Setting the Context for Ethical Conduct in International Research

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AAAS Scientific Responsibility, Human Rights and Law Program
Workshop on Responsible Professional Practices in a Changing Research Environment

*International Research: Moving Towards Best Practices*
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Vancouver Convention Center
West Building, Room 118
Vancouver BC, Canada
Why is ORI Here?

• > 430 international institutions have an assurance with ORI, a requirement to receive PHS funds
• PHS-funded US institutions collaborate with international institutions and communities
• PHS-funded researchers conduct research outside US
• Non-US citizens supported by PHS funds are educated and conduct research in the US
ORI Responsibilities

- Protect the public health
- Protect public resources
- Protect the accuracy of the research record
- Oversee institutional investigations of research misconduct
- Assist institutions foster an environment of responsible conduct of research
ORI Promotes integrity of PHS-supported research

• Honesty of the record (FFP)

  *DIO Mission:* Oversee institutional investigations of research misconduct & whistleblower retaliation & make findings

• Responsible conduct (RCR)

  *DEI Mission:* Prevent research misconduct; promote research integrity; conserve federal resources; & guard public trust
Guardians of the Trust: A Shared Responsibility

Responsible for:

1. Assessing & adjusting their ethical climates
2. Supporting the individual researcher’s ability to function at the leading edge of professional integrity


Partnerships for Success

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**Responsible for:**
1. Assessing & adjusting their ethical climates
2. Supporting the individual researcher’s ability to function at the leading edge of professional integrity

Embossing – reveals borders in background or edges

Original Data  Published Data  Embossed
Is this Research Misconduct?

Begs the questions:
What is research misconduct?
What are professional best practices?
<table>
<thead>
<tr>
<th>Setting the Context for Ethical Conduct in International Research</th>
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<tbody>
<tr>
<td>• Falsification</td>
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<td>• Fabrication</td>
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<td>• Plagiarism</td>
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<td></td>
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<td>• Data Management</td>
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<td>• Publication Practices (authorship &amp; peer review)</td>
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<td>• Collaboration</td>
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<td>• Mentoring</td>
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<td>• Human &amp; Animal Protection</td>
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<td>• Social Responsibility</td>
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<td>• Other</td>
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Inquiry I

• How many of you collaborate internationally? Describe.
• What are the difficult issues when collaborating internationally?
• What changes would help facilitate international collaborations in each sector of the research enterprise?
• What can be done to prevent an individual act of wrongdoing?
• What jeopardizes research integrity in international collaborations?
• Will knowing the goals (motives) of graduate students, post docs, techs, PIs help understand where the hazards are to research integrity?
• Would having a SOPs, a contract help? What would you put in the contract?
Inquiry II

- What harm can come from research misconduct and unacceptable research practices?
- What are the goals of RCR education?
- What is changing in the research environment that affects research integrity?
- What is an environment of research integrity? How does an institution/collaboration foster such a climate? What outcome measures would be used to assess if such an environment was achieved?
- How would you motivate institutions and individuals to foster an environment of research integrity?
Conclusions

Good collaborations depend on every member

– Having a clear **vision** of the values on which the collaboration is underpinned & the goals & objectives of the collaboration

– Understanding thoroughly the **tasks** required to accomplish the objectives

– Building strong **relationships** that can be sustained for the collaboration to succeed

– Behaving responsibly based on **character** so the research is credible
Some Ways Research Misconduct can be Reduced?

- Mentor young researchers in best practices
- Insist on good record keeping & retention (both a research program & institutional priority)
- Review thoroughly all raw data and summarizations of data used in grants & manuscripts by collaborators & co-authors
- Establish institutional procedures to identify & defuse stressors on researchers
Thank You
Oversight: Protecting the Trust

- Individual
- Lab
- Department
- Institution
- Discipline (Association)
- Publisher & editor; site manager (peer reviewer)
- Readership
- Funding source (program officer, peer reviewer)
- Government (dual use, environmental justice goals)
- General Public (internet)
RCR Goals?

• Prevention of FFP
• Protect the research record
• Stewardship of public funding
• Better research
• Career development
• Quicker advancement
• Greater compliance with regulation (floor)
Outcome Measures?

• Reduction in FFP
• Speedier science
• Better science
• Greater job satisfaction
• Change in knowledge
• Change in attitude
Changing environment?

