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

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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

- Half-day workshops

- Small grants program

- 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.

	Response Percent	Response Count
Yes	42.2%	19
No	46.7%	21
In planning phase	4.4%	2
Don't know	2.2%	1
Not applicable to this department/program	4.4%	2
Comments:		23
answered question		45
skipped question		8
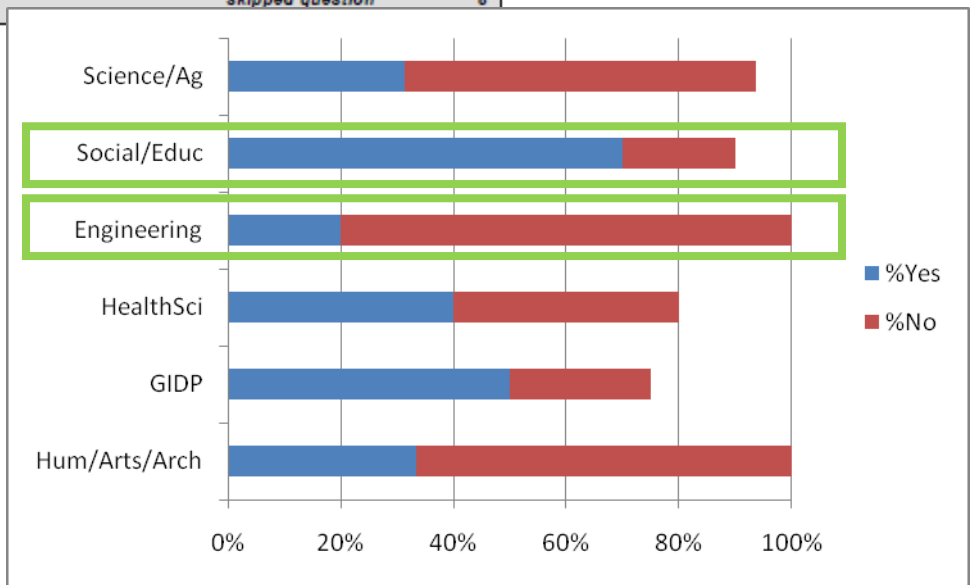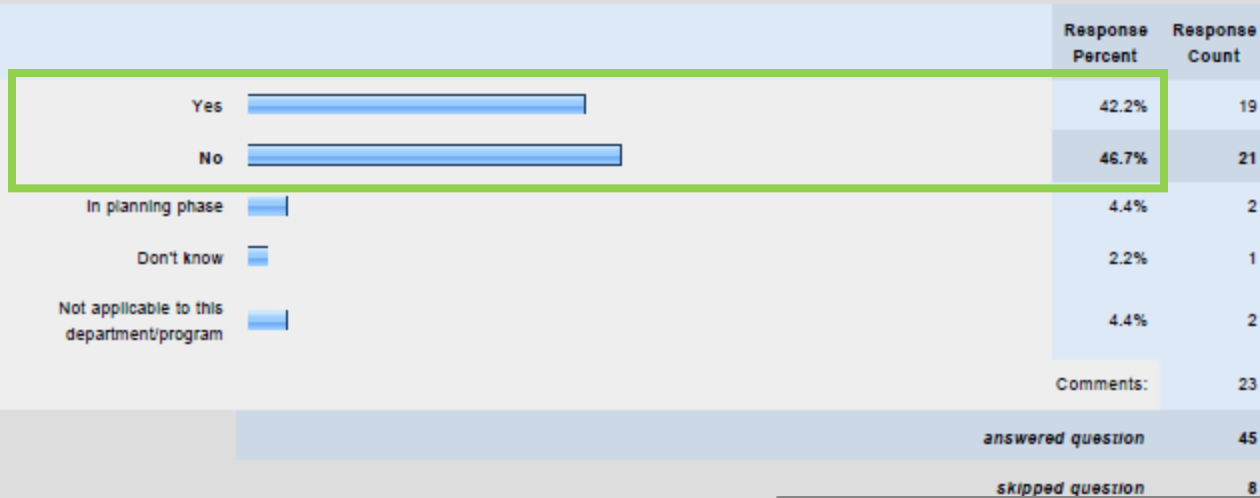
Dept requires RCR training for…?

