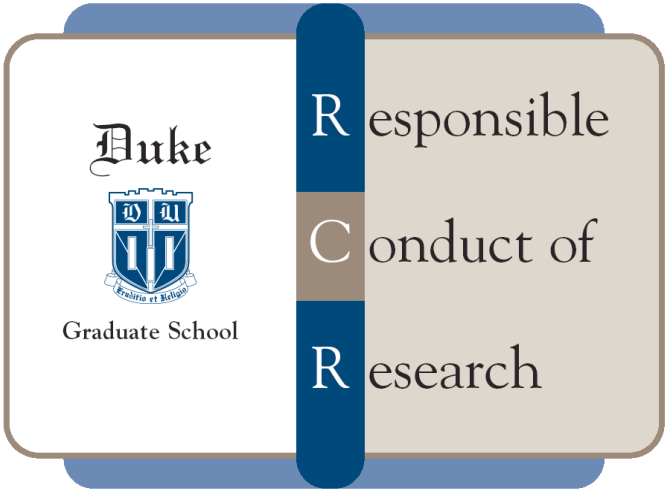


Institutionalizing Research Ethics and Scholarly Integrity: Model Programs

Jo Rae Wright
Vice Provost & Dean, Graduate School
Duke University

RCR– Implementing a degree requirement

- In 1993, the *Executive Committee of the Graduate Faculty (ECGF)* set a goal that RCR training would become a formal Ph.D. degree requirement across all departments at Duke
- Annual RCR Orientation programs began in mid-1990s
  - Expanded from Biomedical Sciences to other departments
- By Fall 2003, RCR became a formal degree requirement for every Ph.D. student and is noted on official transcripts (~2,300 active Ph.D. students; enroll ~500 PhDs annually)

RCR Core Expectations

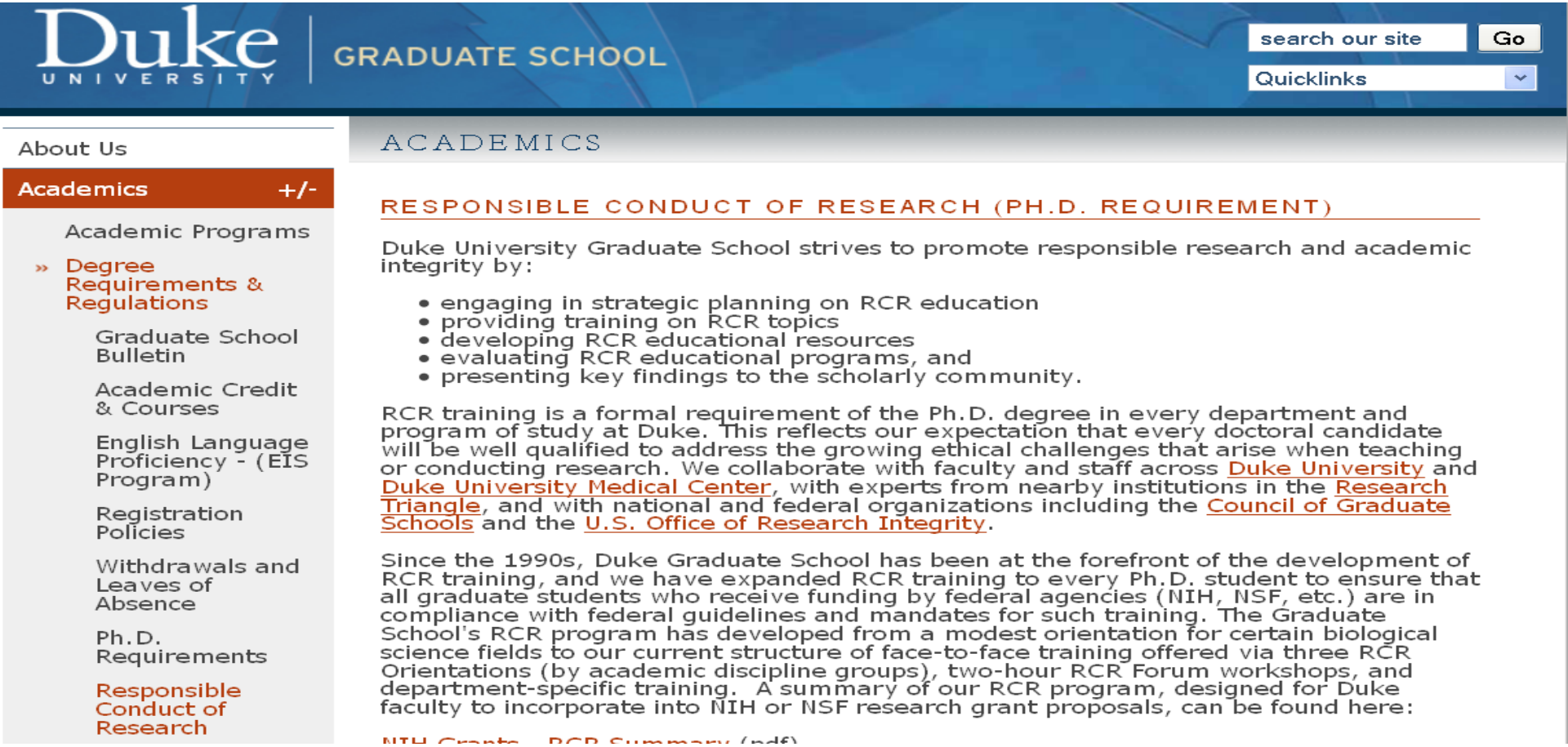
- Why is RCR training an academic requirement?
  - Compliance to federal mandates (NIH, NSF, NEH, etc.)
  - Practical training for RAs and TAs
  - Professional and ethical development
  - Documentation for funding sources/training grants
  - Preparation for the next generation of scholars
    - Carnegie Initiative on Doctorate: *"Stewards of the Discipline"*
    - Current students will face ethical & professional challenges that don't exist now
  - Promoting research that gains the public trust and contributes to society