- More authors on papers
- More expensive
- Shift from public to private
- Publish or perish
- Science isn’t as rigorous as it once was
- Public trust
- Science can’t be trusted
- Global—what does this mean
Climates

• Foster a climate that promotes...
Fraudulent Research Can Cause Harm

“Incompetent researcher has the power to do infinitely more damage to people’s health than any individual physician does.”

Consequences of Research Misconduct to Research Enterprise

• Wasted *direct costs* of fraudulent research
• *Additional costs* of futile attempts to reproduce flawed research
• Diminution of *public trust* in scientists & physicians
• Increase in *doubt* about the value of science-based government policy
• Increasing level of *erroneous literature* & questionable data in public repositories
Administrative Actions

• Public findings of research misconduct:
  – Federal Register
  – NIH Guide to Grants & Contracts
  – ORI Newsletter
  – ORI website
  – Internet

• Debarment

• Prohibited from serving as advisor to PHS

• Supervision
The vitality of our world’s people and economy depends on researchers who are innovative and act responsibly.

Yet...
Expectations: Establishing a Research Program
What Hurdles Must be Leaped?

- Colleagues, Dean (establish independent research program & national reputation)
- Other responsibilities: Scholarship in teaching, directed service, and undirected service; life/work balance
- Funding Opportunity Announcement (FOA)
- Preliminary data
- Application (e.g., NIH R01)
- IRB & other certifications/assurances
- Collaborating institutions
- Community gatekeeper
- Human participant
RCR Instructional Areas

1. Research Misconduct Prevention
2. Human Participant Protection
3. Animal Care & Use
4. Mentor/Trainee Responsibilities
5. Data Acquisition, Management, Sharing, & Ownership
6. Publication Practices & Responsible Authorship
7. Peer Review
8. Conflict of Interest & Commitment
9. Collaborative Research
10. Responsibility in Society
Scope of RCR Education

• Information about compliance (i.e., rules, regulations, policies, guidelines)
• The ethics of the research itself and of the research process
• Abilities that give rise to ethical behavior—Making morally defendable decisions
  – ethical sensitivity, reasoning and judgment, identity formation, habits (James Rest, 1983)
• The relationships involved and the manner in which the research is conducted (that reduces uncontrolled variability) including its planning, execution, inferring, & reporting
• The situation or conditions (location, urgency) under which planning and execution depends
Advancing Values: It’s about character

Shared Values in the Culture of Science

• Honesty
• Accuracy
• Efficiency
• Objectivity
Virtues-Based Research Integrity?

• What list of virtues should be emphasized as necessary and appropriate to flourish as a researcher?
• How should they be determined?
• How should they be ranked in priority?

Can we agree that:
• There is such a list of virtues?
• Flourishing is the “goal”? 
• Role models are necessary to be or become virtuous researchers?
Hume’s Ethics

• Just knowing that research misconduct is wrong is not sufficient to motivate right conduct
• Right research conduct must be a passion
• That passion defines our virtues, and whether we honor or break our contracts

Photo: www.intellectuallychallenged.co.uk/id4.html
Inferences from Hume’s Ethics?

• Persons have to be repulsed by acts of research misconduct to avoid it themselves or report it when observed in others.

• Persons committing misconduct must not feel the pain such acts have on others or feel that the pain to themselves and others is negligible.

• Need education and experience to be sensitive.

• Right action needs to be practiced; to become habit.
What we really want...

• Researchers to act responsibly

• Research institutions to act responsibly by fostering an environment of research integrity

• Acting responsibly is more than conforming to government regulation

• How can a culture of ethics be created and sustained in a research environment?
Commonly Asked Questions

• Why is research integrity important?
• What is research misconduct?
• What does research misconduct look like?
• How is it reported?
• How is research misconduct proved?
• How prevalent is research misconduct?
• What are the penalties for misconduct?
• Why do researchers misbehave?
• Who regulates research misconduct?
• What does ORI do?
DIO & DEI Working Together

**A Desirable Shift in the Curve?**

**Frequency**

**Research Performance Level**

- **FFP** = Falsification, Fabrication, Plagiarism
- **QRP** = Questionable Research Practices
- **RCR** = Responsible Conduct of Research
- **ERP** = Exceptional Research Practices
Embossing – reveals borders in background or edges

Original Data  Published Data  Embossed
The Characters in *The Lab*

You assume the role of four characters confronted with the pressures of working in a research laboratory:

KIM PARK, a third-year *graduate student*, who questions the use of her data by another researcher.

HARDIK RAO, a *postdoctoral researcher*, who deals with the competitiveness in an up-and-coming lab while balancing the responsibilities of a home life.

