

**Asian and Pacific Rim Research Integrity (APRI)
Network Meeting 2017**

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Research Integrity in International Research Collaborations

Category: Research Culture

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In international research settings, institutions and researchers need to understand and have mechanisms in place to navigate through the different research integrity expectations of countries involved in a collaboration. Collaborators are expected to have in place agreements on authorship, ethics approvals, data management, publication and dealing with allegations of research misconduct. The Singapore Statement on Research Integrity reflects international principles but these may conflict with local expectations and legislation. In research involving humans or animals, there are significant cultural and legislative differences among countries and their funding bodies in expected review and monitoring mechanisms. Here, we asked senior researchers at Australian universities and research institutes involved in international research collaborations how the research integrity process is working or could be improved. Building on preliminary findings presented at International Network of Research Management Societies (INORMS) 2016, we will present these expanded findings in the context of the current review of the Australian Code for the Responsible Conduct of Research and discuss how we can address concerns and ideas raised.

Auditing the Responsible Conduct of Research – *How auditing can make a positive contribution to researchers' awareness of the responsible conduct of research.*

Category: Research Integrity Promotion and Education

Barbara Doherty

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Abstract

Objective - To introduce auditing as a novel approach to research integrity education and promotion through a case study of one university's experience in auditing 82 research projects.

Method (*an oral presentation with slides*)

In 2014, a trial program of auditing a selected sample of research projects against ethics/biosafety requirements and responsible conduct of research (RCR) standards was introduced at La Trobe University. That year, 42 research projects were audited. In 2015 and 2016, a more manageable program continued of auditing 20 research projects annually. Each audit involved a one-hour interview with the project chief investigator and two auditors drawn from a team that included ethics and integrity staff, ethics and biosafety committee chairs and Research Integrity Advisors (RIAs). A researchers' approach to records management, supervision, authorship arrangements, data storage and research outputs distribution are discussed and, as relevant, demonstrated. Advice on University services that can assist researchers with managing their research projects is also discussed.

The audits are intended to be informative and friendly and the direct interaction with researchers through an audit interview has proven to be a meaningful way for staff who have roles in ethics, biosafety and research integrity oversight, training and advice to engage with researchers. Including Chairs and RIAs as auditors provides them with an opportunity to be included in ethics and integrity discussions and exercise their capacity to provide policy and best practice advice. The audit program has proven to be an excellent way to message the research community that the institution cares about how they conduct their research.

Results - Aggregate data from 82 concluded audits (2014–2016) will be presented, along with a sample of the audit checklist and questions. Considerations for gaining researchers' confidence and cooperation in the audit process will be explored, and the presentation will conclude with a discussion on how reporting audit outcomes to senior management can help to strengthen the institutional framework which supports the responsible conduct of research.

Conclusions -

- Auditing has fostered a continuous cycle of RCR awareness across the institution
- Auditing is worth the time and energy it can take

Deeper Understanding through a Broader Perspective: Report of Research Integrity Education at SOKENDAI University

Category: Research Integrity Promotion and Education

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Since the STAP cell scandal in 2014, there has been increasing awareness in Japan of the importance of research integrity education. Many universities and research institutions now provide at least some form of educational programs in research integrity. However, those programs are often provided as e-learning courses or video lectures. In order to foster students' active engagement in such education and to present it in a broader context of science and society relations, the authors developed a course on researchers' social responsibility that combines conventional lectures and active learning, and conducted them on various occasions. This talk presents a summary of that practice and shares what we learned from those experiences.

Educational Objective: The course aims to provide graduate students with basic knowledge on research integrity and, at the same time, provide an opportunity to deepen their understanding of its importance in a broader context of science and society and to improve their skills to discuss those issues with researchers from other research areas.

Method: The course is one and a half days long and consists of three modules: research integrity, social history of research, and science communication. Each module employs both conventional lectures and active learning, such as workshops, to maximize students' engagement and knowledge acquisition. In those workshops, students engage in various activities such as group discussion, poster making, and role-play.

Results: A survey consisting of several multiple-choice questions and a free description field was conducted at the end of each module. Students' ratings and their comments suggest that the workshop activities helped to deepen their understanding of the subject of each module. We also found increased awareness about researchers' social responsibilities among the faculty who helped with the workshop.

