

Research Ethics throughout the Curriculum: Promoting Scholarly Integrity at the University of Arizona

Andrew C. Comrie, Ph.D.

Dean, Graduate College & Assoc VP for Research

Acknowledgements:

Elizabeth Boyd, Ph.D.

Tina Tarin



Goals of the Project

- To build an **integrated** RCR training program that:
 - **maximizes opportunities** for exposure to concepts and best practices;
 - provides **multiple levels of engagement** for students, trainees, and faculty;
 - and engages individuals through **multiple modes of interaction**.

CGS PSI Project Activities @ UA

- Full-day Conference



JANUARY 22, 2010
 Catalina Room – Student Union

8:15 a.m. – 8:45 a.m. Check-in & Breakfast
 8:45 a.m. – 9:00 a.m. Announcements
 9:00 a.m. – 9:15 a.m. Welcome Address
 Andrew Comrie, Ph.D.
 Associate Vice President for Research
 Dean of the Graduate College
 Director, Graduate Interdisciplinary Programs
 Professor of Geography

PLENARY SESSIONS – A.M.
 9:15 a.m. – 9:30 a.m. *“Why are we here? Where are we going?”*
 RCR Overview
 Elizabeth Boyd, Ph.D.
 Assistant Vice President for Research Compliance & Policy
 Office for the Responsible Conduct of Research
 Associate Professor of Pharmacy Practice & Science

9:35 a.m. – 10:15 a.m. *“Successful Research in Indian Country: Respecting the Cultural Integrity & Sovereignty of Native Nations”*
 Benedict J. Colombi, Ph.D., Assistant Professor
 Nancy Parazo, Ph.D., Professor
 Kathleen Van Vaak, Ph.D., Candidate
 Department of American Indian Studies

10:20 a.m. – 11:00 a.m. *“The Darkroom is Closed - Image Ethics for a New Generation”*
 Doug Cromeey, Ph.D.
 Assistant Scientific Investigator
 Department of Cell Biology & Anatomy

11:00 a.m. – 11:35 a.m. *“Mentoring with Integrity”*
 Jenny Hill, Ph.D., Professor
 Speech, Language, and Hearing Sciences

- Half-day workshops

Responsible Conduct of Research Workshop

Date: October 28, 2010
Location: Box 1 Meeting Building, Room 102
Time: 7:30 PM – 5:00 PM (Registration 7:30-1:00 pm)
RCR Training Credit: = 4 hours (RFA A&M requirement)

Workshop Topics:
 Data Acquisition & Management
 Plagiarism
 Communication
 Student/Postdoctoral Fellowships
 Mentoring/Supervision
 Publication/Peer Review

For registration contact: Elizabeth Boyd 520.924.4108
 Jen Hill 520.924.7911

The Office for the Responsible Conduct of Research
 1100 South University Avenue, Room 102, Tucson, AZ 85724

If we build it, they will come...

Small Grants Program in Research Integrity

Deadline Extended!

call for grant proposals

Have you ever wished for a one-stop shop for research integrity resources? Do you have innovative and creative ideas for training graduate students in the responsible conduct of research?

Benefits: For the Responsible Conduct of Research (RCR) Act, the University of Arizona has established the Small Grants Program in Research Integrity. Funds will be awarded to support the development of course materials, training modules, and other teaching materials for graduate students, understanding of the responsible conduct of research. All monetary awards will be distributed to the RCR/Responsible Integrity Training Center. The Center will be responsible for locally awarded grants and will provide administrative support for other awards. Proposals should include designs for a participant learning environment and provide a training registration fee.

Mentoring
 Authorship
 Plagiarism

Data Imaging & Manipulation
 Conflict of Interest
 Genetics, rDNA, or vaccine research

Public notice is hereby given that on October 11, 2010, the University of Arizona received a grant from the National Science Foundation to support the Small Grants Program in Research Integrity. The program is intended to encourage faculty/graduate student partnerships to develop training materials that demonstrate or discuss responsible research practices. Topical areas of interest are listed below.

- Small grants program

THE UNIVERSITY OF ARIZONA

Office for the RESPONSIBLE CONDUCT OF RESEARCH

Project for Scholarly Integrity

ORCR UNITS

- Contact Us
- Project for Scholarly Integrity
- Training & Education
- Chemical Lab Safety and Medical Gas Information
- Human Subjects Protection Program
- Biosafety & Biosecurity
- Conflict of Interest
- Report Controls (ITAP/EAB)
- HPAA
- Institutional Animal Care and Use Committee
- Quality Assurance
- Radiation Control Office
- Research Integrity
- University Animal Care
- University Ethics & Compliance Hotline
- Office of the Vice President for Research, Graduate Studies, and Economic Development
- Additional Resources

Project History
 The initiative calls upon institutions to advance the scope and quality of graduate education in the ethical and responsible conduct of research, through the development of diverse and innovative teaching models. Sponsored by [The Council for Graduate Schools \(CGS\)](#), the only national organization in the United States that is dedicated solely to the advancement of graduate education and research.

Project Summary
 This project seeks to build an integrated program of training in the responsible conduct of research at the University of Arizona. Our educational activities will coincide with – and contribute to – campus-wide discussions to formulate and implement new institutional policies to promote the responsible conduct of research.

