

## Training Graduate Engineering Students in Ethics

### **Dr. Mohamed B. Trabia, University of Nevada - Las Vegas**

Dr. Mohamed Trabia currently serves as the Associate Dean for Research, Graduate Studies, and Computing at the Howard R. Hughes College of Engineering at the University of Nevada Las Vegas. He is also a Professor of Mechanical Engineering since 2000.

Dr. Trabia received his B.S. and M.S. in mechanical engineering from Alexandria University, Egypt in 1980 and 1983 respectively. He was awarded a Ph.D. in mechanical engineering from Arizona State University, USA, in 1987. Since then he joined the University of Nevada, Las Vegas, as an Assistant Professor.

His research interests include design and optimization of mechanical systems, characterization of material properties under dynamic loading, system identification and control of smart actuators. Dr. Trabia has been the author of more than 150 technical journal and conference papers. He was involved with multiple funded research grants with total budget exceeding 6 million dollars.

Dr. Trabia is a Fellow of the American Society of Mechanical Engineers (ASME). Dr. Trabia has received multiple awards recognizing his teaching, research, and service efforts including, the ASME Dedicated Service Award.

### **Mrs. Julie A. Longo, University of Nevada - Las Vegas**

Julie Longo joined UNLV's Howard R. Hughes College of Engineering as their Technical Writer in October 2010. Her primary responsibilities include helping faculty prepare papers for publication as well as technical reports to funding agencies, and presenting workshops on technical writing as well as ethics in engineering. She has a B.S. in Biology from Rutgers University and an M.S. in Systems Engineering from the University of Pennsylvania.

Mrs. Longo has worked in Technical Communications for most of her career. In 1976, she was a Senior Editor in Life Sciences on the first editorial board for an Elsevier subsidiary, Academic American Encyclopedia, known today as New Grolier. For almost 15 years, she worked at Lockheed Martin and its predecessors as an Engineering Writer. In that position, she helped engineers publish papers, chapters, and books; edited and wrote manuals as well as other documentation; served as contributing editor for the RCA Engineer journal; and edited the AEGIS Newsletter for the U.S. Navy. She wrote and produced over 100 technical videos, most of which are housed in the U.S. National Archives. She received the prestigious AEGIS Excellence Award from the U.S. Navy in 1990 for her years of contribution to that program, and became an Associate Member of the U.S. Naval Institute. She wrote a major article on "Video Production" for Wiley Encyclopedia of Electrical and Electronic Engineering (print in 1999; web in 2001). From 1996 to 2003, she ran a consulting firm that provided technical communication services to such organizations as PSE&G Nuclear, City of Philadelphia's Department of Energy, and Sarnoff Corporation.

### **Ms. Susan Wainscott, University of Nevada - Las Vegas**

Susan Wainscott is the Science, Technology, Engineering, and Mathematics (STEM) Librarian for the University of Nevada, Las Vegas University Libraries. She holds a Master of Library and Information Science from San Jose State University and a Master of Science in Biological Sciences from Illinois State University. As liaison librarian to several departments at UNLV, she teaches information literacy for many students, provides reference assistance to the campus and community, and maintains the collection in assigned subject areas. Her current research interests include information literacy instruction and assessment, the impact of student affect on learning, data literacy, and data management planning.

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## Abstract

The Howard R. Hughes College of Engineering at the University of Nevada, Las Vegas embarked on providing ethics instruction to incoming graduate students in the form of a mandatory workshop. The College has a diverse graduate student population, including a sizable international component, who are enrolled in several M.S. and Ph.D. degree programs within four departments. Faculty felt that training in ethics was needed to better prepare incoming students for successful graduate studies and working professionally after graduation. Therefore, a standalone workshop was developed that covered four major topics: Research Ethics, Computer Coding Ethics, Publishing Ethics, and Intellectual Property. The last topic covered copyright law, patent law, and trade secrets. To develop this ethics workshop, some ethics instruction programs at U.S. engineering colleges were investigated.

The workshop included a lecture on the basics of each ethical topic and a panel discussion with campus experts in each of the four topics, including faculty from the School of Law and the College of Engineering. The panel discussion was open, and based upon questions posed anonymously in advance. At the end of the workshop, each participant received a flash drive with the lecture slides, a Frequently Asked Questions document containing written answers provided by the panelists, a bibliography, and resource materials for all four ethics topics.

