5th World Conference on Research Integrity

May 28 - 31, 2017
Amsterdam
The Netherlands

Abstract Book

Oral abstracts

Concurrent sessions: Accountability

O-001

Roughly half of RCTs funded by NIH R01 grants do not appear to be registered in ClinicalTrials.gov

E.H. Turner[1], A.W. Chan[2], D.A. Oren[3], S. Bedrick[1]
[1]Oregon Health & Science Univ, Portland, U.S.A.
[2]Women's College Research Institute, Toronto, Canada
[3]Yale University, New haven, U.S.A.

Objective: It has been shown, using a cohort of trials from ClinicalTrials.gov, that many studies funded by NIH are not published in a timely fashion. What remains unknown is whether additional filtering of clinical trials may be occurring "upstream" of registration.
Method: Using NIH REPORT database (https://report.nih.gov/index.aspx) we identified R01 grants that funded RCTs during the 5 years 2009-2013. Within the resulting cohort, we used REPORT to identify how many of these projects linked to registrations in ClinicalTrials.gov.
RCTs were identified using the search word "random%". To exclude any false positives, by the time of the conference, we will review the context within the grant abstracts, and if necessary, modify the search strategy.
Results: For the 5-year period, we identified 2218 R01-funded RCTs. Of those, fewer than half (1024, 46%) showed evidence of registration. The proportion registered remained fairly constant over the 5-year period (range 44-50%). Within the top 5 institutes (by number of projects and amount funded), the proportion registered was 50% and ranged from 43% (tie between NCI and NHLBI) to 65% (NIDA). By the time of the conference, we will look within these institutes for any changes in registration rate over time.
Conclusion: Limitations: (1) Our search methods may have identified some false positives; (2) since they did not distinguish whether trials were subject to FDAAA of 2007, these data do not speak to noncompliance with that law; (3) some PIs may have registered trials but failed to link them back to REPORT.
Nevertheless, systematic reviewers using ClinicalTrials.gov and other registers should consider using grants databases, which are further "upstream", for a more comprehensive inception cohort of RCTs.

O-002

Transparency and accountability in internationally sponsored political science research

T.B. Phillips[1], S.W. Desposato[2]
[1]West Virginia University, Morgantown, U.S.A.
[2]University of California at San Diego, San diego, U.S.A.

Objective: In the past 30 years, political science has experienced both an experimental revolution and a global expansion, and US political scientists are now conducting experiments and fieldwork in nearly every country in the world. These methodological and contextual changes raise a number of ethical issues that the discipline is only beginning to recognize. This presentation describes these changes in the field and identifies the ethical issues associated with experimental and international research.
Method: Taking both an empirical and theoretical approach, this presentation lists a number of ethical issues that need further attention, and examines in depth the regulatory frameworks, disciplinary norms, publishing practices, and researcher attitudes related to local review in host countries.
Results: In internationally sponsored political science research, there is very little accountability with respect to compliance with local review or permitting requirements in host countries. Federal regulations and disciplinary norms do not require compliance, federal funding programs do not require compliance as a condition of funding, and journals do not require assurance of compliance as a submission requirement. Indeed, many journals in political science do not even require assurance of IRB approval from the home institution. Furthermore, there is little transparency in compliance with local requirements because journals do not require disclosure, and researchers rarely volunteer the information in their publications. Anecdotal evidence suggests that many researchers are ignoring local requirements, and individual researchers have argued that this is permissible for a number of reasons. These reasons include perceptions of peer behavior, "leveling the playing field," and beliefs that foreign review mechanisms are corrupt, incompetent, or exist to protect authoritarian governments rather than research subjects.
Conclusion: The lack of transparency and accountability in internationally sponsored political science research is both problematic and unsustainable. This presentation concludes with some suggestions for forward progress. Given the lack of consensus within the discipline, the authors recommend new measures to promote transparency in order to encourage and inform an open discussion. The hope is that increased transparency and thoughtful discussion will produce disciplinary norms for the responsible conduct of research before political scientists face externally imposed measures to ensure accountability.

O-003

Who Faces Criminal Sanctions for Scientific Misconduct?
I. Oransky, A. Abritis
Retraction Watch/Center For Scientific Integrity, New york, U.S.A.

Objective: Criminal sanctions for scientific misconduct are controversial, and rare. A census of cases in which they are applied does not yet exist, to the best of our knowledge. This study aims to identify cases of scientific misconduct in which perpetrators faced criminal penalties, and to characterize how related those penalties were to misconduct.
Method: Lexis-Nexis was searched using the terms "science," "researcher," and "sentenced," leading to 999 results. Retraction Watch (retractionwatch.com) was also searched using the keyword "sentenced." A search for criminally sanctioned researchers and for documents and articles confirming such sanctions was also performed on Google. Where possible, court documents were obtained through online resources. Excluded were cases unrelated to scientific misconduct and those in which charges were dismissed.
Results: A total of 39 science researchers from 7 countries were identified as having been subject to criminal sanctions for actions related to research misconduct between 1979 and 2015, along with 4 researchers still on trial or awaiting sentencing. Criminal sanctions ranged from suspended sentences to 15 years in prison, with an outlier case involving 1st degree murder resulting in a life sentence. Restitution and fines were also common. Overall, 14 researchers were criminally sanctioned for actions directly involving their own research. Three of those 14 had criminal charges solely related to research, while the other 11 also had charges stemming indirectly from their research process, e.g., grant fraud, embezzlement of research funds, or bribery. 22 others were charged for indirect violations alone. Two investigations resulted in charges for multiple researchers - seven researchers in China charged with embezzlement, and four in the United States (U.S.) convicted of bribery. Only five of the more than 250 cases of research misconduct sanctioned by the U.S. Office of Research Integrity over the same period also had criminal sanctions (<2%). No pattern for sentencing based on misconduct characteristics could be discerned.
Conclusions: Criminal sanctions for research misconduct are rare. Future studies should compare cases in which misconduct is punished with criminal penalties, and those in which it is not.

O-004

Has open data arrived at the British Medical Journal (BMJ)? - an observational study
A.R.F. Rowhani-Farid, A.G.B. Barnett
Queensland University of Technology, Kelvin grove, Australia

Objective: To quantify data sharing rates and data sharing policy compliance at the BMJ by asking authors to share their data, and investigate attitudes and examine barriers towards data sharing.
Method: This was an observational study of papers at the BMJ. We randomly sampled 160 BMJ research articles from 2009 to 2015, excluding meta-analysis and systematic reviews which have their data in the article. The main outcome measures were percentages of research articles that indicated the availability of their raw datasets in their data sharing statements, and those that easily made their datasets available upon request.
Results: Three articles contained the data in the article.
Seven out of 50 articles had "data easily available (received)", 35/50 articles were "data not available", and 8/50 articles were "data potentially available".
The percentage of data easily available from the 157 articles was only 4.5% (95% confidence interval: 1.8% to 9%). One of the shared datasets was not verifiable, so the actual data sharing rate might be lower than 4.5%. A further 8 articles had data potentially available, so the data sharing rate could be as high as 9.6% (5.5% to 15%).
For randomised clinical trials (RCTs) which are bound by the BMJ data sharing policy, 5/21 made their datasets easily available, a data sharing rate of 24% (95% confidence interval: 8% to 47%). 16/21 RCTs were categorised as "data not available", and 0/21 as "data potentially available".
The sharing rate for those articles not bound by the BMJ data sharing policy is: 2/29, 7% (95% confidence interval: 1% to 23%).
Conclusion: Possible explanations for low data sharing rates could be: wording of the BMJ data sharing policy; that our emails ended up in researchers' spam folders; and, that researchers are not rewarded for data sharing. Our limitations include: the BMJ data sharing policy applies to clinical trial data, and we did not use the BMJ to negotiate data access.

O-005

Towards an operational Eco-systemic approach of Research Misconduct (RM).

C. Gans Combe[1], S. Faucheux[1], C. prof. Kuszla[2]
[1]INSEEC, Paris, France
[2]Université de Paris X Nanterre, Nanterre, France

The ongoing European project "DEFORM: Determine the global and financial impact of Research Misconduct" includes within its objectives to work on the deployment of an international database intending to provide a comprehensive definition of what is the perimeter as well as predictors of research misconduct to enhance/ease such adverse practices detection and mitigation by creating new models of responsible research governance and processes.

Indeed, most of the works on RM focuses on practical research and accountability towards the scientific community (Bird, 2014), in a functionalist perspective while being (over-)confident about the progressive role of science. However, the persistence of scandals and overwhelming impacts of poorly-conducted research, the growing public mistrust towards scientists associated with continuous pressure due to declining budgets and publish or perish stress makes it necessary to reconsider the appropriateness of scientific practices to society's expectations.

There is a need to further understand what characterizes and determines what can be accurately seen as questionable research practices, and if related predictors can be identified.

Through case studies taken after major industries (chemicals, automotive, data), this presentation aims to give a renewed definition of research misconduct, and to draw up the operational mapping of research process ecosystems and governance, either leading or not to such practices, this in the context of responsible innovation (Owen et al., 2015).

Our methodology considers all stages of the research process that is not only potential risks and opportunities intended by R&D, but also a comprehensive analysis of the associated direct and indirect, short- and long-term probable economic and social value (Von Schomberg, 2011; Wilsdon, 2005)

In the end, we will present a threefold approach tackling RM risks, not only redefining the "RM" phenomenon, but also describing a model of interacting factors (including organizational, political, or financial ones such as the impact of incentive systems processes, stakeholders' influence…) within the research process (including governance), highlighting all elements that could provide hints of the existence of RM (predictors). Finally, a potential Econometric and statistical model validating the abovementioned representation which could be used to identify all RM – even weak – signals will be presented.

Concurrent sessions: Policy

O-006

From scanning phd theses for plagiarism to awareness how to cite references

C.M.A.W. Festen, M. van Donzel
Erasmus University Rotterdam, Rotterdam, The Netherlands

After a severe case of plagiarism in a PhD thesis, the Erasmus University Rotterdam (the Netherlands) decided to tighten up the regulations in respect to plagiarism in PhD theses.

According to the new internal regulations each and every PhD thesis must now be scanned for plagiarism under the responsibility of the supervisor of the PhD student. The graduate school concerned is responsible for the actual scanning procedure. The doctoral dissertation supervisor must, according to the new regulations, analyse the plagiarism scan report.

At the start of developing the new regulations, detection of plagiarism was the main objective as was cleaning up our own house and preventing surprises afterwards. However, when we started developing an adequate procedure for implementing the plagiarism scan, we soon switched the objective from just trying to detect plagiarism to checking whether references to the literature are being used in the right way: a reference check. This approach guarantees the reference check is not a box-ticking event, but really helps to improve referring to other scientific work. Some Graduate Schools of the Erasmus University even use the reference check in their training program for PhD candidates. And of course supervisors are involved in the learning process as well.

The procedure included an analysis and interpretation of the output of plagiarism scans and comparing it with international guidelines. Most Graduate Schools offer support in the analysis and interpretation of the plagiarism scan. The supervisor of the PhD student, however, remains responsible for the final decision whether plagiarism is at hand or not. After the supervisor's consent, the PhD thesis together with the scan is sent to the doctorate committee that will evaluate the PhD thesis. The result of the scan has also to be sent to the Beadle's office where the final scan for plagiarism will be stored.

Part of the implementation trajectory will be an evaluation. The evaluation will pay attention to the actual adherence to the new regulations/procedure and to the way the reference check is being discussed between supervisor and PhD student. The results of the evaluation will be presented at the conference.

O-007

Both whistle blowers and the scientists they accuse deserve protection

S. Hendrix[1], L.M. Bouter[2]
[1]Hasselt University, Hasselt, Germany
[2]Department of Philosophy, Faculty of Humanities, Vrije Universiteit, Amsterdam, The Netherlands

Whistle blowers are essential in the detection of research misconduct. They deserve strong protection, also when they acted cautiously but the allegations turned out to be wrong. All *bona fide* whistle blowers deserve praise and recognition. But making false accusations should be considered as an act of research misconduct and the accused scientists need to be protected.

In the detection of false accusations also a typology of whistle blowers may be helpful. First there are the honestly concerned colleagues, who are sincere and fact-oriented. Their accusations may be wrong but are not likely to be false. They deserve full protection and support. Second, there are the angry colleagues, who may act partly out of revenge, are often unfair and may be false in their allegations. They deserve protection and need supervision to stay professional. Third are the Machiavellists who are intentionally abusive and have self-serving motives. And finally there are the crazy people, who can be paranoid, stalking, or insulting and have the habit to write long and confused messages with a lot of capitals and exclamation marks which they send to everyone they can think of. The difficulty in evaluating allegations of misconduct is that even angry colleagues, Machiavellists and crazy people may be right in the sense that the allegations are true. Therefore, a code of conduct for whistle blowers is needed.

Whistle blowers must act cautiously and follow the rules and procedures carefully. Anonymous whistleblowing ought to be discouraged but cannot be ignored when the allegations are specific, serious and plausible. Striking the right balance between whistle blower protection and timely unmasking false accusations is not easy but must be a primary goal of institutional, national and international policy on research integrity. In addition, we need to shift the focus to prevention of research misconduct and sloppy science and to foster a trustworthy culture that optimizes research quality improvement through education, role modelling and discussion of the dilemma's that scientists face.

O-008

The development of research culture in Japanese public science: Academic responses to policy reforms
T.K. Kamata
University of Minnesota, Minneapolis, U.S.A.

Objective: Research culture is an important component to advance research in science and technology. Among the internal and external factors that exert influence on research culture, government research policies have critical influences on the development of research culture at the individual, group, and organizational level. Policy changes and reforms in regulatory frameworks, funding guidelines, award decisions, and resource allocation priorities would be potential implications to understand cultural shifts and development in research. In this study, the author explores the relationship between government research policy reforms and the development of research culture in Japanese public science.
Method: This study examines the relationship between research policy reforms and the development of research culture at the seven national universities and the two government research institutions in Japan. The data of policy reforms and institutional research policies are collected from publicly available sources, and the author applies the five indicators pertaining to legal status of institutions, funding guidelines and opportunities, recruitment of academic staff, resource allocation, and research assessment to understand institutional responses and institutional policy changes during the development of research culture.
Results: Among the internal and external factors which influence research culture, research policies exert influence on the development of research culture. The national universities have research culture with flexible operating autonomy to promote research in science and technology. Researchers at the national universities would follow flexible funding policies, explore research subjects, and conduct collaborative research nationally and internationally in the broad research areas. The government research institutions have research culture with specific research objectives and goals to improve the quality of research in science and technology. Researchers at the government research institutions engage in research quality improvement activities in the specific research fields. By the time of the conference, the author will have more specific research findings.
Conclusion: There are distinctive differences in the research culture development between the universities and the research institutions in Japan. The limitation of the present study regards the study analysis level. In addition to the use of institutional policies, understanding more variables (e.g. individual data) are valuable to conduct a comprehensive analysis.

O-009

How Reporting Guidelines Can Help to Improve Practice; the story of STARD
M. Bossuyt
Academic Medical Center, Amsterdam, The Netherlands

Objective: Incomplete reporting has been identified as a major source of avoidable waste in biomedical research. Essential information is often not provided in study reports, impeding the identification, critical appraisal, and replication of studies.
In response, reporting guidelines have been put together, to help authors, reviewers and editors in evaluating the compeleteness and transparency of study reports. The EQUATOR websote now hosts over 200 such guidelines.
Methods: To improve the quality of reporting of diagnostic accuracy studies, the Standards for the Reporting of Diagnostic Accuracy Studies (STARD) statement was developed. The original list was develop in 2000, published in 2003, and updatyed in 2015. STARD 2015 represents an updated list, now consisting of 30 essential items. This update incorporates recent evidence about sources of bias and variability in diagnostic accuracy and is intended to facilitate the use of STARD.
Results: Many reporting guidelines are probably put together too casually, witht little attention to dissemination and implementation, which explains why many of these 200+ reporting guidelines have had very little to no impact. Yet reporting guidelines can have effects that extend beyond their original content and purpose, not just improving reporting, but practice as well. We analyze some of the probable additional effects of STARD - and other guidelines - in standardizing terminology, reducing confusion, and improving rseearch practices.
Conclusion: An understanding of these additonal effects of reporting guidelines, and the factors that contributed to them, could help future guideline developers in their effeorst to strengthen research transparency, quality, and integrity.

O-010

A large scale nation-wide survey indicates that the government policy is important for promoting research ethics education among future researchers.

M.A. Asashima[1], I.I. Ichikawa[2], N.H. Hirose[3]
[1]Tokyo University of Science, Tokyo, Japan
[2]Vanderbilt University, Nashville, U.S.A.
[3]Ministry of Education, Culture, Sports, Science and Technology, Tokyo, Japan

In order to ascertain the current effort of various research institutions in Japan for promoting and encouraging research integrity, MEXT conducted a nation-wide survey during July-September of year 2015. Questionnaires were sent to 1,666 institutions, including all the universities, junior colleges, technology colleges, incorporated administrative agencies, as well as a few industrial laboratories. 1,604 (94%) of them responded, including all of the universities, junior colleges and technology colleges. In addition, site visit was made to 9 institutions, which either receive large amount of governmental funds annually or recently experienced an incidence of serious misconduct. The questionnaire focused on ethics education (EE, 17 questions), data storage (DS, 4 questions) and the protocol for misconduct investigation (MI, 55 questions). Results include the following: When private academic institutions are compared, higher percentage of universities have established system for EE (64.3% vs. 48.1%), DS (47.4% vs. 36.3%) and MI (70.2% vs. 55.6%) than junior or technology colleges. These patterns are essentially duplicated in national academic institutions. When national vs. private universities are compared, the former have higher percentages than the latter in all these categories (90.0% vs. 64.3% for EE; 84.4% vs. 47.4% for DS; 95.6% vs. 70.2% for MI). Whereas private industries have relatively high percentage in DS (52.7% vs. 49.6%), they do lower percentages than academic institutions in EE (47.8% vs. 63.5%) and MI (37.4% vs. 68.4%). Of note, ethics education is mandated among researchers at a higher percentage (57.2%) than undergraduate (11.2%) and graduate students (15.1%). The results indicate that the degree of institutional effort to promote research integrity 1) correlates with the focus of their programs on research vs. teaching, and 2) is largely influenced by the governmental policy to mandate government research fund recipients, i.e., researchers, but not students, pointing to the need for placing greater emphasis on student education. 3) Moreover, the publicity of misconduct tends to drive institutional effort for research integrity, indicating an important role for mass media.

Concurrent sessions : RCR approaches 1

O-011

Integrating transparency into a University Quality Management System
C. Henley
London School of Hygiene & Tropical Medicine, London, United Kingdom

Objective: The presentation aims to outline the steps taken at the London School of Hygiene and Tropical Medicine whereby information from GCP research audits are disseminated across the School. The presentation will detail the methods used for the dissemination of information, and a discussion of future steps.
Method: A gap analysis was conducted using the "Concordat to Support Research Integrity" from Universities UK as a standard in January 2016. The results were used to initiate introducing transparency to the audit results, as well as ensure the RGIO of LSHTM is compliant with the Concordat.
Results: The gap analysis demonstrated areas of potential improvement, particularly with regards to transparency. Specifically, the Concordat states that a public statement should be made with regards to research misconduct. This was rectified with the revision of the RGIO website. Following from this, it was thought that audit results, as a key component of the School's QMS, should ideally be made more transparent as well. Whilst not a specific requirement of the Concordat, it falls within the spirit of the document, and has been more challenging to address. Although there is general support from the research community to share audit results, there is also reluctance as the findings may highlight poor practice of a particular group or department. For this reason, the audit database is anonymised and aggregated into themes as the objective is not to blame. This is a key area to help the research community learn from their peers, to improve standards of research and to target training needs, all to support research integrity. The gap analysis was also useful in helping to update key policies and procedures. Further work continues and full results and analyses will be made available during the conference.
Conclusion: Quality improvement and research integrity rely on the will of the researchers to continually progress the quality of their procedures and systems, and this needs to be basis of adding transparency to the sharing of audit results. This should then be integrated within the Quality Management System of an institution.

O-012

Can Humorous Visuals Enhance College Students' Learning Performance and Interest in Research Ethics?
C. Chou, S.J.A. Pan, C. Lin
National Chiao Tung University, Hsinchu, Taiwan

Objective: Since research ethics (RE) is generally considered important yet serious and "heavy" for students to learn, RE educators have shifted their focus to designing engaging, attractive, and effective learning materials. This study aims to investigate whether the use of humorous visuals can enhance students' perception of, interest in, satisfaction with, and effectiveness in learning RE in an online context.
Method: In this study, we will conduct an experiment in which four types of visual and humorous elements are presented (as independent variables), including (1) text-based materials, (2) humorous text, (3) text with humorous pictures and comics, and (4) text with voiced humorous animation. For the dependent variables, the five measures will include students' (i) learning achievement, (ii) cognitive load, (iii) perception of the courseware presentation, (iv) situational interest in learning, and (v) time-on-task while learning. The participants will be randomly assigned to one of the four treatment groups and will begin by reading a five-unit, approximately 90-minute online RE course with specific visual arrangements. After the students finish the reading at their own pace, they will be required to complete all of the aforementioned measures. Measures of students' learning achievement will be retested two weeks after the experiment in order to investigate whether the humorous visuals make any difference in students' decayed learning achievement.
Results: The experiment will be conducted during the fall semester of 2016. A total of 120 undergraduate and graduate students will be recruited as participants. The participants are expected to come from a broad range of professional fields. The results of the statistical analysis will be informative and valuable for RE researchers, educators, and courseware developers. An indispensable part of our research lies in the exploration of adding different doses of humor and types of visual to learning materials in order to shed light on the design and development of concurrent RE courseware.
Conclusion: All of the details of our treatment, research results, implications, and limitations of the study will be presented at the conference.

O-013

When and why do collaborators trust each other - tools for improving RCR training

H.A. Andersen
University of Copenhagen, Copenhagen k, Denmark

Objective: This talk presents an epistemological analyses of ongoing debates among scientists, journal editors and agencies about accountability and responsibility in collaborative research and discuss how analyses of distribution of labor and trust can inform and improve RCR training.

Methods: From a descriptive account of recent debates on the accountability and responsibility of authors to multi-authored papers, this presentation will provide a philosophical analysis of the different views on trust and epistemic dependence that underlie the various concerns and proposed solutions that have been raised in the debates.

Results: Over the last decade, it has been a topic of intense discussion among scientists, journal editors, and research agencies how accountability and responsibility should be assigned to authors of co"◆authored publications. Various journals, editors and agencies have suggested guidelines for authorships that address the issue of accountability and responsibility in different ways, ranging from the ICMJE's recommendation that each author should have confidence in the ability and integrity of their collaborators, to the suggestion by former JAMA editor Drummond Rennie that the senior author must vouch for the publication in its entirety. A philosophical analysis of these debates reveal that two different principles underlie the different positions in the debate, namely whether priority is on enabling a clear attribution of responsibility when misconduct is discovered after publication or whether priority is on enabling collaborators to continuously assess whether their mutual trust is justified and to intervene at an early stage in the research process if trust seems unfounded.

Conclusion: The talk will argue that RCR training can be improved by including tools for transparent analyses of where collaborators rely on testimonies from collaborators and how they assess the trustworthiness of such testimonies.

O-014

Incorporating Research Quality Assurance into MD/PhD and PhD Research Training

L. Davies, C. Petersen, K. Laube, C. Bakker, F. Sayre, Y. Shimizu
University of Minnesota, St. paul, U.S.A.

Objective: Educational activities designed to encourage the adoption of research quality assurance (QA) best practices by MD/PhD and PhD predoctoral trainees will be described. Training outcomes will be used to determine if QA processes were adopted by the trainees to maintain data integrity throughout the life cycle of the data they generate.

Method: Faculty with QA, data management and instructional design expertise are collaborating with MD/PhD and PhD training programs to deliver content intended to support the integration of research QA practices into trainee research projects. Interactive workshops, online resources, and peer and individual support will be provided to train predoctoral trainees in QA and data management best practices. Training will be provided in the second year of research training, when most coursework has been completed and training shifts to laboratory thesis research. Individual formal records reviews for appropriate data reconstruction tools, standing operating procedures, and good documentation practices for management of critical equipment, methods and reagents will assess training success. Pre- and post-self-assessments will measure changes in practices and attitudes of participants and provide further feedback on the efficacy of the training.

Results: Course design and evaluation strategies will be completed by December 2016 and course delivery and evaluation will occur from January-May 2017. Trainees will develop an individualized and risk-based research quality commitment, a QA toolkit, and a data quality assessment tool specifically adapted to maintain data integrity within their research setting. This presentation will describe the design, delivery and outcome of the course, the challenges identified throughout course delivery, and the strategies proposed to address them.

Conclusion: Results of this pilot program will demonstrate whether the recommended, but rarely adopted integration of research QA best practices into basic research settings is (1) of value to research scientists (based on pre-and post- self-assessment results); (2) an effective strategy for ensuring reliable data reconstruction (based on assessment of trainee research records); and (3) is a sustainable model for training predoctoral trainees (based on the time and resources required to conduct the course). This pilot study will also provide an opportunity to use course feedback to inform future training strategies.

O-015

Privacy, not a hiding game
E. Hoorn[1], M.J. Bonthuis[1], M. Domingus[2]
[1]Rijksuniversiteit Groningen, Groningen, The Netherlands
[2]Erasmus University, Rotterdam, The Netherlands

Compliance with the new General Data Protection Regulation (GPDR) challenges existing research practices, especially in research involving human subjects. It also challenges existing checks and balances in universities. Therefore, it is of the utmost importance to integrate awareness about the rights of participants and the instruments for risk assessment in the GDPR into education on research integrity.

The European code of conduct for research integrity identifies a clear breach of legal requirements as a potential breach of academic integrity. The code recommends further development of good research practices. The principle of verifiability brings up the issue of availability of research data mainly for replication by peers. Research codes for ethical self-assessment grapple to integrate a framework to assess the rights of participants on data protection.

Innovations in big data and requirements of funders on open science urgently require facilitating researchers to address privacy issues. Although many argue that the full implications of the new GDPR for research are still less than clear, the GDPR is clear about the use of instruments to assess the risks involved in processing data. An early assessment of risks enables strategies to integrate technical and organizational measures into the research design. These instruments (privacy impact assessment, privacy by design) also help to ask the right questions, when researchers have to decide whether or not to participate in the EU Open data pilot.

Following upon an exploration on the law for sharing research data in academia,#_ftn1 the authors developed a rule of thumb for compliancy with the GDPR for research data: act, use the instruments and debate. In the Netherlands awareness is created about legal aspects that transcend individual research institutions.#_ftn2 The EUR developed a training module on research integrity#_ftn3 and the RUG started working with privacy impact assessment for multi-stakeholder discussions in complex cases.#_ftn4 The lessons learned in education on responsible conduct of research#_ftn5 will be taken on board to discuss ideas about open, re-usable learning materials on privacy.

#_ftnref1 http://ebooks.iospress.nl/publication/40891
#_ftnref2 https://www.surf.nl/en/lcrdm/issues/legal-issues-and-ownership
#_ftnref3 http://www.eur.nl/fileadmin/ASSETS/ieb/integriteit/dilemmagame-mrg.pdf
#_ftnref4 http://www.rug.nl/research/search/research-data-office/legal/pbd/?lang=en
#_ftnref5 https://nrin.nl/event-education-on-ri-2016

Concurrent sessions: Causes

O-016

The U.S. Biomedical and Life Sciences Field and Research Misconduct: Insights from an Analysis of Closed U.S. Office of Research Integrity (ORI) Case Files

R.T. Tamot[1], A.D. Arsenieva[2], D.W. Wright[3]
[1]U.S. Office of Research Integrity, Rockville, U.S.A.
[2]Independent Researcher, Boise, U.S.A.
[3]Michigan State University, East lansing, U.S.A.

The U.S. biomedical and life sciences field is vast and dynamic. In the last twenty years, it has undergone the following changes, among others: an increasing number of scientists with doctorates caught up in the postdoctoral bubble (Theodosiou et al.: 2012); too much attention being paid to the quality of the journals in which scientists publish their results (Reich: 2013); a dramatic increase in the stay rate of temporary visa holders (NSF: 2015); a significant increase in the average age of faculty members when they obtain their first research project grant (Daniels: 2015); a shrinking of research resources (Alberts et al.: 2014); and a dramatic decline in the percentage of tenure and tenure-track professors in all degree-granting institutions (AAUP: 2013). These changes have strained the U.S. biomedical and life sciences field at an unprecedented level, have fostered an intense competition between scientists for positions, resources, and publishing their results in leading journals, and are making it extremely difficult for junior scientists to establish independent research careers as well as for established scientists to acquire grants and other support to fund their labs. These pressures are omnipresent and weigh heavily on new and established scientists. A narrative analysis of 58 closed ORI case files containing documented admissions of research misconduct by Respondents against whom a finding of research misconduct was made either by the ORI or his/her home institution revealed that junior scientists experience these pressures even more intensely as they strive to establish themselves in the field. Our data strongly suggest that many of them could not withstand the pressure and succumb to falsifying and/or fabricating data and/or or plagiarism. This paper seeks to illustrate how the excessive pressure generated by the field contributes to research misconduct and make recommendations for actions stakeholders could take to help curb some of the disturbing trends in the training of new scientists, and funding and publication mechanisms.

O-017

Consorted approaches to facilitate data quality, robustness and relevance in preclinical research and development

T. Steckler, L. Heylen, T. van de Casteele, D. Gallacher, A. Gilis
Janssen R&D, Beerse, Belgium

For drug discovery and preclinical drug development, robust data and scientific rigor are key drivers for decision making, determining the validity of hypotheses, patent strength, time-to-market and consequently knowledge gain and availability of new treatments to patients. Higher failure rates due to non-reliable scientific data increase the risks and costs associated with Research and Development (R&D) and may hamper the successful translation of innovation to novel treatments for patients. Many factors may contribute to this situation, including technical/methodological, cultural and educational aspects. There is a need for simple, sustainable solutions that facilitate data quality without impacting innovation and freedom of research. To address the issues of preclinical data quality a number of initiatives have been started, also involving pharmaceutical industry. Strengths and weaknesses of initiatives that aim to address those issues, including strategies followed by pharmaceutical industry, will be discussed and some of the more recent consorted approaches presented.

O-018

The pursuit of research integrity - An evaluation.
A. Arunachalam[1], S. Sivakumar[2]
[1]International medical university, Malaysia
[2]Rajas Dental College, Tirunelveli, India

Objective: The focus of this presentation is to highlight the subtle characteristics that encroach on research integrity.
Methods: First part involved 30 participants who are dental interns interested to pursue career in academics and research. In each group setting, one of the participants is an actor whose role was to do certain deliberate activities during the conduct of the study. Setting 1 comprised 10 participants. Each participant was given a set of data- Visual Analog Scores corresponding to a new drug for dental pain relief. The role of the participants was to compile the scores and submit to statistical assessment. It was told to them that if the drug is proved to be effective, there is a good chance of getting the manuscript published and that they will be one of the co-authors. In setting 2, with another 10 participants, same procedure was implemented except that additional remuneration will be granted from parent institution on publication. In setting 3, the procedure was same as in setting 1, except that 9 participants were from a different institution and the actor alone was from parent institution. In all the 3 settings, the actor performs intentionally certain malpractices (fudging in the data) during the conduct of the study, which will project the drug to be a good painkiller. Second part involved 10 participants (dental interns) and the investigator. The actor's role will be taken over by the investigator.
Results: Part I: All the settings demonstrated misconduct from the participants. However, there were certain differences. Fudging of the data was moderate in setting 1. In setting 2, it went up high and almost all the participants did what the actor did. But in setting 3, under given circumstances, the manipulation was very low.
Part II: Results yet to be analyzed. [Will be available before the conference]
Conclusion: Though not an ideal social experiment, the assessment highlights certain variables for research integrity. Young budding researchers were prone for misconduct when they witnessed malpractices happening around them and more so when money was involved.
An element of honesty noted if the misconduct happened out of the group

O-019

The cumulative effect of reporting and citation biases on the apparent efficacy of treatments: the case of depression
J.A.C.J. Bastiaansen[1], Y.A. de Vries[1], A.M. Roest[1], P. de Jonge[1], P. Cuijpers[2], M.R. Munafò[3]
[1]University Medical Center Groningen, Groningen, The Netherlands
[2]VU University, Amsterdam, The Netherlands
[3]University of Bristol, Bristol, United Kingdom

Objective: Use the evidence base for antidepressants for depression to illustrate the cumulative impact of four biases on the apparent efficacy of treatments: publication bias, outcome reporting bias, spin, and citation bias.
Method: We derived 74 antidepressant trials and their outcome coding from a meta-analysis by Turner et al. (2008), and added 31 additional trials of novel antidepressants following similar methods. Publication bias and outcome reporting bias were identified by comparing US Food and Drug Administration (FDA) reviews and matching journal articles (if available). Two independent raters coded whether the abstract claimed the treatment was effective or not for all journal articles. Spin was determined by comparing journal article outcomes with the claim in the abstract. Total number of citations in Web of Science was compared between journal articles with positive and negative results. In addition, the impact of spin on citation rates was examined.
Results: Based on FDA reviews, 53 (50%) of the initial 105 antidepressant trials were considered to be positive and 52 (50%) were considered negative. All but one of the positive trials (98%) were published compared to 25 (48%) of the negative trials. Ten of these negative trials (40%) were published as positive trials (i.e., outcome reporting bias). Hence, in the cohort of 77 published trials, only 15 (19%) were published with negative (primary) results; 4 (27%) of these 15 articles unambiguously reported that the treatment was not effective. On average, trials reporting positive results were cited three times as frequently as negative trials (92 versus 32 citations). Among negative trials, those with (mild) spin in the abstract received an average of 36 citations, while those with a clearly negative abstract received 25 citations on average.
Conclusion: Within the antidepressant literature, 50% of all trials are negative, but the cumulative impact of these biases is such that only 5% of published trials unambiguously report that the treatment was not effective, and these trials are cited less frequently than trials reporting positive results. Clinicians and researchers need to be aware that the effects of these four forms of bias accumulate to hide negative results from view.

O-020

Cutting corners, speeding, cheating, and heavy legal machinery in science: Why scientific integrity cannot be contained as a fringe problem

M. Kaiser
University of Bergen, Bergen, Norway

There is a trend to view integrity issues in science, in particular those around FFP, as a psychological phenomena. Attention has been devoted to the precise naming and defining conditions of scientific misconduct, be they FFP or QRP. Whatever the problematic behaviour may be, the most common reaction is to frame it as a purely individual phenomena, to be understood out of a psychological condition of that very individual. The other common trend is to attribute significant harmful consequences to any breaches of scientific integrity, sometimes even attempting to calculate the financial costs of misconduct. However, among those who study these phenomena more closely, the insight has emerged that the causes are various, from psychological factors, to lack of knowledge, cultural differences, and finally systemic factors in the knowledge production itself. Equally, the suspicion has gained ground that the overall costs of misconduct may not be significantly larger that for most low-impact research. – In this paper I shall argue that one will not gain adequate understanding of integrity issues in research, if one sees them as phenomena on the fringes of its practice, rather than already embedded in its very core. I would advance the hypothesis that many recent studies have documented the misguided belief in the reliability of scientific studies. Most scientific research - and that is not limited to research which is problematic in terms of integrity – faces serious problems of quality. The output of research in fields of recognised social need of improved policies is typically more noise rather than reliable information. The framework of post-normal science is a good instrument to conceptualise the issues. I do not want to downplay issues of real scientific misconduct, nor do I want to call off work aiming at institutional reform dealing with integrity. However, what I try to emphasize with my analysis is the need to recognize that the grey zone of questionable research practices has infected all of science, including those areas counted as sound science, and we need to cure the whole body of knowledge production, rather than merely isolated limbs.

Concurrent sessions : Detection tools 1

O-021

Quality assurance: a tool for improving research integrity and supporting a quality culture

M. Bens[1], M. Eitzen[2], R.L. Davies[3]
[1]Colorado State University, Ft. collins, U.S.A.
[2]University of Texas Medical Branch, Galveston, U.S.A.
[3]University of Minnesota, St. paul, U.S.A.

Quality Assurance (QA) is a common concept in medical product development, research and manufacturing; data from these activities are submitted to authorities in support of product approval or licensure. In nonclinical and clinical research, QA professionals are independent of study conduct and focus on assuring that data and study reports are accurate, transparent, and allow for study reconstruction and reproduction. QA professionals are experienced in supporting and assuring data quality, data integrity and research vigor. Yet, the principles and practices of quality assurance and the use of QA professionals are not routinely used in basic research or in assuring the quality of published literature.

QA principles and practices developed and used for regulated studies can be customized for application within any research environment for the improvement of data quality and integrity and to promote a quality culture. Application of QA principles and practices if well planned can be value-added components of good research practices. However, adoption and implementation on a regular basis in non-regulated research environments is currently hindered by lack of knowledge and understanding, inadequate training opportunities, historical attitudes, and limited or no access to QA resources within academic research environments. Several Universities have implemented Quality Assurance programs that support a wide variety of research efforts and that have resulted in quality research training, support and access to QA professionals.

This presentation will explore barriers, misunderstanding and challenges and propose some simple QA principles and practices that have been implemented in academic and non-regulated research environments to improve research reproducibility and establish a culture of quality. Examples include developing standard operating procedures and good data practices, establishing an effective data audit trail, method validation, addition of simple QC/QA practices, establishing quality expectations and policies that support a quality culture, and implementing independent data review.

The adoption of some simple quality assurance practices and tools can support sound data management and research integrity. Such practices are integral to assuring the quality of original source data and the integrity of the research throughout the data life cycle, leading to enhanced data quality, research reproducibility and confidence in the published record.

O-022

Applying Insights from the Field of Behavioral Economics to the Institutional Management of Research Integrity: A Critical Analysis of Institutional Approaches Following a Misconduct-Related Event

E. Slattengren, M.S. Anderson
University of Minnesota, Minneapolis, U.S.A.

Objective: This study is a critical analysis of institutional strategies, following an episode of misconduct, to manage the behavior of researchers and create a research environment that promotes ethical decisions and behaviors. It assesses the likelihood of success of these strategies based on insights from the field of behavioral economics.
Method: The study is based on analysis of documents from five research institutions in four countries. We derive the standards for review of institutional actions from the literature on behavioral economics. Our analysis takes into account the fact that not all successful interventions are expressed in behavior-related terms and outcomes.
Results: Management of ethical behaviors in research institutions has become increasingly important over the last decade, as expectations for researchers have expanded and conduct resulting in institutional crisis or scandal is no longer viewed as rare. Institutions are responsible for providing the resources and environment that enable researchers to do their work with integrity. The literature supports the importance of institutional environment as it pertains to the integrity of research, yet there has been less exploration of the strategic approaches a university may take in fostering an ethical research environment. Institutional responses usually take the form of improving or expanding on policy, RCR education, and compliance systems. While system improvements, policy changes, and campaign-style approaches may be advisable in the short-term, strategies derived from behavioral economics call attention instead to the everyday, critical choices of researchers over time. Our results show the weaknesses of typical institutional responses from this perspective.
Conclusion: Institutions looking to assess and improve their ethical environments should consider using intentional, pervasive, research-based strategies that focus on everyday researcher behavior. Such strategies should aim to normalize responsible conduct over unethical behavior.

O-023

When things go wrong: a systematic approach to determining the integrity of multiple publications
P. O'Brien, J. Lawson, A. Koopman
The University of Queensland, Brisbane, Australia

Objective: Following retraction of a paper because neither primary data nor evidence that the study described was conducted could be located, an investigation of >300 papers by the authors sought systematically to identify papers 'at risk' of falsification/fabrication or of other research integrity breaches.
Method: Criteria delimiting the investigation and prioritising publications for examination were identified. Five decision trees relating to author order and eligibility, ethical approval, verifiable data and funding source were developed. Standardised questions regarding the aetiology of 'at risk' papers were established to obtain additional information, including from co-authors and journal editors.
Results: The extent of the fabrication and falsification involving the original retracted paper warranted an immediate investigation of other research related activities of the main authors. This included reviewing more than 300 publications. Preliminary assessment of publications involving the researchers identified potential disparities between subject matter and known research opportunity. Initial criteria identifying the dates from which questionable research practices first occurred resulted in 92 papers being prioritised as most likely at risk. The five decision trees were applied systematically to assess the integrity of the 92 papers reducing the number to 40. Further assessment using the standardised questions, including corroborating evidence from named co-authors and submission documentation from editors identified 11 publications requiring some form of correction of the public record. In one case, reanalysis of the data was required. Of the 11, four were ultimately retracted and four had errata published to correct authorship. Three were review publications relying to some extent upon the original retracted paper: the editors chose not to publish errata. Key issues identified included one further instance of falsification/fabrication, but also several of plagiarism and incorrect author attribution.
Conclusion: The systematic evidence-based approach described assisted significantly in correcting the public record. The methodology developed and presented here can be applied to similar matters where a large number of publications need to be assessed effectively and efficiently.

O-024

PAASP - Quality Investment starts with Data Quality
B.G. Gerlach, C.H.E. Emmerich, M.C.M. prof. dr. Michel, A.B. dr. Bespalov
PAASP GmbH, Heidelberg, Germany

Objective: Operational Risk Management is needed by every business and basically every economic branch is covered by firms providing assessments of operational risks. One of the very few exceptions: the field of biomedical drug discovery! For some historical reasons, preclinical discovery research is largely exempt from quality control. PAASP is the first full-service consulting and auditing company that specializes in providing assessment of operational risks related to quality of research data.
Method: We have developed a proprietary evaluation platform which is used to detect potential sources of bias and violations of Good Research Practice (GRP) related to study design, conduct, data analysis, reporting and storage during R&D projects. This assessment will serve as a quality label providing a fast expert statement for the robustness of a given data set. Additionally, in collaboration with academic and industry partners, we are setting up GRP guidelines for preclinical biomedical research by organising meetings on GRP with the aim to produce a widely accepted standardisation system and guidelines.
Results: To facilitate the discussion about a better quality governance system, examples from the first field tests (in late 2016/early 2017) using our research analysis and assessment tool will be presented and its value for researchers explained.
Additionally, the first results and experiences will be shared from the meeting on GRP guideline development which will be held in Amsterdam on October 27th. In this context, examples will be given to demonstrate which experimental concepts (e.g. blinding or randomisation in animal experiments) can be standardized without affecting the scientific progress and how to let guidelines and quality requirements further evolve over time depending on the constantly changing requirements of the scientific landscape.
Conclusion: Beside all important efforts for transparency and openness in science, an audit system specifically tailored to the aspects of the research process will complement these efforts and essentially contribute to detect research misconduct, increase reproducibility and accelerate the advancements in science.

O-025

Monitoring Good Research Practices in discovery labs

T. Lavrijssen, D. Malwitz, G. Pauwels, A. Gilis
Janssen R&D, Beerse, Belgium

Monitoring Good Research Practices (GRPs) in a discovery research environment is critical in delivering needed and innovative therapeutics to patients. A pharmaceutical company's reputation, intellectual property protection and decision making all depend on high quality data. The growing number of publications on poor reproducibility and cases of scientific misconduct in preclinical research brings awareness to the potential elevated risks associated with discovery data generated both in house and with our external contractors.

Compliance to Good Research Practices is therefore seen as important but can only be done after a careful consideration on what the minimal quality expectations are versus the risk on inhibiting innovative science. We have implemented a monitoring program on data traceability and data integrity as a way to identify any meaningful data quality risks and to improve on data quality in future experiments.

By all means, in the absence of clear regulations, the endeavor to find and keep the right focus for this spot check program is a key to success, but at the same time we see this approach as a huge opportunity to enhance good research practices.

Concurrent sessions: Researcher attitudes 1

O-026

Conflict of interests in scientific inquiry

K.H.H. Hiis-Hauge
Bergen University College, Bergen, Norway

One of the responsibilities of the National Committee for Research Ethics in Science and Technology (NENT) in Norway is to submit recommendations regarding questions of research ethics, raised by specific actors, or society in general. Moreover, the committee's mandate is to foster informed public debate and inform researchers, the administration and the public about ethical aspects connected to science and technology in today's society. NENT has developed ethical principles that guide their discussions on dilemmas and paradoxes connected to scientific projects or programs. The last few years there has been an increase in cases addressing *conflicts of interests and biases* in scientific programs, project design and accomplishment. Conflicts include funding of petroleum research versus research on green technology, as well as environmental impact assessments of marine pollution from (mining) industry. In many ways these cases reflect a wider societal debate in Norway, concerning environmental impact from the exploitation of petroleum and mineral resources. In a high number of cases, these political debates turn into debates about scientific reports generated throughout decision making processes, associated scientific uncertainties and the interpretation of scientific knowledge. This happens at the same time as national and international research programs plan for even closer relationship between science, policy and innovation in future research.

In this paper we present how ethical principles from the national guidelines have been applied in five cases submitted to the committee concerning conflict of interest. These cases include national research programs, scientific practices and reporting, as well as dissemination of scientific results. Salient ethical principles applied in these cases were openness in research, uncertainty, independence, the precautionary principle, participatory research, and sustainable development. Further, we discuss these cases in the light of insights from science and technology studies, including perspectives from post-normal sciences and the literature of boundary work and institutions. Finally, we sketch possible future scenarios on how the committee can work with the topic on conflict of interest to increase a societal awareness about the intertwined spheres of policy, industry and science, in the future.

O-027

Researcher perspectives on raising concerns: first results from the PRISM project.

P.P. Satalkar, D.M. Shaw
Institute for Biomedical Ethics, Basel, Switzerland

Objective: The aim of this paper is to describe and discuss ways in which institutions can engage in constructive yet critical appraisal of the scientific work of an individual researcher, enabling researchers to feel confident and safe to raise arguments and opinions that might challenge the established norms or practices in science.
Method: We are conducting a qualitative research study entitled PRISM (Perspectives on Research Integrity in Science and Medicine) with medical researchers to understand their experiences regarding research integrity. A total of 24 interviews have been conducted and recruitment will continue until theoretical saturation is reached. The data will be analysed thematically.
Results: Preliminary results of our study indicate that the hierarchy and power relationships among researchers often create reluctance to challenge other researchers whose actions are perceived to compromise principles of research integrity. This is most obvious among PhD students who are caught between what they think is the right way to do science and what they observe around them as established practice of science. This reluctance of PhD students was most prominent in day to day laboratory and clinical work and during the peer review process of manuscripts submitted to journals. They assumed that the established people in a given field must invariably be correct and even if they are wrong, one should not challenge them as doing so might imply an adverse impact on their own career.
Conclusion: Our findings suggest that it may be difficult to move towards an open and constructive research culture because the new generation of researchers is exposed to and part of a system that still operates in many ways that are contrary to the spririt of research integrity. Although our interview study is limited to several institutions in one country, it is likely that these findings indicate concerns of researchers in other countries.

O-028

Research Ethics and Integrity among Biologists and Physicists around the World

K.R.W. Matthews, E. Howard Ecklund, S.W. Lewis
Rice University, Houston, U.S.A.

Objective: In this presentation, we will examine how biologists compare to physicists in differing national contexts in the way they perceive ethical difficulties in their work and the meaning of research integrity and misconduct. This knowledge can inform the broader discussion on responsible conduct of research, ethics education and research oversight.

Method: This project surveyed approximately 20,000 physicists and biologists across 8 different countries and regions—US, UK, India, Italy, France, Taiwan, Hong Kong, Turkey—from 2013 to 2015. From the survey respondents, 600 semi-structured interviews were conducted to further understand scientists' perspectives and ethical challenges.

Results: Physicists and biologists rarely encountered what they saw as traditional research ethics integrity violations: fraud, fabrication and plagiarism. However, scientists often cite numerous lesser violations including issues with authorship, reviewer confidentiality and honesty, and irresponsible conduct of supervisors. Furthermore, while some areas of concern between countries and regions were similar, the degree to which issues like commercialization of research products and the concept of 'publish or perish' varied between nationalities and disciplines.

Conclusion: The public and scientists are engaged in ongoing debates on quality of research, conflicts of interests and other more specialized areas such as embryonic stem cell research, evolution and the creation of the universe. But scientists' attitudes and understanding of research ethics are rarely compared between disciplines and these tensions are rarely compared to scientists in different national contexts. These results help elucidate scientists perceptions to help guide the broader discussion on research integrity and ethics and determine how ethical training of scientists can better approach deficiencies.

O-029

The Scientist's Perception of being a Responsible Scientist

K.R.W. Matthews, E. Howard Ecklund, S.W. Lewis
Rice University, Houston, U.S.A.

Objective: In this presentation, we will examine scientists' perceptions of what it means to be a 'responsible scientist' from three different countries, the United States, the United Kingdom and China. This knowledge can inform research ethics education and oversight.

Method: More than 200 semi-structured interviews were conducted from 2013 to 2015 of scientists—biologists and physicists—in the United States, the United Kingdom and China. The scientists were challenged to describe and define a "responsible scientist" and identify "aspects of the research process that make it difficult to be a responsible scientist." Scientists explained how this responsibility was relevant to their research, role as a mentor and teacher, and to the public.

Results: The definition of a 'responsible scientist' and its relevance to scientific research was similar between scientists in different countries. However, scientists' perception of the importance and significant of their roles as mentor and teacher varied based on national context as well as their responsibilities to the general public. Furthermore, most scientists identified challenges in terms of unethical conduct especially fraud, fabrication or plagiarism—with limited personal knowledge or antidotes about specific incidents. But scientists did mention personal experiences with what they deemed as more 'minor' ethical concerns, including issues involving authorship, reviewer confidentiality and honesty, and irresponsible conduct by supervisors. These experiences were perceived as less clear cut as was their solutions and varied often by discipline and even sub-discipline of research.

Conclusion: Scientists' attitudes and understanding of research ethics and what is means to be a 'responsible scientists' impact their lives as scientists. It effects how they approach their roles as researchers, mentors, teachers as well as how their engage with the public. But scientists' understand of being a 'responsible scientist' is not often addressed and more rarely in different national contexts. By looking at national context as well as discipline, responsible conduct of research challenges can be more adequately understood and addressed to improve the overall quality of the scientific enterprise.

O-030

A Cross-Sectional Survey Study to Assess Prevalence and Attitudes Regarding Research Misconduct among Investigators in the Middle East

M. Felaefel[1], M. Salem[2], R. Jafaar[3], G. Jassim[4], F. Rashid-Doubell[4], R. Yousri[5], N. Ali[6], H. Silverman[7]
[1]MCT-CRO, Maadi, cairo, Egypt
[2]American University in Cairo, Cairo, Egypt
[3]Ain Wazein Hospital, Mount lebanon, Lebanon
[4]Royal College of Surgeons in Ireland - Medical University of Bahrain, Manama, Bahrain
[5]Cairo University, Giza, Egypt
[6]Suez Canal University, Ismailia, Egypt
[7]University of Maryland, Baltimore, U.S.A.

Objective: Research misconduct is on the rise globally, as studies indicate significant levels of questionable research practices. Data regarding the extent of misconduct in low and middle-income countries remain limited. Our aims were to assess the prevalence of and attitudes regarding research misconduct among researchers in several institutions in the Middle East and to identify factors that might account for our findings.

Methods: We performed an anonymous survey study involving investigators at several institutions located Egypt, Bahrain and Lebanon. The survey tool obtained: a) demographic data, b) respondents' self-report and observation of research misconduct practices, and c) attitudes regarding the acceptability of certain practices in research conduct. The misconduct practices were categorized into several composites. We used descriptive analysis, bivariate analysis to investigate associations between responses and independent variables and multivariate regression analysis to determine the strength of each independent variable for each association.

Results: We analyzed data from 278 participants and showed a high rate of misconduct, as 59.4% of our respondents self-reported to having committed at least one misconduct and 74.5% reported having observed any misconduct behavior among one of their colleagues. The most common form of self-report misconduct was "circumventing research ethics regulations" (50.5%) followed by "fabrication and falsification" (28.6%); a misbehavior representing a "conflict of interest" was the least self-reported misconduct (5.8%). The most frequent type of misbehaviors observed by the respondents included "fabrication or falsification of data" (49.6%), followed by "circumventing research ethics regulations" (46.4%), "authorship misconduct" (40.6%), and "plagiarism" (35.6%). Significant predictors of misconduct included a) lack of "prior ethics training" for "circumventing research ethics regulations (odds ratio = 0.49 and p<0.02) and for "fabrication and falsification (odds ratio =0.27 and p<0.0001) and b) "graduation from a "university in the Middle East" for "fabrication and falsification" (odds ratio = 0.20 and p<0.02).

Conclusion: Our data indicate that scientific misconduct represents a significant issue in the Middle East. The demonstration that a lack of "prior ethics training" was a significant predictor of misconduct should motivate the requirement of educational initiatives in research integrity. Self-reporting of misconduct practices could underestimate actual practices.

