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Office of Research Integrity

NEWSLETTER

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.

IN THIS ISSUE

The ORI Newsletter *is interested in providing a forum for occasional commentary by outside experts. Ideas for future newsletters can be submitted to ASKORI.*

A Plan to Prevent and Respond to Plagiarism Complaints

Alan J. Evelyn, M.B.A., Baruch College, CUNY

As the first Research Integrity Officer (RIO) at Baruch College, I wanted to develop a framework that would help engage faculty in discussions about responsible conduct of research and fulfill my responsibilities for the new City University of New York (CUNY) policy regarding the "Disposition of Allegations of Misconduct in Research and Similar Educational Activities."

To better understand what other institutions are doing to foster a culture of research integrity, I attended "The First Biennial ORI Conference on Responsible Conduct of Research Education, Instruction and Training" (Washington University, April 2008) and "Ethics in Research" (Borough Manhattan Community College, CUNY, January 2008). One conclusion was inescapable: as a RIO, I will have the most impact on research behavior and ethical standards in the area of plagiarism. This issue demands to be discussed and assessed in a contextual framework.

The CUNY policy states that a finding of research misconduct requires that there be "...a significant departure from accepted practices of the Relevant Research Community (RRC)." Based on this policy, I decided that the RRC would provide the context in which it would be possible to engage and evaluate faculty complaints of plagiarism.

Four elements, or domains, appear to play a role in the definition of research misconduct: Institution, Publications, Discipline, and Funding.

(See A Plan, page 6)

Would You Like to Manage Your Research Team Better?

John Galland, Ph.D., University of California (UC), Davis

ORI announces a new on-line educational program developed to inspire discussion and dialogue about how researchers can enhance their skills in establishing and running a laboratory or research program. Created for ORI by the Laboratory Management™ Institute at UC Davis, the on-line educational program can be accessed through the ORI web site. The program is intended for researchers at any level of experience, but especially for those early in their career who may have had little education and experience in establishing and running their own independent research program. Instructional materials also are included for educators who might want to use them in their own programs.

The content of the web-based program centers around managerial and leadership issues that can arise in running a laboratory or research program. The issues were selected from those suggested at workshops in laboratory management held at UC Davis, and actually experienced by postdoctoral scholars, graduate students, and researchers in academia, government, and industry. The issues filmed include dilemmas in dealing with difficult people, laboratory

(See Research Team, page 3)

ORI Updates

RRI Conference at Niagara Falls

The Fifth Biannual Research on Research Intregrity (RRI) conference will be held on May 15-17, 2009. It will begin Friday at 1 p.m. and end Sunday at 1 p.m.

Sponsored by ORI and hosted by Roswell Park, the conference will be held at Niagara Falls Conference Center, Niagara Falls, NY.

Registration "early bird" deadline is February 28, 2009, at *http://www.roswellpark.org/register*. The conference web site is *http://www.roswellpark.org/ORI2009*

Co-organizers are Cynthia Ricard and Nick Steneck. Abstracts should be submitted to Cynthia Ricard, Director, Extramural Research, at cynthia.ricard@hhs.gov and Nick Steneck, Consultant to ORI, at nsteneck@umich.edu.

The conference is designed for those interested in learning about the research on research integrity. The content areas often examine issues on the incidence of research misconduct, authorship, impact of mentoring, conflict of interest in published studies, ethical decision making, and evaluation of the research climate.

Interactional Video Planned

ORI plans to create an interactive multimedia simulation for researchers about ethical decision making, in partnership with the Stockdale Center for Ethical Leadership at the United States Naval Academy and WILL Interactive.

Interactive multimedia simulations allow participants to learn by doing. In this case, participants will play the role of a researcher faced with possible research misconduct and the resulting ethical dilemmas. In a realistic environment, participants have to decide what to do. Each choice, and combination of choices, sends the scenario off in a different direction, with attendant risks and consequences. Loc Nguyen-Khoa, ORI Project Officer, points out that the practice helps prepare students for making those tough decisions later in their lives.

ORI's partners in this effort bring tested strengths to the table. The Stockdale Center and WILL Interactive have partnered before to produce four simulations on ethical decision making. In this new endeavor, the three partners will work together to develop the simulation's story, and then WILL Interactive will bring it to life.

RRI Funding Opportunity

Partnering with ORI this year will be the Eunice Kennedy Shriver National Institute of Child Health and Human Development, and the National Center for Research Resources (NCRR). NCRR also will provide administration at all stages of the grant process, including the review process (the past review had been done at CSR).

The format for 2009 reasearchers who are interested in conducting research on research integrity (RRI) will use the R21 mechanism. The R21 directs researchers to focus on questions in the context of research collaborations. The proposed projects for the R21 mechanism must challenge existing paradigms, be developed around an innovative hypothesis, or address critical barriers to progress in understanding the multiple factors that underlie significant departures from research integrity. Proposals must have clear relevance to biomedical, behavioral health sciences, or health services research.