AARON HUTCHINS, a *principal investigator*, whose overwhelming responsibilities as a professor, researcher, and grant writer lead to his decline as a responsible mentor.

BETH RIDGELY, a research administrator, who has accepted the role as the university’s *Research Integrity Officer* and must quickly learn how to handle allegations of research misconduct.
What jeopardizes research integrity?

– Anything that introduces uncontrolled variation into the dataset?
  • An experimentalist approach

– When self interest replaces truth as the primary goal…
Reasons for RCR Instruction

- To Prevent *scientific misconduct* (FFP)
- To reduce *questionable research practices* (QRP)
- Required for trainees and human-subject researchers in US
- Required for NSF funded students & scholars
- To enhance compliance with regulations
- To reduce litigation costs
- To reduce sanctions
- To earn and maintain the public trust
Mini Workshop

- Art Grueneberger
- Nanci Zoppi
Recall Steps of the Scientific Method
Experiment: What are the Characteristics of your best boss
Research Excellence Formula

\[ RE = T + R + V + C \]

\[ RE = \beta_0 T + \beta_1 R + \beta_2 V + \beta_3 C + \epsilon \]

Aspire to: \( \beta_0 = \beta_1 = \beta_2 = \beta_3 = 1.0 \)

Reality: \( = 0.8 \)

Engineer: \( = 2.4 \)

How can you achieve \( > 1? \)
Experiment: Work of Art

- Presumption
Experiment: Working Together Story

TOLERANCE

UNDERSTANDING

RESPECT

ACCEPTANCE

CELEBRATION
Leveraging Diversity
Stages in Team Development

Productivity

Time

Diverse teams

Homogeneous teams

T1

T2
Experimentation Scenario

Personally relevant scenario about **International Collaboration** you would like to see played out by the workshop actors.

Character #1:
Character #2:
Conflict between them:
Setting:
Other information:
Inferences from Experimentation

• Courageous conversation
• Problem behind the problem
• Ask for what you want
Inspiration: Innovation & Problem Solving

Apollo 13
From whom will our motivation, vision, heroes and laborers come?

From You?
Experiment: Alternative Use

You have 300,000 ball point pens in your warehouse. Ball point pens are no longer needed for writing. Think of 30 alternative uses for your 300,000 ball point pens.
Reverse assumptions

• Think of a situation, product, or concept related to a challenge you are facing. Then think about the assumptions you have about that situation.

• Write down those assumptions

• Reverse each assumption and write them down

• Describe a scenario where each reversal conceivably could work.
Example

Suppose you want to open up a new restaurant and you are having difficulty coming up with a novel concept. First list some of the more common assumptions involved in running a restaurant, and then reverse them.
Experiment:
Reverse Assumptions

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Reversal</th>
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<tbody>
<tr>
<td>Restaurants have menus</td>
<td>Restaurants have no menus</td>
</tr>
<tr>
<td>Restaurants charge money</td>
<td>Restaurants do not charge money for food</td>
</tr>
<tr>
<td>for food</td>
<td></td>
</tr>
<tr>
<td>Restaurants serve food</td>
<td>Restaurants do not serve food</td>
</tr>
</tbody>
</table>

What ideas do you have for your new restaurant?
Experiment: “Thermocycler”

• Why did we do this experiment?
• What did you observe?
• How did you feel?
• What inferences can you draw?
Thank You
- Best professional practices
- Changing research environment
- What is changing in the research environment that affects research integrity
- Partisan argument that science is a special interest group
- What are the ethical arguments for & against FFP
- How would one argue in favor of FFP
- When would it be justified to FFP, greater good?
Fact or Myth?

• People from other countries have different senses of what is right and wrong
• It’s an honor to be plagiarized and plagiarism shows respect for the original author; can’t be written better
How would you demonstrate fostering an environment of research integrity?

- List of on-line resources
- Lectures, seminars, colloquia, workshops, courses, certificates, degrees
- Forms, tests, questionnaires (attitudes, perceptions), heroes
- Experiments
- Reduction in FFP
- Audits, evaluations, assessments
- Training grant plans; awards
- Multiplicity of pedagogies (learning styles)/ media used (e.g., YouTube, other social media)
- Academic integrity codes, pledge, affidavit, assurances
- Independent QA/QC team
- Anonymous self reports/ reporting on perception/actual wrongdoing by others
- Art illustrating Research integrity themes
- Use of plagiarism detection software
- Curricular documents on file
How would you measure the quality of RCR?

