

Graduate Education in Responsible Conduct of Research and Professional Development:  
Attitudes, Practices, & Recommendations

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Executive Summary

In the Fall, 2007 semester, a survey was sent to all faculty administrators, faculty, and graduate students at Old Dominion University. This survey assessed four different areas related to RCR instruction: Attitudes toward RCR, Departmental strategies for RCR instruction, Individual experience with RCR instruction, and Attitudes toward the effectiveness of RCR instruction vehicles. A total of 922 people participated in the survey. The key findings are detailed below.

- Attitudes toward RCR
  - Despite strong and widespread agreement with the need for RCR training among students, faculty and administrators:
    - a majority of respondents were less enthusiastic about making RCR training mandatory
    - only a small percentage of respondents rated RCR training as adequate
- Departmental strategies for RCR instruction
  - Informal discussions or research group meetings were the most commonly cited vehicle used for RCR instruction.
  - Masters (non-thesis) students reported receiving less training than Masters (thesis) and Doctoral students
- Faculty-Student experience with RCR instruction
  - A “no-training” response to all RCR topics, except plagiarism, ranged from 39% - 71%. Over 1/3 of graduate students reported receiving no training in areas such as falsifying research data, mentor/trainee relationships, and responsible research practices.
  - A larger percentage of students than faculty reported that RCR was inadequate or non-existent.
- Attitudes toward the effectiveness of Professional Development instruction vehicles
  - Faculty mentoring was judged as the most effective training vehicle.
  - Web-based tutorials were judged to be less effective than the other vehicles.

Although the importance of RCR training was recognized by the survey respondents, actual investment in RCR training was reported as relatively small and needs to be improved. Programmatic efforts should target departmental instruction strategies and foster training in the mentor/trainee relationship. Further, follow-up investigations should determine the source of reported deficits to allow for better program development.

Based upon the training gaps identified by this survey, we make the following recommendations to enhance responsible conduct awareness and understanding at ODU:

- Adoption of the CITI (Collaborative Institutional Training Initiative) RCR training module for all graduate students.
- Adoption of the CITI Program on human subjects research training for all investigators as well as all Thesis and Dissertation students.
- Expansion of the LATA (Laboratory Animal Training Association) training program to all personnel working on animal research protocols.
- Addition of the “About Plagiarism” document to all graduate syllabi.
- Adoption of a plagiarism training module for all Thesis and Dissertation students.
- Requirement of a signed data use and publication authorship agreement between students and their faculty advisors.

## **Background**

Fostering responsible conduct in research (RCR) and professional development is an essential component of academic success for colleges and universities. Graduate students need to be made aware of the numerous ethical issues and rules of conduct that can impact their work, regardless of discipline. At the same time, faculty members need to be aware of the standards in these areas so they can instruct their students effectively. To that end, an assessment of responsible conduct and professional development instruction is a necessary step toward identifying programmatic strengths and weaknesses that can be taken into account when developing new programs of instruction.

In 2004, a survey was conducted at ODU as the first formal evaluation of attitudes toward responsible conduct and the type of instruction that exists at ODU. This survey indicated some ambivalence toward responsible conduct instruction. Specifically, many of the respondents felt that responsible conduct instruction was important but dealt with sufficiently within their programs. Others believed that responsible conduct instruction was applicable to some disciplines but not others. A view held by many was that the status quo was acceptable. However, these attitudes contradict views from federal agencies, such as the U.S. Office of Research Integrity, that responsible conduct training is inadequate for many and the trends in federal agencies (e.g. NSF) that call for more formalized instruction in responsible conduct for graduate students and post-docs.

The current research took place in the fall of 2007 and was designed to explore in more detail the findings from the 2004 study. Four different question areas were included in this survey: Attitudes toward RCR, Departmental strategies for RCR instruction, Faculty-Student experience with RCR instruction, and Attitudes toward the effectiveness of Professional Development instruction vehicles. In 2007, 6,593 graduate students and 878 full- and part-time faculty were at ODU. This survey was sent to all faculty administrators, faculty, and graduate students with available e-mail addresses. (See Appendix A)

## **Participants**

A total of 922 people participated in this survey. This sample included administrators (N=58), faculty (N=182) and graduate students (N=682). 392 males and 530 females participated in the study. Ethnicity of the sample was divided using the U.S. Census Bureau categories: White (N=682), Black or African American (N=90), Hispanic or Latino (N=40), Asian (N=99), American Indian or Alaska Native (N=17), Native Hawaiian and other Pacific Islander (N=7), and other (N=41). Participation varied between the six colleges at ODU: Arts & Letters (N=83), Business & Public Administration (N=88), Education (N=376), Engineering (N=124), Health Sciences (N=60), and Sciences (N=97), with the remaining respondents not associating themselves with one of the six colleges.

## **Attitudes toward RCR**

The first portion of the survey contained 10 questions designed to assess the attitudes held toward RCR and, to a small extent, assess the RCR activity that takes place at a

departmental level. Respondents indicated on a 5-point Likert-type scale how much they agreed with statements concerning RCR (1=strongly disagree; 5=strongly agree).

The first two questions centered upon the importance of RCR training to the respondents. Overwhelmingly, the respondents indicated that they considered RCR highly relevant to their work (95% selecting “strongly agree” or “agree”) and that there was a strong need for graduate RCR training (85% selecting “strongly agree” or “agree”). These findings were similar when assessed separately for administrators, faculty, and graduate students.