Deadline for applications is March 17, 2009. The announcement can be found at *http://grants.nih.gov/grants/guide/rfa-files/RFA-RR-09-004.html*

Journal "Audits" of Image Manipulation

The American Thoracic Society (ATS) has recently agreed with two other publishers in science and has publicly revealed the results of journal prescreening for image manipulation. ATS found, in manuscripts accepted by the *American Journal of Respiratory Cell and Critical Care Medicine*, that "approximately 23% of images had undergone some alteration "including 'erasure,' 'filling in,' 'splicing,' and 'cloning.'" [1] Separately, the *Journal of Cell Biology (JCB)* and *Blood* had reported that 20-28% of accepted manuscripts had signs of image manipulation.[2, 3] Also, 1% of *JCB's* accepted manuscripts had manipulations that look like "deliberate falsifications." [2] Representing the results of a self-audit by the community in the normal conduct of research, a level of 1% is consistent with the incidence of suspected falsification reported by scientists in the recent Gallup study.[2]

So what happens to the allegations? The ORI case load involving falsified images is roughly 10-100 fold less than one would predict from the 1% suspected.[2, 4] Are the rejected manuscripts published elsewhere? For journal prescreening to contribute to the integrity in research, journal editors need to contact the appropriate institutional official.

References

1) Abraham, E., Adler, K.B., Shapiro, S.D., & Leff, A.R. "The ATS Journal's Policy on Image Manipulation." *Proc. Am Thorac. Soc.* 5:869, 2008.

2) Tompa, R. "Finding the False," *The Scientist* 22(6):25, 2008; Rossner, M. "How

(See Image Manipulation, page 3)

ORI Updates

Conference on International Research Collaborations

Melissa S. Anderson, Ph.D., University of Minnesota

The conference "Challenges and Tensions in International Research Collaborations" was held at the University of Minnesota in Minneapolis, on October 2-3, 2008. It was supported by funding from ORI and the University of Minnesota; 267 participants attended from 11 countries.

International collaborations range from multinational projects involving substantial infrastructure development (such as the Large Hadron Collider), to mid-range collaborations among several laboratories (including clinical trials), to simple projects involving two scientists from different countries.

The conference addressed problems that arise in cross-national collaborations. When something goes wrong in an international collaboration, everyone involved readily blames miscommunication, misunderstanding, or misinterpretation of rules or requirements.

Only as a case unfolds will the fundamental differences in the way science is done in various countries appear as contributing factors.

The conference examined four fundamental differences in four areas: (a) the organization and funding of science, (b) cultural expectations, (c) legal and regulatory environments, and (d) the training of graduate students and postdoctoral fellows.

International differences can lead to substantially different assumptions and expectations about how research projects are to be planned, performed, and reported. Unless scientists are fully abreast, they may not comprehend the critical need for explicit attention to aspects of research projects. Many will take for granted various areas of concern—such as compliance with national policies, authority within the administrative hierarchy, and responsibilities of postdocs. Without explicit attention to all aspects of the research, ethical problems and misconduct may happen.

Conference speakers had collective experiences in international research collaborations in over 60 countries and described first-hand experiences in international collaborations.

Many problems are common to all scientific collaborations but are complicated by cross-national differences in oversight and expectations.

Other problems are unique to the international arena, and their solutions often depend on commitment and trust developed through long-term collaborative associations.

There is great interest in international scientific collaborations, because of their potential for stimulating, creative, and productive interactions. On-line project management and improved communication technology have made such collaborations easier to develop and maintain.

Attendees left the conference with a sense that international collaborations are much more complicated than they had realized. They repeatedly used the word "daunting" to describe the prospect of handling the challenges of international research.

Image Manipulation

(from page 2)

to Guard Against Image Fraud." *The Scientist* 20(3):24, 2006.

3) Shattil, S.J. "A Digital Exam for Hematologists." *Blood* 109(9):2275, 2007.

4) Titus, S.L., Wells, J.A., & Rhoades, L.J. "Repairing Research Integrity." *Nature* 453:980-982, 2008.

Managing a Research Team

(from page 1)

hygiene, social responsibility, and authorship.

The video used theatrical professionals (LabActors™) who improvised a scene (LabAct™) that illustrated a conflict between two characters in the laboratory. The subsequent video clips show participants experimenting with various approaches for resolving the dilemma.

"The highly interactive web-based program is the closest we could get to simulating a workshop experience," said John Galland, Director of the Laboratory Management Institute. Users are prompted in this video to ponder how they might resolve the issues and then can observe some of the various ways in which previous workshop participants chose to have the LabActors resolve them.

The educational program recognizes that resolutions to managerial and leadership issues in the laboratory can be highly individual and situation specific. Therefore, the content of the web site is not prescriptive; users of the web-based program can formulate their own solutions. Users also can suggest changes to the program through the program's web site.

Sandra Titus, ORI Director of Intramural Research, adds that "the purpose of this ORI project was to develop educational resources beyond the traditional RCR ones that might be included in research integrity education. It is a valuable tool for not only those who manage laboratories but for all scientists who lead groups."

Jan 1 - Mar 1
Annual
Reports
Due

Research Administration

The Profession of Research Administration: History and Roles

Dr. Edward F. Gabriele, United States Navy Medicine

Beginning chiefly with the World War II advent of increased federal investment in research and development, a new profession emerged—research administration.

Originally, research administrators provided essential management and technical expertise to meet sponsor financial and reporting accountability required of investigators and their institutions. The growing complexity of federal and other sponsor requirements has produced a class of professionals whose roles and responsibilities have exponentially increased over time.

This profession has evolved from a practical necessity to a certified profession of academic and subject matter experts on many levels. The profession is as diverse as are the needs.

Roles are traditionally divided into three distinct areas of leadership and responsibility: pre-award activities, post-award activities, and transformational or transitional activities leading to new research possibilities. Within these three areas, research administrators are responsible for a wide range of activities: workshops, sponsor relations, financial management, strategic planning, executive administration of institutional operations, facilities management, ethics, intellectual property, technology transfer, continuing professional education for researchers and staff, research law, regulatory affairs and compliance, human resources, knowledge science and information technology, archives, and stewardship.