Concurrent sessions: Researcher attitudes 2

O-031

The Storybook Image of the Scientist

C.L.S. Veldkamp, C.H.J. Hartgerink, M.A.L. van Assen, J.M. Wicherts
Tilburg School of Social and Behavioral Sciences, Tilburg University, Tilburg, The Netherlands

Objective: in order to deal with human factors in science, both the general public and the scientific community should recognize that scientists are human, and therefore prone to human fallibility. However, the classic storybook image of the scientist portrays scientists as people of exceptional objectivity, rationality, open-mindedness, intelligence, integrity, and communality. We studied to what extent lay people and scientists believe in this image. **Method**: we conducted three studies among a total of 3.278 participants from over 60 countries in which we measured 1) whether highly-educated lay people, scientists, and science Nobel Prize laureates attributed higher levels of objectivity, rationality, open-mindedness, intelligence, integrity, and communality to scientists than to other highly-educated people, and 2) whether scientists were prone to in-group favoritism when it comes to rating different categories of scientists in terms of these storybook characteristics. **Results**: we found that both lay people and scientists attributed considerably more objectivity, rationality, open-mindedness, intelligence, integrity, and communality to scientists than to other highly-educated people. Moreover, scientists perceived even larger differences between scientists and people with other highly-educated professions than lay people did. Some groups of scientists also differentiated between categories of scientists: established scientists attributed higher levels of the storybook characteristics to established scientists than to early-career scientists and PhD students, while they attributed lower levels to early-career scientists than to PhD students. Female scientists attributed much higher levels of the storybook characteristics to female scientists than to male scientists, whereas male scientists showed no mean differences in attributions to male and female scientists. **Conclusion:** the storybook image seems pervasive among lay people, and even more pervasive among scientists. Some groups of scientists believe that scientists from their own category of scientists fit the storybook image better scientsits from other categories. These beliefs may decrease scientists' willingness to adopt recently proposed practices and policies to reduce error, bias and dishonesty in science. This should be addressed in future research. Our result suggesting that established scientists have a particular negative image of early-career scientists also needs further investigation. Our method to recruit scientist participants may have created some selection bias, potentially limiting generalizability.

O-032

Perceptions of Research Misconduct among Faculty Members at America's top 100 Universities: Preliminary Results from a Large Survey-Based Project

M.D. Reisig, K. Holtfreter
Arizona State University, Phoenix, U.S.A.

Objective: This study provides a descriptive assessment the perceived breadth and seriousness of different forms of research misconduct (i.e., data fabrication, plagiarism, authorship fraud, data falsification, publishing fraud, resource mismanagement, and disobeying institutional authority) among faculty members at America's Top 100 research universities. Results from this ongoing large survey-based project also shed light on the perceived consequences and remedies of research misconduct.
Method: The data collection for this study followed a mixed-mode strategy whereby approximately 500 randomly selected individuals were administered online surveys and 500 randomly selected individuals completed mail questionnaires. The data from both samples were pooled to maximize statistical power.
Results: The findings from the study not only reveal information about scientific misconduct (e.g., prevalence, seriousness, and perceived causes) among a representative sample of active researchers, but also provide a comparative assessment of such factors across the social, natural, and applied sciences.
Conclusion: Researchers need to think creatively about ways of gauging the prevalence, seriousness, and causes of scientific misconduct beyond simple self-report studies conducted in specialized fields of studies. Samples consisting of active researchers from all scientific disciplines provide for much richer analyses from which to guide formal prevention efforts.

O-033

What is 'Responsible Conduct of Research' in Research-Creation? A survey of Canadian Researchers

N.V. Voarino[1], J.C.B.P. Bélisle-Pipon[1], V.C. Couture[2], B.W.J. Williams-Jones[1], C.N. Noury[3]
[1]Université de Montréal, Montreal, Canada
[2]Faculté de médecine et des sciences de la santé de l'Université de Sherbrooke, Sherbrooke, Canada
[3]Université du Québec à Montréal (UQAM), Montréal, Canada

Objective: Research-creation (RC) is an emergent field at the interface of academic research and creative activities, and is defined by the Canadian provincial (Quebec) social science funding agency (FRQSC) as "research activities or approaches that foster the creation or interpretation/performance of literary or artistic works of all types." Researchers in this heterogeneous field may also be practising artists, musicians, dancers, or designers. They therefore have to meet dual-expertise requirements that may sometimes conflict. Accordingly, researcher-creator may encounter very different challenges from their colleagues in the rest of academia. Yet, to date very little is known about how these researchers experience RCR issues, what differences there may be, or how the Canadian RC community responds to institutional RCR policies or provincial/national guidelines. The aim of this survey is both to validate the results of a previous literature review as well as to define issues that are less developed (or not at all discussed) in the academic literature.

Methods: Drawing on the results of a previous systematic scoping review of the academic literature on RCR and RC, we developed a survey to explore researcher perspectives on 4 major clusters of issues: 1) conflicts of interests and conflicts of commitment 2) authorship and knowledge transfer, 3) evaluation and validation; 4) lack of consensual definition of RC. We recruited students, junior, mid-career and senior RC researchers identified through a variety of search strategies, including Canadian authors identified during the literature review, RC grant and scholarship recipients from Canadian funding agencies, and members of RC networks (including music, art, design, etc.). Participants were invited to complete the survey between December 2016 and January 2017.

Results: The results (expected for March 2017) enable the presentation of a realistic portrait of the nature and scope of RCR issues as experienced by RC researchers, and how they are articulated and perceived in practice.

Conclusion: The results allow us to both identify gaps in RCR culture among RC researchers, and to propose the creation of specific RC-RCR guidelines, the adapting of existing RCR policies and guidelines, and the development of pertinent educational and awareness raising tools.

O-034

A survey to analyse the attitude and knowledge on research integrity among first- and second-year research postgraduate students in HKU

F.K.S. Leung, D. Chan
The University of Hong Kong, Hong kong, China

As part of the coursework training for basic knowledge on research skills and methods, all MPhil and 4-year PhD students in HKU are required to pass a faculty-based research ethics course by the end of the probationary period (i.e. first 12 months for full-time MPhil students and first 18 months for full-time PhD students who do not have an MPhil degree). The research ethics course is twelve hours in total, and classes normally include a brief lecture and an in-class, case-based discussion. Around 700 students take the course every year.

A study is being undertaken at HKU to evaluate first- and second-year research postgraduate students' attitude towards and knowledge about research integrity, and whether there is any change in their attitude and awareness after taking the ethics course. At the beginning of the course, students will be asked to complete the first part of the questionnaire. They will be asked to indicate their knowledge of some RI concepts and whether they think that these issues are important. At the end of the course, similar questions will be asked again and students will also be invited to indicate whether they have discussed these issues with their supervisor, and whether they have been involved in or heard about any questionable research practices/research misconduct in the University.

The data will be collected in the 2016/17 academic year. The results of the survey, as well as the initial recommendations arising from the results, will be presented at the conference. The data collected will also be considered by the University for infrastructure building and planning of future RI initiatives.

O-035

Research integrity and professional codes of ethics: a qualitative comparison across social sciences
T.B. Phillips, G.C. Beach
West Virginia University, Morgantown, U.S.A.

Objective: Professional Codes of Ethics (CoEs) articulate expectations for members of the profession in order to guide member behavior, outwardly promote the profession's standards and values, and help the profession avoid external regulation. As a result, the content of CoEs is an important signal of the ethical commitments of a given profession. In order to identify the research ethics priorities and behavioral expectations for US professional organizations in the social sciences, this study examined the contents of their CoEs.

Method: We performed a comparative content analysis (using NVivo) of the current CoEs for the American Anthropological Association, Association of American Geographers, International Studies Association, American Political Science Association, American Psychological Association, American Sociological Association, American Economic Association. In particular, we analyzed how each code treated issues relating to: conflict of interest, authorship, IRB approval, informed consent, deception, subject compensation, and funding disclosure.

Results: Social science disciplines vary widely in the amount and type of guidance they offer on each issue. With regard to conflict of interest, only economics and sociology define and discuss avoidance of conflict in detail. Discussions of authorship largely focus on power differentials and do not provide detailed guidance for earning or appropriately assigning authorship. Geography alone requires IRB consultation for all human subjects research. Anthropology, geography, psychology and sociology all state robust guidelines describing how and when informed consent must be sought, while the other disciplines do not mention the issue. Psychology and sociology alone discuss the appropriate use of deception, debriefing, and compensation to subjects. Funding disclosure discussions vary widely, particularly with regard to when and to whom disclosure is owed, but economics, political science, and sociology are the only disciplines that require disclosure in publication or other public communications of scholarly work.

Conclusion: Discussion of these important issues in research ethics is inconsistent, and CoEs seldom offer clear definitions of a given issue or outline best practices. We encourage professional organizations to review their CoE to ensure that it accurately reflects the discipline's priorities and expectations. Our results provide a useful benchmarking tool and sample language for both domestic and international organizations.

Concurrent sessions: Detection tools 2

O-036

Repair Consensus Guidelines: Responsibilities of Publishers, Agencies, Institutions and Researchers in Protecting the Integrity of the Research Record

J. Broccardo[1], A. Aubert Bonn[2]
[1]Colorado State University, Fort collins, U.S.A.
[2]Universiteit Hasselt, Hasselt, Belgium

There are a multitude of barriers to the effective handling of misconduct related retractions, with confusion regarding roles and responsibilities of key stakeholders. In order to work through these barriers, we have drafted the RePAIR Consensus Guidelines. This document is the result of discussions that emerged from the 2016 conference Keeping the Pool Clean: Prevention and Handling of Misconduct Related Retractions (funded by U.S. DHHS grant #ORIIR150014 and Colorado State University). A subgroup of attendees met to draft a guidance document outlining the roles and responsibilities of key stakeholders in the retractions process. International input will be sought prior to obtaining signatories through an open comment period on the Committee on Publication Ethics website and elsewhere. The draft output of this session is the RePAIR Consensus Guidelines. This document defines respective roles and responsibilities of publishers, agencies, institutions, and researchers in protecting the integrity of the research record when questions regarding misconduct arise. The signatories of this document will support the adoption of these guidelines, with key roles summarized as follows: 1) publishers should post a clear policy on misconduct, investigate and communicate credible allegations, and issue freely available retraction notices explaining reason for retraction; 2) existing agencies should perform thorough, timely, and impartial oversight and/or investigation of credible allegations according to individual agency policy; 3) institutions should designate a Research Integrity Officer or equivalent, establish confidential and visible channels for reporting and investigating misconduct, communicate with journals/agencies when misconduct is suspected and when retractions are warranted; and 4) researchers should create an environment conducive to ethical conduct of research, address possible ethical breaches as appropriate, employ rigorous experimental and analytical methods/analyses, and maintain, review, and share primary data. Barriers to open communication are acknowledged and include privacy laws, lack of regulatory and/or research integrity oversight in some countries/institutions, lack of reporting options or whistleblower protections, and unwillingness/inability to share primary data. Widespread support of key signatories agreeing to adopt these guidelines will promulgate best practices in the handling of misconduct related retractions. Such actions are critical to maintain the transparency and integrity of the research record.

O-037

Plagiarism detection during submission in three Croatian biomedical journals

K.B. Bazdaric[1], V.S.S. Supak Smolcic[1], I.S. Salaric[2], S.G. Gajovic[3], A.M.S. Simundic[4], H.B. Brkic[5], L.B.Z. Bilic-Zulle[6], M.P. Petrovecki[3]
[1]Rijeka University Faculty of Medicine, Rijeka, Croatia, [2]Department of Oral Surgery,School of Dental Medicine University of Zagreb, Zagreb, Croatia, [3]Croatian Medical Journal, Zagreb University School of Medicine, Zagreb, Croatia, [4]Biochemia Medica, Croatian Society for Medical Biochemistry and Laboratory Medic, Zagreb, Croatia [5]The Acta Stomatologica Croatica (ASCRO), Croatian Dental Society, Zagreb, Croatia, [6]Clinical Department of Laboratory Diagnostics, Clinical Hospital Centre Rijeka, Rijeka, Croatia

Objective: Similarity Check (previously CrossCheck), a text-similarity software, is in use from 2010 but there are only a few plagiarism detection reports and no general recommendations of its usage. We aimed to detect textual similarity in manuscripts submitted for publication in three biomedical Croatian journals to establish the threshold of plagiarism.
Method: All submitted manuscripts were checked with Similarity Check (measure: text similarity) and afterwards manually verified by editor (plagiarized or non-plagiarized) in three indexed Croatian biomedical journals [Acta Stomatologica Croatica (ASCRO), Biochemia Medica (BM) and Croatian Medical Journal (CMJ)] from June to December 2015. BM and CMJ have research integrity editor.
Results: We analysed 279 manuscripts, 178 (64%) submitted to CMJ, 56(20%) to BM and 45(16%) to ASCRO. Submitted manuscripts were original articles [201(72%)], case-reports [34(12%)] and others [44(16%)], mostly from Croatia [49(18%)], Turkey [45(16%)] and China [37(13%)]. Out of 279, 75 (27%) manuscripts were verified as plagiarized, 18(40%) in ASCRO, 7(13%) in BM and 50(28%) in CMJ. Out of 75 plagiarized manuscripts, 64(86%) were plagiarized and 11(14%) self-plagiarized. Most of the plagiarized manuscripts were patchwork plagiarized [56(74%)]. The average overall text-similarity of plagiarized manuscripts was highest in ASCRO [median=36.5; 5th - 95th percentile 24%-63%], lower in CMJ [28 (12%-56%)] and lowest in BM [15(3%-30%)] with H=18.46, *P*<0.001. Using the decision of editors as a classification variable we have analysed the text-similarity without literature in order to determine sensitivity and specificity with ROC curve in all manuscripts. The Area under the ROC curve (AUC) was 0.90 (C.I. 0.86-0.93) with P<0.001. The threshold value of overall similarity was 14% with optimal sensitivity 91(C.I. 82-96) and specificity 70(C.I. 63-76).

Conclusion: The detected prevalence of plagiarism in submitted manuscripts (27%) is similar to admission rates of plagiarism in non-self reports in a systematic review of plagiarism. The recommended threshold for screening with Similarity Check is overall text similarity value of 14% which afterwards require manual verification by the editor.

O-038

'statcheck': an Automated Tool to Detect Misreported Statistics in the Scientific Literature

M.B. Nuijten, J.M. Wicherts

Tilburg University, Tilburg, The Netherlands

Objective: We found that half of the psychology papers contain p-values that are inconsistent with their degrees of freedom and test statistic. One in eight papers contain an inconsistency around p=.05, more often in favor of significance than non-significance. We developed the R package "statcheck" to automatically detect these errors.
Method: We used the R package "statcheck" (Epskamp & Nuijten, 2014) to check statistics in 30,717 psychology papers. statcheck converts PDF and HTML articles in plain text, searches for APA reported NHST results, recalculates the p-value based in the reported test statistic and degrees of freedom, and checks if the reported and recalculated p-value match.
Results: statcheck found 258,105 p-values in 16,695 papers. In line with previous findings, we found that 49.6% of the papers contained at least one p-value that was inconsistent with the test statistic and degrees of freedom. In 12.9% of the papers there was at least one gross inconsistency around p = .05 that could have changed the statistical conclusion. These gross inconsistencies were more often in favor of statistical significance than vice versa, indicating a systematic bias towards reporting "successful" results.
As a validity check, we compared statcheck's results with the results of a manual check, and concluded that statcheck is a reliable method for automatically detecting inconsistent statistics in papers: we found an inter-rater reliability of .76 for inconsistencies and of .89 for gross inconsistencies.
The alarmingly high error rates in published literature inspired the scientific world to take action. We are working with Elsevier and Psychological Science to pilot statcheck as a part of their peer review system. We are confident that we can present preliminary results of this pilot at the time of WCRI 2017. We expect that the use of statcheck in peer review could dramatically decrease error prevalence.
Conclusion: There is a high prevalence of reporting errors in psychology, and we found evidence for a systematic bias towards (wrongly) reporting significant results. Although statcheck is not as accurate as a manual check, it provides a simple tool to prevent and/or correct reporting errors in the literature.

O-039

Developing tools for quantitative assessment of inappropriate image reuse

M.C. Walsh[1], H.L. Elliott[2], Y.J. Xu[2], D.H. Wainstock[1], K.G. Godin[1], K. Oleinik[3], D.L. Richmond[2], T. Xie[2], M. Litt[1], B.A. Talbot[1], G. Brodnicki[1]
[1]Harvard Medical School - ARI, Boston, ma, U.S.A.
[2]Harvard Medical School - IDAC, Boston, ma, U.S.A.
[3]Boston University, Boston, ma, U.S.A.

Objective: Image processing software provides essential methods for qualitative assessment (visual inspection) of alleged inappropriate image duplication and/or manipulation. We seek to supplement available tools with quantitative metrics and statistical analyses, to help institutional officials confidently distinguish between images that have been reused and/or altered, and images legitimately produced during independent experimentation. Statistical validation of such quantitative tools may enable their adaptation to automated screening of candidate images against established repositories, enhancing the scale of detection.
Methods: Using optimized registration transforms, our MATLAB algorithm produces visual overlays of candidate image alignments, and identifies potential duplications using image correlation as a quantitative metric. Moving-window correlations between regions within images are also calculated, allowing delineation of areas of local image processing and alteration. An additional tool maps the distribution of image intensities within each image, further evaluating relationships between images, highlighting areas with broad uniform intensity which rarely occur in raw image data. We also developed a protocol for comparing candidate alignments (potential duplications) against two types of controls: frame-shifted controls from within the aligned image pair (intra-image controls), and data from other samples within similar experimentation (inter-image controls).
Results: Our studies of duplicated regions within confocal, immunofluorescence, and light microscopy image data report high correlation values (e.g., 0.8 - 0.9), while appropriate non-aligning (inter- and intra-image) controls generally report lower correlation values (e.g., 0.2 - 0.3). However, experimental data that are routinely distributed in uniform patterns or clusters (including western blots, or large areas of tissue/structure overlap in microscopy data) often yield higher correlation values in non-duplicated control samples. Appropriate control protocols assist in defining the strength, significance, and utility of reported correlations within each forensic image comparison.
Conclusions: Our collaborative team combines expertise in academic research misconduct forensic analysis, biomedical experimentation, image data analytics, and tool development. Continued testing of this image assessment platform utilizing comparative samples from different data cohorts will assist in refining the algorithm and automating the evaluation process. We propose a multi-tiered forensic image assessment approach, including statistical analyses based on objective high-throughput comparisons of independent experimental datasets, enhancing rigor and confidence in detecting research misconduct.

O-040

STAR Methods: A new tool for promoting more transparent and robust methods reporting

K. Brose, E. Porro, A. Goldstein, F. Fiorilla, M. Kvajo, A. Smith
Cell Press, Cambridge, U.S.A.

Objectives: In response to feedback from the scientific community about their challenges related to the reporting and access to detailed experimental design and methodological information in scientific publications, Cell Press-Elsevier developed a new approach for the presentation of experimental methods called STAR (Structured Transparent Accessible Reporting) Methods. The new format is intended as a tool to address concerns about the rigor and robustness of research findings. STAR Method supports best practice guidelines for reporting, such as ARRIVE and the NIH Principles and Guidelines for Reporting Preclinical Research, and promotes open science principles for sharing of data and resources.

Methods: The format features a Key Resources Table that provides critical resources and reagents and links to RRIDS and reagent tags, an structured and intuitive organization for reporting of key experimental design information and dedicated sections to encourage sharing of resources, data and software/code. To allow for full reporting of details and eliminate constraints on reporting imposed by space restrictions, the format is all online and linked to the main sections of the research article, providing an easily accessible link between results and the online methods.

Results: We launched the pilot for STAR Methods in Cell in August 2016 and Cell Systems in September 2016 and will be extending to 13 other Cell Press journals in early 2017. Preliminary anecdotal feedback from authors and the scientific community has been very positive, both from authors about improvement to the process of presenting methods information and from readers, about the improvement in ascertaining key methodological information from the paper and supporting open science principles. In coming months, we will be monitoring the impact of the new format on the quality of methods reporting and author/reader experiences.

Conclusion: STAR Methods offers an intuitive and accessible framework that encourages more robust reporting of methodological information and supports open science principles. Although the current roll-out was limited to life science journals, the STAR Methods format and approach could be readily adapted to research publications in other disciplines.

Concurrent sessions: RCR approaches 2

O-041

HEIRRI project: Creating training programs for responsible research and innovation

A.M. Marušic[1], I.B. Buljan[1], M.M. Malicki[1], H.C. Consortium[2]
[1]University of Split School of Medicine, Split, Croatia
[2]Universitat Pompeu Fabra, Barcelona, Spain

Objective: To create responsible research and innovation (RRI) training programs and materials to be used at different higher education levels (undergraduate, master degree and PhD levels, summer courses and mass open online courses)

Method: The HEIRRI project (Higher Education Institutions and Responsible Research and Innovation) involves 9 partners from 6 different countries that have used a scoping review methodology and expert workshops to generate state of the art practices used to create and subsequently evaluate training programs used at different levels of higher education.

Results: A total of 334 documents were scanned for the scoping review, consisting of academic papers and policy documents that directly addressed the notion of RRI and also a broader body of literature that focused on ideas and understandings of responsibility in research. To ensure that the review was in alignment with the overall structure of the HEIRRI project, the selected documents were sampled to cover at least the six dimensions of RRI, i.e. public engagement, science literacy and science education, gender equality, open access, ethics, and governance of research and innovation. From the scanned documents 23 best practices were selected and will be available on the HEIRRI website and open to the public. Additionally, following two expert workshops and creation of training programs protocol; in the next stage of the project, training programs curricula will be developed and the programs themselves tested and evaluated in 5 European Universities and 2 science museums.

Conclusion: Although HEIRRI takes as its starting point the six RRI key aspects identified by the European Commission (public engagement, gender, open access, science education, ethics and governance), the project wants to stress the potential of RRI as a transformative, critical and radical concept that can be taught at various higher education levels.

O-042

How to use fiction movies in education on responsible conduct of research

F. Blom[1], C. Grigoleit[2], B. Hoogenes[2], I. Vos[2], L.M. Bouter[1]
[1]VU University Medical Center, Amsterdam, The Netherlands
[2]VU University, Amsterdam, The Netherlands

Objective: Several major violations of research integrity shook up academia and society during the last decade. Fostering responsible conduct of research (RCR) and preventing research misbehaviour were put high on the agenda. Teaching students and researchers about rules and norms in research is one thing, but empowering them to deal with moral dilemmas in research practice is a challenge. We argue that fictional narratives can be very useful in exploring the tough choices scientists have to make. In this project, we investigated the usefulness and applicability of a selection of fiction movies for RCR education.

Method: A format for structured description of (fragments of) movies was developed and after pilot testing consensus on the format was achieved. This format was applied to 31movies. Legal and practical aspects of using (fragments of) movies for educational purposes and of sharing the teaching materials online (creative commons) were explored.

Results: Not all movies in our initial selection were deemed useful for RCR education. Of the 31 movies we considered, 20 movies remained in the final selection. The main RCR topics addressed in these movies are: conflicts of interest, selective reporting and citation, scientific writing, authorship, research waste and data collection and study design issues.

Discussion: The structured format, an annotated list of useful fiction movie fragments for RCR education, and descriptions of the legal aspects and practicalities, will be published on the website of the Netherlands Research Integrity Network (http://www.nrin.nl/). Also first experiences with the use of the selected movie fragments in RCR education will be presented.

O-043

Reviewing the Responsible Conduct of Research (RCR) Literature from a Scientific Virtue Perspective

C.M. Mcleskey, E. Berling, R.T. Pennock
Michigan State University, East lansing, mi, U.S.A.

Responsible conduct of research has been scrutinized in the scientific literature with varying intensity for 40 years. The need for training is not in question—in the U.S., both the National Science Foundation and the National Institute of Health require it for all recipients of their funding. News agencies cover instances of scientific misconduct regularly, and many in the scientific community are calling for improved methods for RCR training. Many of the criticisms in this literature focus on flaws in the way RCR training is typically approached, with further worries about the efficacy of such training. Concerns include the short term and long term effects of the training, the sorts of understanding imparted by RCR courses, and whose responsibility it is to do this training when time and energy are of limited supply. We offer a review of this literature from a philosophical point of view, employing a theoretical framework based on Pennock's theory of scientific virtues. What we find are common themes regarding what counts as misconduct, how RCR training is meant to address this, whether case studies and textbooks are effective and, if so, how does one measure such effectiveness. Our review not only examines these themes as they are presented in the literature, but also offers a framework for seeing these issues in a new light. Our approach aims to move from the legalistic model currently employed toward one in which character traits, or 'virtues', that lead to exemplary science are placed front and center. By inculcating virtues such as curiosity, humility to evidence, perseverance, and others, we offer a new way of approaching RCR concerns and training that is both responsive to the current literature and able to offer critiques that lend an explicative voice to some of the more nascent and abstract concerns that some are beginning to raise. By tapping into the inherent motivations typical of scientists and emphasizing the nature of exemplary scientific behavior, we believe we can develop the means for deeper, longer lasting effects as well as a more coherent understanding of what RCR is and its role in the scientific community.

O-044

A virtue-based responsible conduct of research (rcr) curriculum: pilot test results

E.W.B. Berling, C.M. Mcleskey, R.T.P. Pennock, M.O. O'Rourke
Michigan State University, Lansing, U.S.A.

Objective: Scientific misconduct harms science by wasting researchers' time and squandering the limited funding available to support research. To ensure science advances efficiently, part of a scientist's training emphasizes the rules of responsible research. Unfortunately, the standard methods of teaching responsible conduct of research are known to be imperfect. Drawing on Pennock's theory of scientific virtues, we are developing an alternative curriculum for RCR training that emphasizes internally derived values rather than externally imposed rules. This approach focuses on the ways that the virtuous characteristics of scientists lead to responsible and exemplary behavior. This virtues-based approach augments traditional approaches, and we believe that by focusing on the positive roles of virtues, especially through participant-driven discussions and story-telling, RCR training will be more engaging, and thus more influential, than simply completing the tasks required to satisfy traditional certification requirements.
Method: We have been pilot-testing elements of a virtues-based approach to RCR training, conducting Toolbox-style discussion sessions with small groups of scientists. Each discussion module focuses on a particular scientific virtue. The participants respond on a Likert scale to prompts about the role of the topic virtue, and then discuss their thoughts and reactions to those prompts. During these discussions, they explore the roles that the virtue should play in the practice of science.
Results: Preliminary results have shown that participants greatly prefer this engaging virtues-based model over the traditional methods of RCR training. If engagement and enjoyment are linked to effectiveness in learning, this is reason to think a virtues-based approach can enrich standard methods. Comparisons of pre and post Likert scores also suggest that all levels of participants, from young graduate students through senior scientists, adjust their views in light of these discussions.
Conclusion: Virtues-based RCR training can augment the standard methods used. Participating scientists prefer the engaging and positive virtues-based method, and we believe their experiences enable them to continue exploration of these issues with their students, lab groups, and colleagues in ways that reinforce the informal relationships of mentoring and collaboration through which much of scientific training occurs.

O-045

Exploring the fun in science: a prerequisite for succesful RCR-courses
E.L.M. Maeckelberghe
University Medical Center Groningen/University Groningen, Groningen, The Netherlands

Two pitfalls definitely need to be avoided in teaching reponsible conduct in science: 1. making it a highly theoretical endeavour that in most cases will not result in the internalisation of the principles of RCR; 2. limiting the teaching to a small staff, thus not involving a large group of reseachers as role models. Therefore it is necessary to design RCR courses in which students feel challenged to discover the underlying principles and moral issues in responsible research themselves whilst at the same time sharing this discovery with their role models.

At the University Medical Center Groningen, from 2015 on, we organize a mandatory RCR –course for the Graduate School that avoided the pitfalls mentioned above.

We opted for small group learning (10 max), mixed groups (different disciplines), a repository with structured back ground information, giving the PhD students responsibility for their own learning process, and experienced researchers as coaches.

With an influx of around a hundred new PhD students per semester a pool of 20 coaches was needed to ensure continuity.

There were two worries: the motivation of the PhD students as it is a mandatory course and the amount of coaches we needed. After three rounds evaluations show that the course is seen as a necessary, interesting, self-evident and even fun part of doing research. The pool of coaches consist of 45 researchers – role models.

How can we explain this succes?

Before the courses started we created a buzz in setting up a 'fun' project that involved a lot of dedicated reseachers offering their expertise: an interactive film Integrity Factor (see http://www.integrityfactor.nl). The research community was already involved in making RCR–reflection available for young researchers in a non-traditional way.

The driving force of the course is taking the process of discovery by the PhD student as central.

We fostered a culture in which researchers were eager to be coach: they were invited to be role models.

One of the participants summarized succintly what the course is about: *"There is never a dull moment in science".*

Concurrent sessions: RCR approaches 3

O-046

Conceptual definition and empirical investigation of ethics in doctoral supervision

T.E. Löfström[1], K. Pyhältö[2]
[1]Tallinn University & University of Helsinki, Tallinn, Estonia
[2]University of Helsinki & University of Oulu, Helsinki/oulu, Finland

Objective: The aim of the study was to develop a conceptual framework for analyzing ethical issues in doctoral supervision, and to offer a tool for investigating it. The study explored how positive and negative doctoral experience attributes were associated within experiences of ethics in supervision.
Methods: The data were collected from 236 doctoral students in behavioral sciences at two Finnish universities. Participation was voluntary. The study did not require ethics review. The *Ethical Issues in Supervision Scales* were developed based on a set of qualitative studies (Authors, 2012; 2014; 2015a; 2015b). The 16-item instrument measured five ethical principles, namely respect for autonomy, non-maleficence, avoiding harm, beneficence, justice, and fidelity. Scales measuring burnout were included from the *Doctoral Study Survey* (Author et al., 2011). Statistical analyses included exploratory factor analysis, correlation, T-tests, univariate and multivariate GLM, and stepwise regression analysis.
Results: Ethical issues in supervision resulted in three factors: 1) FORM (α=.709) with the common denominator research community, social relations and interaction, 2) RULE (α=.738) with the common denominator fairness and adherence to rules, and 3) CARE (α=.617) with the common denominator personal relations and respecting the individual. FORM predicted cynicism ($F_{(1,232)}$=32.61, p<.000, R^2=.12, and FORM and CARE predicted feelings of inadequacy ($F_{(2,231)}$=10.99, p<.000. R^2=.09. RULE predicted consideration to discontinue studies ($F_{(1,226)}$=12.46, p<.01, R^2=.05, and exhaustion ($F_{(1,232)}$=7.98, p<.01, R^2=.03. The ethics variables did not predict the positive outcome variables Writing productivity and Consideration of an academic career.
Conclusion: First, ethics is an important "invisible" variable in the learning environment. The study showed that doctoral students' experiences of ethics in supervision predicted negative outcomes, i.e. burnout, and consideration to discontinue doctoral studies, but not the positive outcome variables writing productivity and consideration of an academic career. Second, the tool developed on the basis of prior qualitative studies pointed towards the presence of three core ethical entities that influence doctoral students' experiences of the ethics in doctoral supervision, namely 1) the research community and the structuring of supervision, 2) fairness and adherence to rules in order to ensure the equal treatment of doctoral students, and 3) respectful relationships.

O-047

Young researchers know misconduct, but they don't know how to deal with it

M. Gommel[1], H. Nolte[2], G. Sponholz[3]
[1]Institut für systemische Medizin- und Organisationsethik, Berlin, Germany
[2]CoachInScience, Hamburg, Germany
[3]Institut für Medizin- und Organisationsethik, Berlin, Germany

Objective: In our survey we focus on the knowledge of PhD students and postdocs about official GSP regulations, ombudspersons and on their experience with scientific misconduct. We also collect information about the source of their GSP knowledge.
Method: So far, we handed out questionnaires to all 144 participants of 13 consecutive good scientific practice (GSP) workshops we performed in universities and research institutions in Europe. 142 participants (132 PhD students and 10 postdocs) returned the questionnaire. We will continue until we reach 40 workshops and report the full results.
Results: The preliminary data from 13 workshops show that more than 60 per cent of the PhD students were unaware of the existence of GSP regulations, although all involved research institutions assert their obligation to educate young researchers about GSP and make the regulations known to them. Only 5 per cent of the PhD students indicated that they knew the regulations in sufficient detail before they came to our workshops.
The existence of ombudspersons was known to about one fifth of our participants. One in four PhD students indicated that they already had a reason to approach an ombudsperson, despite their short time in research.
At 25 per cent, the rate of involvement in scientific misconduct reported by the participants is higher than the rate reported in another survey that was published in 2015 (19.6 %). We assume that this is due to their longer research experience (3.7 years compared with 2.9 years). After having obtained more data, we will be able to report if there is a significant correlation between time spent in research and experience with misconduct in a current PhD student population.
Conclusion: We consider it unacceptable that most young researchers are not familiar with the content of their institutions' GSP regulations, and even more disconcerting is their unawareness of the existence of ombudspersons, given their degree of personal involvement in scientific misconduct. The analysis of the very few free-text answers concerning the source of knowledge about GSP regulations and ombudspersons could not clearly indicate ways of educating young researchers more efficiently.

O-048

Coordinating Resources to Make Online Research Integrity- & Ethics-related Information Available to Everyone Who Demand It

P. Sun
Siyidi International Education Consulting and Service Co. Ltd., Beijing, China

Objective: Research Integrity- and research ethics-related information (RCR-related information hereafter) is an important source of guidance and educational materials. Both printed and online information on codes of research conduct, principles for handling research misconduct, and instructional courses are massive and scattered, and the availability of such information is unbalanced for different groups of people in terms of status, native language and academic discipline. The presentation will explore the ways of coordinating efforts of relevant agencies, learned societies and individuals to make RCR-related, practice-oriented information widely available.

Method (This is an ongoing research): (1) Some exemplary websites dedicated to research integrity and ethics will be examined, to form a set of criteria for constructing a comprehensive RCR-related information platform for scientific professionals. (2) The advantages and shortcomings of some existing relevant websites will be identified, to reveal the gaps with an "ideal" RCR-related information platform / network.

(3) A preliminary description of the "evaluation results" and suggestions for individual websites will be sent to their hosts for comments. (4) The coordination of the respective Web developers' efforts and relevant issues will be discussed with the Web hosts via emails or face-to-face interactions, and recorded.

(Prospective) Results: The existing RCR-related websites mainly serve specific purposes, however, as policies and guidelines on research integrity, research ethics and research management are inter-related, so information on one website can also be used by other websites, and thus shared by more extensive audiences. The issues of feasibility, criteria, styles, and some technical and logistic problems are expected to be raised during discussion and interaction, and will be analyzed and addressed.

(Prospective) Conclusion: A consensus might be reached that there should be at least one comprehensive RCR-related website for targeted groups of administrators, researchers, mentors, editors and students, etc. This can be achieved by aggregate the contents of related websites, linking to other websites, or adding various language versions to existing websites, etc. The findings might contribute to the design and development of several planned national or international RCR-related information platforms, and the improvement of those existing websites.

O-049

Connecting statisticians and scientists: statistical awareness training as a key tool to ensure research integrity and reproducibility within pharmaceutical drug discovery

T. van de Casteele[1], M. Crabbe[1], B. Verbist[1], K. Johnson[2], F. Tekle[1], N. Goeyvaerts[1], H. de Smedt[1], L. Bijnens[1], H. Geys[1], A. Barron[1], Y. Cherkas[1], M. Lubomirski[1], A. Gilis[1], T. Lavrijssen[1], T. Steckler[1], D. Gallacher[1]
[1]Janssen R&D, Beerse, Belgium
[2]Arbor Analytics LLC, Ann arbor, U.S.A.

Pharmaceutical R&D productivity measured by the number of new drug approvals has dramatically declined over the last couple of decades despite numerous technological advancements. While several causes for this decline have been suggested, the lack of reproducibility of research findings was identified as a potentially critical driver. To ensure research reproducibility, many pharma companies have statistics departments that support research activities. However, expert statistical input to the design and analysis of experiments is often underutilized or the ratio of statisticians to scientists is too small to cover all their needs. Moreover, scientists and statisticians, both highly skilled in their own expertise and working to the same company objectives, often do not speak the same technical language. Consequently, there is a need to improve the connection between scientists and statisticians so that both can contribute maximally to the success of drug discovery projects.

We suggest that statistical awareness training within drug discovery teams, organized by statisticians and supported by research leaders, is a key tool to achieve this goal for the following reasons: i) it creates visibility for the statistics department within the drug discovery organization, ii) it stimulates statisticians and scientists to better understand each other's challenges, iii) it facilitates identification of statistical problems with different levels of complexity that require different solutions and iv) it paves the way for the establishment of common research quality standards and the successful implementation of a translational drug discovery research strategy.

We rolled out statistical awareness training to scientists in the R&D departments, as follows:

to identify needs and knowledge gaps, we surveyed scientists on statistical topics they would like to see addressed, and relied on internal quality audit reports and experiences from project-related interactions with scientists;

we developed and taught a diverse portfolio of statistics training sessions tailored to scientists' needs;

to amplify the impact of statistical training and to stimulate a real "culture of sound statistical practices", we planned to nominate "statistics champions" within the scientific community, and award scientists strongly engaged in implementing good statistical practices.

Here we provide an overview and progress on this action plan.

O-050

Changes of Research Ethics Consciousness of Researchers in Korea Following Hwang's Scandal

L.I.J. Lee
Seoul National University of Education, Seoul, South-Korea

This paper aims to analyze developmental characteristics of research ethics consciousness of researchers in universities and national research institues based on on-line survey comparatively. This survey was carried three times in 2014, 2015, 2016 funded The National Research Foundation of Korea(NRF). And almost 3,000 of professors, researchers and graduate students were involved in this survey. I aimed to find out three important components of research ethics. First, how is the level of researcher's awareness and compliance of the code or regulation on research ethics? Second, how is researchers's awareness and reaction on research misconduct or QRP? Third, what is actual state of reseach ethics education and how the research ethics education affects researcher's knowledge and behaviors to prevent research misconducts including plagiarism etc. In this paper, my main point to examine and to show is that how research ethics reforms in Korea after Hwang's scandal affect to overcome the bad image on research ethics and to promote the level of research ethics consciousness of researchers.

Concurrent sessions: Organizations

O-051

Research integrity and misconduct: Industry vs Universities

K. Dierickx[1], S. Godecharle[1], S. Fieuws[2], B. Nemery[3]
[1]Centre for biomedical ethics and law - University Leuven, Leuven, Belgium
[2]Biostatistics and statistical bioinformatics centre University of Leuven, Leuven, Belgium
[3]Environment and Health - University of Leuven, Leuven, Belgium

Background: Academic researchers often claim that the pharmaceutical industry badly influences biomedical research practice or conducts research fraud. Industry has indeed been found guilty of various forms of research misconduct, and it has been shown that "positive" outcomes are more likely for industry funded research than for research funded by other sources. Conversely, researchers from biomedical companies have complained that research published in peer reviewed academic journals is often irreproducible, implicitly accusing academic researchers of unethical practices. We conducted a large computer-based survey of biomedical researchers and research managers to verify the hypothesis that the experiences and views on research integrity and misconduct differ between those working in industry and those working in universities.

Method: We adapted a survey that was used in previous research conducted in the USA based on our published review of the research integrity guidance documents in Europe, and the published analysis of semi-structured interviews we conducted with biomedical researchers and research managers active in universities or industry. The target population of our survey consisted of 1766 biomedical researchers and research managers active within universities or industry in Belgium.

Results & Discussion: (At this stage we are not allowed to give concrete data, as the manuscript is under review, and not yet published. However, at the time of the conference, we will be able to present the hard data) Within the limits of our survey of self-reported and observed misbehavior, it appears that research misconduct occurs to a substantial degree in both universities and industry. The reported prevalences of observed and admitted misconduct actions in our survey are of the same order as to those found in other surveys on research integrity. When there were significant differences, the reporting rate of research misconduct within industry was systematically lower compared to universities. Remarkably, however, plagiarism formed an exception: it was observed very frequently within industry. Nevertheless, it has been suggested that the fact that research performed by industry is technically clean, does not necessarily guarantee that its conclusions are unbiased, let alone ethical in its design or its conclusions.

O-052

Biomedical Research Integrity in China - A Review of University Documents on Research Integrity

N.N. Yi, B. Nemery, K. Dierickx
KU Leuven, Leuven, Belgium

Objective: Scientific researchers are expected to follow the professional norms in their own domain. With a growing number of scientific publications retracted and research misconduct cases revealed in recent years, Chinese biomedical research integrity is questioned. Therefore, with a review of the documents on research integrity in Chinese universities, this work aims to investigate how the professional norms are specified in these documents: (1) how research integrity, research miscoduct and related concepts are defined, (2) what measures (e.g. training) are taken or to be taken in Chinese (medical) universities and (3) how research misconduct and other irresponsible research practices are takled with.

Methods: After a stratified sampling, 53 universities were selected. Their documents on research integrity were collected by searching on their official websites and confirmation of these universities. Then the content of these documents were analyzed, with special attention on the questions above.

Results: At this stage, the concrete data can not be perceived as the study is under review. At the time of the conference we will show the hard data. We will present how many of these universities have their own documents on research integrity and responsible research practices, and how many have more than one documents for different target groups, including teachers, students and other researchers. We will also present the differences on the document length, the restrained behaviors, the target groups, the supervision subject and the investigation procedure of irresponsible research practices. In addition to these documents, various training on research integrity were also organized regularly in some universities.

Conclusion: Despite the discrepancy they have, all these documents were designed to promote research integrity and cultivate a good research environment in Chinese biomedical domain. However, there is still room for improvement, for example, the tackling process of irresponsible research practices in some documents needs more clarification.

O-053

Shaping tomorrow's research integrity: policies and processes in European research funding organisations and research performing organisations

M.E. Evrard[1], O.B. Boehme[2], M.H. Hiney[3], A.P. Peatfield[4]
[1]Science Europe, Brussels, Belgium
[2]Research Foundation Flanders, Brussels, Belgium
[3]Health Research Board, Dublin, Ireland
[4]Medical Research Council, London, United Kingdom

Members of Science Europe, large public research organisations and funding agencies, play an important role in advancing research integrity in Europe to support borderless science and improve the scientific environment. Through their policies and processes these member organisations (MOs) can drive behavioural change at both institutional and individual level.

In order to identify future actions that MOs can take to effect change, Science Europe needed to understand the prevailing policy/process landscape in Europe. Consequently the http://www.scienceeurope.org/policy/working-groups/Research-Integrity undertook a survey of MOs and recently http://scieur.org/integrityreport the results alongside a supporting set of recommendations.

In analysing the survey responses it became clear that most organisations take actions on research integrity, though there are some differences in definitions and approaches. Some MOs have detailed policies, guidance, and procedures in place, while others are still refining them. It is not surprising to find differences across the MOs, given the diversity of membership in Science Europe and the different regulatory and legal environments within which they operate.

The report concludes that the promotional activities of most MOs are irregular in both the type and level of implementation and recommends that, at a minimum, policies should include promotion of good research practice, clear procedures for dealing with allegations of misconduct, and the possible sanctions available. Whistle-blower protection should be integral to research integrity policies and policies should be clear on the types of misconduct covered. In addition, in order to encourage transparency, the outcomes of proven misconduct should not be hidden and data on cases – either under investigation or proven - needs to be collected centrally to help with monitoring and future planning.

Safeguarding research integrity is undoubtedly a shared task. Science Europe MOs will continue to work towards improving research policies and processes in order to ensure maximum benefit from public funding of research and encourage other research organisations to place integrity at the core of the research endeavour.

O-054

Safeguarding the biomedical research environment: ethical responsibilities of research institutions and funders

Z.M. Master[1], B.C.M. Martinson[2]
[1]Albany Medical College, Albany, ny, U.S.A.
[2]HealthPartners Institute, Bloomington, mn, U.S.A.

Several reports claim that the current biomedical research environment in the U.S. and internationally is unsustainable. There are insufficient faculty positions, longer postdoctoral fellowship times, and the mean age of first-time grant winners is rising. Many scientists face burnout and consider the pressure to publish and obtain grants excessive. The hypercompetitive atmosphere is shifting the norms and practices of individual scientists that may lead to a range of counter-normative behaviors and could account for many of the contemporary research integrity issues we see today, including limited data sharing, disaggregating findings, irreproducibility, and limiting originality and creativity. Even more concerning is whether the current climate is leading to more serious and egregious misbehaviors in research, such as, research misconduct, sabotage or harassment. Safeguarding research integrity is not only the responsibility of individual scientists on-the-ground, but also of academic research institutions. In high-profile cases of research misconduct, scientists are typically labeled as "bad apples" while academic institutions remain virtually blameless. Seldom are questions raised about the role of the institution in preventing misconduct or the organizational climate and culture which may contribute to misconduct. Academic institutions, including universities, colleges research centers, and funders have moral obligations to faculty, students and the public. Here, we explore the moral responsibilities of research institutions to prevent misconduct and other undesirable research-related behavior. Academic research institutions can play a proactive role in promoting research integrity through education, assessing their research integrity environment, and identifying ways to prevent research misbehaviors and reshape the scientific research environment. Similarly, funders such as the National Institutes of Health and National Science Foundation can create programs for more sustainable funding for research, limit the number of graduate students as skilled laborers, and fund research on research integrity. Research institutions and funders bear moral responsibility over research misconduct and need to make serious strides towards redirecting the academic research environment towards a more positive and sustainable future.

O-055

Measuring Your Organizational Climate for Research Integrity: An Exploration of Cross-Cultural Similarities, Differences and Appetites for Collaborative Work in this Area

R. Thrush[1], C. Martinson[1], Heitman[2]
[1]University of Arkansas for Medical Sciences, Little rock, U.S.A.
[2]University of Texas Southwestern, Dallas, U.S.A.

Summary/Relevance to Conference Theme: A compelling strategy used by organizational leaders to promote research integrity is to measure the perceptions of its research-engaged members to reflect an aggregate picture of the organizational climate for research integrity (transparency); and further, to provide feedback and use of such information to guide targeted organizational responses to improve research environments (accountability). This symposium will provide an engaging forum for focused interactive discussion about cross-cultural similarities and differences of key concepts relevant to assessing organizational research climates. International interest, opportunities and potential hurdles to establishing an interest group for this topic will also be addressed.

Symposium Format: We propose a 90 minute symposium with interactive discussion throughout to explore the relevance and interpretability of key research integrity constructs and terms that have been used to measure the organizational climate for research integrity in various settings (primarily in the U.S. to date). Audience response mechanisms with structured questions interleaved throughout the presentation to guide interactive discussion will be employed. 20 minutes–Introduce topic including the conceptual framework and underpinnings of a validated extant survey tool to measure the organizational climate for research integrity, the Survey of Organizational Research Climate (SOuRCe). (Dr. Carol Thrush). 30 minutes-Interactive Discussion with attendees to explore the applicability, transferability and interpretability of key principles for measuring organizational climate for research integrity in various international countries and organizational settings. Due to differences in cultural backgrounds and structures of the scientific enterprise across various countries as well as political structures and how governments interface with the science system we believe this workshop will provide an excellent venue to explore these issues with a group of international delegates. (Dr. Brian Martinson). 25 minutes-Introduction idea to establish interest group on this topic, opportunities and hurdles. We will explore levels of international interest in establishing an interest group for issues regarding the measurement of research integrity climates in general, and will elicit potential opportunities and hurdles, as well as perceived resource needs. Other potential outcomes from could be pursuit of a publication describing what was learned during the workshop. (Dr. Elizabeth Heitman; mailto:eheitman@comcast.net)
15 minutes-Wrap-up and steps forward

Concurrent sessions: Replication

O-056

Determinants of selective citation: a citation network analysis on the effect of industrially produced trans fatty acid on LDL- and HDL-cholesterol in humans

M.J.E. Urlings[1], B. Duyx[1], G. Swaen[1], L.M. Bouter[2], M.P. Zeegers[1]
[1]Maastricht University, Maastricht, The Netherlands
[2]Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

Objective: Citing relevant previous publications is key in scientific knowledge development. If citing is done selectively, this may hamper knowledge development and bias scientific consensus. Especially systematic reviews and meta-analyses, which are used by policy makers to base their decisions on, should give a correct overview of all available literature. To prevent bias due to selective citations, insight should be gained into drivers of citations. Our aim is to assess which determinants influenced the likelihood of citation in the literature on trans fatty acids and cholesterol. In addition, we wanted to assess the effect of citations on the development of knowledge in this area of research.

Methods: A citation network analysis on the literature concerning the effect of industrially produced trans fats on LDL- and HDL-cholesterol has been conducted. Each publication is scored on various potential determinants of citation, namely: study outcome, hedging, study design, number of determinants and study outcomes, sample size, number of affiliations involved, journal impact factor, funding source, country, affiliation and gender of the corresponding author, number of references of the cited publication, language, authority of the authors and whether the title of the publication gave a suggestion of its conclusion. The unit of analysis are all potential citation pathways, which are either realized or not. As citation pathways are nested within the citing publication, random effect logistic regression, taking into account clustering within the citing publication, will be performed to identify determinants of citation in the cited publication.

Results: A network of 108 publications has been identified, containing 5041 potential citations of which 669 were realized. Reporting of signficant results has been found as the biggest predictor of citation. After correcting for study design and sample size, significant results still increased the likelihood of being cited by approximately three times.

Discussion: Within the literature of trans fats and cholesterol, selective citing occurs, mainly based on study outcome. Consequently, disproportionate attention is given to the publications suggesting a harmful effect of trans fat intake on cholesterol, potentially influencing the strong scientific consensus in this area. However, to prove this effect, a cumulative meta-analysis is recommended.

O-057

Biomedical replication studies

E.J. Iorns, N. Perfito
Science Exchange, Palo alto, U.S.A.

Objective: Initial limited data suggests many published results may be irreproducible. The only method for identifying reproducible results is to conduct direct replication studies. However, designed replication studies are rarely funded, conducted or published. This lack of replication studies leads to an inability to identify reproducible results that can be effectively built upon to advance scientific discoveries. Our objective was to provide an effective service for quickly and cost effectively replicating key experimental results to enable the identification of reproducible results.

Method: The Science Exchange network of 3000+ scientific service providers conducted direct replication experiments for a variety of individual projects including the Reproducibility Project: Cancer Biology, the Prostate Cancer Foundation Reproducibility Initiative, the Reproducibility Initiative, and private pharmaceutical validations. Direct replications were conducted and reproducibility of the key experimental results for each study was determined.

Results: Aggregate data on reproducibility rates as well as lessons learned from the replication studies will be presented. Key lessons to date include: publications have insufficient documentation to enable replication or follow on studies requiring contact with the original authors to obtain missing information; reagents are often not uniquely identified, not available or cannot be easily shared due to IP requirements; raw data is infrequently stored or available; replications can be cost effective.

Conclusion: Replication studies are the only mechanism available to validate exploratory experimental results. However, currently very few replication studies are conducted. Science Exchange has provided an effective service utilizing a large network of scientific service providers for conducting replication studies quickly and cost effectively. Having conducted the majority of direct replication studies in the field of biomedical science, suggestions for improvement include: reducing reliance on contacting original authors; dividing research studies into two different phases and funding both phases: exploratory novel studies and validation studies [replications]; implementation of QC measures for validation studies.

O-058

Replication validity of initial association studies: a comparison between psychiatry, neurology and four somatic diseases.

F.G. Gonon[1], E.D.M. Dumas-Mallet[1], K.S. Button[2], M.M. Munafo[3], T.B. Boraud[1]
[1]University of Bordeaux, Bordeaux, France
[2]University of Bath, Bath, United Kingdom
[3]University of Bristol, Bristol, United Kingdom

Objective: We studied the reliability of initial biomedical findings by comparing them to the results of meta-analyses (reports combining results from all available primary studies on the same topic). We then explored whether the reliability varies across biomedical domains and study types (cognitive/behavioral, brain imaging, genetic and "others").

Methods: We analyzed 663 meta-analyses describing associations between markers or risk factors and 12 pathologies within three biomedical domains (psychiatry, neurology and four somatic diseases). For each initial studies, largest studies (i.e., with the largest sample size) and the corresponding meta-analyses we collected the effect size, sample size, publication year and Impact Factor of the journal that published them. Initial studies were considered as replicated if they were in nominal agreement with meta-analyses and if their effect size inflation was below 100%.

Results: Nominal agreement between initial studies and meta-analyses was not better than chance in psychiatry whereas it was somewhat better in neurology and somatic diseases. Effect sizes reported by largest studies and meta-analyses were similar whereas most of those reported by initial studies were inflated. Among the 256 initial studies reporting a significant effect (at $p<0.05$) and paired with significant meta-analyses, 97 effect sizes were inflated by more than 100%. Nominal agreement and effect size inflation varied with the biomedical domain and study type. Indeed, the replication rate of initial studies reporting a significant effect ranged from 6.3% for genetic studies in psychiatry to 86.4% for cognitive/behavioral studies. Comparison between eight subgroups shows that replication rate decreases with sample size and "true" effect size. We observed no evidence of association between replication rate and publication year or Impact Factor. In other words, publishing in high impact factor journals does not guarantee a better replication of initial observations.

Conclusion: Science is a cumulative process and as the Open Science Collaboration described it " A healthy discipline will have many false starts as it confronts the limits of the present understanding". Nevertheless, the differences in reliability between biological psychiatry, neurology and somatic diseases suggest that there is room for improvement at least in some subdomains.

O-059

Replication validity of biomedical findings reported by newspapers

E.D.M. Dumas-Mallet[1], A.S. Smith[1], T.B. Boraud[2], F.G. Gonon[2]
[1]Centre Emile Durkheim CNRS UMR 5116, Pessac, France
[2]CNRS-UMR 5293 Institute of neurodegenerative diseases, University of Bordeaux, Bordeaux, France

Objective: We studied the replication validity of biomedical studies associating a biomarker or a risk factor with diseases and covered by newspapers. Clinical trials investigating the effectiveness of treatments were not considered.

Methods: We previously created a database of 306 meta-analysis articles and their 4843 corresponding primary studies for 3 biomedical domains psychiatry, neurology and four somatic diseases. These studies were classified into 2 categories: the "S" type studies investigating risk factors on which the subject can act (e.g. smoking) and the "non-S" type. Using the database *Dow Jones Factiva,* we identified the scientific articles covered by newspapers. We tested the replication validity of each primary study by comparing it to the corresponding meta-analysis.