Overview of Project Activities

- Program Inventory Survey**
 A campus-wide survey of activities related to the responsible conduct of research and scholarly integrity.
- Survey Results**
- Campus Climate Survey**
 A campus-wide survey to assess the climate of research integrity in graduate education programs at the University of Arizona.
- Survey Details**
- Research Integrity Days**
 Conferences
 Included workshops conducted by national and international leaders in research integrity issues.
- Post-Conference Update**
 Conference Presentation
 Bibliography
 Conference Announcement
 Conference Agenda
- Research Integrity Small Grants Program**
 The program is intended to encourage faculty/graduate student partnerships to develop training materials that demonstrate or discuss responsible research practices. Topical areas of interest

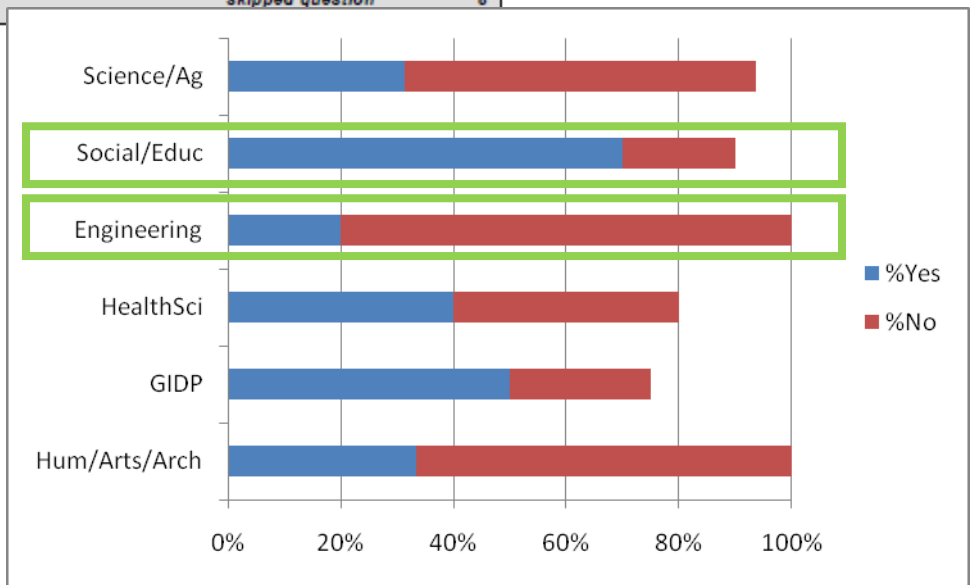
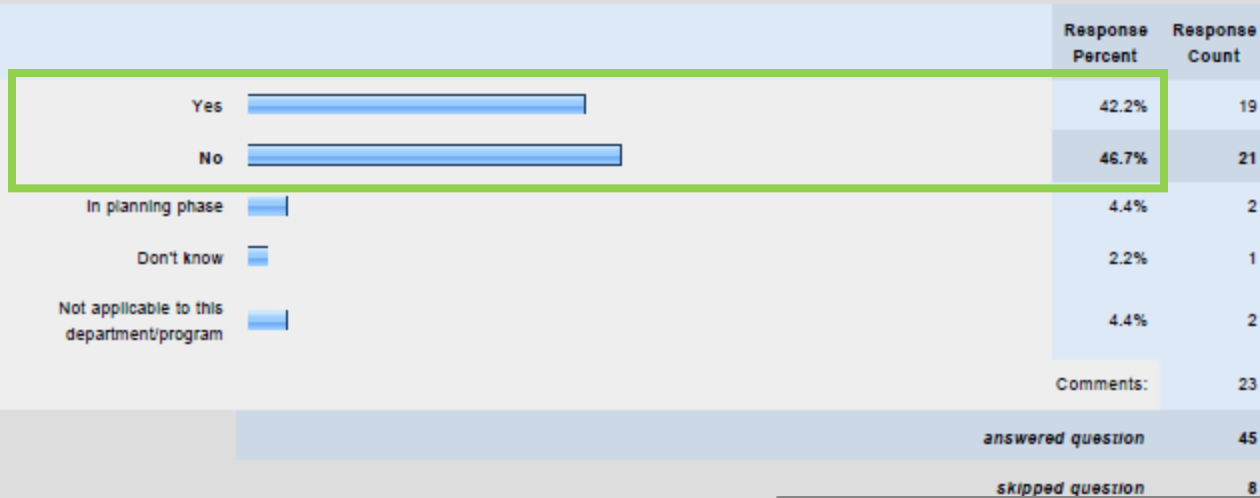
- Resource Center

