

# 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 Assistant Secretary for Health, Department 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.

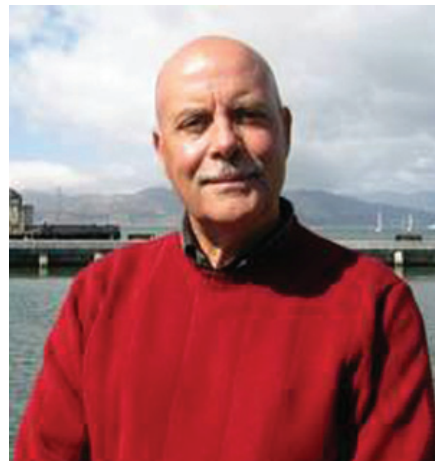


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### ORI Welcomes Its New Director: David E. Wright, Ph.D.

Dr. David E. Wright joined the Office of Research Integrity (ORI) as the Director in January 2012. Before joining ORI, Dr. Wright was a Professor and an Administrator at Michigan State University (MSU). He received his A.B. at Princeton and his Ph.D. at MSU. Dr. Wright began his academic career teaching the History of Technology at Lyman Briggs College at MSU.



*David E. Wright, Ph.D.*

In the mid-1980s, he served as a Program Officer for the Humanities, Science, and Technology Program at the National Endowment for the Humanities. After returning to MSU, he served for 12 years as Chair of the University Committee

on Research Involving Human Subjects Institutional Review Board (IRB). In the early 1990s, he added the duties of University (See **New ORI Director**, page 6)

### Profile of an ORI Scientist-Investigator: Alexander Runko, Ph.D.

Dr. Alexander Runko joined ORI in November 2010. Currently at ORI, Dr. Runko is a Scientist-Investigator with the Division of Investigative Oversight, where he is involved with handling and analyzing allegations and reports of inquiries and investigations of research misconduct that involve Public Health Service funding.

Brookhaven National Laboratory, where he conducted research in Deoxyribonucleic acid (DNA) sequencing under the Human Genome Project Initiative. He received his Ph.D. at the University of Massachusetts Memorial Medical Center, where his graduate studies focused on characterizing the expression of novel genes during embryonic brain development using the zebrafish, *Danio rerio*, as a model organism. Dr. Runko continued his research training as a postdoctoral fellow at the National Institute of (See **Scientist-Investigator**, page 7)

He earned his bachelor's degree in biochemistry from the State University of New York at Stony Brook. As an undergraduate, he was awarded an internship at the

### Copy/Paste—Plagiarism Made Easy: A View from a Managing Editor’s Desk

Elizabeth A. Martinson, Ph.D., Managing Editor, Cardiovascular Research Journal, Giessen, Germany

Every day, about a dozen manuscripts cross my desk: those just having been submitted, a few returning from a review process, or a good many on their way out the door, having just been rejected. A few chosen ones that have been revised and resubmitted are off to the publisher. These articles conform to the journal’s format specifications and ethical standards, get good reviewers’ critiques, and garner editors’ enthusiasm. In addition, these papers have to pass the originality test, and each is screened by the Editorial Office for text plagiarism.

Journal editors now have a number of tools at their disposal that can detect text similarities between a manuscript in question and sources published on the Internet, whether in journals, in books, or on websites. One of these is iThenticate, which analyzes segments of text and color-codes them according to the various sources it finds that have identical wording. With the use of similarity-checking software, editors hope to stay one step ahead of the plagiarist, for whom copying has been made easier with the advent of universal online content. However, as useful as such a tool may be, it is still up to the user to decide what to do with the results that are displayed on the screen.

What constitutes plagiarism, which needs to be followed up on, and what are merely similar fragments of sentences taken from different sources and coincidentally linked

together? Are there types of copying that are excusable?

The theft of ideas, creative works, or “intellectual property” has become an ever-growing concern, as the practice of digital rights management and the recent international uproar over ACTA (Anti-Counterfeiting Trade Agreement) have shown. The Internet has made everything available to everyone. It is just a matter of finding what you want. It’s no wonder, then, that authors bow to the temptation to “borrow” a little bit of text from this source or that, as long as it helps in getting their point across or accomplishing their aims. The problem arises when they fail to give credit to the original thinker, the one who wrote down the idea in the first place.