Assessment of the workshop's effectiveness included pre- and post-workshop surveys of participants as well as feedback from faculty and panelists. Preliminary results included panelist support for continuing to offer the workshop and a good level of attendance by both new and returning graduate students. Based on the pilot test of this workshop in May 2015 and the first two sessions that were rolled out in Fall 2015, the College of Engineering decided to continue the workshops for incoming graduate students. Current activity includes updating the content of future workshops based on continuing assessment of student learning and the content of participant questions for the panelists.

## Introduction

Incorporating ethics teaching within the graduate curriculum has been a topic of continuing and active studies since society has an extremely high level of expectations from practicing engineers. In 2015, one of the revisions of the criteria for accreditation of engineering programs in U.S. academic institutions proposed by Accreditation Board for Engineering and Technology (ABET) included a change from the earlier, *"understanding of professional and ethical responsibility"* to the more specific, *"ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider*

*the impact of engineering solutions in global, economic, environmental, and societal contexts"*<sup>1</sup> (p. 28). While this criterion pertains to undergraduate engineering education, the criteria for Master programs include the *"fulfillment of the baccalaureate level general criteria"*<sup>2</sup> (p. 5).

Several researchers have examined various methods on how to effectively teach engineering ethics, with an emphasis on what topics should be included and what kind of format should be used. In particular, debate has ensued on whether ethics should be taught as a 'standalone course' or if it should be embedded within engineering courses, labs, and projects.<sup>3,4</sup> Another debate has centered on who should teach engineering ethics – non-engineering faculty (e.g., from the philosophy department), engineering faculty, or a team approach.<sup>4,5,6</sup>

According to Li and Fu<sup>4</sup> (p. 341), *"International students have become a permanent fixture in many of the U.S. engineering graduate programs as well as cross-cultural work team in today's engineering firms."* In an interesting study comparing engineering ethics education in China and the U.S., Cao<sup>6</sup> noted that the number of undergraduate and graduate engineering degrees in China far outpace that of the U.S. (p. 1618): *"The US (sic) has unified engineering education and ethics education, therefore achieving integration. Ethical issues have been infused into the engineering curriculum, graduation projects, holiday practice, and production practice, thereby forming a system of engineering ethics education."* The author goes on to recommend that both countries could learn from each other in terms of incorporating ethics in the engineering curricula.

## **Institutional profile**

In Fall 2015, the University of Nevada, Las Vegas (UNLV), had a student population of approximately 25,000 undergraduate students and 4,000 graduate students. UNLV is designated as a Minority-Serving Institution and an emerging Hispanic-Serving Institution. This diversity is reflected in the graduate students of UNLV's Howard R. Hughes College of Engineering, see Table 1. The College of Engineering offers M.S. and Ph.D. degrees in the areas of biomedical engineering, aerospace engineering, materials and nuclear engineering, mechanical engineering, electrical and computer engineering, civil and environmental engineering, construction, and computer science.

After experiencing several cases of academic dishonesty, the faculty felt that rigorous training in research and publishing ethics was needed to better prepare incoming students for successful graduate studies. In addition, it was anticipated that this training would better prepare the engineering graduate students for their professional careers after graduation.

Table 1 Breakdown of the Graduate Engineering Student Enrollment (Fall 2014 & Fall 2015)

<b>Fall 2014</b>	<b>Women</b>	<b>Men</b>	<b>Total</b>	<b>International</b>	<b>Underrepresented Minorities</b>
Full-time M.S. students	31	64	95	43	23
Part-time M.S. students	11	23	64	2	14
Full-time Ph.D. students	18	62	80	55	14
Part-time Ph.D. students	4	13	17	1	2
Total enrollment	<b>64</b>	<b>162</b>	<b>226</b>	<b>101 (44.69%)</b>	<b>53</b>
<b>Fall 2015</b>	<b>Women</b>	<b>Men</b>	<b>Total</b>	<b>International</b>	<b>Underrepresented Minorities</b>
Full-time M.S. students	29	78	107	52	26
Part-time M.S. students	9	23	32	6	11
Full-time Ph.D. students	24	82	82	56	10
Part-time Ph.D. students	4	16	16	2	4
Total enrollment	<b>66</b>	<b>171</b>	<b>237</b>	<b>112 (47.25%)</b>	<b>51</b>

### **Design of the *Ethics in Engineering* workshop**

The College's decisions regarding format, content, and who would provide the instruction were informed by the literature, knowledge of the institutional and college cultures, and capacity to launch a new instructional initiative within the existing degree programs.

