

# **Responsible Conduct of Research**

## **HORT 603**

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# Responsible Conduct of Research

- Purpose
  - The purpose of the Graduate School RCR program in association with the Office of Vice President of Research is to:
    - promote and sustain an environment of academic honesty and research integrity by cultivating and maintaining a Responsible Conduct of Research environment for all graduate students, post doctoral fellows, staff, and faculty, at Purdue University.

## Responsible Conduct of Research

- What does it mean?
- It simply means that one is honest in his/her academic and research endeavors and continually strives to do the right thing.
- It means that you maintain the best and highest standards while engaging in research
- Responsible Conduct of Research does not end with graduate study at Purdue University - this frame of mind and method for action should carry on all along one's career and life.

## Why is RCR important?

- Obvious Reasons:
  - For Graduate student's reputation
  - Scientist's reputation and success
  - For Department's and University's reputation
  - For Graduate student retention and graduation
  - For Continued Funding
  - For Avoiding Emotional stress

# Consequences of Misconduct

- Example : Plagiarism
  - Revoking a dissertation (Ohio University)
  - <http://thepost.baker.ohiou.edu/articles/2006/02/23/news/2486.html>
- Example: Fabrication and Falsification (PhD student –CSU)
  - <http://ori.dhhs.gov/misconduct/cases/Jin.shtml>
  - **Poehlman's case (The New York Times, Oct 22,'06) (Faculty – UV)**
  - [http://ori.dhhs.gov/misconduct/cases/poehlman\\_notice.shtml](http://ori.dhhs.gov/misconduct/cases/poehlman_notice.shtml)
- Reputation and success is impaired
- Debarred from research
- Costly process for everybody involved
- Education and Prevention is better

1. Research Integrity (Misconduct?)
2. Roles and Responsibilities
3. Data Management
4. Authorship and Publication
5. Intellectual Property (today's presentation)
6. Conflict of Interest

## 7. Compliance Requirements:

- Protecting Human Research Subjects
- Animal Care and Use
- Bio-hazards and rDNA
- Radiation or Lasers
- Freedom of Inquiry
- Export Control regulations

## 1. Research Integrity (misconduct ?)

- “Is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing or in reporting research results”\*\*
- \*\*[http://www.ostp.gov/html/001207\\_3.html](http://www.ostp.gov/html/001207_3.html)
- How to avoid plagiarism – OWL workshops
- <http://owl.english.purdue.edu/owl/resource/589/01/>
- Outlining procedure for reporting and investigating research misconduct – Purdue University policies (C-22)

## 2. Roles and Responsibilities

- Good Mentoring Means
  - Making roles & responsibilities very clear
  - Showing commitment for supportive research environment
  - Holding regular meetings and reviews
  - Emphasizing RCR and being successful scientists
  - (Trifolds 1 and 2)

Data Management is complex and includes:

- Data Acquisition
- Data Protection
- Data Analyses and Interpretation
- Data Ownership (Funding agencies, Research Institutions/ Data Sources)
- Data Sharing
- (Trifold 3)

## 4. Authorship and Publications

- Department Policies
- RCR booklet guidelines (refer to the RCR booklet)
- Department/faculty expectations (if any)
- What are the acceptable criteria for authorship in 'your' field of study (if any)
- Trifold 4

## 5. Intellectual Property

- Ownership of intellectual property created by Purdue employees and students, or through use of Purdue University resources is determined through the application of Purdue's policy on intellectual property Graduate students should be familiar with the principles outlined in Purdue's policy so that they understand their rights and their obligations regarding the intellectual property they create

- Copyright
- Trademark
- Patents
- Purdue University Policy (what policy?)
- [http://www.purdue.edu/policies/pages/teaching\\_res\\_outreach/viii.4.1.htm](http://www.purdue.edu/policies/pages/teaching_res_outreach/viii.4.1.htm)
- Purdue University Technology transfer

# Copyright

- Copyrightable works have to be original, a work of authorship and must be fixed in a tangible medium of expression
- Registration is required only for reasons of 'enforcement' or 'remedies' (eg. Lab book)
- Term life is 70 to 95 years
- Refer to Executive Memorandum B-53
- [http://www.purdue.edu/policies/pages/teach\\_res\\_outreach/b\\_53.html](http://www.purdue.edu/policies/pages/teach_res_outreach/b_53.html)
- Attend GS workshop on IP and Copyright
- Or call the Office of Copyright