• Of excellence in research?
• Grants, total amount of awards, publications
• How would having a strong RCR program enrich your institution?
• Why collaborate?
• How do you choose with whom to collaborate?
• What would cause you not to enter into a collaboration?
• What would cause you to walk away from a collaboration?
• What’s the benefit/cost of international collaborations?
• Faculty promoted to full professor if known internationally
• How can the benefits be increased and the costs reduced?
• How many of you collaborate internationally?
• With how many institutions/people?
• With what countries do you collaborate?
• With what countries would you not collaborate?
• With what countries would a collaboration be strong/mutually beneficial; with little difficulty
• What are the difficult issues when collaborating internationally?
• Hurdles, bottlenecks, politics
Who should be targeted to facilitate positive change; how would you like them to facilitate?

- US
- PI
- Institution
- Government
- Professional association
- Funding agencies
- Industry
- IRBs, RIOs, IACUC, H&S
- NAS
- Foundations
- Awards for research integrity
- Experts
  - Books, articles, RRI, RCR association, RIOs, Prim&r

- EU as a body
- Individual governments
- Public
- Ministries
- Journals
- U.N.
- WHO
- PAHO
It's not in my job description

- Class differences
- Spilled milk
- Notebooks with official stamps of SOPs but not used
Goals of RCR; Outcome Measures

• Reduce FFP (Prevention)
• Reduce Whistleblower retail
• Better science/scientists Excellence
• Recruiting
• Ben and Jerry's; Apple environment/climate
• Affinity, achievement, operation
• Prevent liability/culpability
• Prevent the Act of wrongdoing
• Fear the consequences:
  – Inaccurate scientific record
  – Misdirected research
  – Reputation tarnished
  – Inability to recruit
  – Penalties/sanctions
• Go for gold
  – Recognition, pride, accomplishment, competition
Issues - What motivates people
What do people want from the workplace

- Transfer Native
- Transfer transfer
- Native native
- Grad postdoc tech pl
- What is goal of lab, collaboration, individuals
- Recognition, when does it become apparent
- Affinity, achievement, power, autonomy

- For postdoc:
- Job
- Redidency
- Status in home country
- Stuff
- Support for family at home
- English
- When these “wants/needs” go unfulfilled, jeopardizes research integrity
- PI wants paper, promotion ensured
- Tech just to get through the day; $
The captain has turned the fasten seat belt sign
What jeopardizes research integrity in international collaborations when self interest > truth

- Sloppiness
- Fear of making mistakes
- Attention to a detail inseal of important detail
- Lack of big picture thinking
- Routine prevents innovation when confronted with unexpected
- Aim to please
- Anxiousness to produce positive result
- Promotion
- Demonstration of power/authority
- Saving face
What should contract contain

- How should it be monitored
- By whom
- What should the penalty be if broken
- Not a victimless crime
Setting the context for ethical conduct in international research

- Recruitment
- Changes in desireablity of study in US
- Changes in feelings of being welcome in the US
- Retention
  - job prospects
  - Changes in policies; green card
  - Countries of origin’s policies changing
  - Advancement opportunities
  - Discrimination
  - War
  - Need for non-US national to coordinate/manage studies abroad
  - Checks and balances QA?QC SOPs GCP
  - Communication!
  - Oversight
  - Pride of professionalism
  - Best practices what are they, who defines them, demonstrate by example
  - Adventure, experience new culture, travel
FFP

- Human participants
- Animal subjects
- Data management
- Mentoring
- Collaboration - collaborative skills
- Pub practices, authorship, peer review
- Social responsibility
- Rewards
- Common oversight rules
- Procedures
- 2/3 post docs internation up from 59% in 2002
• Clinical trials recruitment
• Forensic tools
• RIO boot camps
• Above repute; reproach
• Tenure review committees; part of performance evalu
• How do you foster research integrity in your lab and instill its importance to your personnel
• How do values, norms, law, policies, structure/framework, customs, resources differ
• Which rules should apply
• RCR taking into account cultural differences
• Scientific truth
• Authentic collaboration
• Transparency
• Collaborative goals= truth, trust
• US PI does not know post doc, foreign institutions
• Everybody a boss v team
• Certificate for credibility
- Pain of Pants
- Work of art
- Best boss - equation
- Pyramid
- Barriers
- Ascites
- Sop - pbj
- Pens
- Reverse assumptions
- Hula
- LabAct
- Power lunch
- Only speak in verbs, nouns, no gestures, only in ??? = demonstrate struggles to achieve genuine communication