

Office of Research Integrity

N E W S L E T T E R

The *ORI Newsletter* is published quarterly by the Office of Research Integrity, Office of the Secretary of Health and Human Services, and distributed to applicant or awardee institutions and PHS agencies to facilitate pursuit of a common interest in handling allegations of misconduct and promoting integrity in PHS-supported research. Please duplicate and circulate this newsletter freely. An electronic copy is available on the ORI home page.



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A European Code of Conduct for Research Integrity

Pieter J.D. Drenth, Hon. President, All European Academies (ALLEA)

Codes of Conduct for Research Integrity have been and are developed by universities, research institutes, academies of sciences, funding organizations, national governments, and even supra-national institutes. The European Code of Conduct for Research Integrity resulted from joint efforts of the Member Forum on Research Integrity of the European Science Foundation (ESF) and the European Federation of National Academies of Sciences and Humanities (All European Academies; ALLEA). The

main goal of the European Code of Conduct for Research Integrity is not only to stimulate and develop institutional settings that strengthen scientific integrity, but also to set standards for scientific integrity across Europe. Moreover, given the increase in international scientific collaborations over the past decades, a code is necessary to reach agreement on definitions and standards in dealing with scientific misconduct in international research settings.

(See **A European Code**, page 4)

Examining RCR Issues in International Collaborations

Sandra Titus, Ph.D., ORI

The Government-University-Industry Research Roundtable (GUIRR) of the National Academies of Sciences (NAS; Washington, DC) recently hosted a workshop on July 26-27 entitled “Examining Core Elements of International Research Collaboration.” The central aim of the workshop was to explore the role of government, industry, and academia in promoting better cross-border and interdisciplinary research collaborations.

Key speakers discussed issues relevant to understanding and enhancing cross-border and interdisciplinary research, including cross-cultural and ethical issues, research

integrity, financial risk, export controls, the role of intellectual property, and diplomacy. One workshop session specifically focused on research integrity and the responsible conduct of research (RCR), highlighting key issues fundamental to promoting and ensuring data integrity in international research collaborations. This article is based on my interpretation and impressions of that session.

Researchers are increasingly involved in international collaborations. However, as Dr. John Kirkland, Deputy Secretary General, Association of Commonwealth (See **RCR Issues**, page 5)

New Online Database of RCR Educational Materials Developed by CTSA Group

Elizabeth Heitman, Vanderbilt University, and Debie Schilling, University of California, Davis

Clinical research educators have a new resource for curricular materials on research integrity made possible by the Clinical and Translational Science Award (CTSA) Consortium's Clinical Research Ethics Key Function Committee (CRE KFC).

The CRE KFC Educational Materials Group, together with the creators of CTSpedia at the University of California, San Francisco, has produced a searchable online inventory of syllabuses, PowerPoint slides, videos, lecture notes, handouts, and links for use in education and training in the responsible conduct of research (RCR). These resources are intended to assist with the development of instructional programs in RCR within the CTSA Consortium as well as in other related contexts within the United States and abroad.

Materials, posted at <http://www.ctspedia.org/do/view/ResearchEthics/WebHome>, are indexed by topic, format, and originating institution. CTSpedia was created as a central repository for tools, educational materials, bits of wisdom, and other resources that may be useful to students and investigators in clinical and translational research. All materials are freely accessible and, unless otherwise stated, may be copied, adapted, and redistributed for non-profit educational purposes, provided that appropriate credit is given to the original authors and affiliate institutions, which hold copyright.

The available RCR materials were collected as part of a larger inventory of CTSA-related RCR education activities, conducted by the CRE KFC Educational Materials Group. A full report of the inventory project was published earlier this year in *Clinical and Translational Science* (DuBois JM, Schilling D, Heitman E, Steneck NH, Kon AA. Instruction in the responsible conduct of research: An inventory of programs and materials within CTSA. *Clinical and Translational Science* 2010; 3(3): 109-111. PMID: 20590680).

This project was funded through a CTSA Administrative Supple-

ment grant from the National Center for Research Resources (3UL1RR024146-03S2. PI: Lars Berglund, University of California, Davis). The project workgroup included: Debie Schilling, University of California, Davis; James DuBois, Washington University/Saint Louis University; Nicholas Steneck, University of Michigan, Ann Arbor; Elizabeth Heitman, Vanderbilt University; Jon Merz, University of Pennsylvania; David Bui, University of California, San Francisco; Nancy Hills, University of California, San Francisco; Mary Banach, University of California, San Francisco; and Alexander Kon, University of California, Davis.