8. Does your department/program require some component(s) of training in research and scholarly integrity for (mark all that apply):

	Response Percent	Response Count
Graduate students	96.0%	24
Postdoctoral fellows	12.0%	3
Faculty	28.0%	7
Technical research staff	12.0%	3
Comments:		13
answered question		25
skipped question		28
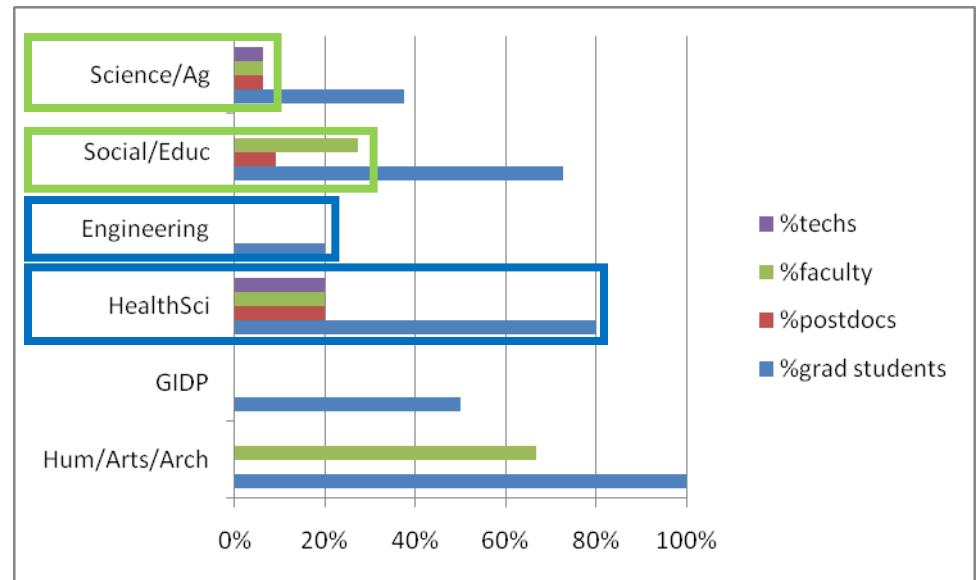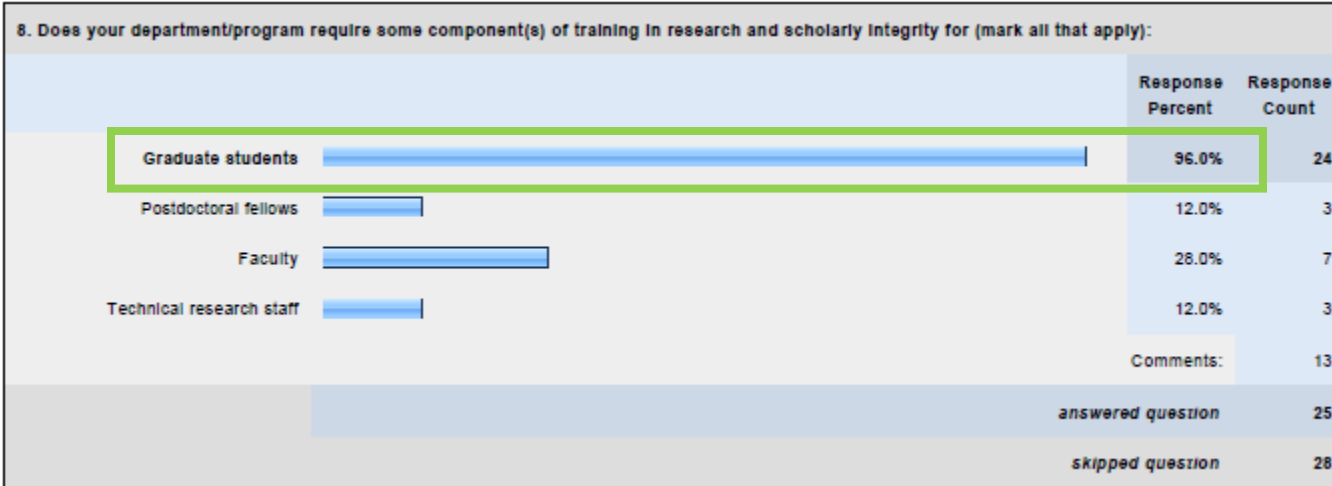
Faculty to trainee/grad RCR role in P&T?

9. Is communication of responsible research practices to trainees (postdoctoral fellows, graduate students, undergraduate students, technical staff) considered in the tenure and promotion process?

	Response Percent	Response Count
Yes	13.6%	6
No	63.6%	28
In planning phase	0.0%	0
Don't know	4.5%	2
Not applicable to this program	18.2%	8
Comments:		7
answered question		44
skipped question		9

How do grad students learn about RCR topics?

Their Mentor!

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)	47.5% (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(grants 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
answered question								40
skipped question								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

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WILDCAT
Not a Copycat

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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 handbooks; 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://deanofstudents.arizona.edu/codeofacademicintegrity.