Duke's approach to RCR education

- "Duke model for RCR"
  - Collaborative
  - Real-life experiences
  - Expands horizons
  - Generating ethical questions together
  - Interdisciplinary
  - Goal= improve ability to respond to ethical challenges individually or with others

Communication to Students-

Website & Email; Google calendar (in process)



Structure of Duke RCR training

- **RCR Orientation** - Graduate School/SOM
  - Basic Medical Sciences (12 of 18 training hours required)
  - Natural Sciences & Engineering (6 of 12 training hours required)
  - Humanities & Social Sciences (6 of 12 training hours required)
- **RCR Forum Events** – Graduate School/Depts.
  - 20-25 events per year (2-hour or 4-hour workshops/retreats)
  - Led by the Graduate School or Dept./Program when pre-approved by the Graduate School
- **Online modules**
  - Limited to graduate students whose research or travel conflicts with regular campus RCR offerings
  - Occasional use as background material & preparation for face-to-face

RCR Orientation – Basic Med Sciences

- Weekend Retreat- Acad. Integrity & RCR
- Entering Biomedical Science PhDs
  - 17 depts, ~120 new graduate students
- Held at Duke Marine Lab (Beaufort, NC)
- Faculty co-directors and ~15 faculty leaders
- Serves as RCR training & Orientation to Basic Medical Science programs

RCR Orientation – On Campus

- 2 Sessions by Academic Division
  - Humanities & Social Sciences
    - 17 depts. , ~140 new students
  - Natural Science & Engineering
    - 18 depts., ~240 new students
- Mandatory
  - 9 am-5 pm week of Orientation (pre-class start)

RCR Instructional Components

- Didactic and small group discussions
- Face-to-face discussion; active learning
- Use of case studies (APPE/RCREC), current news events, and web resources (ORI)
- Faculty panels, staff, and guest/keynote speakers
  - NIEHS/NIH guest speakers
  - Faculty from Duke, UNC, NCSU, etc.
  - IACUC, IRB (campus and medical), Scholarly Communications, Student Conduct, Export Controls, etc.