The Institutional Activities Assessment

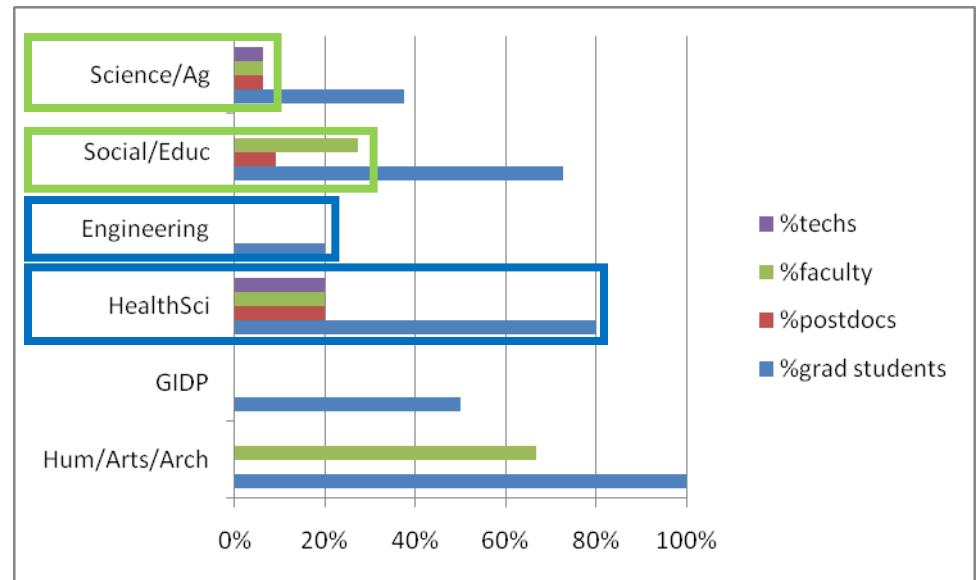
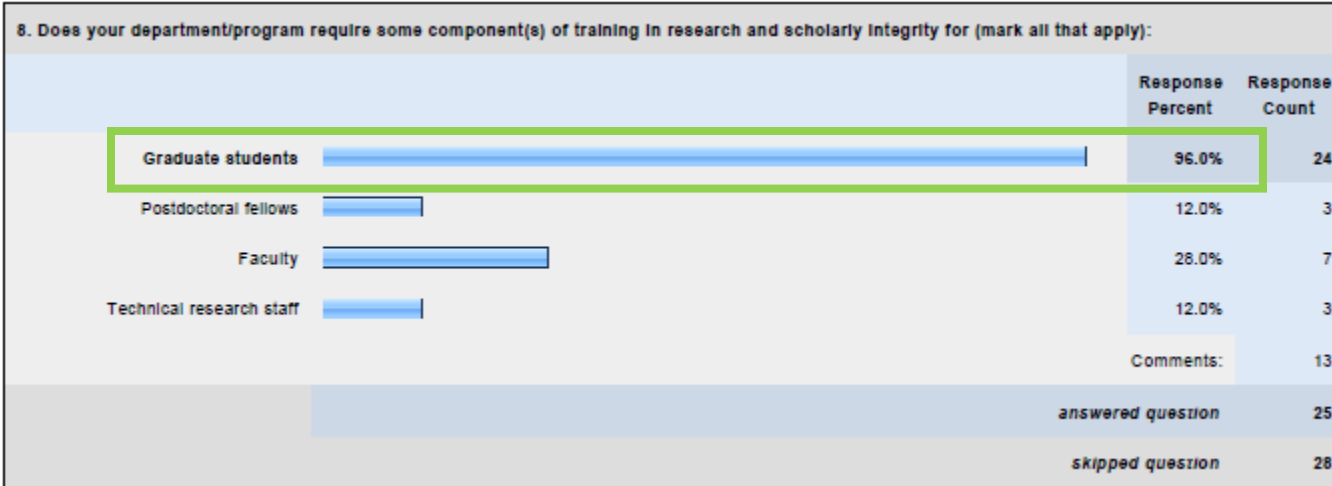
- What did we learn from assessment of institutional and program activities that support research ethics education?
 - RCR/ethics education in the Graduate College and the University is dispersed, variable, and inconsistent
 - Low response may rate reflect communication obstacles, survey fatigue, and relevance issues
 - Terminology may bias some disciplines
 - General campus climate regarding central administration

Dept holds RCR forums/speakers/classes?

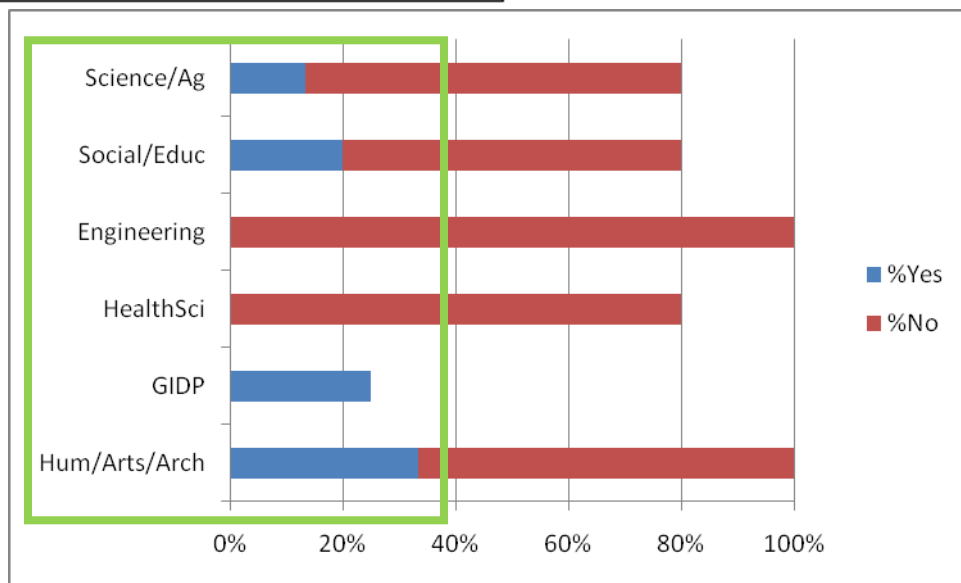
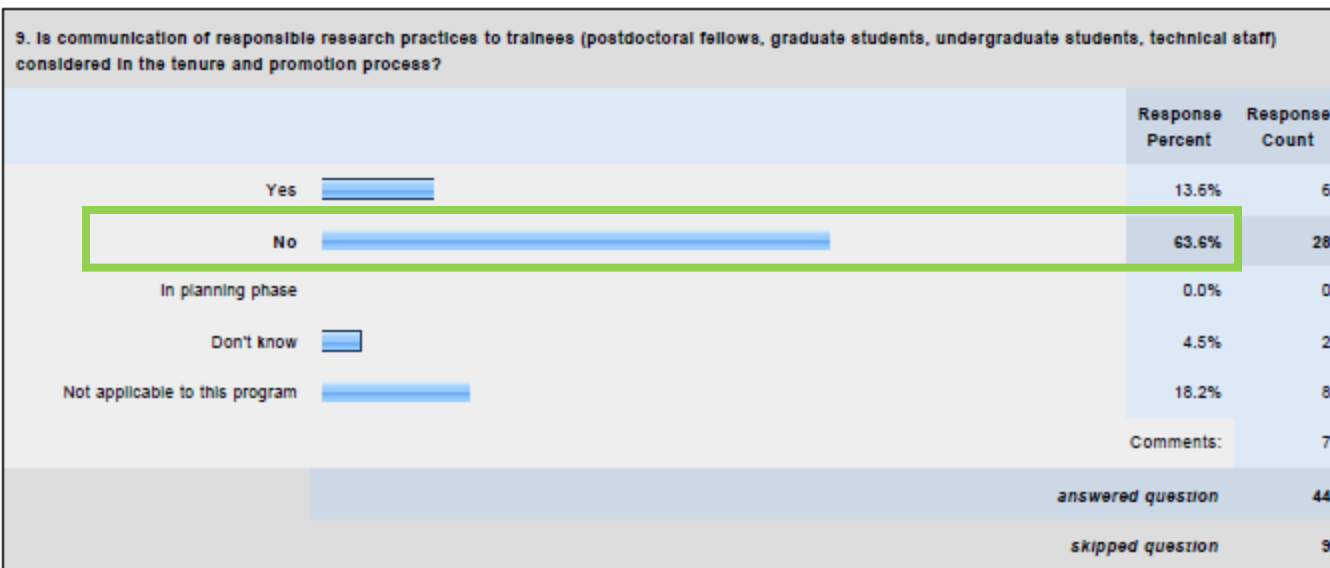
4. Does your department/program hold forums that address responsible conduct of research and scholarly activities, at least in part? Examples include, but are not limited to, speaker series, seminars and workshops or a formal class. Please include the frequency, audience and title/topic of SPECIFIC programs you conduct in the comments box.