During the 2015 Spring semester, the College's Associate Dean for Research, Graduate Studies & Computing reached out to the College's Technical Writer and the University's Engineering Librarian – who plan and coordinate the College's successful Technical Writing workshop series – regarding the need for graduate-level ethics training in the topics of research, publication, computer coding, and intellectual property. These four topics were chosen based on some of the issues that the College felt were of greatest and immediate concern. Having identified the basic topics, the challenge was to develop a workable delivery approach<sup>5</sup> that would, at minimum, alert the students to these issues and, at best, engage them to be interested in learning more about ethical topics and their implications, especially during their graduate career. The Technical Writer and the Engineering Librarian are not tenure-track engineering faculty; however, both have been working closely with engineering faculty and graduate students for several years, which made them familiar with the College's needs.

In March 2015, the Associate Dean, the Technical Writer, and the Engineering Librarian met to plan the ethics workshop. While the Technical Writing workshop series engaged students in a non-compulsory manner, other formats for ethics instruction used at other institutions were considered, including 1) a college-mandated, compulsory, extracurricular training session; 2) incorporation of ethics instruction by faculty in existing courses; and 3) inviting guest speakers to existing courses to provide the training. Based upon the already full syllabi

for existing engineering courses, the desire for consistent training across the College, and the successful model used in the Technical Writing workshops at this College, it was decided to develop a pilot workshop on ethics for the 2015 Summer Term.

This pilot workshop addressed the four ethical topic areas by means of a lecture delivered by the Technical Writer and the Engineering Librarian, and was collaboratively developed with experts within the College and the University. In addition, because the breadth and range of the topics were considered to be beyond any one person, it was decided to invite faculty from the College of Engineering as well as other ethics experts in the University to address student questions in a moderated panel format. This would avoid the potential for participants asking the Technical Writer and the Engineering Librarian questions that may be related to past incidents, and to introduce students to campus experts in these four topic areas.

### **Format and content of the pilot workshop**

The pilot test of this workshop was conducted in May 2015. Participation in this workshop was voluntary; invitations were sent to students who had already participated in the Technical Writing workshop series. They were prompted in the invitation to provide feedback regarding the workshop as if it were a mandatory workshop for new students to attend.

The two-hour workshop was divided into three sections: a brief introduction; a lecture on the four ethical topics; and a discussion with expert panelists in each ethical topic, led by a moderator. The first hour of the workshop was provided by a team consisting of the College's Technical Writer and the Engineering Librarian. The workshop began with a 10-minute introduction regarding the importance of understanding the need for making informed ethical decisions, both in terms of future professional success and, more specifically, with regard to academic success. The intention was to have the graduate students understand that the College administration and the faculty take these issues seriously. The tone of the introduction was to inform and set expectations for participants' future behavior, and acknowledge that not all cultures have identical ethical norms and expectations of graduate students engaged in research and publication.

After the introduction, as a transitional tool to the rest of the workshop, a digital whiteboard web tool (see Figure 1) was set up for the students to anonymously contribute answers to the question: *What Does 'Ethics' Mean to You?* The tool allowed for anonymous entry of text, images, and web addresses from any internet-connected device. Designed as an icebreaker activity, this exercise attempted to indicate to the students that ethics means many things to many people. To conclude this activity, the moderator emphasized that this workshop was designed to introduce the graduate students to the basic standards of academic ethics in the U.S. After this exercise, the formal definition of 'ethics' in the context of academic research

was cited from Merriam-Webster Dictionary Online (2015)<sup>7</sup> as "*the principles of conduct governing an individual or a group <professional ethics>.*"