- A trademark is a word, phrase, symbol, design, color, product configuration, group of letters, or a combination of above
- adopted and used by a company (identifies and distinguishes the source of goods or services of one party from that of others).
- Has to be applied for and granted
- <http://licensing.pmc.purdue.edu/faq/index.cfm#whatis>

- What is it? Is a right of ownership granted by the government to a person that gives the owner the right to exclude others from making, selling or using the claimed invention (<http://www.lib.utexas.edu/engin/patent-tutorial/definitions.htm>)
- Criteria: must be useful, novel, not very obvious and reduced to practice
- Patentable: inventions (process, machine, product, designs etc.)
- Duration: 20 years from filling date (14 years for design patents)
- Granted by: US patent Office or foreign patent office

## Intellectual Property policy

- Why have a policy for Intellectual Property?
- “The purpose of this policy on intellectual property is to provide the necessary incentives and protections to encourage the discovery and development of new knowledge, and its application and transfer for the public benefit”.
  - » (Purdue University Policy on IP – VIII.4.1)

## Who owns a patent?

- Inventors own the patent (check precise legal definition)
- Employers may require that employees assign rights to certain inventions to the company
- Purdue employees follow Purdue University policy (Policy VIII.4.1)

## Principles of University Ownership

- “The University shall own each invention conceived in whole or in part during the course of any employment, research, or scholarship activity involving or relating to the use of University Resources”
- (Purdue policy VIII.4.1)

## Tangible Research Property and Research Data (TRPRD)

- “The University owns all rights, title, and interest in TRPRD developed with support from University resources subject to the University’s control of the disposition of Intellectual property under section V of this policy, in most instances the University permits the creators of University owned TRPRD to retain primary physical custody of it solely for use in scholarship and not for any commercial purpose” (Purdue policy VIII.4.1)

## University Technology Transfer

- Is used for the benefits of the public
- Most inventions not patented
- Most technology is at the infant stage
- Most technology requires big investments for R&D to result in usable products
- Filing for patent is important
- More activities in University Technology Transfer has become more prevalent

- Many ways to do this
  - A. Licenses can be given to existing companies
  - B. Licenses to new companies
  - C. The inventor can start the company (Research Park)
  - D. Inventor becomes a consultant

## 6. Conflict of Interest

- University policy on Conflict of Interest:
- <http://www.purdue.edu/research/vpr/rschaadmin/coi/process.shtml>

# 7. Compliance Requirements

- ***Protecting Human Research Subjects***
- All research involving the use of human subjects must comply with Federal Regulations (45 CFR 46.102) and Purdue University policies to protect human subjects. Consult the IRB web site (<http://www.irb.purdue.edu/>) to review the policies and guidelines regarding the use of human subject's research.
- ***Purdue Animal Care and Use Committee and the Laboratory Animal Program***
- All research involving the use of live, vertebrate animals in research, teaching or testing must comply with the United States Department of Agriculture/Animal and Plant Health Inspection Service-Animal Care (USDA/APHIS-AC). All protocols for animal testing must be approved by PACUC. For details please study the following web site:
  - <http://www.purdue.edu/research/vpr/compliance/animals/index.shtml>
- ***Export Regulations***
- The export of certain commodities, software, technical data, and certain other information is regulated by the federal Export Administration Regulations ("EAR") and International Traffic in Arms Regulations ("ITAR"). Please consult the following web site to all pertaining information according to Purdue University Policies.
  - <http://www.purdue.edu/research/vpr/compliance/exportregulations.html>
- (If Department is involved in Radiation, lasers, controlled substances, etc, please refer to the appropriate guidelines at :
  - <http://www.purdue.edu/research/vpr/compliance/index.html>)

## RCR web site

[www.gradschool.purdue.edu/rcr/](http://www.gradschool.purdue.edu/rcr/)

- **Policies**
- **Resources**
- **NSF RCR training module**
- **CITI-RCR training module**
- **Graduate students/post doctoral fellows and faculty are encouraged to complete RCR training modules.**

- Take advantage of all workshops
- Spend time on online training modules
- Complete CITI-RCR training and print your certificate (very useful for applying to NSF/NIH fellowships)
- Take a full RCR course
- Think before you leap!!!!