Dept requires RCR training for...?



Faculty to trainee/grad RCR role in P&T?



How do grad students learn about RCR topics?

13. How do your *graduate students* learn about the following research and scholarly integrity topics? Please mark all that apply.

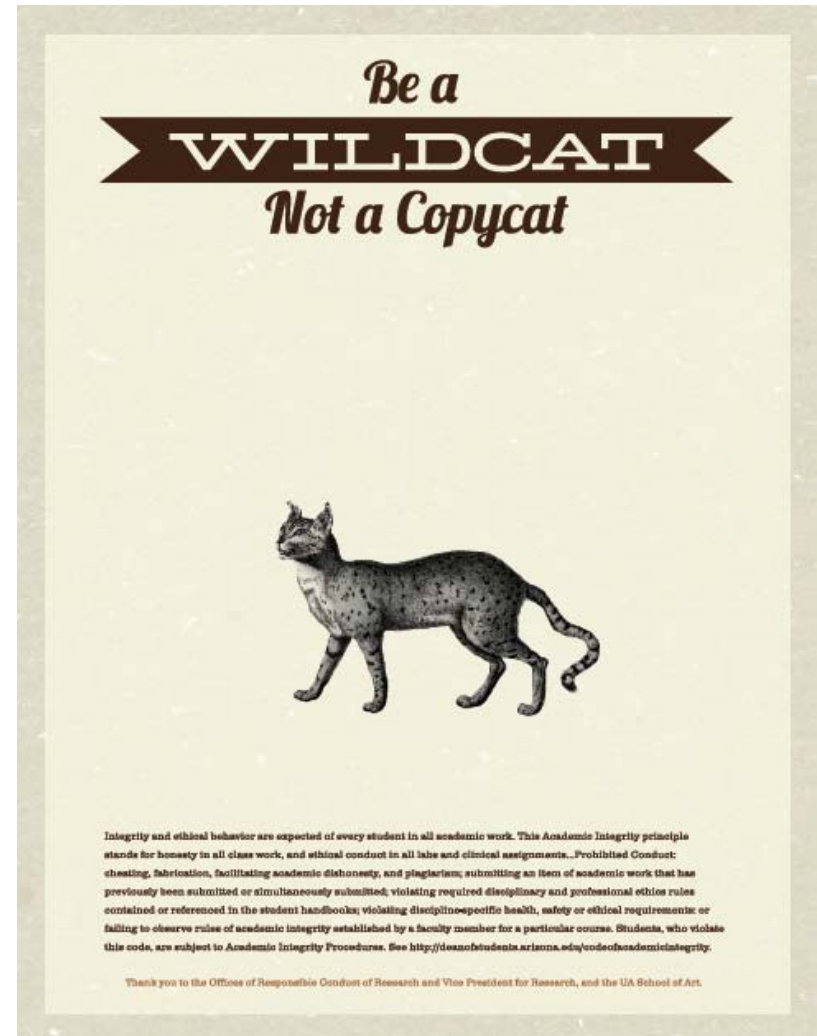
	Advisor or Mentor	Courses (classroom)	Workshops (e.g. RCR)	Printed materials	Web-based materials (e.g. online modules)	No Resource	N/A	Response Count
Data acquisition, management, sharing and ownership	85.0% (34)	37.5% (19)	12.5% (5)	15.0% (6)	17.5% (7)	0.0% (0)	5.0% (2)	40
Conflicts of Interest and commitment	80.0% (32)	37.5% (15)	12.5% (5)	17.5% (7)	22.5% (9)	7.5% (3)	5.0% (2)	40
Use of human participants in research	72.5% (29)	45.0% (18)	15.0% (6)	27.5% (11)	42.5% (17)	0.0% (0)	17.5% (7)	40
Use of animals in research	37.5% (15)	12.5% (5)	5.0% (2)	17.5% (7)	17.5% (7)	2.5% (1)	57.5% (23)	40
Use of hazardous substances	47.5% (19)	20.0% (8)	22.5% (9)	25.0% (10)	20.0% (8)	2.5% (1)	42.5% (17)	40
Research misconduct	84.6% (33)	51.3% (20)	15.4% (6)	20.5% (8)	23.1% (9)	5.1% (2)	0.0% (0)	39
Publication practices and responsible authorship (including plagiarism)	87.2% (34)	53.8% (21)	17.9% (7)	25.6% (10)	20.5% (8)	5.1% (2)	0.0% (0)	39
Mentor and trainee responsibilities	82.5% (33)	37.5% (15)	7.5% (3)	7.5% (3)	2.5% (1)	5.0% (2)	10.0% (4)	40
Peer review (manuscript, grants)	87.5% (35)	52.5% (21)	7.5% (3)	15.0% (6)	10.0% (4)	5.0% (2)	0.0% (0)	40
Collaborative research	87.2% (34)	41.0% (16)	2.6% (1)	10.3% (4)	7.7% (3)	2.6% (1)	2.6% (1)	39
Personnel Management	54.1% (20)	18.9% (7)	2.7% (1)	5.4% (2)	2.7% (1)	10.8% (4)	29.7% (11)	37
Financial Stewardship (grant management)	57.9% (22)	15.8% (6)	2.6% (1)	7.9% (3)	7.9% (3)	10.5% (4)	23.7% (9)	38
							Other methods (please fill in box):	6
							<i>answered question</i>	40
							<i>skipped question</i>	13