The *Oxford English Dictionary* defines plagiarism as (here comes a copy/paste):

“...the wrongful appropriation or purloining, and publication as one’s own, of the ideas, or the expression of the ideas (literary, artistic, musical, mechanical, etc.) of another.”<sup>1</sup>

The “ideas or the expression of the ideas” is perhaps open to interpretation. Obviously, if a paragraph has been lifted verbatim from another publication, it is a clear case. But most instances we encounter as editors are in the gray zone: part of a sentence here and a whole sentence there, not necessarily taken from a continuous flow of text in another

article. And what if a few words have been changed so that the texts are not 100% identical? According to the definition, this still constitutes plagiarism because it is the idea, the essence, of the text that has been purloined (see Figure 1, page 7).

What are the motivations behind the plagiarist’s actions? The pressure to publish is an incredible driving force in the scientific community, as the well-known saying “publish or perish” reveals. Academic promotion and procurement of research funding are the main rewards for publishing as often as possible and in high-impact journals. Individuals may plagiarize because they believe that someone else said it better. Or many whose first language is not English find it easier and cheaper to copy text directly, hoping to avoid having to hire a professional editing service or have a colleague do the proof-reading.

Editors sometimes have to make a distinction between what is willful plagiarism, the theft of ideas as described above, and copying for the sake of accurate reproduction, which in scientific writing is of utmost importance. When a method description is reproduced word for word because the scientist in fact performed that method exactly as described, should an author be prosecuted for plagiarism? In addition, authors sometimes copy a statement or finding from an (See Copy/Paste, page 6)

## Plagiarism and Self-Plagiarism in Scientific Writing: An All-Too-Easy Way to Lose Stature

Jean Rice, Peer Review Manager; Nicki Augustyn, Director of Publications; Cynthia T. French, MS, ANP-BC, Assistant Editor; and Richard S. Irwin, M.D., Master FCCP, Editor in Chief, CHEST Journal

*CHEST*, like many other scientific journals, uses plagiarism detection software as part of the peer review process. We began such a process because of concerns over increasing plagiarism. But even before implementing this process into our workflow, we were aware of this problem because of inquiries and reports from our reviewers and readers. Particularly in a time of search engines, the likelihood that text an author has picked up from earlier work (their own or others') will appear in search results close to the "copied" material is large. Readers notice and judge an author's integrity when they see papers that look alike. We know because they contact us to point out these papers.

What constitutes plagiarism and self-plagiarism is not always intuitive. These practices are an easy way to lose face as a researcher. An author needs to develop an ability to eliminate them from their work.

Self-plagiarism is by far the greater challenge for most authors. We know that you build on a river of research and that there will be similarities as you compile your publication record. Self-plagiarism becomes unethical when authors begin to overlap data and patient reports from paper to paper and fail to cite or acknowledge that they have done so. In nearly all cases, a publication should be based on new sets of data. However, you must

clearly inform readers that there is overlap, what the overlap is, and the need for it.

It is also tempting to reuse chunks of text when you are writing introductions, methods, and discussion sections, but you should always recast text in each new manuscript to add what is unique to that publication. Again, we have had readers ask whether publications are duplicates simply because so much of the text seems to be similar.

Self-plagiarism is also considered to be unethical because you will have, in most cases, signed a publisher agreement when you published an earlier article stating that the work has not been submitted elsewhere for review or published elsewhere. Therefore, use of paragraphs, sentences, and phrases from the earlier works may violate a publisher agreement. Review your work to be sure that nothing is repeated at the phrase level on up.

The more infrequent type of plagiarism is copying the work of others. It might be tempting to reuse and cite a well-crafted discussion word for word, but it may violate copyright law and ethical standards to use more than a few phrases from another piece. At a minimum, you must always cite the article when you are using material from another source and seek legal counsel if necessary. The most serious form of plagiarism is reusing others' data

and results and presenting them as your own. This act is considered to be fraud in the scientific community and can be career ending when uncovered. The websites for ORI,<sup>1</sup> the Committee on Publication Ethics (COPE),<sup>2</sup> and Retraction Watch<sup>3</sup> are good sources to learn about plagiarism, how it is defined, and cases that demonstrate how publishers have dealt with it.

If you work in an academic medical center and have access to a librarian, you may also want to ask whether plagiarism detection software such as Turnitin is available. If your institution has access to such software, you may want to ask the librarian for assistance in evaluating your paper prior to submission for consideration for publication. In our office, we flag for large single matches and a large number of matches from one single source. Running manuscripts through software is, however, no substitute for doing your own due diligence.

Journals like *CHEST* have imposed penalties such as multiyear bans for authors who have copied text, so take the time to review your work. Your career may depend on it.