RCR Forums – Ongoing training

- "Ethics of Pain Management in Animal Care & Use"
- "Environmental Justice and Responsible Research"
- "Improving data integrity and patient safety in clinical research: lessons from the Human Simulation & Patient Safety Center"
- "Copyright and Fair Use in Research and Teaching"
- "Great Expectations of Research Advisers and Mentors"
- "From Publication to Publicity: Ethical Issues in Interactions between Scientists and the Media"
- "Ethical Challenges in Non-Medical Research with Human Subjects: Informed Consent"
- "Access to Scholarly Materials: Ethical Dilemmas in Research"
- "What's in a Picture? The temptation of image manipulation"

Expanding RCR at Duke:
America COMPETES Reauthorization Act of 2010

- During 2010-11, Duke expanded RCR training to include:
  - Postdoc fellows (Ofc. of Postdoc Services/ Ofc. of Research Support)
    - Annual RCR Orientation for postdocs
    - Trent Center for Bioethics, Humanities, History of Medicine events
    - 5-week course geared for NIH training grant recipients
  - Undergraduates in research (Undergraduate Research Support Ofc.)
    - Ex., Howard Hughes Research Fellows

- Comply with H.R. 5116
  - *America COMPETES Reauthorization Act of 2010* (Public Law 111-358) which took effect Jan. 4, 2011
  - Also complies with NIH / NSF criteria

Research on RCR training

- Duke has participated in 3 research projects on RCR:
  - (1) Council of Graduate Schools/ US Ofc of Research Integrity
    - one of 9 universities
    - Evaluated 10 years of data from biomedical science RCR Orientation (aka, “Beaufort Retreat”)
    - Identified ‘best practices’ in RCR program development
  - (2) NSF Ethics Education in Science & Engineering (EESE)
    - “From Micro to Macro Ethics: Advancing RCR education in Nanoscience”
    - Compared pedagogies to address nanobiotechnology RCR training
  - (3) Council of Graduate Schools – Project for Scholarly Integrity
    - http://www.scholarlyintegrity.org/

PSI Project for Scholarly Integrity Council of Graduate Schools

CGS/ORI RCR Best Practices

- Graduate student perspective
  - Informative in content
  - Must be engaging in format
  - Relevant to program and level of experience *as graduate students*
  - Must address ethical questions relevant to steps in research, not ethical theories
  - Focus on Duke policies and how they matter
  - Other info “will be” important to me… later.

CGS/ORI RCR Best Practices

- Faculty and dept. perspective
  - Agree faculty support is vital
  - Think advanced graduate student leadership should be limited
  - Many faculty have not received this training
  - Faculty needed to make ‘discipline-specific’

CGS/ORI RCR Best Practices

- Administrative perspective
  - Ongoing program and curriculum development
    - Enhance web sites for graduate students
    - Provide resources/readings in advance
    - Create sequenced topics for learning
  - Choose appropriate modes of delivery
    - Active learning formats
    - Provide handouts, materials (esp. for Int'l Students)
  - Educate speakers about best practices
  - Conduct ongoing assessment of learning outcomes and program

NSF Ethics Education in Science & Engineering (Grant #0530053)