Table 1

Percentage of respondents selecting “strongly agree” or “agree” on Section 1 items

	Overall	Administrators	Faculty	Graduate Students
Relevant to area of work	95%	98%	94%	94%
Need for responsible conduct training	85%	97%	91%	82%

Other questions in this section yielded less definitive answers. For example, when respondents were asked whether or not they thought RCR training should be mandatory for graduate programs, 20% responded “neither disagree nor agree”. Further, approximately 30% or more of the respondents neither disagreed nor agreed when asked if current RCR training is adequate (37%), if they felt departments currently take an active role in RCR training (38%), if RCR is encouraged in departments (28%), and if graduate faculty endorse RCR training (34%).

### **Departmental strategies for RCR instruction**

The second portion of the survey contained 13 RCR content areas for which respondents provided information on how their graduate programs provided training in these areas. Respondents indicated the type of “vehicle” (informal discussion/research group meeting; web-based tutorials; seminars/workshops; courses) used within departments for RCR instruction or indicated if RCR training did not take place for a given topic.

The most commonly used vehicle in 12 of the 13 RCR areas was “informal discussion/research group meeting” with the frequency ranging from 22% - 42% (the sole exception being for training on animal care, human subjects and biosafety in which courses was slightly higher than informal discussion). Web-based tutorials and Seminars/Workshops were selected at rates much lower than the other two vehicles.

More striking than the type of vehicle used for RCR instruction was the relatively high frequency with which “no training” was indicated for the 13 areas. Only the question regarding Plagiarism revealed a relatively high level of training, with 82% of respondents listing some sort of training taking place. The remaining 12 areas had “no training” selected at 30% or above with over 1/3 of graduate students indicating that they had not received instruction on areas such as falsifying research data (36%), mentor/trainee relationships (37%), responsible research practices (40%), and failure to present contradictory research data (42%). It should be noted that areas such as data falsification

and failure to present contradictory research data are considered to be areas of severe research misconduct.

Due to the fact that some graduate programs have a larger research focus than others, an analysis was conducted in which responses were separated by program type (Masters (no thesis) vs. Masters (thesis) and Doctoral). The pattern of data was similar to the combined analysis, however a higher response rate of “no training” among the non-thesis students was found in a number of areas compared to the thesis and doctoral students. As with the combined analysis, training on Plagiarism for both groups was relatively high (82% for non-thesis students, 79% for thesis and doctoral students). Although differences existed between the groups in the remaining 12 areas, high response rates of “no training” were still found within both groups. As with the areas mentioned above, frequent responses of “no training” were found for falsifying research data (45% for non-thesis vs. 32% for thesis and doctoral), mentor/trainee relationships (43% vs. 40%), responsible research practices (55% vs. 33%), and failure to present contradictory research data (55% vs. 35%).

Table 2  
Percentage of respondents indicating “no training” in responsible conduct topics – Masters (non-thesis) compared to Masters (thesis) and Doctoral students

	Masters (non-thesis)	Masters (thesis) and Doctoral
Plagiarism	18%	21%
Falsifying or “cooking” research data	45%	32%
Misuse of research funds	73%	56%
Discrimination or harassment	38%	34%
Mentor/trainee relationship	43%	40%
Publication & authorship practices	45%	23%
Peer reviewer’s responsibilities	47%	38%
Maintenance of records on methods or research data	43%	26%
Responsible research practices	55%	33 %
Disclosing involvement in firms whose products are based on one’s research	71 %	52 %
Failure to present contradictory data	55 %	35 %
Use of flawed data or questionable interpretation	43 %	24 %
Conflicts of interest	45 %	33 %

Another pattern within the data for this section worth noting is the disagreement between administrators, faculty, and graduate students on reports of “no training.” The typical pattern for each of the 13 areas was that administrators would report the lowest levels of no training (responses ranging from 12% to 61%), followed by the faculty (17% to 52%), and the graduate students reporting the highest levels of no training in these areas (19% to 65%).

Table 3  
Percentage of respondents indicating “no training” in responsible conduct topics

	Overall	Administrators	Faculty	Graduate Students
Plagiarism	18 %	14 %	17 %	19 %
Falsifying or “cooking” research data	36 %	21 %	30 %	39 %
Misuse of research funds	61 %	50 %	49 %	65 %
Discrimination or harassment	33 %	26 %	25 %	36 %
Mentor/trainee relationship	37 %	17 %	26 %	42 %
Publication & authorship practices	30 %	12 %	20 %	34 %
Peer reviewer’s responsibilities	41 %	34 %	38 %	42 %
Maintenance of records on methods or research data	31 %	21 %	23 %	35 %
Responsible research practices	40 %	26 %	32 %	44 %
Disclosing involvement in firms whose products are based on one’s research	60 %	61 %	52 %	63 %
Failure to present contradictory data	42 %	28 %	33 %	46 %
Use of flawed data or questionable interpretation	31 %	14 %	27 %	34 %
Conflicts of interest	37 %	21 %	31 %	40 %

### Faculty-Student experience with RCR instruction

The third portion of the survey contained the same 13 RCR areas included in Section 2. However, respondents were asked to report how often they experienced discussion or guidance with these areas, taking the focus from a programmatic level to an individual level. Respondents indicated if no training occurred in an area or indicated a range for the number of times per year a particular area was covered (1-2; 3-6; 7-12; 13+).