### **To Recap**

- Plagiarism and self-plagiarism are unethical.
- Self-plagiarism occurs when you reuse your own data from paper to (See **Scientific Writing**, page 7)

### Plagiarism

Nancy R. Glassman, M.L.S., AHIP; Assistant Director for Library Informatics, D. Samuel Gottesman Library, Albert Einstein College of Medicine

Plagiarism is regularly reported in the news. A PubMed search of the keyword “plagiarism” run on February 15, 2012, yielded 19 articles published this year. Although incidents of plagiarism date as far back as the written word, there has been a noted increase in recent years. Several factors have contributed to this plagiarism explosion:

- the ease of copying text and images from the Internet and pasting them into a document
- the misconception that because web-based resources are freely available, they are free for the taking
- a growing belief among students that plagiarism is acceptable.<sup>1</sup>

Although some instances of plagiarism are deliberate, there are times when plagiarism is accidental. Self-plagiarism occurs “when authors reuse their own previously written work or data in a ‘new’ written product without letting the reader know that his material has appeared elsewhere.”<sup>2</sup>

Plagiarism has ramifications in the scientific and medical literature beyond sanctions against writers who have been caught plagiarizing. Duplication of text and data in a number of publications has implications for clinical decisionmaking and for basic research.<sup>2,3</sup> Reusing the same data in multiple publications also can mislead readers about the significance of an experiment.

Much attention is given to plagiarism after it has been detected.

More emphasis must be given to plagiarism prevention, specifically raising awareness of various forms of plagiarism and supplying students and authors with the tools and techniques needed to avoid plagiarism altogether.

Plagiarism detection software has been used by many colleges and universities for a number of years. Scholarly journals have also started using this software. Garner et al. reviewed a number of plagiarism detection software tools on the market.<sup>4</sup> Sox describes the *New England Journal of Medicine* editors’ experience implementing iThenticate in the 1990s.<sup>5</sup>

Often overlooked, librarians are also uniquely qualified to assume a leading role in guiding students and researchers through the process of writing and avoiding plagiarism.<sup>6</sup> An example of one such program is under way at the Albert Einstein College of Medicine of Yeshiva University in the Bronx, New York.

At the request of the Dean of Graduate Programs in the Biomedical Sciences, a team of five librarians from the college’s D. Samuel Gottesman Library developed a three-tiered program to educate students about proper citation practices. The details of this program are described in an article in *Medical Reference Services Quarterly*.<sup>7</sup> The program is tailored to the needs of three groups of students: first-year students, students preparing for their qualifying exams, and Ph.D. candidates who

are writing their theses. The three components to the program are: a lecture, a web-based research guide, and a small-group training session.

Each group of students is required to attend a lecture on proper citation and ethical writing. The lectures cover techniques for proper attribution; paraphrasing tips; use of bibliographic management software to collect, organize, and annotate references; and a brief introduction to copyright law. The web-based research guide, “Cite it Right! A Guide to Thesis Preparation,” <http://libguides.einstein.yu.edu/thesis> includes information to help students through their entire thesis-writing process: finding resources, citing and attribution, writing resources, EndNote and RefWorks, and submitting a thesis or dissertation. Small-group sessions, called Library Labs, focusing on citation management software, are also offered. Librarians used ORI’s publication, *Avoiding Plagiarism, Self-Plagiarism, and Other Questionable Writing Practices: A Guide to Ethical Writing*, as a framework for these lectures. This program is in its second year. It is too early to tell whether it has had an impact on the quality of students’ theses. Feedback from the students has largely been positive. Many students said they have heard these lectures numerous times before in their careers, but they felt that the reminders were worthwhile. They also felt that concepts surrounding self-plagiarism (“salami slicing” and “double dipping”) were made clear after the (See **Plagiarism**, page 8)

## Academic Integrity in Higher Education for Health Professionals

Pauline J. Ford, Ph.D., University of Queensland, School of Dentistry, Brisbane, Australia, and Clair Hughes, Ph.D., University of Queensland, Teaching and Educational Development Institute, Brisbane, Australia

Teaching and learning practices in tertiary education that focus explicitly on the development of academic integrity and the avoidance of plagiarism have become an important part of undergraduate curricula. Undergraduate curricula must be carefully designed to ensure that students graduate with a sound understanding of academic and research integrity. Students cannot gain this knowledge unless they actively engage with these topics. Learning activities and assessment tasks that provide relevant experiences of academic and research practices are therefore critical. Teaching staff also may need support to ensure they are confident in their own understanding of integrity and they are able to design assessment tasks that discourage poor academic practice.