Results: 156 primary studies (of which 67 "S" studies) and 5 meta-analysis articles were reported in 1677 newspapers articles. Newspapers equally often covered initial and subsequent "S" type studies (9.8 %). In contrast, initial "non-S" studies were more often covered (12.7%) than subsequent ones (1.1%). The rate of coverage strongly increased with the impact factor of the journal that published them. All together, only 48.7% of the studies echoed by newspapers were confirmed by the corresponding meta-analyses. "S" type studies were more often confirmed (52.2%) than initial "non-S" studies (33.3%). For "non-S" studies, but not for "S" ones, the replication rate increased for subsequent findings and with the journal impact factor. For psychiatric disorders, newspapers preferentially covered initial findings. This partly explains why psychiatric studies were less often confirmed (26.3%) than neurological (63.4%) or somatic (52%) ones. Journalists barely mentioned this lack of reproducibility. They almost never informed the public about the refutation of a previously echoed study (1 case, 4 newspaper articles). Only 164 newspaper articles mentioned that previous studies reached conflicting conclusions and only 12 were related to "non-S" studies.

Conclusion: Journalists preferentially cover initial findings that turn out to be poorly replicated. They ignore or do not deal with the scientific uncertainty inherent to new findings. Journalism and scientific norms have little in common but journalists and scientists should work together to present accurate and trustworthy results to the general public.

O-060

The role of replication studies in improving reproducibility

J.P.h. de Jong[1], J.P. Mackenbach[2]
[1]KNAW, Amsterdam, The Netherlands
[2]Erasmus MC, Rotterdam, The Netherlands

Objective: Recent studies have shown that findings of scientific research are often not reproduced in so-called replicationstudies, leading to a call for more replicationstudies. However, there is no consensus on what a replicationstudy is, how to set them up properly, in what cases a replicationstudy is needed, nor how replicationstudies can be incentivized. Moreover, it is unclear how various disciplines differ in this respect. Our study therefore analyzes the proper place of replicationstudies within the scientific system.

Method: To identify best practices, compare disciplines and make a broad analysis we focus on three disciplines: medical science, biochemistry and psychology. We conduct a literature review, interviews with experts, and stakeholder-workshops. This includes researchers, methodologists, policymakers, funders and publishers. A committee of experts discuss the analysis in consensus meetings.

Preliminary results: Replicationstudies come in many forms, related to five main questions: (1) why is a study replicated, (2) who replicates, (3) what aspects of the research are replicated, (4) how and how precise is the replication carried out, (5) how are the results interpreted and used? What is considered a replicationstudy varies widely between disciplines, although there are actually partly overlapping practices. There is no single best practice but disciplines can learn from practices from other disciplines. Proper replicationstudies can be set up in a variety of ways depending on the goals and the specific scientific background and methodology. Key is that the questions above are answered beforehand and communicated in the publication. Barriers for replicationstudies concern the current incentive system: funding agencies and publishers focus on innovative studies, leading researchers to not conduct replicationstudies or present them as innovative studies. This has led to a research culture where contributing to innovation is respected more than contributing to certainty.

Preliminary conclusion: Replicationstudies come in a variety of guises with their own merits, so answering the 'why, who, what, how and then what'-questions is key in using them effectively. Different scientific disciplines should learn from each other's best practices. Replication studies can play a significant role in the scientific endeavor and should be incentivized accordingly by funding agencies, journals and institutions.

Concurrent sessions: Authorship

O-061

Authors Without Borders: Investigating International Authorship Norms among Scientists & Engineers

D. Plemmons[1], S. Bird[2], D. Vasgird[3]
[1]University of California, Riverside, Riverside, U.S.A.
[2]Science and Engineering Ethics, Wrentham ma, U.S.A.
[3]West Virginia University, Morgantown, U.S.A.

Objective: Authorship conflicts may arise in any collaboration, domestic or international, but international collaborations pose unique challenges. It is unclear how international variation in authorship norms may add confusion that is not encountered in domestic collaboration; it is equally unclear whether authorship conflicts in international collaborations arise due to normative differences, or
due to individual transgressions that collaborators mistakenly interpret as cultural differences. We will present results of a project which will help illuminate some of these differences.
Method: We conducted 24 peer-discussion groups and interviews with postdocs and senior researchers in the US, China, Brazil and Germany, in two disciplines, neuroscience/psychology and engineering. We explored: 1) authorship norms; 2) perceived sources of conflict in international collaborations; and 3) the extent to which the larger societies influence accepted authorship practices. The resulting data are undergoing [or have undergone] thematic analysis to identify themes and practices which are common and particular.
Results: The investigators have undertaken a careful, qualitative analysis of transcripts of the group discussions and follow up interviews with an inter-rater comparison. Preliminary analyses show an interest from post-doctoral and junior scholars in having guidelines which will help them begin authorship discussions and negotiations with senior scholars, and scholars from other countries.
Conclusion: The purpose of these peer discussion groups is to get a sense of the issues that arise when authorship reflects an international/multinational perspective. These discussions are a first step in developing a multinational, multidisciplinary survey to eventually create educational materials that will help researchers understand and resolve potential authorship conflicts in research collaborations, and will also serve as a guide or foundation for discussions of co-authorship among collaborators.

O-062

Experiences of the handling of authorship issues among recent doctors in medicine in Sweden

O. Helgesson[1], M. Lövtrup[2], N. Juth[1], J. Schneider[1], N. Lynöe[1]
[1]Karolinska Institutet, Stockholm, Sweden
[2]Läkartidningen (Journal of the Swedish Medical Association), Stockholm, Sweden

Objective: Gift authorship and enforced authorship run counter to good research practice. Previous studies suggest that researchers in the field of medicine quite frequently undeservedly end up as authors on scientific papers. The objective of the present study is to explore the experiences of the handling of authorship issues among doctors (PhDs) in medicine in Sweden who recently defended their thesis.
Method: A brief questionnaire survey was distributed in September 2016 to all individuals who received their PhD title at medical faculties in Sweden during the first half of 2016, with two reminders. The survey contained two sections. The first section contained background questions on age, gender, previous education, and kind of thesis (basic science, clinical, mixed, or other). In the second section, the respondents were asked whether or not the first, second, and third of the ICMJE authorship criteria were respected in their thesis. They were also asked about their experiences of incorrect handling of authorship order. Two questions, finally, concerned their views on the importance of how authorship and authorship order are handled (from "Very important" to "Not at all important"). The survey offered the opportunity to provide comments to all primary questions. Data is analysed with descriptive statistics. Free-text responses are primarily used as support when interpreting the results.
Results: Pending at the time of abstract submission (in place no later than January, 2017). In a previous questionnaire survey in Sweden directed to recent doctors in medicine (Lövtrup 2010), to which the present survey is a slightly modified follow-up, 47 percent of the respondents claimed that there had been deviations from the ICMJE authorship criteria in their thesis. Deviations from the second criterion (writing or critically revising the manuscript for important intellectual content) were most common (41%), while the first criterion (substantial contribution to the research) was not followed in 30% of the theses.
Conclusion: Pending. The main limitation of the study is that data will consist of the views/understanding of the respondents. They may be wrong, and there may be disagreement in the research group regarding whether or not authorship issues have been handled incorrectly.

O-063

A philosophical framework for a morally legitimate definition of scientific authorship.

M. Hosseini[1], L. Consoli[2]
[1]Utrecht University, Utrecht, The Netherlands
[2]Radboud University, Nijmegen, The Netherlands

Mohammad Hosseini, Utrecht University, Utrecht, The Netherlands
(Contact information: hosseini_86@hotmail.com, +31655131537)
Luca Consoli, Radboud University, Nijmegen, the Netherlands
(Contact information: l.consoli@science.ru.nl)

Objective: We will present in this talk some suggestions to improve the current definition of authorship in codes of conduct (COC). The central claim is that via embedding moral values to current prescriptions, COC will be more approachable for international project groups, and better equipped to address challenges of modern science. The paper on which this presentation is based, has been submitted to 'Science and Engineering Ethics'.
Methods: Using concepts by Jürgen Habermas and Robert Merton about communication theory and scientific ethos, normative aspects involved in dissemination of knowledge are fleshed out. By using the 'Messenger' as a metaphor, and comparing publication of science with delivering a message to the scientific community, we distill some ideal moral values of scientific authorship.
Results: We use the extracted moral values and ideals as tools to check the adequacy of the European Code of Conduct for Research Integrity and its definition of authorship:
Authorship is granted for creative and significant contribution to the research.
All authors are expected to publish their results in an open, honest, transparent and accurate manner.
Given the increasing trend in international scientific collaborations and plurality of normative assumptions and cultural contingencies in those groups, we suggest that an explicit indication of desired moral values enriches the definition of authorship, and makes the code more comprehensible, usable and accessible. We will present such an 'improved' definition.
Conclusion: ECCRI successfully addresses many relevant aspects of dissemination of knowledge. However, its definition of authorship does not fully capture modern challenges of science. This study provided a philosophical analysis to show that science can use publication as a means for spreading truth and furthering scientific careers, as long as mores of science are upheld.

O-064

The perceptions of researchers working in multidisciplinary teams on authorship and publication ethics

Z.M. Master[1], E.S. Smith[2], L.C.E. Campo-Engelstein[1], D.B.R. Resnik[3], D.M. Midura[1], B.W.J. Williams-Jones[2]
[1]Albany Medical College, Albany, ny, U.S.A.
[2]University of Montreal, Montreal, Canada
[3]National Institutes of Health, Research triangle park, U.S.A.

For academic researchers, authorship and publication are the main forms of currency for the rewards of science. Many scientists consider the pressure to publish excessive that may encourage unethical authorship practices including honorary authorship and authorship disputes. Studies have shown that unethical authorship practices occur at least 10% of the time and disagreements over authorship as much as 65%. Studies on ethical authorship practices have focused on scientific disciplines – most notably in biomedical science and medicine – with less attention paid to multidisciplinary teams. Yet it is known that authorship distribution differs among disciplines which could result in greater divergence in authorship practices in multidisciplinary teams. In this study, we interviewed approximately 40 researchers to explore their views on authorship in multidisciplinary research. We found that research institutions, experience working in multidisciplinary teams, and the training and publication experience of individual researchers shape the values authors place on contribution and the practices they use to distribute authorship credit. While contribution to research remains the main criteria to order authors on the byline, both *Need* and *Opportunity* influences authorship order. Based on the "need" for a particular authorship position, e.g., for students to graduate or junior professors to be promoted, researchers may offer the "opportunity" to obtain (or give) key authorship positions even if they are slightly short on contribution. In addition, many health researchers report that authorship disputes may lead to a range of misbehaviors including ruining team dynamics, increasing competition within a team, terminating collaboration, and teaching bad habits to trainees. In some cases, authorship disputes may lead to more egregious misbehaviors including feelings of anger and resentment resulting in retribution, sabotage or misconduct. Current guidance on authorship does not account for authorship order and remains insufficient in capturing the diversity of contributions researchers can make when performing different conceptual and empirical methods. We report a new mechanism of authorship distribution for multidisciplinary teams based on a detailed taxonomy of contribution and open and collegial dialogue with a detailed explanation of authors' contributions within a manuscript.

O-065

An investigation of researchers' understanding and experience of scientific authorship in South Africa

L.M. Horn[1], J.B. Botha[2], E. Breet[2], L. Swartz[2]
[1]University of Cape Town, Cape town, South Africa
[2]Stellenbosch University, Cape town, South Africa

Objective: Despite the availability of authorship guidelines, reports in the current literature indicate that inappropriate authorship occurs frequently. In this study we define inappropriate authorship as honorary or ghost authorship that occurs when authors have not met the criteria outlined in applicable authorship guidelines. Very little is known about the experiences and perceptions of scientific authorship of researchers in low-and middle-income countries (including South Africa). In this study we will examine how researchers with different levels of experience, from various universities and research institutions across South Africa perceive scientific authorship. In particular we will explore: How researchers in South Africa understand authorship ethics? How researchers perceive their ability to put their understanding of authorship ethics and guidelines into practice?

Method: We will use an available list of South African researchers who have published at least one article in a Web of Science journal. We will invite all researchers via email to complete an anonymous web-based questionnaire and to indicate whether they are available for an interview to collect qualitative data in addition to the survey data.

Results: This study has been funded by a grant from the National Research Foundation in South Africa and the research is currently in progress. Results will be available in the first quarter of 2017. We will measure respondents' experience by the number of years they have conducted research and the number of scientific articles they have published. The quantitative data will be analysed with SPPS software and will include descriptive statistics, mean scores, t-tests and 95% confidence intervals (CI). The qualitative data will be transcribed and coded using AtlasTi.

Conclusion: This study will provide insight on the views of both junior and senior researchers regarding publication and authorship ethics. Challenges in applying authorship principles will be identified and discussed. Recommendation on strategies to address challenges and strengthen ethical authorship practices will be developed.

Concurrent sessions: Interventions that work

O-066

Has reporting of methods in animal studies in psychiatric research improved since the introduction of the ARRIVE guidelines?

P.B.D. brandt Danborg, A.L.S. Simonsen, A.H. Hróbjartsson, P.C.G. Gøtzsche
The Nordic Cochrane Centre, Copenhagen n, Denmark

Objective: Animal research has been dominated by poor methodology or poor reporting. The ARRIVE guidelines were introduced in 2010 to increase the quality of reporting in animal research. An evaluation by Baker *et al* (2014) reported inadequate adherence to the ARRIVE guidelines by researchers and journal editors. We are undertaking two systematic reviews to investigate harms from exposure to psychiatric drugs; one on long-term behavioral harms from previous exposure to psychiatric drugs after a drug-free period and one on abnormal development of reproductive organs from exposure to ADHD medication.
Method: Two independent observers assessed risk of bias due to randomization and blinding in studies included in either of the two systematic reviews and published in 2011 or later. We used the ARRIVE guidelines for reporting and the risk of bias tool presented by the Systematic Review Centre for Animal Experimentation (Netherlands) for assessments.
Results: Sixteen of 58 studies included in the two systematic reviews were published in 2011 or later. Of these, two studies reported to have randomized the animals to either intervention or control groups, no studies used random housing to prevent influence on behavior from temperature and light differences, and one study used random outcome assessment to prevent bias from diurnal variation. No caregivers were adequately described as being blinded, and two studies described observers to be blinded.
Overall, the adherence to the ARRIVE guidelines was poor. The results showed us that animal psychiatric research is as methodologically poor or poorly reported as studies published before introduction of the ARRIVE guidelines.
Conclusion: The implications from poor methodology in research or poor reporting are substantial: resources and animals could be allocated to more useful purposes, and important knowledge about harms from psychiatric drugs is delayed or hampered. We strongly endorse the use of the ARRIVE reporting guidelines in animal psychiatric research. The ARRIVE guidelines should be introduced to researchers early in their education to carry out responsible methodological study design. Funding bodies, ethics committees, regulatory agencies and journal editors should demand adherence. Actions to improve guideline implementation and adherence at all institutions implicated in animal research are clearly necessary.

O-067

Public science communication as part of the responsible conduct of research - an example from Finland

I.K. Kohonen
Finnish Advisory Board on Research Integrity/TENK, Helsinki, Finland

In the 21st century, science can no longer be distant from the public. Public trust will be "built on the integrity and objectivity of scientists, and depend on good communication", as Carlos Moedas, Commissioner for Research, Science and Innovation stated at the ESOF conference held in Manchester in July 2016.
In line with this statement universities and funding bodies are endorsing and even presupposing public communication and dissemination of the results. Social media and open access also enable researchers to disseminate their research findings to the general public more easily at every stage of their careers. However, proactive and responsible communication of the research results faces many challenges both at the level of individual researcher as well as at the level of research institutions.
One challenge is motivation. For an individual researcher even finding time for science communication is often troublesome. The current review and crediting system of a research career do not support researchers sufficiently to communicate their results beyond academia. Should public engagement be assessed and credited more strongly? If it should, the question raises: How should this be done?
Second main challenge concerns the responsible communication of the results. Generally, the requirement is that one should not mislead the general public e.g. by presenting deceptive or distorted information concerning one's own results or the scientific importance or applicability of those results. Yet it is not clear how individual researchers should be best supported in achieving this goal. What is the responsibility of their research institutions and the larger scientific community?
The Finnish Advisory Board on Research Integrity and the Committee for Public Information in Finland are running a two-year project that concentrates on responsible science communication. The aim of the project is to promote ethical standards and research integrity in science communication to ensure that results are published and disseminated in a thought-provoking and ethically responsible way. In my presentation I would like to discuss some of the challenges and share some of the good practices that we have discovered during this project.
Key words: science communication, research integrity, impact beyond academia

O-068

Research cultures. On the social, epistemic and normative terrains for promoting research integrity

D. Schmidt-Pfister

University of Konstanz, Konstanz, Germany

Objective: How are normative dispositions reproduced, both formally and informally, within the scientific community? We are particularly interested in those subcultural terrains within science that function as potent normative reference frameworks.

Method: This contribution builds on the project "Scientific integrity in a context of integration and competition" (2009-2014), which speaks to the fields of Science and Technology Studies, value research, and applied philosophy. Our empirical data encompass ethnographic research in 6 renowned universities in Germany, the UK and the USA (two universities per country). In addition to document analysis, participant observation and innumerable informal conversations, we have recorded and transcribed 89 narrative interviews and 10 focus group discussions with researchers in different disciplines and status groups (PhD students, postdocs, professors) and 34 interviews with science administrators. These transcripts have been meticulously evaluated using the software ATLAS.ti. We thus found many utterances between the lines that support the assessment of normative dispositions and reference frames. This information may not be harvested by straightforward questioning. Yet the interview transcripts can be meaningfully interpreted only in combination with the accompanying ethnographic study of the interviewees' professional contexts.

Results: Our findings confirm that disciplines, national contexts and status groups function as important normative reference frameworks, despite increasing interdisciplinary and international research collaboration. However, we identified further subcultural contexts determining understandings of good scientific practice. These include temporary or locally confined terrains such as the working group as well as overarching and long-lived, but rather intangible, terrains such as generations. Moreover, we found that the concept of epistemic rationality needs to be revised with regard to the complex interwoveness of social, epistemic and normative values.

Conclusion: Promoting ethically good research practice requires a better understanding of cultural diversity within the scientific community and of the complex interdependencies between social, epistemic and normative values. Normatively potent subcultures include national contexts, disciplines and status groups, but also research fields, working groups and generations. More than ever, junior researchers today are driven by career-building concerns that foster unconscious amalgamation of pragmatic and moral goals. Continuous, collective reflection is necessary for permanently recalling the superordinate epistemic goals of research.

O-069

Moments of Integrity, Reflexivity and the Fraud Triangle: A New Way to Approach Improving Research Culture

M. Taylor[1], P. dr Barr[2]

[1]RMIT University, Melbourne, Australia

[2]The University of Melbourne, Melbourne, Australia

Objective: We will present a novel approach to the challenge of encouraging responsible research practice. We will discuss the idea of reflexivity in research and its intersection with the Fraud Triangle to present a new set of questions for researchers to ask themselves as they conduct their research

Method: A review of the literature identifies the idea of reflexivity in research as a common practice in humanities and social sciences. Researchers are encouraged to consider how their biases, preconceptions and personality impact the way their research is undertaken and reported. This is not an overt practice in STEM disciplines. The Fraud Triangle describes preconditions necessary for fraud to take place. Does the Fraud Triangle apply to research? Can it help us identify new ways to encourage reflexivity directed at preventing QRPs and research misconduct?

Results: Reflexivity is as applicable to STEM disciplines as it is to HASS, but there is little evidence to suggest that STEM researchers recognize it as an idea related to the conduct of their research, and perhaps then to the idea that they have any influence over the outcome of the research they conduct.

The Fraud Triangle can be applied to the idea of fraud in research, and extended to cover QRPs and other breaches of obligations. It provides a neat way to address the personal or moral factors that are perhaps some of the hardest to influence. Combining the idea of reflexivity in research with the three corners of the Fraud Triangle uncovers questions researchers can ask themselves when faced with 'moments of integrity'. This reflexivity may help prevent QRPs/RM and improve research quality.

Conclusion: Co-application of reflexivity and the fraud triangle provides a new approach to addressing responsible research.

O-070

Increasing Transparency through a Multiverse Analysis

S. Steegen[1], F. Tuerlinckx[1], A. Gelman[2], W. Vanpaemel[1]
[1]KU Leuven, Leuven, Belgium
[2]Columbia University, New york, U.S.A.

Objective: Empirical research inevitably includes constructing a dataset by processing raw data into a form ready for statistical analysis. Data processing often involves choices among several reasonable options for excluding, transforming and coding data. Choosing among the possibilities during data processing is often arbitrary, and justifications for the choices are typically lacking. Any arbitrariness that is present in the data construction is inherited by the statistical result. The objective is to propose a method that offers an idea of how much the conclusions change because of arbitrary choices in data construction, and gives pointers as to which choices are most consequential in the fragility of the result.

Method: Using a worked example focusing on the effect of fertility on religiosity and political attitudes, we show that analyzing a single data set can be misleading. We suggest that instead of performing only one analysis, researchers could perform a multiverse analysis, which involves performing *all* analyses across the whole set of alternatively processed data sets corresponding to a large set of reasonable scenarios.

Conclusion: Our demonstration of the multiverse analysis should serve as a cautionary tale. We hope it raises awareness that, in the light of the multiverse of statistical results, isolating a single statistical result stemming from a chain of arbitrary choices can be highly misleading. Readers of research need to get a sense of sensitivity of conclusions to arbitrary decisions in data preparation, and thus of the fragility or robustness of a claimed effect. We believe that it should become standard practice to go beyond a single data set analysis, and to acknowledge the multiverse of statistical results.

Concurrent sessions: Questionable practices

O-071

Systemic corruption in science

M.J.T.F. Cabbolet
Vrije Universiteit Brussel, Brussels, Belgium

Objective: While ideally all decisions in science should be made in the interest of science, reality is that it has virtually become the standard that decisions regarding submitted journal papers or research proposals are *negative* when the submission contains a dissenting view. The objective of this talk is to argue that we can speak of systemic corruption in science.

Method: The label 'systemic corruption' is justified when the following two conditions hold:

(i) the corruption—here: the making of decisions that favor only those who work on mainstream ideas--, while formally acting in the interest in science—must be widespread;

(ii) the corruption must be due to a weak spot in the decision making process.

While the controversy about this author's work is already indicative for the situation in the Netherlands, the literature has been consulted to establish condition (i) in general. An analysis of the decision making process has been performed to establish condition (ii).

Results: Regarding journal publication and research grant allocation, the weak spot in the decision making process is peer review: the crux is that it can be abused with impunity to express one's dislike of a submitted work. As a result, the expectation value of the decision on a submission that is unorthodox or critical of mainstream research programs is 'rejection'—regardless of its true scientific quality! Literature indicates that this has been going on, on a large scale, already since the 1950's.

It must be realized, however, that there is usually no *intention to fraud*: those who abuse peer review, namely, sincerely believe that *they* are doing the right thing. Nevertheless, scientific integrity is still violated: abuse of peer review concerns, namely, emotional first reactions to a dissenting view that have been put forward without even attempting to apply principles of good scientific practice.

Conclusion: Although individual scientists are not corrupt, there is systemic corruption in science in the above sense. Recommendations to address the issue are reconsidering the steps in the peer review process, teaching (future) scientists a more self-reflective attitude, and to start treating the abuse of peer review as scientific misconduct.

O-072

Presentation and Publication Patterns in International Vanity Conferences in Education: Research on Research Quality

J. Vander Putten
University of Arkansas-Little Rock, Little rock, U.S.A.

Objective: International vanity academic research conferences have low rigor review standards for research quality, and connections between presentation and publication are often seamless with both combined into one conference fee. This document analysis study investigated research quality and demographic patterns of presentation and publication in vanity education research conferences and proceedings.

Method: Two fictitious tertiary education research paper presentation proposals describing studies with fatally-flawed research methods, nonsensical research terminology, and omission of critical research details were submitted to 15 international education research conferences that met criteria for low selectivity conferences.

I also collected random samples of 10 conference proceedings publications on various topics in the field of Education from each of the 15 vanity conferences from phase 1 of the study (N=140). And completed initial descriptive data analyses on the author demographics of vanity conference proceedings publications.

Results: All 18 decision letters I received in response to research paper presentation proposal submissions to 15 international education research conferences were accepted for presentation. This included all 6 proposals that were intentionally submitted after the stated deadlines. Many of these vanity conference websites and Call for Proposals email invitations identified that the proposals would be peer-reviewed, however, 0% of the proposal decision letters included any reviewer comments.

Results from initial descriptive data analyses of the author demographics of vanity conference proceedings publications produced several notable findings. The 150 vanity conference proceedings publications were produced by 264 authors for an average of 1.76 authors per proceedings publication. Eighty-nine per cent of these publications were authored by faculty (N=235), 8% were authored by administrators (N=21), and 3% were authored by independent researcher (N=8).

The 264 authors were located in 36 US states and employed at seven different Carnegie classifications institutional types. Eighteen authors were located in 12 foreign countries. The data analysis results that identified the primary methodological approaches used in research publication proceedings were quite surprising: Quantitative methods (29%, N=43), Qualitative methods (0%, N=0), Mixed methods (1%, N=1), Academic Essay (71%, N=106). Academic leaders and national governance of research activities and league tables may be unaware of the inappropriateness of vanity conferences.

O-073

Contract Cheating in Research
C. Ellis, B. Greene
UNSW Australia, Sydney, nsw, Australia

Objective: Contract Cheating is a form of plagiarism whereby students pay other people to do their assignments and submit that work for assessment as if it is their own. Contract cheating is happening in all levels of education including higher degree research programs. Institutions need to develop their understanding and awareness of contract cheating in order to better detect and deter it. We share our analysis of evidence gathered from contract cheating websites alongside a case study showing how a doctoral-level contract cheating matter was detected and investigated.
Method: We have analysed data gathered from 260 contract cheating websites. These data sets include information and documents relating to contract cheating orders. We have identified a subset of data that relates to higher degree research students. We offer some findings from the analysis of this evidence that show what sorts of contract cheating is taking place and at which stages of the research student life cycle.
We have also collated information relating to the detection and investigation of contract cheating in Higher Degree research.
Results: Contract Cheating is operating internationally on an industrial scale. Our research shows that contract cheating extends beyond the undergraduate student level and there is a worrying amount of work being procured through these sites by students on Higher Degree Research Programs. While the detection and investigation of contract cheating by Higher Degree Research candidates is challenging for many reasons, it is possible to achieve successful outcomes.
Conclusion: To position ourselves better to detect and deter contract cheating in research, we need to better understand why it is happening. In order to do that, we first need to better understand what it is, and also how, where and when it is happening. Our conclusions offer some recommendations as to what educational institutions might do to better detect and deter contract cheating.

O-074

Ranking major and minor research misbehaviors
J.K. Tijdink[1], L.M. prof. Bouter[1], G. ter Riet[2], N. Axelsen[3], B.C. Martinson[4]
[1]VU University, Amsterdam, The Netherlands
[2]AMC, Amsterdam, The Netherlands
[3]Statens Serum Institut, Copenhagen, Denmark
[4]University of Minnesota, Minneapolis, U.S.A.

Background: Codes of conduct mainly focus on research misconduct that takes the form of fabrication, falsification and plagiarism. However, at the aggregate level, lesser forms of research misbehavior may be more important due to their much higher prevalence. Little is known about what the most frequent research misbehaviors are and what their impact is if they occur.
Methods: A survey was conducted among 1,353 attendees of international research integrity conferences. They were asked to score 60 research misbehaviors according to their views and perceptions on the frequency of occurrence, preventability, impact on truth (validity) and impact on trust between scientists on 5-point scales. We expressed the aggregate level impact as the product of frequency scores and truth, trust and preventability scores, respectively. We ranked misbehaviors based on mean scores. Additionally, relevant demographic and professional background information was collected from participants.
Results: Response was 17% of those who were sent the invitational email and 33% of those who opened the invitational email. Ranking suggested that selective reporting, selective citing, and flaws in quality assurance and mentoring are viewed as the major problems of modern research. The 'deadly sins' of fabrication and falsification ranked highest on the impact on truth but low to moderate on aggregate level impact on truth, due to their low estimated frequency. Plagiarism is thought to be common, but to have little impact on truth although it ranked high on aggregate level impact on trust.
Conclusions: We designed a comprehensive list of 60 major and minor research misbehaviors. Many scientists are thought to engage in sloppy science. Our study showed much more concern over sloppy science than over wholesale fraud (FFP). In the fostering of responsible conduct of research we suggest that it may be a way forward to develop interventions that actively discourage the misbehaviours we have presented.

O-075

Academic Integrity: Much More than Research Integrity
G.G. de Graaf, E.R. van Rijswoud, L.H. Huberts
Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

Objective: Academic integrity is about much more than plagiarism, data management and sloppy science. It is about many different integrity violations, and often not good versus bad, but contains value judgments, grey areas. Research integrity cannot be separated from integrity of academic teaching and university governance. 'Integrity' as a field of research focuses on a wide range of sectors, going from science to public administration. The objective is to compare the prevalence and nature of integrity issues between academia and the public sector, and to identify lessons for academic integrity management.

Method: The prime input comes from various surveys on integrity by our research group, the most recent one conducted at the Vrije Universiteit Amsterdam (May 2016). The surveys combine fixed items on organizational aspects as well as types of integrity violations. The comparison of surveys will be supported with a literature study on integrity management.

Results: An initial comparison of studies shows that the prevalence of types of violation between academia and the public sector is similar, with respondents expressing similar concerns for integrity issues. It is striking to see that for the surveyed items on types of violations, the percentage of employees that has witnessed them are comparable, as is the ranking of these violations. 'Inappropriate behavior' (encountered by 35,6% of the VU respondents), 'abuse of power' (35,7%) and 'waste of resources' (32,1%) are most common, followed by 'fraud or theft' (18,3%) and 'conflicting positions' (14,7%).

From an organizational perspective, we see that the concerns of employees in academia are not exclusively academic in nature. Opportunities for sharing complaints with colleagues or confidential counsellors, having a shared moral compass and leading by example were reported as needs for stimulating integrity. The question remains to what extent experiences and concepts from integrity management in other sectors are applicable to academia.

Conclusion: Research integrity cannot be separated from integrity in teaching and university governance; they are about the same values. Furthermore, empirical studies demonstrate the comparability of academia with other (public) sectors with regard to integrity. This invites the exchange of concepts and experiences between different sectors.

Concurrent sessions: RCR training evaluation

O-076

A meta-analysis of the effectiveness of RCR education

M.D. Mumford, L.L. Watts, S. Connelly, K.E. Medeiros, T.J. Mulhearn, L.M. Steele
The University of Oklahoma, Norman, U.S.A.

Objective: As a result of both government policy and institutional objectives, many instructional programs bearing on the responsible conduct of research (RCR) have been initiated in recent years. A wide variety of instructional models have been used in these educational programs. The intent of the present study was to identify those elements of instruction that do or do not contribute to the various outcomes sought in RCR educational programs.
Method: A meta-analytic study was conducted to identify the elements of instruction contributing to the effectiveness of ethics education programs. In all, 32 publication data bases along with 14 journals relevant to RCR and professional ethics were examined. In addition, individual investigators were contacted to identify other potential program evaluation studies. In all, 66 studies reporting data bearing on the effectiveness of 106 courses were identified including 10,069 participants. Course descriptions were coded by three trained, and reliable, judges to assess instructional content and delivery method. A Cohen's d statistic was used to assess the effectiveness of each course based on the evaluation data provided.
Results: It was found that courses developed between 2007 and 2015 produced a Cohen's d of .56 which is considered practically significant and represents an improvement over earlier studies (d = .36). With regard to instructional content the most effective programs stressed personal integrity (d = .96), data integrity (d = .82), differences in field norms (d = .80), common rule (d = .78), contemporary ethics issues (d = .62), whistleblowing (d = .64), authorship and publication practices (d = .60) and instructional compliance (d = .60). With regard to delivery method the most effective courses stressed note taking (d = .85), debate (d = .63), analysis of current events (d = .60), review (d = .59), worksheets (d = .55), and case-based instruction (d = .50).
Conclusions: RCR education programs are improving in effectiveness and have now demonstrated effects on ethics of practical value. However, some elements of instruction work better than others. Broadly speaking these findings suggest that programs stressing active, thoughtful analysis of contemporary ethics issues vis-à-vis basic, standard guidelines prove most effective.

O-077

America competes at 5 years: an analysis of rcr training plans

T.B. Phillips[1], F.V. Nestor[1], G.C. Beach[1], E. Heitman[2]
[1]West Virginia University, Morgantown, U.S.A.
[2]Vanderbilt University, Nashville, U.S.A.

Objective: This project evaluates the impact of the National Science Foundation (NSF) policy to promote education in the responsible conduct of research (RCR). To determine whether this policy resulted in meaningful RCR educational experiences, our study analyzed the instructional plans developed by individual universities in response to the mandate.
Method: Using a sample of 108 US institutions classified as Carnegie "very high research activity," we analyzed all publicly available NSF RCR training plans. We coded plans for a variety of features, including public accessibility, format of training offered, format of training required, whether they give trainees choices, and whether they require the same training for all classes of trainees.
Results: Our study analyzed institutional training plans in light of the consensus best practices in RCR education that were known at the time the policy was implemented. We found that fewer than half of universities developed plans that incorporated at least some of the best practices. More specifically, only 31% of universities had content and requirements that differed by career stage, only 1% of universities had content and requirements that differed by discipline; and only 18% of universities required some face-to-face engagement from all classes of trainees. Indeed, some schools simply provided hand-outs to their undergraduate students. Only 14% of universities required a renewal or refresher as trainees advanced through career stages. Most universities (82%) had plans that could be satisfied with online programs such as the Collaborative Institutional Training Initiative (CITI) RCR modules.
Conclusion: While other governmental agencies have RCR training requirements, the NSF policy is unusual because it requires universities to develop RCR training plans, but provides no guidelines or requirements for the format, scope, content, duration, or frequency of the training. Furthermore, the NSF does not hold universities accountable for their training plans. Our study shows that this vaguely worded policy, and lack of accountability, has not produced meaningful educational experiences for most of the undergraduate students, graduate students, and post-doctoral funded by the NSF. This information will be useful to any administrative body (federal, professional, or institutional) considering or revising a mandate for RCR education.

O-078

Review of the National Science Foundation's RCR policy and survey of institution responses

A.M. Manka, R.A. Allbritten, C.D. Davis, V.H. Hillgren, J.K. Kroll, L.L. Layne, S.M. Moore, E.R. Runko, A.S. Sacknovitz
National Science Foundation, Arlington, va, U.S.A.

Objective: To present the results of our review of NSF's RCR policy and our survey of the RCR programs institutions have implemented.

Method: We examined NSF's RCR policy requirements and how institutions implemented them. We requested from approximately 50 institutions a) their RCR plans and tracking data on participants, and b) individual interviews with a senior official, the RCR administer, and recent participants of their RCR course.

Results: We identified three criteria by which institutions would be in compliance with NSF's RCR policy—1) by having an RCR training plan; 2) by designating an RCR administrator to oversee compliance; and 3) by tracking and ensuring that those who should take the training actually do—and determined which institutions in our sample were in compliance. Based on our interviews, we provided insights to NSF on various matters, including promising practices at some awardees and areas where NSF might need to clarify its intent.

[**Note: We have not shared our results with NSF yet, so we are not presenting any specific conclusions in this abstract. We will be able to provide an updated abstract in late Oct**.]

Conclusion: We provided NSF with feedback that it can use to strengthen its RCR program. [**We will identify specific conclusions in our revised Abstract.**]

O-079

Improving the transparency and accountability of research integrity training: The Epigeum Impact Programme

H. Steneck[1], B. Fletcher[2], E. Nobles[3]
[1]University of Michigan, Ann arbor, U.S.A.
[2]Epigram, London, United Kingdom
[3]University of Tennessee, Knoxville, Knoxville, U.S.A.

Research Integrity (RI) (also called Research Ethics [RE] or Responsible Conduct of Research [RCR]) training is widely regarded as one solution to the nagging problems of misconduct and misbehavior in research. Presumably, if researchers were more aware of their responsibilities they would behave more responsibly. Based on this presumption, many countries and research institutions now either require or strongly recommend training on the responsible conduct of research in general and on some special topics such as the use of humans or animals in research, conflict of interest, biohazards, and safety.

This presentation will report on a new approach to improving the transparency and accountability of RI training. The Epigeum Impact Programme uses data collection tools embedded in its basic researcher training courses to develop three profiles:

a researcher profile: knowledge, confidence, attitudes, behavior
an institutional profile: supportive, competitive, pressured, unfair
a professional profile: influential, irrelevant, confusing

The profiles are designed to help institutions assess the impact of RI training on their researchers and to understand the factors that influence research behavior. Profile reports can be generated for departments, the units within which departments are organized or an entire institution and also compared to benchmark data from all of the institutions participating in the Impact Programme.

The Impact data is collected during learning, from initial registration through the entire training cycle to follow up surveys several months after the training has been completed. Participation is voluntary. The Impact data is coded and not linked to personal information.

The Impact Program is currently being tested on a trial basis at three US universities. Once the basic instruments have been refined and validated, it will be integrated into Epigeum's basic and advanced RI courses, a course on Human Subjects Protects, and other researcher training courses. This paper will present a description of the Impact Programme and report on the initial validation process. Benchmark data will be available to participating institutions beginning Summer 2017.

O-080

Building research integrity and capacity (bric):results of a randomized controlled trial (rct) to test an educational intervention designed to increase research literacy among lay-research staff

C.N. Nebeker

UC San Diego, La jolla, U.S.A.

Background: Community Health Workers (CHWs), known as Promotores de Salud in Latino communities, serve as health educators and research facilitators in underserved populations where health disparities are most prevalent. As research facilitators, CHWs /Promotores may contribute to the design, implementation and reporting of research studies yet, have little/no formal academic research training.

Objectives: The "Building Research Integrity and Capacity" (BRIC) study aims were to: 1- develop a research literacy assessment instrument informed via formative research methods and, 2- test the effectiveness of the Spanish language version of the BRIC training with Promotores/CHWs.

Methods: Phase I involved formative research with Principal Investigators and Project Managers who prioritized research skills/knowledge and suggested culturally appropriate assessment methods. Phase II involved development of an assessment tool that mapped to BRIC learning objectives. During Phase III, we conducted a Randomized Controlled Trial (RCT) and analyzed the results. The RCT involved a one-day, in-person training where 43 participants were randomly assigned to receive either BRIC or the control training.

Settings/Subjects: We recruited Spanish-speaking CHWs/Promotores with assistance from the San Diego County Promotores Coalition (SDCPC) and our academic partners. Participants completed a screening survey and were randomized to one of two training conditions. Trainings were conducted in person, in Spanish at local community clinics and schools.

Results: Participants assigned to the BRIC training showed a mean improvement of 4.7 points compared to control participants who obtained a mean improvement of 1.1 points (p=0.01). In a linear regression model controlling for age, education, and gender, the adjusted mean difference was 3.3 points greater improvement in the active arm (p=0.026).

Conclusions: The BRIC intervention is effective in increasing participant knowledge of the scientific method and human research ethics. Principal investigators who involve lay research staff/volunteers in any aspect of health research are encouraged to integrate the BRIC training to reduce threats to data fidelity and enhance the scientific integrity of public health research.

Concurrent sessions: Retractions

O-081

Investigating the impact of retracted randomised clinical trial reports

F. Stewart[1], A. Avenell[1], A. Grey[2], M. Bolland[2], G. Gamble[2]
[1]University of Aberdeen, Aberdeen, United Kingdom
[2]Department of Medicine, University of auckland, New Zealand

Objective: examine the impact and influence of retracted trials; determine their effects on the evidence base and clinical practice.

Methods: we selected six trials by an author team (Y Sato et al), published 2005-2007, retracted in 2016 (2292 participants). We used citation searching (May 2016) in bibliographic databases to identify citations of the retracted papers. We investigated, quantitatively where possible, whether the conclusions and recommendations of systematic reviews, meta-analyses and guidelines would change after the removal of the retracted trials. For citations in other publications – e.g. trial reports, textbooks – we made subjective judgements to assess the retracted papers' influence.

Results: the total number of citations for all six retracted papers by Sato et al was 717 (mean per trial 120, median 75, range 44-323). Eighty-nine citations were in systematic reviews, meta-analyses, clinical guidelines, textbooks and trial reports.

At least four systematic reviews would have substantially different conclusions if the retracted trials were removed from the analysis. In 5/22 cases we were unable to evaluate potential influence because it would be necessary for the authors of reviews and guidelines to revisit their analysis, without the retracted trials, to ascertain if their conclusions would change. In three instances it appeared that one or more of the retracted trials were excluded from reviews, despite apparently meeting the specified inclusion criteria, which may indicate concern on the review authors' part about the trials' reliability or validity.

The highest-cited retracted trial was included in reviews and guidelines relating to stroke prevention, osteoporosis and prevention of falls and fractures. Furthermore, its conclusions led to the undertaking of at least two further RCTs (4169 participants). Letters and expressions of concern have been published since 2005 relating to inconsistencies in this trial's reported data.

Conclusion: retracted trials authored by Sato and colleagues have reached a wide audience, corrupting related literature to a considerable extent over a sustained period of time. Our investigations highlight the difficulty in determining the true extent of a retracted paper's influence and raise further questions around establishing appropriate, robust procedures for journals and authors to address the consequences of retracting papers.

O-082

Novel statistical investigation methods examining data integrity for 33 randomized trials in 18 journals from one research group

A. Grey[1], A. Avenell[2], G.D. Gamble[1], M.J. Bolland[1]
[1]University of Auckland, Auckland, New Zealand
[2]University of Aberdeen, Aberdeen, Scotland

Objective: The application of statistical techniques might assist the investigation of data integrity in randomized controlled trials (RCTs). We analysed features of randomization in 33 RCTs reported by a group of researchers, about which we and others had concerns.

Method: We compared observed distributions of p-values for between-groups differences in baseline variables, for standardized sample means for continuous baseline variables, and for differences in treatment group participant numbers, with the expected distributions.

Results: The researchers published 33 RCTs over 15y (1997-2012), involving 5894 participants, predominantly older patients with substantial co-morbidities, often recruited over very short periods. Randomized treatment groups were improbably similar. The distribution of p-values for comparisons of baseline characteristics differed markedly from that expected ($P=5.2*10^{-82}$), as did the distribution of standardized sample means for baseline continuous variables ($P=4.3*10^{-4}$). In a comparison set of 13 RCTs we conducted in the same discipline, involving 2851 older adults, each analysis produced distributions similar to those expected ($P=0.07$ and $P=0.78$, respectively). In the RCTs of interest, the differences between participant numbers in randomized groups differed markedly from those expected ($P=1.5*10^{-5}$). Outcomes were remarkably positive, with very low mortality and few study withdrawals despite frail elderly participants. There were very large reductions in a frequently reported outcome, hip fracture incidence, regardless of the intervention studied (RR 0.22, 95% CI 0.15-0.31, P<0.0001, range of RR 0.10-0.33), that greatly exceeded those reported in meta-analyses of other trials. Investigations prompted by these analyses have led to 10 of the trial reports being retracted to date.

Conclusions: A systematic approach using statistical techniques to assess randomization outcomes can assist the evaluation of data integrity; in this case, the analyses strongly suggested the RCT results were unreliable

O-083

An In-depth Analysis of the Annotation of Retractions in PubMed and Web of Science
M. Schmidt
German Centre for Higher Education Research and Science Studies, Berlin, Germany

Objective: As an increasing number of articles are formally being retracted and then interpreted as indicators for research integrity, the validity of information about retractions has to be assessed. Research about retractions and thus about research integrity relies on publication databases such as the Web of Science (WoS) or PubMed and this presentation will raise the question to what extent this information about retractions can be relied on.
Methods: Publications are being formally retracted as a consequence to proven failures of research integrity, such as fabrication, falsification, plagiarism but also honest error. While it is the foremost purpose of retractions to correct the publication record, a penalizing and dissuasive effect seems evident. Furthermore, research on scientific misconduct relies increasingly on retractions of articles. However, comparability and interpretability of these studies are impeded by the fact that standards for collecting data sets of retractions and the validity of database records have received little attention so far. My presentation will discuss the conceptual and empirical delineation of retractions against related publication types with respect to definitions from COPE and individual publishers and in comparison to the implementation and prevalence in PubMed. The consistency of retraction annotation in PubMed – which is based on the two publication types Retraction of Publication (RoP) and Retracted Publication (RP) – is then analyzed and compared to the annotation of the respective items in the interdisciplinary database Web of Science (WoS). Analyses are based on self-developed matching and search algorithms, the PubMed online interface and WoS raw data.
Results & Conclusion: Results show that withdrawn publications, which are conceptually similar to retractions and amount to a substantive number of publications in PubMed, are underestimated when using PubMed RoP and RP publication types, as is done in almost all PubMed-based studies. A considerable number of PubMed RP and RoP is not labelled as such in WoS or inseparable from corrections. These results are highly relevant for corpus and sample strategies especially in WoS and will be used to establish best practice criteria for collecting retractions for further research.

O-084

Research on research integrity: publishing patterns, trends, and impact
M.C.E. Aubert Bonn, W. Pinxten
Hasselt University, Diepenbeek, Belgium

Research on research integrity is booming: an expansive number of editorials and articles have been published on the topic and millions of euros have been invested in research in this domain worldwide. But how do these efforts translate in publication patterns? Do we get better quality of publications, for example by obtaining a better empirical base for the discussion? What is known about the impact of these papers? And do they represent the most urgent priorities in the domain?
Using SCOPUS, we searched for papers published between 2010 and 2015 classified as 'articles' and containing the following sequence of keywords: ((**academic** OR **research***) W/4 (**misconduct** OR **integrity**)) OR (**responsible** W/2 **research**). The search yielded 1429 records, which we screened through title and abstract for relevance to include 431 articles directly targeting research integrity.
Less than half contained empirical data, despite having included only publications classified by SCOPUS as 'articles' and thus excluding all editorials, letters, and other types of publications. Theoretical approaches, narrative reviews, recommendations, and opinions prevailed.
Articles were cited an average of 7 times, yet the distribution of citations was heavily skewed. Over half of the total citations came from 20 papers, all published in USA, Canada, Australia, Croatia, and the Netherlands. The median number of citation was 2, and over 100 articles were seemingly never cited.
Within the empirical half, the great majority estimated the prevalence of misbehaviours while a clear minority tested and proposed solutions to target misconduct. Over half of the papers addressed or targeted the first players of research (i.e., researchers, students, mentors, or instructors) while less than a third targeted higher actors in the scientific system (e.g., institutions, funders, policy makers, integrity offices, or editors).
This short overview points to two important problems. First, while the topic is clearly still relevant and appealing to publishers, it is time to strive for a better scientific and empirical base of published papers. Second, given that almost a quarter of the included articles were never cited, uptake and dissemination of published results should be better considered.

O-085

Reporting concerns about data integrity for 33 randomized trials in 18 journals from one research group: narrative review of how journals deal with expressions of concern and the retraction process

A. Grey[1], A. Avenell[2], G.D. Gamble[1], M.J. Bolland[1]
[1]University of Auckland, Auckland, New Zealand
[2]University of Aberdeen, Aberdeen, Scotland

Objective: In 2012-3, we systematically reviewed a set of 33 randomized controlled trials in 18 journals (impact factors 1-38), 1997-2012. We found statistical evidence for failure of randomization and improbably positive outcomes, improbable researcher productivity and trial recruitment, data inconsistencies, reporting errors, duplicated data and text, and uncertain ethical oversight. We considered our work worthy of publication for its academic value and ability to explain journals' investigations, expressions of concern (EOC) and retractions. We notified affected journals with an explanatory letter and our systematic review, requesting publication.

Method: Narrative review of the outcomes of notifying journals of concerns about data integrity.

Results: We notified the highest ranking affected journal (1 paper, and 2 in highly ranked sister journal) in 3/2013. After internal review it launched an investigation, eventually culminating in an EOC in 5/2015, and 3 retractions in 6/2016. In 4/2015, it rejected our manuscript. Between May-September 2015 we submitted sequentially to 4 journals, 3 affected, 1 unaffected. The unaffected journal deemed publication inappropriate "in a journal that has not published any of the articles in question". Each affected journal notified launched an investigation - we were unable to determine whether they cooperated in their investigations or notified other affected journals. The first 2 declined the manuscript, the 3rd will publish it about 1y after submission.

Thusfar, 10 trial reports and 1 related letter have been retracted: all retraction notices report that only one author was responsible for misconduct. 8 refer to data integrity concerns, 4 use the term "fraudulent". 1 retraction occurred in a journal we had not contacted.

One journal, with two affected trial reports, retracted one in 10/2015, because of plagiarism and 'concerns about the underlying data'. Not until 6/2016 was the online version labelled as retracted. The second affected trial report was retracted in 9/2016. The other journal affected by this plagiarism did not retract their report until 6/2016.

Conclusions: Analyses of research misconduct may be extremely difficult to publish. Resolving concerns about research misconduct by one group that spans many journals may be haphazard, and severely hampered by the absence of a coordinated, systematic approach.

Concurrent sessions: National experience 1

O-086

Ensuring research integrity during data collection in a closed context - the case of Vietnam.
H. Quach-Hoang
The University of Hong Kong, Hong kong island, Hong Kong

Objective: This paper aims to feature the ethical and cultural challenges when conducting case study in a closed context like Vietnam. Additionally, it presents several practices during the researcher's fieldwork to ensure integrity, validity and reliability. From these, positionality and responsibility of a researcher will be discussed.
Method: "Ethical moments" and cultural hindrances occurred from the case studies of three flagship public universities in Vietnam. Three data collection techniques were employed, including documentation, semi-structured interviews with 27 top professors, administrators and lecturers, and direct observation of their interactions with and attitudes towards each other and the researcher as an outsider. Thematic coading approach and cross-case comparison were used to analyze the data to depict the distinct traits of a "toxic" academic culture.
Results: This paper focuses on Vietnam as a "critical" context with a distinct totalitarian regime, the exercise of strict government control, and participants' fear of tracebility and self-protecting behaviours, which results in hindrances to access to the research sites, recruit participants and obtain reliable and comprehensive data. Three researched universities depict vividly the image of a "toxic" academic culture where academic dishonesty and corruption are extremely prominent.
"Ethical moments" emerged as the attitudes of the faculty members interacting with the researcher during the recruit and interview procedures. These manners are understood as the result of the pain and inconfidence sufferred by the academics in a peripheral and disavantageous country. Being exposed to both the "toxic" academic environment and their strong emotions, the researcher had to employ several practices, especially reflexivity and positionality, so as to protect the participants and ensure the research integrity.
Conclusion: A closed context like Vietnam presents a "depressing" and complex picture of research integrity, in which academic dishonesty and corruption are "unwritten" norms. The struggle to adopt and combine "standard norms" of Western academic culture with their traditional ones leads to Vietnam's academics' pain and inconfidence. As a result, the researcher had to face ethical issues during her fieldwork, which required her to be reflexive constantly in terms of the positionality and practices to ensure the integrity, validity and reliability of the study.

O-087

Promotion of sound research activities --- JSPS's approach
Y.I. Iye
Japan Society for the Promotion of Science, Tokyo, Japan

The Great Earthquake in March 11th 2011 and the subsequent accidents in Fukushima Nuclear Plant caused devastating damage to the disaster area. Another type of incidents gravely influenced science in Japan were the cases of research misconduct successively exposed and publicized over the last few years. These states of affairs caused serious disturbances to the general public's trust in science and scientists as well as the practicing scientists' self-confidence on their own doings.
Honesty and integrity in conducting research are the prerequisite for collaborative development of science and also the basis of public trust in science and scientists. While this being an unchanging bottom line, both research communities and governmental organizations in Japan have come to harbor urgent need to strengthening autonomous proactive measures to prevent research misconduct and thereby restore public trust.
In 2013, Science Council of Japan (SCJ) issued a revised version of the Statement "Code of Conduct for Science" originally issued in 2006, reemphasizing the research integrity. The Ministry of Education, Culture, Sports, Science and Technology (MEXT) has issued a new "Guideline for the Measures against Research Misconduct and Abuse of Research Funds" in August 2014 and enacted it from April 2015. The Japan Society for the Promotion of Science (JSPS), together with other funding agencies, has stipulated that every research fund awardee must take a course in research ethics.
JSPS prepared a textbook entitled "For the Sound Development of Science -The Attitude of a Conscientious Scientist-", which is known as "Green Book". It also developed an e-learning program "e-Learning Course on Research Ethics (eL CoRE)" based on the contents of the "Green Book" and made it freely available to researchers and research institutes for their self-development of research integrity.
I present JSPS's efforts to universalize research ethics and to ensure fairness in research activities.

O-088

Promoting research integrity in Australia: a funding agency perspective

S.R. Robertson, J.B. Barr, B.W. Westman

National Health and Medical Research Council, Canberra, Australia

Objective: To present NHMRC's work that focuses on strengthening Australia's research integrity framework given the Australian government's commitments to significantly increase medical research funding and to encourage innovative Australian research.

Process: NHMRC is Australia's leading expert body promoting the development and maintenance of public and individual health standards. NHMRC both funds research and develops advice.

Australia's research framework is underpinned by three national standards that provide guidance on responsible and ethical research conduct for both humans and animals, including the *Australian Code for the Responsible Conduct of Research*, 2007 (the Code).

The Code is the leading reference for researchers and institutions across all disciplines about the expectations for responsible research conduct and the handling of investigations into research misconduct. It is co-authored by NHMRC, the Australian Research Council (ARC) and Universities Australia (UA).

Australia's research integrity framework is a self-regulated model. While funding agencies work with the research sector to develop the standards for all research, institutions are responsible for ensuring that the research, for which they are responsible, is conducted ethically, with integrity and in line with established standards and guidelines. Institutions are also responsible for receiving and investigating any allegations of research misconduct.

There are inherent and obvious conflicts within this system and the current review of the Code will challenge some of these issues by asking the sector to consider moving towards a more open and transparent system for identifying and managing allegations of research misconduct and breaches of the Code. For example, the model that applies to medical practitioners in Australia where allegations of misconduct are considered by an independent medical board, and the public is made aware of any transgressions, could have application in this area.

