

Responsible Conduct of Research at Purdue University

**ADVANCING TO A HIGHER DEGREE
Community, Knowledge, Discovery
Purdue University**

**Purdue University
Graduate School RCR web site:
www.gradschool.purdue.edu/rcr/**

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Preface

The Graduate School is pleased to provide this booklet of “best practices” for Responsible Conduct of Research (RCR) at Purdue University to all graduate students, post doctoral researchers, staff and faculty.

The guidelines provided should help students to have a responsible and a successful career as a researcher.

These guidelines were prepared by the Graduate Council Task Force Sub-committee on Ethics in Graduate Education (2003). This sub-committee was composed of Professors Michael Forman (Chair), Peter E. Dunn, Rodney J. Bertolet, John J. McConnell, Phillip Pope and Mr. Adam Keil.

This RCR booklet is a product of the guidelines from the above task force and the recommendations of the Graduate Council Task Force in Responsible Conduct of Research (2007) composed of Professors Jack W. Spencer, James P. Greenan, Jeffrey J. Volenec, Kenneth A. Foster, Jack M. Barron, Rengaswami Chandrasekaran, Peter E. Dunn, Osman A. Basaran, Simon C. Bauer-Leffler (graduate student), Thomas W. Atkinson (Associate Dean, Graduate School), James L. Mullins (Dean of Libraries), Stephen J. Akers (Executive Associate Dean of Students), and Gita N. Ramaswamy (Task Force Chair, and Associate Dean of the Graduate School).

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Introduction

This Responsible Conduct of Research (RCR) booklet provides general guidelines essential to conduct research in a responsible manner by all persons at Purdue University. The major aspects of RCR included in this booklet are guiding principles for research, advising and mentoring, data management, intellectual property and copyright, and scholarly publishing. The RCR booklet also provides information and Web links to resources on compliance requirements that are essential for certain fields of research. Although this booklet was originally written for graduate students, it is a resource applicable to all students, post-doctoral researchers, staff and faculty members at Purdue University.

The objective of this booklet is to inform all concerned parties about the different aspects of RCR in order to prevent either unintentional or intentional misconduct. Quite often misconduct is unintentional, resulting from a lack of understanding or insufficient training of researchers. We hope that this booklet will encourage students to ask questions if they are unsure and become better informed. Misconduct is a very serious allegation, and a finding of misconduct can result in the need for severe action, such as a student's expulsion from the University.

Individual Colleges/Schools and Departments with graduate programs are encouraged to supplement this RCR booklet with discussions with students about their graduate studies and provide specific examples of RCR in their own discipline.

Linda Mason
Dean, Graduate School

Roles of the Graduate Dean in Ethical Awareness and Conduct of Graduate Students at Purdue University

The Dean of the Graduate School (hereafter referred to as the Graduate School) will continue to use the approved and established procedures of Purdue University to deal with and adjudicate disciplinary action of graduate students.

- Investigation of student misconduct (e.g., classroom behavior, cheating, and plagiarism in course work) is overseen by the Office of the Dean of Students at Purdue University and is outlined in University Regulations (https://www.purdue.edu/studentregulations/student_conduct/regulations.html). Investigation of research misconduct (e.g., fabrication, falsification and plagiarism of research) at Purdue University is overseen by the Research Integrity Officer as defined by Research Misconduct (III.A.2) (<https://www.purdue.edu/policies/ethics/iiiia2.html>).
- These two campus units charged with the responsibility for dealing with student dishonesty and research misconduct will notify and keep the Graduate School informed about developments and outcomes of cases involving graduate students.
- The Graduate School has the responsibility to ensure that all Purdue University graduate programs provide up-to-date information and opportunities for education in RCR for students, post-doctoral researchers and faculty working in mentor/mentee relationships. For example, the Graduate School takes the lead to develop ongoing workshops and forums, and to aid in the development of courses that address, in a positive manner, such issues as the graduate student/faculty research relationship, plagiarism, ownership of intellectual property, and the proper and ethical conduct of research. The Graduate School ensures that all graduate students at Purdue University are aware of and are proponents of the Integrity Statement of the University.
- The Graduate School exercises primary responsibility to develop appropriate policies and procedures for dealing with issues involving fraud in the graduate application and admissions process. The Graduate School and Graduate Council will adjudicate any grievances or appeals filed based on decisions made by graduate examination committees