Research administrators serve in diverse institutions all around the globe, including: universities, government agencies, research institutions, and healthcare and academic medical centers.

As society increasingly invests in the importance of research and development for human progress and for the advancement of the quality of human life, the leadership of research administrators, whether executives or technical staff, is equally important to guarantee that the human benefits of research are realized continually now and into the future.

Plans for SRA 2009 Seattle Meeting
SAVE THE DATE: OCTOBER 17-21, 2009

Rebecca Vandall, SRA International

The Society for Research Administrators (SRA) 2009 theme, ***Research Without Borders***, recognizes a changing research environment, where managers are expected to deal with increasingly complex relationships that span disciplines, organizational units, institutions, and even national boundaries. New skills will be required in this new environment, and SRA 2009 plans to offer both a forum for professional development and exciting new opportunities for collaboration.

It is anticipated that more than 1,500 people from over 40 nations will participate in executive seminars, symposia (posters, papers, and abstracts), exhibits, concurrent sessions, and interactive activities.

A new Global Research Track has been added to the current tracks: Finance, Research Law, Research Ethics, Sponsors and Agencies, Sponsored Programs Administration, Management and Operations, and Professional Development.

Woven throughout the tracks will be content threads and certificate programs. SRA's participants come from universities, government, healthcare providers, non-profits, foundations, and commercial settings, making the meeting unique in its ability to build research management competency at all levels—from novices, to "tweeners," to senior executives.

Please check the SRA web site at *http://srainternational.org/*

2008 Annual Report Time

Institutional officials should receive an e-mail from the ORI Assurance Manager, in December, requesting that they begin to log into the Annual Report on Possible Research Misconduct System to update and verify their contact information.

If you are the responsible official who signs the Annual Report on Possible Research Misconduct (PHS 6349) and have not received the e-mail, please contact Robin Parker, Assurance Manager, robin.parker@hhs.gov or 240-453-8407.

Current contact information is necessary so that institutions may be sent their IPF numbers and their passwords prior to the beginning of the filing period which starts January 1, 2009. The filing period remains open through March 1, 2009.

If institutions fail to provide an annual report in that time period, they become ineligible to receive PHS support.

Research on Research Integrity

Developing Tools to Assess and Promote Scientific Self-Regulation

Brian C. Martinson, Ph.D., HealthPartners Research Foundation and Carol R. Thrush, Ed.D., University of Arkansas for Medical Sciences

To promote the integrity of scientific research, most, if not all, research organizations would prefer an internal, self-regulatory approach over one favoring compliance with externally imposed mandates. How well institutional self-regulation works, however, and its variability across universities, remain open questions.

We are currently addressing these questions with a new research effort to develop a tool—the Uniform Research Integrity Climate Assessment (U-RICA). We believe such a tool will provide university leaders with valuable insights about the climates and sub-climates within their institutions.

Over the next two years, we will assess, establish, and validate the psychometric properties of our instrument by surveying a large, nested, random sample of ~2,500 researchers based in roughly 20 academic health centers across the United States.

To facilitate adoption of the tool, we are partnering with a group of opinion leaders from within the ethics cores of several universities that currently hold Clinical and Transitional Science Awards (CTSAs) to conduct feasibility analyses. We identify opportunities, stakeholders, and possible strategies as well as perceived risks, potential hurdles, and threats facing the success of propagating use of this tool in the CTSA Consortium.

In addition, a preliminary version of this instrument will be used by multiple universities to assess their climates as part of the Project for Scholarly Integrity being conducted by the Council of Graduate Schools.

We believe that the findings from our research and application with multiple universities will provide convincing evidence on the value of self-assessment and will diminish resistance and concerns of doing an institutional self-review.

New Research on Research Integrity Publications

Recipients of ORI-NIH grants have published their research findings in the following papers:

Djulbegovic, B., Kumar, A., Soares, H.P., Hozo, I., Bepler, G., Clarke, M., & Bennett, C.L. "New Cancer Treatment Successes Identified in Phase 3 Randomized Controlled Trials Conducted by the National Cancer Institute-Sponsored Cooperative Oncology Groups, 1955 to 2006." *Arch. Int. Med.* 168(6):632-642, 2008.

Errami, M., & Garner, H. "A Tale of Two Citations." *Nature* 451:397-399, 2008.

Louis, K.S., Holdsworth, J.M., Anderson, M.S., & Campbell, E.G. "Everyday Ethics in Research: Translating Authorship Guidelines into Practice in the Bench Sciences." *Higher Educ.* 79(1):88-112, 2008.

Mcgee, R., Almquist, J., Keller, J.L., & Jacobsen, S.J. "Teaching and Learning Responsible Research Conduct: Influences of Prior Experiences on Acceptance of New Ideas." *Accountability in Res.* 15(1):30-62, 2008.

Kligyte, V., Marcy, R.T., Sevier, S.T., Godfrey, E.S., & Mumford, M.D. "A Qualitative Approach to Responsible Conduct of Research (RCR) Training Development: Identification of Metacognitive Strategies." *Sci. Eng. Ethics* 14:3-31, 2007.

Is Mentoring Part of RCR Training?

Elizabeth Ripley, Virginia Commonwealth University

Prior studies have looked at the impact of mentors on academic and research careers. However, there have been no empirical studies focusing on the correlations between mentoring and responsible conduct of research (RCR) training and knowledge.