Conclusion: We conclude that the course was effective in achieving the educational objective. However, we feel the need for a more exact procedure to measure the effectiveness of such education, not only on the students' attitudes right after the course but also on their research practices throughout their careers.

Does Research Ethics Education Really Work? Empirical Evidence from Taiwan

Category: Research Integrity Promotion and Education

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Objectives: This study aimed to investigate the effectiveness of the Online Research Ethics Education program in Taiwan regarding students' literacy as well as their cognitive and behavioral attitudes in research ethics.

Method: Participants were 767 graduate students recruited from universities located in the northern, middle, southern, and eastern parts of Taiwan. Informed consent was sought from the students to participate in the pre-post experiment-control design study. A research ethics literacy test was developed to assess students' competence in understanding and evaluating the following four aspects: basic concepts in research ethics, ethical considerations in the research procedure, protection of research subjects, and publication and authorship. Test items were firstly reviewed by a panel of content and test development experts. Statistical procedures were then applied to examine the quality of each item concerning its distraction efficiency, difficulty, discrimination, and guessing parameters using a 3-PL item response model and classical test theory. The literacy test had a reliability of .75. The item bank was established using the Balanced Incomplete Block Design (van der Linden, Veldkamp & Carlson, 2004), which applied Multiple Matrix sampling of the items to randomly assign three clusters of test items to participants for effective control of item exposure and assessment of participant performance.

Researcher-developed questionnaires were used to assess cognitive and behavioral attitudes toward the basic concepts in research and the data management procedure. Semi-structured interviews were conducted on five students using convenience sampling to assess their perception before and after the courses regarding the importance and usefulness of research ethics education as well as their comments on the online course.

Result: Students who took the online courses exhibited higher scores in their research ethics literacy and cognitive and behavioral attitudes than those who did not. The experimental group scored higher in the posttests than the pretests in all three aspects. Qualitative interviews showed that the courses enhanced students' awareness of the consequence of misconduct in research, their perceived academic writing skill to avoid plagiarism, and their metacognition in the course content.

Conclusion: The Research Ethics Education program is effective in promoting students' literacy and their cognitive and behavioral attitudes toward research ethics. Moreover, the nature of this online-based program has the affordance to accommodate a massive number of learners.

Evidence-based Development of a Research Ethics Course in Taiwan

Category: Research Integrity Promotion and Education

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Background and Objectives: In response to the urgent need for research ethics training in Taiwan's higher education, in 2014 the Taiwan Ministry of Education (MOE) initiated a grand project – *Education and Implementation Mechanism of Research Ethics in Taiwan's Higher Education*. The project serves as a pioneer in forming a well-organized ethics education system and providing learning resources.

One of project goals is to develop high-quality digital instructional courses in traditional Chinese. As members of the development team, we have carefully followed the ADDIE model (the iterated Analysis, Design, Development, Implementation, and Evaluation model) to ensure the feasibility, scalability, appropriateness, and cost-effectiveness in the course development process. To provide empirical evidence for every decision-making in the ADDIE model, we have conducted a series of studies.

Method

Analysis: analyzing the current situation and educational needs of Taiwan's research environment by a survey of university deans of academic affairs (2012, 2016); and surveys of faculty needs (2012) and student needs (2012).

Design: including studies on motivation design for student engagement, the use of humorous visuals for enhancing students' learning experience, and the usefulness of smart feedback in the course.

Development: including studies on learning maps for research ethics, students' misconceptions of research ethics, students' (mis)understanding of plagiarism, researchers' perceptions of authorship, researchers' recognition of research ethics principles and practices and so on for content development.

Implementation: including studies on students' learning behaviors/patterns in the course, students' preferences for online/face-to-face/blended course formats, the feasibility of the flipped class.

Evaluation: assessing the effectiveness of the course by a series of pre/post-test control group experiments, individual/focus group interviews, and the study on the relationship among student engagement of interactive learning activities, their course satisfaction, and their learning performance by self-report and real log data.