Outcome: NHMRC's push to focus on developing and promoting a stronger research integrity framework is essential given the Australian government's commitments to significantly increase medical research funding via the *Medical Research Future Fund Act 2015* and to encourage innovative Australian research.

Conclusions: I will discuss how NHMRC and its co-authors have addressed these challenges and how they are currently being received by the research sector.

O-089

The Research Integrity Landscape in Flanders (Belgium) - Lessons learned on promoting integrity, handling allegations and networking among the Flemish universities

B. Seghers[1], M. de Voecht[2], I. Lerouge[3], A. Peters[4], S. van der Burght[1], A. van Scharen[5]

[1]Flemish Commission for Research Integrity, Brussels, Belgium
[2]University of Antwerp, Antwerp, Belgium
[3]KU Leuven, Leuven, Belgium
[4]Hasselt University, Hasselt, Belgium
[5]Vrije Universiteit Brussel, Brussels, Belgium

Objective: The Research Integrity landscape in Flanders (part of Belgium) is in a maturing stage. Research integrity became a fixed topic in university research policy in Flanders since 2011. Since then, universities have developed their own policy (including initiatives for promotion and procedures for handling allegations). A national-level RI commission giving second advice on complaint files exists since 2013.

It is the objective to map different initiatives and provide take home suggestions for research administrations of (research institutes in) other regions or small countries.

Method: The RI officers of the universities and national commission have put together an overview of the complex RI landscape in Flanders.

We focus on the good practices of (1) handling allegations, (2) promoting a culture of research integrity in universities and (3) cooperation between diverse institutions and networking to learn.

Results: By 2017, start-up years in implementation are over. Universities have experienced many of the pros and cons of a number of practices. (1) After ten years of handling allegations, lessons were learned and university procedures were refined. We report on important conditions for a performant self-regulation system, from confidentiality counsellors to interuniversity agreements. (2) This presentation elaborates on the why and how of some initiatives in awareness rising (with focus on communication strategies), training, tools for researchers and points of contact. What have we learned and what questions remain? (3) The last few years, Flemish universities, research institutes, the national RI commission and other actors have cooperated closer than ever before: harmonisation of procedures; joint RI training; coordinated communication on cases; a network of RI officers sharing best practices and joining forces… All of these initiatives have grown organically, bottom-up, not induced by regulation.

Conclusions: A variety of initiatives have been undertaken by the Flemish RI community to tackle cases of scientific fraud as well as to promote sound academic conduct. Fruitful cooperation makes it possible to advance, together!
This helicopter view can offer other institutions inspiration to go ahead in implementing a research integrity culture.
By learning from the implementation process of others teething problems can be avoided.

O-090

Redundant publications and self-plagiarism in Lithuanian academia
L. Tauginiene
Mykolas Romeris University, Vilnius, Lithuania

Lithuanian academic practice to deal with redundant publications (RP) and self-plagiarism (SP) is at advent stage both nationally and institutionally. Deliberation to understand such research misconducts is missing as well. Therefore, it is aimed to analyse national decisions of the ombudsman for academic ethics and procedures (OAEP) in this regard and to figure out what proves and arguing are brought in to shift academic shortcomings.
As all decisions of the OAEP are publicly available, four decisions on cases related to RP and SP in academic works were found and analysed using the qualitative content analysis.
The Office invokes various mechanisms to bring evidence on researchers' misconducts. It varies from contacting authors, editors, university administration to referring to legal acts, online sources (especially regarding definitions). However, it is not always clear how mechanisms are selected to substantiate a decision. Also, arguing is rather based on a form than a substance of academic shortcoming. Therefore, uniform practice to examine research misconducts at national level is still under development.
Editors' engagement to cooperate with national bodies in order to ascertain RP and SP is significant but diverse. Some of them have clear definitions and provisions regarding scientific misconduct applied to journals published under their umbrella (e.g. Elsevier). Some of them do not react to join a national investigation and it implies an irresponsible behaviour of the editor.
Even if only one author's publications are under investigation regarding research misconducts, all co-authors of these publications are arraigned under joint liability because it is difficult to prove guiltlessness, especially after more than few years after publication. Such a situation implies the lack of a clear understanding on authorship in academia and, *ipso facto*, encumbers the appropriate protection of interests later on. Similarly, misunderstanding concerning overlapping emerges to ensure the wholeness and continuity of science thought. Thus, distinction between permissible overlapping and SP is thin, particularly in reprint.
Homogenous detection of such research misconducts as RP and SP is a prerequisite to shape trust-based practice either for the Office or Lithuanian higher education and research institutions.

Concurrent sessions: Publication practices

O-091

Publishing negative trials on the efficacy of antidepressant medications in pooled-trials publications: the pooled-trials publication bias

A.M. Roest[1], Y.A. de Vries[1], E.H. Turner[2], P. de Jonge[1]
[1]Interdisciplinary Center Psychopathology and Emotion regulation, Groningen, The Netherlands
[2]Oregon Health and Science University, Portland, U.S.A.

Objective: Previous studies on reporting bias generally examined whether trial results were published in stand-alone publications. In the present study we investigated whether pooled-trials publications constitute a specific form of reporting bias. We assessed whether trials on the efficacy of antidepressants for depression that were not published as stand-alone publications were published in pooled-trials publications and whether negative trials were more likely to be published in pooled-trials publications only than positive trials. In addition we examined the research questions and presentation of efficacy data in these articles.

Method: Data from a cohort of 74 randomized controlled trials for 12 antidepressant agents were extracted from an earlier publication and the corresponding Food and Drug Administration reviews. A systematic literature search was conducted in PubMed, EMBASE and the Cochrane Central Register of Controlled Trials to identify pooled-trials publications. Because of small cell sizes, P values were obtained using Fisher's exact test

Results: We found 86 pooled-trials publications that reported results of 20 trials (not published in stand-alone publications) on 10 antidepressants. Not-positive trials were 9.5 times more likely to be published exclusively in pooled-trials publications than positive trials (p<0.001). Ten out of 86 publications, reporting on 7 (35%) trials, had as primary aim to present data on the trial's primary research question (drug efficacy compared to placebo). Only 3 of these publications, reporting on 3 (15%) trials, presented individual efficacy data for the primary research question. Other pooled-trials publications reported on secondary efficacy outcomes or safety outcomes.

Conclusion: Negative trials on the efficacy of antidepressants for depression were much more likely to be exclusively published in pooled-trials publications than positive trials. These pooled-trials publications often did not answer the original primary research question but presented (positive) results on secondary questions. Pooled-trials publications therefore further bias the apparent efficacy of antidepressants.

O-092

Managing or Maintaining Bias? Examining the Institutionalisation of Conflicts of Interest in Medical Journal Publishing

R.A. Hendrick
University of Edinburgh, Edinburgh, United Kingdom

Objective: The involvement of commercial interests in medical research has led to concerns about potential conflicts of interest (COI), and their impact on research and resulting publications. Responding to these, most medical journals have developed COI policies emphasising the process of disclosure. Publishers, professional associations and commercial companies have also produced guidance. Studies conducted on the journal policies have found various weaknesses. However, to date, no further research has been undertaken to explore in more depth why they are ineffective and how COIs might be better managed.

Method: This study drew upon two distinct datasets to explore this question. A sample of COI policies (from journals, publishers, commercial companies and professional associations) was analysed, together with 50 semi-structured interviews with actors working in a range of roles across the field. These were thematically analysed in in order to understand in more detail how COIs and their management are conceptualised within medical journal publishing, where weaknesses lie, and how the process might be improved. Theories of institutionalism were drawn on to explain the findings.

Results: Based on empirical PhD research, this study found a narrow and institutionalised interpretation of COI. Emphasis is placed on particular actor groups; others with an opportunity to influence journal content are frequently marginalised. Particular types of interest are highlighted, while others receive little discussion, thus remaining unregulated. An ingrained way of thinking about COI was also evident in the management of COI: self-disclosure is regularly highlighted, despite its inherent weaknesses. The research identified further mechanisms that could assist in managing COI; however, the findings suggest that, in practice, these have limited uptake and efficacy. Overall, this research found that narrow interpretations of COI appear to have become institutionalised and are thus resistant to change.

Conclusion: Given the practical impacts that medical research can have on health policies and treatments, robust systems and processes are required to protect journals and the integrity of the work they contain. Thus, understandings of the topic of COI require reconstruction in order to allow them to be effectively managed.

O-093

Editorial Expressions of Concern revisited

I. Oransky[1], A. Abritis[1], A. Mccook[1], M. Roig[2]
[1]Retraction Watch/Center For Scientific Integrity, New york, U.S.A.
[2]St. John's University, Staten island, ny, U.S.A.

Objective: The present study expands on the findings of a previous study which reported on various characteristics of editorial expressions of concern (EEoC). The aim of the present version of the study was to examine the fate of papers that have been issued an EEoCs and the degree with which these can be identified -- in a typical literature search -- as being subject to an editorial concern.

Method: A search of the PubMed database using the phrase "expression of concern" resulted in 146 papers that had been issued an EEoC. To determine the fate of these papers, we entered the title of each flagged paper in the search feature of PubMed and also that of the home page of the respective journal in which the flagged paper had been published and noted any communications that appeared in connection with each paper.

Results: Of those papers for which an EEoC had been issued and for which follow-up information had been found, 6 (4%) resulted in corrections and another 46 resulted in retraction (32%). We could not find any follow-up information on the other 84 papers, which comprised 60% of the sample. Of these 84 papers, 33 of them (39%) had EEoCs issued within the last two years. However, 27 of the flagged papers (32%) had EEoCs that were 4 years old or older. There was little uniformity in the extent to which papers were linked to EEoCs and to subsequent corrections and retractions in both PubMed and the journal in which the concerned paper had been published. For example, we found several instances in journals in which the target paper had not been linked to the EEoC. Other target papers were not linked to available follow-up notices in the journal nor marked in a way that indicated an editorial concern. Similar patterns were observed in the indexing of target papers in PubMed.

Conclusion: The lack of consistency with which EEoCs are visible when papers appear in searches is troublesome. We urge the publishing community to follow guidelines for EEoCs similar to those suggested for retractions, http://retractionwatch.com/2015/05/21/what-should-an-ideal-retraction-notice-look-like/.

O-094

How are journals handling third party inquiries of possible duplicate publications?

M.M. Malicki, A.U. Utrobicic, A.M. Marušic
University of Split School of Medicine, Split, Croatia

Objective: To address duplicate publications without published notices of duplication or retraction

Method: At the 4th WCRI we had presented our initial analysis of duplicate publications (DP) indexed in MEDLINE, following which we contacted journal editors about unresolved cases of DPs. For cases we did not receive the reply (following two rounds of reminders), we obtained and analysed full text of the articles.

Results: Of 1011 citations indexed as DPs in MEDLINE till January 2013, 712 (70%) constituted 369 unique cases of duplications, while 299 were MEDLINE indexing errors. Of the 369 unique DPs, only 185 (50%) were addressed by notices and 25 (7%) retracted. In order to come to these numbers, during the course of the study we inquired journal editors about 250 cases (including both indexing errors and unaddressed DPs) and received 181 (72%) replies. Of the 181, editors identified 61 (34%) cases as not being DPs, 43 (24%) as DPs they would publish notices about, 29 (16%) as cases they would further investigate, 13 (7%) for which they did not specify if they would publish a notice, 12 (7%) for which they asked advice on how to proceed, 10 (6%) for which they would not publish notices, 8 (4%) for which a notice already existed (but was not visible on PubMed or article website) and 5 (3%) for which they felt the investigation should be handled by the other journal due to its later publication date in that journal. For the articles we did not receive a reply from the editors or for those belonging to journals no longer publishing (n=85) we were able to download and compare the original and duplicate articles for 81 cases.

Conclusion: Despite existence of clear guidelines on how to deal with duplicate publications, 28% (69 of 250) of contacted journals did not reply to inquiries of duplicate publication even after two rounds of reminders. Addressing DPs needs to be more transparent and prompter if science is to preserve its integrity.

O-095

Transparency and integrity of peer review

J.M. Wicherts

Tilburg University, Tilburg, The Netherlands

Objective: Peer review is a core method of quality control in the sciences, but several surveys among researchers and peer review scandals have highlighted that it does not always function optimally. Here I discuss ways in which transparency of the peer review system could help improve peer review. I present results of a series of studies in which we used transparency of peer review systems at journals to predict quality of peer review.

Method: I developed 15-item tool that enables stakeholders to rate transparency of the peer review system. Transparency ratings of over 500 journals in various fields done by authors, experts in Open Access publishing, and academic librarians were related to author's experiences with peer review, whether or not the journals were earmarked as being published by predatory publishers, and whether or not the journal had accepted a lethally flawed paper.

Results: Transparency ratings proved to be internally consistent. Ratings predicted author-assessed quality of peer review of their work. Journals earmarked as being published by a supposed predatory publisher and journals that accepted the lethally flawed paper averaged relatively low scores on transparency.

Conclusions: Results of this series of studies supported the reliability and validity of the new tool to rate transparency of the peer review system at academic journals. Results aligned with the view that lack of transparency is associated with low quality peer review. I discuss some recent results from the website QOAM.edu that allows academics and other stakeholders to use the new tool. The website currently reports over 5000 transparency ratings of journals and over 2750 ratings by researchers who have had experience with the peer review system at many of these journals.

Concurrent sessions: Codes and definitions

O-096

Value Pluralism in Research Integrity
G.J. de Ridder, H.D. Peels
Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

Guidelines for research integrity and good research practices, such as the European Code of Conduct for Research Integrity or the UKRIO Code of Practice for Research, contain various sorts of principles and norms regarding honesty and diligence, reliability, replicability, independence, responsibility for future generations, impartiality, open communication, avoidance of fabrication, plagiarism, and falsification, and so forth. Through an investigation of several representative codes, we argue for two conclusions: (1) Several influential codes of conduct codify a multi-layered and irreducible plurality of values and (2) these codes – and hence our understanding of the concept of research integrity – can benefit from a more explicit specification of the values that are at stake.
As to (1), we will show that codes of conduct contain principles that have to do with moral, epistemic, prudential, legal, professional, and conventional values. Focusing on the epistemic domain and drawing on arguments from the philosophical field of epistemology, we will show that there is even an irreducible plurality of epistemic values that is relevant to research integrity: not just truth or knowledge, but also accurateness, justification, and understanding. These values are irreducible to one another. This is illustrated by showing that they lead to somewhat different research principles and that, remarkably, these principles can even, at least potentially, be in conflict with each other.
As to (2), we will first show that extant codes tend to run several kinds of values together. This results in slightly unclear precepts and potentially confusing or conflicting guidelines. Next, by specifying the relevant values behind research integrity more clearly, codes of conduct can be made more perspicuous and thus easier to use. This also has the further advantage of making it easier to find potential blind spots in codes of conduct – values that aren't adequately represented. We will discuss the value of understanding as an example of a blind spot.

O-097

Promoting virtue or punishing fraud: contrasting discourses on scientific integrity and ways to obtain it
S.P.J.M. Horbach, W. Halffman
Radboud University, Nijmegen, The Netherlands

Objective: Even though integrity is widely considered to be an essential aspect of research, there is an ongoing debate on what actually constitutes research integrity. The understanding of integrity ranges from the minimal, only considering falsification, fabrication and plagiarism (FFP), to the maximum, blending into science ethics. Underneath these obvious contrasts, there are more subtle differences that are not as immediately evident. Rather than performing a conceptual analysis through philosophical reasoning and discussion, we aimed to clarify the discourse of 'scientific integrity' by studying its usage in written documents
Method: Scientific publications, policy documents and newspaper articles were analysed by means of scientometric and content analysis techniques, including co-word analysis of full-text publications. The texts were analysed on their usage of the term 'integrity' and of frequently co-occurring terms and concepts. A comparison was made between the usage in the various media, as well as between different periods in which they were published by mapping co-occurrence networks of significant terms and themes.
Results: The debate about integrity is usually presented as a single, universal discussion, with shared concerns for researchers, policymakers and 'the public'. However, we show that there are substantial differences between the discourse on research integrity in the scientific arena and in the public domain. Notably, scientists and policymakers adopt different approaches to research integrity, presenting it either as a virtue that must be kindled or as a product of norms that should be enforced.
Conclusion: The differences in approaching the concept of integrity self-evidently lead to diverse suggestions on how to promote scientific integrity or prevent scientific misconduct. Suggestions differ along the lines of individual versus organisational or institutional approaches; focus on promotion or repression; and focus on educational or policy measures. Interesting variations in intervention strategies with a focus on self-regulation or improved external control were visible and will be further explored.

O-098

The Australian better practice guide for managing and investing research misconduct:the challenge of the new

K.L.A. White[1], S. O'Brien[2], J. Barr[3], S. Robertson[3]
[1]Macquarie University, North ryde, Australia
[2]University of Queensland, Brisbane, Australia
[3]NHMRC, Canberra, Australia

Objectives: Around 100 institutions are involved in single and multi-centre research in Australia. Each has its own policies and procedures for managing allegations of research misconduct. Heterogeneity in approaches in a country with high research output and small research population is not sustainable. Developed in 2007, the Australian Code for the Responsible Conduct of Research (the Code) is under review jointly by the National Health and Medical Research Council (NHMRC), Australian Research Council (ARC) and Universities Australia (UA). This review provides a new approach for investigating and handling potential research misconduct cases.

Process: Adherence to the Code is a requirement of all research funding provided by the NHMRC and the ARC. A key priority for NHMRC in 2015–18 is to further develop a strong research integrity framework to accommodate new innovations in practices and processes that may emerge in the Australian research community, while additional funding flows into the system through the Medical Research Future Fund.

Initial consultation in early 2015 resulted in detailed feedback, some wanting more guidance and others less. Therefore, a new approach was taken to develop a streamlined Code and detailed Better Practice Guides. A committee was established and tasked with preparing the first of a series of guides in the area of investigating potential research misconduct. It is intended that other guides will follow eg. authorship, conflicts of interest and supervision of research trainees. Membership on the committee has been drawn from across the Australian research sector to ensure practical application.

Outcome: The revised Code and Guides will mark a significant shift for the Australian research community. We report on the challenges in providing guidance to research institutions when investigating breaches of the Code and determining the seriousness of those breaches and developing guidance to complement and support a revised, principles-based Australian Code.

Conclusions: Developing new and effective resources to support the revised Code is a significant, and at times, a controversial, national challenge. The Better Practice Guides will serve as important references for researchers and administrators across all disciplines. Ultimately their purpose is to promote community trust in the integrity of Australian research.

O-099

Interpreting integrity: a conceptual schema

D.M. Shaw, P. Satalkar
University of Basel, Basel, Switzerland

Objectives: Researchers refer to "research integrity", "scientific integrity", "research misconduct", "scientific misconduct" and "research ethics". However, they may use some of these terms interchangeably despite conceptual distinctions between them. Our objective is to clarify what is signified by key terms concerning research integrity, and to suggest clearer conceptual delineation between them. METHODS: Conceptual analysis based upon general usage of these phrases and categorization of integrity-breaching behaviours in literature and guidelines, including clarification of different domains and agents involved. Analysis also informed by trends in qualitative interviews conducted as part of the PRISM (Perspectives on Research Integrity in Science and Medicine) project. RESULTS: Detailed analysis of the key terms used in discourse on integrity reveal a distinct lack of clarity regarding concepts. First, the general focus is on people as agents, despite the important roles played by teams, institutions and journals. Second, much of the ambiguity in this area revolves around a general failure to distinguish between science and research. Third, this failure in turn means that scientific integrity and research integrity are treated as synonyms, when in fact they are distinct yet overlapping concepts; the same applies to scientific and research misconduct. Just as research integrity covers a wider sphere than scientific integrity, so integrity of both types covers a wider sphere than misconduct of both types. Fourth, the common categorization of unethical behaviours is not justified. For example, failure to disclose conflicts of interest affects science more than plagiarism does, yet the latter is widely regarded as the more serious offence. Both are breaches of research integrity, yet only failure to disclose conflicts poses a potential threat to scientific integrity. Finally, the narrow classification of misconduct as comprising only "serious" breaches of integrity is problematic. CONCLUSION: Our analysis indicates that greater clarity is needed in the debate on research integrity. Distinguishing between scientific and research integrity, reassessing the relative gravity of different misbehaviours in light of this distinction, acknowledging the important role of institutions and journals, and recognising all breaches of integrity as misconduct may help to improve guidelines and education.

O-100

Epistemic integrity of the research process

J. de Winter,
Herenthout, Belgium

Objective: In this presentation, different definitions of "epistemic integrity of the research process" are discussed. A new definition, which avoids the problems of earlier definitions, is proposed and illustrated with examples from biomedical science and climate science.

Method: To test whether a certain definition forms a good explication of the concept of epistemic integrity, it is assessed on the basis of the following questions (based on Rudolf Carnap's view on explication): (1) Can the definition be applied to most cases in which the term is used?, (2) Is it exact?, (3) Is it fruitful (e.g., to develop norms for science)?, and (4) Is it as simple as possible?

Results: The best definition states that the epistemic integrity of the research process is the degree to which the research process adheres to (1) the standards that those involved in the research process say it adheres to, and (2) common standards, unless those involved in the research process explicitly report that these standards are violated. This definition outperforms definitions in terms of honesty as it enables us to account for unintentional infringements of scientific integrity. It also outperforms earlier definitions in terms of common standards, as it doesn't conflict with scientists' freedom to question existing standards. The definition under consideration scores very well on the aforementioned criteria of explication (see Method section), and is most useful to analyze particular cases of alleged scientific misconduct.

Conclusion: If scientists want their research to have the highest degree of epistemic integrity, they should be as clear as possible about the standards that the research adheres to (and doesn't adhere to). Violations of established scientific standards do not imply that epistemic integrity is compromised as long as these violations are clearly reported to the audience.

Concurrent sessions: National experience 2

O-101

Conclusions inter- american encounter on scientific honesty

S.G.L. Litewka[1], E.H. Heitman[2], R.H. Hall[3], J. Linares[4], P. Ostrosky[4]
[1]UNIVERSITY OF MIAMI, Miami, U.S.A.
[2]Vanderbilt University, Nashville, tn, U.S.A.
[3]Autonomous University of Queretaro, Queretaro, Mexico
[4]Autonomous University of Mexico, Mexico city, Mexico

Under a grant from the U.S. Office of Research Integrity (ORI), we are working with colleagues at the National Autonomous University of Mexico (UNAM) and Autonomous University of Queretaro (UAQ) to host a conference on the essential academic policies and related infrastructure necessary to support institutional integrity in Mexican universities. Starting with a set of international surveys about institutional infrastructure for research and a review of policy documents and relevant statements from their home institutions and national agencies, a pre-conference working group from several universities across Mexico will identify the strengths and needs of Mexican policy and practice in the following thematic areas: 1) Defining, preventing, and responding to research misconduct; 2) Standards of authorship and responsible publication practices; 3) Conflicts of interest and their management; 4) Data collection, management, ownership, and sharing; conflict 4) Collaborative research and divergent international policies; and 5) Developing a policy and curriculum on research integrity and responsible conduct of research. The conference, scheduled for mid-January 2017 at UNAM, will engage 150+ additional participants to critique and expand upon the on the working group's provisional definition, typology, and estimated scope of misconduct relevant to Mexican universities. Drawing on participants' experience and insights, the conference will propose a framework for new policies, practices, and infrastructure necessary to promote and sustain scientific integrity across Mexican universities and support Mexican researchers in international collaborations.
Results: The pre-conference activities and conference will result in a series of conclusions about the state of research integrity in Mexico, a parallel series of recommendations and priorities for institutional action on research integrity, and a draft policy framework applicable to the country's academic research institutions.
Conclusion: Mexico has a vast number of academic research institutions but limited policy and infrastructure to support research integrity. The conference will shed light on existing perceptions in Mexico about misconduct and prompt new engagement by Mexican universities in the promotion of institutional research integrity.

O-102

EARTHnet: An initiative to promote a Research Integrity framework in Greece

P.K. Kavouras[1], E.K. Koumoulos[1], N.F. Foeger[2], D.K. Lanzerath[3], M.K. Kritikos[4], C.C. Charitidis[1]
[1]National Technical University of Athens, Athens, Greece
[2]European Network of Research Integrity Offices, Vienna, Austria
[3]European Network of Research Ethics Committees, Bonn, Germany
[4]Vrije Universiteit Brussel, Brussels, Belgium

Objective: This work presents EARTHnet (Ethical Aspects in Research and Technology for Human network), a recent Greek initiative in the field of Research Ethics (RE) and Research Integrity (RI). This initiative gathers researchers from different scientific and technology fields and aims at raising awareness among the Greek research community on issues concerning RE and RI. EARTHnet has the ambition to become a center of communication and interaction among Greek researchers and to promote a RI framework in Greece.
Results: Greek research community has a significant and long standing contribution on European and global level. However, it does not seem to consider RI as a cutting edge aspect. This partly stems from the incomplete knowledge on the importance of RI and partly from the fact that a national RI committee that would act as a center of communication and source of legislation is missing. EARTHnet, based at the National Technical University of Athens, focuses on filling the knowledge gap on aspects of RI and act as a center of communication between Greek researchers. Currently, it gathers researchers from diverse scientific disciplines, namely from medicine, biomedicine, nanoscience, engineering and hard sciences, embracing 14 entities as members. EARTHnet aims at the adoption of a national code of conduct for research and the set up of a national RI committee that will promote a RI framework in Greece, in line with the highest ethical international standards. For this reason EARTHnet has developed strong links with transnational RE and RI networks. Specifically, two pillar networks, namely EUREC and ENRIO are associated networks with EARTHnet.
Conclusion: Two cardinal issues for raising awareness on RI in Greece is to communicate, among the Greek academia, the efforts and debates on that subject on a European and Global level and to assembly a critical mass of concerned scientists so as to draft a nationwide instrument of pressure/leverage for the creation of an institutionalized code of conduct for research and a national RI committee.

O-103

Asian and Pacific Rim Research Integrity Network: Increasing Accountability and Transparency

F.K.S. Leung[1], D. Chan[1], W. Kalichman[2], E. Mah[2]
[1]The University of Hong Kong, Hong kong, China
[2]University of California, San Diego, San diego, U.S.A.

Objective: To facilitate accountability and transparency in research, the objectives of the proposed meeting are to (a) articulate differences and areas of common ground, (b) identify best/recommended practices, (c) identify opportunities for research or collaboration, and (d) set an agenda for coming years.

Method: To promote research integrity, the Asian and Pacific Rim Research Integrity (APRI) network was established during a planning committee meeting in San Francisco in February 2015. The first formal APRI network meeting was held in February 2016 in San Diego. Based on participant feedback, the meeting was considered highly successful and demonstrated a clear need for ongoing development. To further facilitate participation, the first meeting in Asia will be co-hosted by the University of Hong Kong and the University of California, San Diego in HK on February 20-22, 2017. The meeting will further multi-national awareness, understanding and opportunities for collaboration, and is an essential step in the creation of a sustainable, robust international partnership to promote research integrity in the region. The two and a half days meeting will consist of plenary and breakout sessions. The target audience will be those who work in research integrity including teachers, researchers and senior administrators as well as those responsible for addressing allegations of research misconduct. Travel grants will be available to ensure diverse participation from the region, including those nations with fewer resources. The number of participants will be around 70 to enable deep and sustained conversations.

Results: The Planning Committee is comprised of some of the leading authorities on research integrity from Australia, China, HK, India, Japan, New Zealand, Pakistan, Singapore, South Korea, Taiwan, Thailand and the US. The experience and expertise of the meeting co-hosts and the Planning Committee ensure that all four of the meeting objectives will be met. Concrete meeting outcomes for each of the objectives will be reported, including participation and feedback.

Conclusion: Specific findings can be reported after the conclusion of the February meeting, but it can be anticipated that it will be possible to report one of the first, multi-national efforts to harmonize and coordinate efforts for promoting research integrity.

O-104

Promoting research integrity in France

L. Corvol[1], M.L. Leduc[2]
[1]College de France, Paris, France
[2]Ethical committee of CNRS (COMETS), Paris, France

Objectives: As a follow-up of the French National Charter for Research Integrity, signed in 2015 by all research institutions and universities, the French Ministry for Research and Higher Education, I was asked to chair a committee meant to elaborate recommendations for the French government.

Methods: The committee first highlighted the distinction between ethics and scientific integrity, analyzed the causes and the social and institutional consequences of scientific misconducts and eventually tackled the question of results reproducibility. A survey sent to all French research institutions indicated the difficulty to detect frauds and the absence of statistics for fraud cases in science at the national level. The committee report was released to the Ministry and to the press on June 29, 2016.

Results: The report gives a global view of the methods already in use to promote integrity, points out the need for further promoting research integrity in most universities and research agencies. It outlines the lack of a national frame for legal procedures in case of proven frauds. It shows that new ethical perspectives occur in the context of open data and open access for publications. It mentions that the European Community increases the level of requirement in terms of ethics, scientific integrity, and social responsibility in research.

Conclusions: A fresh impulse is given in France to deal with research integrity resulting from a strong political will. Training for PhD students at universities just became compulsory. The creation of a French Office for Scientific Integrity is soon to be decided.

O-105

Enhancing the research culture at strathmore university amongst phd faculty members
V.G. Gichuru
Strathmore University, Nairobi, Kenya

Strathmore University is one of the private universities in Kenya which has research as one of its key pillars.Hence the university has been focusing on growing the number of doctorates (PhD's) amongst their faculty who are the brains behind research.This has not resulted however in a vibrant research culture.

An analysis of strengths,weaknesses,opportunities and threats (SWOT) which face research at Strathmore universtiy was done.Questionnaires were distributed amongst various stakeholders to capture their understanding of a research culture.Data was analysed using Statistical Package for Social Sciences (SPSS).

The SWOT analysis indicated that some of the strengths at Strathmore university include excellent infrastructure and a concerted effort to increase the number of PhD holders amongst the faculty.Some weaknesses include heavy teaching loads for faculty members which leaves them with little time to engage in research.The opportunities include the university having a strong brand name.Amongst the threats these include a lot of emphasis on teaching rather than research coupled as well by lack of enough research funding.

Some of the stakeholders were interviewed on their idea of a research culture and they gave varying responses.There are those who envisage a research culture as consistently publishing journal articles on emergent issues.Others thought that a research culture is brought about by participating in collaborative research on various issues within the community.On the status of the research culture,26% rated it as good owing to the fact that a number of initiatives to inculcate a research culture were being done e.g. the research week.Those who indicated that the research culture was poor (0.5%) was due to the fact that research seems to stagnate after faculty members attain their PhD.

To grow a research culture at Strathmore university, the presence of excellent infrastructure as well as emphasis on growing the number of PhD holders is key.However to grow the culture further,there is need to place emphasis on incentives , having mentoring structures for younger faculty and strengthen research managment.

Symposia abstracts

Symposium: Publishing and research ethics as wicked problems

S-01

Responding to research integrity

M.A. Jacob
Keele University, Newcastle, United Kingdom

In this short panel introduction, I share some insights from the point of view of my own research on research integrity. To do this I draw on my ethnographic fieldwork and on historically informed research on differences and common denominators in legal and expert engagement with suspect scientific practice between 1850 and the present day.

I emphasize the critical need for contextualizing current responses to research misconduct. More specifically I discuss some fruitful payoffs for research integrity, of having historically and socially situated understanding of research integrity that are informed by the humanities. Some current research findings may have practical implications for how the research integrity sees itself. For example, research integrity has become more than a set of programmatic norms, but an increasingly potent professional expertise, even a field of governance.

Far from risking jeopardize good practice, keeping a self-reflexive eye on research integrity practices and expertise can contribute to deepen contemporary multi-sited engagements towards more accountable and transparent science. These engagements are necessarily global, yet unavoidably local.

S-02

Research integrity: catalyst and outcome of innovative research practices and tools

B.M.R. Kramer, J.M. Bosman
Utrecht University Library, Utrecht, The Netherlands

In a world of changing research practices, three goals for science and scholarship can be identified: making research more open, efficient and 'good'. The latter category involves research integrity, transparency and reproducibility, and is potentially the most transformative for the way research currently is conducted. Open sharing in all phases of the research cycle is necessary, but not sufficient to translate this goal into practice.

<p/>We will discuss how issues around research integrity are addressed in existing guidelines and declarations, such as the TOP guidelines (with 8 standards focusing on transparency and registration) and ResearchTransparency.org (a broader set of integrity principles for research and higher education) Through our global survey and multiple workshops, we have some indications on the extent to which researchers currently identify integrity issues as important, and what practices regarding research integrity they feel should be included in a truly open science workflow. Finally, we will discuss some practical examples of research tools that have integrity checks built in or that contribute to integrity and help avoid questionable research practices.

<p/>The extent to which researchers feel enabled or constrained in adopting tools and practices that promote integrity is influenced by many factors, including tool interoperability, internal and external collaboration culture, and assessment and evaluation criteria. At all these levels, stakeholders in scholarly communication (from researchers themselves, publishers, librarians, and tool developers to research institutions, governments and funders, and to some extent even journalists and the general public) can work together to effect a change in research culture.

S-03

The need for new incentives in publishing.
C. Hurst
The Royal Society, London, United Kingdom

Background: Through publishing, there is the opportunity to make research more accountable and transparent. The 'publish or perish' culture of assessment creates perverse incentives which can lead to poor research practice and even fraud. There is a growing recognition that researchers should be assessed on a broader range of research outputs such as creating and sharing datasets, training/mentoring others and peer review activity. Incentives for positive behaviours are required to create a change in research culture.
Main Points: There are many occasions in the publishing process where research practice can be made more transparent and accountable. For instance, researchers can post preprints, participate in open peer review, share datasets or publish negative results. Yet such activities are not currently recognised and rewarded. How can we incentivize them?
A recognition from funders and tenure committees that these are valuable research outputs and behaviours is necessary. Such outputs need to be validated, easily recorded and measurable. New incentives can leverage the evolving infrastructure such open researcher and contributor identifiers (ORCID), 'objective peer review' journals and open science. The narrow focus of research assessment on publication in elite journals needs to be reduced. New incentives are required based on creating transparency and quality rather than the impact of research outputs.
Conclusion: Funders, institutions and publishers need to work together to incentivize researchers to create an accountable and transparent research system.

S-04

'Publishing and Research Ethics as a wicked problem: new thinking and new approaches to making research more accountable and transparent'.
J. Jacobs
Office of Research, Ethics and Integrity, CRICOS, Australia

Background: Research intensive institutions face a number of cultural and procedural challenges when managing allegations of research misconduct when concerned with publications. Therefore a collaborative and effective working relationship with journal editors is highly desirable and important in terms of ensuring all aspects of the peer review and published works are sound and accurate. Equally important is how universities build cultural capital in responsible research conduct by direct and indirect supports for the research community. These two elements are inextricably linked to building transparency and accountability in research. An integrated approach of training education and post investigation support are key elements of the Queensland University of Technology (QUT) approach.

S-05

How could editors think differently about the complexities of research and publishing ethics?
V. Barbour
Committee on Publication Ethics (COPE), Norfolk, United Kingdom

This is part of the proposed concurrent session Publishing and Research Ethics as wicked problems: new thinking and new approaches to making research more accountable and transparent. Research and publishing are becoming increasingly complex, especially with the advent within the sciences of large data analytics. In addition, published papers and review processes are increasingly open and online and available for scrutiny in ways that are unprecedented and for which there are few accepted practices. Critical analysis of published work therefore does not just happen within journals but happens more and more publicly. Furthermore, current methods of correcting published work are not now sufficient for the changing norms of publishing
Main Points: The previous framework of submission, review and publishing of a final version which remains unchanged post publication, all conduced solely within limited academic circles, is now at an end. Although this change may seem challenging, there are in fact substantial opportunities offered by new technologies if they are combined with the development of associated behaviour change. In particular, such changes will have to address the increase in public scrutiny of research findings and the need for tailoring to specialties. Editors, publishers and academics need to collaborate in order to prioritise the needs and to agree on what the best processes within their specialty are, to adapt relevant technologies and agree what are the appropriate norms of behaviour. For example, in some specialties open peer review may be a high priority, in others the highest priority maybe the need for the development of processes for handling preprints.
Conclusion: There is a need for editors, publishers and academics to work collaboratively to address the new challenges in publishing ethics that have arisen due to the increased complexities of research and publishing. Changes in both technology and in behavioural norms are important.

Symposium: Research Integrity in for-profit organizations

S-06

Science used in decision making: a different story at different levels (focus on the area of observational epidemiology)

G. Swaen[1], M.E. Pauwels[2]
[1]Maastricht University, Maastricht, The Netherlands
[2]CEFIC, Brussels, Belgium

Regulators often depend on science to develop legislation. In practice, they rely on the opinion of scientific committees, who make use of reviews summarising research articles. Euro Chlor presented a 'matrix' depicting the process of research being translated into legislation and identified some of the major vulnerabilities in the process. All topics of this concurrent session on Research Integrity in for-profit organizations can be situated at one or more levels of the science-to-decision-making matrix.

This first talk is situated at the mid-level of the matrix, where the choice of relevant publications to be considered in a review or a scientific opinion, is made. In some instances, industry has challenged the chosen academic epidemiological research, claiming that the test protocols did not fulfil the fundamental requirements of sound epidemiological research. Often there has been frustration that, by a subjective lack of trust, industry's voice has not been taken into account and only academic research has been considered, irrespective of its quality.

We therefore wish to emphasize that an essential component of good scientific practice is a pre-specified study protocol, describing the study methodology, data collection and analysis. A protocol prevents selective reporting of the data, as the primary study outcome, potential confounders and cut-off

off points are pre-specified. A study reviewing scientific publications on phthalates revealed that many studies did not have such a pre-specified protocol and existing protocols were of low quality. Corresponding authors of 158 eligible journal articles were asked to participate in a short telephone interview and to provide a copy of their study protocol. 47 (29.7%) agreed and ultimately 22 (14%) provided a copy of the study protocol. Corresponding authors reporting their study as being positive were three times less likely to provide a copy of their protocol and to participate in the interview. Therefore, the risk of selective reporting is high, jeopardising a balanced weight of evidence based decision. Also, no statement can be made on the quality of the presented data.

S-07

Research Integrity in for-profit organizations - the view of pharmaceutical industry

A.M. Gilis, J. Gallacher, T. Lavrijssen, D. Malwitz, T. Steckler
Janssen Research & Development, Beerse, Belgium

The integrity of scientific data generated either internally or resulting from external collaborations is pivotal for drug development. Substantial evidence has accumulated that robustness, rigor and validity of research data can be problematic, which may impact on conclusions made regarding predictability of preclinical models and/or quality of drug targets for evaluation in clinical proof-of-concept studies. Higher failure rates due to non-reliable scientific data increase the risks and costs associated with Research and Development (R&D) and may hamper the successful translation of innovation to novel treatments for patients. This talk will consider examples of questionable research practices and their potential impact on drug development. Also prevention strategies will be discussed.

S-08

Principles of research integrity in the food and drink industry
M.J.E. Urlings[1], R. Hamer[2]
[1]Maastricht University, Maastricht, The Netherlands
[2]Unilever, Vlaardingen, The Netherlands

Like all industries, the food industry relies on scientific research to assure safety of their products, support claims we make on products and understand the impact of our products on health, environment and society. Some sectors of the public casted doubt upon industry-funded research in the past, claiming that it has been biased toward results favoured by the food industry. Unilever recently published their internal guidelines for conducting food related research which build on scientific rigor and transparency and are well aligned to the Food Drink Europe Principles for Research Conduct. It sketches an approach that should be applicable to any research including systematic reviews that are often used in policy making.
This scientific knowledge, which is used in policy decisions, develops from empirical data to systematic reviews and policy making via scientific citations.
To gian insight in how scientific literature develops in the food industry, Maastricht University conducted a citation network analysis on the literature concerning trans fat intake and cholesterol. This method aims to identify determinants of selective citations. Potential determinants under study are, inter alia, study outcome, study design, gender of the author and funding source. In the citation network analysis, all potential citation pathways are mapped and via statistical analysis compared to the citations that have actually been performed, in relation to the potential determinants of citation. Results show that reporting of a positive result of trans fat intake on cholesterol increases the chance of citation with three times, compared to reporting negative results. No difference was found in the chance of being cited between studies funded by for-profit or not-for-profit organisations. From this study, we conclude that citation bias exists in the trans fatty acid literature.

S-09

Development of non-animal methodology and EU legislative requirements - a delicate balance for cosmetics
V. Rogiers
Vrije Universiteit Brussel, Brussels, Belgium

Challenges of science-based decision making at EU level:
-In the EU, cosmetics must be safe for the consumer. Safety is based on the safety of the ingredients and must be shown by quantitative risk assessment. Since 2013 the testing and marketing bans present in Regulation 1223/2009/EU are fully implemented. Consequently only validated, animal-free methods are allowed.
-Validated non-animal tests are available for: skin corrosion: OECD 430, 431, 435; skin irritation: OECD 439; phototoxicity: OECD 432; eye irritation /corrosion: OECD 437, 438, 460, 491, 492; skin sensitization: OECD 442C, 442D, 442E; toxicokinetics: OECD 428; genotoxicity: OECD 471, 473, 476, 487, 490. No validated alternatives exist for repeated dose toxicity testing which is essential for quantitative risk assessment as required by the EU regulatory authorities.
-Non-animal testing is highly wished by animal welfare organizations and is lobbied extensively in the European parliament. March 2015, 1.17 million signatures were submitted to the EC to stop vivisection.
-It is generally known that scientific projects and their outcome are not running in parallel with the development of alternative methods needed for quantitative risk assessment.
-The different EU Scientific Committees and several scientific associations warned repeatedly for the potential consequences because of the lack of alternative methods for systemic toxicity and long-term effects.
- Today, new cosmetic ingredients highly needed for human health (preservatives, UV filters) are lacking.
-The latest opinion given by the High Court of Justice (September 2016) reconfirms the spirit of the Cosmetic Regulation and supports the animal testing ban (The Court concludes that the placing on the EU market of cosmetic products containing some ingredients that have been tested on animals outside the EU in order to market those products in third countries may be prohibited if the data resulting from that testing is used to prove the safety of the products concerned for the purposes of placing them on the EU market).
- As a consequence safety assessors in the EU will have to blind out existing safety information on cosmetic ingredients which has been generated (after the deadlines) in third countries. Whether this is ethically acceptable remains an open question.

Symposium: Predatory journals

S-10

Editors, predatory journals and academic communities

A. Marušic
University of Split School of Medicine, Split, Croatia

This session will explore predatory journals from different perspectives, including the publishing and research communities. It is sometimes very difficult to differentiate between journals that misuse the publishing practices to publish research without appropriate assessment procedure and new small and scholarly academic journals that strive to increase its visibility and impact. My presentation will focus on how editors can ensure the integrity both of the research published in their journal and of the editorial/publishing processes in the journal.

S-11

What do we know about potential predatory journals and the articles they publish?

D.M. dr. Moher, L. Shamseer, K. Cobey, J. dr. Galipeau, M. dr. Lalu, M. dr. Avey, M. dr. Mcinnes
Ottawa Hospital Research Institute, Ottawa, Canada

Objective: In the first study we compared the characteristics of journals that are potentially predatory with presumed legitimate open access and subscription-based biomedical journals. In the second study we examined the types of research articles published in potential predatory journals and assessed the their reporting quality.
Methods: For the first study we randomly selected 100 journals each from lists of potential predatory journals (source: Beall's List); presumed legitimate, fully open access journals (source: PubMed Central); and presumed-legitimate subscription-based (including hybrid) journals (source: Abridged Index Medicus). Journal characteristics (e.g., website integrity; look and feel; editors and staff characteristics; editorial/peer review process; instructions to authors; publication model; copyright and licensing; journal location; contact) were collected by one assessor and verified by a second. For the second study we used Beall's lists [single and multiple journal publishers] to identify 3570 biomedical articles. Two people independently extracted epidemiological and descriptive characteristics from each article and assessed the completeness of their reporting using reporting guideline items.
Results: Thirty-one (33%) of the potential predatory journals promoted a bogus impact metric - the Index Copernicus Value – versus three (3%) open access journals and no subscription-based journals. Nearly three quarters (n=66, 73%) of the potential predatory journals had editors or editorial board members whose affiliation with the journal was unverified, compared to two (2%) open access journals and one (1%) subscription-based journal. Potential predatory journals charge a considerably smaller publication fee (median $100 USD, IQR $63-$150) than open access journals ($1865 USD, IQR $800-$2205) and subscription-based hybrid journals ($3000 USD, IQR $2500-$3000). The epidemiological and reporting characteristics from the included 3570 articles will be presented during the workshop.
Conclusion: We identified 13 evidence-based characteristics by which predatory journals may potentially be distinguished from presumed legitimate journals. Research from around the world is being published in illegitimate journals although the nexus of activity appears to be in South East Asia, particularly India. Some publications are based on funded research, including from prestigious funding organizations. To what extent funders know that their funding, often based on taxpayer revenues, is being used towards publications in potentially illegitimate journals is unknown.

S-12

Predatory journals and research in developing countries

P. Clark
The Lancet, London, United Kingdom

Objectives: The goals of this talk are to understand where and why we have a predatory journal problem, identify what drives the problem, and discuss who or what has responsibility for dealing with it.
Methods: Based upon 13+ years of editorial experience at general medical and global health journals in the UK and South Asia, along with an audit of publications at a large public health research organisation, the lessons learned, challenges and contradictions, and proposed solutions for the predatory journal problem will be discussed.
Results and Conclusion: While the predatory journal problem is global, it disproportionately affects low- and middle-income country (LMIC) researchers who experience increasingly heavy pressure to publish but have lower levels of publication literacy, training, and support. LMIC institutions and funders appear not to be holding their researchers to account. The global evidence base for health policy and practice is distorted by predatory journals, making the problem everyone's responsibility. Few responsible bodies are as yet taking any action.

S-13

OST Action New Frontiers of Peer Review (PEERE) - Many shades of journal publishing: what colour is peer review in a predatory journal?

J.S. Stojanovski
University of Zadar / Ruder Boškovic Institute, Zagreb, Croatia

Objective: In this study, scholarly publishing environment and different journal publishing models will be analyzed in order to determine the reasons of appearance, characteristics and a way for the abolition of so-called "predatory publishers".
Method: A survey was conducted of important articles, books and other sources pertaining to the business models in scholarly publishing, authors' preferences and "predatory publishers".
Results: Business models vary among publishers, and a majority did a shift from reader-pays to author-pays OA model. High APCs, authors' pressure to publish more and more papers and lack of the transparency of peer-review process has led to the emergence of many publishers with a dubious quality of the editorial process. "Predatory publishers" attracted almost 500.000 papers in 2014.
Authors are faced with ever intense competition to publish in a vast array of journals that employ diverse publishing practices, often without transparent editorial policy and clearly stated business model. They are not familiar with concepts of "traditional academic journals", "prestigious journals", "mega-journals", "high profitable journals", "hybrid journals", "predatory journals", and it is a difficult task for them to select the right journal for submission. Authors tend to value the benefits of OA journals but their career often depends on a number of papers they publish. Although Baell defined 52 characteristics and maintain the list of "predatory publishers", the publishing landscape is far away from being black and white. Many shades of journal publishing make increasingly hard to find out what is a trustworthy journal, and "predatory journals" have found their niche in gray range.
Conclusion: Scholarly publishing fundamentally relies on the integrity of all participants. Transparency of editorial policies, open and valued peer-review, and open access to the research data could solve many present problems. Publishers focused on the evolution of scholarly publishing instead on their profits, could contribute to the advancement of science. In the era where APC will be related to publisher's services, different articles' format, an inclusion of additional multimedia material, interactive features, data mining and text mining tools, and other advantages supported by available technologies, the color of predatory publishers will probably fade away

Symposium: Re-thinking retractions

S-14

Re-thinking retractions: the pros and cons of self-retraction
E. Moylan
BioMed Central, London, United Kingdom

Daniele Fanelli (Stanford University, USA) will introduce his proposal for a system of self-retraction for honest error. Richard Mann (University of Leeds, UK) will give the researchers' viewpoint from his own experience of retraction. Ivan Oransky (Retraction Watch) will highlight the challenges involved. If retraction notices were more explicit, and all parties were transparent, would retractions have less of a stigma? Ginny Barbour (Chair, Committee on Publication Ethics) will give her view from the perspective of COPE's guidance on retractions. Can we go further and could technology solutions now enable better policies: is a more radical re-think of retractions achievable?

Symposium: Reducing research waste, improving integrity

S-15

What are academic institutions doing to reduce waste and increase value in research, and what could they do?

P.M. Bossuyt, D.A. Korevaar

Academic Medical Center - University of Amsterdam, Amsterdam, The Netherlands

Objective: In 2014, The Lancet published a series articles with recommendations on how stakeholders can reduce wastre and increase value in research. A numbr of these were adressed at academic institutions. We assessed the extent to which academic institutions have policies that meet these recommendations.

Methods: Deans and directors of research of the medical schools of the top 100 universities from the Times Higher Education World University Rankings 2013–14 (ordered by clinical, preclinical, and health) were invited to participate in a fi ve-question email survey.

Results: We received complete responses from only 26 of the 100 invited universities. Most of these (n=20) reported they have a policy to register clinical trials in a publicly accessible trial registry and to make full study reports available (n=19), but such policies are rare for protocols (n=5), analytical algorithms (n=5), and raw data (n=5). Two of 26 universities did not have an institutional policy for any of these five elements (table 1). Only five medical schools reported having a policy to make all study protocols publicly available.

Conclusion: Our survey demonstrates that it is possible for academic institutions to have policies for more openness in sharing planned, ongoing, and completed studies, but that the majority of responding universities do not yet have such policies.

S-16

Reducing waste from inappropriate ethics analysis and hyper-regulation of research

I. Chalmers

James Lind Initiative, Oxford, Luxembourg

Ranking forms of scientific misconduct: In a commentary published in *The Lancet* in 2006, Nylenna and Simonsen proposed 'a new approach to the prevention of scientific misconduct', illustrated with a Figure showing a 'slippery slope between honest errors and intentional fraud' (Lancet 2006;367:1882-3). The slope identified 9 forms of error or misconduct, but the ranking of these took no account of the potential of each to cause harm to research participants and patients. There is now abundant evidence that two forms of misconduct, in particular, result in harms to research participants and patients, as well as in waste in research. These result from (i) new research being proposed and done without first assessing systematically what can be known from existing research; and (ii) incomplete and biased reporting of research.

Acquiescence in misconduct by research ethics committees: Despite their brief to protect research participants on behalf of the public, research ethics committees have acquiesced in both these forms of research misconduct. Although their failures in these respects was pointed out over 20 years ago (Savulescu et al. BMJ 1996;313:1390-1393), they have played little or no part in efforts to address these problems. Instead they have acquiesced in or actively promoted hyper-regulation and obstruction of research. The consequence has been that, by delaying or vetoing needed research they have contributed to the avoidable suffering and deaths of millions of people, the vast majority of whom have not participated in research (Chalmers. Int J Pharmaceut Med 2007;21: 395-404).

Conclusions: Research ethics review is a public health intervention intended to protect research participants and the public more generally. Like any other public health intervention, it should be shown to do more good than harm. As things stand, it seems research ethics review seems more likely to be doing harm than good, at least with respect to research assessing the effects of treatments (Salman et al. Lancet 2014;383:27-36).

S-17

What can journals do to improve research reporting?

E. Wager
Sideview, Princes risborough, United Kingdom

Objective: To describe the effects that journal policies can have on the quality of research reporting.
Results: The usefulness and reliability of many areas of research is compromised by incomplete reporting. This has been especially well documented in medicine but also shown in a range of disciplines. Journal policies can encourage more effective reporting. These include requirements to register trials or experiments, or publish protocols at the start of the study. Review of the protocol alongside a manuscript and use of reporting guideline checklists may also help. Tools to improve adherence to medical reporting guidelines have been developed. Requirements to share data or provide direct links from data to figures and better linkage (e.g. of protocols and full articles) are also promising. New dissemination platforms that increase the efficiency (and reduce the burden) of publication may also contribute to improved reporting.
Conclusion: While journals may help encourage more effective reporting, problems with weak study design and inappropriate conduct or analysis must be addressed at an earlier stage.

S-18

The UK NIHR's 'Adding Value in Research' program: lessons from 6 years of improvement

M. Westmore
National Institute for Health Research Evaluation, SOUTHAMPTON, United Kingdom

Objective: To add value and reduce avoidable waste in research through a major funder's policies and procedures.
Method: The UK' National Institute for Health Research is funded by the UK Departments of Health to improve the health and wealth of the nation through research. We have both a passion for ensuring research makes a difference to society and a responsibility to use public funds well.
We have developed a way of considering what we, and those we work with do, how we do it, and what difference it makes to the overall relevance and quality of research. This is called the NIHR Adding Value in Research Framework (http://www.nihr.ac.uk/avir). It sets expectations for both our staff, funded researchers and research institutions.
Results: Everything we do is focussed on the evidence needs of those that benefit from, use, plan, or deliver health, public health or social care services.
We insist on patient, public and health care professional involvement in all stages of the research and research management process.
We commission specific areas of research prioritised by those that benefit from, use, plan, or deliver health, public health or social care services.
We insist all studies are registered in appropriate registries
We insist that a review of what is already known is completed ahead of all new primary research
We insist that studies are well designed to ensure bias is minimised, and that protocols are in the public domain.
We fund a large system of clinical research networks to support efficient and effective study delivery.
We publish final reports in a peer reviewed and edited NIHR Journals Library and fund wider publication in open access journals.
We disseminate findings of research as actionable, accessible, and trustworthy information.
We evaluate the impact of these policies and procedures through business intelligence and an academic programme of Research-on-Research.
Conclusion: Adding Value in Research provides a framework for funders to raise the quality and relevance of applied health research. We have evaluated the impact of this approach and have identified areas working well and areas for improvement.

