An Individualized Approach to RCR Training

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RCR Training Goals

1) Learn the “Rules” of Responsible Research Conduct

2) Inspire students to incorporate the study of Responsible Research Practices and Ethics as an integral part of their research career

3) Improve responsible decision making – *Best Practices*
Challenges

- Diverse audience
  Culturally & Academically

- Breadth of information
  Information must be Applicable

- Large numbers of trainees
  Numbers continue to grow
  1) Faculty choose to participate
  2) New NSF grants are funded

- Faculty Burden
  Perception of Interference
  Minimize faculty work

- “To-do” list

- Identifying trainees
  Need for Faculty “Buy-In”
Three-Branch Approach

1) Safety Training
   - Faculty Identify Appropriate Training
   - Online or Specialized Departmental Training
     • Departments & EH&S

Breadth of Information
Large Number of Trainees
2) RCR Training by CITI

Faculty/Trainee Identify RCR Course

Breadth of Information
Large Number of Trainees
Three-Branch Approach

Individualized Training

- **Didactic Course in Ethics/RCR**
  Some Departments Have course
  i.e., Chemistry (RCR)

  **Tuition**

  **Responsible Research vs. Ethics**
  Applicable?

- **Ongoing Training in Seminars, Readings, etc.**
  Highly variable & flexible (i.e., skills development)
  Free option (largely)
  6 Credits per year (1 Credit/hour seminar)
  Specialized when done correctly
  Summaries - Labor intensive for me
Trainees – Postdocs, Grad Students, Undergrads, Techs, Volunteers
Location – Field Researchers, On campus, Distance learners, ABD…
Types of “Events” – Seminars (recorded), Workshops, Readings (My column), Lab Discussions, Conversations, Mentor guided training; Summaries of Retraction Watch, Student identified Learning Opportunities

Key – Summaries & Feedback

Description of Acceptable Summary
A paragraph that demonstrates that the trainee 1) comprehended the message of the event and 2) can apply the information to their discipline.

Unacceptable Summary
“I attended “Title of Event”, please give me credit.”
Responsible Research - Misconduct

Research Misconduct – Scandals of Science

Never Fabricate Data

Never Falsify Data

Never Plagiarize

Violations of Trust!!
Responsible Research – Ethics/Responsibility

- Ethical treatment of colleagues/subordinates
  - Authorship/Intellectual Property
  - Collaboration
  - Mentoring

- Responsible management/analysis of data
  - Data Collection, Management, Analysis & Archiving
  - Data Management Plans

- Ethical Publishing/Reviewing Practices
- Ethical Treatment of Research Subjects
  - Animals & Human
- Conflicts of Interest & Commitment
- Social Responsibility
- Safe Research
Personnel Management
Effective Collaboration
Avoiding Procrastination/Imposter Syndrome
Data Management
  Keeping a Lab Notebook
Appropriate Quantitative Methods – Resources
Creating a Research Presentation/Poster
Critically Reading the Literature
Maneuvering University Bureaucracy
  IRB, IACUC, ORS, RCR, FCOI, Purchasing, etc…
Individualized Training

Diverse Audience ☺
Breadth of Information ☺
Large Number of Trainees ☺
Faculty Burden ☺
“To-Do” List ☺
Identifying Trainees ☺
Incorporating Training ☺
Goals, Strengths & Difficulties

- Get Students thinking about Responsible Research
- Students can focus training on interests
  - Skill development to enhance best practices
- Summaries must express understanding
- Quality Feedback on Summaries is Critical
  - Timely feedback?
- Initial Training Description seems Complex