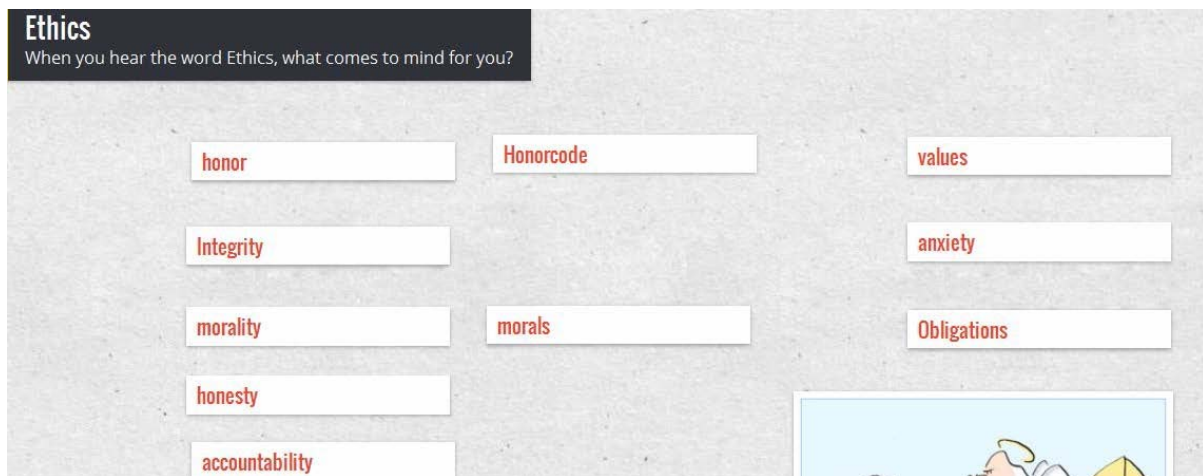


Figure 1 Interactive software was used to start the conversation among students on what the term 'ethics' meant to them.

This introduction was followed by a 40-minute lecture by the Technical Writer and the Engineering Librarian about the four key topics, Research Ethics, Publishing Ethics, Computer Coding Ethics, and Intellectual Property Law. The last topic addressed copyright law, patent law, and trade secrets. Throughout this lecture, definitions for relevant key terms, such as *plagiarism* and *copyright*, were provided. Because of the considerable range of information given during this lecture, the panelists – chosen for their expertise in each ethics topic – were asked to provide information they felt important; the Technical Writer then developed the presentation based on that information. All panelists were cited in the final slide of the presentation, not only to acknowledge their contribution but also to let the students know that this ethics workshop was a community effort, and that many people are involved in training them in ethics.

In the Research Ethics section, the topics discussed were: the scientific method, design procedures for experiments, reporting experimental failures, assuring the quality of data, good data management practices, and the need to report data accurately. For the Computer Coding Ethics section, such issues as UNLV's code citation guide, how to provide proof of permission to reuse code, checking for licensing terms, and proper citation of code were covered, among other topics. The Intellectual Property section covered the distinctions among copyright law, patent law, and trade secrets. Specific information regarding U.S. law governing each topic was provided, including protections that the students themselves had regarding their own research products.

One of the major issues discussed in the Publication Ethics section is the increasing difficulty in getting a paper published with the major publishing houses (e.g., Elsevier, Springer, or IEEE) if ethics issues were ignored, such as plagiarism as well as improper citations and references. At this point, most of the major publishing houses are members of the Committee on Publishing Ethics (COPE)<sup>8</sup>, which examines such issues as false data, plagiarism, duplicate publications, and faulty authorship. The point was to alert these students that pursuing a graduate education in engineering involves the transition from a 'student' mentality – focused on internally graded reports and projects – to a 'professional' mentality, including their initiation into the professional world of academic dialogue by means of published works and the damage to their budding reputations if this is approached haphazardly. The lecture portion of this workshop established a common basis of understanding for the panel discussion that took place during the remainder of the workshop. Further, the lecture provided the participants with enough basic information so that they were better prepared to ask questions to the panelists.

During a short break while the panelists moved to the front of the room, the participants were provided an opportunity to provide additional questions for the panelists on 3x5 notecards, which were given to the Technical Writer and the Engineering Librarian. The remainder (approximately half) of the workshop involved an open discussion with a panel of experts drawn from across the university, including faculty from the College of Engineering and Boyd School of Law.

The Technical Writer served as moderator for the panel discussion, and first asked the panelists the questions that had been submitted in the pre-workshop survey (Appendix A), followed by the index cards questions. This anonymous style of question and answer was designed to mitigate any uncomfortableness the participants might have experienced in asking questions outright. In fact, at first, most of the questions came from anonymous sources; however, as the panelists discussed each question, the participants became more comfortable in raising their hands and asking questions. By the end of the workshop, a time limit and a limit on the total number of questions asked had to be imposed due to the large number of questions the students were asking.