S-19

The need for research methods and processes to be evidence-based when performing research

H. Lund
University of Southern Denmark, Odense, Denmark

Objective: A systematic search of literature evaluating research authors citation patterns all indicates that authors only refer to a small fraction of all relevant studies, and the one they choose is based upon preferences and strategic considerations. The question is how we as researchers can be evidence based when preparing new research and setting new results in context.

Method: An international network (http://ebrnetwork.org) define "Evidence Based Research" as the ability of researchers to include the preferences and values of the patients and the use of systematic reviews of earlier studies when new research is planned. Further, the network encourages to a more efficient production, updating and dissemination of systematic reviews.

Results: The implications of an evidence based research approach for researchers, funding agencies, research regulators, ethic committees, editors and reviewers, educators and patients will be presented. The achievement of a more efficient production and updating of systematic reviews has also implications for systematic review specialists, information specialists and librarians, information technologists, and programmers, and will also be discussed. A flow chart indicating the tasks and the responsibilities for all involved in evidence based research practice will be presented.

Conclusion: To embark on research when there are no systematic reviews showing that a genuine uncertainty exists, particularly when the research involves people and animals, is unethical, unscientific, and wasteful. Even though it is challenging, the concept of being evidence based when preparing new research and interpreting new results is possible.

S-20

The potential use of text mining and automated tools to monitor & reduce waste and improve integrity

P. Glasziou
Centre for Research in Evidence-Based Practice, Robina,qld, Australia

Objective: Much of the 85% waste in research is preventable by detection of design or reporting problems at an earlier stage. However, the manual workload for such prevention is substantial. Automated tools have the potential to greatly reduce the load, and hence make prevention feasible for authors, institutions, funders, and journals.

Method: A search of automated tools for assisting systematic reviews identified several potential tools; this was supplemented by a search for tools in use assist with detecting publishing or reporting problems.

Results: Few tools appear to be used routinely to assist authors or editors with identifying problems. *TrialsTracker* estimates the proportion of unreported trials registered on ClinicalTrials.gov, and ranks the rates of major trial sponsors. *StatsCheck* detects a limited number of statistical problems in papers. An analysis of 30,000 published papers found problems in 13%, but can now be used before submission. *Penelope* , developed at the EQUATOR centre for reporting guidelines, will check a research manuscript for statistical problems and for several reporting. *SciDetect* automatically checks for fake scientific papers, which causes a small proportion of retractions. However, a range of other software is available that are not currently used for detecting problems. For example, *RobotReviewer* can reliably extract the Risk of Bias assessment of clinical trials reports, but is currently only used retrospectively by systematic reviewers; *RevManHAL* can write appropriate results text for systematic reviews based on extracted data; and *Retractobot* is being developed to alert authors when papers they have cited have been retracted.

Conclusions: Though text mining and automated tools have considerable potential to assist with reducing waste in research, few are currently being used and relevant software has not been specifically adapted for that purpose. Given the currently estimated $170 Billion current research waste, the development, evaluation, and uptake of such tools should be a funding priority.

Symposium: Being more scientific about scientific integrity

S-21

The Value of a Comparative Benchmarking Database for Research Integrity Climates

C.K. Gunsalus[1], R. Thrush[2], C. Martinson[3]
[1]University of Illinois, Urbana, U.S.A.
[2]University of Arkansas for Medical Sciences, Little rock, ar, U.S.A.
[3]HealthPartners Institute, Bloomington, mn, U.S.A.

Objective: The goal of this session is to provide an engaging forum for focused interactive discussion about the value of a comparative benchmarking database containing empirical data across a number of research institutions.
Methods: The SOURCE is the only validated instrument specifically designed to measure the climate of research integrity in academic organizations. As the SOURCE results are correlated with individuals' self-reported research-related behaviors, the comparative database benchmarking across institutions allows decision-makers to respond with confidence to evidence of empirical data illuminating research integrity environments.
Results: Attendees will have the opportunity to explore the elements of comparative, benchmarked data across research institutions allowing a more scientific approach to assessing, understanding, and improving institutional research integrity.
Conclusions: This session will provide an excellent venue for building community understanding of the interactive features of the benchmarking tool and database.

S-22

Main Outcomes of a Randomized Controlled Trial to Test Reporting and Feedback to Foster Research Integrity Climates in the U.S. Veterans Affairs Research Service

B. Martinson[1], R. Thrush[2]
[1]HealthPartners Institute, Bloomington, mn, U.S.A.
[2]University of Arkansas for Medical Sciences, Little rock, ar, U.S.A.

Objective: Assessing the integrity of research climates and sharing such information with research leaders may support research best practices. We report here results of a pilot trial testing the effectiveness of a reporting and feedback intervention using the Survey of Organizational Research Climate (SOuRCe).
Method: We randomized 41 Veterans Health Administration (VA) facilities to a phone-based intervention designed to help research leaders understand their survey results (enhanced arm) or to an intervention in which results were simply distributed to research leaders (basic arm). Primary outcomes were 1) whether leaders took action, 2) whether actions taken were consistent with the feedback received, and 3) whether responses differed by receptivity to quality improvement input.
Results: Research leaders from 25 of 42 (59%) VA facilities consented to participate in the study intervention and follow-up, of which fourteen were at facilities randomized to the enhanced arm. We completed follow-up interviews with 21of the 25 leaders (88%), 12 from enhanced arm facilities. The proportion of leaders reporting taking some action in response to the feedback was twice as high in the enhanced arm as in the basic arm (67% vs. 33%, p = .20). Among facilities in the enhanced arm, a higher proportion of actions taken were responsive to the survey results than in the basic arm (42% vs. 22%, p=.64).
Conclusion: Enhanced feedback of survey results appears to be a promising intervention that may increase the likelihood of responsive action to improve organizational climates. Due to the small sample size of this pilot study, even large percentage-point differences between study arms are not statistically distinguishable. This hypothesis should be tested in a larger trial.
NOTE: Manuscript under review at time of this submission at American Journal of Bioethics – Empirical Bioethics.

S-23

Academic Research Culture in Amsterdam: study design
L. Bouter, J. Tijdink
VU University Medical Center, Amsterdam, The Netherlands

Objective: Ensuring research integrity should be one of the key responsibilities of universities and university medical centers. Traditionally, institutions have focused on codes of conducts, procedures for handling allegations and courses on responsible conduct of research. Recently the importance of fostering a culture of research integrity receives more attention. The aim of our project is to explore and clarify the most salient aspects of the research culture in the four academic institutions in Amsterdam and to identify promising ways to promote responsible research practices. Special attention will be given to differences between academic ranks and disciplinary fields.
Methods: We will assess the salient aspects of research culture by a web-based survey among all active researchers (N > 5000) using the Survey of Organizational Research Climate. The level of perceived publication pressure will be determined with the Publication Pressure Questionnaire. We will also explore the perceived frequency of occurrence of 60 research misbehavior items, what their impact is on validity of study findings and explore what the knowledge accumulation might be if they occur, and how these misbehaviors can be prevented. Departing from the survey results we will determine with focus group interviews what the perceived barriers for responsible conduct of research are. Also the thoughts and perceptions of scientists on the preventability of research misbehaviors will be explored. As are the solutions and interventions believed to be most effective. Subsequently we will design and try out two pilot interventions that are based on the knowledge gathered in the web-based survey and the focus group interviews: 1) regular moral case deliberation sessions in research groups, and 2) a training program for novice mentors of PhD students.
Results: No data are available yet.
Conclusion: The design of the study will be presented, including the considerations that guided its development and the issues encountered while preparing its execution. Additionally the envisioned feedback of the findings to the participants and their institutions will be described.

S-24

Exploring Cross-Cultural Similarities, Differences and Collaborative Interests in Measuring Organizational Climate for Research Integrity
R. Thrush[1], Heitman[2], C. Martinson[1]
[1]University of Arkansas for Medical Sciences, Little rock, U.S.A.
[2]University of Texas Southwestern, Dallas, U.S.A.

Objective: The goal of this session is to provide an engaging forum for focused interactive discussion about cross-cultural similarities and differences in key concepts relevant to assessing organizational research climates.
Methods: Due to differences in cultural backgrounds and structures of the scientific enterprise across various countries, as well as political structures and how governments interface with the science system, it is important to ensure the relevance, transferability and interpretability of key research integrity climate constructs and terms that have been previously used to measure the organizational climate for research integrity. International interest, opportunities and perceived resource needs for establishing an interest group on this topic will also be explored.
Results: Attendees will have the opportunity to provide their insights on these topics via focused interactive discussion led by the presenters.
Conclusions: This session will provide an excellent venue for building community around international issues and interests in the assessment of organizational research integrity climate.

Symposium: Assuring responsible conduct in researchers' day-to-day work

S-25

Thinking outside the box of research integrity

L. Knowles

University of Alberta, Canada, Newton, U.S.A.

Enhancing understanding of research integrity at the individual and institutional level is a key endeavor of scientists and regulators alike. While focus on eliminating fabrication, falsification and plagiarism is central to research integrity and responsible science, it is worth thinking broadly about the mandates and effects of research integrity.
<p/>In this presentation I will examine wider issues of research integrity including cases involving human subjects research using employees in industry, cultural challenges in global research initiatives, retrospective analysis of clinical trial data and conflicts of interest. I will examine what responsible science means to the public and how that adds further obligations on individual researchers.
<p/>In an effort to deepen the discussion of research integrity, I will explore broader implications of responsible scientific conduct including cases in which lapses in scientific integrity bolster the notion that research results can be manipulated to serve a particular end. I will look at downstream effects of fabrication, falsification and plagiarism in an increasingly fractured civil society in which science is increasingly co-opted for idealogical purposes.
<p/>Notions about integrity in communication of scientific results apply beyond the scientific publication itself; for example, in the way results are communicated to the public. Responsibilities of researchers and science communicators to assure the wide and useful distribution of scientific information will be discussed.

S-26

From the individual to the collective responsibility on research integrity: a view from the Director's office

C.E. Sunkel

University of Porto, Porto, Portugal

Research integrity has in recent years become a major subject of debate, discussions and generally is a major concern in virtually all areas of science; especially, it seems, in the life and health sciences. Problems in responsible conduct of research at both the individual and institutional levels have become an unfortunate and regular side product of experimentation which has raised many questions that go from the mere definition of what "responsibility" and "integrity" are, the detection irresponsible practices, and the individual and institutional procedures to follow once detected and the resulting outcome.
The step rise in irresponsible and very damaging practices can be attributed to some extent to the massification of science in recent years, but it also has to be viewed in terms of the highly competitive nature of the scientific processes that have marked career prospects, ego satisfaction and in many instances merely being able to hold on to a job. In this presentation I would like to discuss these issues from the point of view of a research group leader that over the last few years has become an institute director that now has to cope with a delicate balancing act of ensuring the scientific validity of the work done in-house with the increasing mobility of researchers that bring with them a past that might not fully conform to expected and accepted scientific practices.

S-27

Transparent Publishing, Preprints & Open Science: the EMBO Press paradigm

J. Pulverer
EMBO, Heidelberg, Germany

<p/>The biosciences are witnessing a rapid growth and diversification of research. Scientific progress depends on efficient mechanisms to select, quality control, archive, share and find reliable and reproducible research. The research paper remains the predominant mode of sharing peer-reviewed research findings, and a subset of scientific journals play important roles also as a proxy for quality and impact in research assessment. I will discuss how the editorial and peer review process at highly selective journals can be reformed to assess both the interest of the claims made by a researcher and the reliability, reproducibility and integrity of the experimental data. EMBO Press has instituted a research integrity assessment process that runs in parallel to peer review. A clear process of engagement with authors and institutions ensures interactions between all stakeholders and aims to prevent mistakes from entering the literature without inadvertently aiding and abetting misconduct. I will discuss the challenges this poses in terms of resourcing and scalability.

I will describe new concepts in biomedical sciences publishing including figure panel authorship, links to confirmatory data, partial retractions and versioning, with the intent of receiving feedback on these ideas from the audience. I will also discuss forward looking policies and publishing modalities that facilitate sharing of research data with minimal delay and maximal transparency, focussing on EMBO *Source Data* and Preprint servers.

In times of limited funding and a metrics centric research assessment process, the pressures to publish in a subset of journals can increase dramatically. I will discuss the challenges this poses to the publication process in the context of reproducibility and scientific integrity and focus on the responsibilities of the different stakeholders in terms of education, quality control, reporting and sanctions.

Symposium: Transparency & accountability during and after misconduct investigations

S-28

Challenges facing institutions in liaising with journals on research integrity cases

P. Taylor

RMIT University, MELBOURNE, Australia

Background: Research institutions are responsible for investigating cases of suspected research and publication misconduct. Cases of proven misconduct may require retractions and journals may also request information about on-going investigations. However, institutions are constrained by local legislation on data protection and employee protection, and these may prevent information sharing. Nevertheless, we have obligations to work together on these sometimes sensitive and difficult matters to ensure the integrity of the research record. What does working together look like? What do we need to understand better about our individual obligations as journals/publishers and institutions?

Results: Institutions have concerns about:

- journals that do not respond appropriately to investigated cases of proven misconduct (e.g. not publishing a retraction)
- journals alerting researchers to concerns about data fabrication or falsification which may allow destruction of evidence or hamper institutional investigations
- journals publishing an "Expression of Concern" during a lengthy or complex investigation
- journals failing to contact institutions when they have information about possible misconduct
- journals refusing to share information (e.g. peer review comments) which might be relevant to an investigation

S-29

Challenges facing journals in liaising with institutions on research integrity cases

C. Graf

COPE, Committee on Publication Ethics, and Wiley, Oxford, United Kingdom

Objective: The objective of this presentation is to highlight the challenges that journals face when liaising with institutions about research integrity and misconduct investigations.

The Committee on Publication Ethics (COPE) published guidance on cooperation between research institutions and journals on research integrity cases in 2012 (available at http://publicationethics.org/files/Research_institutions_guidelines_final_0_0.pdf).

Journal editors and publishers continue to experience challenges and report a variety of responses to requests for information from institutions about misconduct investigations.

Method: Discussion between representatives of journals and institutions at an expert meeting convened in Heidelberg in July 2016.

Results: Difficulties faced by journals include:

- institutions that do not respond to requests to investigate cases of suspected misconduct
- difficulty identifying the correct person (or department) to liaise with in an institution
- unwillingness to share information about completed investigations due to legal concerns, data protection issues or employee rights
- requests for retractions without sufficient details of the reasons for retraction or confirmation that an appropriate investigation has taken place
- authors challenging the findings of institutional investigations
- differences of opinions among authors about whether a publication should be retracted

Conclusion: New or enhanced practices at journals and institutions designed to address these challenges may improve collaboration between journals and institutions, and thus may improve their ability to address and resolve research integrity cases together.

Note: This submission is linked with 2 submissions from Liz Wager and Paul Taylor, originally submitted as 1 panel session. These 3 submissions should be considered together and - if accepted - should be placed consecutively in the programme (Paul Taylor first, Chris Graf second, Liz Wager third)

S-30

Cooperation & Liaison between Universities & Editors (CLUE)

E. Wager[1], S. Kleinert[2]
[1]Sideview, Princes risborough, United Kingdom
[2]The Lancet, London, United Kingdom

Objective: To stimulate debate and develop proposals on further guidelines to encourage cooperation and liaison between research institutions and journals over cases of suspected or proven research and publication misconduct.
Method: The Committee on Publication Ethics (COPE) published guidelines on this topic in 2012 based on cases presented to COPE and discussion with editors and universities (available at http://publicationethics.org/files/Research_institutions_guidelines_final_0_0.pdf). However, both institutions and journals continued to report difficulties and requested further guidance. Specific challenges arising when institutions and journals need to cooperate and share information over research integrity cases were discussed at WCRI in Montreal (2013). These questions were used to inform an expert meeting in Heidelberg in July 2016. Guidance from the Heidelberg CLUE meeting will be available for discussion and comment at WCRI in 2017.
Results: The CLUE recommendations will be presented.

Symposium: Methodology for evaluating evidence for infringements of scientific integrity

S-31

Detecting data anomalies on the basis of summary statistics

C.H.J. Hartgerink, M.A.L.M. van Assen, J.M. Wicherts
Tilburg University, Tilburg, The Netherlands

Objective: Despite initiatives to increase data sharing, raw data underlying research articles are frequently unavailable (some even argue against it). Consequently, statistical methods to detect data anomalies in raw data are conditional on actually retrieving those raw data. We investigate the performance of methods to detect data anomalies due to data fabrication based solely on summary results typically reported in empirical research articles.
Method: We tested the performance of two statistical methods in 36 genuine- and 39 fabricated datasets on the anchoring effect (https://osf.io/b24pq). We inspected the variation in variances in independent conditions and anomalous amounts of high p-values in nonsignificant results. Considering we hardly know how researchers fabricate experimental data, we asked actual researchers to fabricate data for experimental studies instead of simulating datasets.
Results: We noticed that, as a group, fabricated nonsignificant effect sizes resembled genuine nonsignificant effects rather well. For fabricated significant effects, fabricators exaggerated effect sizes drastically (13/39 had r>.9; these were also the largest effect sizes across the board). Upon analyzing the datasets individually for data fabrication, we refined the variance of variances method by altering the assumption from one underlying population variance across all groups to condition-specific variances. This greatly improved the performance of this method (AUC = .42 before, .77 after). Detecting data anomalies in nonsignificant results, based on excessive amounts of high p-values, performed barely better than chance (AUC = .52 and .53 for two different nonsignificant effects).
Conclusion: The results of this study on detecting data anomalies indicates researchers might be better at fabricating nonsignificant effects than fabricating significant effects. The variation of variances method seems fairly good, whereas analyzing high p-values performs at chance level. Moreover, large effect sizes (r>.9) seem like an easy first step in detecting data anomalies in research articles.

S-32

Benford's law and other methods of fraud detection

A.D. Diekmann
ETH, Zurich, Switzerland

Digits generated by the measurement of natural and social processes often follow a logarithmic distribution. This regularity was originally discovered by Newcomb (1881) and rediscovered by Benford (1938). The Newcomb-Benford law was applied in accounting to detect fabricated or falsified data. Also, the method was and is still applied to explore doubtful data in empirical social research (interview falsification), data from statistical bureaus and possibly manipulated data of scientific research. In this talk I will give a critical overview on applications of the method and I will compare it with alternative methods of fraud detection.

S-33

Evaluating evidence for low data veracity from reported summary measures: a case study

C.F.W. Peeters[1], C.A.J. Klaassen[2], M.A. van de Wiel[1]
[1]VU University medical center, Amsterdam, The Netherlands
[2]Korteweg-de Vries Institute for Mathematics, University of Amsterdam, Amsterdam, The Netherlands

Objective: Following allegations of misconduct, the Rector of the University of Amsterdam (UvA) invited the authors to investigate all papers by social psychologist dr. X that were published under UvA affiliation. The objective of the investigation was to shed light on the status of these publications in terms of judgments on their veracity.

Method: A whistleblower initially pointed, for certain publications by X, attention to the linearity of the trend across experimental conditions in one-way ANOVA-type designs with 3 factor levels (a design-staple in many papers by X). The effects seemed to deviate very little from perfect linearity across studies. Two methods (delta F-testing paired with Fisher's method and a tailored evidential value analysis) were used to – given reported standard deviations and sample sizes – quantify excessive closeness of reported means to perfect linearity under the assumption of perfect linearity in the population. Fifteen publications could be investigated with these methods.

Results: Strong conflicts between observed linearity in the patterns and the inherent randomness real outcomes should exhibit are indicative of low veracity of the reported data. Of the 15 investigated publications, 8 show strong evidence for low scientific veracity, 3 show inconclusive evidence for low scientific veracity, and 4 show no evidence for low scientific veracity.

Conclusion: Multiple investigated publications contain anomalous data patterns. The cumulative evidence across these publications renders the coincidence hypothesis very unlikely.

Symposium: Accountability and transparency for research integrity via country report cards

S-34

Research integrity report card for the UK

E. Wager

Sideview, Princes risborough, United Kingdom

Objective: The infrastructures and legal frameworks affecting research integrity are known to vary between countries. Research integrity report cards aim to provide information on a number of countries in a standard format. Such information should help researchers understand the effects of different systems and also facilitate comparisons between countries. Although it is notoriously difficult to estimate the frequency of research misconduct, due to the use of different definitions and varying levels of transparency, these report cards are a first step towards understanding the research integrity environment in a particular country and should facilitate further research.
Method: Published data on factors relevant to research integrity in the UK (such as number of researchers, sources of research financing, existence of national bodies, codes and laws relating to research integrity) will be collected using the proposed report card format.
Results: Will be presented.

S-35

Accountability and Transparency for Research Integrity via Country Report Cards

Z. Hammatt

Z Consulting, Bethesda, md, U.S.A.

To build upon the focus session at the 4th World Conference on Research Integrity and complement report cards from the UK, Norway and Croatia, this presentation will offer a report card on research integrity from the United States. The presentation will offer an example of a report card designed to explore the national role in fostering and monitoring of a research environment that is conducive to research integrity. By discussing aspects related to structure, process and outcomes, this report card seeks to offer potentially measurable information. For example, compared to other countries, the United States has the largest budget for research and development ($69 billion; nondefense, 2016) and about 54,000 research doctorate degrees were awarded by U.S. institutions in 2014 (NSF: 2015). The U.S. Office of Scientific Integrity and Review (predecessor of the Office of Research Integrity [ORI]) was created in 1989 to formalize the process of reviewing and acting upon misconduct allegations in accordance with the 1989 Public Health Service (PHS) Misconduct Regulation (revised in 2005). Approximately 5,000 institutions, ~400 of which are non-U.S., apply for or receive PHS funds and are thus required to comply with the U.S. misconduct regulation, both in the handling of allegations of falsification, fabrication and plagiarism, and in promoting the responsible conduct of research. Other U.S. agencies, including the National Science Foundation and the Veteran's Administration, use similar definitions but follow diverse processes. These and other country indicators will be offered in the context of the broader Amsterdam Agenda designed to increase accountability and transparency on a global scale.

S-36

Country Report Card on Research Integrity: Norway - A Broad Approach to Research Integrity

A.B. Birkeland, J.S. Severinsen, E.E. Engh

The Norwegian National Research Ethics Committees, Oslo, Norway

Objective: Following an initiative at the WCRI 2015 in Rio, the Norwegian National Research Ethics Committees have prepared a Country Report Card describing the Norwegian system on research integrity. Our aim has been a report card that is informative for readers without previous knowledge of the Norwegian system on research integrity, as well as for researchers based in Norway and the Norwegian community in a broad sense (officials, media and the general public). In addition, the report card should be a tool for benchmarking in order to encourage best practice.

Methods: There are no existing templates for a report card on research integrity, so our work has focused on developing an informative format. The minutes from the session in Rio have been our starting point with three main themes: system, process and outcomes. In the report card, we have mainly combined existing information and key figures and have worked closely with designers in order to visualise the information.

Results: The theme "outcomes" has been the most challenging part of the report card. However, we also consider it the most important part in order to measure development in the field of research integrity and making it a tool for benchmarking. The challenges with defining purposeful "outcomes" reflect the challenges met in the session on WCRI 2015 in Rio. We decided to present our products (i.e. guidelines, meetings, books, recommendations etc.) and their impacts as the main part of our "outcomes". In addition, we have worked on identifying and presenting the challenges in the Norwegian system on research integrity.

The report card will be available on several platforms, of which the most important will be a future digital version on the Internet. This could potentially be part of an international website with report cards from other countries, thus strengthening transparency and accountability in the global field of research integrity.

Conclusion: Visualising the information on the report card is a key part of the process. Defining and presenting "outcomes" for the work on research integrity is challenging. It remains to be seen how the report card is used.

S-37

Accountability and Transparency for Research Integrity via Country Report Cards - Case study of Croatia

A. Marušic

University of Split School of Medicine, Split, Croatia

I will present the report card on the state of research integrity in Croatia, using the country report card developed at the 4th World Conference on Research Integrity in 2015. The card includes the information on structure, process and outcomes for research integrity, together with relevant data on the state of research framework in a country, such as funding for research, success rates in obtaining research grants, funding for research on research integrity. Croatia has a small research community and one of the smallest budget for research (less than 0.8% of the BDP) but is one of rare European countries that has a national research integrity body with a legal basis for its work. However, the implementation of legal provision for its work and research integrity at the research and higher institutions is not fully functional. While research integrity is a part of accreditation of research and higher education institutions, there is little organizational structure for research integrity at individual institutions.

Research integrity country report for Croatia will be used for comparison with two other country report cards in this pilot exercise, UK and USA, in order to discuss the broader issues in transparency and accountability of research on a global scale.

Symposium: When Research Misconduct Becomes Unlawful

S-38

Introduction to Research Integrity and the Law: Finding potential grant double-dippers

H. Garner

Primary Care Research Network and the Center for Bioinformatics and Genetics, Blacksburg, U.S.A.

Recently we have seen Research Integrity cases move from institutional and governmental investigatory and disciplinary processes to the more formalized legal process, with potentially much more severe consequences. In both cases, these processes vary significantly across the world, so it is important to obtain a world-perspective, as is presented in this session. Further, to illustrate the potential magnitude of the issue, Dr. Garner will discuss estimates of scientific fraud in the US, which would potentially fall into the legal realm.

S-39

The unfortunate mingling of ethics and law in cases of scientific integrity

P.M. Kaiser

University of Bergen, Bergen, Norway

Matthias Kaiser will discuss whether (i) providing legal reference points for scientific misconduct (FFP) prevents more comprehensive assessments of unethical behavior in science, and whether (ii) bringing disputes about scientific misconduct to court entails lower ethical standards as normally aimed at. Kaiaser will use concrete cases from experience in integrity committees in Norway. Kaiser is deeply sceptical about mingling the necessary discussions about scientific integrity with bureaucratic discussions about how to enforce, monitor, control and sanction scientific misconduct by legal means.

S-40

Harnessing the Law to Enhance Research Integrity

I. Freckelton Qc

Barrister, Melbourne, Australia

Ian Freckelton will argue that the law is inextricably enmeshed in the processes and consequences of investigation of research misconduct in that actions for unfair dismissal, whistleblower protection and entitlements, defamation, disciplinary penalties, and appeals from decisions about complaints, to name but some examples, all find expression in litigation. The challenge for the law is to provide suitably for procedural fairness and transparency for all involved. In addition, a role for the law is to enable clarity and finality of decision-making, while ensuring that it does so in an informed way which responds proportionately to the conduct found proven and protecting the integrity of the discipline and the institution concerned. He will argue that although instances abound where the law has not accomplished these objectives as well as is desirable, the reality is that law and legal processes play a major role in resolution of accusations of research misconduct. There are positive aspects to this. Amongst them are the potential for authoritative articulation of scholarly values and provision of suitable redress for victims and consequences for those found to have engaged in misconduct that is not just unethical but demonstrably harmful.

S-41

The Parallel Tracks of Legal Accountability for Research Misconduct in the United States

J. Thomas, M. Broughton

Gentry Locke, Roanoke, U.S.A.

John Thomas will outline the three forms of legal accountability related to research misconduct in the United States: (1) criminal liability; (2) civil fraud accountability (e.g. the False Claims Act); and (3) administrative accountability. The past several years have seen these three parallel tracks out of synch, as illustrated in several examples. Thomas will analyze the structural problems with these parallel forms of accountability and how the lack of an integrated approach actually undermines the efficient, transparent, and just handling of research misconduct cases. Thomas and Matt Broughton will also suggest possible ways to better integrate the three tracks and will discuss some of the legal issues faced in research misconduct-based False Claims Act cases.

Poster abstracts

Poster Walk: Research on research 1

PM-001

Diagnostic accuracy meta-analyses in imaging journals: analysis of pooling techniques and their impact on summary estimates of diagnostic accuracy

D.F. Mcinnes[1], A. Mcgrath[1], A. Korevaar[2], M.M. Bossuyt[2]
[1]University of Ottawa/ Ottawa Hospital Research Institute, Ottawa, Canada
[2]Academic Medical Center, Amsterdam, The Netherlands

Purpose: To determine whether systematic reviews of diagnostic accuracy studies published in imaging journals are using recommended methods for meta-analysis, and to evaluate the impact of traditional methods on summary estimates of sensitivity and specificity.

Methods: Medline was searched for published articles containing systematic reviews that included meta-analysis of test accuracy data, limited to imaging journals (Jan 2005 to May 2015). Two reviewers independently extracted study data and classified methods for meta-analysis as traditional (univariate fixed or random effects pooling; summary ROC curve) or recommended (bivariate model; hierarchical summary ROC curve). Use of methods was analyzed for variation over time, by geographical location, subspecialty and journal. Results from reviews using traditional univariate pooling methods were recalculated with a bivariate model.

Results: 300 reviews met the inclusion criteria, of which 39% (118/300) used recommended meta-analysis methods. No change in method used was observed over time (r=0.54, p=0.09); however there was geographic (χ^2 = 15.7, p=0.001), subspecialty (χ^2 = 46.7, p<0.001) and journal (χ^2 = 27.6, p<0.001) heterogeneity. Fifty-one univariate random effects meta-analyses were re-analyzed with the bivariate model; the average change in the summary estimate was -1.4% (p<0.001) for sensitivity and -2.5% (p<0.001) for specificity. The average change in width of the confidence interval was 7.7% (p<0.001) for sensitivity and 9.9% (p=<0.001) for specificity.

Conclusions: Recommended methods for diagnostic accuracy meta-analysis in imaging journals are used in a minority of reviews; this has not significantly changed over time. Traditional (univariate) methods overestimate diagnostic accuracy and provide more narrow confidence intervals than recommended (bivariate) methods.

PM-002

Outcome Reporting Bias in epidemiology studies on phthalates

G.M.H. Swaen
Maastricht University, Maastricht, The Netherlands

Objective: Epidemiology studies on phthalate exposure and health provide inconsistent and confusing results. Our aim was to better understand these studies and to compare their study protocols with the published articles.

Method: We conducted a literature search and selected 158 epidemiology studies on phthalates. We invited the corresponding authors for a short interview on their study and requested a copy of their study protocol.

Results: 30% of the corresponding authors refused participation. Nearly all received protocols lacked sufficient detail for a meaningful comparison with the published article. Authors who published a positive study were three times less likely to provide their study protocol.

Conclusion: This body of literature lacks transparency and is likely to be subject to Outcome Reporting Bias.

PM-003

Positive studies are cited twice as often as negative ones: a meta-analysis of citation bias

B. Duyx[1], M.J.E. Urlings[1], G. Swaen[1], L.M. Bouter[2], M.P. Zeegers[1]
[1]Maastricht University, Maastricht, The Netherlands
[2]VU University Medical Center, Amsterdam, The Netherlands

Objective: Citation bias, the selective citation of previous literature based on its outcome, can distort the evolution of knowledge and has been studied in different fields. In this systematic review we bring together all evidence and quantify the pooled impact for the first time.

Method: An extensive search strategy was developed and applied to the Web of Science Core Collection and Medline.

Results: We identified 48 studies across disciplines, mostly biomedical. Random effects meta-analyses showed that statistically significant studies are cited almost twice as often as non-signficant ones, and, similiarly, that studies supporting a specific hypothesis are cited more than twice as often as non-supportive ones.

Discussion: Positive studies are on average cited two times as often as negative studies. It seems likely that this imbalance threatens the valid evolution of knowledge.

PM-004

Assessment of research waste: an examination considering the study design, surrogate and clinical endpoints in studies of calcium intake and vitamin D supplementation

M.J. Bolland[1], A. Avenell[2], A. Grey[1]
[1]University of Auckland, Auckland, New Zealand
[2]University of Aberdeen, Aberdeen, Scotland

Objective: Research waste is estimated to be very common. Redundant research represents a large cost to society and misappropriates participants' resources and altruism. Assessments of the prevalence and scope of research waste are rare. As an example, we assessed research waste in clinical research on calcium intake and vitamin D.
Method: We examined 404 randomised controlled trials (RCTs) and observational studies of calcium intake (diet or supplements) and bone mineral density (BMD) or fracture, and 548 RCTs of vitamin D supplements, and assessed the proportion of studies that used surrogate or clinical endpoints. For studies with BMD or fracture as an endpoint, we estimated when the 'tipping' point occurred indicating the need for RCTs with fracture as an endpoint, and whether each study published at least 5y after the tipping point was novel, added new clinical knowledge or was research waste.
Results: Observational studies of calcium intake and BMD or fracture outnumbered RCTs by 3.3-4.5 times. For both calcium intake and vitamin D, studies using surrogate endpoints outnumbered studies using clinical endpoints by 1.6-3 times. Of 41 RCT publications of calcium intake and BMD or fracture published at least 5y after the tipping point in 1994, we considered that 19 (46%) lacked novelty, another 13 (32%) added no new clinical knowledge, and 30 (73%) were research waste. Of 204 observational study publications of calcium intake and BMD or fracture, 197 (96%) lacked novelty, another 5 (2%) added no new clinical knowledge, and 202 (99%) were research waste. Of 39 RCTs of vitamin D and BMD or fracture published at least 5y after the tipping point in 1999, 14 (36%) lacked novelty, another 13 (33%) added no new clinical knowledge, and 27 (69%) were research waste.
Conclusions: A high proportion of studies of calcium intake since 2000 (95%) and trials of vitamin D since 2005 (69%) on BMD or fracture represent research waste.

PM-005

Critical evaluation of health research publication activity in Uzbekistan

M.J. Cho, S.V. Saravanan
Center for Development Research (ZEF), Bonn, Germany

Uzbekistan has made diverse efforts to improve its health research system to meet the global standards but still lacks behind in research production. The aim of this study is to identify why such a gap exists and what the current research practice is in Uzbekistan. This study used the Medline bibliographic database PubMed and Web of Science to analyse health research outputs from 1991 to 2015. Based on eligibility criteria total of 321 publications were exported for bibliometric analysis (publication activity, quality, specializations and collaboration rates). More than 43% (140/321) of the publications in the health sector had Uzbek authors as corresponding authors. The research topics published showed typical double burden of diseases profile. International collaboration, however, showed higher collaboration in infectious disease research (67 articles) compared to non-communicable diseases (18 articles). The most productive research producing organization was the Tashkent Medical Academy in both international collaboration and local authorship 14% (44/321 articles). While authors affiliated to Ministry of Health were present in 40 articles of international collaboration, their presence was minimal in articles consisting of only Uzbek authors (9 articles). About 92% (118/127 articles) of the articles authored by only Uzbek authors were published in journals with minimal impact factor (less than one) while international collaboration research had about 50% (98/194 articles) of its articles published in journals with higher impact factor (IF average 1.9). Of 55 journals identified from publications by only Uzbek authors, about 69.1% of the journals indicated that they were peer-reviewed; although not all were specific with their peer review guidelines. Most Uzbek researchers aimed for journals published in Russia (45.5%) along with close regional ties such as Eastern European Countries, Turkey, India, and China. Overall the study revealed considerable growth of publications over the past two decades. However, challenges such as hierarchical administrative issues with research collaboration, English language barrier, and lack of awareness in scientific writing and editing among Uzbek authors still remain. Proper training in research ethics and research communication seem crucial so that Uzbek scholars are aware of the right journals to publish and communicate their findings.

PM-006

European researchers' understanding and experiences of research integrity

M. Kennedy, Z. Deans, R. ter Meulen
University of Bristol, Bristol, United Kingdom

Objective: In order to promote research integrity and develop policies and training for researchers, it is helpful to know how research integrity issues are perceived and experienced in the everyday practices of doing research. Several policy documents (such as the Singapore Statement on Research Integrity and the UK Concordat for UK Universities) have been developed to promote and safeguard integrity in research. However, these policies alone cannot ensure that researchers adopt certain attitudes or behaviours that are favourable to research integrity. It is also important to consider the impact of work culture and practices of individual researchers and, investigate circumstances where integrity may be encouraged or compromised.

PRINTEGER (Promoting Integrity as an Integral Dimension of Excellence in Research), is a European project whose mission is to: "*enhance research integrity by promoting a research culture in which integrity is part and parcel of what it means to do excellent research, not as an external and restrictive control system.*" Part of this project involves a specific task of investigating researchers' understanding and experiences of integrity, including identifying circumstances and developments in their work they think might impact integrity in research.

Method: To address this specific task in the PRINTEGER project, focus groups have been conducted in four countries (UK, Norway, Italy and Estonia) with researchers at different levels of seniority and from different scientific disciplines, as well as research managers and support staff. Topics for discussion included how individuals understand and define integrity and misconduct, the impact of policies and, what issues are identified as salient to integrity in the everyday practice of their work. Thematic analysis is being used to analyse the data.

Results: Preliminary findings from the focus groups will be presented. These findings will eventually contribute to the development of policies and instruments for promoting and supporting research integrity as part of the wider aims of the PRINTEGER project.

PM-007

The National Institute for Health Research Programme in Research on Research

J. Douet
University of Southampton, Southampton, United Kingdom

Objective: To discuss the value and role of the NIHR, Evaluations Trials and Studies Coordinating Centre (NETSCC) Research on Research Programme (RoR) in terms of how it works to assess, evaluate and improve the research management processes, functions and systems as well as the research managed by NETSCC. To highlight a number of completed studies and how these have led to improvements which are being implemented in practice.

Method: An overview of the Research on Research Programme in terms of its development, purpose and objectives will be presented. Reported findings from a collection of RoR studies will be presented. Studies have investigated the percentage for projects publishing, the description of trial interventions in the journal series and the role of pilot and feasibility studies. The results of the projects feedback into the management of research and improve the research management of projects we fund.

Results: Evidence provided by RoR is important. It demonstrates how a major UK funder of health research actively seeks to assess its management, commissioning and dissemination processes to ensure maximum impact and benefit to patients. By evaluating these research management processes, as well as the research we manage, we are also able to maximise the effectiveness and value of health research. So by providing evidence to improve how research is initiated, conducted and reported we are strengthening the evidence base for high quality scientific research.

Conclusions: Work disseminated through RoR not only informs a major UK funder of health research but also the wider research community. Through RoR studies we are able to provide the evidence to suggest new ways of improving the overall quality of funded research but also to what extent these changes will make in practice.

PM-008

Overinterpretation of research findings: evidence of 'spin' in systematic reviews of diagnostic accuracy studies?

D.F. Mcinnes[1], A. Mcgrath[1], N.V. van Es[2], A. Korevaar[2], M.M. Bossuyt[2]
[1]University of Ottawa/ Ottawa Hospital Research Institute, Ottawa, Canada
[2]Academic Medical Center, Amsterdam, The Netherlands

Objective: Using pre-defined and piloted criteria, to formally assess the degree of overinterpretation present in systematic reviews of diagnostic test accuracy.

Methods: Medline was searched through PubMed using the search filter: systematic[sb] AND (sensitivity and specificity[mesh] OR sensitivit*[tw] OR specifit*[tw] OR accur*[tw] or ROC[tw] or AUC[tw] or likelihood[tw]). Searches were restricted to articles published in December 2015 and January 2016

Articles describing a systematic review of diagnostic accuracy studies in humans, and reported on one or more meta-analyses of accuracy estimates, such as sensitivity, specificity, and area under the receiver operator curve (AUC-ROC) were included. Systematic reviews of a test's predictive or prognostic accuracy, and those in languages other than English, were excluded.

A single investigator collected demographic data for each systematic review. Two investigators then independently applied the pre-defined and piloted criteria for assessing overinterpretation to each included systematic review with disagreements resolved by consensus.

The main outcome of the study was to determine the proportion of reviews applying any overinterpretation practice, an actual overinterpretation practice or a potential overinterpretation practice.

Results: All 112 reviews assessed contained at least one overinterpretation practice. 86/112 (77%) of reviews contained an actual overinterpretation practice and 107/112 (96%) contained a potential overinterpretation practice. There was no significant difference among incidence of actual overinterpretation practices by impact factor median split (χ^2 = 0.05, p = 0.82), type of test evaluated (χ^2 = 1.62, p = 0.44) and study design (χ^2 = 0.30, p = 0.58). Similarly, there was no significant difference among incidence of potential overinterpretation practices by impact factor median split (χ^2 = 0, p = 1), type of test evaluated (χ^2 =4.61, p = 0.010) and study design (χ^2 = 1.18, p = 0.28).

Conclusion: The majority of diagnostic accuracy systematic reviews employed an over-interpretation practice. As systematic reviews and meta-analyses are considered a high level of evidence, authors, editors and peer-reviewers should attempt to minimize this phenomenon.

PM-009

Critical care nurses perceptions of clinical research process in intensive care unit

H.I. Karjalainen[1], T. Keränen[2], H. Halkoaho[1], E. Ruokonen[1], A. Pietilä[3], S. Bendel[1]
[1]Kuopio Universtity Hospital, Kuopio, Finland
[2]National Institute for Health and Welfare, Helsinki, Finland
[3]University of Eastern Finland, Kupopio, Finland

Objective: The purpose of this study was to describe critical care nurses perceptions of clinical research process in intensive care unit. Approximately 90 % of informed consents are given by relatives. Need to act fast, high risks of interventions and high clinical burden of ICU staff are also great challenges in ICU research.

Method: Thematic focus-group interviews were conducted among 28 ICU nurses in 9 groups by one researcher. The data was analyzed qualitatively using thematic content analysis.

Results: Nurses mainly perceived clinical studies positively. The nurses stated that their skills to give information about ongoing studies are poor and information about the studies given to them was inadequate and superficial. Nurses recognized many problems as related to the role of the relatives. The nurses were concerned that the consent for research is obtained almost always at the beginning of the ICU care. Most of the nurses had positive attitudes toward participating in situations when informed consent is obtained and they often actively aim to participate in these situations. The find many issues to promote patients and relatives to give informed consent, but also found were hope that the study will benefit the patient, expectations that the study will benefit future patients and that there is no risk of harm to the patient. The nurses saw voluntariness of the participation of patients in clinical research as self-evident. Giving enough time to the patient or relative for decision making was considered to support their autonomy. Inequality in the discussion between a physician/ investigator and patients and/or relatives was an issue that most of the nurses brought out.

Conclusion: In general, nurses have positive attitude toward research. There were also some unmet needs, i.e. communication, role of relatives and training. Due to this study there is need for rethinking of the informed consent process, i.e. who should give the consent and what is a proper situation for obtaining the consent.

PM-010

Mapping the literature on health research reporting practices from LMICs

A.C. Rohwer[1], T. Young[1], E. Wager[2], P. Garner[3]
[1]Stellenbosch University, Cape town, South Africa
[2]Sideview, Princes risborough, United Kingdom
[3]Liverpool School of Tropical Medicine, Liverpool, United Kingdom

Objectives: To map the literature related to research integrity in low-and middle income countries (LMICs) and identify gaps, to describe the factors associated with research integrity and good research reporting practices and to estimate the occurrence of research misconduct in reporting research amongst health researchers in LMICs.

Methods: We conducted a systematic review of published and unpublished studies of research reporting practices (e.g. authorship, plagiarism, duplicate publication) amongst health researchers in LMICs. We included studies with quantitative and qualitative data, as well as case studies that reported on the occurrence of research misconduct and factors associated with research integrity. We searched MEDLINE, Scopus, CINHAL, ERIC, PsychInfo, Web of Science, LILACS and Africa-Wide in June 2015, and contacted experts in the field for other relevant studies. There were no limitations on language. Study selection, data extraction and quality assessment was done by one author and checked by another. We contacted authors in case of missing data. We narratively synthesised and summarised results in table format.

Results: The search yielded 6003 citations after removal of duplicates. After exclusion of irrelevant titles and abstracts, we screened 113 full-texts and included 33 studies comprising 20 surveys, 10 document analyses, 2 qualitative studies and 1 case study. Studies assessed authorship issues (n=9), plagiarism (n=9), conflict of interest (n=4), duplicate publication (n=2) and research misconduct in general (n=9) and were conducted in Asia (n=11), Middle East (n=10), Sub-Saharan Africa (n=4), Latin America (n=6), and across more than one region (n=2). Most studies had a small sample size and were poorly reported. Data extraction is ongoing and complete results will be presented at the WCRI.

Conclusions: To our knowledge this is the first attempt to comprehensively map and synthesise studies on research integrity conducted in LMICs in a systematic way. Taking stock of existing studies by conducting a thorough search of various databases is important in order to provide direction for future research.

Poster Walk: RCR Education 1

PM-021

Learners' Preference of RCR Learning Modes: Online vs. Face-to-Face

H.C. Wei, C.C. Chou, C.L. Kao

Institute of Education, National Chiao Tung University, Hsinchu, Taiwan

Objective: While online RCR training courses, in addition to traditional face-to-face classes, are increasingly accepted and taken by learners and researchers worldwide, this study focused on learners' preferences for specific learning modes. By understanding learners' preferred mode of learning, RCR educators and training developers could design better courses that are more effective for current learners.

Method: The participants consisted of 191 graduates who were enrolled in a fully asynchronous online RCR course supported by the Taiwan Ministry of Education. A questionnaire called the Learner Preference of Learning Mode for RCR (LPoLM-RCR) was used for this study. The questionnaire consisted of two main sections. The first section investigated respondents' preferred learning mode (online or face-to-face). An exploratory factor analysis (EFA) involved a three-factor structure: self-control, human interaction, and information access. The second section explored learners' decisions to choose an online course or a face-to-face course.

Results: The results indicated that most learners rated the online course as having a higher degree of self-control and information access as measured by the LPoLM-RCR. However, the participating learners rated the traditional face-to-face course as having a higher degree of human interaction. Considering these three studied dimensions, the results revealed that most learners preferred the online RCR course if they could decide the mode for themselves. Similarly, most learners recommended that their schoolmates choose the online RCR course if their schoolmates could decide the mode for themselves. Logistic regression analysis showed that the self-control factor, compared to human interaction and information access, was a significant predictor of learners' preference to take an online RCR course and learners' recommendation to schoolmates to take an online RCR course. These findings indicated that the level of self-control over the learning content and progress led to the learners' decision to take the RCR course in different delivery modes.

Conclusion: In general, most learners preferred the online version of the RCR training course to the face-to-face version, and the self-control factor contributed to this preference. These findings may confirm and contribute to RCR designers' resolve to develop a digital RCR training course for learners and researchers in Taiwanese higher education.

PM-022

An online RCR course in Peru

R. Lescano[1], S. Egoavil[2], J. md Garcia[2], S. Mallma[2], G. phd Lescano[2]
[1]NAMRU-6, Callao, Peru
[2]Universidad Peruana Cayetano Heredia, Lima, Peru

Responsible Conduct of Research (RCR) is a widely accepted set of ethical and professional standards to ensure scientific rigor, transparency and public trust. Even though, RCR courses have been available in the developed world for over 10 years, the situation is not the same in developing countries.

Objective: Funded with a US NIH Supplemental grant to a research training grant awarded to Universidad Peruana Cayetano Heredia (UPCH), a team of Peruvian professionals from the prestigious UPCH and the U.S. Naval Medical Research Unit No. 6 drafted the modules and in July, 2013, launched the course platform entitled Conducta Responsable en la Investigacion, at the UPCH site, http://www.cri.andeanquipu.org/index.php/es/. The objective was to improve the skills of Spanish-speaking researchers to identify, detect, and avoid unethical practices and elevate Peruvian scientific standards to international requirements in the field of research integrity. This is the first online RCR course available to the Spanish-speaking community for free and with a certification.

Methods: This course includes seven (7) modules: Introduction to RCR, Research Misconduct, Plagiarism, Responsible Authorships, Responsible Publications, Conflicts of Interest, and Mentoring. Modules are presented using introductory cases, case discussion and case evaluations. Some also involved videotaped interviews of Peruvian researchers' experiences. Two new modules will be added shortly: Human Subjects Protection and Animal Welfare. The course is entirely in Spanish and offers a certificate to those who obtain an 80% response rate. This course and certificate are free of charge and available to anyone who wishes to log in. Several face-to-face courses are currently offered in an effort to complement the online course and allow for live discussions.

Results: To-date, over 15,000 have accessed the course from throughout the Americas. The most frequently checked modules have been Introduction, Research Misconduct and Plagiarism.

Conclusion: This course has been adopted as a mandatory course by several research institutions in Peru. In June 2016, the Peruvian National Science Foundation (CONCYTEC) adopted the course to use mandatorily for their registered researchers and grantees. A project to assess the impact of this course among Peruvian investigators is currently being planned.

PM-023

Introducing the Short Course on RCR Instruction: A Project of the U.S. Office of Research Integrity
K.D. Pimple
Indiana University Bloomington, Bloomington, U.S.A.

Objective: To describe the Short Course on RCR Instruction and its future.
Method: N/A
Results: N/A
Conclusion: ORI will hold a 1½ day train-the-trainer event in April, 2017. Sessions will cover standard and emerging RCR subjects as well as effective pedagogy and RCRI evaluation and assessment. The author is the logistics director; Kathryn Partin, ORI Director, and a high-caliber planning committee contributed.

PM-024

How to Clarify What Research Practices Are Acceptable
P. Sun
Siyidi International Education Consulting and Service Co. Ltd., Beijing, China

Objective: Many codes of research conduct are commonly accepted, such as those developed by COPE, ICMJE and some international organizations, while there are confusions or controversies over certain research practices, e.g. self-plagiarism, the appropriateness of re-using parts of one's thesis/dissertation in his/her journal articles or vice versa, and the legitimacy of using certain publication services. So it is important to clarify the accepted conduct, to enable the researchers to know and follow the same norms, and understand what are the exceptions in certain circumstances. The presentation will explore the potential ways to make clear the codes and guidelines.
Method (This is an ongoing research): The research will: (1) To identify waht behaviors are vague or controversial in academic norms, based on the practices in China; (2) To analyze the causes of confusions and the possible disputes behind them; (3) To lean that how the controversial points were addressed in the development of codes or guidelines from those involved in drafting or approving processes; and (4) To explore the possibility of solving the problems with existing mechanism, i.e. a certain authority approves the draft norms developed by a panel or a working group.
(Prospective) Results: Some codes of research conduct can be clarified by accepting internationally recognized norms, or through experts' deliberations, explanations and discussions, while some others may need further debates or input from outside, as some elements beyond academic norms can be involved, e.g. fo rthe purpose of stopping the spread of certain misconduct. The differences in norms can be classified as major ones and minor ones, and should be dealt with differently.
(Prospective) Conclusion: It is necessary to coordinate the development of commonly accepted norms, e.g. by setting up several international advisory bodies representing scientists, journal editors, research administrators, etc. respectively, to discuss common or major concerns raised by people who develop codes of conduct, etc. by means of offering authentic advices, background information or position statements.

PM-025

Medical humanities in undergraduate medical education: time and place to deal with scientific integrity.
L. Ribeiro, M.A.F. Ferreira
Faculty of Medicine of the University of Porto, Porto, Portugal

Objective: This presentation will showcase how scientific integrity was incorporated into a medical humanities (MH) course directed towards freshman medical students enrolled in the Faculty of Medicine of the University of Porto (FMUP), the way students addressed a challenging group work on this topic, as their perceptions on scientific integrity training.
Method: A MH course with a component on scientific integrity was delivered (1 semester) to freshman medical students, 2015/2016 academic year. Assessment included a group work on an intervention program approaching, among other suitable choices, "Ethics in research", "Academic integrity" and "Fraud". A questionnaire was applied to assess perceptions about scientific integrity training.
Results: A total of 281 students participated in this study. Both a quantitative and qualitative analysis will be performed to evaluate the results obtained with the intervention program, while a differential analysis in the sample of students who developed the work group on scientific research will be further explored. Preliminary results show that these programs elaborated by students during the group work were directed towards different audiences and involved the organization of conferences, seminars, courses, web platforms, videos, blogs and the preparation of flyers and other educational materials. Preliminary results on the perceptions of freshman medical students about scientific integrity and responsible conduct of research show that the majority of them recognize the importance of this training, the need to be delivered at an early phase of medical education, as well as to be extended throughout the medical course.
Conclusion: The scientific integrity approach in MH at an early stage of medical education may contribute to ethics reflection. The small number of students who choose scientific integrity topics is a limitation of this work that can be overcome by data provided by the 2016/2017 freshman students who attend this course.

PM-026

Mentorship, Research Misconduct, and the U.S. Office of Research Integrity (ORI) Educational Resources
R.T. Tamot[1], Z.H. Hammatt[2]
[1]U.S. Office of Research Integrity, Rockville, U.S.A.
[2]Z Consulting, Bethesda, md, U.S.A.

In their analysis of the role of the mentor in closed ORI cases of trainee research misconduct, Wright et al. (2008) reported that almost three quarters of the mentors had not reviewed the source data and two thirds had not set standards. An ongoing intramural research project of closed ORI case files--where the trainee was found responsible for misconduct either by the ORI or his/her institution and that contained admissions of research misconduct by the trainee--confirms this conclusion. It also revealed that mentors often demand unreasonable volume of or certain data from trainees, and sometimes, deal with them in heartless and inconsiderate ways. Our data strongly suggest that rather than being a source of emotional and psychological support, inspiration, and role models, mentors, at times, could also be a source of tension and immense distress for junior scientists and play a contributory role in the research misconduct committed by junior scientists. To address factors that contribute to research misconduct, ORI develops and implements initiatives related to the responsible conduct of research and promotion of research integrity, including educational resources and social media outreach programs. In this paper, will first present some of the narratives of junior scientists that highlight how poor mentorship could contribute to research misconduct. Then, we will present and discuss some of the educational materials and social media outreach programs the Division of Education and Integrity (DEI) of ORI has developed and disseminated for promoting responsible conduct of research. We recommend that scientists at all levels and institutional officials explore the educational and media resources developed by DEI and use them as appropriate to help prevent research misconduct from occurring at their institutions.

PM-027

Postdoctoral Professional Development Series at Pennington Biomedical Research Center

J. Brantley

Pennington Biomedical Research Center/LSU, Baton rouge, U.S.A.