Guiding Standards for the Pursuit of Graduate Study and Research at Purdue University

Planning a Course of Study

- For students planning on completing master's and/or doctoral degrees, pursuit of a graduate education requires successful completion of a program of coursework and research as defined by the chosen program. Plans of study to guide this pursuit should combine sufficient breadth and depth to provide a foundation for lifelong learning in the discipline of interest, with anticipation that the discipline will continue to evolve throughout the student scholar's career.
- Through dialogue with their major professor and advisory committee, graduate students should develop a clear understanding of expectations regarding commitment and effort to be devoted to their graduate program.

Conducting Research

- The goal of research and scholarship is the discovery of knowledge.
- Integrity in research is an essential part of Purdue University's intellectual and social structure, and adherence to its spirit and principles is required. These principles include commitment to truth, objectivity, fairness, honesty, and free inquiry.
- For master's and/or doctoral degrees based upon original research, the thesis or dissertation is the primary document that summarizes the independent contributions of a graduate student at the completion of the graduate program of study. As such, the thesis or dissertation is to be written by the student, and no one else, and to summarize and reflect the student's independent contributions to their discipline.
- Thesis master's and/or doctoral degrees are not granted based on time and effort expended, but on the achievement of a significant research contribution as evaluated by the faculty. This accomplishment must be significant, as measured against the standards of the discipline, and must include an important, independent, and original contribution by the student scholar.
- Students who are planning on completing a thesis-based master's and/or doctoral degree should become familiar with University and departmental policies regarding the conduct of research, and rights in data and intellectual property developed during thesis research, early in their graduate tenure. Also critical is an understanding of their advisor's policies and procedures governing authorship and publication of research results.
- The ultimate objective of the graduate research experience is for the student to progress to the point of becoming an independent and self-reliant researcher, scholar and/or artist.

Student Responsibilities

- Graduate students have a significant personal responsibility for determining the direction of their graduate studies, and for making frequent critical assessments of their own progress and achievement. All students should have a clear understanding of the requirements to complete their degree objectives and develop a plan to satisfy these requirements within the shortest reasonable timeline.
- Graduate students must not advocate, condone nor tolerate discrimination against any individual on the basis of race, religion, color, sex, age, national

- origin or ancestry, marital status, parental status, sexual orientation, disability, or status as a disabled or Vietnam veteran.
- The ultimate objective of the graduate research experience is for the student to progress to the point of becoming an independent and self-reliant researcher, scholar and/or artist.
 - It is the responsibility of graduate students who receive financial support for their graduate program to understand the responsibilities associated with the support they receive and to carry out these responsibilities in a timely, conscientious and professional manner.
 - Graduate students with assignments as teachers have special responsibilities to be prepared for their class/laboratory sessions, and to maintain professional and mentoring relationships with their students.
 - Graduate student scholars must always strive to recognize and acknowledge the scholarly contributions of others; to be complete and accurate in recording and reporting the results and conclusions of their research, scholarly, or artistic endeavors; and to preserve the integrity of the research record.
 - Scholars, researchers, and artists have a special obligation to exemplify the best qualities and highest standards of personal and professional conduct.

Guiding Standards for Expectations of Those Advising and Mentoring Graduate Students and Post Doctoral Scholars at Purdue University

Advising Post Doctoral Scholars and Graduate Students

- A graduate faculty member is expected to advise a post doctoral researcher/scholar /graduate student carefully and thoughtfully. The faculty advisor acts as the mentor and helps shape the mentee's values and understanding of research. Before entering a post doc or student-advisor relationship, the advisor and post doc/graduate student should consider their mutual interests; the compatibility of their expectations, work habits, personalities; the career goals of the student and in the case of a thesis-based degree, their research goals.
- Graduate faculty should establish and communicate clear expectations regarding commitment and effort to be devoted to the student's graduate program/research.
- Graduate faculty members are responsible for all phases of graduate education/research and will be accessible to students/post doctoral researchers/scholars who are under their guidance.
- Graduate faculty will foster the development of excellence in every mentee.
- Graduate faculty will be objective in the evaluation of research and academic performance and will communicate that evaluation fully and honestly to their students/post doctoral researchers/scholars. Graduate faculty will report accurately on the competence of students/post doctoral researcher/scholar to other professionals who require such evaluations.