To fill this gap in knowledge, we are examining K award recipients. This unique population of new and career-change researchers is federally funded by the National Institutes of Health and is required to receive training in research integrity.

Studying this population of investigators allows for two important evaluations. It will afford an analysis of the RCR training experiences of K recipients along with an assessment of their acquired skills and competence. Second, given the K program's requirements for a mentoring relationship, the role of the mentor in teaching, modeling, and encouraging RCR in the training component can be evaluated.

A web-based survey of K awardees (approximately 3,200) and their mentors will be conducted. The findings from this study will help determine what components of RCR training are important for RCR knowledge and application of the recipient. Information regarding the influence of both general mentoring and specific RCR mentoring will be analyzed. Areas of strength and weakness with RCR training and mentoring will be identified and can be used to help formulate recommendations to improve RCR training and mentoring for young investigators.

Research Misconduct

A Plan to Prevent and Respond to Plagiarism Complaints

(from page 1)

Jeremy Graham, M.S., M.S.Ed., and I began by setting the parameters for building a database containing the policies and pronouncements on authorship and plagiarism from the four elements of our RRC framework. For "Institution," we set up a web page with definitions and a decision tree based on the CUNY policy.

For "Publications," we searched for all articles by Baruch College faculty from 2002 to the present and compiled a list of 604 publications. We visited the web sites of each journal and recorded their authorship and plagiarism policies (or lack thereof) into a database tagged by department and discipline.

For each "Discipline," we are compiling a list of professional societies and organizations in which faculty members have made presentations since 2002.

We are also working on the "Funding" domain: we will compile a list of agencies that have funded members of the Baruch College faculty since 2002 and list their requirements. We plan to define and develop a policy dataset for disciplines and funding agencies that will be similar to the publication database.

Implementation of RRC Tool: Both the Office of Research Integrity and the National Science Foundation's Office of Inspector General report that only a fraction of the allegations they receive meet the definition of research misconduct.

It has been suggested that one way of decreasing plagiarism allegations made without merit is to have "authorship agreements." Many institutions are trying to work with faculty members to set standards for authorship agreements, but they report faculty resistance to a "one size fits all" model. Such resistance is understandable: one can reasonably argue that clinical research, also known as clinical trials, is vastly different from historical research.

An RRC dataset provides a significantly improved framework that is tailored to individual research communities. We plan to present each research discipline with its relevant data from the four domains. We hope to engage the faculty in a dialogue about the rules as well as advocate the value of making authorship agreements prior to conducting work. We believe that promoting researchers' discussion of authorship agreements would be effective in reducing conflicts and plagiarism issues.

No universally accepted set of criteria defines the progression of a disagreement over authorship from a dispute to misconduct. Even the National Science Foundation and the National Institutes of Health have different standards for authorship. Each case is evaluated by institutions based on facts and circumstances.

We believe that without authorship agreements, researchers are vulnerable to accusations of plagiarism because individuals and other research stakeholders involved have different perceptions on who has the right to claim authorship.

I welcome comments and constructive criticism on our RRC framework, its proposed use to help evaluate allegations of plagiarism, and authorship agreements.

Blacklisting Whistleblowers

Michael J. Kuhar, Ph.D.,
Emory University

Repercussions against whistleblowers are well known, and while steps have been taken to protect them, more can be learned and considered. One of the consequences to whistleblowers has been blacklisting, which is a process of shunning, harassing, and excluding the person. Those who hesitate in taking part in the process may be explicitly or implicitly threatened with being blacklisted themselves.

This process and the consequences for both parties have not been examined and discussed until recently. In two recent publications, the ethics of blacklisting have been examined, and it seems clear that the process itself is unethical. The blacklisted person is harmed even if exonerated, and the harm tends to be at least partly emotional. It is akin to vigilantism, coercive, without due process, and without a code that ensures that the punishment fits the crime.

Those who initiate and carry out blacklisting need to be made aware of the ethical issues and of the fact that participation in the process is degrading to themselves. Also, those who stand by and passively support blacklisting are similarly degraded. Very little support for blacklisting can be found, and some action against it is advocated (Kuhar, M., 2009, in press; Kuhar, M. "On Blacklisting in Science." *Sci. Eng. Ethics* 14:301-303, July 31, 2008).

The level of trust that has characterized science and its relationship with society has contributed to a period of unparalleled scientific productivity. But this trust will endure only if the scientific community devotes itself to exemplifying and transmitting the values associated with ethical scientific conduct.[2]

Committee on Science, Engineering and Public Policy of the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine (1995). *On Being a Scientist*, 2nd edition. Washington, DC: National Academy Press, preface (unnumbered page).

Emerging Issues

New I-Group Studies International Research Collaborations

Government-University-Industry Research Roundtable (GUIRR), The National Academies

In July 2008, the Government-University-Industry Research Roundtable (GUIRR) of the National Academies initiated, and in October formally launched, a Working Group on International Research Collaborations (called I-Group). International research collaborations are playing an increasingly important role in working toward solutions to major global challenges like climate change, energy, AIDS, and food security.

The development and administration of international research collaborations, however, present some major challenges. The I-Group is charged with seeking a more structured approach to international research collaborations and designing an administrative infrastructure that can help governments, companies, and universities manage a wide range of administrative and legal complexities.