The postdoctoral professional development series at Pennington Biomedical Research Center (PBRC) consist of (1) bi-weekly data presentation sessions, (2) monthly interactive sessions on topics related to professional development milestones (e.g., interviewing for a faculty position) and the responsible conduct of research, (3) workshops on grant writing, (4) graduate coursework on nutrition and (4) and faculty mentoring groups. PBRC has over 200 scientists conducting research in nutrition and preventive medicine. Most research is focused on obesity and related metabolic diseases such as Type 2 Diabetes. PBRC has 45 postdoctoral fellows and two NSRA training grants. This presentation will highlight the integration of research integrity concepts and content throughout aspects of postdoctoral professional development and present feedback from participants.

PM-028

Instituto Nacional de Saúde (INS) - Mozambique workshop on integrity and responsible conduct of collaborative HIV research

E. Heitman[1], S. Enosse[2], S. Chicumbe[2], T. Moon[1]

[1]Vanderbilt University Medical Center, Tn, U.S.A.

[2]Instituto Nacional de Saúde, Maputo, Mozambique

Objective: The research ethics education program *Formação Colaborativa em Ética na Pesquisa* (FoCEP), organized by Vanderbilt University and Universidade Eduardo Mondlane (UEM) and funded by the Fogarty International Center, aims to enhance the knowledge and skills of Mozambican investigators, research ethics committee (REC) members, and educators in research ethics and integrity.

Method: In March 2015, FoCEP conducted a 3-week practicum on research ethics and integrity with senior members of Mozambique's RECs. During this event, participants from the Mozambican *Instituto Nacional de Saúde (INS*) identified gaps in the expertise of their affiliated HIV investigators regarding international standards of responsible conduct of research. To address the need for common high standards across the INS, FoCEP held a 3-day workshop on "Integrity and Responsible Conduct of Collaborative Research in HIV" in Maputo in July 2016.

Results: Workshop participants included 35 investigators from 23 INS research facilities and affiliates, with 5 presenters and discussion facilitators from Mozambique, the United States, and Brazil. The workshop explored: 1) Research integrity and perspectives on misconduct; 2) Standards of data management and sharing in collaborative HIV research and related challenges in the Mozambican context; and 3) International standards of responsible publication and ways to improve practices in Mozambique. Group discussions focused on possible development of INS policy and education programs as a step to formalizing an institutional culture of integrity. Participants concluded that Mozambican researchers have limited awareness of international concepts of fabrication and falsification of data; that the growth of HIV research across Mozambique has led to an explosion of data with only limited policy on its storage, management, sharing, and future use; and that many researchers are concerned about plagiarism and standards of authorship in scientific publication but do not generally agree on best practices in research publication.

Conclusions: The Workshop's discussion groups observed that INS researchers and affiliates could benefit from additional discussion, education, and policy development on the responsible conduct of HIV research. This presentation will report on INS researchers' interpretation of international standards for integrity and considerations for responsible conduct in Mozambique.

A practical guide to developing research ethics education for stem cell researchers and biomedical scientists

D.P. Paciulli[1], Z.M. Master[2], M.M. Mcdonald[3], H.L. Longstaff[4]
[1]Stony Brook University, Stony brook, U.S.A.
[2]Albany Medical College, Albany, ny, U.S.A.
[3]University of British Columbia, Vancouver, bc, Canada
[4]Engage Associates, Vancouver, bc, Canada

Stem cell research (SCR) is a rapidly moving field with the scientific and societal goal of translating research into new diagnostic tools and therapies. While the clinical potential is certainly exciting, there are rich ethical, legal/policy and social issues related to SCR. In many countries, ethics training for scientists is encouraged or has become mandatory, but pedagogical training varies in terms of course goals, content and quality. **Objective & Method:** Through a comprehensive review of the academic literature on research ethics training, we offer a practical guide for academic course directors interested in developing training on the ethical, legal/policy and social issues of SCR geared towards scientists. **Results:** We describe the process of developing training based on individual institutional culture, resources and materials available. Based on our experience, we discuss how to perform a needs assessment and planning to develop pedagogical tools. We cover course objectives, how to structure a course, and course assessment. We describe various tools used to evaluate courses including knowledge, ethical problem solving skills, ethical sensitivity skills, attitudes and values, and student satisfaction. Lastly, we broadly discuss course topics including the responsible conduct of research, ethics of research involving animals and humans, and special topics surrounding stem cell ethics and policy. Most of these topics (responsible conduct of research, research involving animals and humans) are general for all bench and clinical scientists because courses for science trainees should focus on the practical aspects of working collegially, to recognize and assess ethical situations, and to handle them effectively; training for scientists should not focus exclusively on moral theory. **Conclusion:** The features outlined in this presentation provide a protocol for professors, administrators and staff in academic institutions to develop training on research ethics for stem cell scientists within an existing framework of ethics education.

Poster Walk: Research Culture 1

Mapping of Scientific Integrity Work in the United States Leads to a Set of Principles

A.J. Kretser[1], D.M. Murphy[1], T.B.D. Tbd[2]
[1]ILSI North America, Washington, U.S.A.
[2]TBD, Tbd, U.S.A.

Objective: Scientific integrity is fundamental to the mission and work of ILSI North America, which follows a tripartite model involving industry, government and academic scientists. This presentation will provide an overview of the expansive range of activities on scientific integrity in the United States among five sectors. Based on these programs, a synthesized set of principles on scientific integrity was developed by a consortium of organizations. This presentation will outline key steps that must be integrated into all phases of scientific research to uphold scientific integrity.

Method: In 2016, ILSI North America published a manuscript in *Critical Reviews in Food Science and Nutrition*, "Scientific Integrity Resource Guide: Efforts by Federal Agencies, Foundations, Non-Profit Organizations, Professional Societies, and Academia in the USA." The publication serves as a guide for activities taking place on scientific integrity and will remain a living document. In Fall 2016, ILSI North America began work on a second manuscript to synthesize a set of principles on scientific integrity. A consortium of organizations, federal agencies and professional societies was brought together to co-author the manuscript and endorse the resulting principles.

Results: The mapping of scientific integrity activities in the United States provides a resource for the scientific community on the extensive work being done and helps to identify areas where more attention is needed. It is hoped that new collaborations among sectors will be formed. The themes that emerged among the sectors provided the foundation for the set of principles on scientific integrity that will serve as a roadmap for the scientific community.

Conclusion: Scientific integrity is at the forefront of the scientific research enterprise, more so than ever in recent years due to the apparent increase in misconduct and misuse of research data. Scientific integrity needs to remain visible in the scientific community and evolve along with new research paradigms. High priority in instilling these values falls upon all stakeholders.

It is important that the scientific community continue to champion the highest standards of scientific integrity for all sectors and embrace this new paradigm of shared responsibility in the 21st century.

Making Explicit the Implicit: How too much biomedical research contributes to an untrustworthy research enterprise and the unethical use and treatment of human subjects

A. Yarborough
University of California Davis, Sacramento, U.S.A.

Objective: Demonstrate the diminished warrant of public trust in biomedical research implicit in widely documented features of research that collectively impact its ability to exhibit three postulated criteria of trustworthiness: reliability, social value, and ethical conduct.

Methods: This is a conceptual presentation that draws, in part, upon various published studies about numerous problems in biomedical research.

Results: A range of scholarship about biomedical research indicates there are multiple reasons to question whether the enterprise deserves the extent of public trust that it enjoys. Well-characterized deficiencies in research, including but not limited to poor scientific design, multiple biases, research misconduct, non-validated research methods, and clinical trials done primarily for profit considerations, contribute to unreliable published findings and clinical trials of suspect social value. Both negatively impact our ability to ethically conduct clinical research.

The degree of social value of biomedical research is best determined by the strength of the case that research can lead to improved understanding and treatment of disease, since that is the presumed justification for doing the research. Widespread problems in the quality of research and the publications that report its results lessen the likelihood that it will produce reliable knowledge that can lead to improved health. Further diminishing social value is the prevalence of such things as "me too" trials and seeding trials conducted primarily for marketing purposes. Combined, such problems undermine efforts to assure the ethical conduct of research: they call into question our ability to confidently ascertain when benefits outweigh risks, an ethical requirement for research; and the informed consent process suppresses information about these problems from unsuspecting research participants, raising the prospect of exploitation.

Conclusion: An examination of widespread features of biomedical research reveals the extent to which it can fail to meet common expectations of trustworthiness. The research community needs to acknowledge these shortcomings if it is to be able to identify and adopt reforms capable of assuring the public that the research enterprise truly deserves their trust. Recognizing that these problems represent serious ethical deficiencies and thus go beyond concerns about research quality and design may help to facilitate such acknowledgement.

PM-042

Engaging Research Administrators to Support Ethical Research

A.E. Dade[1], D. Schaller-Demers[2]
[1]George Mason University, Fairfax, U.S.A.
[2]Memorial Sloan Kettering Cancer Center, New york, U.S.A.

Objective: Research scientists cannot effectively deal with the responsible conduct of research in a vacuum. They are in need of solid support from their institutional administrative communities. That support cannot be provided without thoughtful consideration of the issues, practical knowledge of the prevailing rules and regulations, and a vested interest in championing the public trust and safeguarding research subjects' welfare.

Research administrators have a front row seat to how research is conducted and administered in various settings. They are involved at all stages of the research process – from development and pre-award phase though to project closure. As such they can be independent observers to the research process as research occurs. Yet, often they do not realize the integral role they play in maintaining and supporting an institutional environment that supports research integrity and the Responsible Conduct of Research (RCR).

Method: The presenters have been approaching research ethics training for this important population from a variety of perspectives. Both presenters regularly engage research administrators at their own institutions, they provided a two-day intensive course on Research Ethics and Governance to research administrators in 2016, and they present on these topics at national and international research administration meetings. These training sessions include RCR core content and explore the complex roles of research administrators and how they interconnect to support and protect the research enterprise. These training efforts are evaluated through post-course evaluations in which attendees are asked about the value of the training and whether it provided an enhanced understanding of their role in supporting an ethical research enterprise.

Results: Post-course evaluations indicate that research administrators learn new and valuable content and also find the time learning about RCR well spent.

Conclusion: Evaluation results suggest that RCR training should be enhanced and expanded for research administrators. RCR Instructors should continue to evaluate ways in which research administrators may be engaged in the RCR education process. Additionally, to support and maintain effective institutional cultures of responsibility, research integrity awareness, dialogue, and processes must be built into the day-to-day roles and actions of research administrators no matter where they work within the institution.

PM-043

Attitude of dental professionals toward scientific publications in Mangalore city, India - A questionnaire study

E.A. Aluckal
Mar Baselios Dental College, Kothamangalam, Ernakulam, India

Objective: To assess the attitude of students and faculty members toward scientific publications in Mangalore city, India.

Methods: The subjects included students and faculty members of three dental colleges of Mangalore city. A structured questionnaire was given to dental postgraduate (PG) students (second and third year) and faculty members (n = 724). The completed questionnaires were analyzed by SPSS software version 21.

Results: About 72% of dental PG faculty and 88.6% PG students responded to the questionnaire, with overall response of 79.6%. Among the PG faculty, professors had more scientific publications, followed by Associate Professors and Assistant Professors. The publications as first or corresponding author were less among both faculty and PG students while co-authorship was more among PG students compared to faculty members. Awareness about the term "plagiarism" was overall high and relatively highest among Associate Professors, followed by Assistant Professors, Professors and PG students. The percentage of publications in fee charging journals was more among PG students than faculty members and self-funding for publication was observed in 87.4% of PG students and 98.6% among faculty members.

Conclusion: About 78.6% of dental professionals were involved in publishing of their research work and the number of publications increased steadily with an increase in their academic experience. All the dental professionals concurred that publications are one of the main criteria for academic excellence.

Tales of misconduct: novels as critical windows into integrity challenges in research

H.A.E. Zwart
Radboud University Nijmegen, Faculty of Science, Nijmegen, The Netherlands

Objective: Scientific misconduct has become a key issue of concern, not only among research communities, but also among manager, funders and publishers of research. Misconduct is addressed in various types of discourse such as (a) reports, guidelines and codes of conduct; (b) empirical studies; (c) normative and / or conceptual analyses and (d) editorials in academic journals. I propose a methodology and conceptual framework for studying integrity challenges from a somewhat different, oblique perspective, namely by closely analysing "science novels" (i.e. novels about contemporary scientific research practices) devoted to this topic, such as Arrowsmith by Sinclair Lewis (1925), The affair by C.P. Snow (1960), Cantor's Dilemma by Carl Djerassi (1989), Perlmann's Silence by Pascal Mercier (1995), Intuition by Allegra Goodman (2006) and Solar by Ian McEwan (2010). Method: Rather than on particular case studies (such as the novels mentioned above), the focus of my presentation will be on the question how novels can be used in research and education on integrity challenges emerging in contemporary science. Novels, I will argue, offer intriguing "oblique" windows into contemporary research practices. They provide imaginative laboratories for exploring the various ethical, philosophical and psychological dimensions involved in scientific misconduct. Misconduct novels often adhere to an experimental design, as outlined by Emile Zola: they aspire to address the question what will happen if protagonists (i.e. literary "research subjects") are exposed to emerging research challenges: how will they respond, what options for action and deliberation are available, how will they be affected? Results / conclusion: I will outline that novels may help us to open-up the integrity debate, first of all by raising the awareness that, notably in problematic situations, we often do not know what plagiarism (or fabrication, or falsification, etc.) really is. Novels allow for a multidimensional approach ('depth ethics'), combining a focus on individual deviance with attention to the systemic context (the current transformations or even crisis of the knowledge production system, seeing misconduct as a symptom). Rather than functioning as moral vignettes, I will argue that misconduct novels challenge us to reconsider some of the basic conceptual building blocks of integrity discourse.

What would Aristotle do about Research Integrity?

D.P. Misselbrook
Royal College of Surgeons in Ireland, Bahrain, Adliya, Bahrain

Objective: Thinking about research integrity is often driven by failures of integrity, occasionally dramatic, usually mundane but always serious. Our response to such failures is normally one of regulation and censure. This presentation will explore a different approach, analyzing how the basic claims and theoretical models of modern VE might apply to research integrity.
Methods: Parallel discourses and failures within medicine have led to a similar burgeoning literature on medical professionalism and escalating medical regulation. But in the last decade there has also been an increasing interest in Virtue Ethics (VE) within medical professionalism, derived from the work of Aristotle and popularized by MacIntyre, Hursthouse, Foot and many other contemporary authors.
There has been some recent interest in VE within the research integrity literature, however this area remains largely unexplored. This presentation therefore critically examines both the theoretical promise and the evidence so far for a VE approach to research integrity.
This paper offers a novel theoretical analysis into the ethics of research integrity. I identify key virtues (Aristotle's "settled dispositions") that are relevant to research. I will analyse how external (regulatory forces) and internal (personal dispositions) may interact to create the current research integrity picture. I will question what a VE approach may offer as a parallel track, not substitute, to regulation.
Results: VE should not be conceptualized as a discourse whose main function is to explain transgression. I will focus on the light it may shed on both accepted and deviant social behaviours within the research community. Aristotle's "doctrine of the golden mean" can be used to describe the complexity and innate ambiguity of human goal seeking behaviours. I will particularly comment on the relevance of VE in areas where regulation is problematic, such as poor research practice.
Conclusion: VE gives us a second dimension (apart from regulation and censure) to our analysis of problems of professionalism and our response to failure. We can examine not only behaviours but also issues of character and the settled dispositions of medical professionals themselves.

PM-046

Strategies to support academic research integrity and regulatory compliance at CSU
M. Bens, J. Broccardo, M. Dobos, L. Felton-Noyle, K. Kim, R. Woods
Colorado State University, Ft. collins, U.S.A.

Colorado State University (CSU) has a long-standing reputation for ethical conduct of research in all areas and takes pride in the quality and quantity of research performed on its campuses. A unique component of the support system provided at CSU is a collaborative effort to maximize research integrity support and minimize administrative overload through the Research Integrity & Compliance Review Office (RICRO).

RICRO is a service-oriented office under the Office of the Vice-President of Research and provides assistance to researchers, staff, and the faculty in maintaining an ethical environment for activities in the following research and teaching areas:
1. Protection of animal subjects – Institutional Animal Care and Use Committee (IACUC)
2. Protection of human participants – Institutional Review
3. Protection of animal subjects – Institutional Animal Care and Use Committee (IACUC)Board (IRB)
4. Responsible use of biohazardous agents and rDNA – Institutional Biosafety Committee (IBC)
5. Responsible Conduct of Research – RCR Program
6. Quality Assurance Program including Research Integrity and Regulatory Affairs
7. Post Approval Monitoring
8. Conflict of Interest

By strategically housing these programs in one office, CSU promotes a collaborative and cohesive approach toward protecting the rights and welfare of research subjects while providing guidance on research integrity issues and assisting the research and scholarly community in conducting and promoting responsible and ethical research. This collaboration supports all university regulatory review committees, research integrity programs and quality assurance programs to ensure that research is conducted ethically and in accordance with applicable regulations and guidelines. This poster will provide an overview of the programs, educational support, benefits, and challenges of the RICRO approach toward research integrity.

Academic institutions can benefit by having a collaborative and service-oriented approach to regulatory review that supports research quality and integrity. Of greatest value is minimization of Institutional administrative burden, decreased time and effort in regulatory review, and increased support of research development, approval and implementation. Increased support for research integrity and a culture of quality can be gained when review personnel work as a team with faculty and other university administrative programs

PM-047

Beyond the replicability crisis: how to foster good research practices in order to purse quality
M.A. Andreoletti
European Institute of Oncology, Milan, Italy

In the last few years, biomedical research has been harshly criticized for having produced over the years mostly non-reproducible studies, and fallen short of everyone's expectations despite massive funding. However, despite recent effort to shore up replicability, things will never come to head, as long as the main interests of scientists are the quantity and the novelty of their publications. Of course, being productive and innovative is not a bad thing in itself, yet it becomes an issue if productivity and originality are pursued at the expense of quality. The quality of scientific research is reached through many steps. Starting in the lab, by validating cells lines and reagents, performing power calculations, and so on, finally ending with the serious and meticulous review. But that does not happen most of the time because it is time consuming, and time is every scientist's worst enemy, in particular of young researchers, who are facing a stiff competition in the scientific jobs market. A scientist that embraces good research practices is not necessarily recognized as a good scientist in the research community. To resolve this conflict, it is necessary to seriously address two intertwined issues: the *redistribution* of resources and the *recognition* of merits. Changing the incentive reward system and fostering a culture of good and responsible research has now become inevitable, even though it might seem a wild-goose chase. But there is a precedent from a different field. In the eighties, in Italy, a grassroots organization known as "Slow Food" started to fight against the heavy industrialization of the agricultural products and food market, striving for sustainable foods and promotion of small local businesses, which were crushed by the big food companies. Slow Food educated consumers to quality and protected small producers endorsing them for the quality of their products. In a while its brand has speeded to all corners of the globe, giving an advantage on the market to certified producers, which otherwise would have disappeared. Implementing such a model might be the best way to foster good and responsible research practices.

PM-048

Exploring the ethical culture prevailing among Institutional Ethics Committee members in health institutions in India

P.S. Ganguly[1], B. Ganguly[2]
[1]Indian Institute of Public Health Gandhinagar, Gandhinagar, India
[2]Pramukhswami Medical College, Karamsad, Anand, India

Objective: Mandatory ethical review of biomedical research projects is a relatively new practice across health institutions in India. Ethical review is commonly perceived as a bottleneck by researchers. Majority of ethics committee members are also from the same population and not well trained in Bioethics. We aim to explore how the members believe and act according to ethical principles

Methods: The study will involve primarily a qualitative methodology supported by a short quantitative component. A sample of 12-15 respondents representing a wide spectrum from 4-5 institutions will be selected. For qualitative, interviews will be conducted with the help of a semi structured interview. The responses will be recorded, noted and coded. Framework analysis will be used to generate major themes. A small quantitative tool will be applied simultaneously.

Results: Results are yet to be obtained and will be presented at the time of submission the final paper/presentation. As of now, we can mention the following domains that our results will be describing:
Qualitative – perception on need of ethical research, rightly identifying research integrity, perception on critical role and responsibility of ethics committee, perception on researchers' ability to address ethical issues in research
Quantitative- experience in reviewing research articles, training on research ethics, publications in research ethics, other professional engagements in bioethics

Conclusion: We hope that the findings of this study will result in introspection of ethics committee members and inculcate a culture of self/peer assessment among them. It will cascade into promoting a culture conducive of improved ethical conduct in research across the health institutions in India.

PM-049

Sex and gender equity in research (SAGER). Implications of the SAGER reporting guidelines for research integrity.

P. de Castro[1], T.F. Babor[2]
[1]Istituto Superiore di Sanità, Rome, Italy
[2]Department of Community Medicine, University of Connecticut, School of Medicine, Farmington, U.S.A.

Objective: To show how the https://researchintegrityjournal.biomedcentral.com/articles/10.1186/s41073-016-0007-6 can contribute to research integrity. Sex and gender differences are often overlooked in research across disciplines and there is confusion in the very use of terminology. This negatively affects research results and research integrity as a whole, limits research reproducibility and harms both men and women, besides representing an unfortunate and avoidable waste of resources. The guidelines address these issues by helping authors in the preparation of manuscripts and referees in the application of sex and gender considerations in the review process.

Methods: The SAGER guidelines, produced by a multidisciplinary panel within the European Association of Science Editors (EASE), were developed on the basis of 1) an online survey of 716 journal editors to map existing gender policies and the composition of editorial boards, peer reviewers and staff, 2) consultation of online articles, and 3) expert committee reports.

Results: The SAGER guidelines defined the following requirements for authors, editors and peer reviewers:
Appropriate use of terminology in journal articles submitted for publication to avoid confusion. Differentiation by sex and gender of any subject of research considered in the study to reveal any possible difference in the results, even if not initially expected. If such differentiation is not appropriate it should be explained.
Further actions undertaken under a SAGER vision (such as training, gender balance in editorial committees, etc.) will be reported.

Conclusions: Widespread adoption of the SAGER guidelines by journal editors is needed to address the issue of sex and gender underreporting in research, enhance research integrity, and promote responsible research and innovation. Adoption implies that editors will be required to report sex and gender-disaggregated data, whenever applicable, in all the sections of journal articles from study design, to data analysis, results and interpretation of findings. The research community at WCRI would benefit from a wider appreciation of their responsibilities in this regard in order to guarantee research integrity, maximize the use of resources and enhance the usefulness of research results at a global level and across disciplines.

Poster Walk: Research Culture 3

What the Drongo Can Teach Us About Fraud: Is Deception Part of Natural, Adaptive Behavior?

W.J.J. dr. Jermakowicz[1], S.R. dr. Ramamoorti[2]
[1]University of Miami, Miami beach, U.S.A.
[2]Kennesaw State University, Kennesaw, ga, U.S.A.

Objective: Few tricksters in nature are as clever as the Drongo, a songbird of the Kalahari Desert in Sub-Saharan Africa. The Drongo acts as the trusted watchdog of the desert, alerting nearby animals of oncoming predators by sounding alarms. Lately though, with food supply becoming scarce, the Drongo often resorts to fraud. The songbird has learned to sound false alarms that trick animals into abandoning their prey and retreating to hide. The Drongo then swoops in for the steal. But the false-alarm victims eventually catch on to the Drongo's tricks, and learn to ignore these fake calls. The Drongo then escalates the fraud to a higher level by using "vocal mimicry" to copy the calls of diverse desert species in order to fool its neighbors and win the food. By turning to fraud the Drongo is able to gain a competitive foraging advantage.

Fraud and deception, as evidenced by mimicry and camouflage, are common in nature. What can we learn from nature about fraud? For this presentation we consider evolutionary biology as providing the framework for the study of scientific fraud.

Method: We perform a literature search and analyze scientific fraud using Tinbergen's Four Whys Model, which provides four levels of questions for an integrative understanding of human behavior in the context of evolutionary biology.

Results: Necessity is the mother of invention. Whether in nature, the business world or in the field of scientific research, fraud involves a continuous process of altering pre-existing behaviors to serve new adaptive functions. For an integrative understanding of scientific research fraud, it is important we understand the phylogenetic and developmental histories of the behavior and how it currently operates in the hyper-competitive environment of scientific research.

Conclusion: To remedy this we need to consider not only the root causes of scientific fraud, but also think like a fraudster in order to catch one. Our response strategies will undoubtedly be aided by increased transparency and improved analytic methods of detecting fraud but, ultimately, we need to think about creating a fraud-resistant culture of science. Deterrence is better than detection; less costly, and simply more effective.

Roles and responsibilities of a medical research ethics committee (mrec): a qualitative study investigating views and experiences of committee membersr

B. Drukarch, M. Diepeveen, J.J.G. Geurts, W. van der Borg, G.A.M. Widdershoven
VU University Medical Center, Amsterdam, The Netherlands

Objective: As principle guardian of the ethical quality of research, the work of MREC's is relevant for research integrity. The aim of this ongoing pilot study is to gain insight into the views and experiences of MREC-members regarding their individual role(s), and the role of the MREC as a whole, in assessing admissibility of medical research. Perspectives on perceived responsibilities, potential dependencies and (conflicting) interests are explored to allow for better definition of the position of MREC's in responsible conduct of research.

Method: Semi-structured interviews were held with 10 members of the MREC-VUmc , representing a wide variety of disciplines. Subsequently, 8 MREC-members will be invited shortly for a focus group discussion to validate and elaborate on themes emerging from the interviews. Data are subjected to thematic analysis.

Results: Preliminary analysis of interview data revealed that MREC-members feel responsible for both protecting research participants and fostering the quality and value of scientific output. In performing this task, various moral tensions arise, in particular regarding: The scope of safeguarding participants; Consistency in weighing benefits against risks and burdens; Perceived responsibility to contribute to researchers 'ethical and methodological' skills; Trust in both integrity and expertise of researchers and fellow MREC-members. A more in-depth exploration of preliminary findings is ongoing.

Conclusion: Findings thus far provide detailed and (partly) novel insights into apparent moral tensions experienced by individual members of a MREC whilst performing their (self) perceived main tasks and responsibilities, i.e., protection of research participants and improvement of research quality. As such, they help in explicating the moral dimensions in the daily conduct of assessing medical research proposals and are likely to stimulate the debate on the role of MREC's in fostering research integrity. However, being a "single center" investigation, results should be interpreted with care and subsequent studies in other MREC's, both national and international, are warranted.

PM-062

Prevalence and Perceptions of Sudanese students and faculty regarding responsible conduct in research

S.A. Osman[1], H.J. Silverman[2]
[1]Federal Ministry of Health, Khartoum, Sudan
[2]University of Maryland, Baltimore, U.S.A.

Objectives: Responsible conduct in research is not often addressed in higher education in Sudan. This study aims to explore the prevalence, attitudes and perceptions of graduate students and academic faculty regarding responsible conduct in research.

Methods:

Study Design: cross-sectional study.

Tool: A self-administered anonymous survey tool that consisted of the following sections: 1) demographics; 2) respondents' self-report and observation of misconduct practices; 3) attitudes regarding research misconduct, focused on fabrication, falsification of data, plagiarism, and conflicts of interest; and 4) perceptions regarding current practices in responsible conduct in research (RCR).

Participants: Using a convenient sample technique, we distributed 300 questionnaires to medical students, graduate students and faculty in medical and health schools at Ahfad University for Women, Khartoum University, and Al-Neelain University.

Statistics: We used descriptive analysis, bivariate analysis to investigate associations between responses and independent variables and multivariate regression analysis to determine the strength of each independent variable for each association.

Results: We analyzed data from 221 surveys, representing a response rate of 73.7%. The mean age of the respondents was 32.2 years. Among respondents, 25.3% had a bachelor degree, 48.4% had an MSc/MPH and 11.4% had an MD/PHD and 71.1% received graduate studies in Sudan. Among respondents, 55.7% conducted scientific research, 49.8 % received training in ethics, but only 35 % in RCR. The most common form of self-report research misconduct was plagiarism (68.7%) followed by falsification (66.6%), fabrication (61.1%). The most frequent type of misbehaviors observed by the respondents included fabrication (70.1%); falsification (69.2%), and plagiarism (64.2%) and conflict of interest without disclosure ((66.1%). A large number of resspondents agreed that "falsification and fabrication" and "plagiarism" was acceptable (42.5% and 38.5%, respectively). Completed analysis involving associations between independent and dependent variables will be completed by the time of the conference.

Conclusion: Research misconduct is a significant occurrence in the medical specialties in Sudan. We recommend further studies in other universities in Sudan to confirm the generalizability of our results and qualitative studies to further investigate potential explanatory hypotheses of these results.

PM-063

Ethically conducted clinical research in hospitals

S.M. Nurmi[1], M.K. Mari Kangasniemi[1], A.H. Arja Halkoaho[2], A.M.N. Pietilä[1]
[1]University of Eastern Finland, Kuopio, Finland
[2]Kuopio University Hospital, (Science Service Centre), Kuopio, Finland

Background Administrative staff, including principal investigators, administrative managers, and elected officials, have a crucial role in ensuring the ethical conduct of the clinical research that occurs in their organizations. The administrative staff's perspective of the ethical aspects of clinical research has received little attention in previous studies, which mainly focus on the perspectives of researchers and clinical staff.

Aim This study describes the ethical aspects of clinical research from the perspectives of the administrative staff at two university hospitals in Finland.

Methods Qualitative data were collected with semi-structured face-to-face interviews ($n = 31$), and subjected to content analysis.

Results Based on the findings of this study, we identified four central ethical aspects. Firstly, human subject autonomy is a fundamental ethical principle, but it is also jeopardized in everyday research practice in hospitals. Secondly, tension between the regulations and clinical research practice has increased and may complicate the ethical conduct of clinical research. Thirdly, we identified concerns related to a changing clinical research environment and its impact on ethical research conduct. Fourthly, our findings identified some organisational factors that may promote ethical conduct of clinical research.

Conclusion It is important to strengthen researchers' ethical sensitivity through education. Furthermore, we should reinforce elements such as organizational culture, cooperation, and a workable research infrastructure that support good research ethics in hospitals. In the future, the primary goal is to determine a means for supporting researchers and clinical staff in their efforts to conduct clinical research in an ethical manner.

PM-064

The Scientific Character Virtues: An Interdisciplinary Study

T. Pennock
Michigan State University, East lansing, U.S.A.

Within the scientific community, the professional research values of working scientists, and especially the character virtues of the most exemplary scientists, become the foundation for the practice of scientific research in all fields. Professional ethical virtues affect the way that scientists think about each other and their work as well as non-scientific issues. But despite the importance of these values, there are many unanswered questions about them. What *are* the normative virtues that are taken to constitute the scientific character? Do all scientists share a common conception of scientific virtue or are there significant differences between disciplines? How are normative virtues transmitted and instilled by the scientific community?

Drawing on philosophy of science and virtue theory, we have developed a philosophical account of scientific virtue, but we are also interested in how a priori accounts relate to the actual value perceptions of working researchers. We hypothesize that that scientists do share a tacit conception of the virtues that constitute the ideals of the scientific character, but that they do not typically come to understand these by formal means. Rather, they primarily absorb these through mentoring relationships with senior scientists who pass them on by example or through anecdotes about other researchers who are seen as exemplifying one or another aspect of scientific virtue.

To explore scientists' own thinking about the guiding purpose of science and the virtues and values that are essential to the practice of science, the Scientific Virtues Project surveyed a random sample of 500 exemplary scientists as reflected by membership in the National Academies and other major disciplinary honors and a second group of junior scientists. This study provides the first systematic survey of the values that define what it means to be a scientist since Robert Merton's seminal work in the 1940s and 50s. This presentation will discuss the goals of and theoretical background to our national study, some of its major results, and the two decades of philosophical, historical and sociological research that led up to it.

PM-065

Promoting the Responsible Conduct of Research for University and College Leaders

J.C. Carfora[1], Z.H. Hammatt[2], S.G. Garfinkel[3]
[1]Loyola Marymount University, Los angeles, U.S.A.
[2]Z Consulting, Bethesda, md, U.S.A.
[3]U.S. Office of Research Integrity, Rockville, U.S.A.

If one theme has consistently emerged from the four World Conferences on Research Integrity (Lisbon, Singapore, Montreal and Rio De Janeiro), it has been communicated as follows: There needs to be greater and more substantive effort put into the teaching and incentivizing of research integrity, the Responsible Conduct of Research (RCR), and the ethical conduct of scholarly activity in general, at the highest levels of education.

To address this theme, nearly 80 research integrity officers (RIOs), senior college and university leaders, government officials, attorneys, and research fellows from 18 U.S. states and five countries convened in Los Angeles, April 14-15, 2016, to address the handling of research misconduct investigations – and fostering a culture of research integrity – at institutions of higher learning in the USA and globally.

Co-sponsored by the U.S. Office of Research Integrity (ORI) and Loyola Marymount University (LMU), this inaugural meeting was the first time ever that representatives from the National Institutes of Health, the National Science Foundation, the Office of Laboratory Animal Welfare, the Office for Human Research Protections, and the Office of Research Integrity along with senior university and institutional officials and Research Integrity Officers (RIOs) formally gathered to engage in discussions around promoting research integrity at the highest institutional level. Meeting participants included a diverse range of officials from both small and large institutions of higher learning who held positions from post-doctoral fellows to Vice Presidents and Associate Provosts of research advancement and compliance, and teaching RIO/Vice President/Attorney teams.

The two-day meeting included roundtable discussion and plenary presentations on topics such as handling allegations of research misconduct, fostering research integrity through incentives and monitoring, misconduct involving human and animal research, and responsible conduct within and beyond the institution. In the context of these overarching themes, attendees brainstormed together to explore the concept of moving beyond compliance to a higher goal of instilling and enhancing a culture of research integrity. This presentation will offer some of the recommendations that emerged from the roundtable discussions as far as measurable steps that can be taken by senior institutional leaders to begin to achieve this higher goal.

PM-066

Ethical aspects in clinical research: A pilot study among pregnant women
A.M. Pietilä[1], A. Halkoaho[2], L. Tolonen[3]
[1]University of Eastern Finland, 70211 kuopio, Finland
[2]University Hospital of Kuopio, Kuopio, Finland
[3]Health Care Center, Kalajoki, Finland

Background: Research on the ethics of studies involving pregnant women is essential because the women are a vulnerable group. Research on pregnant women is evaluated critically because of potential physical harm for both mother and baby. Furthermore, an informed consent process and the participant recruitment process are significant for promoting participants' autonomy.

Aim: The aim of this study was to find out about women's perceptions about research ethics, participant recruitment and the process of informed consent. This study is also considered a pilot study and included an aim of testing a pilot survey on research ethics. This study is part of KuBiCo (Kuopio Birth Cohort). KuBiCo is a large multidisciplinary platform for collecting data from pregnant women and their children in the district of North Savo, Finland.

Results: In total, 954 women participated in the KuBiCo platform during the years 2013-2014. Over half of the pregnant women (60.4%, n=576) responded to an electronic research ethics questionnaire. The quantitative data of the survey were analyzed by descriptive statistical methods and the answers to open-ended questions were analyzed by qualitative content analysis. Pregnant women had made the voluntary decision to participate, and they had received enough information on which to base this decision. Primiparas and respondents under 35 years of age were more confident of the processing their private information in the study than multiparas and respondents over 35 years of age. The benefits accomplished for science and society were considered highly important and such aspects also motivated the respondents to participate in the KuBiCo platform. Personal benefit was perceived as less significant.

Conclusions: An important finding in this study was that women had been informed about the purpose of the study in which they participated and were interested in taking part in a scientific study. They appreciated clinical research if the purpose of the study was appropriate in relation to their values and life situation

Poster Walk: Detecting and managing allegations

PM-074

Efficacious validation of databases as tool to guarantee research integrity: a case-study.
P.A.M.J. Frantzen
Driehoek Research Support BV, Leiden, The Netherlands

Objective: To determine retrospectively, at low costs, the validity of a database of 3,000 subjects of a Dutch investigator-initiated RCT.
Method: An investigator-initiated trial run among 70 Dutch hospitals generating clinical data of 3147 subjects. The validity of the main parameters of the study (see results) was determined by selecting 9 hospitals, which included the highest number of subjects in the study. The number of subjects monitored in a hospital depended on the local accessibility of the sources (e.g. electronic or paper) and the time available on one day. The agreement between sources and databases for each of the selected parameters was expressed as percentage.
Results: The hospitals selected covered geographically quite well The Netherlands. The data of, on average, 44 subjects per site were checked with a range of 29 to 84. This accounted for 25 – 89% of the subjects included at a hospital. The agreement between sources and database was rather poor with respect to the parameter 'eligibility of subjects', i.e. on average 79%. The agreement was higher for the other four parameters checked, 'randomisation', 'start date of follow-up', 'date of treatment', and 'primary outcome' having agreement of, 96%, 95%, 91% and 98%, respectively. The confidence of the estimated correlations was at the 95%, or 97%, level depending on site monitored. The validation took net 10 days, which is equal to costs of about € 8,000 in this case.
Conclusion: Sample-based validation of major parameters is a promising, and relatively cheap, approach to validating large databases. It may be, amongst others, an efficacious tool for institutional boards and supervisors to guarantee research integrity at relatively low costs.

PM-075

Scientific integrity: knowledge and behaviors of undergraduate nursing students
D. Guilhem, N. Silva
University of Brasília, Brasilia, Brazil

Objective: Scientific integrity includes adoption of ethical practices in the research development, and it is essential for responsible scientific exercise. The scientific initiation is an important strategy for training future researchers. It is indispensable to discuss the ethical training for young scientists. The main objective was to identify the perception and practices of nursing undergraduate students about the scientific integrity principles, from design to dissemination of results.
Methodology: Observational and cross-sectional study with quantitative approach. Data collection by interview with undergraduate students of nursing participating in a young scientist program from public and private institutions of Federal District-Brazil, in the period of 2013-2016. It was used a structured questionnaire applied face-to-face and electronically. The project submitted and approved by the Research Ethics Committee of Institute of Humanities, University of Brasilia.
Results and Discussion: 50 students participated of the study. Respondents were from two public and three private educational institutions; 82% were women and 18% men. Regarding the knowledge and adoption of practices and ethical principles for the development of research, most of them recognized the importance of the ethical review process before the beginning of the research, conduction of the study and dissemination of the results. However, it was clear that even with this familiarity with good scientific practices, not always the students behave in the most responsible way. The students mentioned the predominance of formal education through courses and classes to access the contents related to scientific integrity. They recognized the importance of complementary studies to strengthen ethical competences of students.
Conclusion: The scientific scenery is an important locus to promote ethical, technical and professional training for undergraduate students. The contents related to good ethical practices, scientific integrity, and responsible are fundamentals and their introduction in the earlier stage of academic curricula provide knowledge and guidance for science development.

PM-076

Level of data manipulation and research reporting-related misconduct among Nigerian agricultural research personnel

J.N. Nmadu[1], K.M. Baba[1], H. Sallawu[1], T.T. Amos[2]
[1]Federal University of Technology, Minna, Minna, Nigeria
[2]Federal University of Technology, Akure, Nigeria

The objectives are to describe the socio-economic profiles of the respondents, determine level and prevalence of data manipulation among them, describe the various research reporting-related misconducts and determine whether there is any syndication of them and, describe the various challenges faced by the respondents in data collection and research reporting. A sample of 500 was randomly drawn from research personnel working in the various tertiary institutions in Nigeria. The data is being collected via questionnaire (Google form) administered through their emails. Data analysis is mainly descriptive but syndication was measured as the ratio of publications to the number of co-authors. Results show that 75% of the respondents are university workers out of which 83% are PhD holders and 42% are in the professorial cadre. The results further show that they have published an average of 68 papers in general but 46 academic papers and the ratio of papers to author (4.25) is quite high, suggesting some syndication among them. Most (50%) publish their papers without attaching raw data and only a few indicated that they could replicate the various research with the same results; this findings was further affirmed by more than 60% who say that they did not preserve the original data. Most of the respondents claim familiarity with common statistical software although majority do not analyse their own data but they have never failed plagiarism test. Majority (67%) claim that they have been mentored although 75% indicated that their various institutions do not have a formal mentoring programme. In terms of authoring, 42% indicated that they are always co-authors in their areas of specialisation but only 50% of them contributed to the research and drafting of the paper. In addition, 58% have never authored a publication with a non-Nigerian. The main constraint faced by majority is funding gap. The high rate of misconduct among the respondents was manifested in high paper/author ratio and lack of research integrity in preserving research data as well as co-authoring paper in other areas of specialisation. High premium should be placed on preservation of research data and funding research for national development.

PM-077

Substantiating misconduct allegations in divisive research: Where there's smoke there's fire?

J.E. Hoepner
Australian National University, Lyneham, act, Australia

Objective: This project aims to investigate the challenges associated with identifying 'genuine' research misconduct in particularly divisive research fields. Highly visceral, emotive responses to research may draw on claims of misconduct primarily to silence unfavourable findings, rather than expose wrongdoing.
Method: Qualitative research interviews were conducted with 11 academics and scientists whose research has drawn allegations of research misconduct, either from inside or outside academia. A mixed-methods analysis of the data was used to determine shared themes, discourses and characteristics within the dataset.
Results: This research found that in cases where enquiry elicits a visceral or emotive response, research misconduct allegations are common. The accusations described by participants can be distinguished both by their severity; and whether the claim came from inside or outside academia. In some cases, members of the public decried the research through mainstream or social media, while others contacted several participants' employers to encourage discipline or even termination of their contracts. In other cases, participants were investigated or disciplined by their employer without detectable external pressure, though the grounds for this action were often not transparent or well supported by evidence. Several participants described allegations of misconduct leveled at them as being an intimidation tactic, rather than a factual claim based on a clearly articulated breach of policy. In these instances, it is exceedingly difficult to identify or substantiate genuine misconduct. These responses to controversial enquiry from within and outside academia suggest there are significant risks for researchers to openly and honestly share their findings.
Conclusion: This research concludes that in research areas that elicit controversy, the honest and accountable sharing of knowledge may generate misconduct allegations, rather than prevent them. This study relies on qualitative data with a small sample, and as such is limited to describing aspects of this apparent paradox, rather than a comprehensive account of its scope, frequency or severity.

PM-078

promoting research integrity at cnrs (national center for scientific research), france

M.L. Leduc, L.L. Letellier
Ethical committee of CNRS (COMETS), Paris, France

Objectives: CNRS is the largest research institution in France, covering all disciplines. Its ethics committee (COMETS) sets out principles intended both to the institution and to the staff. One of its objectives is to help promoting ethical values and integrity in research, in a context in fast evolution: an increasing number of frauds are now revealed by the media or the social networks, new laws put an obligation for group leaders to reveal misconducts and protect whistle blowers. COMETS, linked to universities and other research bodies, intended to deal with this situation at the national scale.

Methods: COMETS updated, enhanced and translated into English its *guide book* "A guide to carry out research practices with integrity and responsibility". The guide sets out the principles that feature in the *French National Charter for Research Integrity*, signed in 2015 by all research institutions and universities. It is intended for research staff belonging to the CNRS as well as the universities, regardless of their discipline, standing and level of responsibility. It provides guidelines for good practices in publications, data sharing, and recommendations of how to deal with evaluation, conflicts of interest, misconduct, and relationships between science and society. The need for careful training of young researchers by group leaders is also outlined, with indications how to deal with harassment.

Results: The *guide book* and the *Charter* are hand out to all new CNRS members, who have to sign that they will conform to the integrity recommendations. These documents triggered the reflection at the national level regarding the now compulsory training to ethics and deontology of PhD students soon to be extended to institutional and non-permanent researchers. To deal with misconducts or fraud, COMETS advises CNRS to appoint an integrity officer to encourage and facilitate the submission of reliable allegations. In this context, COMETS also believes that scientific social networks may be precious sources of information and that the institution should make an appropriate use of them.

Conclusion: Dealing with research integrity in France significantly improved recently thanks to a good coordination between research institutions and universities.

PM-079

Gauging the extent of p-hacking and selective publishing in the Journal of Experimental Psychology: General. P-curve and p-value distribution analyses for the years 1994, 2004, and 2014.

K. Karpe[1], F. Zenker[2]
[1]Adam Mickiewicz University, Poznan, Poland
[2]Lund University, Lund, Sweden

Objective: Statistically significant results of empirical research are presumably easier to publish than non-significant findings. Researchers' bias towards publication and attendant practices such as p-hacking and selective publishing of data are therefore thought to negatively impact psychological science as a whole. Though more subtle that straightforward fabrication, falsification, or plagiarism, selective publishing and p-hacking lead to the overrepresentation of false positives, and hence threaten to undermine the reliability of meta-analyses. Method: This study gauges the extent of p-hacking and selective publishing in 60 articles published in the Journal of Experimental Psychology: General in 1994, 2004, and 2014. For each year, the twenty top-cited articles are subjected to a p-curve analysis (PCA) and an analysis of the p-value distribution for all published p-values (PDA). Both methods take published p-values as input to indicate the same type of misconduct, but comparing the methods' outputs yields better information than each delivers by itself. Results: Our analysis yields no evidence for severe p-hacking. PCA shows that the data are very probably not effects of selective publishing alone. Although a peak below $p=0.05$ (being a sign of p-hacking) was observed for recalculated p-values linked to a focal hypotheses in PCA, PDA provides no evidence for selective publishing, nor a peak around $p=0.05$. Both methods thus converge. At the same time, there is some (weak) evidence for p-hacking among results linked to the focal hypothesis. Conclusions: We conclude that the sample articles probably studied true effects, and estimate the probability to be low that undue disruptions to the research process have occurred. We discuss the informational value of combining PCA and PDA against the background of the extant literature on the distribution of p-values.

PM-080

Detecting misconduct in the field of Marine Scientific Research

G.B. Guilloux[1], K.A. Koskina-Saridaki[2]
[1]University of Bretagne Occidentale, Plougonven, France
[2]IdEF/Paris XIII, Athens, Greece

Objective: The objective of this communication is to discuss the content of the ethical obligation to obey the Law to ensure a responsible marine scientific research. The obligation for scientists to uphold integrity is not precisely defined. We will examine if it might or should be applied to marine scientific research.
Method: We will approach the subject through an "inductive reasoning", involving the search for pattern from observation of marine scientific research practices, especially scientific research applications in marine national areas, and the development of explanations of how research integrity could be defined for those patterns through series of case studies.
Results: Marine scientific research is governed by Part XIII of the 1982 United Nations Convention on the Law of the Sea, one of the only international legally binding set of rules governing scientific activities. It represents a compromise between researching States, mainly developed countries, supporting the idea of an unhindered research, and the developing Coastal States, defending their national interests. It is addressed to States and competent international organizations conducting scientific activities at sea, but also indirectly to national scientists and research institutions of the States Parties, while applying for and conducting research in marine spaces under or beyond the limits of national jurisdiction. Within marine national spaces, the prior informed consent of the Coastal State shall apply in accordance with Part XIII. But with regard to the study of documented practices, international rules governing marine scientific research are often perceived as an impediment to research driven by the traditional principle of freedom and a new principle of economic efficiency. This sometimes leads to the avoidance of such procedures (consent procedure) or of any other obligations deriving from it (dissemination and publication obligation). Should those breaches of Law always be considered as a misconduct regarding to Scientific Integrity?
Conclusion: It appears that marine research integrity is questioned by variable legal and practical rules. The common thread amongst different *modus operandi* is the emergence of rules considered better adapted to marine scientific community needs in accordance with Scientific Integrity which should therefore be discussed in an effective way.

PM-081

Scientific Integrity and scientific misconduct between undergraduate students of health sciences

D. Guilhem, N. Silva, M. Novaes
University of Brasília, Brasilia, Brazil

Objective: Scientific integrity is an essential requirement for scientific practice. Universities and research institutions, as trainers of future scientists, share responsibility for dissemination of contents focused on building core values and moral responsibilities. The main aim was understand the perceptions and practices of undergraduate students from health and biological sciences about the scientific integrity principles.
Methodology: Observational, cross-sectional study with a quantitative approach. Data collection by interview with undergraduate researcher's students, preserving anonymity by ballot technique. The questionnaire contained 13 questions into four sections: 1) general data, 2) issues for classifying the level of agreement or disagreement with statements about the research process, 3) self-reports behaviors as researcher, 4) ethics training and scientific integrity.
Results: 119 young scientists participated of the study. Although students has shown notions of good scientific practice, this issue must be constantly on the agenda. Faced with a hypothetical case of complaint of a scientific misconduct, 41% of respondents were neutral about this statement and 21% said they would not report the deviation. Even ethical guidelines are known, not always the subjects are positioned in the most responsible way. In the items on self-reports behaviours, 20% said they have already started collecting survey data prior to approval of the ethics committee.
Originality: Production of evidences linking conducts adopted by young scientists to scientific integrity.
Conclusion: Researches' experiences appears as an important educational space and professional training for students. Good practices in research need to be included earlier in the curriculum, throughout the guidance and training.

PM-082

Scientific misconduct: Knowledge, actions and attitudes amongst Scandinavian doctoral students

B.M.H. Hofmann[1], S.H. Holm[2]
[1]NTNU Gjovik and University of Oslo, Gjøvik, Norway
[2]University of Manchester, Manchester, United Kingdom

Objective: To find out what doctoral students know about scientific misconduct, what they do, and what their attitudes towards misconduct are.

Methods: A questionnaires aimed at investigating self-reported knowledge, actions, attitudes was distributed to doctoral students at faculties of medicine in Norway and Sweden. The survey was distributed to 582 PhD-students from 2010-2015.

Results: 467 were returned, giving an overall response rate of 80%. The survey revealed that about � know of various forms of scientific misconduct (FFP), and some researchers know about misconduct from their own department (last 12 months). A few admit scientific misconduct (in various forms), and about 15% experience challenges with respect to authorship (the last 12 months). Knowledge about rules and regulations is poor. The attitudes towards scientific misconduct vary. A significant fraction accepts actions that in the science ethics literature are considered as misconduct. For example, almost half of the research fellows think it is acceptable to do repeated statistical analysis until finding statistically significant results.

Conclusion: Although the results are in line with international research, they call for effective efforts to promote research integrity at Scandinavian universities.

PM-083

Presentation of the DFG - Rules of Procedure for Dealing with Scientific Misconduct:

K.H. Hüttemann
Deutsche Forschungsgemeinschaft (DFG), Bonn, Germany

The Deutsche Forschungsgemeinschaft (DFG) is the self-governing organisation for science and research in Germany. It serves all branches of science and the humanities. In organisational terms, the DFG is an association under private law. Its membership consists of German research universities, non-university research institutions, scientific associations and the Academies of Science and the Humanities.

The DFG receives the large majority of its funds from the federal government and the states, which are represented in all grants committees. At the same time, the voting system and procedural regulations guarantee science-driven decisions.

Based on its own Rules of Procedure, the DFG carries out a two-step procedure to ascertain scientific misconduct. The two-step process comprises an informal preliminary investigation by the DFG Head Office and a formal process involving the Committee of Inquiry on Allegations of Scientific Misconduct.

The Committee of Inquiry on Allegations of Scientific Misconduct investigates allegations of scientific misconduct carried out by applicants, funding recipients, others responsible for the use of DFG funds, and reviewers, as well as members of DFG bodies involved in consultation and decision-making processes.

The committee is chaired by the Secretary General of the DFG and is made up of four members of the Joint Committee.

The committee discusses cases in oral meetings. The committee weighs the evidence to determine whether scientific misconduct has occurred. If scientific misconduct has been established, the committee's findings are forwarded to the Joint Committee with a recommendation. Otherwise the committee will close the case.

Poster Walk: Publications and the media

PM-094

The author's role in the manuscript, what is written in the instruction of mainstream Brazilian Journal of Nursing?

I.E. Cabral[1], E.Y. Egry[2], D.A. Barbosa[3]
[1]Federal University of Rio de Janeiro, Rio de janeiro, Brazil
[2]State University of Sao Paulo, Sao paulo, Brazil
[3]Federal University of Sao Paulo, Sao paulo, Brazil

The **objectives** of the study were to identify how the authors should declare their role in writing the manuscript based on instructions for authors published in the websites of a mainstream Brazilian Journal of Nursing. **Method**. The selected criteria of including a Brazilian Journal of Nursing were the highest impact factor measured by Journal Citation Report (JCR/2015), online available a full text in english and portuguese version, and sponsored by public Publishers. We applied a content analysis approach for categorizing the data gather from the journal website. The **results** showed that three Journals attended the criteria of inclusion with 0.534 (A); 0.452 (B) e 0.298 (C), respectively. All the information regarding the expected author behavior are explicit declare at different parts of the instructions for publication. The most common parts were "scope and policy", "preparing a manuscript for submission", "authorization to publish and transfer of copyright", "title page", "Authorship", and "Copyright". The authors should declare what kind of substantial contribution each one gave to write the manuscript, such as conception and planning research or idea, developing a fieldwork, analysis and interpretation, formulation and critical review. Only the journal C publishes the author contribution of conducting the research and elaborating the manuscript or developing the idea together.

We **concluded** that there are a lacking of uniformity in which part of instructions the information regarding author's behavior should be showed; the declaration of substantial contribution to write the manuscript remains unknown by the readers. The ethic of manuscript author should be clearly demonstrated also for the reader and not only for the Journal's staff.