Announcement

A funding opportunity for the ORI-NIH Research in Research Integrity grant program has been announced:

<http://grants.nih.gov/grants/guide/rfa-files/RFA-ES-11-004.html>

Participating organizations are:

- Office of Research Integrity (ORI)
- National Institute of Environmental Health Sciences (NIEHS)
- National Institute of Dental and Craniofacial Research (NIDCR)

Earliest submission is February 4, 2011.

Letter of intent is due February 5, 2011.

Application deadline is March 4, 2011, by 5:00 p.m. local time of applicant organization.

The primary areas of interest for this Funding Opportunity Announcement are Research Integrity and the Public Trust, Research Integrity and Bias, Research Integrity in Community-Based Participatory Research, and Research Integrity and Factors Affecting Researchers' Behavior.

ORI Presents at AAMC Conference

At a session entitled “Advancing Values while Advancing Health: Educating New Scientists” at the Association of American Medical Colleges (AAMC) annual meeting in Washington, DC, Division Director John Galland gave a brief overview of the responsibilities of the Office of Research Integrity (ORI) for helping to ensure the honesty of the research record and the professional development of researchers in responsible conduct. “Helping researchers to develop their innovation, productivity, and integrity will help them flourish and help ensure the vitality of our health and economy,” he said. Galland reported that the scope of responsible research education includes information about the rules, regulations, policies, and

guidelines for research, but also, after philosopher James Rest, about the abilities that give rise to ethical behavior. Several scenarios were enacted by professional actors to illustrate integrity issues that can arise in Community-Based Participatory Research (CBPR). CBPR is research done with communities that combines producing research results and improving community health outcomes.

The first scenario illustrated that not only is it important that a researcher become sensitive to the community where the research is done, but that the community understand the barriers that a researcher must overcome to flourish academically and serve the community effectively.

The second scenario illustrated how, in CBPR, presumptions about others can sometimes be misleading and condescending. Finally, a scenario was enacted that illustrated how allegiances, such as the recruiter to the Principal Investigator, the caregiver to the patient, and the participant to the recruiter, and the participant to the recruiter, can affect the quality of care of participants in research.

USA Science and Engineering Festival

Cynthia Ricard, Ph.D., ORI, and Maria Smith, B.S., DS Federal

More than 1,500 free, interactive exhibits drew about 1 million people to Washington, DC, to learn about science, technology, engineering, and math. The Office of Research Integrity (ORI) was one of the official partners for the first USA Science and Engineering Festival on the National Mall, October 23-24, 2010. The ORI exhibit received more than 1,400 visitors each day.

In addition to Drs. John Galland and Cynthia Ricard from ORI, volunteers at the ORI tent included Jane Otado, Ph.D. (Howard University Hospital); A. Victoria Rivas-Vazquez, M.A., and Sheila Cohen

Zimmet, B.S.N., J.D. (Georgetown University Medical Center); and John Ricard (the Kennedy Institute of Catholic Charities).

At the ORI exhibit, young children huddled around the puzzles, solving illusions and riddles. Their laughter and shouting, “I got it!” attracted still others to come over to investigate and participate. Some students came to the festival as part of their science homework assignments. They completed worksheets about their activities at the expo. Visitors learned what ORI does as a federal agency to promote research integrity and investigate allegations of research misconduct.

Disclaimer

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A European Code of Conduct *(from page 1)*

Inspired by the First World Conference on Research Integrity in Lisbon (September 17-19, 2007), ESF convened a workshop on Research Integrity in Madrid, Spain (November 17-18, 2008).

At that conference, the ESF Member Organizations Forum on Research Integrity was launched. The Forum formed four working groups (WGs). Their composition and commissions were as follows:

1. **WG 1.** Raising Awareness and Sharing Information. Chair, Sonia Ftacnikova, Slovakia
2. **WG 2.** Codes of Conduct. Chair, Pieter Drenth, Netherlands
3. **WG 3.** Setting Up National Structures. Chair, Maura Hiney, Ireland
4. **WG 4.** Research on Research Integrity. Chair, Livia Puljak, Croatia

WG 2 was tasked with developing a (European) Code of Conduct, which defined the core values and norms of scientific integrity and could be used as a template for national or institutional codes of conduct across Europe.