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CHEATING
No matter how you look at it.

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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.

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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

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When to reach your audience?

- Challenge: Trainees at different stages of their careers may have different needs and different understandings of critical issues.

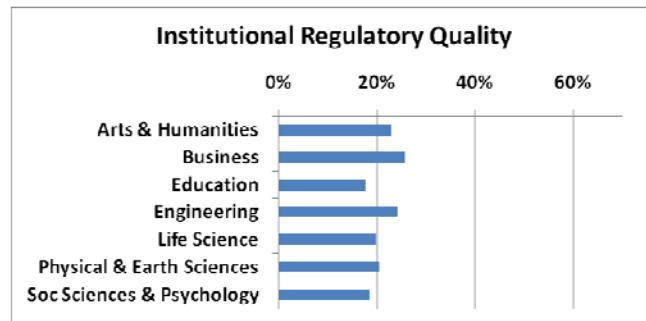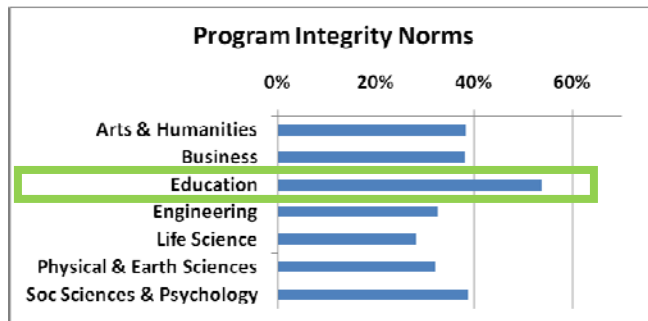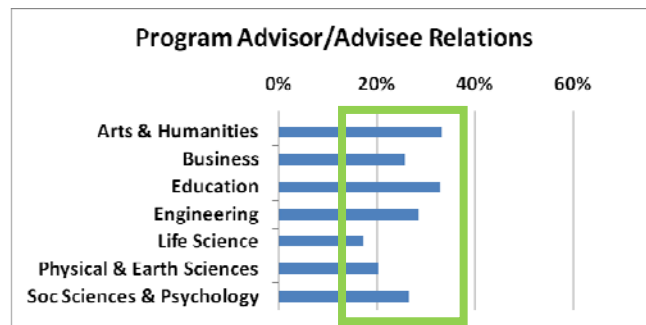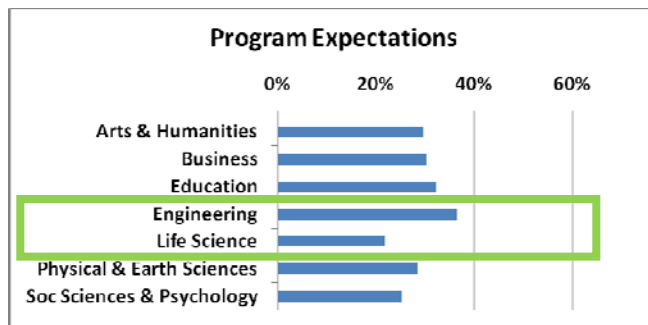- A Solution: Target particular career-stages

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 Wainwright (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%)