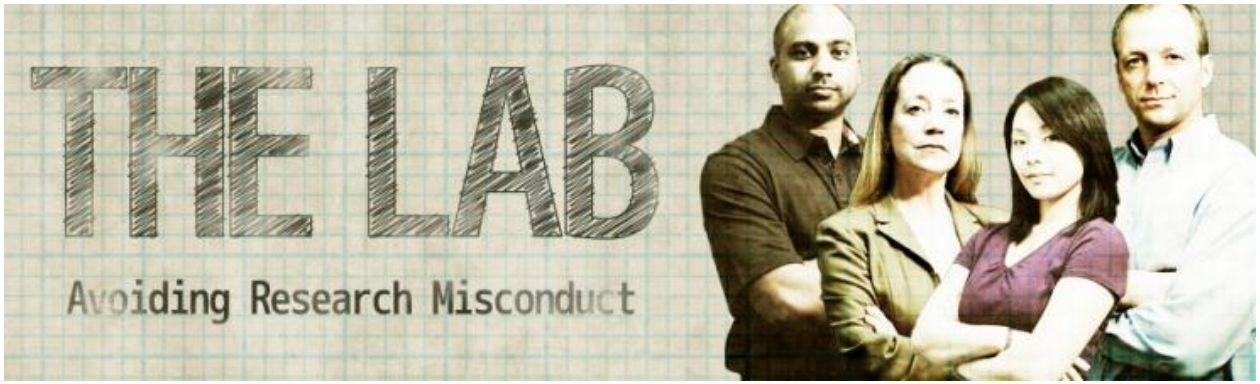
P.I., Tod Laursen, Pratt School of Engineering

- Identify effective RCR teaching strategies to address ‘macroethics’ of nanobiotechnology
- Macroethics = societal implications of research (downstream impact on environment, society)
- Microethics = understand individual behavior (lab notes) and professional responsibility
- Project compared 3 pedagogical methods and diverse audience groups:
  - case study discussions
  - didactic teaching on ethical theories
  - writing professional ethics codes

NSF EESE Results

- Code of Ethics writing and case-study analysis as ‘active learning’ methods promote ethical awareness and ethical decision-making skills
- Didactic instruction on ethical theory is less engaging or perceived as not relevant
- Interdisciplinary audiences can significantly raise awareness of diverse ethical issues
  - Study began w/ PhDs in 2 engineering centers; ethical awareness was limited to disciplinary issues
  - Later groups of humanities, social scientists, and STEM researchers identified a wider range of ‘macro ethical’ issues (environment, health, etc.)

Plans for using “The Lab” Video



- Fall 2011- Basic Med Sci RCR Orientation - Faculty co-directors plan to use
- Fall 2011- RCR Forum
  - STEM disciplines
- Feedback via Qualtrics survey (pre/post)

RCR Training at Duke- Challenges

- Resources
  - $$
  - Faculty - ~35 faculty, 15 TAs, 10 staff participate in Orientation
  - Staff time
- Faculty are volunteers and not ‘experts’ in research ethics
- Encouraging Department/Program/School specific forums
- Limited training resources (esp. Humanities)
- Assessment
- Master’s degree
  - NIH/NSF require if funded, but not yet an academic requirement
- Discipline-specific training & faculty buy-in:
  - - especially challenging in the Humanities

Thanks

- Senior Associate Dean, David Bell
- Assistant Dean, Doug James
- Staff assistant, Kris Moyle

- CGS ORI Project for Scholarly Integrity support
- NSF Ethics Education in Science & Engineering

RCR Resources

National Science Foundation
WHERE DISCOVERIES BEGIN

- NSF EESE Project Outcomes
  - CITI (Collaborative Institutional Training Initiative)
    - See https://www.citiprogram.org/Default.asp
    - Module: RCR for Engineers
  - Online Modules, National Academy of Engineering Online Ethics Center
  - Books: Dr. Daniel A. Vallero
    - Environmental Biotechnology: A Biosystems Approach (2010)
    - Sustainable Design: The science of sustainability and green engineering (2008)
    - Biomedical Ethics for Engineers (2007)
    - Socially Responsible Engineering: Justice in Risk Mgmt (2006)
  - Article: Vallero & James
    - "Comparison of pedagogies to address macroethics of nanobiotechnologies." *Ethics in Biology, Engineering & Medicine*(Vol.1:No.3)