Guiding Research

- The goal of research and scholarship is the discovery of knowledge.
- Early in a post doc/graduate student's tenure, the advisor should make the student/post doc aware of University and departmental policies regarding the conduct of research and rights to data and intellectual property developed in the course of research. Also critical is ensuring that the student/ post doc understands his or her advisor's policies and procedures governing authorship and publication of research results.
- For a student pursuing a research based graduate degree, it is the advisor's responsibility to guide the student through the student's first research experience and to understand and constructively critique the research accomplishments. In relations with all graduate students, graduate faculty will be candid, fair, and committed to the student's welfare and progress.
- Integrity in research is an essential part of Purdue University's intellectual and social structure, and adherence to its spirit and principles is required. These principles include commitment to truth, objectivity, fairness, honesty, and free inquiry.

Teaching and Modeling Responsible Behavior

- Graduate faculty will advise students/post docs concerning the ethics of the profession; encourage the practice of scholarship and publication; assist students/post docs in addressing ethical issues; and in the case of research

based graduate degrees, guide the students' ethical and responsible conduct in research.

- When engaged in teaching, research, or supervision, graduate faculty will recognize the power and influence they hold and avoid engaging in conduct that exploits or demeans students or that could be construed as an abuse of that power.
- The graduate advisor has the responsibility to discuss career opportunities with the student/post doc throughout the student's graduate program or post doc's research program, and particularly after the student has completed his or her immediate degree objective.
- Graduate faculty must not condone nor tolerate discrimination against any individual on the basis of race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability, or status as a disabled or a veteran.
- Graduate faculty will strive to enhance the educational value of student assignments/experiences as teaching and research assistants.
- Graduate faculty will not permit personal or intellectual differences with colleagues to impede student access to those colleagues or interfere with students' research or progress toward a degree objective.
- Graduate faculty have a responsibility to serve as exemplars in recognizing and acknowledging the scholarly contributions of others; in providing complete and accurate records and reports of the results and conclusions of their research, scholarly, or artistic endeavors; and in preserving the integrity of the research record.
- Graduate faculty has special obligations to exemplify the best qualities and highest standards of personal and professional conduct.

A Guide to Data Management and Retention for Graduate Students and Post Doctoral Scholars Engaged in Research at Purdue University

One major difference between undergraduate and graduate education for students pursuing a thesis-based master's and/or doctoral degree, is a shift in focus from mastering coursework to engaging in original scholarship and research. In classes, students probably spend most of their time learning what others have concluded from their data collection and analysis. As students/post docs begin, to engage in original scholarship and research, they will gather their own data, conduct their own critical analyses, and draw their own conclusions. Critical to original scholarship and research in any discipline is the quality of data ...data are the currency of analysis, the basis for conclusions. Safeguarding this currency is an investment in a student's/ post doc's future and the future of the discipline.

- ***What are data?***

Francis Macrina¹ describes data as “any form of factual information used for reasoning.” Data may be a number resulting from a measurement, a picture documenting an event, an inventory of participants in a meeting, the nucleotide sequence encoding a plant protein, or a digital mass spectrum derived from analysis of a small molecule.

Dr. Macrina points out that some data are “intangible,” like a digital series of numbers recorded from an instrument, or responses to a survey or notes from field observations. Other data are “tangible,” like a fixed and stained histological section of tissue dissected from an earthworm. Each of these forms of data has its own unique challenges to ensure accurate recording and preservation.

- ***Why are the management and retention of data important?***

In the text cited above, Dr. Macrina suggests several reasons why data management and retention are important. Recorded data provide the platform for analysis and interpretation of results from the field, laboratory, or library. They are also the basis for many forms of scholarly writings and serve as the definitive source of facts, observations and details of methods, procedures, or analyses. Recorded and preserved data foster the norms of accuracy, replication, and reliability in scientific research. Often of special importance for students or their mentors trying to repeat or resume a project initiated by someone before them is the ability to understand precisely how a procedure was performed by someone else, and what was observed months or years before. Accurate and authenticated data records are critical for the documentation of inventions and the defense of patents. Recorded data are also critical in resolving challenges to data or conclusions, including formal allegations of research misconduct that may arise long after the primary researcher has moved on to another project or institution.