Outcomes of Activities Assessment

- Areas for Intervention
 - Responses for Humanities and Arts (did they ignore this because they saw it as not relevant to their field?)
 - RCR interpretation/explanation in Health Sciences
 - RCR activities/classes in Engineering and Sciences
 - Add RCR statement/info on all dept websites
 - Increase “difficult discussions” in Science and Engineering
 - Programs for postdocs and techs (orientation & in service)
 - Ways to engage faculty in RCR programs (beyond online IRB)
- Some challenges and some (simple) solutions:
 - Who to target?
 - What to present?
 - When to reach your audience?
 - How to deliver content?

Who to target?

- **Challenge:** Identifying audiences and providing instruction
- **A Solution:** Central role for graduate students in driving RCR training
 - Grad-to-grad
 - Grad w/ faculty
 - Grad-to-undergrad



CHEATING

it's a pain in the...



Students at the University of Arizona, who are found in violation of the Code of Academic Integrity, are subject to Academic Integrity Procedures. These procedures sometimes take weeks or months of hearings and appeals, and can result in a notation on the student's transcript or revocation of a student's degree, additional sanctions, suspension or expulsion from the University. Prohibited Conduct: cheating, fabrication, facilitating academic dishonesty, and plagiarism; submitting an item of academic work that has previously been submitted or simultaneously submitted; violating required disciplinary and professional ethics rules contained or referenced in the student handbook; violating discipline-specific health, safety or ethical requirements; or failing to observe rules of academic integrity established by a faculty member for a particular course. See <http://www.arizona.edu/codeofacademicintegrity>.

Thank you to the Office of Responsible Conduct of Research and Vice President for Research, and the UA Board of Art.

Cheating is
CHEATING
No matter how you look at it.



Integrity and ethical behavior are expected of every student in all academic work. This Academic Integrity principle stands for honesty in all class work, and ethical conduct in all lab and clinical assignments. Prohibited Conduct: cheating, fabrication, facilitating academic dishonesty, and plagiarism; submitting an item of academic work that has previously been submitted or simultaneously submitted; violating required disciplinary and professional ethics rules contained or referenced in the student handbook; violating discipline-specific health, safety or ethical requirements; or failing to observe rules of academic integrity established by a faculty member for a particular course. Students, who violate this code, are subject to Academic Integrity Procedures. See <http://www.arizona.edu/codeofacademicintegrity>.

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Everytime you
CHEAT
a bunny gets thrown in a puddle.



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A Cheater is a
CHEATER
no matter how small.



Cheating at the University of Arizona is any violation of the Code of Academic Integrity which includes: submitting an item of academic work that has previously been submitted or simultaneously submitted; failing to observe rules of academic integrity established by a faculty member for a particular course; violating required disciplinary and professional ethics rules contained or referenced in the student handbook; violating discipline specific health, safety or ethical requirements; or cheating, fabrication, facilitating academic dishonesty, and plagiarism. Integrity and ethical behavior are expected of every student in all academic work. This Academic Integrity principle stands for honesty in all class work, and ethical conduct in all lab and clinical assignments. Students, who violate the code this code, are subject to Academic Integrity Procedures. See <http://www.arizona.edu/codeofacademicintegrity>.

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What to present?

- **Challenge:** RCR represents a broad range of issues and topics, only some of which will be relevant for most audiences.
- Broad-based RCR training helps orient trainees to underlying issues, but is challenging to deliver in an engaging way.
- **A Solution:** Thematic or topic-driven approach



When to reach your audience?

- **Challenge:** Trainees at different stages of their careers may have different needs and different understandings of critical issues.
- **A Solution:** Target particular career-stages



The flyer is titled "Life Science Research Integrity Workshop" and is subtitled "Your Key to Unlock the Opportunities of Graduate Education". It features silhouettes of three people against a world map background. The text is organized into sections: a header, a list of topics, a table of details, and a footer.

Life Science Research Integrity Workshop
Your Key to Unlock the Opportunities of Graduate Education

Designed for Incoming Life Science Graduate Students
Life Science Undergraduate Students, Post Doctor and Faculty on invite

STUDENT-ADVISOR RELATIONSHIPS - AUTHORSHIP - CONFLICT OF INTEREST - HUMAN SUBJECTS - ANIMAL CARE - RESEARCH DESIGN - PUBLICATION - BIOETHICS - RESEARCH MISCONDUCT

Date:	Wednesday September 8, 2010
Location:	Kayling Bioresearch Building, 400A Southrop Room 103 University of Arizona
Time:	11:00 am - 12:00 pm
Highlights:	Dr. Parker Armit, Assistant Professor, Professor, Life Science Ethics - Lunch provided - Advisory Panel Discussion with Life Science Professionals - Interactive Q&A with the speakers and presenters
Co-sponsor:	Arizona Bioethics, University Excellence - RSVP: armit@arizona.edu


Sponsored by the
Office of the Vice President for Research
The Office for the Responsible Conduct of Research

How to deliver RCR content? #1

- **Challenge:** Traditional teaching methods may make RCR seem abstract, compliance-oriented rather than values-based.
- **A Solution:** Locate RCR within the issues at the heart of our disciplines.

