

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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July 15, 2014

Dr. W. Randolph Woodson
Chancellor
North Carolina State University
Campus Box 7001/A Holladay Hall
Raleigh, NC 27695-7001

Dear Dr. Woodson,

The House Science, Space, and Technology Committee has been aware of a long-running case of research fraud which was supported by a grant from the National Science Foundation (NSF) awarded to your university. Results from the NSF-supported work were published in the May 7, 2004 issue of *Science* magazine¹ and highlighted in a press release from NCSU.² The fact that the three authors, Drs. Bruce E. Eaton, Daniel L. Feldheim, and Lina A. Gugliotti, have moved on from NCSU does not lessen our concern.

We write today to express our dismay that the integrity of the scientific record for this NSF-sponsored work remains damaged. Our dismay is only heightened by the recent revelations that this practice appears to be wide spread.³ As of this letter, the Library of Congress informs us that there have been 115 first generation citations of the 2004 article in various scientific publications. This number does not include the citations generated by the controversy in the scientific literature on the validity of the original findings.

We are also aware of an attempt by Dr. Terri Lomax, Vice Chancellor of the Office of Research, Innovation & Economic Development, to contain the damage with her October 20, 2009 letter to the editors of *Science Magazine* (Attachment 1). However, we feel that the tone of the letter describing the unsubstantiated published data does not convey the intensity of the findings determined by NCSU's internal investigation on June 6, 2008. Dr. Lomax's 2009 letter states:

¹ Lina A. Gugliotti, Daniel L. Feldheim, Bruce E. Eaton, "RNA-Mediated Metal-Metal Bond Formation in the Synthesis of Hexagonal Palladium Nanoparticles," *Science*, Vol. 304 no. 5672 pp. 850-852; available at: www.sciencemag.org.

² NCSU Press Release, "RNA Molecules Made to Create Tiny New Inorganic Particles," April 19, 2004; available at: http://www.ncsu.edu/news/press_releases/04_04/147.htm.

³ Hank Campbell, "The Corruption of Peer Review Is Harming Scientific Credibility," *The Wall Street Journal*, July 14, 2014, available at: <http://online.wsj.com/articles/hank-campbell-the-corruption-of-peer-review-is-harming-scientific-credibility-1405290747>.

“We are bringing this matter to your attention, so that you can assess whether the authors have satisfactorily corrected this information in the scientific record.” (Attachment 1).

The 2008 NCSU investigation concludes:

“Despite the majority conclusion that scientific misconduct did not occur in this case, the Committee is concerned about the integrity of the scientific record. The 2004 *Science* paper is frequently cited as proof of formation of pure metal nanoparticles or palladium crystals via an RNA-mediated mechanism. The Committee concludes that neither at the time of the original publications nor presently, have the Respondents produced or published sufficient data to unambiguously justify this conclusion.”

Additionally in the NSF Office of Inspector General’s (OIG) Semi Annual Report to Congress, published September 2013, the IG addressed this case by referencing the completion of a report with recommendations made to the NSF Deputy Director. The recommendations, which await a response from NSF, include:

“We concluded that collectively the coauthors recklessly falsified their work in the original article. We recommended that NSF require retraction of the article and three years of certifications and assurances for each author, and bar each author as an NSF reviewer, advisor, or consultant for three years.”⁴

Further, on April 1, 2014, NCSU’s Faculty Senate voted in favor of a rule modification from the Personnel Policy Committee that requires notification of journal editors.⁵ The resolution “replaced the ‘*should be notified*’ to ‘*be communicated*’, i.e., making notification of the appropriate journal editors a requirement. The resolution was approved by the Faculty Senate.”⁶

While the NSF OIG investigation of Drs. Eaton, Feldheim, and Gugliotti remains open, pending a final reply from NSF, given the damage to the scientific record which has already occurred and continues to occur, we would appreciate your responses to the following questions:

1. When NCSU contacted *Science Magazine* in 2009, did it provide them a copy of the NCSU investigation and determination that data was unjustifiable? If not, why not?
2. In light of the recent faculty vote at NCSU and completion of an NSF OIG report with recommendations to penalize Drs. Eaton, Feldheim, and Gugliotti, will you write to *Science Magazine* again to alert them to these series of events, the University’s findings, and the NSF OIG’s recommendations that the article be retracted and that NSF require

⁴ NSF OIG Semiannual Report to Congress, September 2013, available at: <http://www.nsf.gov/pubs/2014/oig14001/oig14001.pdf>.

⁵ NCSU “Resolution on the Requirement for Proper Notifications for Falsified Results,” Faculty Senate Resolutions, April 1, 2014, available at: http://ncsu.edu/faculty_senate/2013-2014/R4.php.

⁶ NCSU Report of Personnel Policy Committee, 2013-2014 Academic Year; available at: http://ncsu.edu/faculty_senate/faculty-senate-committees/documents/fsppcrpt13142a.pdf; (emphasis in original).

three years of “certifications and assurances for each author, and bar each author as an NSF reviewer, advisor, or consultant” for the same number of years? If not, why not?

3. Title 45 § 689.4 of the Code of Federal Regulations⁷ states that awardee institutions “bear primary responsibility for prevention and detection of research misconduct,” which require them to take “action necessary to ensure the integrity of research, the rights and interests of research subjects and the public, and the observance of legal requirements or responsibilities.” Please explain how NCSU has met its research misconduct responsibilities and obligations under federal regulation in the case involving Drs. Eaton, Feldheim and Gugliotti?

