### Scientific Societies as Institutions for Promoting Research Integrity/ Responsible Conduct of Research

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Science and Publication Ethics

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(AAAS)













SOCIEDADE BRASILEIRA DE

Journal of the Brazilian Society of

Mechanical Sciences and Engineering









Federação de Sociedades de **Biologia Experimental** 



Sociedade Brasileira de Matemática



### Why focus on societies?

- \*Disciplinary culture/Community of practice
- \*Norms/Standards
- \*Scope
- \*Membership
- \*Enduring
- \*Publishers
- \*Professional resource



Scientific societies are not intended to replace the roles that universities and governments play, but can augment what they do.

Should be viewed as partners with unique experiences and resources they can bring to the table.



American Mathematical Society
2004 Statement
The Culture of Research and Scholarship in
Mathematics: Joint Research and Its Publication

The culture of joint research and its publication differs among disciplines, and this essay is meant to explain that culture for mathematics....mathematicians traditionally list authors on joint papers in alphabetical order. An analysis of journal articles with at least one U.S. based author shows that nearly half were jointly authored. Of these, more than 75% listed the authors in alphabetical order. In pure mathematics, nearly all joint papers (over 90%) list authors alphabetically.

5



Historically biologists tended to place a PI, or supervisor or lab head last in an author list, whereas organic chemists might have put him or her first.

"Credit where credit's due," *Nature* 440: 591–708, 2006



In computer science,...the person who heads up the lab is always listed first and the person who wrote the paper is listed last.

Conventions, Authorship, and Fields of Study Sandra Porter, July 28, 2007



### **Washington University in St. Louis**

## Policy for Authorship on Scientific and Scholarly Publications, 2009

Authorship Order: The order of authors is a collective decision of the authors or study group. This policy does not address questions or disputes regarding the order of authorship on publications. It is not possible for the University to define the order of authorship.



### A report recommending that scientific organizations

"develop educational and training activities and materials to improve the integrity of research...assist universities in identifying substandard research and training practices that compromise the integrity or quality of research...develop policies to promote responsible authorship practices, including procedures for responding to allegations or indications of misconduct in published research or reports submitted for publication."

Institute of Medicine, *The Responsible Conduct of Research in the Health Sciences*, National Academy Press, Washington, DC., 1989.



Throughout its history, AAAS has addressed issues at the intersection of science and society, searching for common ground between the values of science and those of the larger society.



SPECIAL ISSUE CONTAINING REPORTS OF THE THIRD INDIANAPOLIS MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND ASSOCIATED SOCIETIES

### SCIENCE

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#### THE THIRD INDIANAPOLIS MEETING

#### OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND ITS ASSOCIATED SOCIETIES

Edited by F. R. MOULTON

#### THE SPIRIT OF IT

expressed it, "the current movement might be de- in examining the relations of all of them with moisty, serbed as an effect to shift from science for eximate. The association is conducted its module appearance in

The most controle expression of ecoperation among It is quite possible that the one hundred and first - wientists with various interests was the many sympomeeting of the association, held in Indianapolis from six that were organized. They maged freely and December 27, 1907, to January 3, 1908, will be remon. widely across the nexal boundaries of the sciences, bord so the beginning of a new era in the association. eurishing all that were included. Many of the leading As large as was this meeting and as flor as were its existince in the United States participated in these programs, its most notable characteristics were the fine broad synthesis of ucknot, several of them leaving spirit of ecoperation among selection in different fields meetings of their own special societies for the purpose. and the increasing sense of responsibility of assentiets. The opinion was frequently expressed that in integralto soriety. As an editorial in the Washington Post ing the seiences-physical, biological and social-and



After World War II, AAAS affirmed a commitment to bridging science and society by revising its Constitution in 1946 to include objectives "to improve the effectiveness of science in the promotion of human welfare, and increase public understanding and appreciation of the importance and promise of the methods of science in human progress" (AAAS Constitution, 1946).