Dr. C.D. (Dan) Mote, Jr., President of the University of Maryland and GUIRR co-chair, is the individual impetus behind the establishment of I-Group. Other members currently include representatives from the Air Force Office of Scientific Research, Department of Defense, DHHS Office of Research Integrity, Dow Chemical, Loyola Marymount University, National Institutes of Health, Northrop Grumman, The Ohio State University, University of California–Berkeley, The University of Texas at Austin, and The University of Texas at San Antonio.

I-Group has initially identified the following issues and concerns in developing international research collaborations: cultural differences; ethical standards governing the treatment of human research participations and the care and use of animals in research; responsible conduct of research and research integrity; publications and intellectual property standards; liability and insurance; safety and personnel security; currency and other financial and accounting matters; ITAR and export control regulations; domestic and international security; and intergovernmental relations and financial assistance.

The vision of I-Group is to contribute to the intellectual discourse on international research collaborations through having a conference or workshop, preparing practical recommendations for guiding principles, publishing a primer on developing and structuring international collaborations, and developing a set of living studies on successful and not so successful collaborations. Developments will be posted at "Current Projects" (*http://www7.nationalacademies.org/guirr/*).

RIO Boot Camp UPDATE

An extensive training program for Research Integrity Officers (RIOs) is entering its third year. Dr. David Wright, Ph.D., the ORI Consultant, recognized the need to address the rapid turnover and inexperience of RIOs at many universities. The curriculum of the 2½-day ORI boot camp has been evolving over the last two years because of responses from evaluations and debriefings conducted at the end of each meeting.

By emphasizing the interaction of experienced with less experienced RIOs, with minimum input from ORI, we plan to bring together 25-30 RIOs, with counsels, to learn and establish a network of RIOs. This approach will help establish the position of RIO as a profession. The workshop provides time for observing, discussing, and practicing skills of interviewing; assessing allegations of misconduct; and guiding an investigation of possible research misconduct.

Attendees of the training programs have continued access via a RIO web site that Dr. Wright has established with Michigan State. The audiovisual materials developed for the boot camps will eventually form an on-line resource available to all. In the initial four sessions, the focus is on universities receiving the highest levels of NIH funding. The attendance has been by invitation only. The program has trained approximately 100 RIOs involved with institutional compliance programs. ORI anticipates funding additional boot camps at various locations to facilitate regional attendance and enhancing subsequent local networking.

Plan to Attend the

RESEARCH CONFERENCE ON RESEARCH INTEGRITY

MAY 15 - 17, 2009

Case Summaries

Peili Gu, Ph.D., Baylor College of Medicine (BCM):

Based on the report of an investigation conducted by the Baylor College of Medicine (BCM) and an initial review conducted by the Office of Research Integrity (ORI), the U.S. Public Health Service (PHS) found that Dr. Peili Gu, former postdoctoral researcher, Department of Molecular and Cellular Biology, BCM, engaged in scientific misconduct in research supported by National Institute of Diabetes and Kidney Diseases (NIDDK), National Institutes of Health (NIH), grant R01 DK073524, National Institute of Child Health and Human Development (NICHD), NIH, grants T32 HD07165 and U54 HD07495, and National Institute of General Medical Sciences (NIGMS), NIH, grant R01 GM066099.

ORI acknowledges Dr. Gu's full cooperation with the BCM misconduct proceedings.

Specifically, PHS found that the Respondent committed misconduct in science with respect to reporting falsified data in the following three papers:

1. Gu, P., LeMenuet, D., Chung, A., & Cooney, A.J. "Differential Recruitment of Methylated CpG Binding Domains [MBDs] by the Orphan Receptor GCNF Initiates the Repression and Silencing of Oct4 Expression.'' *Mol. Cell. Biol.* 26(24):9471-9483, December 2006 (hereafter referred to as the "MBD paper"):

- Respondent falsified the relative expression level of Oct4 in differentiated P19 cells and embryonic stem cells treated with MBD2 and MBD3 small interfering RNA presented in Figures 5E and 6E, respectively.
- Respondent falsified Figure 6A depicting wild type and GCNF-/-embryonic stem cells to compare the binding of GCNF, MBD2, and MBD3 to the Oct4 gene and the measurement of expression at the RNA and protein levels by deleting in Photoshop the GCNF Western blot data in the GCNF-/-cells (to match the lack of expression at the RNA level) and falsified the MBD 2 Western blot data in the GCNF-/-cells (or that depicted in Figure 7C, which shows the exact same data but reportedly from DNA methylation-deficient embryonic stem cells [Dnmt3A/Dnmt3B/ES cells]).
- Respondent falsified the MBD2 wild type and GCNF-/-chromatin Immunoprecipitation (ChIP) data in Figure 6B.

2. Gu, P., Morgan, D.H., Sattar, M., Xu, X., Wagner, R., Raviscioni, M., Lichtarge, O., & Cooney, A.J. "Evolutionary Trace-Based Peptides Identify a Novel Asymmetric Interaction that Mediates Oligomerization in Nuclear Receptors.'' *J. Biol. Chem.* 280(36):31818-31829, September 2005:

- In Figures 3C and 3D, depicting transfected wild-type and mutated HA-GCNF expression levels in undifferentiated and differentiated P19 cells, Respondent planned not to show the data for the Asp307 mutant (the data for the Asp307 mutant were deleted in panel D); however, she falsified Figure 3C by deleting the least intensive band instead of the Asp307 mutant in order to make the overall data appear more consistent and support the claim that there were no significant differences in the expression levels between the GCNF mutants and the wild type HA-GCNF in P19 cells.
- In Figure 4A, Respondent intended not to show each figure where non-specific bands were not visible in the original data. The data for the Asp307 mutant: she falsified the reported results by deleting the least intensive band instead of the Asp307 mutant in order to make the overall data appear more consistent in support of the claim that all mutants were expressed at similar levels in COS1 cells and that the various point mutations had not altered the stability of the protein.
- Respondent falsified Figure 5A, which reported the detection of HA-GCNF point mutant expression in retinoic acid-differentiated P19 cells by Western blot with anti-HA antibody, by duplicating a series of lanes in the published figure: Lane 2 is the same as lane 4; lane 3 is the same as lanes 5, 7, and 9, and lane 6 is the same as lanes 8, 10, and 11.
- Respondent falsified Figure 6C, which reported on the dimerization abilities of various GCNF mutants, by cutting and pasting (in Photoshop) bands into original lanes 7 and 8 to demonstrate the homodimer; certain of the comparisons reported in the text describing this figure do not appear to be confirmed in a repeat experiment.

3. Gu, P., LeMenuet, D., Chung, A., Mancini, M., Wheeler, D., & Cooney, A.J. "Orphan Nuclear Receptor GCNF Is Required for the Repression of Pluripotency Genes during Retinoic Acid-Induced Embryonic Stem Cell Differentiation.'' *Mol. Cell. Biol.* 25(19):8507-8519, October 2005:

- Respondent falsified Figure 1A by cutting out lanes and relocating them, wild type GCNF lanes 7 and 8 of the original data becoming lanes 1 and 2 in the published figure; the effect of the falsification was to demonstrate the inverse correlation with expression of Oct4, which did not appear to be confirmed in a repeat of the experiment.
- Respondent falsified Figure 4A by switching the 6 hour and 12 hour Oct4 expression data in the wild type embryonic stem cells (these falsified data also appear in Figure 5B).

Dr. Gu has entered into a Voluntary Settlement Agreement (Agreement) in which she has voluntarily agreed, for a period of three (3) years, beginning on September 12, 2008:

(1) 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

Case Summaries *(continued)*

committee, or as a consultant or contractor; 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 the Respondent 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 monitoring of the Respondent's research to the funding agency and ORI for approval. The monitoring plan must be designed to ensure the scientific integrity of the Respondent's research contribution. Respondent agreed that she will not participate in any PHS-supported research until such a monitoring plan is submitted to ORI and the funding agency.

Dr. Gu also agreed that she would immediately cooperate with BCM officials to request retraction of the MBD paper. In the retraction letter, she will state that she alone was responsible for the falsification and fabrication of some of the data reported in the paper.

Homer D. Venters, Jr., M.D.,University of Illinois at Urbana-Champaign (UIUC):

Based on the report of an investigation conducted by the University of Illinois at Urbana-Champaign (UIUC) and extensive additional image analysis conducted by the Office of Research Integrity (ORI), the U.S. Public Health Service (PHS) found that Dr. Homer D. Venters, former graduate student, Neuroscience Program, UIUC, engaged in scientific misconduct in research supported by National Institute of Mental Health (NIMH), National Institutes of Health (NIH), awards R01 MH051569 and F30 MH12558 and National Institute on Aging (NIA), NIH, award R01 AG06246.

Specifically, PHS found that the Respondent committed misconduct in science:

- By intentionally and knowingly preparing and including duplicate image data in Figures 5 and 10 of PHS fellowship application F31 MH12558, "Neurodegeneration via TNF-alpha inhibition of IGF-1," submitted in 1999, which was funded as F30 MH12558 from June 1, 2000, to May 31, 2003. Because the duplicate data were labeled as having been obtained from different experiments, the results for at least one of the two figures were intentionally falsified and constitute an act of scientific misconduct.
- By intentionally and knowingly preparing and including duplicate image data in Figures 3 and/or 4 of a manuscript submitted and published as: Venters, H.D., et al. "A New Mechanism of Neurodegeneration: A Pro-inflammatory Cytokine Inhibits Receptor Signaling by a Survival Peptide." *Proc. Natl. Acad. Sci. U.S.A.* 96:9879-9884, 1999.
- by preparing and providing to his dissertation committee in March 2000 a thesis proposal entitled "An Alternate Mechanism of Neurodegeneration: Silencing of Insulin-like Growth Factor-I survival signals by Tumor Necrosis Factor-alpha," which contained five falsified figures: Figures 1.3, 1.4a, 2.1b, 2.3e, and 2.5b. In each figure, he reused data within the same figure or in another thesis proposal figure as representing differently treated samples or as data obtained with different immunoblotting antisera.
- In March and April 2001, Respondent included several of the same falsified figures as in the thesis proposal and multiple additional falsified figures in his dissertation "Silencing of Insulin-like Growth Factor I Neuronal Survival Signals by Tumor Necrosis Factor-alpha." In all, Figures 3.3, 3.4a, 3.4b, 4.1b, 4.3a, 4.5b, 5.1a, 5.2, 5.4a, 5.5a, 5.6a, 5.7a, and 5.8a were falsified. In each instance, he assembled figures by reusing significant data, on some occasions after manipulating the orientation of the data, either within the same figure or in other figures related to his thesis and represented the data falsely as coming from different samples or different experiments.