March 5 Forum:
Harvill Room 404 - 3:30 pm



- Diane Austin (University of Arizona)
- Joel Walnwright (Ohio State University)
- Michael Goodchild (University of California at Santa Barbara)
- Moderated by Paul Robbins (University of Arizona)

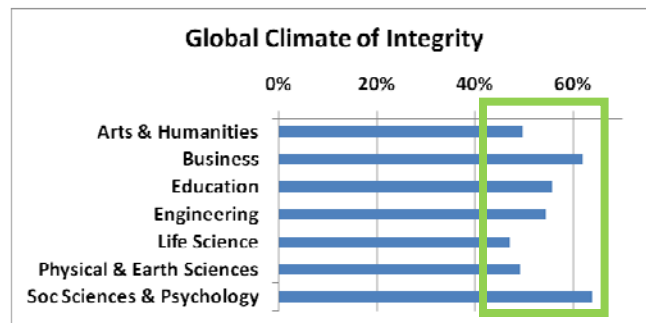
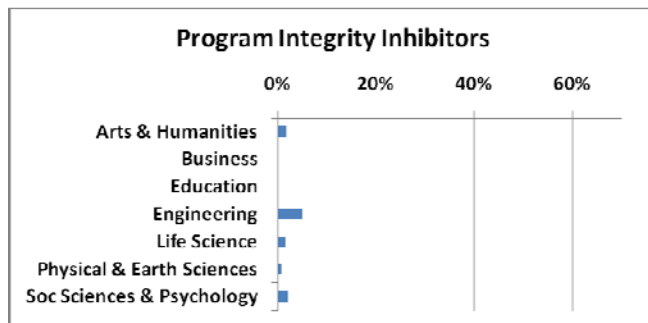
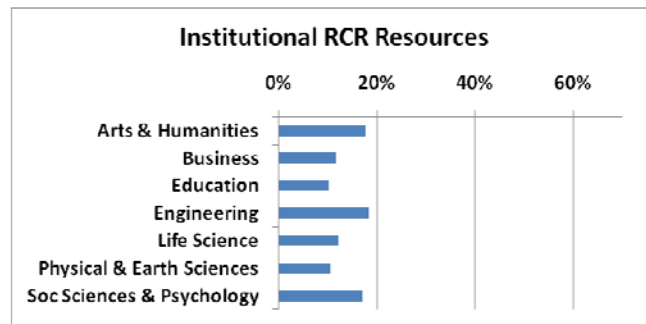
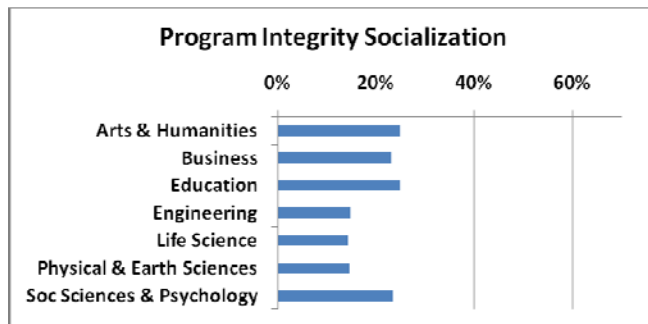
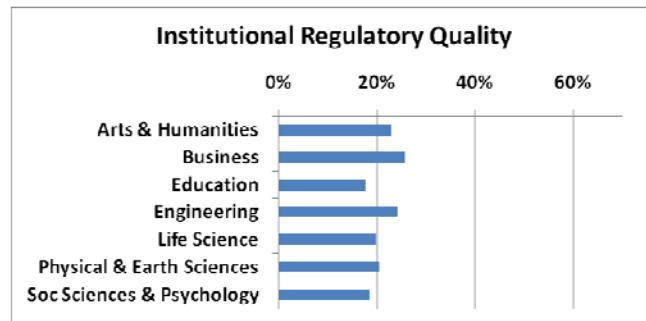
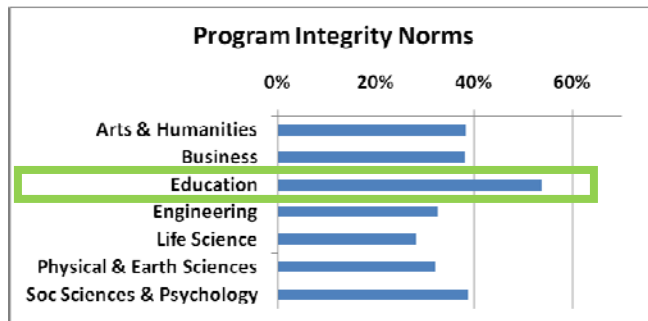
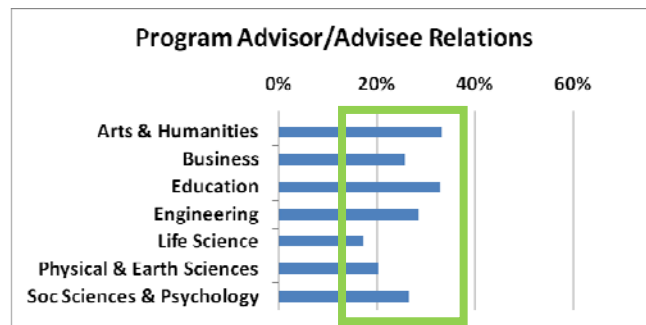
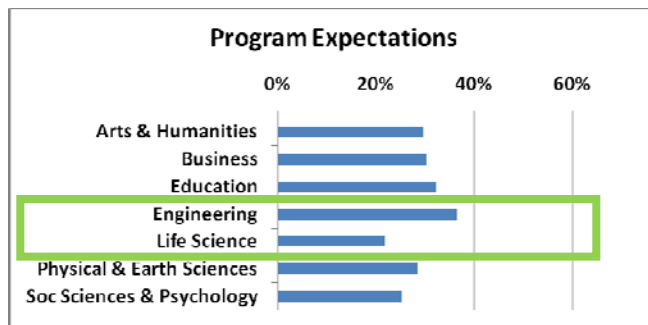
How to deliver RCR content? #2

- **Challenge:** Traditional teaching methods may make RCR seem abstract, compliance-oriented rather than values-based.
- **A Solution:** Locate RCR within the issues at the heart of our disciplines.