Program Expectations

Program Advisor/Advisee Relations

Program Integrity Norms

Institutional Regulatory Quality

Program Integrity Socialization

Institutional RCR Resources

Program Integrity Inhibitors

Global Climate of Integrity
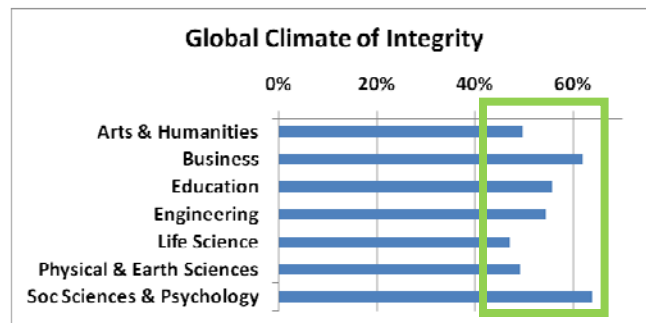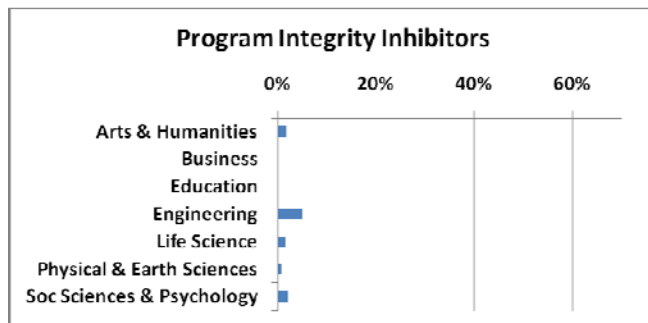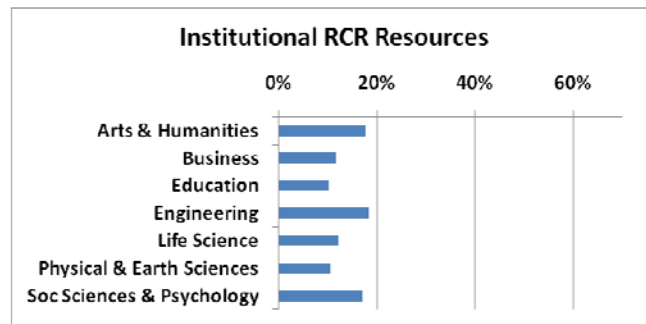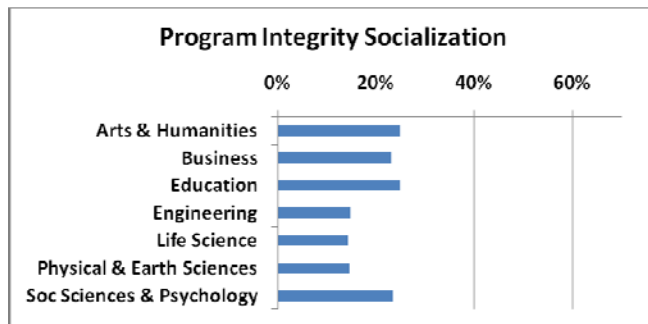
