

# **Promoting Research Integrity**

## **Show Me the Data!**

### **Scientific Approaches to Strengthening Research Integrity in Nutrition and Energetics**

**Conference convened by the  
UAB Nutrition Obesity Research Center**

**New Paltz, NY  
August 6-8, 2012**

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**Director, Scientific Responsibility, Human Rights and Law Program**

**American Association for the Advancement of Science**

National Academy of Sciences  
Responsible Science: Ensuring the Integrity of the Research Process  
1992

*Scientists and their institutions "should foster an environment...that encourage[s] responsible research practices."*

Institute of Medicine  
Integrity in Scientific Research: Creating an Environment that Promotes  
Responsible Conduct  
2002

*"Fostering an environment that promotes integrity in the conduct of research is an important part of...accountability."*

Public Health Service Policies on Research Misconduct  
May 17, 2005

Section 93.000(c)

*"Foster a research environment that promotes the responsible conduct of research...."*

The concordat to support research integrity



There should be...a research environment that nurtures...a culture of research integrity.

## Singapore Statement on Research Integrity

Preamble. The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

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### PRINCIPLES

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*Honesty* in all aspects of research

*Accountability* in the conduct of research

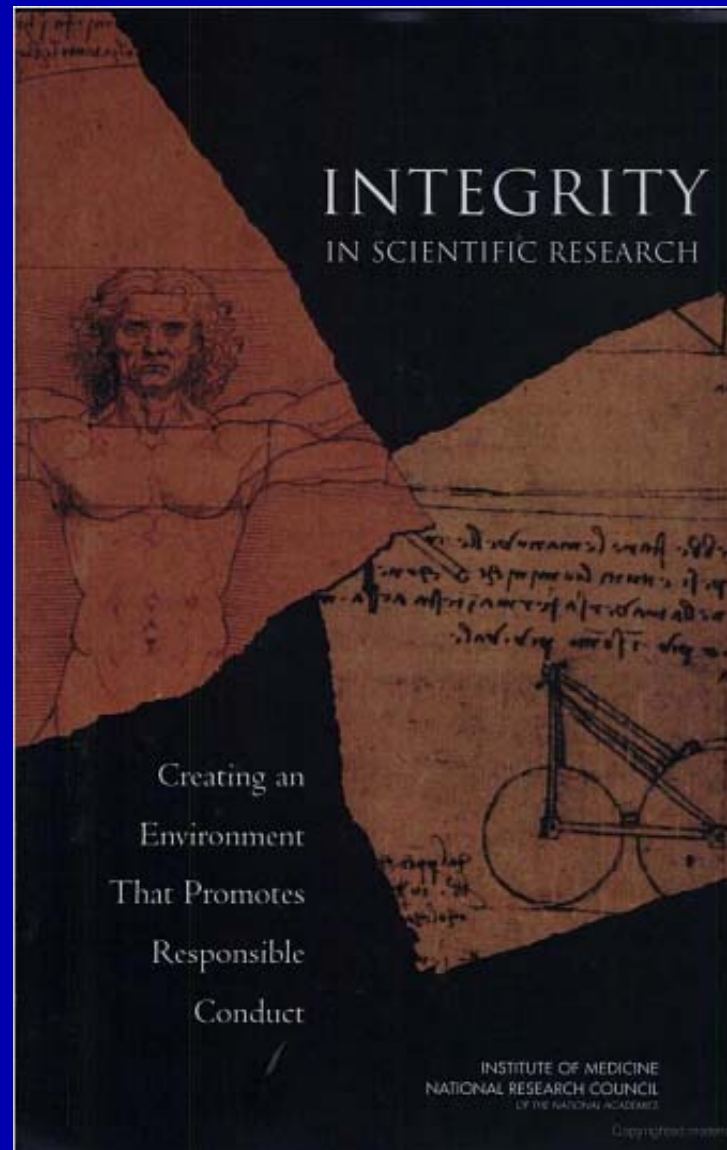
*Professional courtesy and fairness* in working with others

*Good stewardship* of research on behalf of others

**13. Research Environments:** Research institutions should create and sustain environments that encourage integrity through education, clear policies, and reasonable standards for advancement, while fostering work environments that support research integrity.