A preliminary discussion paper served as a starting point for an iterative series of discussions within the WG and the ESF Member Organizations.

Research misconduct is damaging to science, is harmful to individuals and society, and is certainly deleterious to the public's trust in science. In Europe, National Acad-

emies of Sciences are important actors contributing to discussions of scientific integrity. Also, ALLEA has repeatedly expressed concern about the increasing prevalence and, consequently, negative effects of misconduct in research. The European Academies have also been involved in this discussion because of its significance. At a special meeting in Berne (June 29-30, 2009), representatives of ALLEA's Member Academies provided input for the final version of the Code of Conduct.

A common agreement on standards, rules, and procedures regarding research misconduct is a necessary precondition for a proper and responsible management of international scientific research projects. Barriers that contribute to the effective prevention of research misconduct in international research settings include differences in definitions, procedures, codes, or rules regarding scientific misconduct between the collaborating countries. Significant variation also exists because some countries may have certain codes and regulations; others have only national codes or local codes. A number of countries do not have formal codes and regulations regarding research misconduct and scientific integrity. In general, across Europe there is a lack of a coherent and generally accepted policy and approach, and the present patchwork of codes and procedures is problematic given the increasing number of international research collaborations.

In June 2010, an executive summary of the comprehensive report of the WGs titled *Fostering Research Integrity in Europe* was published by ESF Strasbourg (<http://www.esf.org>). The European Code begins with a definition and description of the principles of integrity in scientific and scholarly research. These include honesty, reliability, objectivity, independence, openness, duty of care, fairness, and responsibility for future scientists and researchers. This Code is followed by a description of various forms of misconduct including fabrication, falsification, infringement of intellectual property, improper dealing with misconduct, and minor but unacceptable infringements. These are the principles of scientific integrity, and their violation should be considered to have a universal character and should be part of a universal code of conduct. The European Code of Conduct presents guidelines for good practice, as well as rules for dealing with data practices and management, proper research procedures, responsible research procedures, publication-related conduct, and reviewing and editorial issues. However, legitimate differences between national, disciplinary, or institutional systems should also be recognized. Therefore, rules of procedure must allow for such differences and cannot claim universal applicability.

The proposed Code of Conduct has been generally approved by the (See A European Code, page 5)

A European Code of Conduct *(from page 4)*

European national academies and within the ESF Member Organizations Forum. The insights and conclusions of the four WGs have resulted in a comprehensive strategy for promoting and safeguarding integrity in scientific and scholarly research and practice.

One must remember that this Code of Conduct is not a body of law. It is not intended to have a legal character. It is a basis for self-regulation. A basic responsibility of the scientific community is to formulate the principles and virtues of scientific and scholarly research and

to define its criteria for proper research behavior.

Therefore, in many academic settings, universities, and funding organizations, some code or guidelines for research integrity and good research practices are already in effect. It is not the intention to replace these codes; rather, we expect these codes or guidelines to be consistent with the European Code of Conduct for Research Integrity. However, in countries where such a code does not yet exist or is still being developed, this new Code may have a stimulating and guiding effect.

*“Seek not the favor of
the multitude; it is
seldom got by honest
and lawful means.*

*But seek the
testimony of few; and
number not voices,
but weigh them.”*

Immanuel Kant

18th-Century German
Philosopher
1724 to 1804

RCR Issues in International Collaborations *(from page 1)*

Universities, London, pointed out, before that begins, one must know the infrastructure and consider the differences that are present in the culture, the ways research is conducted, the institutional structure that supports the researcher, and the economic incentives for researchers and institutions. There is a growing awareness from current international researchers that research standards for data collection and management may encounter serious problems that can impede and limit successful research efforts.

Researchers who worked with collaborators in other countries described their experiences and mechanisms for promoting data integrity. One key element stressed by attendees was the importance of taking the time to thoroughly train and then continually monitor team members.

While international collaborations may appear to open doors to additional research opportunities, many speakers stressed giving careful consideration to what one is trying to accomplish and evaluating what one’s potential collaborator is trying to accomplish. One must consider motivations and have a good rationale for why one plans to work with a certain individual or center.