- ***Who is responsible for data management and retention?***

¹ Macrina, Francis L. (2000) *Scientific Integrity: An Introductory Text With Cases*, Chap. 11, ASM Press, Inc, Washington, DC, pp. 231-256.

Everyone who collects analyzes, or reports data is a stakeholder with a personal and professional interest in the quality, accuracy, and preservation of their data. Therefore, researchers and their mentors share responsibility for data management and retention.

- ***Who has rights to the data gathered by graduate students/post docs?***

The scholar or researcher who is the primary data collector certainly has rights to data they collect. Likewise, all who collaborate in the design of an experiment or project may have rights to the data collected. However, Purdue University also has rights to data collected by its employees, students/post docs using University resources, especially if the project is supported with University funds or with funds from a third party administered by the University. Specifically, the University has an ownership interest in data collected under a sponsoring grant or contract from a third party such as a federal agency. Generally, the University's Principal Investigator or the faculty mentor directing the scholarship research has custodial responsibility for data collected under a grant or contract to Purdue University. As a result, it is the norm for original data collected under a sponsored project to be retained by the Principal Investigator/faculty mentor. However, it is also customary for students/post docs to retain a copy of data collected in the course of their research.

- ***How long must original data be maintained and accessible?***

Clearly, the best answer is as long as possible. Practical standards for data retention and archiving of data vary among disciplines and with the form of the data. However, if the data were obtained with sponsorship (funding) from a grant or contract from a U.S. federal agency, regardless of discipline or form of data, it is a requirement that all grant or contract records, including original data, must be retained, preserved and available for review for at least three years after the final financial transaction involving the grant or contract. It is generally the responsibility of the Principal Investigator/faculty mentor to ensure that original data are retained, preserved and accessible.

- ***When should data gathering, management, and retention be planned?***

Before beginning thesis or dissertation research, every graduate student/post doc should have a formal discussion with his or her advisor or advisory committee to ensure that together they have planned how data will be recorded to ensure completeness and accuracy, and to ensure that data are preserved for future reference.

A Guide to Ownership of Intellectual Property for Graduate Students and Post Doctoral Scholars at Purdue University

During the course of graduate education and research, students/post docs will encounter and utilize intellectual property created by scholars and teachers from whom they learn, and they will create intellectual property as a result of their individual and collaborative efforts. Ownership of intellectual property created by Purdue employees, students/post docs, or through use of Purdue University resources, is determined through the application of Purdue's policy on intellectual property (<https://www.purdue.edu/policies/academic-research-affairs/ia1.html>). Graduate students/post docs 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.

- ***What is “intellectual property?”***

Intellectual property is a legal term that refers broadly to intangible and tangible property that is a unique creation of the human mind. As used in Purdue's policy, intellectual property is broadly defined to include inventions, copyrightable works, and trademarks, and also tangible research property. **Inventions** are novel, useful and non-obvious processes, methods, discoveries, devices, plans, compositions of matter, or other creations that reasonably appear to qualify for protection under the United States patent law. **Copyrightable works** are original works of authorship, which have been fixed in any tangible medium of expression, and include, but are not limited to, literary, musical, dramatic, choreographic, pictorial, graphic and sculptural works, motion pictures and other audiovisual works, sound recordings, architectural works, and computer programs. **Trademarks** are any words, names, symbols, or devices, or any combination thereof, adopted and used to identify goods or services and to distinguish them from those manufactured or sold by others. **Tangible Research Property** refers to perceptible items produced in the course of research including such items as biological materials, engineering drawings, integrated circuit chips, computer databases, prototype devices, circuit diagrams, and equipment.

- ***Who owns patent rights in inventions created by graduate students/post docs?***

Under Purdue policy, the University shall own all domestic and foreign rights in and to any and all inventions made or developed by all faculties, staff, students, post docs and visiting scholars in the course of employment by the University, or through the use of University resources. University resources means any support administered by or through Purdue University, including but not limited to University funds, facilities, equipment or personnel, and funds, facilities, equipment or personnel provided by governmental, commercial, industrial, or other public or private organizations which are administered or controlled by the University.