Undergraduate research is widely recognized as a high-impact learning practice that enriches learning outcomes and enhances student engagement by socializing students to the academic and professional environment.<sup>1,2</sup> Groups of dentistry students at the University of Queensland have undertaken student research projects for a number of years. These projects reflect the importance placed by the school and its staff on supporting students' development of high-level personal skills and professional attributes and provide the best possible preparation for entry to the profession. They also have been designed to provide a context for putting a

range of skills into practice: information literacy, research methods, teamwork, communication and engagement with the profession, and academic and research integrity. Attention to developing academic integrity and deterring plagiarism was achieved by several means. A mentor from the academic staff at the school was appointed to each group. The mentor "modeled" the role of academic researcher and was a source of guidance and oversight for the student members. Each group created contracts so that the roles of each member were agreed upon at the outset. In addition, the groups submitted draft manuscripts to each other for peer review. Submissions were analyzed using plagiarism detection software Turnitin, and the group was permitted to amend the report before its final submission. This use of plagiarism detection software, as part of the learning process, rather than as a punitive measure, is also supported by the literature.<sup>3</sup>

Although experimental learning and innovative assessment help ensure that students are engaged in their learning, there is a fundamental requirement for clear and consistently enacted institutional policy on academic integrity. We recently investigated the perceptions and experience of the staff and students of our dental school regarding academic integrity and plagiarism.<sup>4</sup> Many students felt that the guidelines for dealing with plagiarism were not adequate and

that text-matching software should be used in the assessment of written submissions in all courses. Some students were also unsure about whether plagiarism was actually a problem in the school. The University of Queensland continues to address plagiarism concerns through (1) the development of an academic integrity curriculum, (2) the development of student knowledge and skills regarding plagiarism, and (3) the incorporation of deterrents, including attention to task design, that can reduce opportunity.

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### New ORI Director (from page 1)

Intellectual Integrity Officer (Research Integrity Officer [RIO]) and Assistant Vice President for Research Ethics and Standards to his portfolio.

### Copy/Paste (from page 2)

article verbatim while citing that article, not realizing that this does not excuse them from using the precise wording of others. In such cases, an editor can be somewhat lenient, and a rewriting is usually sufficient.

The other extreme—the copying of ideas, conclusions, or hypotheses without giving credit to the original author—is fortunately encountered

From 2001-2011, while still a Professor at MSU, Dr. Wright also served as an Expert Consultant to ORI, working with both the Division of Investigative Oversight (DIO)

less frequently. It should still be dealt with severely. It can lead to the rejection of a manuscript and the informing of an author's institution, which can obviously have dire further consequences for that person's career. Sometimes one author will accuse a coauthor. This is not a valid excuse because all authors have a responsibility to be vigilant and thorough in preparing a manuscript. It is advisable that

and the Division of Education and Integrity (DEI). He designed and delivered the ORI RIO Boot Camp Program for institutional RIOs and their legal counsel.

senior authors perform a scan for text similarity prior to submission: better safe than sorry.

One source of advice and information for editors is the Committee on Publication Ethics (COPE),<sup>2</sup> a forum founded in 1997 in the United Kingdom that currently lists 7,000 members. It provides flowcharts for decisionmaking by editors and publishers confronted with cases of suspected misconduct<sup>2</sup> and regularly holds meetings where members discuss anonymized cases, either in person or by teleconferencing. These cases and the comments of the forum attendees can then be viewed online for those seeking advice in handling difficult situations.

With awareness of plagiarism on the rise<sup>2,3</sup> and with the availability of online software for similarity checking, I hope that there will eventually be a decrease in the incidence of serious infringements.

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**FIGURE 1: Example of word changes in a published text that constitute plagiarism (excerpt<sup>3</sup> used with permission).**

#### Original

With the greater availability in the past decade of software that quickly and efficiently scans the literature for duplication, there has been increased awareness by the public of the issue of plagiarism. A famous, recent case is that of the former German Defense Minister whose doctoral title was revoked because he reportedly plagiarized a large portion of his doctoral thesis. There have been numerous other such text 'copy-paste' incidents in other countries as well. Just as readily, it has become easy to manipulate and transfer data from one figure into another, as long as the end product supports the story the author wants to tell. We would like to discuss here the types of cheating we have encountered over the past few years as journal editors and highlight what we think should be done about it.

#### Altered

With the greater availability in the past few years of programs that quickly and efficiently scan the literature for similarity, there has been increased awareness in general of the issue of plagiarism. A well-known instance is that of the former German Defense Minister whose doctoral title was revoked because he reportedly plagiarized large segments of his doctoral thesis. There have been many other such text 'copy-paste' incidents in other countries as well. One can also easily manipulate and transfer data from one figure into another so that the end product supports the author's conclusions. We would like to describe here the types of cheating we have detected over the past few years as journal editors and propose what steps we think should be taken to prevent it.