In addition to the above questions, please provide the Committee with all records (as defined in Attachment 2) of communications between Drs. Eaton, Feldheim and Gugliotti and the University regarding the release of information about the allegations of misconduct and the findings of the Committee, including communications about the University’s letter to *Science Magazine* in 2009 (Attachment 1). Your records should also include all internal University correspondence among faculty and staff, as well as correspondence from and to attorneys representing the doctors as well as the University.

We would appreciate a response to our letter by July 29, 2014. If you have any questions, please feel free to contact Mr. Raj Bharwani of the Majority staff at (202) 225-6371, or Mr. Dan Pearson of the Minority staff at (202) 225-6375.

Sincerely,



Rep. Paul Broun, M.D.
Chairman
Subcommittee on Oversight



Rep. Dan Maffei
Ranking Member
Subcommittee on Oversight

Attachments

⁷ Role of Awardee Institutions, 45 CFR 689.4, available at: <http://www.gpo.gov/fdsys/granule/CFR-2013-title45-vol3/CFR-2013-title45-vol3-sec689-4>.

Attachment 1

North Carolina State University is a land-grant university and a constituent institution of The University of North Carolina.

Office of Research
and Graduate Studies

NC STATE UNIVERSITY

October 20, 2009

Office of the Vice Chancellor
Campus Box 7003
103 Holladay Hall
Raleigh, NC 27695-7003

Dr. Bruce Alberts
Editor-in-Chief
Science Magazine
1200 New York Avenue NW
Washington, DC 20005

Dr. Peter J. Stang
Editor
JACS
1155 Sixteenth Street N.W.,
Washington, DC 20036

David G. Whitten
Editor-in-Chief
Langmuir
1155 Sixteenth Street N.W.,
Washington, DC 20036

919.515.2117
919.515.7521 (fax)

RE: "RNA-Mediated Control of Metal Nanoparticle Shape", Lina A. Gugliotti, Daniel L. Feldheim, and Bruce E. Eaton, *J. Am. Chem. Soc.* v. 127, pp. 17814-17818 (2005)

"RNA-Mediated Synthesis of Palladium Nanoparticles on Au Surfaces", Dage Liu, Lina A. Gugliotti, Tong Wu, Magda Dolsak, Alexander G. Tkachenko, Mathew K. Shipton, Bruce E. Eaton, and Daniel L. Feldheim, *Langmuir* v.22, pp. 5862-5866 (2006)

"RNA-Mediated Metal-Metal Bond Formation in the Synthesis of Hexagonal Palladium Nanoparticles", Lina A. Gugliotti, Daniel L. Feldheim, Bruce E. Eaton, *Science*, v. 304, pp. 850-852 (2004)

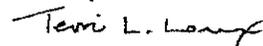
Dear Editors:

A multi-institutional panel of experts reviewed aspects of the above referenced journal articles, all of which are based on research conducted at NC State University. The panel found that certain results published in these articles could be misleading to the scientific community and recommended to the authors that:

- (1) The solution described in the Science paper was not "aqueous" but in fact was "aqueous/organic" comprising both water and THF. While you rectified your error in the subsequent JACS paper, the Science paper remains wrong and is regularly cited by other scientists.
- (2) [The panel] was unable to verify that electron diffraction data was properly indexed and thus concluded that you improperly stated that "A combination of scanning electron microscopy and electron diffraction showed that the hexagonal particles were crystalline Pd." You should correct the scientific record accordingly to remove any and all reference to your reliance upon EDS or SAED data in concluding crystallinity of the "Pd."

We are bringing this matter to your attention, so that you can assess whether the authors have satisfactorily corrected this information in the scientific record. We have turned the results of our review over to the Office of Inspector General at the National Science Foundation who are conducting an independent review of the matter.

Sincerely,



Terri L. Lomax, Ph.D.
Vice Chancellor for Research and Graduate Studies

cc: Ken Busch, United States Office of Inspector General
Ray Fornes, Associate Dean, Research, College of Physical & Mathematical Sciences
Morteza Khaladi, Chair, Chemistry Department
Matthew Ronning, Research Integrity Officer

ATTACHMENT

1. The term "records" is to be construed in the broadest sense and shall mean any written or graphic material, however produced or reproduced, of any kind or description, consisting of the original and any non-identical copy (whether different from the original because of notes made on or attached to such copy or otherwise) and drafts and both sides thereof, whether printed or recorded electronically or magnetically or stored in any type of data bank, including, but not limited to, the following: correspondence, memoranda, records, summaries of personal conversations or interviews, minutes or records of meetings or conferences, opinions or reports of consultants, projections, statistical statements, drafts, contracts, agreements, purchase orders, invoices, confirmations, telegraphs, telexes, agendas, books, notes, pamphlets, periodicals, reports, studies, evaluations, opinions, logs, diaries, desk calendars, appointment books, tape recordings, video recordings, e-mails, voice mails, computer tapes, or other computer stored matter, magnetic tapes, microfilm, microfiche, punch cards, all other records kept by electronic, photographic, or mechanical means, charts, photographs, notebooks, drawings, plans, inter-office communications, intra-office and intra-departmental communications, transcripts, checks and canceled checks, bank statements, ledgers, books, records or statements of accounts, and papers and things similar to any of the foregoing, however denominated.

2. The terms "relating," "relate," or "regarding" as to any given subject means anything that constitutes, contains, embodies, identifies, deals with, or is in any manner whatsoever pertinent to that subject, including but not limited to records concerning the preparation of other records.