- ***Who owns copyright to original works of authorship created by graduate students/post docs?***

It is the policy of Purdue University that all rights in copyrightable works shall remain with the creator unless:

1. The copyrightable work is created pursuant to the terms of a University agreement with an external party. The copyrightable work is created as a specific, written requirement of employment or as an assigned University duty that is specified in writing or when the copyrightable work is prepared at the University's expense ("work-for-hire").
2. The copyrightable work is specifically commissioned by the University.
3. In the judgment of the University Committee on Patents and Copyrights, the creator of the copyrightable work made more than incidental use of University resources.
4. The copyrightable work is also patentable and/or is associated with a University trademark.

- ***Who owns copyright to original works of authorship created by a graduate student while satisfying degree requirements?***

The general principles of copyright ownership described above apply. However, in accord with academic tradition, and unless accepted by the conditions above, the University does not claim ownership to traditional works of scholarship, regardless of their form of expression. Specifically, the University does not claim ownership to works of students created in the course of their education, such as dissertations, papers and articles, when in the judgment of the Committee on Patents and Copyrights, the creator of the traditional work of scholarship did not make more than incidental use of University resources.

- ***What should a graduate student/post doc do if they create intellectual property that may be owned by Purdue University?***

If a graduate student/post doc believes that they have participated in creating intellectual property that may be owned by Purdue University, they should first bring the intellectual property to the attention of their

major professor or supervisor, or the head of their department. Then, the student/post doc, in consultation with their advisor, supervisor, or head, should disclose the new intellectual property to the Purdue Research Foundation's Office of Technology Commercialization (OTC). OTC has been assigned responsibility for evaluation, protection, and management of intellectual property owned by Purdue University.

- ***If intellectual property created by a graduate student/post doc is licensed by the University, who shares in the revenue generated by the license?***

Under University policy, net proceeds derived from licensing University intellectual property will be distributed one-third to the inventors/creators and two-thirds to the University. One half of the University share will be returned to the inventors'/creators' departments. However, if the licensed intellectual property was created as a "work-for-hire" or a commissioned work, the inventors'/creators' share will be distributed to the inventors'/creators' department, rather than to the inventors/creators personally.

- ***How can I obtain additional information?***

Additional detailed information about the University's policy can be obtained directly by reading Executive Memorandum B-10. To obtain assistance with the interpretation of the University policy, contact the Purdue Research Foundation's Office of Technology Commercialization.

A Guide to Scholarly Publication for Graduate Students and Post Doctoral Researchers/Scholars

One of the most attractive features of a career focused on scholarship and research is the sense of excitement and anticipation associated with pursuing unanswered questions, exploring new dimensions of problems, and discovering new approaches and insights into our world, its cultures and traditions, and the people who inhabit it. Sooner or later, hopefully sooner, new scholars and researchers recognize that accompanying the anticipation of the search and the excitement of discovery is the obligation to share methods and conclusions with the community of scholars and researchers. This is done through scholarly publication ... the process whereby the fruits of the researcher's labor become part of the "research record," the cumulative compilation of the hypotheses, methods, data, analyses, conclusions, and speculations of those who practice the disciplines... Attitudes toward scholarly publication range from dread to love. In any case, it is important for all graduate students/post docs to become familiar with the conventions and standards of scholarly publication. Many of the ideas and information in the sections that follow were abstracted or paraphrased from a text by Macrina (2000)².

- ***Why is it important to publish the results of research and scholarship?***

There are many, very practical reasons why one might choose to create and submit a formal scholarly essay or article or monograph for publication. From a big picture perspective, probably the most important reason is that, if a person believes that he or she has learned something significant, it is only through publication that the insight can be shared broadly and recorded for future scholars to appreciate. In addition, one of the critical steps in research and scholarship is peer review. New methods, data and conclusions become part of the research record only after peers have reviewed them and agreed that they advance the field. It is only through dissemination of detailed formal descriptions of research or scholarship, results and conclusions that investigators provide the opportunity for others to duplicate their approach, to test conclusions by applying alternate methods to gather complementary data, and, ultimately, to extend the work by adding their own insight. Through publication, researchers record and acknowledge the contributions of all individuals who have participated in a scholarly project. Publication also provides an opportunity to place contributions in the context of previous work, acknowledging and anchoring the work in the foundation on which it was built. It provides an opportunity to speculate on implications or applications of conclusions for future application. From a more personal perspective, scholarly publications are an important metric of professional accomplishment and accountability. They are critical to justifying to