Speakers also highlighted the need to have a clear understanding of the cultural context as well as a formal written agreement before beginning the research. Such agreements should happen long after trust has been established and individuals and institutions know and understand each other’s goals. The following lists of issues are a summary of the committee discussions and presentations made by Drs. David Resnick (National Institute of En-

vironmental Health Sciences), William Blattner (University of Maryland Biotechnology Institute), and Aliyu Gumel (University of Maryland). Specifically, agreements should include the following objectives:

- To specify tasks
- To specify authorship and intellectual property
- To describe financial issues
- To describe a dispute resolution process and termination provision

The discussion focused on what might be done to enhance training and international collaborations in the United States. A course or courses could be developed to help domestic researchers who work on international collaborations (See RCR Issues, page 6)

RCR Issues in International Collaborations (from page 5)

understand and discuss the objectives listed above.

Moreover, since data integrity is one desired objective, many participants noted that there is a need for additional training and rules that offer an assurance of data integrity. Industry is often far ahead of academia in knowing how to assure data integrity, specifically in the pharmaceutical area, because they are required to follow the Food and Drug Administration's (FDA's) Good Clinical Practice rules (<http://www.fda.gov/ScienceResearch/SpecialTopics/RunningClinicalTrials/default.htm>).

Future discussions with representatives from various industries might also provide additional information on how to adapt and translate some of the data integrity

standards from industry to academia and to researchers.

Finally, participants noted the need for the government to expand and alter their role in promoting and regulating data integrity in the international arena. These include the following guidelines:

- Regulatory approaches should be altered to be applicable to modern research operations.
- Online courses can be a valuable component of RCR education and training, but should not be the sole mechanisms used.
- Institutions and agencies should be required to invest real resources in monitoring and enforcing existing RCR requirements.
- Institutions should be directed to ensure that every researcher con-

ducting international research receives RCR training that addresses international issues.

- Institutions and agencies should be required to develop better systems of data stewardship and transparency.

Participants also hoped that the ideas promoted through the presentations and discussions could lead the NAS GUIRR to convene a larger meeting to further explore and advance the issues involved in international research collaborations as well as provide an impetus for bringing about necessary changes.

Additional information about this particular project may also be viewed online on the GUIRR web site at <http://www.nas.edu/guirr>

Case Summaries

Hung-Shu Chang, Ph.D. Washington State University

Based on the report of an investigation conducted by Washington State University (WSU) and additional analysis by ORI in its oversight review, the U.S. Public Health Service (PHS) found that Hung-Shu Chang, Ph.D., former postdoctoral fellow, WSU, engaged in research misconduct in research supported by National Institute of Environmental Health Sciences (NIEHS), National Institutes of Health (NIH), grant R01 ES012974.

PHS found that the Respondent engaged in scientific (42 C.F.R. Part 50

and 93) and research misconduct by fabricating and falsifying data in Figure 3 of a paper published in *Endocrinology*.¹ Specifically, PHS found that:

1. the Respondent, by not conducting any of the claimed bisulfite sequencing, fabricated the methylation status of CpG sites in eight candidate genes identified in both Figures 3 and 4 as No. 11, No. 12, No. 13, No. 14, 15, No. 22, No. 26, No. 31, and No. 19, to support the hypothesis that the environmental compound, vinclozolin, induces a permanent alteration in the epigenetic reprogramming of the germline

that promotes transgenerational disease states; and

2. the Respondent, by conducting only a small fraction of the claimed bisulfite sequencing, and falsifying the results obtained, falsified the methylation status of CpG sites in eight additional candidate genes, identified in Figures 3 and 4 as No. 2, 3, 24, No. 5, 6, 9, No. 8, No. 16, No. 17, 18, No. 27, 28, No. 29, and No. 33.