This assessment of first-person experience with RCR training matched the pattern of the departmental strategies but revealed higher frequencies of no training compared to those reported in the previous section. Plagiarism had the lowest reported rate of no training (19%). The report of “no training” in the remaining 12 areas ranged from 39% to 71%. When RCR training took place, respondents most commonly indicated that training occurred 1-2 times per year followed by 3-6 times per year. Higher frequencies of training (7-12 and 13+) were relatively low, each represented by less than 10% of the responses. As with the previous section, a general pattern existed where administrators reported providing higher levels of training (responses ranging from 10% to 76%), followed by faculty members (12% to 68%), and then graduate students who reported receiving the lowest level of training (21% to 74% combined student analysis; 20% to 83% for non-thesis; 55% to 63% for thesis and doctoral).

Table 4

Percentage of respondents indicating that they never engaged in discussion or guidance on responsible conduct topics

	Overall	Administrators	Faculty	Graduate Students
Plagiarism	19 %	10 %	12 %	21 %
Falsifying or “cooking” research data	48 %	43 %	40 %	51 %
Misuse of research funds	70 %	62 %	58 %	74 %
Discrimination or harassment	39 %	22 %	29 %	43 %
Mentor/trainee relationship	39 %	17 %	30 %	43 %
Publication & authorship practices	39 %	22 %	30 %	43 %
Peer reviewer’s responsibilities	54 %	50 %	47 %	56 %
Maintenance of records on methods or research data	44 %	34 %	34 %	48 %
Responsible research practices	53 %	43 %	45 %	57 %
Disclosing involvement in firms whose products are based on one’s research	71 %	76 %	68 %	72 %
Failure to present contradictory data	56 %	48 %	47 %	59 %
Use of flawed data or questionable interpretation	45 %	31 %	39 %	48 %
Conflicts of interest	46 %	36 %	35 %	50 %

Table 5

Percentage of respondents indicating that they never engaged in discussion or guidance on responsible conduct topics – Masters (non-thesis) compared to Masters (thesis) and Doctoral students

	Masters (non-thesis)	Masters (thesis) and Doctoral
Plagiarism	20 %	22 %
Falsifying or “cooking” research data	56 %	44 %
Misuse of research funds	83 %	63 %
Discrimination or harassment	43 %	42 %
Mentor/trainee relationship	46 %	39 %
Publication & authorship practices	54 %	31 %
Peer reviewer’s responsibilities	59 %	51 %
Maintenance of records on methods or research data	57 %	37 %
Responsible research practices	66 %	44 %
Disclosing involvement in firms whose products are based on one’s research	79 %	63 %
Failure to present contradictory data	65 %	51 %
Use of flawed data or questionable interpretation	55 %	39 %
Conflicts of interest	52 %	47 %

### Attitudes toward the effectiveness of Professional Development instruction vehicles

The final portion of the survey assessed the attitudes of respondents toward the effectiveness of 5 different training methods: Informal Group Discussions/Research Group Meetings, Web-based Tutorials, Seminars/Workshops, Courses, and Faculty Mentoring. Respondents indicated on a 5-point Likert-type scale how much they agreed that a particular method was effective (1=strongly disagree; 5=strongly agree).

Faculty Mentoring was ranked as the most effective mechanism for training (86.98% selecting “strongly agree” or “agree”) with Informal Group Discussions, Seminars/Workshops, and Courses also ranked as being effective (82%, 79%, & 76%, selecting “strongly agree” or “agree”, respectively). Web-based Tutorials were considered to be much less effective, with only 48% of respondents indicating agreement with this method’s effectiveness and 25% indicating disagreement.

### **Comparison of 2004 and 2007 surveys**

Further exploration of the results from the two surveys indicate some changes in attitudes and behaviors that occurred between the two survey administrations. One area of comparison focuses upon the attitudes toward responsible conduct instruction. Although not identical, three questions from each survey were analogous to one another. In each instance, a greater percentage of respondents on the 2007 survey strongly or very strongly agreed with the importance of responsible conduct training than indicated on the 2004 survey. Relevance to one’s work (81% selecting “strongly agree” or “agree” on the 2004 survey, 95% on the 2007 survey), need for graduate students to receive training (69% on 2004, 80% on 2007), and making responsible conduct training mandatory (50% on 2004, 71% on 2007) all followed this pattern.

However, the change in attitude toward responsible conduct training did not match the one area of comparison that was capable of measuring actual behaviors. While direct comparisons of training methods in the two surveys is difficult due to different categories used for the surveys, it was possible to measure the lack of training in various areas. A comparison of “no training” responses on the 2004 and 2007 surveys found respondents indicating less training taking place on the latter survey. In areas such as ethics, data management, research misconduct, publication & authorship practices, and conflict of interest, much higher levels of “no training” were reported on the 2007 survey.

Table 6  
Comparison of 2004 and 2007 surveys on “no training” responses

2004 Survey	2007 Survey
Data management & Ownership – 19 %	Maintenance of records – 32 %
Mentor/trainee relationship – 22 %	Mentor/trainee relationship – 37 %
Publication practices – 19 %	Publication & authorship practices – 30 %
Authorship practices – 21 %	
Peer reviewer responsibilities – 19 %	Peer reviewer responsibilities – 41 %
Research involving human subjects – 27 %	Responsible research practices involving humans and animals – 40 %
Research involving animal subjects – 56 %	Plagiarism – 18 %
Research misconduct – 23 %	Falsifying or “cooking” data – 36 %
	Disclosing involvement in firms – 60 %
Conflicts of interest – 21 %	Conflicts of interest – 37 %

### Conclusions and Future Directions

The results of this survey illustrate the importance of responsible conduct training to multiple segments of the academic community at ODU. Administrators, faculty, and graduate students all indicate that responsible conduct training is necessary for graduate education and that resources should be allocated for this training. The strength of these attitudes can be found throughout the responses of the survey.