127 words, 27 different (79% similarity)

## Scientist-Investigator (from page 1)

Neurological Disorders and Stroke (NINDS), National Institutes of Health. His postdoctoral research primarily analyzed the genetic and molecular mechanisms responsible for the neurodegenerative disease Friedreich's ataxia, using the fruit fly *Drosophila melanogaster* as a model organism. Dr. Runko's research resulted in several first authored, peer-reviewed publications, poster awards at national meetings, and an awarded grant from the National Ataxia Foundation. After his postdoctoral research at NINDS, Dr. Runko was employed at PAREXEL International, where he served as a consultant in drug

development for the pharmaceutical industry. Dr. Runko was responsible for the evaluation and preparation of pharmacological, toxicological, and genotoxicity studies for the Food and Drug Administration investigational new drug applications. Prior to joining ORI, Dr. Runko was employed as a Health Program Specialist in the Neurodegeneration Cluster Program at NINDS, which managed grants on neurodegenerative disorders including Alzheimer's disease, amyotrophic lateral sclerosis, Huntington's disease, and Parkinson's disease. At NINDS, Dr. Runko was also a member of

the NINDS Data Access Committee for the database of Genotypes and Phenotypes (dbGaP), which involved the management and review of applications that accessed genome sequencing datasets and genome-wide association studies.

## Scientific Writing (from page 3)

paper or repeat text in more than one publication and do so in a manner that is not transparent.

- Plagiarism of others' work occurs when you reuse more than a few phrases from their work (and fail to always cite others).
- Reusing data from others' work as if they are your own is not only plagiarism, but fraud that has serious consequences for your career.

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2. Committee on Publication Ethics. <http://publicationethics.org/>. Accessed Feb. 16, 2012.
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## Disclaimer

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*“Ethics is knowing the difference between what you have a right to do and what is right to do.”*

**Potter Stewart**

Associate Justice of the  
United States Supreme Court  
(1915 - 1985)

## Case Summaries

### Jennifer Jamieson State University of New York Upstate Medical University

Based on the report of an investigation conducted by the State University of New York, Upstate Medical University (SUNY US) and additional analysis conducted by ORI in its oversight review, ORI found that Ms. Jennifer Jamieson, former graduate student, Department of Cell and Developmental Biology, SUNY US, engaged in research misconduct in research supported by National In-

stitute of General Medical Sciences (NIGMS), National Institutes of Health (NIH), grant R01 GM047607-18A1, and National Heart, Lung, and Blood Institute (NHLBI), NIH, grants R01 HL70244-05.

ORI found that Respondent engaged in research misconduct by falsifying data that were included in grant application R01 GM047607-18A1, in a manuscript submitted for publication to the *Journal of Cell Biology* and in several interdepartmental

data presentations. Specifically, ORI found that:

- Respondent falsified Figure 1A in a manuscript submitted for publication to the *Journal of Cell Biology*, by altering immunoprecipitation Western blot data to make this experiment appear that no Vav2 SH2 was associated with PKL 3YF, when in fact it did. In addition, the Respondent falsified five figures depicting Western blots of similar experiments in four (See Case Summaries, page 9)

### Plagiarism (from page 4)

plagiarism. Some non-native speakers of English, lacking confidence in their English-writing skills, said they found paraphrasing to be particularly challenging. Additional resources have been added to the research guide to address this need.

In addition to avoiding plagiarism, proper citation practices serve another vital role. They allow researchers to build off the ideas of other researchers, allowing their fields of study to evolve.<sup>8</sup>

A selected list of anti-plagiarism tutorials and guides follows:

- University of North Carolina Libraries. Interactive plagiarism tutorial: <http://www.lib.unc.edu/plagiarism/> and information-citing tutorial: <http://www.lib.unc.edu/instruct/citations/>
- University of Alabama at Birmingham. *Ethics for Authors* guide: <http://www.uab.edu/ethicsforauthors/>

- University of Wisconsin–Madison Writing Center. *The Writer's Handbook: Avoiding Plagiarism*: [http://writing.wisc.edu/Handbook/QPA\\_plagiarism.html](http://writing.wisc.edu/Handbook/QPA_plagiarism.html)
- Emory, Oxford College Library. Humorous video produced by students and embedded tutorial by a librarian: <http://oxford.library.emory.edu/conduct-research/plagiarism-and-academic-honesty>
- Rutgers University, Paul Robeson Library. Three-part tutorial, including a step-by-step demonstration of proper citing and paraphrasing: <http://library.camden.rutgers.edu/EducationalModule/Plagiarism/>
- Medical Writing Tip of the Month from the journal, *CHEST*: <http://chestjournal.chestpubs.org/cgi/collection/mwt>

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## Case Summaries (continued)

laboratory meeting presentations. The purpose of the falsifications was to show that the experimental results were as described when they were not, or to show that the results were of greater significance than they actually were.

