A researcher who considers the ethical dimensions of a project less worthy of rigorous analysis than the experimental components is only half a scientist.

--John P. Gluck

Brad R. Woods, Ph.D.
*Incoming* Executive Director, Office of Research Integrity;
Research Integrity Officer

Special thanks to: Carolyn Broccardo, Ph.D., PMP
University of Wyoming
ON BEING A SCIENTIST

movie from Leiden University

https://youtu.be/tCgZSjoxF7c?t=48m30s  Start at 48:30-50:40
WHY RCR?

- Integrity in research is an essential component of the research enterprise
- Ethical research is the responsibility of the entire research team. It is a shared responsibility between the institution and the research team
- It is a requirement:
  - National Institutes of Health (NIH)
  - National Science Foundation (NSF)
  - USDA-National Institute of Food and Agriculture
- It is a core component of the new UNLV Graduate Research Certificate Program
Scientists behaving badly

Martinson, Brian C, Anderson, Melissa S, de Vries, Raymond
Scientists behaving badly

Martinson, Brian C, Anderson, Melissa S, de Vries, Raymond

Table 1 | Percentage of scientists who say that they engaged in the behaviour listed within the previous three years (n = 3,247)

<table>
<thead>
<tr>
<th>Top ten behaviours</th>
<th>All</th>
<th>Mid-career</th>
<th>Early-career</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Falsifying or ‘cooking’ research data</td>
<td>0.3</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>2. Ignoring major aspects of human-subject requirements</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>3. Not properly disclosing involvement in firms whose products are based on one’s own research</td>
<td>0.3</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>4. Relationships with students, research subjects or clients that may be interpreted as questionable</td>
<td>1.4</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>5. Using another’s ideas without obtaining permission or giving due credit</td>
<td>1.4</td>
<td>1.7</td>
<td>1.0</td>
</tr>
<tr>
<td>6. Unauthorized use of confidential information in connection with one’s own research</td>
<td>1.7</td>
<td>2.4</td>
<td>0.8 ***</td>
</tr>
<tr>
<td>7. Failing to present data that contradict one’s own previous research</td>
<td>6.0</td>
<td>6.5</td>
<td>5.3</td>
</tr>
<tr>
<td>8. Circumventing certain minor aspects of human-subject requirements</td>
<td>7.6</td>
<td>9.0</td>
<td>6.0 **</td>
</tr>
<tr>
<td>9. Overlooking others’ use of flawed data or questionable interpretation of data</td>
<td>12.5</td>
<td>12.2</td>
<td>12.8</td>
</tr>
<tr>
<td>10. Changing the design, methodology or results of a study in response to pressure from a funding source</td>
<td>15.5</td>
<td>20.6</td>
<td>9.5 ***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other behaviours</th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>11. Publishing the same data or results in two or more publications</td>
<td>4.7</td>
<td>5.9</td>
<td>3.4 **</td>
</tr>
<tr>
<td>12. Inappropriately assigning authorship credit</td>
<td>10.0</td>
<td>12.3</td>
<td>7.4 ***</td>
</tr>
<tr>
<td>13. Withholding details of methodology or results in papers or proposals</td>
<td>10.8</td>
<td>12.4</td>
<td>8.9 **</td>
</tr>
<tr>
<td>14. Using inadequate or inappropriate research designs</td>
<td>13.5</td>
<td>14.6</td>
<td>12.2</td>
</tr>
<tr>
<td>15. Dropping observations or data points from analyses based on a gut feeling that they were inaccurate</td>
<td>15.3</td>
<td>14.3</td>
<td>16.5</td>
</tr>
<tr>
<td>16. Inadequate record keeping related to research projects</td>
<td>27.5</td>
<td>27.7</td>
<td>27.3</td>
</tr>
</tbody>
</table>

Note: significance of χ² tests of differences between mid- and early-career scientists are noted by ** (P<0.01) and *** (P<0.001).
But such tight field sites will require that Woods take aggressive steps to assure participant confidentiality/anonymity when developing his research protocols. Woods will want to provide pseudo-names for his place-based research rather than using actual town names. In addition, Woods plans to conduct field interviews with residents on issues related to quality of life in these two small mining communities. Here, I would suggest that Woods makes sure to assure the IRB at Penn State that all identifiers and tapes will be erased/discarded leaving only an official transcript of record for each interview. The reason, given this topic is a highly contested area of study and investigation, it is highly likely that his information and data will enter legal proceedings in the future. When turning over data to the courts or attorneys, it is important that no personal identifiers of any transcript or interview be part of the process of discovery.
WHAT IS RCR?

For the purpose of this Notice, responsible conduct of research is defined as the practice of scientific investigation with integrity, it involves the awareness and application of established professional norms and ethical principles in the performance of all activities related to scientific research.
WHAT IS RCR?