Dr. Venters has entered into a Voluntary Settlement Agreement (Agreement) in which he has voluntarily agreed, for a period of three (3) years, beginning on November 19, 2008:

(1) 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 the Respondent 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 monitoring of the Respondent's research to the funding agency and ORI for approval; the monitoring plan must be designed to ensure the scientific integrity of the Respondent's research contribution; Respondent agreed that he will not participate in any PHS-supported research until such a monitoring plan is submitted to ORI and the funding agency;

(2) That Respondent will ensure that any institution employing him will submit to ORI, in conjunction with each application for PHS funds or report, manuscript, or abstract of PHS-funded research in which the Respondent is involved, a certification that the data provided by the Respondent are based on actual experiments or are otherwise legitimately derived, and that the data analyses, procedures, and methodology are accurately reported in the application or report; Respondent must ensure that the institution sends a copy of each certification to ORI; and

(3) 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 or contractor to PHS.

Respondent also voluntarily agreed that within 30 days of the effective date of this Agreement:

Case Summaries *(continued)*

(4) He will submit a letter to the journal editor, with copies to his coauthors, identifying his falsification of Figures 3 and/or 4 in the following article: Venters, H.D., et al. "A New Mechanism of Neurodegeneration: A Proinflammatory Cytokine Inhibits Receptor Signaling by a Survival Peptide." *Proc. Natl. Acad. Sci.* 96:9879-9884, 1999.

Kirk Sperber, M.D., Mount Sinai School of Medicine (MSSM):

Based on the report of an investigation conducted by the Mount Sinai School of Medicine (MSSM) and additional analysis conducted by the Office of Research Integrity (ORI) in its oversight review, the U.S. Public Health Service (PHS) found that Dr. Kirk Sperber, former Associate Professor, Department of Medicine, Division of Clinical Immunology, MSSM, engaged in scientific misconduct while supported by National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), grants R01 AI45343 and P01 AI44236, and National Cancer Institute, NIH, grant R29 CA256990.

PHS finds the Respondent engaged in scientific misconduct by falsifying and fabricating data that were included in NIAID, NIH, grant applications R01 AI45343-01A1, R01 AI45343-04A2, and P01 AI44236-05. Respondent's scientific misconduct occurred while he was a faculty member at MSSM. Respondent is no longer employed at MSSM.

Specifically, PHS found that Respondent engaged in scientific misconduct by falsifying and fabricating data in the following publications:

1. In multiple figures reported in Sperber, K., Beuria, P., Singha, N., Gelman, I., Cortes, P., Chen, H., & Kraus, T. "Induction of Apoptosis by HIV-1-Infected Monocytic Cells.'' *J. Immunol.* 170:1566-1578, 2003 ("2003 *J. Immunology* paper") (Retracted in December 2005); by duplicating and reusing panels of FACS data in Figures 1A, 2, 4A, 4B, and 7; by duplicating and reusing lanes of polyacrylamide gels in Figure 3, of Western blot analyses in Figures 5A, 5C, 6C, and 9, and of agarose gels in PCR analyses in Figure 5B; and by duplicating and reusing laser confocal micrographs in Figures 10 and 11. Respondent's claims that Figures 1A, 2, 4A, and 7 were representative of experiments repeated five times and that Figures 3, 4B, 5A, 6C, and 9 were representative of experiments repeated three times constitute additional falsifications. The effect of these misrepresentations was to falsely demonstrate the proapoptotic activity of a protein from a novel cDNA clone isolated from an HIV-infected human macrophage cell line and to falsify its presence in brain and lymphoid tissue from patients with HIV-associated dementia.

2. In Figure 10 reported in Rakoff-Nahoum, S., Chen, H., Kraus, T., George, I., Oei, E., Tyorlin, M., Salik, E., Beuria, P., & Sperber, K. "Regulation of Class II Expression in Monocytic Cells after HIV-1 Infection.'' *J. Immunol*. 167:2331-2342, 2001 (Retracted in November 2006); by duplicating and reusing four confocal micrographs to misrepresent different panels for the Cath D, 43pol and CD-63, 43neve data; for the Cath D, 43gag and Cath D, 43nef data; for the DAMP, 43 nef and M6PR, 43nef data; and for the M6PR, 43gag and the CD-63, 43gag data. Respondent's reported claim that the results were representative of an experiment repeated five times constitutes an additional falsification.

3. In Figures 3B, 4B, and 6B reporting flow cytometry analyses (FACS) in Chen, H., Yip, Y.K., George, I., Tyorkin, M., Salik, E., & Sperber, K. "Chronically HIV-1-Infected Monocytic Cells Induce Apoptosis in Cocultured T Cells.'' *J. Immunol*. 161:4257-4267, 1998 (Retracted in November 2006); by reusing two FACS histograms, each to represent 2 different experiments in Figure 3B; by reusing the same FACS histogram as the negative control for CD-4 cells and for the CD-8 cells in Figure 4B; and by duplications of the top two panels, the middle two panels, and the bottom two panels of data as graded dilutions of different fractions in Figure 6B to falsely show that a soluble factor from 43HIV cells induced apoptosis. Figure 6B was also presented in grant application AI45343-01A1 as Figure 5B. Respondent's reported claims that the results in Figures 3B, 4B, and 6B were each representative of experiments that were repeated three times constitute additional falsifications.

PHS also finds that Respondent engaged in scientific misconduct by falsifying and fabricating the following data in NIAID, NIH, research applications R01 AI45343-04A2 and P01 AI44236-05:

4. The results of Figures 1, 6C, 7, 9, 10, and 11 from the 2003 *J. Immunology* paper were reported in NIAID, NIH, grant application R01 AI45343-04A2; nearly all of the figures in the paper were falsified, so that the claims in the grant application derived from those figures were also false. 5. Two figures in NIAID, NIH, grant application P01 AI44236-05 contained falsified data: In Figure 1b, panels of confocal microscopy images of intestinal biopsies from four patients were falsified by duplication; and in Figure 3, one panel of PCR data was duplicated and similarly misrepresented as data from the same four biopsy specimens.