PM-095

Analysis of papers studying scientific misconduct from three major databases in China

L.L. Yu, M. Miao, B.H. Feng, P.J. Zhang
Beijing Hospital, Beijing, China

Objective: By retrieving and analyzing papers that study scientific misconduct in three major databases in China: CNKI database, Wanfang database and SinoMed database up to 2015, the authors aim to analyze the current situation of scientific misconduct in China and find out the main problem. Method Firstly, the retrieval words are chosen according to concept, definition of scientific misconduct, literature and policy documents in domestic and abroad. Then, paper retrieval is conducted in three main databases separately up to December 2015 and mismatched or repeated items are removed. Finally, the publishing year, journal, keywords, institution and funding of the papers are analyzed. Results The number of related papers is 2651 in total and the earliest one was published in 1983. The amount of papers increases gradually year by year, exceeds 100 annually after 2005 and increases to nearly 200 since 2009. 2512 journal papers are published in 1094 journals, among which Acta Editologica collects the largest amount of 76. The editorial staff published the most related paper. The top 5 keywords are academic misconduct, academic corruption, research integrity, academic morality, scientific misconduct, which occurs respectively in 832 papers, 478 papers, 224 papers, 192 papers, 192 papers. Plagiarism, falsification and fabrication only occurs in 102 papers, 2 papers and 1 paper respectively. Analysis of the reason of scientific misconduct comes from individual case and few surveys investigate directly on whether researchers have committed scientific misconduct and its real reasons. The top twelve institutions issuing papers include 9 universities, 2 research institutions and National Natural Science Foundation of China. The funding rate of papers in CNKI and SinoMed database is 19.01% and science and technology management department, university and social association accounts for 56.25%, 25.69% and 15.28% of all funding institutes. Conclusion In China, more and more attention is drawn on scientific misconduct and increasing amount of research is done around the subject. However, most research goes on the surface, and rarely analyzes the nature and influence factor. Therefore, subsequent research should be carried on deep and needs more support from state department in charge of science and technology.

PM-096

Measures to promote high impact journal publication integrity in a Comprehensive University: the case of Universiti Malaysia Sarawak, Malaysia

K. Jusoff
UNIVERSITI MALAYSIA SARAWAK, Kota samarahan, Malaysia

With a mission and vision towards a world-class Malaysian comprehensive university, Universiti Malaysia Sarawak (UNIMAS) journal publication activities realise the significance of journal publication integrity. As to be refined in the UNIMAS Policy on Journal Publication Integrity, every single academic member of the University must uphold the highest standard of ethical conduct laid by the University's rules, policies and guidelines, in particular on the aspects of journal publishing. This paper highlights UNIMAS efforts in promoting responsible conduct of high impact journal publishing. Since January 2016, the University has organized regular High Impact Journal Writing and Publishing Workshops and invited seminars, which are now mandatory for all academic members and postgraduates to publish in ISI Web of Science/Scopus/ERA/GS indexed journals towards an improved higher ranking position in the QS Asian University Ranking (AUR). The program covers important ethical and integrity issues in journal publishing, especially on authorships/co-and multiple authorships, publishing in paid "suspicious" OA journals due to the demand of the yearly Key Performance Indicators (KPIs) and publishing reward incentives set by UNIMAS, plagiarism and questionable publishing practices. It is hoped that a journal publishing integrity funding scheme will be established by the University to encourage faculty members and postgraduates to tailor higher education and training programs to promote journal publishing integrity awareness. It is expected that UNIMAS will be more active in international networks of journal publishing integrity with a compulsory journal publishing ethics and integrity course for all postgraduates effective next year's intakes. The paper concludes by raising some of the challenges faced by UNIMAS including cultural and disciplinary journal publishing differences, increasing international journal writing and publishing collaboration activities, and the changing international scene of the QS World University Ranking game.

PM-097

The research productivity of countries and its relationship with the correction of the literature: Insights from an ongoing project

M.D.R. Dias Ribeiro, S.M. Ramos de Vasconcelos
Federal University of Rio de Janeiro, Rio de janeiro, Brazil

The scientific productivity of countries can be related to several factors, including percentage of Gross Domestic Product (GDP) invested in Research & Development (R&D), number of active researchers, and international collaborations. This input to science usually reflects on number of publications of countries and, usually, to the visibility of their research, through citations, for example. Increasingly, the dynamics of communicating science has been influenced by the correction of the literature, helping shape this international landscape. It has been shown, for example, that journals published by countries with an established research tradition have been more active in retracting articles. However, looking at the broader panorama of the correction activity, we make the following question: Could research productivity, measured by the number of papers in major international databases, be correlated with this correction process? We addressed this question through data recorded in *Retraction Watch*, which may be considered the most reliable source of records for the correction of the literature. We focus particularly on retractions. *i.e*, other types of correction were not documented for this analysis. We collected retractions (n=996) from July 2014-December 2015. The documents were categorized according to "reasons for retractions". The distribution of such reasons along the documents were the following: 4% (n=36) – non-specified; 7% (n=64) – erros; 45% (n=443) – misconduct (fabrication, falsification and plagiarism); and "*other*". For data on research productivity, we used the 2015 *Scientific Journal Rankings* (SJR). So far, we have included the top 15 listed: the US, China, the UK, Germany, India, Japan, France, Italy, Canada, Australia, Spain, South Korea, Brazil, Russia, and The Netherlands. We have found that it is not possible to establish a correlation between the research productivity of countries and participation in the process of correcting the literature. However, our interpretation has some caveats - the correction of the literature is a recent activity in the research community, and the visibility of publications by authors from different countries is quite diverse. Also, our time range for the analysis is short and does not allow us to draw definite conclusions. Further data have been collected for a more comprehensive analysis.

Expertise and conflicts of interest among independent commenters in media coverage of health research: a cohort study

A. Grey, M.T.M. Wang, M.J. Bolland
University of Auckland, Auckland, New Zealand

Objective: Conflicts of interest can compromise the integrity and objectivity of professional opinions and judgments. It is recommended that media coverage of medical research, which influences the views and behaviors of clinicians, scientists and members of the public, include independent commentary with identification of relevant conflicts of interest.

Methods: We analyzed 104 independent comments in news stories on original clinical research published in high-impact medical journals from 1/1/2013-3/31/2013, and 21 related journal editorials. Main outcomes were prevalence of relevant academic and clinical expertise, prevalence and disclosure/reporting of academic and financial conflicts of interest, and disposition of comments towards study findings. Each outcome was independently assessed by 2 investigators and consensus sought in the event of disagreement.

Results: Only 1 in 6 news stories included independent comments. 25% of commenters and 0% of editorialists had neither relevant academic nor clinical expertise (P=0.002). 54% of commenters had academic conflicts of interest, but only 25 of 56 were reported; 32% had financial conflicts of interest, but only 11 of 33 were reported. When academic or financial conflicts of interest of commenters were congruent with the results of the source research, 97% and 93% of comments, respectively, were favorably disposed towards the research. When academic or financial conflicts of interest of commenters were not congruent with the results of the source research, 16% and 17% of comments, respectively, were favorably disposed towards the research.

Interpretation: News stories about medical research infrequently include comments from independent commenters. Independent commenters may lack relevant academic or clinical expertise. Academic or financial conflicts of interest are frequently present, but infrequently reported. The presence of a conflict of interest aligns with the disposition of comments towards the source research.

The Public Perception of Stem Cell Research in the Media and the Increase of Unproven Stem Cell Clinics

K.R.W. Matthews[1], A.S. Iltis[2]
[1]Rice University, Houston, U.S.A.
[2]Wake Forest University, Winston-salem, U.S.A.

Objective: Stem cells have been touted by the media as the new future for medicine. Unfortunately with limited therapies currently available, unscrupulous clinics around the world are using the positive public image of stem cells to market unproven stem cells interventions to "cure" diseases ranging from Autism to Multiple Sclerosis. This presentation will describe the continued marketing and use of experimental stem cell-based interventions and how it negatively impacts the scientific research enterprise.

Method: To understand this issue and ways to promote change, we reviewed and analyzed literature relevant to unproven stem cell interventions and alternative regulatory strategies to increase access to the therapies undergoing the clinical trial process. We also surveyed stem cell clinic websites to understand how they advertise to the public, what therapies they offer and the data they use to validate the procedures. This research identified key priorities and goals for developing public policy and regulatory approaches that will be more inclusive and help prevent patients from seeking unproven treatments.

Results: Clinics offering unproven stem cell interventions have been identified around the world including in the United States charging up to $40,000 per treatment. Clinics market themselves online and use the media's portrayal of the benefits to stem cell research as well as public figures, including prominent athletes, to promote their business. Their websites lack evidence of safety and efficacy or relevant clinical research to justify the procedure. Several policy options have been proposed recently to promote a faster trial process including allowing the marketing (and charging patients for access to) the final stage of a clinical trial.

Conclusion: The landscape of stem cell tourism should prompt a re-evaluation of current policy approaches to stem cell-based interventions with respect to the design, initiation, and conduct of clinical trials. Stakeholders, including scientists, clinicians, regulators and patient advocates, need to work together to find a compromise to encourage patients to stay in their home country and within the clinical trial process instead of seeking unproven treatments abroad. We identify ways in which policy may be developed to improve the regulation, oversight, and ethical conduct of stem cell research.

PM-100

The Role of the Media in Promoting Research in Africa:Case Study of Nigeria
B.A. mr. Abubakar
Kanuri Development Association, Maiduguri, Nigeria

The Media plays vital roles in promoting research, because through the media stakeholders affected or related to the research findings could be reached. However in Africa the media is a medium with approximately 90 % out reach when it comes to research findings outreach. It has the powers to project and promote research works for researchers in reaching their subjects and relevant stakeholders such as governments,international organizations and institutions,in some cases it even help in sourcing some research grants available within. Contrary to the above role of the media in Nigeria the media are so biased in promoting research works in its generality,but rather they are biased and corrupt that they only promote researches that are of finacial or special interest to them. So at the end of the day the best research works in the country remain invisible,unknown and probably even worthless due to lack of attentions coming from relevant stakeholders expected to use such research findings

PM-101

Trust in Science and Engaging the Media
C. Fekken
Queen's University, Kingston, ontario, Canada

Public trust in science is based on the assumption that science will be conducted in a rigorous and honest manner and on the expectation that institutions will be open in exposing findings of research misconduct. A review of the major national / international frameworks for local policies on the management of responsible conduct of research reveals no broad guidelines for engaging with the media despite major societal shifts in: the public's expectations for information; the platforms for transmitting information broadly and rapidly; and the ground rules for engagement with media. At the same time, the rights of the multiple stakeholders in the research misconduct process for confidentiality and for protection of reputation are governed by integrity policies and by local employment standards and laws that have not anticipated the exploding media trends being experienced today. The result is that we see very mixed practices across misconduct cases related to what information is or is not released into the public domain. Further, we see little concerted attempt to use the media in positive ways to promote research integrity.
 This paper argues for the development of a forward thinking policy statement that allows nimble interactions not just with the media, but with a media savvy public. Regulatory and administrative bodies charged with the responsible conduct of research need to articulate what it means to engage the media. What are the goals of media engagement? To punish, to dissuade, to warn, to inform, to promote good behavior, to foster positive values? What is the optimal balance between confidentiality and transparency and how should the differing perspectives of multiple stakeholders be taken into account? Are there basic journalistic principles, such as factual accuracy, limited harm, serving society, and promoting civil discourse, that should inform interactions with the media? What happens when "participatory social media" ignores such principles and rapidly and dramatically manipulates information in unintended ways? The benefits of a policy statement would be to stimulate local policy makers to develop guidelines to disseminate honest information, to contain misinformation, and to promote mechanisms that will allow the public to discern between the two.

PM-102

How do we stop predatory publishing?
S. Eriksson
Uppsala University, Uppsala, Sweden

This presentation discusses the phenomenon of 'predatory publishing' in relation to academic journals and what can and should be done to eliminate or reduce the effects of this development. This growing phenomenon has the potential to greatly affect science as publishing papers for profit without any genuine concern for content, but with the pretence of applying authentic academic procedures of critical scrutiny, brings about a worrying erosion of trust in scientific publishing. I will give examples of what has been done so far to counteract these developments and present some important recent initiatives that aim to help scholars and students to avoid these journals. I will also claim that more should be done.

Poster Walk: Research on research 2

PT-011

Informed consent process : a challenging issue of health research in India

B.G. Ganguly[1], N.N. Nanjappan[2], P.S.G. Ganguly[3]
[1]Pramukhswami Medical College, Anand, India
[2]Ambedkar University Delhi, Delhi, India
[3]Indian Institute of Public Health Gandhinagar (IIPHG)In, Gandhinagar, India

Informed consent is an essential prerequisite for enrolling participants in biomedical research. Getting meaningful and ethical informed consent is becoming a challenge for the researchers in India. As a result limitations are increasing in research studies through restricted sample size or delay in the study which are alarming signals.

The aim of this study was to explore the perception of researchers on informed consent process with reasoning.

The study was designed as qualitative type, through semi-structured interviews of researchers who were involved in (1) regulated and non-regulated clinical trials, (2) funded and non-funded research projects. Interview guide was prepared to explore researchers' experiences in informed consent process, behavior and interactions of the patients participating in research studies. The data were analyzed using thematic framework approach.

The challenges perceived by the researchers in informed consent process were multifaceted. In regulated clinical trials, they were related to time and duration of the whole process, especially in audiovisual recording of consent process, legalized in India. Moreover, patients' comprehension on risk and benefit in drug trial was found to be another challenging issue. But in other research projects, not related to clinical trial, main challenges were directed towards patient or participant factors like understanding, behavior and cooperation. In questionnaire based studies, issues like permission from head of the family, financial benefit and expectation, certain religious and cultural norms were playing significant role. These resulted in increase in refusals for participation. It was also revealed that there was failure in conveying adequate information by the researchers to patients on the nature and possible consequences of the procedures to be carried out in the study. This was because of apprehension of the researchers towards changing decision or refusal to consent by the participants in the study.

The issue of informed consent in India is a challenge due to various complexities of culture, level of education and demographics resulting in increased nonparticipation or refusal to give consent. The guidelines, prepared in line with western culture, need to be relooked from the angle of consent process for addressing complex diversities in India.

PT-012

Graduate research on plagiarism in Brazil: characterization of current status

M.V.R. Almeida, J. Fontes-Pereira
Universidade Federal do Rio de Janeiro, Niteroi, Brazil

Objective: To characterize the current status of Graduate level (MSc and DSc Dissertations/Theses) research on plagiarism in Brazil.

Method: Data were obtained from a public database developed by the Ministry of Education of the country (the "Banco de Teses CAPES"), which attempts to register data on all MSc/DSc studies presented in Brazil. Basic data concerning author, year and place of presentation, abstract (for items from 2013 on) and keywords are available in an online, free access platform. The following keywords were used for this study: plagiarism, science integrity, ethics and scientific misconduct (all keywords both in Portuguese and in English). Those items pertaining directly to plagiarism studies were then identified by reading the abstract (if available) or by searching the manuscript over the Internet.

Identified items were classified by the present authors as: a) conceptual studies (e.g. discussions over the concept of plagiarism or of ethical concepts related to plagiarism), b) development of detection mechanisms (software), c) teaching (of prevention methods), d) legal aspects, e) quantitative studies and f) "other" (e.g. historical commentary). Year of conclusion and main area of study were also obtained.

Results: The available manuscripts spanned 2008-2016, and a total of 97 items were located, two of which had to be discarded. Identified studies pertained to all main areas of academic research, e.g. Engineering, Education, Language Studies, Health, History and Arts.

Twenty-two items were classified as "conceptual studies". Twenty referred to the development of detection algorithms or software procedures. Eleven, to the study of legal aspects of plagiarism, seven to teaching, four to quantitative studies and the remaining items to the "other" category.

Conclusions: The database includes more than one hundred thousand items, what gives a perspective of the interest in plagiarism research in the country. It is interesting to notice that the development of detection mechanisms represents a substantial proportion of the identified items (close to 1 out of each 4 studies). This suggests an imbalance in research areas pertaining to plagiarism in the country, given that teaching (of prevention methods) and quantitative studies together added up to about 1 out of 10 studies.

PT-013

Research integrity practices in the European research programmess: Learning from good practices

S.K. Krstic

Independent researcher and consultant, Belgrade, Serbia

Objective: The objective of this study is to provide better understanding of research integrity practices in European research programmes and reduce the existing information gap. It aims to identify and highlight examples of good practices, as well as to analyse how these successful approaches can be optimally used to treat identified areas of weaknesses within and beyond relevant programmes.

Method: The focus group for this study are current and past fellows of the Marie (Sklodowska) Curie Actions, which are widely known as a European research mobility scheme which provides high quality and innovative training for researchers at various stages of their careers. The study is supported by the qualitative and quantitative analysis of the survey results.

Results: This is ongoing study and results are not available yet. The survey and ethical procedure for its implementation have been already designed. It is expected that the results will be available by the end of the year and they will be presented at the conference. According to the prepared survey questions, it can be mentioned already now that the study aims to highlight areas which have not been investigated by now. The abstract will be updated before the conference, in line with the obtained results.

Conclusions: Although it is impossible to provide conclusions before the results are obtained, it is expected that the results will lead to the conclusions which will help to spread examples of good practice (identified both by trainees and trainers), improve quality of training and support research integrity culture in Europe and beyond.

PT-014

The impact of systematic review of animal studies on research culture

K. Mccann, R. Macleod, S. Sena

The University of Edinburgh, Edinburgh, United Kingdom

Objective: The Lancet Waste Series suggests that studies should be designed with reference to systematic reviews of existing evidence and that new research should be interpreted in the context of such reviews. Assessment of animal studies through systematic review is not yet an intrinsic part of the research cycle. We hypothesise that these analyses have the potential to improve the design, conduct and reporting of animal studies but in vivo researchers need to see their conduct as positive and useful. We assessed the response to and impact of independent systematic review using examples from two different research domains.

Methods: We present evidence resulting from systematic reviews of studies investigating the anti-inflammatory agent, interleukin-1 receptor antagonist (IL-1 RA), for the treatment of ischaemic stroke, and the MVA85A vaccine for tuberculosis challenge in animals.

Results: Where systematic review is accepted and valued by researchers, we saw an improvement in the quality and range of evidence produced to support the use of IL-1 RA for the treatment of stroke. In an updated systematic review published in 2016, we observed larger sample sizes and the median quality score increased from 6/15 (IQR 5-7) to 11.5 (9.8-12) compared to the original review, published in 2009. Systematic review has had a positive impact on stroke research culture and resulted in more complete reporting and more robust findings that are more likely to be reproducible. In contrast, we observed a visceral objection to independent systematic assessment of the evidence supporting the MVA85A vaccine for tuberculosis challenge.

Conclusion: Independent assessment of animal research is an important component of the research cycle that can have a profound impact on how studies are carried out. These contrasting examples highlight how systematic review can positively influence research culture but also how those conducting independent systematic reviews have a duty to ensure that the potential users of the research understand their aims and the potential impact of using this research.

Bias in the reporting of harms in clinical trials of second-generation antidepressants for depression and anxiety: a meta-analysis

Y.A. de Vries[1], A.M. Roest[1], L. Beijers[1], E.H. Turner[2], P. de Jonge[1]
[1]University Medical Center Groningen, University of Groningen, Groningen, The Netherlands
[2]Oregon Health & Science University, Portland, U.S.A.

Objective: Previous research has shown that reporting bias has inflated the apparent efficacy of antidepressants. We investigated whether apparent safety was also affected.
Method: We included 133 trials, involving 31,296 patients, of second-generation antidepressants for the treatment of major depressive disorder (MDD) or anxiety disorders, obtained from Food and Drug Administration (FDA) reviews. We extracted data on overall discontinuation, discontinuation due to adverse events, and serious adverse events (SAEs). Meta-analysis was used to compare discontinuation rates between FDA reviews and matching journal articles, while SAEs were compared qualitatively.
Results: The odds ratio for overall discontinuation, comparing drug to placebo, was 1.0 for both sources, while that for discontinuation due to adverse events was 2.4 for both sources. Seventy-seven of 97 (79%) journal articles provided incomplete information on SAEs; sixty-one (63%) articles made no mention of SAEs at all. Of 21 articles which could be compared to the FDA, only 6 (29%) had full reporting without discrepancies. Nine (43%) articles reported a discrepant number of SAEs. Descriptions were absent or discrepant in 6 (29%) additional articles, even for important SAEs such as suicide attempts.
Conclusion: Reporting bias has not affected average discontinuation rates over trials. However, SAE reporting is not only very poor, with over half of articles failing to discuss SAEs altogether, but discrepancies between the FDA and articles were common and often led to a more favorable drug-placebo comparison. These findings suggest that journal articles are an unreliable source of data on SAEs.

Editors of SciELO journals: what their frequency with practices of misconducts in science?

E.D. Damasio
State University of Maringá - UEM - Federal University of Rio de Janeiro - UFRJ, Maringá, Brazil

Objective: SciELO open access journals started in Brazil. Indexed almost thousand edited by countries in the world. Considering the central role of editors in the publishing process and the increasing number of misconduct in science, it was elaborated a survey with objective to perception misconducts to all editors to Brazil and five countries.
Method: A survey to send all SciELO editors to investigate the views in Brazil and five Latin American countries. The results to 97 Brazilians editors and 112 to other countries, who have answered the presents their *frequency* of problems with 11 practices of misconduct, measured through a likert-scale question, ranging from 0 (never) to 3 (very often).
Results: In Brazil it was identified that 'redundant publication' is the highest-scoring practice editors at frequency with while 'plagiarism' and 'duplicate submission' is the lowest, with the respective average ranges 1,11 and 1,05. Two practices have score means ranging from 0,80 to 0,68 to: 'reviewer misconduct' and 'conflicts of interest'. Other six practices have score means lower than 0,42 to 0,21: 'ghost authorship', 'undisclosed commercial involvement', 'contested authorship', 'image manipulation', 'data fabrication' and 'data falsification'. The set of results addresses that Brazilian editor have a very low level of frequency with respect to many relevant science misconducts. On the others countries identified that 'redundant publication' is the highest-scoring practice editors at frequency with 1,18. 'Duplicate submission' on second with 1,13. Have more score means ranging from 0,94 to 0,69: 'plagiarism', 'conflicts of interest', 'reviewer misconduct' and 'ghost authorship'. Five have score means lower than 0,40 to 0,29 'contested authorship', 'undisclosed commercial involvement', 'image manipulation', 'data fabrication' and 'data falsification'.
Conclusion: On the analysis are found difference in frequencies on the Brazil and others countries, on the distribution of the very low level. The others countries there is a highest distribution on the frequencies. Recent study carried on with Wiley-Blackwell science journals editors presented even higher score means. Such picture suggests that the reliability on the complete journal editorial flow may be in risk by a lack of frequencies identified by editors´ on the most relevant practices of misconduct in science.

PT-017

Undisclosed outcome switching in Swedish human subjects research

G. Nilsonne[1], Willén[2], Olle[3], Gert[1]
[1]Karolinska Institutet, Stockholm, Sweden
[2]IGDORE, Na, Sweden
[3]CHALMERS UNIVERSITY OF TECHNOLOGY, Gothenburg, Sweden

Objective: Undisclosed outcome switching introduces bias in research and is considered a questionable research practice. Research plans describing intended outcomes are submitted in applications to ethical review boards. This project aims to compare published papers to research plans, and investigate the prevalence of undisclosed outcome switching as well as correlates to faithful reporting.

Method: A sample of applications to Sweden's six regional ethics review boards was selected at random from applications approved during 2012. Applications were matched to published papers by database searching and by contacts with the responsible scientist. When applicable, applications were also matched to clinical trial registry entries and/or study preregistrations. Papers were coded systematically and the prevalence of undisclosed outcome switching was determined.

Results: Pending. We expect to find that many ethical applications cannot be matched to any published reports, that undisclosed outcome switching has a nonzero prevalence, and that outcomes are more clearly specified and less often switched without disclosure in clinical trials.

Conclusion: Undisclosed outcome switching may threaten research integrity.

PT-018

The second national survey on scientific integrity in Norway: Background, questions and some results

M. Kaiser[1], H. Ingierd[2]
[1]University of Bergen, Bergen, Norway
[2]The Norwegian National Research Ethics Committees, Oslo, Norway

This paper reports on some first results of a collaborative project (2016-1018) between higher education institutions and the National Committees for Research Ethics in Norway. The first such national survey dates back to 1996-97, revealed some disturbing high numbers of self-reported misconduct, and was widely criticised on various grounds. In the meantime the Government has introduced a Research Integrity Act in Norway (2007), and in 2016 suggested a revision of it. This spurred the University of Bergen, the University College of Bergen and the National Committees of Research Ethics in Norway to basically ask what has changed in the meantime, has integrity in science become more or less of an issue, have new institutional structures to prevent and deal with integrity issues shown an effect? The study is formed as an anonymous questionnaire sent out electronically to Norwegian researchers (from PhD level to professors) and aims mainly at prevalence questions, mainly about FFP and QRP. Questions are chosen to maximise comparability to other international studies of scientific integrity. Results of the survey will be analysed with the usual statistical instruments. However, a qualitative study is planned as a follow-up, with the purpose of understanding underlying mechanisms promoting or inhibiting good scientific practice and integrity. In the end, the study is to serve as the empirical background material for educational and preventive activities regarding scientific integrity. It is also intended to throw more light on important institutional differences and practices within Norway. The authors will report on first salient results of the study.

PT-019

The relation between swimming in chlorinated water and asthma in childhood: a citation network analysis

B. Duyx[1], L.M. Bouter[2], M.J.E. Urlings[1], G. Swaen[1], M.P. Zeegers[1]
[1]Maastricht University, Maastricht, The Netherlands
[2]VU University Medical Center, Amsterdam, The Netherlands

Objective: to assess the determinants of being cited in the scientific research field on the relation between swimming in chlorinated water and asthma in children. Chlorinated water reacts with urea discreted by the human body. This reaction forms chlorination by-products that can irritate the respiratory system. It has been postulated that the high prevalence and rise of childhood's asthma in the western world is caused by swimming in chlorinated pools. However, research on this topic shows contradictory conclusions, which makes it an interesting topic for citation analysis.

Method: we identified 36 empirical and non-empirical publications on this topic via Web of Science. From these publications we extracted the following determinants (among others): study outcome, research quality, sample size, research design, authority, specificity, funding source, corresponding author's gender, affiliation and country, and the journal's impact factor. We have tested their impact on citation with a mixed model logistic regression. Results will be presented.

Conclusion: We will discuss our findings in the light of research integrity. Especially if research with positive outcomes is cited more often than research with negative outcomes it might distort knowledge production in this field, and lead to false beliefs. We will therefore assess the 'citation health' of this particular network.

PT-020

Responsible Conduct of Research-Creation: A Portrait of an Uncharted Field of Research

N.V. Voarino[1], V.C. Couture[2], J.C.B.P. Bélisle-Pipon[1], S.C.M. Mathieu-Chartier[1], E.S.H. Saint Hilaire[3], B.W.J. Williams-Jones[1]
[1]Université de Montréal, Montreal, Canada
[2]Faculté de médecine et des sciences de la santé de l'Université de Sherbrooke, Sherbrooke, Canada
[3]Concordia University, Montréal, Canada

Objective: Responsible conduct of research (RCR) is now ubiquitous, and present in most if not all areas of research. However, one area that has received very little attention is Research-Creation (RC), an emergent field at the interface of academic research and creative activities. In Canada, the Quebec provincial social science funding agency (FRQSC) defines RC as "research activities or approaches that foster the creation or interpretation/performance of literary or artistic works of all types". Researcher-Creators – who are at the same time researchers and practising artists, musicians, or designers – may be faced with very different challenges from colleagues in the rest of academia. Little is still known on how RCR issues are articulated in RC and how the very heterogeneous RC community responds to institutional policies or provincial/national RCR guidelines. This review sought to identify and categorize RCR issues, and detect RC-specific determining factors.

Methods: To answer these questions, we conducted a scoping review of the academic literature dealing with RCR in RC, a first step in a two-year project to build tools to raise awareness and support RCR in RC. An initial sample of 2523 papers was collected. Analysis of the titles and abstracts resulted in a sample of 200 papers, which were then read in detail and coded using *QDA miner* software.

Results: The thematic content analysis highlighted major RCR issues and their specificity in RC. Preliminary analysis identified 4 major clusters: 1) conflicts of interests and conflicts of commitment 2) authorship and knowledge transfer, 3) evaluation and validation; 4) lack of consensual definition of RC. The articulation of these issues, however, may be quite different from mainstream RCR. Final results are expected by November 2016.

Conclusion: Preliminary analysis points to the use of non-RCR language to describe similar (but also different) issues and the fact that very few articles directly deal with RCR in RC, findings that will be critical in the development of RCR guidance that is pertinent and adapted to the realities of the RC community.

Poster Walk: RCR Education 2

PT-030

Modeling the effectiveness of RCR education
M.D. Mumford, L.L. Watts, L.M. Steele, T.J. Mulhearn, K.E. Medeiros, S. Connelly
The University of Oklahoma, Norman, U.S.A.

Objective: Institutions are often developing new courses in the responsible conduct of research (RCR) or revising existing courses. As a result, it would be of value to have a tool to provide instructors with forecasts bearing on the likely effectiveness of instruction. To develop such a tool, or predictive system, a model of RCR course effectiveness is needed. The intent of this present effort was to develop an empirical model to predict the effectiveness of RCR instruction.
Method: Development of this model was based on meta-analytic data. A meta-analysis led to the identification of 106 courses, including 10,069 participants for which evaluation data was available. Subsequently, a panel of three trained, and reliable, judges coded course attributes and indices of the effectiveness of instruction. Judges coded types of outcome measure and effect size, study design, population characteristics, instructional parameters (e.g., course length), trainer characteristics, instructional development procedures, instructional content, instructional activities, and practice characteristics. Multiple variables were examined in each category. A structural equation modeling analysis was used to assess how these variables influenced RCR educational outcomes.
Results: The model developed was based on general principles bearing on the effectiveness of educational and training systems. When the model was fitted to the data, the resulting goodness of fit index was .95 and the root mean squared error of approximation was .04. These findings indicate that the model provided an excellent description of extant RCR courses and the impact of these courses on outcomes of RCR educational programs.
Conclusions: Apparently, the variables giving rise to the outcomes emerging from RCR courses can be modeled. This model might be used to predict the outcomes of courses designed to develop professional ethics and anticipate the impact of course decisions. This model is being used to develop a tool to allow instructors to forecast the effect of content adjustments on course outcomes.

PT-031

Evaluation of the Effectiveness of Michigan Engineering Ethics Programs Using the Ethical Decision Making Measure
J.C. Cha, E.W. Wagner, J.A. Ashton-Miller
University of Michigan, Ann arbor, U.S.A.

The effectiveness of the University of Michigan College of Engineering Responsible Conduct of Research and Scholarship (RCRS) program was evaluated using the Mumford et al. ethical decision making (EDM) measure. Students complete RCRS training through college (C) workshops (four two-hour sessions), or two department (D:D1,D2) semester-long, one credit, courses. Fifty-one percent of the PhD students were international. We investigated whether 1) the RCRS training improved students' ethicality, 2) there was a difference in effectiveness between the C workshops and D courses, and 3) there was a difference in effectiveness for domestic and international students. The EDM was administered online in a pre-post format. Participants were asked to provide demographic information including department, citizenship status, and native language. Incoming Fall 2015 PhD students, plus Master's students enrolled in the D courses were asked to complete the EDM (total n = 657): students trained in the C workshops completed the pre-test of the physical science/engineering EDM before the semester began and the post-test following completion of their last workshop; students in D courses completed the two tests at the beginning and end of the semester. The EDM was scored and t-tests were conducted at University of Oklahoma. Overall ethicality improved statistically of all students between the pre-post tests (C: $t(62)=4.94$, $p<0.01$, $d=0.79$; D1: $t(50)=7.21$, $p<0.01$, $d=1.26$; D2: $t(9)=3.10$, $p=0.01$, $d=1.01$). All groups improved in overall ethicality, but C had a slightly greater effect size than D. Both domestic and international students' ethicality improved (domestic: $t(85)=8.65$, $p<0.01$, $d=1.16$; international: $t(40)=4.05$, $p<0.01$, $d=0.85$). There was a smaller effect size in the data management EDM sub-dimension ($t(40)=2.03$, $p=0.05$, $d=0.49$) than domestic students ($t(85)=4.25$, $p<0.01$, $d=0.62$). We conclude the RCRS program was effective in improving students' ethicality; furthermore, the two training groups (C & D) were similar in their effectiveness. Limitations included the lack of standardized testing environment, students not treating the EDM seriously, and small sample sizes. Future studies might address how to more effectively teach research data management to international students.

PT-032

Teaching research ethics with flipped-classroom and dialog discussion - opinions of the PhD-students in health sciences

A. Halkoaho[1], S. Happo[2], T. Keränen[2], [1]Kuopio University Hospital, Kuopio, Finland, [2]University of Eastern Finland, Kuopio, Finland

Objective: Legal and ethical aspects are important issues in clinical research. Before initiating a study, a favourable opinion of research ethics committee (REC) must be acquired. In general, clinical investigators often need education in ethics but a challenge is to make the training pragmatic. We developed a new course formula to illustrate ethical issues in study protocols. The main aim was to elucidate why and how clinical study participants should be protected but also to guide PhD-students toward deeper understanding of ethical aspects in clinical research.
Method: 26 PhD-students in medical and health sciences attended the course. Flipped-classroom with video presentations, dialogue discussions and group teaching was used. Course evaluation was done by means of a questionnaire and reflection on own learning. Links to appropriate legislation, ethical guidelines and pre-recorded video lectures were used as introductory material. For the purpose of self-learning, students were sent three clinical study protocols, modified from actual ones to include questionable solutions is key ethical issues. Principal Investigator's ethics statement, study information leaflet and consent form, were also provided. In contact learning sessions, we presented dialogue based lectures with practical examples of clinical research including an introduction to REC ethics evaluation practices. In group teaching, students acted as REC members evaluating modified study plans.
Results: After the course, students assessed their own learning. According to the feedback, this kind of teaching enhanced the learning of research ethics and increased the awareness of research ethics in practice. Video lectures were considered to be very educative compared with written course material only. Students found the live classroom lectures very informative as they deepened the knowledge acquired from the pre-material. The dialogue method was appreciated as it challenged the students throughout the lecture session. Group teaching was seen as an efficient way to learn ethics. Video lectures followed by the dialogue discussion enhanced knowledge to act as active members in group teaching.
Conclusion: Ethical aspects in clinical research are well adopted by reflecting ethical issues upon research protocols in group discussions. Flipped-classroom and dialogue discussions prior to group teaching seem to support learning and deepen ethical awareness.

PT-033

Scientific Integrity Committee of the Instituto Oswaldo Cruz |Fundação Oswaldo Cruz-Brazil

M.C. de c⬦ssia Cassimiro
Instituto Oswaldo Cruz/Fundação Oswaldo Cruz, Rio de janeiro, Brazil

Define scientific integrity has been a universal challenge in several countries. In this sense, the Singapore Declaration (2010)[1] constitutes an essential tool for the scientific integrity committees in major centers of teaching and research, because The principles and responsibilities set out in the Singapore Statement on Research Integrity represent the first international effort to encourage the development of unified policies, guidelines and codes of conduct, with the long-range goal of fostering greater integrity in research worldwide. According to Hiney (2015)[2], efforts to promote responsible research and ethical behaviour and to protect the research record need broad definitions of misconduct and a lower intentionality threshold. However, if the objective of a policy or regulation is to hold researchers accountable only for fraudulent behaviours that damage the research record, then it may be appropriate to define misconduct within the narrow confines of FFP, and with a high threshold of culpability. It is common to want the same definition to both catch bad behaviour and promote good behaviour. The Scientific Integrity Committee of the Instituto Oswaldo Cruz was established in December 2015, the members are researchers from different professions. The basic knowledge was acquired through the study of literature on scientific integrity[3]. The misconduct may cause devastating impact for researchers, institutions and society that is why we seek a consensus on the need to offer specific education and support for researchers, especially for the next generation of young researchers. We believe that the monitoring of research practices, instead of processes has the potential to influence the behaviour so that decrease the likelihood of scientific misconduct.
[1]SINGAPORE STATEMENT ON RESEARCH INTEGRITY (2011). 2nd World Congress on Research Integrity: http://www.singaporestatement.org/statement.html
[2]HINEY, M (2015). Briefing Paper - 'Research Integrity: What it Means, Why it Is Important and How we Might Protect it'.
http://www.scienceeurope.org/uploads/PublicDocumentsAndSpeeches/Briefing_Paper_Research_Integrity_web.pdf
http://www.singaporestatement.org/
[3]THE BRAZILIAN MEETING ON RESEARCH INTEGRITY, SCIENCE AND PUBLICATION ETHICS I, II, III:
(2010): http://www.iibrispe.coppe.ufrj.br/index.php/i-brispe ;
(2012): http://www.iibrispe.coppe.ufrj.br/index.php/i-brispe
(2014): http://www.fapesp.br/8788
3TH WORLD CONFERENCE ON RESEARCH INTEGRITY (2013):
http://www.researchintegrity.org/3wcri/program_e.shtml
4TH WORLD CONFERENCE ON RESEARCH INTEGRITY (2015): http://www.wcri2015.org/
ROUNDTABLE ON RESEARCH INTEGRITY AND SCIENCE COMMUNICATION IN THE XXI SCIENCE (2011): -
http://www.fiocruz.br/ioc/media/20110912_Programacao_bioetica.pdf

PT-034

The Changes to the Institutional Research Climate Before and After the Implementation of a Nationwide Research Ethics Education Project in Taiwan

S.J. Pan, C. Chou, C. Kao
National Chiao Tung University, Hsinchu, Taiwan

Objective: To foster research ethics (RE) among scientific communities, the Taiwan Ministry of Education initiated a nationwide RE online education project in 2014. The current study aimed to explore the changes to the research climate among institutions by comparing the surveys conducted during the project's planning phase (2012) and implementation phase (2016).

Method: Surveys and self-developed questionnaires were used in this study. Both questionnaires from 2012 and 2016 consisted of four parts, including the institution's: general information, instructional environments, needs assessments related to RE education, and willingness to be involved in the RE project. A slight difference between the two questionnaires was the addition of more items related to the current RE project in the 2016 survey. The respondents to the surveys were the deans of academic affairs in every university/college in Taiwan.

Results: In total, 112 and 106 deans participated in the surveys in 2012 and 2016, and the effective rates were 65.12% and 67.52%, respectively. The results from both surveys showed that the participating deans unanimously agreed with the importance and learning needs of RE for institutional communities. By the fall semester of 2016, 34 universities/colleges in total had participated in the RE project, and approximately 20,800 graduate students had completed the RE online education and passed a certification exam. However, the results from 2012 and 2016 were compared, and some differences were found. For example, only nine (8.04%) deans in 2012 claimed that their universities/colleges had institutional-level RE-related policies and/or ethical standards, while this frequency substantially increased in the 2016 survey (n = 67; 63.21%). Furthermore, a total of 22 (20.75%) deans in 2016 stated that their institutions provided plagiarism detection systems to assist students and faculty in their academic work, while there were only six (5.36%) deans who made this statement in 2012. The results also revealed no substantial differences related to the frequencies of institutional required and/or elective RE-related courses between the two surveys.

Conclusion: The findings provide first-hand information regarding the effectiveness of the project. As the project executors, we will refer to these results to continue promoting RE education among Taiwan's research institutes.

PT-035

Student and Faculty Evaluations of Michigan Engineering's 'Train-the Trainer' RCRS Program

J.C. Cha, E.W. Wagner, J.A. Ashton-Miller
University of Michigan, Ann arbor, U.S.A.

The University of Michigan (UM) College of Engineering Responsible Conduct of Research and Scholarship (RCRS) program was developed for 16 engineering disciplines. Since 2011, 3,383 students and research fellows have participated in 154 college workshops and two department (1 credit) semester-long courses involving 582 graduate (MS and PhD) students. The goal of this study was to measure 1) student perception of instructor effectiveness; and 2) faculty perception of how teaching in the program affects their research practices. So, during the 2015-2016 academic year, students completed a 9-question University of Oklahoma evaluation (using a Likert scale between "poor" [1] and "excellent" [5]), for instructor effectiveness in teaching ethics. Faculty members completed a 10-question University of Michigan survey, with Likert scale ranging between "not at all" [1] and "substantially" [5], to assess if teaching in the RCRS program changed their understanding of ethics and RCRS best practices. The weighted mean and standard deviation (SD) were calculated for all questions. There was a 29% student response rate (n=462). The results show mean ± SD student responses that averaged 4.09 ± 0.98 to "the extent the instructor contributed to their learning of ethics." The faculty response (rate 60%, n=21) was 4.10 ± 0.94 that "preparing for and teaching the workshops contributed to or improved my understanding of best practices in RCRS" while answering 3.62 ± 0.92 for research ethics. After teaching in the program, the faculty averaged 2.52 ± 1.03 on "adjusting their lab/research practices" while answering 2.24 ± 1.48 on their students making adjustments. Faculty instructors reported increased awareness and implementation of best practices after teaching. We conclude that the instructors were effective in improving students' understanding of ethics. Not only did the RCRS program improve students' ethicality, it also improved the understanding of ethics and RCRS for the faculty who taught it. To date 7% (n=36) of faculty have taught, helping to broaden the impact across the college to its classes and research laboratories. Limitations include low student response rates, variability caused by a single student having up to four different instructors, and varying amounts of ethicality-focused content across workshops.

PT-036

Major types of ethics education and their effectiveness

M.D. Mumford, T.J. Mulhearn, L.M. Steele, L.L. Watts, S. Connelly, K.E. Medeiros
The University of Oklahoma, Norman, U.S.A.

Objective: Many different approaches have been employed in educational programs bearing on the responsible conduct of research (RCR). Instructional models, or types, of instruction range from on-line courses, to issue discussion courses, to professional practices courses. The intent of the present study was to identify the major types of RCR courses, the common instructional models employed, and to appraise the effectiveness of the different instructional models.

Method: Overall, 32 data bases and 14 journals were examined to identify publications providing descriptions of RCR courses. In all, 330 such educational courses were identified of which 66 provided some form of evaluation data. A panel of three trained, and reliable, judges were asked to review these course descriptions and rate each course with respect to multiple variables bearing on 1) instructional content, 2) instructional processes, 3) delivery methods, and 4) instructional activities. Cluster analytic procedures were used to identify more or less similar courses with respect to these variables. Subsequently, for courses falling into a given type, or cluster of similar courses, indices of course effectiveness were obtained.

Results: Eight types of courses were identified that have been employed in RCR education: 1) field-specific compliance, 2) online, 3) professional decision processes, 4) general discussion, 5) targeted, experimental instruction, 6) norm adherence, 7) exemplar based, and 8) philosophical self-reflection. The most effective instructional types were found to be professional decision processes and targeted, experimental instruction. The least effective instructional types were found to be general discussion and norm adherence courses.

Conclusions: Eight major approaches, or types of programs, are commonly employed in RCR educational courses. Of these educational types a focus on professional decision-making appears most effective. Unfocused discussion of ethical issues is of limited value as are programs that simply stress adherence to guidelines. Apparently, a balanced, professional approach, which encourages active, thoughtful personal analysis of ethical issues, is the most appropriate approach to RCR instruction.

PT-037

Ethical challenges in designing and conducting medicine quality surveys

P. Tabernero Estévez[1], M. Parker[2], R. Ravinetto[3], S. Phanouvong[4], S. Yeung[5], F.E. Kitutu[6], P.Y. Cheah[7], M. Mayxay[1], P.J. Guerin[8], P.N. Newton[1]
[1]Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit, Vientiane, Laos
[2]The Ethox Centre, University of Oxford,, Oxford, United Kingdom
[3]Department of Clinical Sciences, Institute of Tropical Medicine,, Antwerp, Belgium
[4]United States Pharmacopeia, Promoting the Quality of Medicines Program,, Rockville, U.S.A.
[5]London School of Hygiene and Tropical Medicine,, London, United Kingdom
[6]Makerere University College of Health Sciences,, Kampala, Uganda
[7]Mahidol Oxford Tropical Medicine Research Unit, Mahidol University,, Bangkok, Thailand
[8]WorldWide Antimalarial Resistance Network,, Oxford, United Kingdom

Objectives: The conduct of surveys of medicine and health product quality is of great importance, particularly in settings – often in low- and middle-income countries – where there is a high likelihood of the widespread use of unsafe or ineffective medicines. The reasons for conducting surveys are powerful, but they also present ethical challenges requiring careful thought that have had minimal discussion and may even be ignored.

Methods: The majority of available objective evidence regarding medicine quality derives from surveys. However, this is a "new" research field, and there is a lack of ethical and legal guidelines for medicine quality surveys. Hence, those conducting surveys are often left wondering how to judge what counts as best practice. The main ethical challenges in the design and conduct of surveys have been listed, discussed and translated in a set of recommendations by an experts' panel.

Results: It is vital that the design and conduct of medicine quality surveys uphold moral and ethical obligations and analyse the ethical implications and consequences of such work. These aspects include the impact on the local availability of and access to medicines; the confidentiality and privacy of the surveyors and the surveyed; questions as to whether outlet staff personnel should be told they are part of a survey; the need of ethical and regulatory approvals; and how the findings should be disseminated. The level of risk acceptable by the survey team and the responsibilities of institutions and supervisors should be discussed with the Medicines Regulatory Authority (MRA), the concerned ethics committee and local authorities. A risk assessment should be performed before the survey is undertaken and clear guidelines appropriate to local conditions need to be developed. Urgent release of information via the national regulatory authority and WHO Rapid Alert System should be conducted for appropriate action.

Conclusions: An international, but contextually sensitive, model of good ethical practice for medicine quality surveys is needed. This work is a first step in this direction.

PT-038

Can an Interactive Design Help Students Learn Better in an Online RCR Course?

H.C. Wei, C.C. Chou, C.L. Kao
Institute of Education, National Chiao Tung University, Hsinchu, Taiwan

Objective: An interactive design has been considered an indispensable component embedded in online learning materials. It can be made into a variety of formats, including a pop-up quiz, online voting, matching practice, multiple choice question, true/false quiz and others. To understand whether an interactive design embedded in an online RCR course enhances students' learning performance, this study examined the relationships among students' responses to these interactive designs, their learning performance, and their course satisfaction.

Method: The participants consisted of 266 undergraduate and graduate students enrolled in a fully asynchronous online RCR course supported by the Taiwan Ministry of Education. This course was presented as a series of web-based (with text, graphs, and animations) instructional units in Chinese. Several interactive designs (e.g., matching items, multiple-choice quizzes, voting) were embedded in the learning content of 15 units. These interactive designs provided the feedback to clarify and deepen students' understanding. Students' responses to the interactive design were automatically counted by the online courseware system. The learning performance included scores on the quiz immediately following the end of each unit and scores on a 45-item final test. The students' self-reported course satisfaction was measured by 27 items on a 5-point Likert scale.

Results: The results indicated that students' times of response to the interactive design of the learning content were related to their scores on the quiz immediately following the end of each unit; however, these responses were not related to the students' scores on the 45-item final test or the 27-item self-report on course satisfaction.

Conclusion: We concluded that students' times of response to the interactive design of the learning content contribute to their scores on the quiz immediately following the end of each unit. However, students' times of response to the interactive design of learning content had no influence on their final test and course satisfaction. Nevertheless, we considered the interactive design embedded in the presentations to play a role in students' learning through online RCR courses. The findings and implications of this study could constitute a useful guide for RCR educational practitioners and the development of future RCR online learning content.

PT-039

Growing a campus-wide rcr program: pedagogical and administrative challenges

J. Borenstein, J. Willis
Georgia Institute of Technology, Atlanta, U.S.A.

Objective: It has been several years since the two main U.S. federal agencies serving as key driving forces in the Responsible Conduct of Research (RCR) realm, the National Institutes of Health and the National Science Foundation, have put in place the current versions of their RCR training mandates. In response to the federal initiatives, our university - a large American engineering institution - developed an RCR policy designed to ensure compliance with funding sponsors. Since then, the institution has also created two "academic" RCR policies, embracing the mindset of moving "beyond compliance". The first of the two academic RCR policies, enacted in 2011, established campus-wide RCR training graduation requirements for all new doctoral students. The second academic policy, enacted in 2014, expanded RCR training requirements to master's thesis students. With three RCR policies now in place, many associated challenges have emerged.For the purposes of this presentation, we will primarily focus on the strategies used for handling the educational and administrative dimensions of the compliance and doctoral RCR policies. These policies both contain two RCR training components: an online course and an in-person experience. Doctoral students satisfy the in-person component either by completing a centrally-offered one credit graduate course or by enrolling in a course or series of courses within their home graduate program.Whereas all doctoral students have roughly the same in-person RCR requirement, the other career stages covered by the compliance policy have different in-person options. This results in three key challenges: first, appropriate and sufficient training opportunities must be made available for each career stage. Second, information about these opportunities must be effectively communicated across campus. Third, there must be robust systems in place to track training completions.

Conclusion: We aim to share lessons learned about managing the challenges emerging from developing and administering an institution-wide RCR program. These lessons may be helpful to those seeking to refine their own approach to RCR education and training.

Poster Walk: Research Culture 2

Is it fair to the children? Asenapine trials for acute manic or mixed episodes in children with bipolar disorder were misrepresented.

P.B.D. brandt Danborg[1], T.S. Schumann[2]
[1]The Nordic Cochrane Centre, Copenhagen n, Denmark
[2]Department of Child and Adolescent Psychiatry Aabenraa-Kolding, Aabenraa, Denmark

Objective: In 2015, the FDA approved the antipsychotic asenapine for acute manic/mixed episodes in pediatric patients (10-17 years) with bipolar I disorder, based on one trial lasting three weeks, followed by a 50-week open-label extension (OLE) phase. The authors claimed that "asenapine was generally well tolerated".
Method: One unblinded observer extracted data on harms and quality of life from the paper and compared these to data from the trial register and the FDA clinical review. A second observer validated the data.
Results: Of 404 participants, 303 were randomized to one of three asenapine doses and 101 to placebo, 321 entered OLE and 140 completed it. Non-serious adverse events (AEs) were reported with a 5% threshold. During the randomised phase, extrapyramidal symptoms were reported for 13 (4.3%) asenapine-treated children versus two placebo-recipients (2%), weight gain above 7% occurred in 26 (8.6%) patients on asenapine versus one on placebo, and there were 414 versus 43 non-serious AEs.
During the OLE (described to assess safety), 613 serious AEs in 23 participants were registered in the trial register; self-harm was reported 192 times. Extrapyramidal symptoms events were reported 20 times and 109 experienced >7% weight gain. Non-serious AEs totaled 3437 events in 200 participants (62%) while the paper reported selected AEs. The pediatric Quality of Life Enjoyment and Satisfaction Questionnaire is a self-reported 70-point scale. Results were only reported in the trial register. During the randomized phase, the change from baseline was 3.4 (standard deviation 9.8) and 1.5 (8.2) for patients on asenapine and placebo, respectively. For OLE, the change from baseline was 1.4 (8.6). Thus, we saw minimal clinical difference and high variation in the data.
Conclusion: Comparing published results to those in a trial register for the one trial that led to approval of asenapine in children showed that the authors' conclusions were misleading. The extent of harms was understated, as is commonly seen. The participating children experienced a vast amount of AEs, and they did not feel better. A debate on the justification of OLEs and reporting and interpretation of harms data in general is clearly needed.

Moral communication in the scientific system - a reconstructive analysis of comments about research misconduct in retraction watch

L.W. Walther
German Centre for Higher Education Research and Science Studies (DZHW), Hannover, Germany

Objective: Based on the idea of self-regulation in the research system and the role of media in this process, this study was conducted in order to reveal how the scientific community is discussing cases of research misconduct on the weblog 'Retraction Watch'. The findings of this study are part of my sociological master's thesis at the University of Hanover.
Method: 'Retraction Watch' is a weblog about retracted scientific papers that aims to increase transparency in handling retractions. The empirical basis of this study are comments on blog posts of the weblog. The chosen posts concern four personnel related cases. The cases have been chosen with regard to the fact that the reason for the retraction of a paper was research misconduct. The cases cover two different academic fields: social sciences and life sciences. The comments on blog posts have been analysed with means of the documentary method. Overall, 248 comments have been analysed.
Results: An exploratory analysis of the comments uncovered three patterns in the discussion of the cases: providing information, phrasing expectations and shaming the accused authors. Further reconstructive analyses of the comments revealed that these patterns are communication approaches which reflect the values of the scientific community in regard to the research system. According to the moral communication theory of sociologist Niklas Luhmann, these values are expressed by the distribution of esteem and disesteem. The analysed comments indicate conditions for the distribution of esteem in the research system. These conditions address institutional players of the research system, as well as the scientific practice and the accused authors in person. Although the findings are limited due to the small sample of comments, both cross-case and case-specific conditions for the distribution of esteem in the research system can be deduced from the results.
Conclusion: The study is limited by the small sample and the focus on one weblog. Nevertheless, this study provides an insight into the values of the scientific community on scientific practice and the research system. The values are expressed by communication approaches which indicate the conditions of the distribution of esteem and disesteem in the research system.

PT-052

University of Sheffield research study: Ingredients for fostering a healthy research environment

L.V. Unwin, L.V. Unwin
University of Sheffield, Sheffield, United Kingdom

The University of Sheffield has undertaken a study involving interviews with its senior research leaders to investigate the factors that combine together to create a healthy and competitive research environment (i.e. one which facilitates excellent research and upholds principles of research integrity, where all members understand the value of 'rigour, respect and responsibility' in undertaking their research). This includes capturing and disseminating good practices on how this kind of environment can be nurtured and sustained.

10 departments were selected from across the University's faculties, using a sampling method that aimed to identify those departments which demonstrated healthy and competitive research environments. The heads of these departments were invited to participate in semi-structured, in-depth interviews covering a range of relevant themes (e.g. leadership, structures and processes supporting research, recruitment and management of staff).