Despite this recognized importance, the attitudes toward responsible conduct training do not appear to translate to the actual investment in responsible conduct training. The portions of the survey that asked respondents to indicate the activities that take place in their departments show that both departmental investment in training and individual investment in training is not as high as one would expect. A reported lack of support for responsible conduct instruction is evident from the responses in Section 1 of the survey. While this survey did not directly investigate specific programmatic efforts in responsible conduct instruction, the fact remains that a perceived lack of support and commitment for responsible conduct instruction is reported by the respondents in this survey.

Another example of how the positive attitudes toward responsible conduct instruction do not match with self-reported measures of behavior is in the amount of training that occurs for different responsible conduct topic areas. This survey asked respondents to report how training occurred at both a departmental level and an faculty-student mentoring level. The degree to which no training occurred in areas such as data management, data fabrication, and conflicts of interest was surprisingly large and was at a level even higher than that reported in the 2004 survey. This increase in reported lack of training could be due to either programmatic changes that have occurred between survey administrations or due to increased awareness of what responsible conduct training entails.

Another point worth mentioning is that an apparent disconnect exists between the faculty and graduate students regarding the perception of responsible conduct instruction. While both groups had high report rates of “no training” responses in a number of areas, faculty

reported providing instruction on responsible conduct issues more frequently than graduate students reported receiving this instruction. If faculty are providing this instruction in an informal manner, it could be that the graduate students are not attributing this information the importance that it deserves. An important follow-up to this survey should be to determine the source of this disconnect and correct it.

One final aspect of the survey findings worth noting is that the type of graduate program appears to impact the type of responsible conduct instruction being received. Non-thesis students are not receiving the same responsible conduct training as thesis and dissertation students. While all groups report similar patterns of responsible conduct being considered important and not receiving training in a number of topic areas, non-thesis students gave the highest response rate of “no training” for most responsible conduct topic areas. This should not be the case as responsible conduct issues apply to every discipline at ODU, regardless of research focus. This finding should be further explored to determine why training is not taking place and how it can be worked into the curriculum for these students.

Overall, the potential for improving responsible conduct training at ODU exists. An extremely positive attitude toward responsible conduct training was reported by every group responding to this survey. The current problem facing ODU is that this attitude toward responsible conduct instruction has not transferred to effective programmatic instruction on these issues. This survey has raised awareness of the challenges facing ODU as we strive to improve education in this important area. The next step to determine the best way to move forward and solve the problems identified in this survey.

## **Recommendations**

Based upon the shortcomings in RCR instruction outlined in this report, the following recommendations are made as an initial attempt to increase awareness and understanding of RCR issues.

1. Enhanced RCR training – Currently, training requirements for human and animal subjects research at ODU are near the floor of regulatory requirements. Other mechanisms for training are available that would be more rigorous than our current program and would allow administrative oversight of training.

We recommend the adoption of the CITI (Collaborative Institutional Training Initiative) RCR training module for all graduate students. The module provides training in all areas investigated in this report and should allow for standardized instruction in these areas that would compliment in-person training for the students. (See Appendix B)

We recommend the adoption of the CITI Program for human subjects research training. This is a successful training program used by over 800 institutions nationwide and can be tailored to the particular needs of ODU. Completion of the CITI training modules would be required for all investigators on human subjects

research protocols (both exempt and non-exempt research) as well as for all graduate students enrolled in Thesis and Dissertations classes. (See Appendix C)

We recommend that the completion of the LATA (Laboratory Animal Training Association) training program be required of all personnel conducting animal research at ODU. Current training requirements can be met by the LATA training, but can also be met through more informal mechanisms such as non-standardized training conducted by the Animal Facility Manager. Required use of the LATA program would allow for a basic level of standardized training. (See Appendix D)

2. Plagiarism training – No formal institution-wide policy exists regarding training about plagiarism. We recommend a two-pronged approach to addressing this oversight in the training of graduate students. First, an adopted version of the “About Plagiarism” document developed by the College of Business and Public Administration would be included in all graduate syllabi. Second, completion of the plagiarism training module used by the College of Arts & Letters Writing Tutorial Services would be required of all graduate students enrolled in Thesis and Dissertation courses. (See Appendix E)
3. Written agreement between graduate students and faculty advisors – The data from this survey indicated a shortcoming in face-to-face discussions regarding responsible conduct issues. However, both faculty and graduate students indicated that they believe the mentoring relationship to be an important vehicle for the teaching of these issues. To help facilitate discussion on these important topics, we recommend the requirement of a signed agreement between Thesis/Dissertation students and their faculty advisors concerning rights to data and publication authorship. This agreement would serve to clarify the working relationship between the student and professor. Additionally, it will provide a foundation upon which to build future discussions on RCR issues. (See Appendix F)