At the end of the workshop, each participant received a handout 'packet' on a flash drive containing the lecture slides, a document containing student questions with written answers provided by the panelists, a bibliography, and additional resource materials for all four ethics topics. For examples of included resources, see Appendix B. After the workshop was completed, the participants were contacted by email and invited to take a post-workshop survey. This survey (Appendix A) gave participants the opportunity to answer the same questions as the pre-workshop survey, which can help determine if the workshop improved

their awareness of ethics standards. Further, it provided the participants an opportunity to provide feedback about the workshop.

### **Pilot workshop evaluation and feedback**

During the pilot test of this workshop in May 2015, 15 attendees participated, including two staff members, 11 engineering graduate students, and two Ph.D. candidates from the College of Education. Of these participants, seven completed the pre-workshop survey (one staff and six graduate students) and six completed the post-workshop survey (six graduate students).

Informal formative assessment during the workshop included the level of student engagement with the digital whiteboard exercise, willingness to provide questions for the panelists, and engagement with the panel. We were encouraged by the number and quality of the questions asked of the panelists. Although the pre- and post-workshop surveys were used as formal assessment tools, the results are not presented here due to some errors in several of the survey questions that did not allow for multiple answers when required.

As mentioned above, we were encouraged by the quality of questions asked of the panelists both from the pre-workshop survey and during the workshop. Questions included very specific questions regarding citation of non-traditional media, such as code and images; who to contact for reuse permissions for material published in a government report; and scenarios regarding intellectual property protection while communicating with a research team. More general questions included when and how to communicate experimental failures, how to report errors or errata once a paper has been published, and concerns about the reliability of online sources or digital lab notebooks. Sample questions from participants are included in Appendix C.

Of the respondents to the post-workshop survey, written feedback from students included recommendations for more time on each topic or general positive comments about the panel discussion and the overall workshop. Panelist feedback was gathered by means of informal communications, and included a willingness on the part of the panelists to participate in future workshops.

### **Outreach and attendance for the Fall 2015 *Ethics in Engineering* workshops**

Based on assessing the outcome of this pilot test, the workshop was rolled out in September 2015. To give students more flexibility to participate, two sessions were held on separate days. Engineering faculty was notified of this workshop by email, and were informed that the College would prefer that attendance be made mandatory for each department's new graduate students. General notices were posted on the College's homepage as well. The four departments did make the workshop mandatory for all new graduate engineering students, and



optional for continuing students. One department chose to make this workshop mandatory for all graduate students. In addition, one faculty member made participation in this workshop mandatory for the graduate students in a Research Methodology course.

For the two sessions offered in September 2015, one faculty member, 44 M.S., and 31 Ph.D. engineering graduate students attended. Table 2 shows the breakdown of attendees by department for the sessions held in September 2015. Information was not requested about the ethnicity or nationality of the participants; however, an informal scan of the registration list revealed that the attendees appeared to be representative of the College's graduate student population.

Table 2 Participants in the September 2015 Sessions

Department	Participants
Civil and Environmental Engineering and Construction	16
Computer Science	5
Electrical & Computer Engineering	32
Mechanical Engineering	23

### **Changes in content and format for the Fall 2015 *Ethics in Engineering* workshops**

Key changes in the Fall 2015 workshop sessions related to who provided which portions of the lecture. The Associate Dean introduced each workshop to emphasize the College's interest in ethical behavior by graduate students, and to share anecdotes regarding the impact that unethical behaviors may have on an individual's career and to society at large. The remainder of the lecture was provided solely by the Technical Writer, while the Engineering Librarian became one of the available panelists for future workshops. The activities and content of the workshop were not changed from May 2015. Once again, the lecture content was reviewed by the panelists in advance, and additional materials for the flash drive were solicited from the panelists.

### **Feedback for the Spring 2016 *Ethics in Engineering* workshop**

In the Spring semester, the Engineering Ethics workshop was held in February 2016. The content and format followed the Fall 2015 format. Fifteen people attended this workshop, four of whom were M.S. students, nine were Ph.D. students, and two were faculty. The breakdown by department was none from Civil and Environmental Engineering and Construction, two from Computer Science, six from Electrical and Computer Engineering, and two from Mechanical Engineering. The attendance numbers are reasonable as fewer students were admitted in the Spring semester.