² Macrina, Francis L. (2000) "Scientific Integrity: An Introductory Text with Cases", Second Edition, ASM Press, Washington, DC, pp. 49-72.

employers and sponsors how their resources have been utilized, and why their continued investment is warranted. Scholarly publications are often used to justify merit increases in salary or promotions in rank and responsibility, and to document the appropriateness of awards and other recognitions.

- ***How do I know when to publish?***

Timing and format of scholarly publication vary between and among scholarly disciplines. In some disciplines, the custom is to publish several individual technical articles in scholarly/scientific journals, while in others, it is customary to combine and synthesize the various components of the project as chapters in a monograph. As a result, it is best for the new graduate student/post doc to ask their major professor/supervisor to share the customs of their discipline. However, a few principles apply broadly across disciplines. One of these principles is that, generally, the time to write a formal publication is when the author has a significant story to tell. Depending on the subject matter and nature of the study, one may have a story to tell after gathering and analyzing a limited amount of data, while, in other cases, the evolution of a story may take several years of varied approaches and complex analysis. However, it is relatively rare for one or two experiments to provide sufficient new insight to tell a story. The practice of publishing in “least publishable units” has given rise to the expression “salami science,” which describes the practice of presenting the story as a series of very thin slices ... and “salami science” is generally considered to be an undesirable form of publication. Also considered undesirable is the practice of publishing less than complete descriptions of methods or analytical approaches, which fail to provide sufficient detail to allow the work to be reproduced.

- ***How is the authorship of a scholarly publication determined?***

A commonly accepted standard states that *all* authors of a scholarly publication should satisfy three conditions. First, each author should have made a *significant contribution* to the work described. Generally, a *significant contribution* means that the individual has had a significant impact on the direction, scope, or depth of the research or analysis. This normally entails a substantial role in the conceptualization, design, execution, or interpretation of data, and implies that the author has a clear understanding of the goals and outcomes of the work. Second, each author must be prepared to take responsibility for all aspects of the work described in the publication. It is not necessary that all authors have participated in all parts of the project. However, they should be sufficiently familiar with the total project that they are comfortable with the description, methods, and conclusions and that they are willing to accept responsibility for the content of the publication. Finally, each author should have read and approved the final draft of the manuscript and explicitly consented to

the submission of the manuscript to a publisher. Individuals who have contributed to the project, but whose contributions do not rise to the level justifying authorship, should be recognized in an *Acknowledgements* section of the manuscript.

- ***How is the order of authors for a publication decided?***

Conventions for determining the order of authors for a research or scholarly publication vary among disciplines. For example, in the life sciences, it is customary for the first (or lead) author listed to be the individual who played the primary role in generating data, interpreting results, and writing the first draft of the manuscript. In this convention, the last author listed is commonly the principal investigator, lab director, or major professor responsible for oversight of the project. On the other hand, in physics, it is common for authors to be listed alphabetically in research publications. To avoid misunderstandings, it is *very important* for graduate students to discuss authorship and the order of authors with their major professor before they begin to write a joint publication. It is also *highly desirable* to discuss expectations regarding publications when collaboration between researchers or laboratories is being planned rather than waiting until the results have been gathered and the first draft of a paper is completed.

What is plagiarism and how can I avoid it?