Appendix A

Professional Development & Responsible Conduct Survey

**Old Dominion University**

**Professional Development & Responsible Conduct Survey**

**Background**

The Council of Graduate Schools, National Academy of Sciences, and higher education accrediting bodies, e.g., Southern Association of Colleges and Schools (SACS), emphasize that an essential component of a graduate student's education is training in the ethics, values, and rules of scholarly/scientific pursuits. This knowledge and set of skills are critical to graduate training and encompass areas such as authorship, mentoring, data ownership, publication practices, and competency in ethical decision-making. In 2004, with funds from the National Science Foundation and the Office of Research Integrity, ODU began the development of an institutional program to provide training of our graduate students in responsible conduct and professional development. In an effort to improve the quality of our training efforts, the Offices of Graduate Studies and Research are interested in obtaining your thoughts about ODU's training programs in professional development and responsible conduct and ask you to please complete this brief survey. Your input will be used to assess current attitudes and practices and thus better prepare our graduate student to deal with the increasing complexities and demands for ethical and responsible behavior among our future teachers, researchers, and business professionals.

Thank you!

On a scale from 1 to 5 where 1=strongly disagree and 5=strongly agree, please indicate the degree to which you disagree or agree with the following statements.					
	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Professional Development and responsible conduct is relevant to my area of work.	1	2	3	4	5
Graduate students need to receive Professional Development and responsible conduct training.	1	2	3	4	5
The teaching of Professional Development and responsible conduct is encouraged in my department.	1	2	3	4	5
Other graduate faculty in my department endorse the importance of Professional Development and responsible conduct training for graduate students.	1	2	3	4	5
Professional Development and responsible conduct training can be easily integrated into the graduate curricula in my department.	1	2	3	4	5
Professional Development and responsible conduct training should be a mandatory part of all graduate curricula.	1	2	3	4	5
Faculty in my department regularly discuss Professional Development and responsible conduct issues with students.	1	2	3	4	5
Current Professional Development and responsible conduct training for graduate students is adequate.	1	2	3	4	5
Departments should take an active role in preparing graduate students in Professional Development and responsible conduct.	1	2	3	4	5
Departments currently take an active role in training graduate students in Professional Development and responsible conduct.	1	2	3	4	5

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Which of the following “vehicles” are used by your graduate program to provide training in the following topics? Select all that apply.					
	Informal Discussion, Research Group Meetings	Web-based tutorial	Seminars; Workshops	Courses	No training on this topic
Plagiarism	1	2	3	4	5
Falsifying or “cooking” research data	1	2	3	4	5
Misuse of research funds	1	2	3	4	5
Discrimination or harassment on the bases of race, gender, sexual orientation, etc.	1	2	3	4	5
Mentor/trainee relationship	1	2	3	4	5
Publication & authorship practices	1	2	3	4	5
Peer reviewer’s responsibilities-unauthorized use of information	1	2	3	4	5
Maintenance of records on methods or research data	1	2	3	4	5
Responsible research practices-animal care, human subjects, biosafety	1	2	3	4	5
Disclosing involvement in firms whose products are based on one’s research	1	2	3	4	5
Failure to present data that contradicts one’s previous research	1	2	3	4	5
Use of flawed data or questionable interpretation	1	2	3	4	5
Conflicts of interest	1	2	3	4	5

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Please indicate the number of times within an academic year you engage in any level or duration of discussion or guidance on the following issues:					
	Never	1-2	3-6	7-12	13+
Plagiarism	1	2	3	4	5
Falsifying or “cooking” research data	1	2	3	4	5
Misuse of research funds	1	2	3	4	5
Discrimination or harassment on the bases of race, gender, sexual orientation, etc.	1	2	3	4	5
Mentor/trainee relationship	1	2	3	4	5
Publication & authorship practices	1	2	3	4	5
Peer reviewer’s responsibilities-unauthorized use of information	1	2	3	4	5
Maintenance of records on methods or research data	1	2	3	4	5
Responsible research practices-animal care, human subjects, biosafety	1	2	3	4	5
Disclosing involvement in firms whose products are based on one’s research	1	2	3	4	5
Failure to present data that contradicts one’s previous research	1	2	3	4	5
Use of flawed data or questionable interpretation	1	2	3	4	5
Conflicts of interest	1	2	3	4	5

On a scale from 1 to 5 where 1=strongly disagree and 5=strongly agree, please indicate the degree to which you disagree or agree with the following statement: ....are effective methods for training graduate students in Professional Development.					
	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Informal group discussions/Research group meetings	1	2	3	4	5
Web-based tutorials	1	2	3	4	5
Seminars and workshops	1	2	3	4	5
Courses	1	2	3	4	5
Faculty mentoring	1	2	3	4	5

If you are Faculty, please provide the following information:

F 1. your academic department or unit\_\_\_\_\_

F 2. your gender \_\_male\_\_female

F 3. ethnicity\_\_\_\_\_

F 4. your rank \_\_Assistant\_\_Associate\_\_Professor\_\_other\_\_\_\_\_(give rank)

F 5. number of years as a graduate teacher/advisor\_\_\_\_\_

F 6. number of graduate students under your direct supervision and mentorship\_\_\_\_\_

F 7. number of graduate students you have directly supervised and mentored in your career\_\_\_\_\_

F 8. number of graduate courses you are teaching this semester\_\_\_\_\_

F 9. number of graduate courses you have taught in your career\_\_\_\_\_

If you are a graduate student, please provide the following information:

S 1. your academic department or unit\_\_\_\_\_

S 2. your gender \_\_male\_\_female

S 3. your ethnicity\_\_\_\_\_

S 4. type of graduate program \_\_doctoral\_\_masters (thesis)\_\_masters (non-thesis)

S 5. number of years as a graduate student\_\_\_\_\_

S 6. number of graduate research methods classes you have completed\_\_\_\_\_

S 7. place of birth \_\_\_\_\_

S 8. country in which you received undergraduate degree\_\_\_\_\_

## Appendix B

## CITI Program RCR Training Module – Topic List

Adam Rubenstein (ID: 745958)

Thursday, June 5, 2008

# CITI Collaborative Institutional Training Initiative

[Announcements and Frequently Asked Questions \(FAQ\)](#)

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## Responsible Conduct of Research Gradebook

### Elective Modules for *THE RESPONSIBLE CONDUCT OF RESEARCH FOR SOCIAL & BEHAVIORAL RESEARCH* (ID: 7243)

	Date	Score
<b>Required: 43    Completed: 2</b>		

<a href="#">The CITI Course in the Responsible Conduct of Research</a> (ID: 1522)	Completed 11/29/07	no quiz
<a href="#">Introduction to the Responsible Conduct of Research</a> (ID: 1248)	Completed 06/04/08	no quiz
<a href="#">Introduction to Research Misconduct</a> (ID: 1343)	Incomplete	
<a href="#">Social &amp; Behavioral Research Misconduct</a> (ID: 1495)	Incomplete	
<a href="#">Case Study - Truth or Consequences Social &amp; Behavioral Research</a> (ID: 1217)	Incomplete	
<a href="#">Case Study -</a> (ID: 1218)	Incomplete	
<a href="#">Case Study Plagiarism -SBR</a> (ID: 1472)	Incomplete	
<a href="#">Case Study No News Is Not Good News - SBR</a> (ID: 1494)	Incomplete	
<a href="#">Introduction to Data Acquisition and Management</a> (ID: 1344)	Incomplete	
<a href="#">Data Acquisition and Management Module - Social &amp; Behavioral</a> (ID: 1523)	Incomplete	
<a href="#">Data Management Video Vignette Case Studies</a> (ID: 1211)	Incomplete	

<u>Case Study - Data Management - Share and Share Alike - SBR</u> (ID: 1440)	Incomplete
<u>Case Study - Data Management "Who Owns Research Data?" sbr</u> (ID: 1200)	Incomplete
<u>Case Study - Data Management "The New Clinical Data Manager" BioMed - SBR</u> (ID: 1201)	Incomplete
<u>Introduction to Responsible Authorship</u> (ID: 1345)	Incomplete
<u>Responsible Authorship and Publication in SBR</u> (ID: 1518)	Incomplete
<u>Responsible Authorship - The Chair as an Author. (SBR)</u> (ID: 1378)	Incomplete
<u>Authorship and Publications -The Grateful Author (SBR)</u> (ID: 1379)	Incomplete
<u>Introduction to Peer Review</u> (ID: 1367)	Incomplete
<u>Responsible Peer Review Module in SBR</u> (ID: 1521)	Incomplete
<u>What is Responsible Peer Review (SBR)</u> (ID: 1374)	Incomplete
<u>Peer Review and Controversial Research - SBR</u> (ID: 1370)	Incomplete
<u>Introduction to Mentoring</u> (ID: 1335)	Incomplete
<u>Responsible Mentoring Module</u> (ID: 1250)	Incomplete
<u>Mentoring Case Study: O, What a Tangled Web We Weave.</u> (ID: 1337)	Incomplete
<u>Mentoring Case Study: The Graduate Student Laborer.</u> (ID: 1338)	Incomplete
<u>Mentoring Case Study: Sherry's Secret.</u> (ID: 1339)	Incomplete
<u>Mentoring Case Study: Lisa Bach's Case</u> (ID: 1340)	Incomplete
<u>Mentoring Case Study: The Business of Mentoring.</u> (ID: 1341)	Incomplete
<u>Mentoring Case Study: Too Much Help is Just Too Much!</u> (ID: 1342)	Incomplete
<u>Introduction to Conflicts of Interest and Commitment</u> (ID: 1349)	Incomplete

<a href="#"><u>Social &amp; Behavioral Science Conflicts of Interest and Commitment Module</u></a> (ID: 1462)	Incomplete
<a href="#"><u>Col Case Study - The Case of the Promising New Technology - SBR</u></a> (ID: 1454)	Incomplete
<a href="#"><u>Col Case Study -The Case of the Entrepreneurial Psychologist - SBR</u></a> (ID: 1457)	Incomplete
<a href="#"><u>Col Case Study - Janet's Suspicions - SBR</u></a> (ID: 1459)	Incomplete
<a href="#"><u>Introduction to Collaborative Relationships</u></a> (ID: 1242)	Incomplete
<a href="#"><u>Responsible Conduct of Collaborative Science Module - Social &amp; Behavioral Research</u></a> (ID: 1484)	Incomplete
<a href="#"><u>When Collaborators Disagree (SBR)*</u></a> (ID: 1314)	Incomplete
<a href="#"><u>Why Can't We All Just Get Along (SBR)</u></a> (ID: 1180)	Incomplete
<a href="#"><u>Collaborations Between Academics (SBR)</u></a> (ID: 1393)	Incomplete
<a href="#"><u>When Collaborators Become Competitors - SBR</u></a> (ID: 1401)	Incomplete
<a href="#"><u>Marriage Has it's Advantages. (SBR)</u></a> (ID: 1405)	Incomplete
<a href="#"><u>The CITI RCR Course Completion Page.</u></a> (ID: 1043)	Incomplete

## Appendix C

## CITI Program Human Subjects Training – Topic List

Adam Rubenstein (ID: 745958)

Thursday, June 5, 2008

# CITI Collaborative Institutional Training Initiative

[Announcements and Frequently Asked Questions \(FAQ\)](#)

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## Human Research Gradebook

Take the next required module, *Belmont Report and CITI Course Introduction*.