This was the first workshop that had an accurate pre- and post-workshop survey, allowing evaluation of improvement by the participants in their knowledge of ethics. The respondents had an option for multiple answers to each question. Six people took the pre-workshop survey, and nine people took the post-workshop survey. The results of the four questions asked about ethics are shown in Table 3. Question 1 addressed the ethical issues surrounding use of another author's figures or pictures in the student's work. More post-workshop respondents correctly indicated that permission and a citation to the original source were required compared to pre-workshop respondents, although one incorrectly answered that quotation marks should surround the image. Question 2 related to ethical reuse of computer code; while more post-workshop respondents correctly answered these questions, compared to pre-workshop respondents, there appeared to be some remaining confusion, as some respondents did not select all three correct responses. All but one post-workshop respondent correctly answered Question 3, which related to international differences among copyright and patents, demonstrating an increase in understanding of intellectual property ethics. Responses for Question 4 may indicate an area where additional clarity is needed in the lecture materials, as more post-workshop respondents selected multiple answers, including incorrect options, than compared to the pre-workshop responses. Alternatively, this question may need refinement to ensure that options are mutually exclusive.

In addition, the post-workshop survey gave an opportunity to the respondents to provide feedback. Among the written responses, the participants stated that aspects of the workshop they found valuable included, *"discussion with the panelists"* and *"discussion about engineering-related research (using codes and citing them, figure usage, etc.)"*. When asked to rate three aspects of the workshop from 0 - 100, 0 being extremely poor and 100 being excellent, the respondents, on average, selected:

- Four ethics topics: 85
- Panel discussion and the opportunity to ask questions: 84
- Flash drive with resource material: 81

## **Lessons learned and discussion**

While there was substantially more coordination and preparation required to provide a panel discussion in the workshop, the willingness of students in Fall 2015 to openly ask questions of the panelists, and the variety of questions submitted in all formats, validated the decision to incorporate this activity. It was worthwhile to include the experts in the design of the lecture content and as panelists. Some students expressed informally that they were grateful to know that there were experts on these topics in the Law School. The content of the workshop was greatly improved by all panelists, and the resource material in the flash drives increased in number and breadth of topic resources due to suggestions from the panelists.

Table 3. Results from Pre-Workshop and Post-Workshop Surveys for the February 2016 Ethics Workshop (*Participants had an option for multiple answers for each question*)

	<b>Correct answer</b>	<b>Pre-workshop survey <sup>a</sup></b>	<b>Post-workshop survey <sup>b</sup></b>
1. To use an exact copy of a picture or a figure from another author's work, I must:			
a. Place the picture or figure in quotation marks ("" )		0	1
b. Provide a citation to the picture or figure.	√	3	8
c. Obtain written permission or a license from the copyright owner when necessary.	√	6	8
2. When re-using a code created by another person, you must:			
a. Cite in the comments of the relevant part of the developed program	√	2	7
b. Cite in the applicable project documentation	√	2	5
c. Include the Uniform Resource Locator (URL) of the source and date of retrieval	√	3	6
3. Are laws for copyright and patents different in different countries?			
a. Yes for copyright but no for patents		2	0
b. No for copyright but yes for patents		0	0
c. Yes for both copyright and patents	√	3	8 <sup>c</sup>
d. No for both copyright and patents		1	0
4. When there is more than one collaborator, who is responsible for obtaining permissions to use materials created by others?			
a. You are responsible		1	5
b. Your faculty advisor is responsible		1	3
c. You need to talk to your collaborators early in the process to determine who is responsible	√	6	7

<sup>a</sup> Six respondents took the pre-workshop survey out of 15 participants in the workshop.

<sup>b</sup> Nine respondents took the post-workshop survey.

<sup>c</sup> The post-workshop survey had two possible answers, yes for both copyright and patents and no for both copyright and patents.

## Conclusion and future development

The College of Engineering continues to offer the Engineering Ethics workshop, with minor updates to the content and format. In addition, the number of panelists available for each area of expertise is increasing. This workshop will be held every semester. In addition, the resource materials using flash drives will be updated before each workshop.