What Constitutes a Research  
Environment that Fosters Research  
Integrity?

How Can We Know Whether It's  
Working?



# THE NATIONAL ACADEMIES

## Institute of Medicine Committee on Assessing Integrity in Research Environments

### Statement of Task

The Institute of Medicine (IOM) and the National Research Council (NRC) will establish a committee to address the expressed need of the Department of Health and Human Services for a means of tracking the state of integrity in the research environment. The committee will (1) define the concept “research integrity”, (2) describe and define the concept “research environment”, (3) **identify elements of the research environment that promote research integrity**, (4) **indicate how the elements may be measured**, (5) suggest appropriate methodology for collecting the data, (6) **cite appropriate outcome measures**, (7) **make recommendations regarding adoption and implementation** by research institutions, government agencies, scientific societies, and others (as appropriate) **of those identified elements of the research environment that promote research integrity**, and (8) convene a public meeting to discuss the IOM report, recommendations, and potential strategies for implementation.

## External Environment: Direct & Indirect

- Funding
  - Gov't legislation, regulations, court rulings
  - Job market
  - Scientific societies
  - Professional journals
- 
- Media
  - Public opinion/literacy
  - Domestic & international economic situation

Institute of Medicine  
Integrity in Scientific Research: Creating an Environment that Promotes  
Responsible Conduct  
2002

*The external environment...over which individuals and often institutions have little control, can affect behavior and alter institutional integrity for better or worse.*



Institute of Medicine  
Integrity in Scientific Research: Creating an Environment  
that Promotes Responsible Conduct  
2002

Since each individual researcher brings unique qualities to the research environment, the constants must come from the environment itself.

Research institutions bear the primary burden of promoting and monitoring the responsible conduct of research.

The vigor, resources, and attitudes with which institutions carry out their responsibilities will influence investigators' commitment and adherence to responsible research practices.

“Institutions should develop a multifaceted approach to promoting integrity in research appropriate to their research environment.”

## Multifaceted Approach?

- Clear articulation of institutional norms and ethical expectations, including rewards and sanctions
- Visible and supportive institutional leadership
- Mechanisms for reporting behavior in conflict with norms, policies, etc.
- Fair and timely responses to violations
- Education and training in research integrity
- Policies and procedures that comply with regulations
- Effective mentoring in RCR

Institute of Medicine

Integrity in Scientific Research: Creating an  
Environment that Promotes Responsible Conduct

2002

To optimize the institutional approach to fostering the responsible conduct of research, it is critical that organizations simultaneously implement processes for evaluating their efforts, thereby establishing a basis for organizational learning and continuous quality improvement.

Two other reasons: To be accountable to others and to determine most effective resource allocations.

## Institute of Medicine Integrity in Scientific Research: Creating an Environment that Promotes Responsible Conduct 2002

- Despite the importance of integrity to sound research, the means of promoting integrity in the individual researcher and developing an institutional climate that fosters integrity are not precisely known.
- There are no established measures for assessing integrity in the research environment.
- There is a lack of evidence to definitively support any one way to approach...promoting and evaluating research integrity.
- The committee found that existing data are insufficient to enable it to draw definitive conclusions as to which elements of the research environment promote integrity.

Institute of Medicine  
Integrity in Scientific Research: Creating an  
Environment that Promotes Responsible Conduct  
2002

“Thus, the committee drew on more general theoretical and research literature to inform its discussion. Relevant literature was found in the areas of organizational behavior and processes, ethical cultures and climate, moral development, adult learning and educational practices, and professional socialization.”