Departments with healthy and competitive research environments tended to demonstrate a combination of practices which support one or more of the following themes:

(1) A focus on recruiting the *right* people (high quality but not always the most successful; the right ethos is key – everything else flows from this)

(2) A focus on the 'next generation' (development and mentoring of PGRs and research staff)

(3) Inclusive processes and systems (a 'flat' rather than hierarchical structure)

(4) An embedded culture of collaboration and trust (open discussion of research ideas/proposals/papers and providing constructive feedback)

A web tool has been developed to share these findings in an engaging and interactive way with senior research leaders across the University, with a view to assisting them with developing their own research environments to be more productive/ successful, whilst also following principles of research integrity. This tool can be demonstrated as part of a presentation.

The study, although on a small scale, identified a range of good practices that the departments involved have in place. Many of these practices tended to fall within the broad themes mentioned in the previous section, and support the view that successful research environments tend to demonstrate characteristics that support the principles of research integrity.

PT-053

The European Network of Research Ethics and Research Integrity (ENERI)

B. Buschbom[1], N.F. Foeger[1], D.L. Lanzerath[2]
[1]Austrian Agency for Research Integrity, Austria
[2]European Network of Research Ethics Committees, Bonn, Germany

Awareness of highest standards of ethics in research and a commitment to a responsible conduct of research are a prerequisite for the reliability and credibility of research. The European Network of Research Ethics and Research Integrity (ENERI) is an EU-funded project which is based on existing networks, projects and infrastructures that already initiated and developed important steps in sharing information, training and capacity building.

The European Network of Research Integrity Offices (ENRIO) and the European Network of Research Ethics Committees (EUREC) mutually initiated ENERI in collaborations with experts in academic research ethics (RE) and responsible research and innovation (RRI), practitioners in training and education in research ethics and research integrity (RI), and specialists in e-communication and database design.

The ENERI project started in September 2016. The aim is to collect information about national structures of Research Integrity Offices (RIOs) and Research Ethics Committees (RECs) in Europe, about cases of good practice regarding guidelines and training in both fields and to finally generate a dynamic expert database of RE and RI experts. Main purpose is not only to share experiences but also to improve capacities (e.g. training for members of RIOs and RECs). Close cooperation with other EU-funded project as e.g. PRINTEGER, SATORI, HEIRRI and other European initiatives in these fields will be an important tool to raise efficiency in reaching our aims.

ENERI aims to raise awareness for the fact that RE and RI are an integral part (a "normative ingredient") in science and research and should not be conceived as an additional burden to research(ers).

PT-054

How to build an ethical scientific organization?

H. Bout

Universiteit Nyenrode, Amsterdam, The Netherlands

In recent years more and more attention is paid in the Netherlands to the integrity of scientists, due to violations reported in the media.

Many Dutch universities have drawn up a code of conduct and the influential Association of Dutch universities has set up a hotline and a procedure to perform integrity investigation.

It is remarkable that the focus of Dutch universities and scientific organizations is particularly directed at repression: the detection and punishment of violations of integrity.

But an ethical scientific community is more than 'just' the absence of violations. It is a community in which all members do not only know how not to behave, but also know how to act morally justifiable. A community of which their members behave more or less consistent en consequent, that support eachother when questions arise.

How to build such an ethical scientific community? Which structures are helpful?

To gain an answer, I will translate the lessons learned from a Dutch local government that have worked for years on building an ethical organization. I will show that in this field a number of choices are made regarding the building of integrity:

They choose to judge the actions of employees, rather than their character. Thus one follows philosophically the line of deontology and consequentialism rather the line of virtue ethics.

They work on two parallel tracks: a. Repressively (focused on violations.): working on the prevention of violations, the investigation of suspected violations and on consistent and just punishment of proven violations. b. Learning (focusing on the good act) by paying systematic attention on dilemma's occurring on the work floor of professionals.

In peer group discussions knowledge is cco-created on solving moral problems. This knowledge is shared not only at individual level but also at team- and sometimes organizational level. A vision on learning and development of organizations based on Aristotle's 'phronesis'.

For each of these two track different organizational structures are needed.

No quantitative research is done to determine quantitavely whether the local government has made progress. In qualitative interviews employees (including managers) tend to be positive on the effect of this approach.

PT-055

The ethos of science as a future prospect of ethics of (life) sciences

P.h.D. Ilieva

Institute for the Study Societies and Knowledge, Bulgarian Academy of Sciences, Sofia, Bulgaria

Ethical issues and moral dilemmas in scientific practice are diverse, not only along the process of knowledge production but in a way, the revolutionary discoveries are going to be used and applied. The annals of science record increasingly and a great variety of cases of deviation and ethical misconducts. Respectively, the public records (media) popularized striking cases of abuses and misappropriations, predominantly (or particularly) in the field of life sciences.

Ethical practice of scientific community, which assists to settle the moral dilemmas and ethical collisions in scientific life, by means of ethical norms for discerning the ethical from unethical in science, recently became reinforced by science policy activities. United efforts of scientific communities, science policy, social and ethical bodies are directed to construct a future "planetary" scientific ethics.

Can a **reliable theoretical conceptualization** help to resolve the variable set of the constantly emerging moral dilemmas, entailed, for example, by the high-technologies advance? The positive answer presupposes a conjecture for evolution of former ethical norms of pure, academic science into, say, bioethical constrains.

In my paper, I claim that there is a **specific scientific morality** distinctive than universal, which can be revealed only if it is observed according to the process of knowledge production. The last would bring us, closer to respond the still open conceptual questions: Is there a historical evolution of the set of ethical norms in science? Is there a connection between the set of ethical norms and the process of knowledge production? Is it possible a correlation between the evolution of the process of knowledge production and its ethical regulatory?

The discussion of those issues could fill the gap between the rapid development of ethical practice and its theoretical conceptualization, which nowadays obviously lags behind.

PT-056

Building a research integrity culture: make it fun!
A.M. Gilis, D.J. Gallacher, F. Wittock, T. Lavrijssen, D. Malwitz
Janssen Research & Development, Beerse, Belgium

In order to enforce research integrity principles in an organization, one can think about writing a policy, generating procedures and guidelines and organizing training sessions so everyone knows what to do. This may look good on paper and is hopefully lean and fit for purpose. However, if one wants an organization to adopt research integrity into its day to day activities and at all levels, one needs to go beyond work instructions and policies. How can this be achieved? During our journey over the past 5 years, we found that continuous and positive communication is an important element for success. As an example, a campaign appealing on scientist's creativity led to very engaging visuals to promote research integrity that were displayed on the walls across the different global research labs. Furthermore, interactive and fun activities during training sessions were appreciated by the scientists. On condition that management is fully supportive and the right rewarding system (good science rather than positive outcomes) is in place, we found that positivity and fun are key elements in building a research integrity culture.

PT-057

Silencing unpalatable research: Is disgust to blame?
J.E. Hoepner
Australian National University, Lyneham, act, Australia

Objective: This project aims to investigate whether disgust plays a role in opposition to academic enquiry deemed objectionable, by groups inside and outside academia. These hostile responses reveal the boundaries to academic freedom and how we determine what constitutes 'acceptable' enquiry.
Method: Qualitative research interviews were conducted with 20 academics and scientists whose research has elicited controversy. A mixed-methods analysis of the data was used to determine shared themes, discourses and characteristics within the dataset.
Results: This research found that the responses to enquiry deemed unpalatable were strikingly similar and followed distinct thematic patterns. The responses described in the data can be understood in two ways: first, whether the response behaviour was overt or covert, and second, whether the attack came from within or outside academia. The data suggests that while individual reactions to distasteful enquiry may differ in severity, explicitness, and which groups object to the research, one factor unites them. All cases share a seemingly visceral response characterised by an inability to engage with the research in a critical or rational manner. The reaction is one aimed at silencing or shutting down the offending research, rather than understanding or critique. These 'knee-jerk' responses lie outside the typical peer-review process academics generally expect. This instinctive reaction reveals the often invisible and unspoken boundaries that exist in both our conception and practice of academic freedom.
Conclusion: This project concludes that disgust plays a significant role in opposition to research. This visceral response overrides critical engagement with some lines of enquiry, and attempts to suppress research in the name of acceptability. This research challenges our understanding of academic freedom and the hidden limits that impede scholarship.

PT-058

From research ethics to research integrity to open science: the evolution of Finnish RCR regulation

H.L. Laine
University of Helsinki, Helsinki, Finland
Heidi Laine
University of Helsinki, Helsinki, Finland

Objective: Research ethics (RE), research integrity (RI) and open science are all about the quality of science and scholarship. Why do these discussions exist in separate silos, populated by separate communities? To understand the historical roots of this separation and possible bridging solutions, I treat the Finnish responsible conduct of research (RCR) guidance and regulation mechanism, one of the longest standing in the world, as a case example.

Method: The study is be based on a variety of methods from historical and social sciences, such as oral history, field theory, cultural-historical activity theory and social psychology of science. The main sources are interviews of former and standing Finnish Advisory Board on Research Integrity (TENK) officials and archival documents. Secondary sources are contemporary professional publications, used for purposes of contextualization.

Results: The paper will describe the twenty-year evolution of TENK from an RE body into one that focuses on RI matters. It will map the key discussions and actors, both individual and institutional, and analyze their strategies and incentives in shaping the Finnish RCR landscape.

The evolution of thinking on RCR in terms of openness will also be studied. Open science is a relatively recent concept, but the demands for access, transparency and reproducibility are as old as scholarly research itself. Authors previous research has shown a positive connection between researchers' understanding of RE&RI issues and willingness to share research outputs beyond toll-access articles. The results from this study will be utilized when developing RE&RI curricula for the EU funded European Network of Research Ethics and Research Integrity (ENERI) project, which the author is affiliated with.

Conclusions: Forming a holistic understanding on RE&RI and open science issues is of vital importance to the global research community. A case study, despite the anecdotal evidence, has the potential to make visible key disconnects. A history oriented view helps to recognize the separations that rise from concepts, and therefore are necessary to maintain, from ones existing due to historical reasons, and could be overcome.

PT-059

Neutralizing fair credit: factors that influence questionable research practices in authorship assignment

T.B. Phillips[1], B.S. Trinkle[2], B.R. Moffatt[2], A.A. Hall[2]
[1]West Virginia University, Morgantown, U.S.A.
[2]Mississippi State University, Starkville, U.S.A.

Objective: Research misconduct (FFP) and questionable research practices (QRP) are typically attributed to "bad apples," ignorance of best practices, or environmental influences. This study contributes to the growing body of knowledge on the factors that influence individuals to engage in FFP or QRP. More specifically, this study determines whether coercion and the techniques of neutralization, as introduced in the criminology literature, influence a researcher's willingness to add an author when authorship is not deserved.

Method: Using the factorial survey method, we created a standardized vignette in which two independent variables were systematically and simultaneously manipulated to determine their influence on the dependent variable, the respondent's willingness to engage in a questionable research practice.

Results: Our results indicate that US born graduate students are more willing to add an undeserved coauthor if the person who requests authorship is a faculty member in the student's department as opposed to a fellow student. Students are most likely to add an undeserving author if a faculty member is also their advisor. In addition, four techniques of neutralization are associated with student willingness to engage in a questionable research practice: defense of necessity, advantageous comparison, euphemistic labeling, and diffusion of responsibility. Students are more likely to add an undeserving author if they believe that they have no other choice; what they are doing is not as bad as what others are doing; doing so is necessary to compete with others; or other graduate students are behaving the same way. Of particular interest is the fact that participants who had received RCR training were no less likely to engage in the questionable research practice of adding an undeserved coauthor than those who had not received RCR training.

Conclusion: Knowledge of these factors that influence irresponsible research practices will provide for opportunities to improve research ethics education strategies and materials. We conclude this presentation with recommendations on how to incorporate this information in RCR curriculum.

Poster Walk: Interventions that work

PT-067

Participatory Action Research (PAR) in support of research integrity: engaging the parties concerned

P.F. Feldmann[1], S.B. Blangy[2], J.M.C. Chevalier[3]
[1]Cirad, Montpellier, France
[2]Cnrs, Montpellier, France
[3]Carleton University, Gatineau, Canada

Objective: Given the mixed results obtained from conventional training and educational strategies, a PAR approach is proposed to achieve greater rigor and effectivity in addressing issues of research integrity.

Method: This presentation focuses on the development and testing of a PAR methodology to support collaborative thinking and action in the field of research integrity. It has been developed in the context of meetings hosted by the GDR PARCS (*Groupement de recherche* Participatory Action Research and Citizen Sciences), based in Montpellier, in partnership with a Canadian-based PAR lab known as SAS2 Dialogue. It has been first applied within this network and then further tested with a population of PhD students, from different disciplines and backgrounds, in the course of Agreenium's International Research School.

Results: The proposed methodology allowed participants to identify, in less than two hours, the key moral principles usually involved in addressing matters of research integrity, without any prior lecture based on received knowledge in the field, such as the *ANR's Policy for ethics and research integrity*. Participants also generated and discussed a list of possible misconducts, covering most of those otherwise appearing in the National Charter for Research Integrity. Interestingly, participants raised concerns not always reflected in official documents, as they relate to data theft, access and quality, for instance. The doctoral candidate population insisted on the importance of involving senior researchers in using the proposed methodology to further explore issues of research integrity in their own work.

Conclusions: Our approach to research integrity assumes that improvements in this field require the authentic engagement of all those concerned. Our first experiment in using PAR shows highly promising results. Participants quickly identified the moral principles and usual forms of misconduct reported in the literature. The full methodology, to be further tested, invites participants to identify the main drivers or determinants of research integrity and develop appropriate recommendations suited to their context. Further methodological testing is also needed to ensure that the proposed methodology creates safe space for all those involved such that they may engage in group-based ethical discussions constructively.

PT-068

Departmental Ethics Screening: an ethics review intervention that works in more than one way

M.G. Fouché[1], L.M. Horn[2]
[1]Stellenbosch University, Stellenbosch, South Africa
[2]University of Cape Town, Stellenbosch, South Africa

Objective: Formal ethics review is regarded by many researchers in social, behavioural, economic and management, and education research as an unnecessary relic from the Health Sciences imposed on them. Add to this, comments on scientific design from the review committee, and delays in feedback due to an overburdened ethics office and committee and you have a recipe for revolt. We present an intervention designed to locate scientific review and ethics risk level determination in the relevant departments.

Method: A Departmental Ethics Screening Committee (DESC) process was launched in January 2012. The aim of this 'bottom-up' intervention was to triage the ethical review of projects in the social, behavioural sciences according to an assessment of ethical risk, rather than other criteria such as level or type of degree (for student research), or seniority of applicant. The natural progression of this intervention and its advantages and disadvantages will be presented as a case study.

Results: After five years, the DESC process has matured significantly, but still presents some challenges. A surprising outcome has been its role in raising accountability for and awareness of ethical research at all levels in the institution, from undergraduate student level to seasoned academics and researchers.

Conclusion: Designing an efficient ethics review system remains a challenge. It is however possible to create processes that can reduce turn-around times for low risk research proposals, build ethics review capacity, increase awareness regarding the ethics of research involving human participants and broadly add value to the research endeavour.

PT-069

The role of ethics committees in research quality and governance in the Australian research environment

P.W. Sou
UNSW Australia, Unsw sydney, Australia

In Australia, research involving human participants or animals first require the approval of an ethics committee. In the case of animal research, animal use must be justified and the principles of the 3Rs (replacement, reduction and refinement) implemented where possible. To facilitate the ethical review process, Animal Ethics Committees (AEC) are comprised of veterinarians, animal researchers, animal welfarists and lay people. The major Australian funding body, the National Health and Medical Research Council (NHMRC) have recently sought comments on a draft document "Best practice methodology in research involving animals".

In this paper, I will discuss the increased responsibilities expected of AECs should the above NHMRC document be enforced. Where once, AECs were expected to only assess the ethical acceptability of the use of animals in research, there is a growing trend that AECs assess for scientific rigour via appropriate experimental design, conduct and statistical analysis.

AEC members will be surveyed to assess their views on whether they are adequately prepared to embark on these additional responsibilities requested of them. We will explore how institutions can better equip members for this task that proposes to improve scientific quality by ensuring scientific robustness at the ethics review stage.

PT-070

Incentives for responsible management of data to improve research integrity: The case of a digital laboratory notebook system

K.H. Nielsen, J. Busch, E.S. Andersen
Aarhus University, Aarhus, Denmark

Objective: We present the Aarhus University Labbook (AU Labbook), a digital laboratory notebook (DLN) system developed to promote transparency and accountability, but also connectivity and interactivity in data management. Initiated in 2007, AU Labbook now facilitates documentation of the entire research process with integrated social media features, e.g., commenting and following. We aim to understand AU Labbook as an incentive to improve data integrity.

Method: One of the authors (ESA) has been prime mover in the development of AU Labbook. Personal experiences and semi-structured interviews with users (researchers) will be used to understand how AU Labbook interacts with established data management practices. In particular, the transfer of AU Labbook from an interdisciplinary setting to mono-disciplinary research settings will be pursued.

Results: The work on the AU Labbook began in 2007, where researchers at the iNANO (interdisciplinary nanoscience) center at AU embarked on the development of open source, team collaboration software tool into a local DNL system tailored to the needs of the researchers. Our initial experiences indicate that DLN systems such as AU Labbook can have a positive impact at the local level of the research groups directly involved in the development of such systems. We aim to strengthen this initial result by collecting and analyzing more empirical data on the process of developing and implementing AU Labbook. At the time of writing, AU Labbook is being promoted across the Science and Technology as an incentive to strengthen data quality and integrity. We plan to follow this process closely in the course of late 2016 and early 2017 by interacting with the researchers that develop, promote, and use AU Labbook and through semi-structured interviews with selected participants.

Conclusion: We have found indications that tailored DLN systems such AU Labbook can have positive impact on data integrity and data sharing in smaller research units. We aim to provide more data on the implementation of AU Labbook across several research groups with very different research practices. Our study will add to our general understanding of how incentives to improve data management structures actually work out in practice.

PT-071

Protocol for a randomised controlled trial of an Intervention to Improve Compliance with the ARRIVE guidelines (IICARus)

E.S. Sena[1], C.M. Irvine[1], F. Cramond[1], J. Liao[1], D.W. Howells[2], G.L. Currie[1], M.R. Macleod[1]
[1]University of Edinburgh, Edinburgh, United Kingdom
[2]University of Tasmania, Tasmania, Australia

Objective: Measures which might improve the quality of reports of *in vivo* research, such as the ARRIVE guidelines, have been endorsed by a large number of journals. There is evidence that this endorsement has not been matched by a substantial increase in the quality of published reports. Here we sought to determine whether mandating the completion of an ARRIVE checklist at manuscript submission improves full compliance with the ARRIVE guidelines.
Method: Manuscripts submitted to a major research publishing house, which describe *in vivo* research, were randomised to intervention or control editorial processes via the study website (https://ecrf1.clinicaltrials.ed.ac.uk/iicarus/). Intervention is mandatory completion of an ARRIVE checklist and the comparator is manuscripts managed according to current standard practice. Manuscripts will be assessed for compliance with the guidelines by two independent reviewers. Authors, editorial staff and peer reviewers were not informed that the study was taking place and manuscript reviewers are to remain blinded to group allocation throughout the conduct of the study.
Results: 1689 manuscripts were randomised into the study. 1324 manuscripts passed the journal's technical checks and entered the peer review process. To date, 95% of included studies have final acceptance decisions and 40% of the included studies have been assessed for compliance against ARRIVE. The majority of studies come from China and the United Sates.
Conclusion: To our knowledge this is the first blinded, randomised controlled trial in publishing. These data will provide robust evidence on the impact of mandating, rather than endorsing, reporting guidelines on the quality of reporting. To maintain integrity in the study we have not named the publisher; however, only 5% of studies are remaining without final acceptance decisions which we anticipate will be completed by the time of this meeting.

PT-072

Towards a framework for research integrity

M. Patrão Neves[1], A.S. Carvalho[2], J. Araújo[2]
[1]Universidade dos Açores, São migue, Portugal
[2]Universidade Católica Portuguesa, Porto, Portugal

Objective: The aim of this communication is to develop a model that is understandable by the researchers and that could have a real impact on their behaviour.
Method: Taking into consideration the scientific method reasoning our task is to develop an organizational structure that able researchers to understand the real dimensions of the problem.
Results: This communication will present a tentative systematization, organization and classification of the different issues on research integrity in order to establish a framework that allow scientists to understand the ethical parameters of their behaviour.
Conclusion: Integrity in science and innovation has always been a part of the self-regulation of researchers and a key element to the credibility of research. Today it is under an unparalleled pressure due to the high academic and economic impact of scientific and technological production. It is urgent to objectively establish common parameters of integrity and, from there, to draw a sound normative framework that could lead to an internationally wide identification of violations to scientific integrity, to an evaluation grounded in common criteria and followed by suitable consequences. This framework aims to impact on the behavior of researchers since it will frame the integrity issues throughout the scientific method able the scientific community to identify and understand the limits and the ethical issues of their daily work.

PT-073

Introducing ethics and research integrity to undegraduate students in biomedicine: a brazilian experience

A. Kaysel Cruz[1], M.R. Vasconcelos[2], R. Franci[1]
[1]University of São Paulo, Ribeirao preto, Brazil
[2]Federal University of Rio de Janeiro, Rio de janeiro, Brazil

The approach to ethics in science and technology has been a contemporary demand for universities all over the world, which has gradually influenced curriculum culture. Particularly in countries with an established research tradition, the discussion of ethical implications of new technologies has received increasing attention in biosciences and engineering. In the last few years, however, many questions related to the doing, reviewing and communicating science have reinforced the role of research integrity at the university environment. In Brazil, we seem to be at the beginning of a subtle change in the curriculum culture in biosciences. The Ribeir�o Preto Medical School (FMRP) at the University of S�o Paulo (USP) is a case in point. An undergraduate course in biomedical sciences was implemented in 2014, and it includes a compulsory discipline on critical questions related to science, ethics and society. The discussions are held during five semesters, which include one module on ethics in science and technology and research integrity. This module of 32 hours total is developed as workshops with senior and junior researchers involved in research ethics and integrity education in Brazil. The four-hour workshop sessions stimulate open debate with students, who work collaboratively and write reports on particular topics. Brainstorming sessions are followed by group work on case studies. Workshop themes on research integrity includes responsible authorship, notions of ownership and originality in science, plagiarism and honesty in communicating science to peers and to the public. A workshop session on research integrity and scientific communication from the research project to the paper explores notions of accountability in science and the role of peer review in the publication system. At the end of these workshop sessions, groups of 4-6 students share their reflections and conclusions on one of these topics. The students have joined the debate and been strongly involved in the brainstorming sessions. This educational experience leads to consider that exposing undergraduate students early to the debate on central aspects of research integrity is challenging but, the activities have proven productive and potentially fruitful for establishing a culture of responsible conduct of science among biomedicine undergrads at FMRP.

Poster Walk: Plagiarism and Replicability

PT-084

The need for the establishment of a Committee for the Integrity of Scientific Research in health training institutions such as the Higher Institute of Oujda Health Nurses and Technical Professions

M.A. Maamri

Higher Institute for Nursing Professions and Technical Health of Oujda, Oujda, Morocco

Research expectations for increasing the knowledge and improving the quality of human life are very strong. The absolute integrity of researchers is expected by the population. But as any others persons, scientists are subject to many constraints and temptations. Thus, in the whole world manipulation of the results of scientific works, of plagiarism, tarnish the image of research by documented fraud in all scientific disciplines and in most countries. The production of reliable, reproducible and significant knowledge requires intellectual rigor.

In the institution mentioned in the title, beyond proven fraud, some violations of scientific integrity were occasionally identified. A survey of 50 end-of-study dissertations revealed some fraud. Among the most spectacular cases, the student authors of two end-of-study dissertations in the field of public health where found guilty of having manipulated results by plagiarism.

An Ethics Committee for Research investigated the papers and concluded that the results had previously been given, and were completely reproduced from papers published in neighbouring countries without any citation. The end-of-study dissertations were rejected and the students were severely punished.

These rules provided by the Ethics Committee have become a necessary practice for ensuring the integrity of research in our institution. This Committee aims at clarifying the precise involvement of the authors of research work, it checks the plagiarism detector of data, and interviews other participants in the field investigated.

PT-085

Reporting and investigating plagiarism: the difficult road to a new policy

L.M. Horn

University of Cape Town, Cape town, South Africa

Objective: Higher education and research institutions need to ensure that they have comprehensive policy and procedure in place for addressing plagiarism and promoting ethical academic scholarship. The problem of plagiarism appears to have grown significantly over the last decades and most institutions are grappling with effective ways of ensuring that plagiarism does not occur in both a teaching and learning and research context. Stellenbosch University is comprehensive university of approximately 30, 000 students (of which 10,000 are post-graduate) and over 1000 academic teaching and research. Unofficial and anecdotal reports from most environments indicate that plagiarism is regarded as a significant problem at this institution although the exact extent of the problem has largely remained undocumented.

I recently led a task team of academics and academic managers to substantially update and revise the **Plagiarism Policy:** and the companion **Procedure for the investigation of Plagiarism** at this institution. This task proved to be surprisingly challenging and revealed deep-seated disagreement about almost all aspects of the proposed Policy and Procedure.

Method: A broadly consultative process was followed and will be briefly described. This process was aimed at attempting to reach agreement about the definition of plagiarism, the notion of self-plagiarism, the categorisation of the seriousness of an incident of plagiarism and the best way of investigating, managing and documenting plagiarism across the entire academic spectrum of the university.

Results: After a lengthy process, consensus was eventually reached on all aspects of the Policy and Procedure. Points of contention and accepted solutions will be highlighted in this presentation.

Conclusion: Plagiarism policy development and implementation at a comprehensive academic institution can prove particularly challenging. Such policy must be able to accommodate the needs of very different learning and research environments and levels of experience of staff and students, while ensuring a fair and consistent application that will promote research integrity across all contexts.

PT-086

Causes behind plagiarism and its determinants: an ethical challenge for timely prevention

I.N. Melamed, F. Luna
Latin American Faculty of Social Sciences, FLACSO Argentina, Buenos aires, Argentina

Introduction: The present material aims to an in depth analysis of the issue of plagiarism and its determinants, paying special consideration to the lack of enough knowledge in the field by researchers as one of the main issues that potentially lead to the ocurrence of plagiarism in the different steps of the research process.
At the same time and in case the hypothesis of the lack of knowledge is confirmed, an ethical need will exist to implement actions toward capacity building in this field.
Objective: Disseminate the concept of plagiarism and its versions spurring a dialogue on ethics and integrity in research; Promote integrity reasearch literacy in order to engage people willingness to shape the future of the field. As an additional purpose we intend to facilitate a dialogue between key actors in order to shed light on this area, aimed to reduce the know - do gap.
Method: The proposal will initially collect information due to an informal consultation through the Spanish Blog of the Program of Bioethics, Latin American Faculty of Social Sciences. http://www.elblogdebioetica.blogspot.com/
Although the sample will not be statistically significant, the information obtained will illustrate the presentation and also guide the subsequent actions.
Once the consultation process has finished the BLOG will be the on line scenario where different activiities regarding the topic of Plagiarism will be shared, as well as study cases together with a cadre of scientific literature.
Results: At the time of the Conference the results of the public consultation will be available to be presented as well as the learning materials and activities posted at the BLOG.
Conclusion: The importance of this presentation and of the results obtained - although not statistically significative - is to shed light to an issue not always acknowledged and to also raise the need of capacity building in the field. <b/>
While plagiarism may be related to ethical misconduct in research we urge to build trust between the different actors and facilitate the acquisition of knowledge in the topic as a preliminary step before judging the behavior of the people involved.

PT-087

Analysis of Plagiarism from the perspective of students of a private institution of higher education

R. Bastos Silva Figueredo, M. Gomes Leandro
Faculdade São Salvador, Salvador, Brazil

Objective: Plagiarism is identified in the scientific community as a recurring problem, regardless of whether there are ethical and legal standards with the purpose of restrain it. There is therefore a high incidence of copyright violations, especially in the seat of higher level courses of education institutions. The graduate receives incipient research. The lack of knowledge about the value of research for the development of science is one of the causes for the incidence of academic practice of plagiarism. Moreover, the difficulty that the young university student faces to write a text of his authorship combined with digital accessibility culminate in practice copy of scholarly and scientific texts published. In this sense, the motivation of this research is to understand the universe of the student at a Private Institution of Education, who commits academic plagiarism during the submission of daily papers along the undergraduate course, either on submission of monographs in the end of graduation. Method: The methodology used is the survey data from questionnaires among the student body. Results and conclusion: The results will be analyzed with other published studies in order to build intervention strategies for the student body and for the professors, aiming awareness, prevention and control of academic plagiarism.

Cross-validation of the factorial structure of the Attitudes Toward Plagiarism Questionnaire and its shortened version (ATPQ-15)

M.M. Mavrinac, G.B. Brumini, M.P. Petrovecki
Faculty of Medicine, Rijeka, Croatia

Objective: The original version of the Attitude Toward Plagiarism Questionnaire (ATPQ) consists of 29 items exploring three plagiarism factors. It was constructed and validated in Croatia in 2009 and used in more than 30 studies in different countries. The aim of this study was to cross-validate the ATPQ and construct an abbreviated version.

Method: Three studies were conducted during 2010, 2013 and 2016 on different populations: undergraduate students (N=144), research fellows (N=171) and senior researchers (N=68). Confirmatory factor analyses were used to validate the factorial structure. Reliability was assessed with coefficient of internal consistency Cronbach α.

To determine the best items to use for the shorter version, every item had to fulfill four conditions:

1 – Confirming the same factor in all studies,

2 – Factor loadings >0.35,

3 – Inter item correlation r=0.20 – 0.60,

4 – Good face validity assessed by three experts.

Results: The results from all studies provided sufficient support for the original three-factorial structure of ATPQ. Confirmed factors were: (1) Plagiarism Approval, (2) Plagiarism Disapproval and (3) Subjective Norms toward Plagiarism. Internal reliability was good for all factors (Cronbach α=0.78 – 0.87).

According to the data obtained from the cross-validation we have shortened the original ATPQ with 29 items into a revised version with 15 items (ATPQ – 15). Five items were chosen to measure each factor. Chosen items had high factor loadings (0.39 - 0.79), minimal inter item correlation (from r<0.45 to r<0.55) and satisfactory face validity. Validation of the factorial structure and reliability of ATPQ-15 will be released in November 2016.

Conclusion: The cross-validation studies confirmed the three-factorial structure of the original ATPQ with very good internal reliabilities. Obtained data enabled the construction of a shorter version with 15 items (ATPQ – 15) instead of the original 29.

The current study confirmed that the ATPQ is a suitable and reliable tool for measuring attitudes toward plagiarism.

Future data will reveal psychometric characteristics of the ATPQ - 15.

Further validation is needded on English speaking population.

Exposure of teachers to ethical, cultural, educational and legal perspectives on plagiarism: Lessons from an educational project in Brazil

R.A. Amaral, S.M.R. mr Sonia
Federal University of Rio de Janeiro (UFRJ), Rio de janeiro, Brazil

Plagiarism has received increasing attention in the school environment and is considered a challenge for educators and students. For educators, understanding subtleties involved in plagiarism practices plays a crucial role for them to broaden their perspective on the matter. For countries with a tradition of academic integrity policies, institutionalized practices for dealing with plagiarism seem to be incorporated into their education culture. However, the extent to which educators themselves are exposed to pedagogical, cultural, and legal perspectives about plagiarism is unknown. To our knowledge, such exposure is fundamental for educators to develop broader pedagogical actions that go beyond detection and prevention, such as exploring notions of intellectual property and citizenship. In the BRICS (Brazil, Russia, India, China and South Korea), plagiarism in education is a concern. Yet, the literature on pedagogical efforts to strenghten guidance for teachers is scant for these countries. In Brazil, a project on plagiarism at school was conducted in partnership with the Education Secretary of Búzios, a well-known municipality in Rio de Janeiro. Teachers of biology, mathematics, physics, chemistry, and portuguese (n = 38) participated in two one-day workshops (May and June, 2016) addressing different perspectives of plagiarism. In **Workshop 1** (May 2016), we explored cultural and educational issues, and in **Workshop 2** (June 2016), we explored ethical and legal issues. After the workshops, participants were invited to join a collaborative endeavor to produce a **'Booklet on Plagiarism at School**", which is meant to offer an opportunity for schools to discuss plagiarism among students before detection softwares are implemented. For the "Booklet", not only experts who gave the workshops, but also a few teachers who participated were co-authors. Our poster will show the concept behind this booklet, focusing on ethical, cultural, educational and legal perspectives on plagiarism in Brazil through various genres, such as cartoons, poetry and real cases, developed by both experts and learners. Among the lessons we learned from this project is that it is possible to approach plagiarism at school as a theme - that may stimulate critical thinking and citizenship - and not only as a problem to be tackled or eliminated.

PT-090

A perspective on plagiarism from high-school teachers and students from a federal institution in Brazil: results from an ongoing project.

C.C.S. Coelho Santos, M.D.R. dias Ribeiro, S.M. ramos Vasconcelos
Institute of Medical Biochemistry Leopoldo de Meis - UFRJ, Rio de janeiro, Brazil

Academic integrity encompasses honesty and other core values that should underpin the education endeavor, which includes interactions between educators and learners. In these interactions, plagiarism, which challenges academic integrity, is usually addressed as a student-centered problem. This perspective reflects the bulk of the international literature, which focuses mostly on the frequency of plagiarism cases, reasons alleged by students, and cultural factors that may influence their attitudes toward the practice. To our knowledge, much less focus has been given to the role of the learning culture in seeking understanding of plagiarism. We have looked at this role in particular educational settings in Brazil and already presented results from a survey of teachers (42 valid responses) from a major federal school. We identified that teachers recognized the influence of the learning culture in students' attitudes toward assignments, for example. From this group surveyed, nine participated in a focus group in which these cultural aspects were explored. Among the points raised was that most teachers did not have the opportunity to discuss plagiarism in their undergraduate courses. Also, there was some consensus that plagiarism should not be a student-centered problem, *i.e.*, pedagogical approaches are also to blame and may stimulate plagiarism practices among students. We then surveyed a purposeful sample of 419 high-school students at the same institution about their views on plagiarism. Among the issues investigated was whether they perceived plagiarism as a real problem among Brazilian students in basic education. Their perceptions vary and suggest that they have a conservative view of the problem. Among them, about 55% did not agree with an assertive suggesting that the incidence of plagiarism is high among Brazilian students. The interpretation of students' attitudes has some caveats, which may partially be attributed to some sociological bias. Overall, our results have led us to the following considerations: For a country like Brazil, with so much diversity in education quality, identifying the factors that may explain plagiarism (1) should be sought in light of the country´s school culture; (2) should take priority over detection mechanisms, widely adopted in major countries; (3) should take a less student-centered approach.

PT-091

Ethical Challenges in Emerging Area of Research: A case study of fraud and reproducibility issues in stem cell research

K.R.W. Matthews[1], A.S. Iltis[2]
[1]Rice University, Houston, U.S.A.
[2]Wake Forest University, Winston-salem, U.S.A.

Objective: Stem cells are touted by the scientists as the new future of medicine. While excellent research has propagated this excitement, the field has been plagued by several high profile fraud and fabrication scandals. This presentation will describe the challenges this emerging field faces and potential solutions scientists can implement to improve oversight and reproducibility.
Method: To understand the impact of unethical and irresponsible research on a field, we reviewed and analyzed literature relevant to the 2005 Hwang and the 2014 Obakata cases of stem cell fraud. We utilized this research to identified key priorities and goals for developing a policies of and regulatory approaches to help reduce incidents of misconduct.
Results: While the two prominent cases of stem cell fraud—Hwang in 2005 and Obakata in 2014—were isolated incidents, they highlight how an emerging field with high visibility could attract unscrupulous activities. These cases demonstrated how science is self-correcting by identifying and ultimately correcting the scientific literature. They also encouraged journals to adopt additional mechanism to detect data manipulation and checks on authorship. Unfortunately, the incidents also illustrated areas of concern which are still being resolved, such as a lack of standardized record keeping. Furthermore, they highlighted areas common in emerging fields including insufficient definitions of what it means to be a cell and its properties as well as inadequate consensus among scientists on how to evaluate cell characteristics such as specific biomarkers or functional features.
Conclusion: As an emerging field with a lot of press, the rewards for new stem cell research discoveries outweighed the risk of discovery of misconduct. But with standards developed by the scientific community, these high profile cases should become less prevalent. Studying these cases with student highlight how small incidents of unethical or irresponsible behavior turn into significant fraud cases and can serve as a guide for emerging fields to develop clear and consistent standards and definitions. We identify specific policies and practices scientists and publishers can use to improve oversight and reproducibility, decreasing the incidence and impact of fabrication, falsification, and fraud in stem cell research and emerging areas of research.

PT-092

Writing and Reproducibility: The role of writing as a source of failures to replicate scientific studies

J. Johnson, W. Goodman
University of Miami, Coral gables, U.S.A.

Objective: The challenge of scientific replication or reproducibility – an obstacle for empirical research, a problem for funders and investigators, and even a crisis in public trust of the scientific enterprise – is one of the most interesting and important challenges facing the world's research community. We hypothesize that this crisis, as it has been called, is in part caused and might be magnified by the unhappy fact that many scientists just do not write very well. Our objective here is to suggest that poor scientific prose is an under-recognized source of reproducibility failure.

Method: A decade of efforts to help scientists improve grant submissions and the preparation of scientific articles has identified several weaknesses or flaws in biomedical writing. These include vague writing, opaque prose, excessive use of the passive voice, hedging and boasting. We propose a project in which (i) published articles are analyzed and scored for the incidence and prevalence of these flaws, and (ii) they are then tracked against subsequent reproducibility successes and failures. There being no assay or normed test for measuring poor prose, one would need to be developed.

Results: We of course do not yet have results for this proposed investigation. We have nevertheless begun introducing the issue of writing quality into our curriculum in the responsible conduct of research. Graduate students and postdocs have reviewed the material favorably and some, as a result, have sought advice and support from experts in our scientific writing program.

Conclusion: The challenge of scientific reproducibility has several causes, all of them difficult to identify in any particular case. The suggestion that prose quality must be added to other hypothesized causes – including pressure to publish, "secret sauce," careless mistakes and occasionally even frank misconduct itself – is an innovative and testable hypothesis. That it will be difficult to do so should at this point be seen as less worrisome than the need to provide a fuller understanding of all the causes of the reproducibility crisis.

PT-093

Challenges in dealing with plagiarism: a journal editor's perspective

K. Sadeghi, F. Ghaderi
Urmia University, Urmia, Iran

Plagiarism is a non-excusable academic sin, and most journal publishers have a zero tolerance policy against plagiarism. Authors found to be plagiarizing may be blacklisted from further publication in a certain journal and their details may be shared with other journal editors. To caution again plagiarism and to prevent plagiarizing authors from submitting their work, journal editors may require authors to sign an initial agreement stating that their work is free from plagiarism, in addition to checking for this after the submission. In a context like Iran where it is not easy to have access to plagiarism checker software, journal editors rely on an undertaking by corresponding authors that their manuscript is free from plagiarism. The editors of a Scopus-indexed journal followed laborious procedures to check the submissions for plagiarism. Despite undertakings by the submitting authors that their work was free from plagiarism, the researchers found that more than 80 per cent of the submission to their journal suffered from plagiarism at various levels. The paper discusses the sources of the problem as well as the challenges the editors face in dealing with this academic misconduct.

Poster Walk: Understanding integrity

PT-103

Ethical considerations in original articles published in Epidemiology and Health Services: journal of the Brazilian National Health System, 2014-2016

L.P.G. Posenato Garcia

Institute for Applied Economic Research (Ipea), Brasília, df, Brazil

Introduction: Epidemiology and Health Services: journal of the Brazilian National Health System is a scientific quarterly journal published by the Brazilian Ministry of Health. The journal publishes mainly original articles that report research involving human subjects, in accordance to its mission: to disseminate epidemiological knowledge applicable to surveillance, prevention and disease control relevant to Public Health.

Objective: To describe the ethical considerations presented in the original articles published from 2014 (v. 23, n. 1) to 2016 (v. 25, n. 1).

Methods: 147 original articles were published (10 issues), 8 were excluded because they did not report research involving human subjects. We checked for the description of the following items in the Methods section: Human Research Ethics Committee (HREC) approval, date of approval, registry number, and informed consent.

Results: We reviewed 139 original articles. HREC approval was mentioned in 45/45 articles that reported use of primary data, 16/16 that reported use of secondary data from surveys, 30/62 that reported use of secondary data from health information systems, 12/13 that reported use of medical records, and 3/3 that reported studies conducted with both primary and secondary data. All 48 articles that reported studies with primary data described the HREC registry number, 34 mentioned obtaining of informed consent, and 7 informed the date of HREC approval. Among the 91 articles that reported studies conducted exclusively with secondary data, 51 included HREC approval, 55 informed the registry number, and 29 the date of HREC approval.

Conclusion: All articles that reported studies conducted with primary data and with secondary data from surveys included information regarding HREC approval. The reporting of HREC approval was lower in the articles that reported use of secondary data from health information systems, pointing to the need to standardize the ethical review procedures and ethical considerations reporting for those studies.

PT-104

Knowledge, Attitudes and Practices of Bioethics among Doctors in medical and dental Teaching Hospitals in India

K.p. Katpattil

Yenepoya university, Mangalore, India

Objective: This study aims to assess the knowledge of, practices in and attitudes to Bioethics among Medical Doctors and Dental health care professionals in three medical and two dental schools in Mangalore City.

Methodology: A questionnaire-based, cross-sectional study was carried out at three medical and two dental schools in Mangalore city . A total of 347 Medical Doctors and Dental health care professionals were contacted and Two hundred and ninety-nine consented to participate and 256 returned the questionnaire (response rate 83%). The questionnaire, which was a 28-item pre-tested, self-administered questionnaire, included both closed and open-ended questions. The proposal for the study was approved by the institutional review board (IRB) and a Written consent was obtained from each participant. The returned questionnaires were analysed using SPSS version 11.5. Descriptive analysis was carried out for all the data.

Results:

Nearly 76% of the Medical Doctors and Dental health care professionals had not undergone any bioethics training. Nearly 98% of the medical doctors, as compared to 72 % of the dental doctors, knew that their institution had an ethics committee. There was a difference between the Medical Doctors and Dental health care professionals in terms of their attitude to and knowledge of healthcare ethics, with the former having a superior knowledge of the subject and a better attitude.

Conclusions: The Medical Doctors and Dental health care professionals come across ethical issues during their training, but are not equipped to resolve the ethical dilemmas they encounter. The Dental health care professionals have less of an appreciation of Bioethics than their medical counterparts. There is an urgent need to include formal training of practical ethics and make departmental learning more interesting

PT-105

Patient's Awareness, Attitude, Understanding and Perceptions towards Legal Nature of Informed Consent

S. Sha
AL IQBAL HOSPITAL AND RESEARCH CENTRE, Thrissur, India

Objectives: Patient's autonomy is an imperative issue in the health service area. It is a known fact that patient's awareness of legal and ethical issues related to the consent process is often limited. The present study was therefore conducted to ascertain patient's awareness, attitude and perceptions towards Legal nature of informed consent.

Methods: A structured interview schedule was developed and handed out to 555 patients in the Surgery department during January 2014 to June 2014. A great deal of misconception regarding the legal status of consent was seen.

Results: 88% of participants believed that they had no right to change their mind after signing the consent. 61.6% trusted their doctor to do the right thing and did not mind what happened to them provided they were made better. Level of understanding was satisfactory in only 32% of patients.

Conclusion: The study concludes that there exists a vast discrepancy between the informed consent that perceived by patients. Current consent procedures seem inadequate as a means for the expression of autonomous choice and their ethical standing can be called into question.

PT-106

Integrity in reporting research: Perspectives from LMIC health researchers

A.C. Rohwer[1], T. Young[1], E. Wager[2], P. Garner[3]
[1]Stellenbosch University, Cape town, South Africa
[2]Sideview, Princes risborough, United Kingdom
[3]Liverpool School of Tropical Medicine, Liverpool, United Kingdom

Objectives: To explore low- and middle-income country (LMIC) health researchers' perceptions, experiences and awareness of good and poor practices in relation to authorship, redundant publication, plagiarism and conflict of interest.

Methods: We conducted an online survey of LMIC health researchers in 2015. We developed and piloted a questionnaire containing scenarios related to authorship, redundant publication, plagiarism and conflicts of interest. We set up the survey on Google and invited participants via email. Data were analysed with SPSS. We conducted follow-up, semi-structured interviews via telephone or Skype, with participants who indicated willingness and provided contact details. We recorded and transcribed all interviews and analysed data using thematic content analysis. Transcripts were coded with Atlas.ti and emerging themes identified through discussions within the author team. Ethical approval was obtained and anonymity of responses ensured.

Results: 199/583 (34%) health researchers from Latin America, Africa and Asia responded to the survey. Respondents had published a median of 20 peer reviewed articles (IQR: 7 to 41). Most respondents thought that adding (65%; 129/198) or omitting (98%; 195/198) an author, text-recycling (71%; 141/198), translating a text (95%; 189/198) or copying an idea (90%; 178/198) without acknowledgement of the source, and not declaring a financial (87%; 173/198) or non-financial conflict of interest (76%; 151/198) was unacceptable. However respondents indicated that these practices did occur at their institutions. Guest authorship was the most common practice and 77% of respondents stated it occurred in their institution. Fifteen respondents, comprising junior and senior researchers participated in telephonic interviews. Four main themes emerged from the interviews: 1) Authorship rules are simple in theory, but in practice it is a haphazard process 2) Academic status and power underpins many of the problems 3) Research environments do not enable good practices 4) Different types and levels of conflicts of interest lead to uncertainty.

Conclusions: Although LMIC researchers perceived certain reporting practices to be unacceptable, they indicated that these occurred at their institutions. Guest authorship emerged as an important problem across regions. Limited institutional processes and structures, lack of role-models and emphasising promotions and publications are important factors that influence research integrity in LMICs.

PT-107

The status of scientific integrity and relevant education of medical graduate students in Beijing, China

M.M. Miao[1], Y.L.L. Yu[1], S.X. Shao[2], X.Y. Xu[3], H.F. Zhang[3], P.B. Peng[3], B.H. Feng[1], P.J. Zhang[1]
[1]Beijing Hospital, Beijing, China
[2]Beijing University of Chinese Medicine, Beijing, China
[3]Capital Medical University, Beijing, China

Objective: Bio-medical field has become high-incidence area of scientific misconduct, the loss of good faith was reported frequently in recent years. The graduate students are the new blood of our nation's researchers, therefore, the scientific integrity education to the entry-phase researchers is essential. In China, because of the long training period and career plan, high social pressure and others, scientific integrity problem is particularly serious for the medical students. We conducted a survey to assess the awareness of scientific integrity of medical postgraduates, and the status of education of academic integrity in Medical Universities in Beijing.

Method: From December 2015 to March 2016, 123 postgraduates are selected as the participants of the survey by randomized method. We conducted a questionnaire survey in four famous medical universities in Beijing, and use descriptive analytical method for survey results. The contents of investigation included the status of academic integrity of the current medical students, education of academic integrity in Medical Universities, awareness of scientific integrity and acquisition channel of relevant knowledge.

Results: According to the survey, 81.30 percent of respondents had more or less misconducted in scientific research. 39.34 percent of universities had not open courses about scientific methods, 23.77 percent of universities had not offer the curriculums on academic standards and medical ethics. By analyzing the access to knowledge of research integrity, we find that related seminars or report is the best channel to acquire academic research integrity knowledge, accounting for 61.48%. Followed by the curriculum of academic ethics and compliance aspects, the network information or communication with classmates, which accounts for 39.34 percent.

Conclusion: The survey suggests that the education of scientific integrity in our country is very inadequate, the knowledge on good scientific faith was fragmented. At present most of the medical universities have not yet set up scientific integrity course, and access to the knowledge of integrity is limited for students. The scientific integrity education has become an extremely urgent issue.

PT-108

Understanding Integrity. An inquiry into the principles of proper academic practice.

M.R.E.A. Domingus
Erasmus University Rotterdam, Rotterdam, The Netherlands

In public debate, usually a narrow meaning of 'research integrity' is used. Plagiarism or forging scientific data are seen as breaches of research integrity, and as such, as showcases of scientific misconduct. However, only two aspects of proper academic practice are then being addressed: reliability and verifiability. The Netherlands Code of Conduct for Academic Practice#_ftn1(Revised 2014) defined six principles of proper academic practice.

Additional questions one can raise are, for example:

Can one reasonably expect a conflict of interests, given the nature of the research and the funder of the research? Is the research method chosen beforehand and is it the most suitable one, given the type of research within the research discipline? Is the data / literature selected fair, given the discourse of the topic within the research discipline?

Are the subjects misled intentionally prior to participating in an experimental behaviour lab

These questions address other principles of proper academic practice. Answering these questions requires, I propose, normative framework on what is acceptable and require an in depth knowledge of the scientific discipline and its methodologies. Sometimes what looks like p-hacking to get statistical power, is for methodologically justifiable reasons, commonplace within certain disciplines.

What are the practical consequences of safeguarding these principles of proper academic practice:

- for the way ethical committees are constituted and function
- for smart data management strategies and research support in general
- for open data policies

Some recommendations are made for Fostering Research Integrity#_ftn2 with regard to both a code of conduct as well as a normative framework.

#_ftnref1 See: http://vsnu.nl/files/documenten/Domeinen/Onderzoek/The_Netherlands_Code
%20of_Conduct_for_Academic_Practice_2004_(version2014).pdf
#_ftnref2 See: http://www.eur.nl/english/eur/publications/integrity/scientificintegrity/

PT-109

SQA: promoting research integrity through professional development and education in quality assurance

M. Bens[1], M. Eitzen[2], A. Graham[3]
[1]Colorado State University, Ft. collins, U.S.A.
[2]University of Texas Medical Branch, Galveston, U.S.A.
[3]Society of Quality Assurance, Charlottesville, U.S.A.

Objective: The Society of Quality Assurance is a professional membership society dedicated to promoting and advancing the principles and knowledge of quality assurance essential to human, animal, and environmental health research. As one of its strategic goals, the Society provides an international forum for exchange and dissemination of information and knowledge pertaining to quality assurance. As such, the Society creates dynamic educational, professional development, and outreach programs in support of research integrity in both industry and academic environments. Recent efforts have been made to expand from the traditional focus of the quality assurance professional toward a broader audience that spans all levels of education from grade school through University and beyond.

Method/Results: SQA is committed to supporting research integrity, as evidenced by its development of tools and resources that encompass a wide breadth of research environments, topics, and mechanisms. Some examples of SQA tools and resources that support research integrity and which will be presented in this poster include:

* Educational programs, e.g., live Quality College education programs, special symposia, annual conferences, and on-line training courses and webinars;

* Interactive research integrity and STEM tools for young students presented at the 5th USA Science and Engineering Festival and now available online;

* Career development in quality assurance, e.g., career center, professional credentials, individual mentoring;

* Regulatory issues support;

* Specialty area networks, forums, and publications;

* Professional, student and outreach memberships; and

* International Regional Chapters.

Conclusion: This poster will highlight opportunities for education and professional development in areas supporting quality assurance and research integrity, the availability of which conference attendees may not be aware.

PT-110

Academy Roles in Fostering Research Integrity

T. Arrison
InterAcademy Partnership, Washington, dc, U.S.A.

National academies and the global inter-academy movement have been active in a variety of projects and efforts to foster research integrity and scientific responsibiltiy. These include the development of policy reports, guidelines, and educational materials, organization of workshops and conferences, and participation in national and international fora. This paper will describe past, current, and planned future efforts on the part of academies.

PT-111

International and intra-national variation in research misconduct definitions: ethical and legal issues

D.B. Resnik[1], L. Rasmussen[2], A. Raymond[3], T. Neal[4], G.E. Kissling[1]
[1]National Institutes of Health, Research triangle park, U.S.A.
[2]University of North Carolina at Charlotte, Charlotte, nc, U.S.A.
[3]Elon University, Elon, nc, U.S.A.
[4]Practicing attorney, Raleigh, nc, U.S.A.

Objectives: To describe international and intra-national (i.e. U.S.) variation in research misconduct definitions. To discuss ethical and legal issues that may occur as a result of variation in misconduct definitions.
Method: This presentation summarizes data from two different studies of research misconduct definitions, an international one and a national one. Both studies used similar coding categories to classify the misconduct definitions. The international study examined national research misconduct policies of 22 countries ranked in the top 40 according to research and development funding for 2014. The national study examined the misconduct policies of the 183 of the top U.S. research institutions ranked by total research funding in 2009. All definitions were independently coded by two researchers, disagreements were resolved, and inter-rater agreement was assessed.
Results: 68% of countries and 59% institutions in the samples had misconduct definitions that go beyond the U.S. federal definition (i.e. fabrication, falsification, or plagiarism or FFP). 54.6% of the international policies included unethical authorship in the definition of misconduct, followed by unethical publication practices (36.4%), conflict of interest mismanagement (36.4%), unethical peer review (31.8%), misconduct related to misconduct investigations (27.3%), poor record keeping (27.3%), other deception (27.3%), other serious deviations (22.7%), misuses of confidential information (22.7%), and serious human or animal research violations (22.7%). 45.4% of the U.S. policies included other serious deviations in the definition of misconduct, followed by serious violations of human or animal regulations (23.0%), misuse of confidential information (15.8%), misconduct related to misconduct (14.8%), unethical authorship (14.2%), other deception (13.1%), and property theft (10.4%).
Conclusion: While there is widespread agreement that the definition of research misconduct should include FFP, most countries and institutions go beyond this benchmark. There is also significant international and intra-national (within US) variation in how misconduct is defined. This variation may lead to ethical and legal problems because behavior classified as misconduct by one country or institution may not be classified as misconduct by another country or institution. Researchers involved in international or intra-national collaborations may need to agree upon a definition of misconduct that will apply to their work.

www.wcri2017.org