- Respondent falsified Figure 3I in a manuscript submitted for publication to the *Journal of Cell Biology* by falsely labeling a Western blot to indicate levels of expression for various Vav2 mutants, when the experimental data were taken from a completely unrelated experiment.
- Respondent falsified Figure 6A in an interdepartmental laboratory presentation by falsifying Western blot data to falsely depict Paxillin and Hic-5 expression and phosphorylation levels after siRNA treatment.
- Respondent falsified Figure 5 from NIGMS, NIH, grant application GM047607-18A1, by falsifying Western blot data to support the hypothesis that co-transfection of PKL plus RhoA GEF Vav2 induces RhoA activation and signaling upon plating on fibronectin.

Ms. Jamieson has entered into a Voluntary Settlement Agreement (Agreement). Ms. Jamieson neither admits nor denies ORI's finding of scientific misconduct nor any particular finding of fact asserted in support of that finding. The settlement is not an admission of liability on the part of the Respondent.

Ms. Jamieson has voluntarily agreed for a period of three (3) years, beginning on December 20, 2011:

(1) to have her research supervised if employed by an institution that receives or applies for U.S. Public Health Service (PHS) funding; Respondent agrees that prior to the submission of an application for PHS support for a research project on which the Respondent's participation is proposed and prior to Respondent's participation in any capacity on PHS-supported research, Respondent shall ensure that a plan for supervision of her duties is submitted to ORI for approval; the supervision plan must be designed to ensure the scientific integrity of Respondent's research contribution; Respondent agrees that she shall not participate in any PHS-supported research until such a supervision plan is submitted to and approved by ORI; Respondent agrees to maintain responsibility for compliance with the agreed-upon supervision plan;

(2) that any institution employing her shall submit, in conjunction with each application for PHS funds, or report, manuscript, or abstract involving PHS-supported research in which Respondent is involved, a certification to ORI that the data provided by Respondent are based on actual experiments or are otherwise legitimately derived and that the data, procedures, and methodology were accurately reported in the application, report, manuscript, or abstract; and

(3) 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.

### **Calleen S. Zach Creighton University**

Based on evidence obtained from Creighton University (CU) and additional evidence gathered by the Office of Research Integrity (ORI) during its oversight review, ORI found that Ms. Calleen S. Zach, former Research Assistant and Data Base Manager, CU, engaged in research misconduct in research funded by National Institute of Child Health and Human Development (NICHD), National Institutes of Health (NIH), grant R01 HD046991.

Specifically, ORI found that the Respondent provided falsified subject enrollment numbers in an application to NIH for continued funding of R01 HD046991 in 2008, a no-cost, one-year extension request for R01 HD046991 (April 8, 2009, letter to NICHD, NIH), and an application for additional funding of R01 HD046991 (June 30, 2009, to NICHD, NIH). In addition, she knowingly and intentionally provided falsified subject enrollment numbers in reports to the CU Institutional Review Board (IRB) in 2008 and 2009.

ORI concluded that Respondent's knowing and intentional falsification of data constitutes research misconduct as defined by 42 C.F.R. § 93.103. In addition, ORI found that Respondent's intentionally deceptive behavior, including false statements made to the CU institutional officials, forgery of petty cash receipts, and theft of NIH research grant funds, establish a lack of trustworthiness (See Case Summaries, page 10)

**Case Summaries** *(continued)*

and present responsibility to be a steward of Federal funds. 2 C.F.R. § 180.125, 180.800(d), 376.10.

The following administrative actions have been implemented for a period of five (5) years, beginning on January 23, 2012:

(1) Ms. Zach is debarred from eligibility for any contracting or subcontracting with any agency of the United States Government and from eligibility for, or involvement in, nonprocurement programs of the United States Government, referred to as “covered transactions” as defined in 2 C.F.R. § 180.200, 376.10; and

(2) Ms. Zach is prohibited from serving in any advisory capacity to the U.S. Public Health Service (PHS) including, but not limited to, service on any PHS advisory committee, board, and/or peer review committee, or as a consultant.