Results and Conclusions: By the end of 2016, 43 of Taiwan's 138 universities which have graduate programs have participated in this project; more than half of first-year graduate students are and will be required to take the course provided by this project. In addition, 90 courses from 40 universities have used the courseware to teach their undergraduate/graduate students in an online/face-to-face blended format.

In the presentation, we will demonstrate how the results of these studies were implemented in our course development. The empirical evidence collected from the research endeavors would be useful for researchers and educators dedicated to the initiation of research ethics courses.

Experience of Teaching Academic Integrity to Undergraduate Medical Students

Category: Research Integrity Promotion and Education

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Objectives: The pressure to succeed forces many individuals to engage in academic and research misconduct. As naïve initiates into the academic world, students are at greater risk of succumbing to unethical practices as a result of this pressure. At the Aga Khan University (AKU) Medical College in Karachi, Pakistan, zero tolerance policies regarding academic and research misconduct are in place, but education is also crucial to ensure that adequate knowledge is disseminated and such practices are not rampant in the first place.

Method: Academic and research integrity are essential content of the bioethics curriculum integrated in the undergraduate medical programme at AKU Medical College. Related sessions are appropriately sequenced, such that first-year medical students receive an interactive session on academic integrity, including definitions of and how to avoid plagiarism, at the start of the academic year before they begin any assignments. This is followed by a tutorial on ethical principles in research, with the objective of students understanding the importance of and identifying the steps involved in ethical clearance/exemption. Other sessions in between and following these two in the five-year undergraduate medical programme focus on the knowledge, skills and attitudes required for ethical behaviour, particularly in the medical profession.

Results: Feedback from the Year 1 academic integrity session reveals that several students have plagiarized in the past, both intentionally and unknowingly. A targeted session on academic integrity was useful for making them aware of types of plagiarism, including self-plagiarism. Overall the students found the session useful for understanding the importance of academic integrity and how to avoid plagiarism in the future. Since the formal session has been placed at the start of the programme, there have been no actionable complaints against medical students regarding plagiarism in academic assignments or research output.

Conclusion: An ethics curriculum, with targeted sessions on academic and research integrity, is important to lay a foundation of values, including honesty, that are essential components of professionalism and form the cornerstone of ethical behaviour.

Initiation of a System for Improving Reproducibility of Research and Development in Thailand

Category: Research Integrity Promotion and Education

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The reproducibility of research has been a growing concern to the scientific community recently. One of the key underlying issues is the extensive pressure to produce high impact research publications or commercial prototypes. The situation is becoming more relevant in middle income countries, including Thailand, that are trying to advance their socioeconomic status. The NSTDA is a major government agency, and it hosts several research centers and manages many national research and development programs. To ensure the reproducibility and quality of R&D, the NSTDA has recently founded two units, namely the Office of Research Integrity and the Research and Development Quality Promotion Division. The immediate tasks of these offices are the advocacy and increasing awareness of the relevant concepts and practices. Other activities are expected to follow with the collaboration of countries in Asia and the Pacific Rim.

Research Integrity in Clinical Research Settings: Culture, Compliance and Communication

Category: Research Integrity Promotion and Education

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Objective: With the increasing complexity of clinical trials, the outsourcing of services and the lack of time or support for researchers mean that maintaining clinical research at a high level of quality is a difficult task. This paper describes strategies and programs in place at a major tertiary teaching hospital to address the culture and compliance of research integrity.

Methods: A review was undertaken of the numerous programs and strategies to foster and promote research integrity at a major teaching and research-intensive hospital in Melbourne. This includes online International Council for Harmonisation-Good clinical practice (ICH-GCP) training, a Research Audit Program and Training/Education Workshops on Research Ethics and Research Misconduct.

Results: An institution-wide Research Audit Program was implemented in late 2015. We found that researchers' compliance with meeting the requirements of conducting research in accordance with national and institutional policies, guidelines and regulations has been improved. Issues identified from this audit program in general relate to consent forms, the consent process, documentation and the conduct of trials. Other issues also include difficulties with recruitment, changing research personnel and updated ICH-GCP training. Feedback from researchers is that they are receptive to the implementation of the Research Audit Program, and, whilst researchers are asked questions during the audit, they are also encouraged to ask questions back and provide any comments.