Required Modules	Date	Score
▶ <a href="#">Belmont Report and CITI Course Introduction</a> (ID: 1127)	Incomplete	
Students in Research - SBR (ID: 1321)	Incomplete	

### Elective Modules for *PRIM&R - SOCIAL BEHAVIORAL DEMO* (ID: 2217)

	Date	Score
<b>Required: 19   Completed: 0</b>		
History and Ethical Principles - SBR	Incomplete	
Defining Research with Human Subjects - SBR	Incomplete	
The Regulations and The Social and Behavioral Sciences - SBR	Incomplete	
Assessing Risk in Social and Behavioral Sciences - SBR	Incomplete	
Informed Consent - SBR	Incomplete	
Privacy and Confidentiality - SBR	Incomplete	
Research with Prisoners - SBR	Incomplete	
Research with Children - SBR	Incomplete	
Research in Public Elementary and Secondary Schools - SBR	Incomplete	
International Research - SBR	Incomplete	

Internet Research - SBR	Incomplete
Human Subjects Research at the VA	Incomplete
HIPAA and Human Subjects Research	Incomplete
Workers as Research Subjects-A Vulnerable Population	Incomplete
Hot Topics	Incomplete
Conflicts of Interest in Research Involving Human Subjects	Incomplete
The IRB Member Module - "What Every New IRB Member Needs to Know"	Incomplete

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**Elective Modules for PRIM&R - BIOMEDICAL**
**DEMO** (ID: 2218)

**Date      Score**
**Required: 20    Completed: 0**


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History and Ethical Principles	Incomplete
Basic Institutional Review Board (IRB) Regulations and Review Process	Incomplete
Informed Consent	Incomplete
Social and Behavioral Research for Biomedical Researchers	Incomplete
Records-Based Research	Incomplete
Genetic Research in Human Populations	Incomplete
Research With Protected Populations - Vulnerable Subjects: An Overview	Incomplete
Vulnerable Subjects - Research with Prisoners	Incomplete
Vulnerable Subjects - Research Involving Minors	Incomplete
Vulnerable Subjects - Research Involving Pregnant Women and Fetuses in Utero	Incomplete
Group Harms: Research With Culturally or Medically Vulnerable Groups	Incomplete
FDA-Regulated Research	Incomplete
Human Subjects Research at the VA	Incomplete
HIPAA and Human Subjects Research	Incomplete
Workers as Research Subjects-A Vulnerable Population	Incomplete

Hot Topics	Incomplete
Conflicts of Interest in Research Involving Human Subjects	Incomplete
The IRB Member Module - "What Every New IRB Member Needs to Know"	Incomplete

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**Elective Modules for *PRIM&R* - STUDENT**
**RESEARCHER MODULE** (ID: 4867)

**Date      Score**
**Required: 12    Completed: 0**


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History and Ethical Principles - SBR	Incomplete
Defining Research with Human Subjects - SBR	Incomplete
The Regulations and The Social and Behavioral Sciences - SBR	Incomplete
Assessing Risk in Social and Behavioral Sciences - SBR	Incomplete
Informed Consent - SBR	Incomplete
Privacy and Confidentiality - SBR	Incomplete
Research with Prisoners - SBR	Incomplete
Research with Children - SBR	Incomplete
Research in Public Elementary and Secondary Schools - SBR	Incomplete
International Research - SBR	Incomplete
Internet Research - SBR	Incomplete

Appendix D

LATA Training – Topic List

**The Base Module (Version 3.0 )**

**The Humane Care and Use of Laboratory Animals**

**The Species Modules (Version 3.0 )**

**The Humane Care and Use of the Laboratory Rat**

**The Humane Care and Use of the Laboratory Mouse**

**The Humane Care and Use of the Laboratory Hamster**

**The Humane Care and Use of the Laboratory Guinea Pig**

**The Humane Care and Use of the Laboratory Rabbit**

**The Humane Care and Use of the Laboratory Goat**

**The Humane Care and Use of the Laboratory Dog**

**The Humane Care and Use of the Laboratory Cat**

**The Humane Care and Use of Nonhuman Primates**

**The Humane Care and Use of Laboratory Swine**

**The Humane Care and Use of Laboratory Fish**

**Techniques Modules (Version 3.0 )**

**Aseptic Surgery and Perioperative Care of Rodents**

**Aseptic Surgery and Perioperative Care of Rabbits**

**Aseptic Surgery and Perioperative Care of the Dog**

**Aseptic Surgery and Perioperative Care of the Cat**

**Aseptic Surgery and Perioperative Care of Swine**

**Anesthesia and Analgesia of Rodents**

**The Safety Module (Version 3.0 )**

**Occupational Health and Safety**

Providing training on the humane care and use of laboratory animals to the world LATA Inc. - Copyright 1999-2008 - All rights reserved

Appendix E

“About Plagiarism” document

*About Plagiarism*  
The College of Business and Public Administration  
Old Dominion University

**What is it?**

The Old Dominion University (ODU) Catalogue (2004-2006, p. 14, F) defines plagiarism as follows:

A student will have committed plagiarism if he or she reproduces someone else’s work without acknowledging its source; or if a source is cited which the student has not cited or used. Examples of plagiarism include: submitting a research paper obtained from a commercial research service, the Internet, or from another student as if it were original work; making simple changes to borrowed materials while leaving the organization, content, or phraseology intact; or copying material from a source, supplying proper documentation, but leaving out quotation marks. Plagiarism also occurs in a group project if one or more of the members of the group does none of the group’s work and participates in none of the group’s activities, but attempts to take credit for the work of the group.