**Michael W. Miller, Ph.D.**  
**State University of New York**  
**Upstate Medical University**

Based on the report of an investigation conducted by the State University of New York, Upstate Medical University (SUNY UMU) and additional analysis conducted by ORI in its oversight review, ORI found that Dr. Michael W. Miller, former Professor and Chair, Department of Neuroscience and Physiology, SUNY UMU, engaged in research misconduct in research supported by National Institute on Alcohol Abuse and Alcoholism (NIAAA),

National Institutes of Health (NIH), grants R01 AA07568-18A1, R01 AA06916, and P50 AA017823-01.

ORI finds that the Respondent engaged in research misconduct by falsifying and/or fabricating data that were included in grant applications R01 AA07568-18, R01 AA07568-18A1, R01 AA006916-25, and P50 AA017823-01 and in the following:

- Miller, M.W., Hu, H. “Lability of neuronal lineage decisions is revealed by acute exposures to ethanol.” *Dev. Neurosci.* 31(1-2):50-7, 2009 (“*Dev. Neurosci.* 2009”)
- Bruns, M.B., Miller, M.W. “Functional nerve growth factor and trkA autocrine/paracrine circuits in adult rat cortex are revealed by episodic ethanol exposure and withdrawal.” *J. Neurochem.* 100(5):1115-68, 2007 (“*J. Neurochem.* 2007”)
- A prepared manuscript submitted to *PNAS* for publication.

As a result of its investigation, SUNY UMU recommended that *Dev. Neurosci.* 2009 and *J. Neurochem.* 2007 be retracted. Both publications have now been retracted:

- *Dev. Neurosci.* 2009 was retracted online on January 19, 2012, at <http://content.karger.com/ProdukteDB/produkte.asp?Aktion=ShowPDF&ArtikelNr=323471&Ausgabe=0&ProduktNr=224107&filename=323471.pdf>

- *J. Neurochem.* 2007 was retracted online on January 23, 2012, at <http://onlinelibrary.wiley.com/doi/10.1111/j.1471-4159.2012.07662.x/full>

Specifically, ORI finds that the Respondent:

- Falsified Figure 5 in NIH grant application R01 AA07568-18A1 by altering the bar graphs to make the experimental results appear valid and consistent with his hypothesis that ethanol exposure *in-utero* alters the transition of cells from Pax 6 expression to Tbr2 expression, which is critical to normal brain development.

Specifically:

- a. in the VZ/SZ panel (upper row, right), Dr. Miller decreased the values by 50% for the bar graphs representing control and treated mice for “Tbr2,” “both,” and “both/Ki-67,” to falsely report an equivalent frequency of Tbr2 expressing cells in the right and left panels; this result was required for the experiment to appear valid;
- b. in the MGE panel (lower row, right), Dr. Miller altered the bar graphs representing control and treated mice for “Ki-67,” “Pax6,” and “both” to falsely report that ethanol increased the frequency of K-67+ cells and to report an equivalent frequency of Pax expressing cells in the right and left panels.

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## Case Summaries (continued)

- Fabricated bar graphs in Supplemental Figure 2 in a manuscript submitted to *PNAS* and text in the manuscript also appearing in the grant application AA00616-25 to support the hypothesis that ethanol exposure during postnatal weeks 1 and 2 causes specific neuronal cell death in layers II/III and V of the cortex.

Specifically, Dr. Miller:

- a. fabricated bar graphs in Supplemental Figure 2 and related text in the *PNAS* manuscript to show that in select layers of the cortex, ethanol induced neuronal death occurred in postnatal day 10 (P10) mice;
  - b. included fabricated text in the *PNAS* manuscript and the grant application citing results of experiments using 15-25-day-old mice treated with ethanol during the second postnatal week, when these mice were never generated.
- Falsified Figure 6 in a manuscript submitted to *PNAS* by altering data points for the labeling index of caspase3 and TUNEL in cortex layers II/III and V after exposure to ethanol in postnatal day 7 (P7) mice, such that the two assays confirmed each other. The same data were also included as Figure 4 in NIH grant application R01 AA06916 and as Figure 7 in a poster presentation at the 2009 Research Society on Alcoholism.
  - Falsified the figure legends and/or text in a published paper and multiple grant applications to

support the primary hypothesis of the published paper that gestational alcohol exposure had an effect on brain development by affecting the way neurons differentiate and migrate into the cortex, rather than by changes to cell growth or death. Specifically, Dr. Miller falsely reported the number of animals (n) that were used in figure legends and/or text in the following:

- Figures 2 and 5, *Dev. Neurosci.* 2009, also included as Figures 3 and 4, respectively, in R01 AA07568-18;
  - Figure 4 and Table 2 in P50 AA017823-01.
- Falsified Figures 4 and 6 in *J. Neurochem.* 2007 by altering bar graphs to increase the significance of the effect of ethanol exposure and/or withdrawal on NGF or trkA protein expression, thereby conforming with the paper's hypothesis that ethanol exposure and withdrawal affect the normal NGF/trkA circuits in cortical layer V. Specifically, Dr. Miller:
    - a. increased the value of the ethanol-treated NGF expression in Figure 4 and decreased the value of withdrawal NFG to alter the difference between the two from approximately 2.2% to 11.6%, thereby falsely reporting significance where there was none;
    - b. in Figure 6:
      - a) increased the value of withdrawal trkA data by approxi-

mately 70% to falsely report significance with relation to the ethanol treated value and increase significance with relation to the control;

b) increased the value of the ethanol-treated phospho-trkA data by approximately 100% to increase the significance with relation to the control;

c) falsely reported the results for Figure 6 as showing a nearly doubled ratio of p-trkA to total trkA after ethanol exposure when there was no increase at all.

Dr. Miller has entered into a Voluntary Exclusion Agreement (Agreement). Dr. Miller neither admits nor denies committing research misconduct but accepts that ORI has found evidence of research misconduct as set forth above.

Dr. Miller has voluntarily agreed:

(1) to exclude himself voluntarily from any contracting or subcontracting with any agency of the United States Government and from eligibility or involvement in nonprocurement programs of the United States Government referred to as "covered transactions" 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 (collectively the "Debarment Regulations") for a period of one (1) year, beginning on February 6, 2012;

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### Case Summaries *(continued)*

(2) to have his research supervised for a period of two (2) years immediately following the one (1) year period of exclusion; Respondent agrees that prior to the submission of an application for U.S. Public Health Service (PHS) support for a research project on which the Respondent's participation is proposed and prior to the Respondent's participation in any capacity on PHS-supported research, Respondent shall ensure that a plan for supervision of Respondent's duties is submitted to ORI for approval; the supervision plan must be designed to ensure the scientific integrity of Respondent's research contribution as outlined below; Respondent agrees that he shall not participate in any PHS-supported research until such a supervision plan is submitted to and approved by ORI; Respondent agrees to maintain responsibility for compliance with the agreed-upon supervision plan; the requirements for Respondent's supervision plan are as follows:

i. a committee of 2-3 senior faculty members at the institution who are familiar with Respondent's field of research, but not including Respondent's supervisor

or collaborators, will provide oversight and guidance for two (2) years immediately following the period of exclusion; the committee will review primary data from Respondent's laboratory on a quarterly basis and submit a report to ORI at six (6) month intervals setting forth the committee meeting dates, Respondent's compliance with appropriate research standards, and confirming the integrity of Respondent's research; and

ii. the committee will conduct an advance review of any PHS grant applications (including supplements, resubmissions, etc.), manuscripts reporting PHS-funded research submitted for publication, and abstracts; the review will include a discussion with Respondent of the primary data represented in those documents and include a certification to ORI that the data presented in the proposed application/publication is supported by the research record;

(3) that any institution employing him during the two (2) years dur-

ing which the supervisory plan is in effect shall submit, in conjunction with each application for PHS funds, or report, manuscript, or abstract involving PHS-supported research in which Respondent is involved, a certification to ORI that the data provided by Respondent are based on actual experiments or are otherwise legitimately derived and that the data, procedures, and methodology are accurately reported in the application, report, manuscript, or abstract; and

(4) 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 for a period of three (3) years, beginning on February 6, 2012.

### ORI thanks the following people for contributing articles to the newsletter:

*Nicki Augustyn*

*Pauline J. Ford*

*Cynthia T. French*

*Nancy R. Glassman*

*Clair Hughes*

*Richard S. Irwin*

*Elizabeth A. Martinson*

*Jean Rice*

**Office of Research Integrity  
1101 Wootton Parkway, Suite 750  
Rockville, Maryland 20852**

Office of the Director... (240) 453-8200  
Fax ..... (240) 276-9574

Division of Education  
and Integrity ..... (240) 453-8400  
Fax ..... (240) 276-9574

Assurances Program .... (240) 453-8400  
Fax ..... (301) 594-0042

Division of Investigative  
Oversight..... (240) 453-8800  
Fax ..... (301) 594-0043

Research Integrity  
Branch/OGC ..... (301) 443-3466  
Fax ..... (301) 594-0041

<http://ori.hhs.gov>