Dr. Chang has entered into a Voluntary Settlement Agreement in which he has voluntarily agreed, for a period of three (3) years, beginning on July 21, 2010:

Case Summaries (continued)

(1) to exclude himself from serving in any advisory capacity to PHS, including but not limited to service on any PHS advisory committee, board, and/or peer review committee, or as a consultant; and

(2) that any institution that submits an application for PHS support for a research project on which the Respondent's participation is proposed or that uses him in any capacity on PHS-supported research, or that submits a report of PHS-funded research in which the Respondent is involved, must concurrently submit a plan for supervision of the Respondent's duties to the funding agency for approval. The supervisory plan must be designed to ensure the scientific integrity of the Respondent's research contribution while applying for or conducting PHS-supported research. The Respondent agrees to ensure that a copy of the supervisory plan is submitted to ORI by the institution for ORI approval. The Respondent agrees not to participate in any PHS-supported research until such a supervisory plan is submitted to ORI.

1. Chang, H.S., Anway, M.D., Rekow, S.S., & Skinner, M.K. "Transgenerational epigenetic imprinting of the male germline by endocrine disruption exposure during gonadal sex determination." *Endocrinology* 147(12):5524-5541; hereafter referred to as the "Endocrinology paper."

Elizabeth Goodwin, Ph.D. University of Wisconsin-Madison

Based on the report of an investigation conducted by the University of Wisconsin-Madison (UW-M) and additional analysis conducted

by ORI in its oversight review, the U.S. Public Health Service (PHS) found that Elizabeth Goodwin, Ph.D., former associate professor of genetics and medical genetics, UW-M, engaged in scientific misconduct involving research supported by the National Institute of General Medical Sciences (NIGMS), National Institutes of Health (NIH), grants R01 GM051836 and R01 GM073183.

PHS found that the Respondent engaged in misconduct in science by falsifying and fabricating data that she included in grant applications 2 R01 GM051836-13 and 1 R01 GM073183-01.

PHS found that in grant application 2 R01 GM051836-13, The Respondent knowingly and intentionally:

1. falsified Figures 5A and 5B by reusing figures from two of her earlier published papers and falsely labeling them to claim results that had not been achieved in her laboratory;

2. falsified Figure 7B by reusing a figure from one of her published papers and both relabeling it to claim she had detected the STAR-2 protein rather than the TRA-1 protein actually detected and modifying the image in the application to disguise its origin;

3. falsified Figure 8C by using a figure produced by one of her students and relabeled it to show that RNAi treatment of *C. elegans* led to increased expression of the TRA-2 protein when this result had not been obtained by the student; and

4. falsified the table on Page 20 of the application showing phenotypic frequencies of worms expressing star-2 (ok483) mutants by significantly overstating the level of aberrant phenotypes and fabricating certain categories of phenotypes not seen by the student conducting the research.

PHS finds that in grant application 1 R01 GM073183-01, Dr. Goodwin knowingly and intentionally:

1. falsified Figure 5 because she used the same two lanes in both Figure 5 and Figure 7, although they were flipped horizontally in one of the figures to disguise their reuse. In Figure 7, the lanes illustrated an effect on *laf-1* during developmental stages of *C. elegans*, and in Figure 5, the same lanes purportedly illustrated an effect on *laf-1* non-coding RNA. A witness testified that the result in Figure 5 had not been observed, whereas that in Figure 7 had, indicating that the claims for Figure 5 were falsified; and

2. falsified Figure 8 by reusing photographs prepared by a student that identified the location of *rRas-l* expression in adult worms and claiming instead that the images illustrated the location of *laf-1* mRNA. The images had been enlarged and cropped to disguise their location.

Dr. Goodwin has entered into a Voluntary Exclusion Agreement in which she has voluntarily agreed, for a period of three (3) years, beginning on July 22, 2010:

Case Summaries *(continued)*

(1) to exclude herself from any contracting or subcontracting with any agency of the U.S. Government and from eligibility for, or involvement in, non-procurement programs of the U.S. Government referred to as “covered transactions” pursuant to the HHS Implementation of OMB Guidelines to Agencies on Governmentwide Debarment and Suspension at 2 C.F. R. 376, *et seq.*; and

(2) to exclude herself from serving in any advisory capacity to PHS, including but not limited to service on any PHS advisory committee, board, and/or peer review committee, or as a consultant.

2010 Annual Report on Possible Research Misconduct

Institutions must submit their annual report electronically between January 1 and March 1, 2011. Please log on to the ORI web site at http://ori.hhs.gov/assurance/electronic_submissions.shtml

For additional information and assistance, please contact Robin Parker at robin.parker@hhs.gov or (240) 453-8400.

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