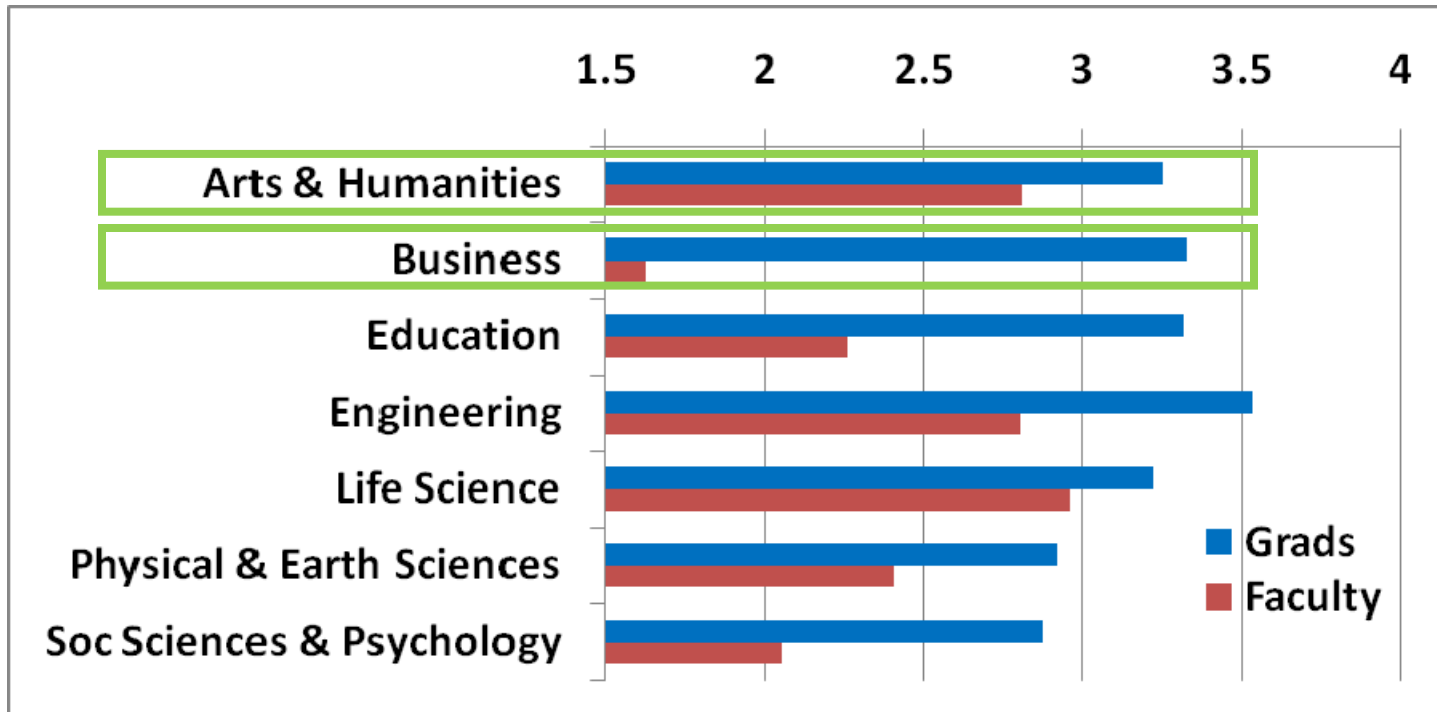


Climate Integrity Survey (%>4.5)

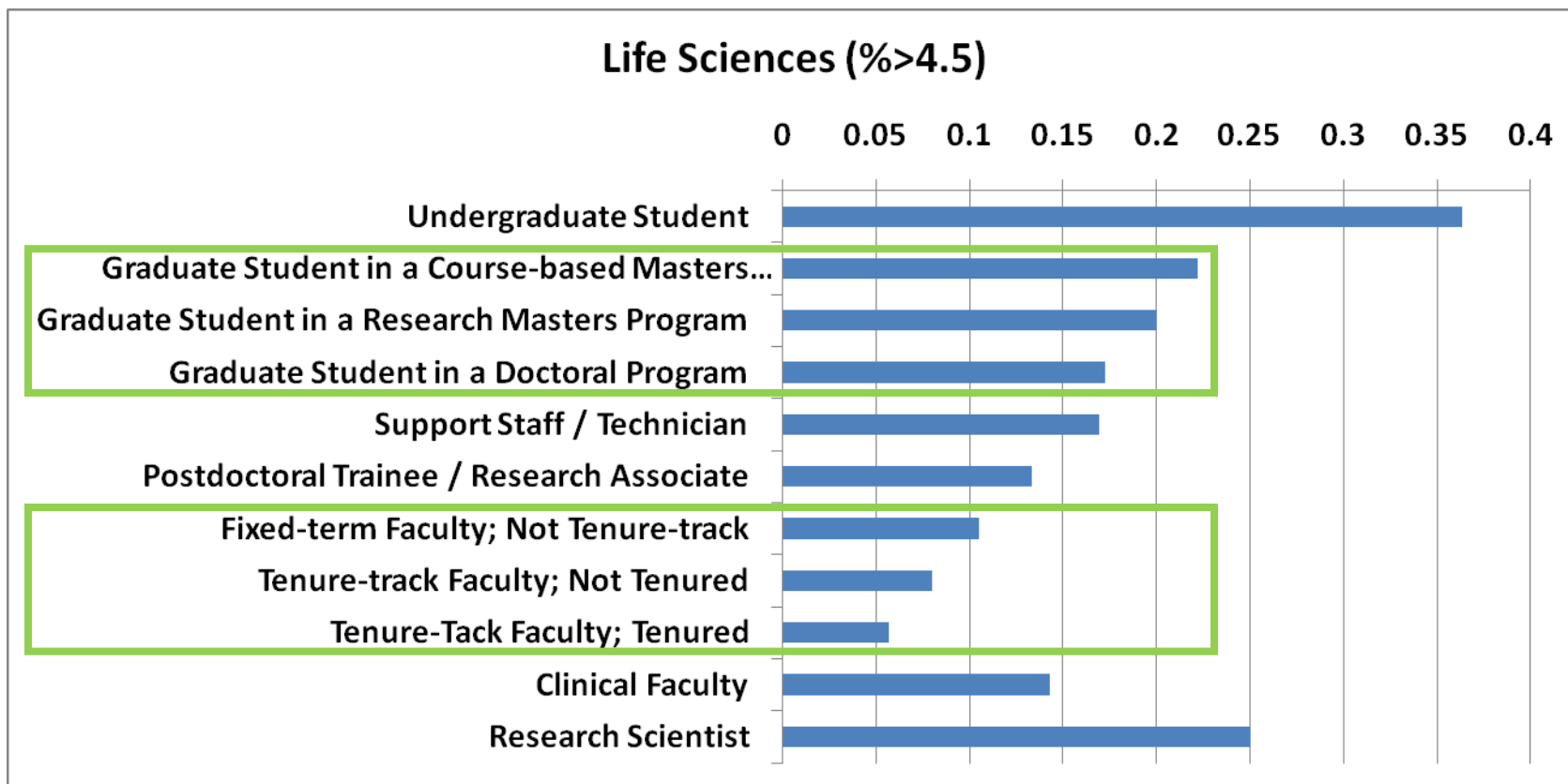
- Thrush/Martinson survey instrument
- Aimed at all researchers
- ~1700 individual responses (~15%)