The Association created a new standing Committee on Scientific Freedom and Responsibility in 1976 to "encourage and assist the AAAS ... and other scientific groups to develop statements of principles governing professional conduct, and to...encourage scientists to accept their professional responsibilities both with regard to safeguarding the integrity of science and with regard to the application of science in the promotion of human rights and general welfare."

AAAS amended its Constitution in 1977 to include "to foster scientific freedom and responsibility" in its mission.



In 2002, under new executive leadership, AAAS revisited its historic mission and stressed the Association's commitment to "advance science and innovation throughout the world for the benefit of all people," and the priority to be accorded to the "responsible conduct and use of science and technology" (AAAS Mission, 2002).



As members of the professional research community, we should strive to develop and uphold standards that are broader than those addressed by the governmental regulatory framework for dealing with misconduct in science."

National Academy of Engineering Institute of Medicine February 2, 1994



There needs to be a long-term approach that will inform and enable researchers to act properly, not because the law mandates, but because responsible science requires it.



The public's trust of individual scientists rests, in part, on its expectation that their conduct is governed by norms and standards prescribed by the professional community



Scientific societies are well positioned to function as custodians of the professional values and ethical standards that have been articulated by members over time, and to help transmit them to subsequent generations of scientists.



"Members of a scientific discipline,...are bound together by similar aspirations, values, and training....a scientist is defined [in part] by his or her relationship to the discipline....The scientific and engineering societies are distinct...institutions, and as visible, stable, and enduring entities, they act as the custodian of the discipline's core values and distinctive traditions. Hence,...over time the behavior of individual members can be (and is) explained by references to [their society]."

Mark S. Frankel, "Professional Societies and Responsible Conduct," in *Responsible Science: Ensuring the Integrity of the Research Process*, Vol. II, National Academy of Sciences, 1993.



### **SOCIETY ACTIVITIES**

Programs at Annual/Regional Meetings

**Ethics Committees** 

Columns/Articles in Professional

Journals/Newsletters

Publications on Research Ethics

Workshops

**Resource Materials** 

**Discussion Groups** 

Special Activities for Students/Trainees

Mentorship Programs

Awards to Members Exemplifying Integrity in

Research

**In-service Training** 

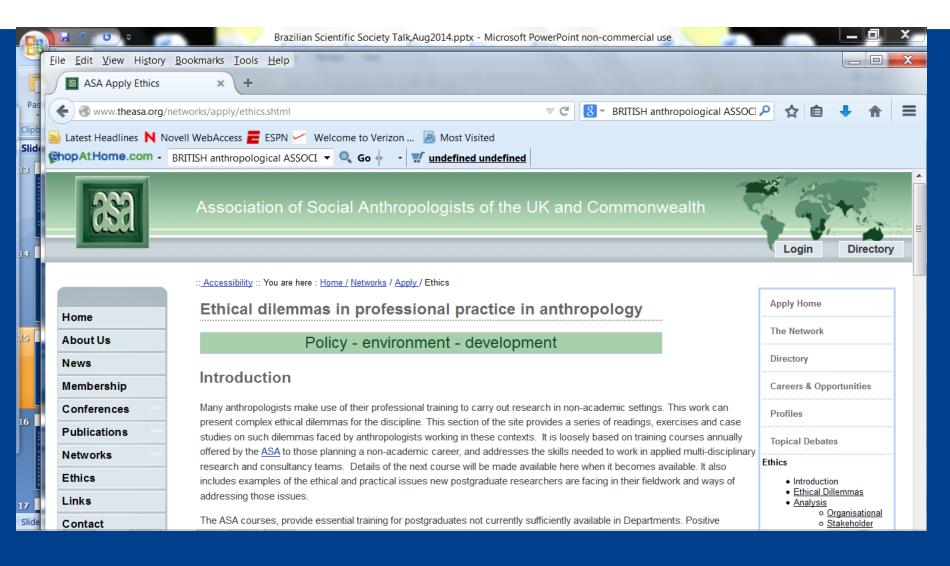
Hotlines



### American Psychological Association

APA's Ethics Office promotes ethics throughout the field of psychology. The Office supports the Ethics Committee in adjudicating ethics complaints, offers educational workshops and seminars, provides ethics consultations, and serves as a resource to members and the Association in addressing new ethical dilemmas as psychology grows and evolves as a discipline.