**Hints for Avoiding Plagiarism:**

- *More than three words is plagiarism.* This is a good yardstick to use when wondering whether or not quotes are appropriate. They are, if you are copying more than three words in sequence.
- *One source is not “common knowledge.”* Common knowledge does not require citation. But something is not common knowledge if you have found just one source for the information.
- *When in doubt, cite!* If you have any doubt about whether or not to cite a source, err on the side of making the attribution.
- *If your co-author sounds surprisingly eloquent, make sure the contribution is their own.* We often work in groups and co-author papers and projects. You should ask the question of your co-author if you doubt the work is their own. In group work, you are responsible for the project/paper in its entirety.
- *Look away.* When you are writing, do not have open books or papers in front of you as you type. Read your sources, and then put what you have read into your own words.
- *Writing is hard work.* Paraphrasing is relatively easy, writing is hard. Learning to be a good writer is part of what your college education is about. Staring at an empty screen in *MS Word* does become less daunting over time!
- *Just because it’s on the Internet, doesn’t mean it’s yours.* The Internet is a fantastic resource and search engines are terrific research tools. But what you find on the Internet was written by someone. You must cite Internet web sites, and if you use a quote, use appropriate quotation procedures.
- *Paraphrasing is more than changing a verb tense or reordering a list.* There is a difference between citing a source for a fact and creating a bad quote.
- *Use a Style Guide.* Purchase a style guide and refer to it. Your teacher may suggest one or look for one at Amazon. Popular and timeless guides are by the American Psychological Association, Strunk and White, and Kate Turabian.

**The High Cost of Plagiarism**

In your professional career, you will find that reputation is everything. Plagiarism can ruin your reputation and cost you your professional career, along with the respect of your peers and family. Plagiarism at Old Dominion University is an act of academic dishonesty that has serious consequences. Note that plagiarism is specifically covered in the ODU Honor Pledge. Refer to the Student Handbook and Student Affairs for details about sanctions and penalties for this behavior.

8/1/2006

Appendix F

Data and Publication Authorship policy and agreement form

**Proposed Addition to Dissertation & Thesis Committee Policy**

**RIGHTS TO DISSERTATION/THESIS DATA  
AND PUBLICATION AUTHORSHIP**

**Background:** In recent years, there have been a growing number of disputes on university campuses between faculty advisors and graduate students involving ownership of data used in theses and dissertations and the authorship of publications resulting from student/faculty efforts. Such conflicts generally arise because some students and faculty are not aware of academic traditions in such matters, which vary from discipline to discipline. Further, there is confusion between ownership of data (which may reside with the faculty) and use of such data in the thesis/dissertation, (the text of which normally resides with the student). Support of the student and the research on a project where the major professor is also the project director, and where the student is an employee doing "work for hire" may also abridge the rights of a student.

**Proposal:** In order to avoid possible disagreements on these matters, the Office of Graduate Studies proposes to add the requirement of a written agreement to the current University policies on Thesis Committees (pg 73 of current catalog) and Dissertation Committees (pg 75 of current catalog). The new section is indicated in red in the attached copies of the appropriate sections of the catalog.

This proposal requires the student and the faculty chair of the student's thesis or dissertation committee to discuss and arrive at a mutual agreement on a number of issues. These are issues that involve: (a) possible copyright of the thesis/dissertation, (b) ownership of data to be utilized by the student, (c) publication rights and order of authorship on co-authored publications, and, (d) timelines for publication of data. The essential question to be asked in formulating such agreements is whether the faculty member, acting as a major professor/thesis/dissertation chair, is functioning mainly as an adviser to the student. In this case the origin of the research and design primarily comes from student concepts and ideas. Contrast this situation to one where the student is gaining experience in the conduct of research by working on a project primarily conceived by the faculty, and often supported by faculty efforts, freely acknowledging the valuable contribution and original ideas coming from such student participation.

In general, it should be noted that the author of the thesis/dissertation holds the copyright to the manuscript, but that right does not automatically extend to the data used in developing the manuscript. In many instances, an individual faculty member may retain the primary interest in the data and appropriately claim senior co-authorship to any publication(s). This is particularly true where students are working in laboratories established by efforts of the faculty and on projects that are essentially faculty initiated, and where the student is closely supervised by a faculty member. Further, students may surrender even their copyright interest by undertaking the research as "work for hire."

Copyright laws are complex and the parties involved are advised to seek help from the Office of Graduate Studies in order to help reach equitable agreements.

This written agreement will become part of the student's file and attached to the student's thesis/dissertation committee approval form. Copies will be given to the student, thesis/dissertation chair, the appropriate graduate program adviser, and the Dean of Graduate Studies.