- Consists of shared ethical values of the research community:
  - Honesty
    - Conveying information truthfully and honoring commitments
  - Accuracy
    - Reporting findings precisely and taking care to avoid errors
  - Efficiency
    - Using resources wisely and avoiding waste
  - Objectivity
    - Letting the facts speak for themselves and avoiding improper bias
RESPONSIBLE CONDUCT OF RESEARCH

- Human or animal subjects
- Authorship and publication
- Conflicts of interest
- Peer review
- Data integrity
- Financial responsibility
- Collaboration
- Mentoring

Responsible Conduct of Research
THE REGULATIONS

• 1990: NIH implemented training requirements related to principles of scientific integrity
  • NIH provides wide latitude in requirements
  • Suggests core areas:
    1. Conflicts of interest
    2. Data recording and retention
    3. Professional standards and codes of conduct
    4. Responsible authorship
    5. Handling of research misconduct
    6. Training in the use of human and animal subjects
THE REGULATIONS

• Targeted audience includes graduate students and postdoctoral fellows

• Eventually specified:
  • The rationale, format, frequency, subject matter of instruction, the degree of faculty participation, and the trainee attendance requirements

• Linked to National Research Service Awards (T32 and T34) applications

• By the early 2000s, RCR education was prevalent at most major research institutions
RCR EDUCATION REQUIREMENTS

All applications for NSF funding must certify that the institution has a plan for RCR training and oversight of students.

All individuals supported by any NIH training, career development award, research education grant, or dissertation research grant must receive instruction in responsible conduct of research.

Program directors, faculty, undergraduate students, graduate students, postdoctoral researchers, and any staff participating in the research project [must] receive appropriate training and oversight in the responsible and ethical conduct of research.
BEING A RESEARCHER MEANS THINKING ABOUT

- Collaboration & Teams
- Sharing your work
- Intellectual Property
- Keeping track of data
- Data Integrity
- Ethical Dilemmas
- Following the rules
- Social responsibility

aka the Responsible Conduct of Research!!
RCR TRAINING AT UNLV

• Two required components
  • Eight hours of face to face training
  • CITI online training

• Three approved courses at UNLV
  • EAB 704, PSY 756 and BIO 701. These cover all of the same topics but delve deeper into case studies and discussion

• Mentoring in the research environment (informal)

• http://www.unlv.edu/research/responsible-conduct
RCR SPECIAL TOPICS

- **Animal Welfare**
  - Training required for anyone working with vertebrate animals
  - All activities must be described in a research protocol approved by the IACUC

- **Human Subjects Protections**
  - Training for anyone interacting with living human subjects
  - All activities must be described in a research protocol approved by the IRB
ADDITIONAL CONSIDERATIONS

- Biological Safety
  - Research activities with potentially hazardous biological materials on campus, including recombinant DNA, infectious materials, human materials, and toxins requires approval from UNLV’s Institutional Biosafety Committee

- Radiation Safety
  - Research activities involving the use of radioactive materials require approval from the Radiation Safety Committee

- Chemical Safety
ADDITIONAL CONSIDERATIONS

• Permit Requirements
  • Public lands, USDA

• Export Controls
  • Deemed exports: unlicensed “export” of certain technologies to foreign persons for reasons of international security and trade protections
  • Restrictions may apply to: foreign travel, foreign shipments
  • Additional information: UNLV’s website [http://www.unlv.edu/research/export](http://www.unlv.edu/research/export); CITI training; Export Control Officer
Social responsibility serves as a foundation for all research ethics

The research community is a part of, not apart from, the larger society. Like other professionals, scientists contribute to society through their work in a manner that reflects their interests, talents and expertise…The social responsibilities of researchers arise not simply because research is funded (directly or indirectly) by the public. Research is carried out in the name of society as an expression and reflection of society’s needs, interests, priorities, and expected impacts (Bird 2014).
LAY SUMMARIES are: “...building blocks for broad and transparent communication between scientists and the public....[but] If a journal demands that this is done every time, some summaries will still be opaque, and the Twittersphere will ridicule those”
Engineering Values into Genetic Engineering: A Proposed Analytic Framework for Scientific Social Responsibility

Pamela L. Sankar¹ and Mildred K. Cho²

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²University of Pennsylvania, Department of Psychology, Suite 320, Philadelphia, PA

"...science has moved to a new “post-normal” stage (Funtowicz and Ravetz) which, having superseded traditional concepts of risk prediction, calls for a fundamental re-thinking of how science should and can serve society. Thus many philosophers agree that science does have a broader responsibility to society that includes, but extends beyond, the role responsibilities laid out in RCR..."
RESPONSIBLE CONDUCT OF RESEARCH

- Social responsibility
- Conflicts of interest
- Peer review
- Financial responsibility
- Mentoring
- Data integrity
- Collaboration
- Authorship and publication
- Human or animal subjects

Responsible Conduct of Research
WHERE DO I GO FOR HELP?

- PI/Mentor
- Colleagues
- Chair or Director
- Research Office (ORI)
INFORMATION/RESOURCES

- Federal Office of Research Integrity
- Guidelines on UNLV’s Office of Research Integrity Website
- CITI RCR course (online)
- UNLV’s RCR training
  - Four face-to-face sessions each semester
  - Presentations available online
THANK YOU! ANY QUESTIONS?