## Integrity in Scientific Research

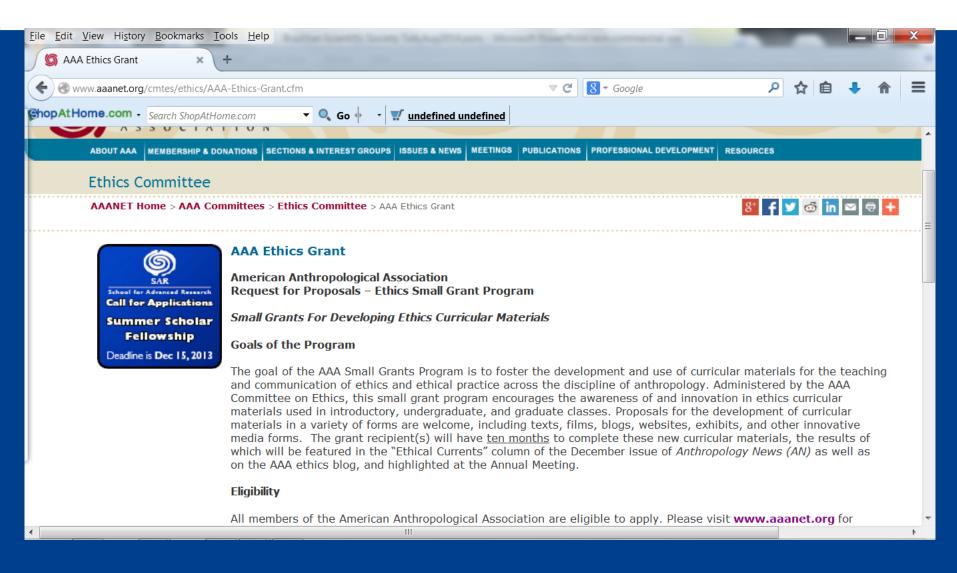


Challenging scientists - students, fellows, technicians, and administrators - to define ethical problems, identify options for responding, and to assess those options in light of their own experiences

the videos the project resources order now

A project sponsored by American Association for the Advancement of Science - Directorate for Science and Policy Programs in Collaboration with Amram Nowak Associates, Inc. and the Medical College of Georgia - Division of Health Communication

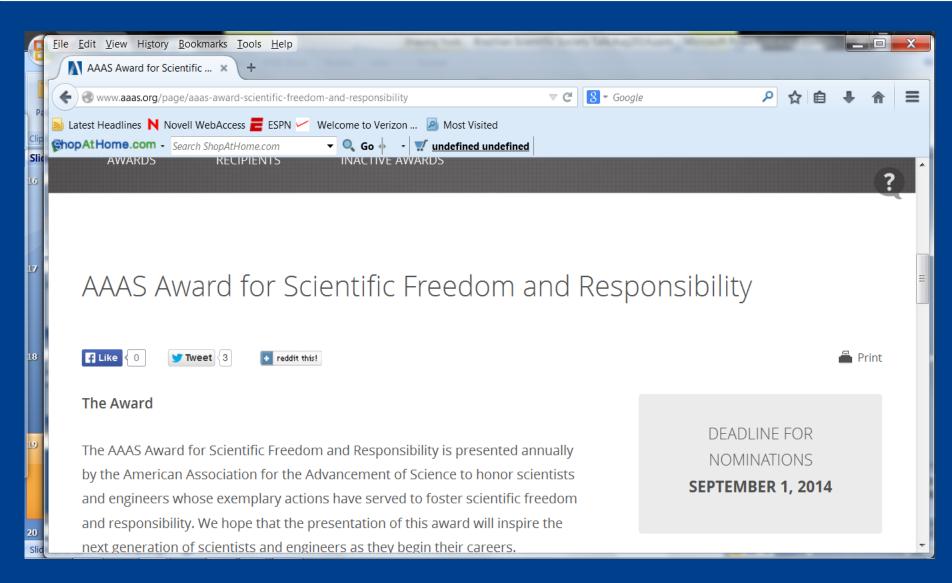














### Responsibilities of Scientists

### Two Types:

Internal responsibility for upholding standards agreed upon by scientific community—scientists' professional responsibilities