A free online industry-wide endorsed GCP program was introduced three years ago. We found a high level of uptake and compliance. We have also introduced the online ICH-GCP course to medical students and Human Research Ethics Committee (HREC) members who have all enthusiastically embraced the course.

A Training/Education Workshop on Research Ethics and Misconduct was introduced as part of the institution's annual research week event. The next step is to roll out these workshops as weekly "bite size" research information sessions.

Conclusion: The regular auditing of research projects is an important means by which the Research Directorate ensures approved research is monitored appropriately. It is also an essential process of providing education to researchers about the requirements of conducting research in a responsible manner. Mandatory online GCP training courses facilitate a high level of compliance, whilst face-to-face workshops allow better communications and interactions between researchers and Research Directorate staff.

Various programs and strategies described at St Vincent's Hospital Melbourne provide the institution the ability to monitor approved research and promote the culture of research integrity. This gives sponsors confidence in the quality of our research data, making us a competitive site on the global market for clinical trials.

The Role of the Center for Research Ethics Information (CRE) in the Cultivation and Education of Research Integrity in Korea

Category: Research Integrity Promotion and Education

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Since 2007, the Korean government has been increasing efforts to establish research ethics by investing in the Ministry of Education and launching the Center for Research Ethics Information (CRE). The objective of this project is to analyze the role the CRE has played in fostering and providing education in research integrity to researchers and universities, and hence project further tasks to be attempted in the future.

The methods consist of analyzing various official documents related to the establishment and operation of the CRE, extracting quantitative data and statistics on research ethics content, and gathering information on user satisfaction.

The results of this research include an increase in interest about research ethics and the cultivation of awareness via the collection, analysis, and dissemination of diverse information and materials regarding research ethics. The CRE has been contributing to problem-solving in research misconduct and providing consultation for the many difficulties scholars face in practicing research. It has heightened active communication among researchers and has helped establish a healthy research culture.

Furthermore, the CRE plans to contribute more in enhancing the CRE website, activating communication among Korean universities and academic societies, providing CRE services in English, and networking and collaborating with the World Conference on Research Integrity (WCRI) and the Asian and Pacific Rim Research Integrity (APRI) Network.

Need for Concerted Efforts to Implement Research Integrity in Academic Institutions

Category: Research Misconduct and Questionable Research Practices

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Accessibility to scientific literature and tangible data has dramatically increased the submission rate of research manuscripts to journals. It is encouraging to find young investigators engaged in research. However, the increase in the number of fraudulent research papers is a serious concern. The dishonesty we are witnessing is not just restricted to some commonly known acts of misconduct, such as plagiarism and the submission of false data; it has been adopted inconspicuously in many other forms. Examples include misrepresentation and wrong attribution of an institute, duplicate submission of manuscript to another journal, and submission to journals without the knowledge or consent of other contributors. As a result it is becoming increasingly difficult for the editors to verify the identity and association of the authors with the academic institutes. Also, the originality of the data on which the submitted manuscript is based may be questionable. We are witnessing an emerging trend in the duplication, falsification and unverifiable data presentation in papers written by inexperienced researchers.

In this scenario the responsibility of journal editors is scaled up many fold, They not only need to ensure that the manuscript submitted is of good quality in terms of scientific content, but also need to corroborate and verify that the submission is the author's own data, and that the work done is in fact carried out at the institution the author claims to represent or that the author holds a position that allows him/her to act as a corresponding author. Despite the availability of plagiarism detection tools, journals mainly rely on reviewers' painstaking efforts to screen manuscripts submitted for publication.

Despite the best practice guidelines of the Committee on Publication Ethics (COPE), these misattributed authorships continue to become an unmanageable issue. Recognizing such acts of research misconduct has not been easy, particularly if the original source is not available in electronic format or not archived in an easily accessible library collection. Technology has been rapidly improving, which has made it possible to identify instances of research misconduct, particularly plagiarism in research papers, using sources available on the internet.

Our major concern is that any misconduct – whether in the form of a fraudulent publication or misattribution – would not only tarnish institutional reputation with questionable research practice, but also hinder scientific innovation. To protect institutional reputation, it is important to develop and implement a policy on submitting publications to research journals without affecting the basic rights of academic freedom.