Dr. Sperber has entered into a Voluntary Exclusion Agreement in which he neither admitted or denied HHS' findings of scientific misconduct. However, he recognized that if this matter were to proceed to an administrative hearing, there is sufficient evidence upon which an Administrative Law Judge could make findings of scientific misconduct against him. Dr. Sperber agreed not to contest or appeal the jurisdiction of the PHS or HHS findings of scientific misconduct as set forth above and in the MSSM Report. Dr. Sperber has voluntarily agreed, for a period of four (4) years, beginning on September 12, 2008:

(1) To exclude himself from any contracting or subcontracting with any agency of

Case Summaries *(continued)*

the United States Government and from eligibility or involvement in nonprocurement programs of the United States pursuant to HHS' Implementation (2 C.F.R., Part 376 et seq.) of OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (2 C.F.R., Part 180); and (2) 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 or contractor to PHS.

Jusan Yang, M.S., M.D., University of Iowa (UI):

Based on the report of an investigation conducted by the University of Iowa (UI) and additional analysis conducted by the Office of Research Integrity (ORI) in its oversight review, this settlement resolves proposed U.S. Public Health Service (PHS) findings that Dr. Jusan Yang, former Assistant Research Scientist, UI, engaged in scientific misconduct in research supported by National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health (NIH), grant R01 HL48058.

PHS finds the Respondent engaged in scientific misconduct by falsifying and fabricating data that were reported in a scientific manuscript intended for publication entitled "Increased renin transcription after inhibition of NF-YA with RNAi reveals through regulation of Ea element and Ear2" and at two professional scientific meetings.

Specifically, PHS found that:

1. Respondent falsified Figure 1 in the manuscript that purports to show the effectiveness of four plasmids targeting different parts of the NF-Y coding sequence in inhibiting NF-Y expression by:

- Claiming in Figure 1A that the loading control bands were obtained by reprobing a Western blot with antibody to GAPDH when he used a prominent background (nonspecific) band from the blot probed with antibody to NF-YA;
- Inappropriately enhancing and manipulating the NF-YA band in Figure 1A claiming decreased expression of NF-YA in cultures transfected with 2 of the 4 constructs, and;
- Falsely claiming in Figure 1B that the quantitative data for NF-YA expression obtained by scanning Western blot films were based on an n of 4 and that the expression of NF-YA in cultures treated with two constructs was statistically significantly lower than the control. Versions of the same falsified blot and histogram also were reported in several of Respondent's public presentations.

2. Respondent falsified Figures 4, 5, 6, and 8 in the manuscript by claiming in the figure legends that 4 independent repetitions contributed to each figure's results when the actual numbers of repetitions were n=3 for Figure 4, n=1 for Figure 5, n=3 for Figure 6, n=2 for Figure 8; in Figure 5, error bars based on the Student's t test further falsely claim that n was >2. He further falsified Figures 6 and 8 by reporting smaller standard errors of the mean than were obtained from the actual data, thereby giving an enhanced impression of rigor for the reported experiments.

Respondent reported Figures 5, 6, and 8 (without legends) at the American Heart Association Council for High Blood Pressure meeting in September 2003, and he reported Figures 5 and 8 at the Experimental Biology meeting in April 2004.

Respondent stated that he does not intend to apply for or engage in PHS-supported research. However, if such a circumstance were to arise, Respondent agreed for a period of five (5) years, beginning on October 14, 2008:

(1) That any institution that submits an application for PHS support for a research project on which the Respondent's participation is proposed or which uses him in any capacity on PHS-supported research, or that submits a report of PHS-funded research in which he 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; Respondent agreed to ensure that a copy of the supervisory plan is also submitted to ORI by the institution; Respondent agreed that he will not participate in any PHS-supported research until such a supervision plan is approved by ORI; and

(2) That any institution employing the Respondent submits, in conjunction with each application for PHS funds or report, manuscript, or abstract of PHS-funded research in which he is involved, a certification that the data provided by the Respondent are based on actual experiments or are otherwise legitimately derived, and that the data, procedures, and methodology are accurately reported in the application or report; the Respondent must ensure that the institution also sends a copy of the certification to ORI; and

(3) 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.

DISCLAIMER

All authors who generously shared their thoughts have indicated that they are speaking for themselves and not for their specific organizations.

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ORI-RRI Program Awards

Congratulations to these recipients of 2008 ORI–NIH-RRI grants:

Elizabeth Ripley and Virginia Commonwealth University: "RCR Multi-component Mentoring Model" (Through NCRR)

Brian Martinson at Health Partners Research Foundation: "Propagating the Uniform Research Integrity Climate Assessment (U-RICA)" (Through NCRR)

Melissa Anderson and University of Minnesota Twin Cities: "Integrity in International Research Collaborations" (Through NIGMS)

ORI collaborated with the National Center for Research Resources, which provided the administration at all stages of the process. The ORI–NIH-RRI program has awarded 49 research studies since 2000. The RRI program has created a community of scholars who study, draw attention to, and provide guidance on issues relating to responsibility in research. Our scholars have produced dozens of publications and are now recognized around the world as leaders in this emerging field. Links to their published papers can be found at *http://ori.dhhs.gov/research/extra/rri_publications.shtml*

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