External responsibilities toward the larger community—scientists' social responsibilities



"Experts must respond to issues and questions that are never merely scientific and technical, and must address audiences that never consist only of other experts....science must now be sensitive to a much wider range of social implications."

Michael Gibbons "Science's New Social Contract with Society," Nature, December 2, 1999

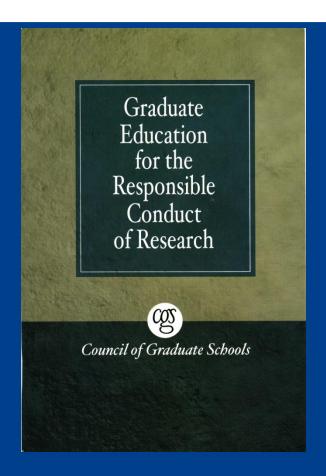


Science is a global enterprise and scientists are, socially and professionally, citizens of a global community.

No society can afford to educate its future scientists to engage in research without ever understanding how the methods and techniques they use or the knowledge they generate can benefit or harm others.

Role for both societies and universities.





"Graduate programs...have a responsibility to prepare future scientists for the social responsibility that goes with being a scientist." (2006)

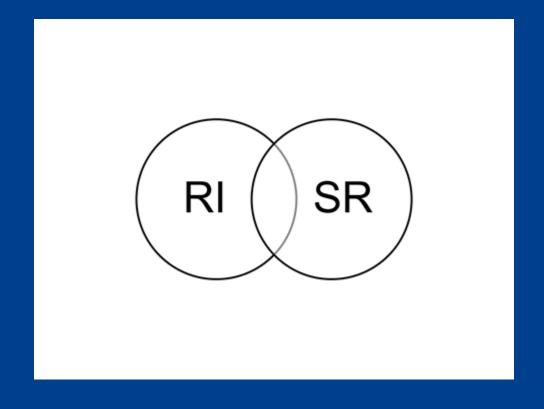


Every field of study, no matter how "technical," is a community of practice. For this reason, no field is "value-free." Every community of practice is framed by communal values and ethical responsibilities; these expectations need to be made explicit and fully explored among students and faculty.

Similarly, every field is rife with contested questions whose resolution may have far-reaching human consequences....When students choose a field of study, they need and deserve the opportunity to explore openly all of the issues basic to their community with their fellow students and with guidance from mentors. They should have many occasions to clarify and apply their own sense of ethical, professional, and civic responsibilities as they move forward in their chosen course of study.

Association of American Colleges and Universities College Learning for the New Global Century, 2007







### Singapore Statement on Research Integrity, 2010

Preamble

"The value and benefits of research are vitally dependent on the integrity of research."



# Empower young scientists to act on their social responsibilities

- \*to be clear about their own values and that of their profession/discipline
- \*to be sensitive to the values held by others (to listen)
- \*to understand the social complexity of the issues they will face
- \*to cultivate the confidence, insights, and tools/skills needed to fulfill their professional and social responsibilities



The integrity of the scientific method and its findings has always been central to what scientists do and how others perceive science. That is one feature of science not likely to change. Neither are calls for greater public accountability on the part of scientists likely to change, not when science is increasingly interconnected with major social, economic, and political issues.



What is likely to change, however, is how we handle the threats to the integrity of science from within and externally, and how we demonstrate both to ourselves and to the larger society that, as scientists, we accept responsibility for what we do, and expect others to hold us accountable.