Assessment tools are being refined to evaluate the level of success of these workshops more accurately. Beginning in May 2016, we plan to survey engineering faculty at the end of each academic year to determine: 1) whether they have seen more awareness in their graduate students regarding ethical issues and 2) whether they have seen an improvement in research and publication efforts by their graduate students. In addition, the faculty will be asked to give any kind of feedback to improve the workshop and meet their needs. It is expected that there will be enough data over time to refine the workshop format to better meet the needs of the College and the students. We will present analysis of these results in future publications.

In addition, we will continue to review the literature for similar efforts. It is our hope that sharing the preliminary results of this experience with colleagues in other engineering colleges will generate useful feedback and discussions regarding best practices for improving graduate student understanding of ethical aspects of research and publication practices.

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## Appendix A. Assessment Survey

**Table A-1. Pre- and Post-Workshop Survey Instrument**

1. Research ethics involves: (More than one possible answer to this question)
• Understanding and applying the Scientific Method.
• Reporting experimental failures.
• Calibrate your equipment for precision and accuracy.
• Back up everything.
2. To use an exact copy of a picture or a figure from another author's work, I must:
• Place the picture or figure in quotation marks (" ")
• Provide a citation to the picture or figure
• Obtain written permission from the copyright owner when necessary
• None of the above
3. When re-using code created by another person, you must:
• Cite in the comments of the relevant part of the developed program
• Cite in the applicable project documentation
• Include the Uniform Resource Locator (URL) of the source and date of retrieval
• Obtain written permission or a license from the copyright owner and the patent owner when necessary
4. Are laws for copyright and patents different in different countries?
• Yes for copyright but no for patents
• No for copyright but yes for patents
• Yes for both copyright and patents
• No for both copyright and patents
5. When there is more than one collaborator, who is responsible for obtaining permissions to use material?
• You are responsible
• Your faculty advisor is responsible
• You need to talk to your collaborators early in the process to determine who is responsible.

**Table A-2. Pre- and Post-Workshop Survey Questions**

<b>Pre-Workshop Question:</b> What are your questions to the panelists regarding Research Ethics, Computer Coding Ethics, Publishing Ethics, and Intellectual Property (copyright and patents)?
<b>Post-Workshop Question:</b> Your feedback on this workshop is extremely important. Please let us know what aspect of the workshop was most useful for you?
What suggestions do you have to improve this workshop?

## **Appendix B. Examples of materials provided to participants for further reading**

- Student Code of Conduct Retrieved from  
[https://www.unlv.edu/sites/default/files/page\\_files/27/StudentConduct-Code.pdf](https://www.unlv.edu/sites/default/files/page_files/27/StudentConduct-Code.pdf)

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### **Publication Ethics**

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## Appendix C. Examples of student questions for the expert panelists

- How many repetitions are required to assure my data is accurate / precise enough?
- What is the criteria for reporting the make/model of our laboratory instrumentation? Are we under obligation to disclose this at all times? Is there an obligation to report this to personnel who contact us concerning our published works?
- How and when should I report my failure in a paper or an external report? Does it sound silly?
- Do the 'Big Four' publishers – IEEE, Elsevier, Springer, Taylor & Francis – generally provide streamlined routes to retroactively submit errata in our published papers if we find errors succeeding publication?
- What if you know that a private company cannot provide data, but you can obtain some of the company's data from open sources online? Can you still use the data for a paper's publication?
- My interest in attending this workshop is mainly due to lack of experience with copyright/citation/ethics issues. I am particularly interested in how to properly cite images, code (or sections of code), computer programs, and dissertation/thesis documents, as well as how the citations should be properly inserted into the text. Online citation resources are generally helpful, but extremely limited when focusing on specific citation questions.
- If an author produced scientific work and published it as a report for a government agency – say, the Department of Energy – or a private company – say, Bechtel – do you obtain permission to use the material from the report from the author or from the government?
- Do I have to refer to a paper 1 that the author referred in his work -paper 1? If I'm mainly referring to paper 1?
- When submitting a paper for publication, if the reviewer requests adding a list of references, what is the proper ethical action to take, especially given in case the list of additional references contains one or more similar authors, such that the reviewer may be trying to "pad" his total citations?
- Can I talk about the project with other competitors after filing a provisional patent?
- If I do use someone else's code in my own code, how should I mention that in anything that I publish?
- What if the computer coding is open source? Do we need to get permission first?