How beneficial would it be for people in your department/program to receive additional instruction in responsible research practices?
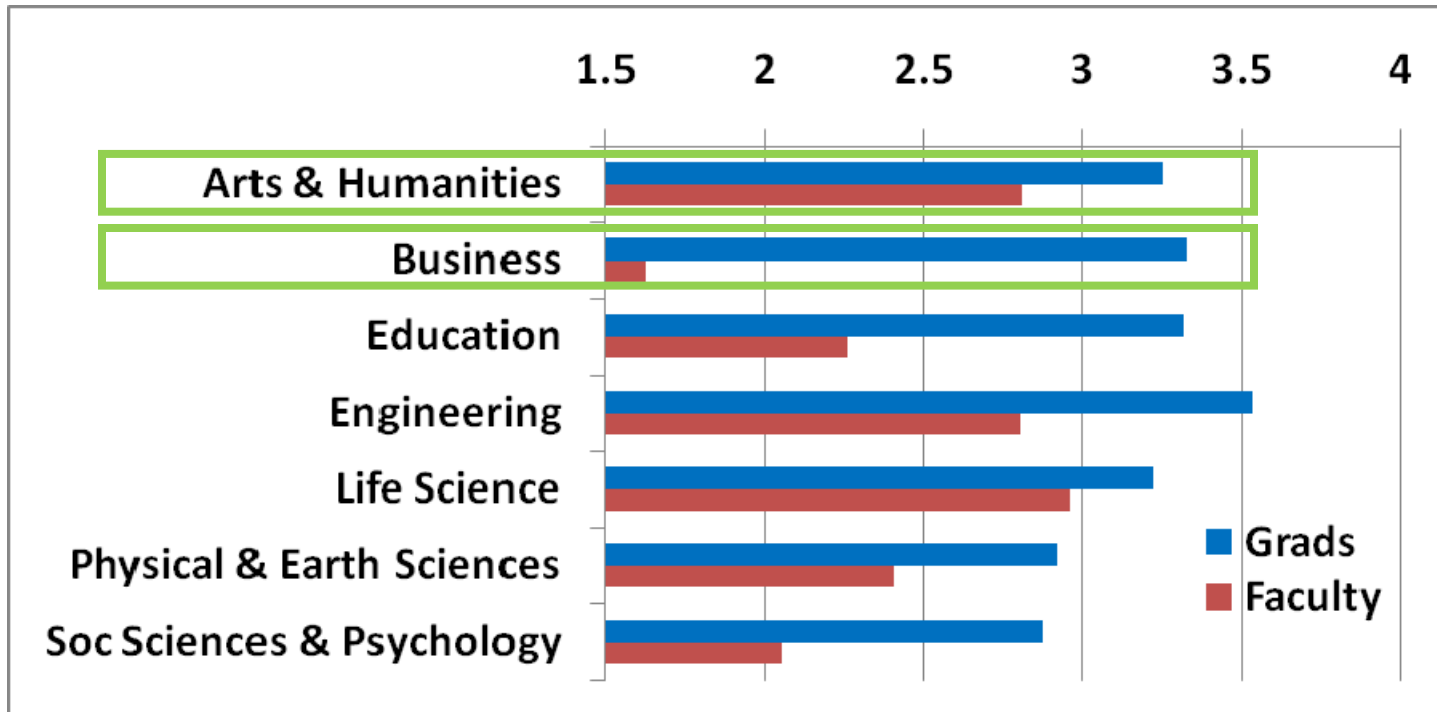
How able are people in your department/program to define research misconduct?
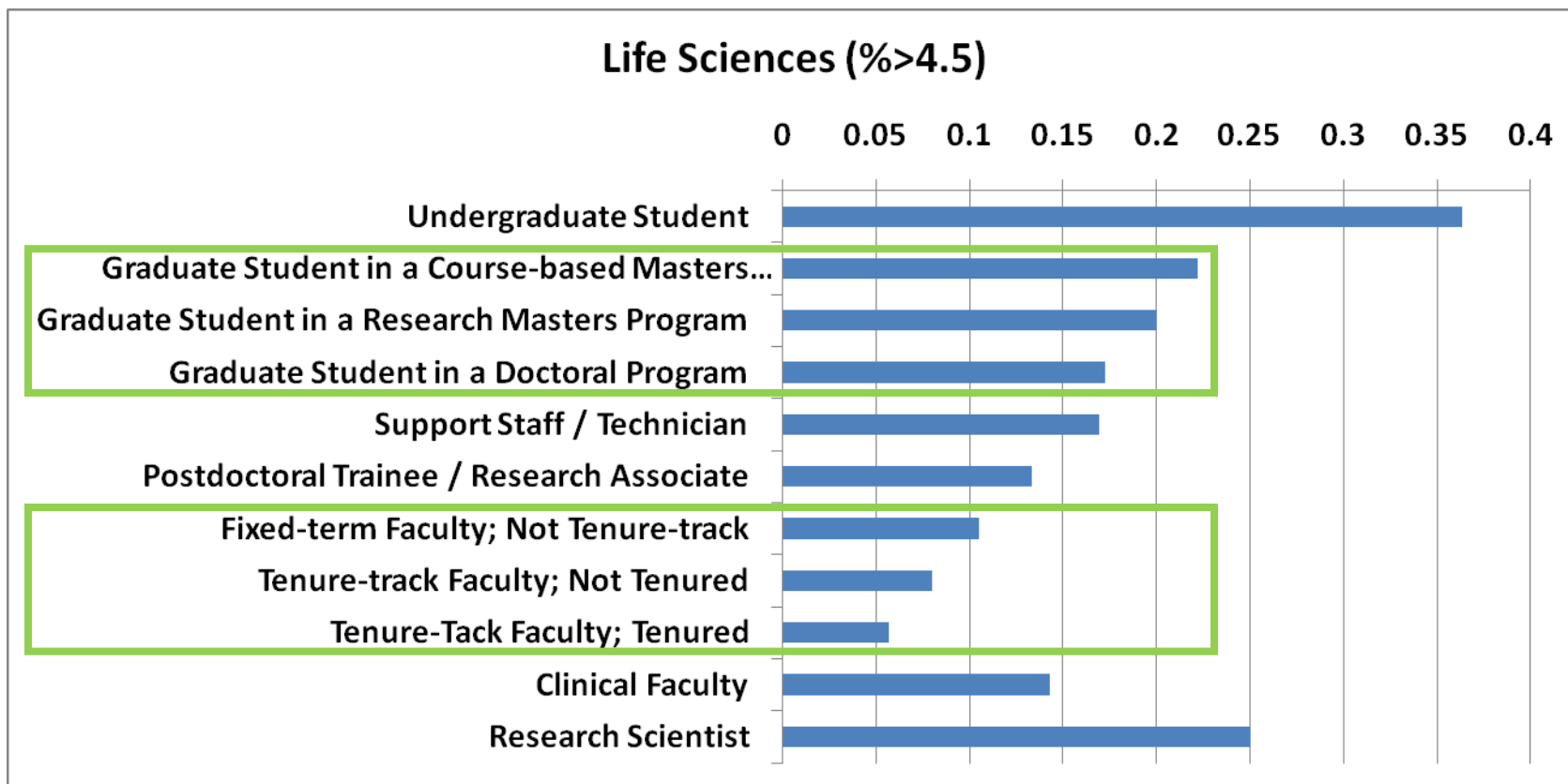
After working with "Carrots", a "Stick" was introduced: NIH & NSF Regulations

- 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

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…