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TO: RCRinput@nsf.gov

RE: Federal Register /Vol. 74, No, 37/ Thursday, February 26, 2009, Call for Comments: National Science Foundation, Responsible Conduct of Research

To Whom It May Concern:

Thank you for the opportunity to provide comments on this proposed plan. In addition to our comments provided here, the University of Minnesota endorses the comments submitted by the Council on Governmental Relations (COGR).

The University of Minnesota (UMN) has a long history of supporting the responsible and ethical conduct of research. Policies approved in 1999 by UMN's Board of Regents and University Senate mandate completion of a comprehensive RCR curriculum for faculty, staff and student researchers, including automated mechanisms for tracking and verifying completion. This program could form UMN's framework to meet the proposed requirement for NSF. Challenges would remain, however.

We recommend that NSF allow broad interpretations of the terms included in this new requirement—specifically, with regard to the following text:

> *"NSF will require that at the time of proposal submissions to NSF, a proposing institution's Authorized Organizational Representative must certify that the institution has a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. "*

Institutions will need to develop definitions of and assumptions about the terms used in the text above in order to accommodate a broad variety of situations and needs. The interpretation of "training", "oversight", and "supported" may need to be applied differently to meet the needs at particular institutions and for specific individuals. On-line, class room, or individual training may each be applicable for different roles, expectations, and/or disciplines. For example, a student who is performing simple administrative tasks may only need training in how to report a suspected unethical event, while a post-doctoral student may need much more comprehensive training, similar to that of a principal investigator. Also, the timing of such training may occur at a variety of times; sometimes more appropriate before research activities begin, and sometimes more appropriate on an on-going, continuous basis. We also encourage NSF to allow the use of previously existing definitions (such as the one used by ORI), in order to minimize confusion and complexity.

Although we understand and support the philosophy behind the intent of these new requirements, we would also respectfully caution NSF regarding the potential for this new requirement to impose undue compliance obligations on undergraduate research assistants and their principal investigators. It is our expectation at UMN

that principal investigators and senior investigators appropriately bear the responsibility for fostering and maintaining integrity in research projects, as well as for training their students and postdoctoral researchers.

As requested, we submit the following remarks on issues outlined in the call for comments:

What challenges do institutions face in meeting the new RCR requirement?
Challenges for UMN include:

- Devoting the resources necessary to develop consistent, high-quality training and to monitor and verify completion;
- Determining the appropriate level, format, and timing of training;
- Maintaining and presenting the training;
- Determining, ensuring and documenting a consistent, reasonable, and appropriate approach for the oversight of the responsible and ethical conduct of the research performed; and
- Ensuring such efforts are not duplicative of previously existing requirements and determining, where necessary, a means to "supplement" what is already required by current accreditation groups in engineering and other professional curriculum.

What role should Principal Investigators play in meeting NSF's RCR requirement?
Principal Investigators (PIs) should serve as mentors to all students (undergrads, graduate and professional students, and post-docs) who participate in research sponsored by NSF. For the purposes of this requirement, PIs need an understanding of the research ethics issues in their field, appropriate training for the role they have in preparing the next generation of scientists and investigators, time to develop and present appropriate training for those students, and time to implement and ensure appropriate oversight of the student's work. We believe that NSF should clarify that it is appropriate to charge the costs associated with these activities directly to NSF grants.

There are likely to be differences in the RCR plans that institutions develop to respond to this new requirement. What are the pros and cons of exploring a diversity of approaches?

- **Pros** for a diversity of approaches include the flexibility to develop RCR training and an oversight program that is appropriate for the content, developmental and academic stage of the intended audience that incorporates discipline-specific insights into the issues, and that fosters critical thinking about research and research ethics.
- **Cons** include the time and resources required to develop, document, and maintain the materials and process.

How might online resources be most effective in assisting with training students and post-docs in the responsible and ethical conduct of research?
Online training could be effective for presenting introductory and general material that will be needed by everyone involved in the project, using the convenience and availability of the Internet. The limitations of this approach stem from the initial time and cost to develop and implement the materials and the ongoing time and costs of maintaining high quality and up-to-date materials. There can also be a lack of engagement with materials presented in Web-based formats, and the nuance of higher-level discussions of ethical issues can be lost in this format.

Discuss possible approaches to verifying that the requisite RCR training has been provided:
This area presents one of the biggest challenges of the new requirement. Assigning responsibility for verifying completion of this requirement in ways that result in consistent, accurate, and timely information is very difficult, especially in large, decentralized and complex institutions like UMN. The University currently has some systems in place to track completion of its faculty-oriented RCR programs; however, the usefulness of

these systems with students may be limited. This issue is exacerbated by the likelihood t that a student's progression in research will at times be rapid and diverse, and not easily mapped to formal training timetables and opportunities.

We appreciate the opportunity to provide our comments on this NSF Responsible Conduct of Research proposal and welcome the opportunity to engage in further discussions.

Regards,

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Vice President for Research
University of Minnesota