## What research\* tells us...

- Work environment, and members' perception of it, "are critical determinants of individual attitudes and behavior in organizations."
- What is communicated by the institutional environment helps members make sense of what goes on and what is expected of them in an organization.
- Organization's environment is especially influential determinant of ethical conduct in organizations.
- An organization's environment has a "profound impact on pressure, misconduct, reporting, and retaliation" as experienced by members of an organization.

### Conclusion

- "Research in organizational behavior indicates that the ethical...[environment] of an institution can either inhibit or promote the responsible conduct of research." (IOM Report)

\*Based on studies in fields such as management, psychology, business ethics, organizational development.


*Business & Society* June 2010 vol. 49(2):  
345-358

*Conceptualizing and Measuring Ethical Work*

*Climate Development and Validation of the Ethical Climate  
Index*

Anke Arnaud  
*Embry-Riddle Aeronautical University*





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## Center for Academic Integrity

### Assessment Guide

The Academic Integrity Assessment Guide is the most powerful tool to assist colleges, universities, and secondary schools to **assess the climate of academic integrity on their campuses**. The guide will help your institution:

- Evaluate its current academic integrity programs and policies
- Assess campus attitudes and conduct in the classroom, the lab, and the exam room.
- Identify areas — from sanctions to educational programs — that need strengthening
- Develop specific plans for improving the adherence to standards of academic honesty.
- Give prominence to a dialogue about academic integrity on your campus.
- Increase the awareness of academic integrity issues among faculty, students, and administrators.

Academic integrity is a fundamental value of teaching, learning and scholarship. Yet there is growing evidence that students are cheating and plagiarizing in record numbers. The Academic Integrity Assessment Guide will help your college or university address this critical issue in a proactive and constructive way.

User's Manual  
for the  
Survey of Organizational Research  
Climate

This document provides a description of the survey including a brief overview of its background and development, terms of permission to use the survey, intended respondents and settings, administration and scoring instructions and considerations regarding data analysis and reporting basics.

Carol R. Thrush, Brian C. Martinson, A. Lauren Crain, James A. Wells

3/1/2011



## Assessment Characteristics

### Process evaluation

Designed to track which program activities were actually performed and measure their outputs, what they did (e.g., ethics training and recall of specific skills and knowledge).

Activities and outputs have little value, in and of themselves, in offering measures of effectiveness. Their primary value derives from their contribution to achieving program outcomes.

## Assessment Characteristics (con't.)

### Outcomes Evaluation

Concerned with the extent to which a program achieves its intended results (e.g., measures changes in the lives, attitudes, and conduct of an organization's employees).

- Is there less misconduct?
- Are employees and agents able to recognize ethical issues on the job?
- How often are decisions made with reference to standards, procedures, and expectations?
- How willing are employees and agents to seek advice?
- How willing are employees and agents to report concerns?
- How satisfied are those who report their concerns with management's response?

Evaluating program processes answers the question, Did we do what we said we would do?

Evaluating program outcomes adds the question, Did the changes we expected occur?

Together, they help answer the question, have the changes enhanced or impeded achieving the environment we want?

When the assessment is done, it may be used to:

- Give an organization a picture of the current ethical environment
- Establish a "baseline" for comparison with subsequent assessments
- Compare the findings with other similarly situated organizations

## Metrics for Assessing an Environment for Promoting Research Integrity

- Unit of analysis (e.g., research team, laboratory, department, school, organization, some combination of the aforementioned)?
- Documentation: Reality & Perception

Metric: Researchers' views of the clarity and fairness of institutional policies and procedures for reporting misconduct.

Metric: Researchers' satisfaction with institution's response to reports of violation.

Metric: Options for seeking ethics guidance, usage, and satisfaction.

Metric: Extent of efforts by advisors to discuss with advisees key principles of research integrity and their application in various context (e.g., authorship, data sharing, etc.).

Metric: Institution's resource allocation for enhancing an ethical research environment.

Metric: Efforts by senior administrators to communicate high expectations for research integrity and their perceived effectiveness.