How beneficial would it be for people in your department/program to receive additional instruction in responsible research practices?



How able are people in your department/program to define research misconduct?



After working with “Carrots”, a “Stick” was introduced: NIH & NSF Regulations

- Resource & how-to web pages
- More workshops
 - Developed set of workshop presenters from faculty etc.
 - Offer multiple topics in interactive sessions
 - Role plays, talks, difficult discussions, web resources, etc.
- Got people’s attention and enabled us to assist in meeting compliance requirements



Office for the RESPONSIBLE CONDUCT OF RESEARCH

Search 

NIH-RCR

ORCR UNITS

- Contact Us
- Project for Scholarly Integrity
- Training & Education
- Chemical Lab Safety and Medical Gas Information
- Human Subjects Protection Program
- Biosafety & Biosecurity
- Conflict of Interest
- Export Controls (ITAR/EAR)
- HIPAA
- Institutional Animal Care and Use Committee
- Quality Assurance
- Radiation Control Office
- Research Integrity
- University Animal Care
- University Ethics & Compliance Hotline
- Office of the Vice President for Research, Graduate Studies, and Economic Development
- Additional Resources

National Institutes of Health (NIH) - RCR Education

As of January 25, 2010, the NIH requires RCR education for faculty, staff and students supported by the following awards: D43, D71, F05, F30, F31, F32, F33, F34, F37, F38, K01, K02, K05, K07, K08, K12, K18, K22, K23, K24, K25, K26, K30, K99/R00, KL1, KL2, R25, R36, T15, T32, T34, T35, T36, T37, T90/R90, TL1, TU2, and U2R, NIH Institutional Research Training Grants, Individual Fellowship Awards, Career Development Awards (Institutional and Individual), Research Education Grants, and Dissertation Research Grants.

Important Note: Completion of RCR education is not a condition of eligibility to apply; however, RCR hours must be completed within 90 days of the post-award date.

Instructions for PI's, Faculty, & Post-Doctoral Researchers	Instructions for Students
<p>Step 1: Complete an individual or group RCR Education Plan.</p> <p>Access the Education Plan form at www.orcr.vpr.arizona.edu/replan</p> <p><i>A copy of the completed plan must be included with grant application documents. If personnel have not been hired at time of submission, base proposed activity on position-specific requirements. Education plans can be updated accordingly during post-award hiring.</i></p>	<p>Step 1: Complete your RCR Education Plan.</p> <p>Access the Education Plan form at www.orcr.vpr.arizona.edu/replan</p> <p><i>Provide a copy of this document to your project PI.</i></p>
<p>Step 2: Complete 8 hours of RCR education within 90 days of the post-award date.</p> <p>Access course descriptions and enrollment options at www.orcr.vpr.arizona.edu/nihadmin</p>	<p>Step 2: Complete 8 hours of RCR education within 90 days of the post-award date.</p> <p>Access course descriptions and enrollment options at www.orcr.vpr.arizona.edu/rcrnhst</p>
<p>Step 3: Complete refresher training every 4 years or upon major career stage changes.</p> <p>Refresher courses will be available in Spring 2011</p>	<p>Step 3: Complete refresher training every 4 years or upon major academic/career stage changes.</p> <p>Refresher courses will be available in Spring 2011</p>
<p>Step 4: Request verification of refresher training from students every 4 years or upon major academic/career stage changes.</p>	

Final Thoughts ...

- **New regulations** helped motivate students/faculty to seek out RCR training opportunities, but also tended to shape their expectations toward more traditional ways of learning
- Designing and delivering high-quality RCR training is labor-intensive and time-consuming – **how do we sustain the initial energy**, especially in difficult economic times?
- **Motivating faculty** to do more or to change what they have been doing **is the most difficult challenge** of all. Our efforts were hampered by packed schedules and curricula, poor communication systems, and ‘old’ ways of thinking.
- **Graduate students are creative, motivated**, and keenly aware of many of the core RCR issues. They are the future of RCR...