The core concept of plagiarism is relatively simple but the application of the concept to specific situations can be more complicated, controversial, and discipline-specific. Issues related to plagiarism can be more difficult to appreciate for international students who may not be familiar with the significance of this issue for academic writing in American institutions. The Council of Writing Program Administrators (CWPA) states that plagiarism “occurs when a writer deliberately uses someone else’s language, ideas, or other original (not common knowledge) material without acknowledging its source.”³ Thus, whenever a person chooses to repeat the exact words written by another author, that person must mark them with quotation marks (“”) and provide a citation to the original source (as above for the CWPA definition of plagiarism). Where problems generally arise is when someone attempts to paraphrase the words or ideas of other authors. Here it is critical that the writer uses his/her own words in expressing the original author’s writing and clearly informs the reader of the original source of information. Two excellent sources of additional guidance, from which many of the ideas above were abstracted, are websites maintained

³ Council of Writing Program Administrators, “Defining and Avoiding Plagiarism: The WPA Statement on Best Practices,” <http://www.wpacouncil.org>

by Purdue's Online Writing Laboratory⁴ and Indiana University's Writing Tutorial Services⁵.

- ***How can I get additional information regarding scholarly publication?***

Due to the variation in customs among disciplines, the best source of additional information on the standards and conventions for scholarly publication in a discipline is the student's major professor, and this is a topic that every graduate student should discuss with his or her advisor early in the course of graduate study. The book and websites referenced in this brief article also contain useful guidance on these topics.

Additional resources:

1. Gordon Harvey, *Writing with Sources: A Guide for Students* (Hackett Publishing Co.)

<https://www.amazon.com/Writing-Sources-Students-Hackett-Handbooks/dp/087220944X>

2. Michael Harvey, *The Nuts and Bolts of College Writing* (Hackett Publishing Co.)

<https://www.amazon.com/Nuts-Bolts-College-Writing/dp/0872205738>

⁴ Online Writing Laboratory, "Avoiding Plagiarism," http://owl.english.purdue.edu/handouts/research/r_plagiar.html

⁵ Writing Tutorial Services, "Plagiarism: What it is and How to Recognize and Avoid It," <http://www.indiana.edu/~wts/wts/plagiarism.html>

A Guide to Following Federal Regulations and Purdue University Policies on Compliance Requirements for Specific Areas of Research

- ***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. These requirements apply if research is conducted using Purdue facilities or property, supported with University funds, or performed by Purdue staff, faculty, or students. The Institutional Review Board (IRB) is responsible for making the final decisions as to what constitutes Purdue-related human subjects research and how subject protection must be implemented. Consult the IRB web site (<https://www.irb.purdue.edu/>) to review the policies and guidelines regarding the use of human subject's research.

- ***Purdue Animal Care and Use Committee (PACUC) 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) policy. The Animal Welfare Act (AWA) administered by USDA provides rules and regulations to ensure that animals are treated humanely. If a person is working with animals on PHS-funded projects, then his or her work is regulated by National Institutes of Health/Office of Laboratory Animal Welfare. All protocols for animal testing must be approved by PACUC. For details please study the following web site: <https://www.purdue.edu/research/regulatory-affairs/animal-research/>

- ***Animal Exposure Occupational Health Program***

This program protects both Purdue University personnel and laboratory animals and all individuals who come in contact with animals should participate in this program. For details please visit the following web site: <https://www.purdue.edu/research/regulatory-affairs/animal-research/occhealthprogram.php>

- ***Institutional Bio-safety Committee***

All research involving the use of rDNA, biohazardous agents, or unfixed human fluids and tissues, must follow the rules and regulations of the Purdue University Institutional Bio-safety Committee. For further details, please visit: <https://www.purdue.edu/research/regulatory-affairs/biosafety-and-rdna/>

- ***Radiation or Lasers***

All research involving radiation or lasers must conform to the rules and regulations administered through the Office of Radiological and Environmental Management (REM) at Purdue University. For further details regarding radiation or laser safety, please visit the following web site: <https://www.purdue.edu/ehps/rem/about/radlas.html>

- ***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 for all pertinent information according to Purdue University Policies: <https://www.purdue.edu/research/regulatory-affairs/export-controls-and-research-information-assurance/>

- ***Controlled Substances***

All research and teaching involving the use of controlled substances must be in compliance with both State and Federal regulations concerning the use and handling of controlled substances. Compliance will be accomplished by proper licensing with the State of Indiana and the U.S. Department of Justice Drug Enforcement Administration (DEA), record keeping, inventory, and handling by University research staff. For more information, please visit the following web site: <https://www.purdue.edu/ehps/rem/laboratory/HazMat/DEA.html>