Ethics Training in Geosciences

The Department of Geosciences will implement a requirement, starting with Fall 2014 for incoming graduate students, to engage in activities that promote and strengthen their academic and professional integrity while studying at Virginia Tech. Specific topics that will be incorporated into the training are:

1. Plagiarism and other violations of the Graduate Honor Code

2. Proper use of professional conventions in citation of existing research and scholarship, accurate reporting and ownership of findings, and acknowledgement of contributions to the work

3. Ethical standards in teaching, mentoring, and professional activities

4. Appropriate lab procedures and maintenance of lab notebooks and other research documentation

5. Fair use of publications, software, and equipment

6. Guidelines for maintenance of confidentiality (and, where relevant, anonymity) in research

7. Guidelines for determination of authorship

9. Available avenues for reporting alleged misconduct.

The Department of Geosciences proposes that the above topics will be addressed in our ethics and integrity training via 2 components:

1. A new 1 hour course "Introduction to Graduate Studies in Geosciences" will be offered each Fall semester and will be required of all graduate students in their first semester in the department. The purpose of this course is to provide an overview of the department and what it means to be a graduate student in the Department of Geosciences. The outline of the course for Fall, 2014 is as follows and approximately 40 percent of the course will be devoted to Professional Ethics.

   Week 1: Introduction to the department including identification of research groups: Nancy Ross
   Week 2: Introduction to facilities with lab tours: Bob Tracy
   Week 3: What does it mean to be a graduate student and department expectations including expectations of GTA's; AAAS self-assessment for graduate students: Maddy Schreiber

Week 4: Literature searches, Endnote, using the library for research: Ed Lener

Week 5: Safety in the Lab and in the Field: Greg Norris and Jim Spotila

Week 6: Communication to avoid conflict and conflict resolution: Ennis McCreary and Dale Robinson

Week 7: Roundtable discussion on Ethics in Research, Teaching and Courses: Faculty

Week 8: Invited presentation on "Ethics in Academia": Hannah Scherer

Week 9 and 10: Graduate Honor Court: Graduate Student Assembly and presentations by students of Ethics Case Studies: Ken Eriksson

Weeks 11 and 12: Roundtable discussion on how to develop a research proposal (GSA, AAPG, NSF); how and when to publish your results; determination of authorship of publications; how to maintain research records – lab and field note books, storage of sample collections: Faculty

Week 13: How to write a resume and cover letter: Faculty

Week 14: How to give an effective scientific presentation: Bob Bodnar

2. An online training will be required Graduate students in the Spring semester; once (for MS students) or twice (for PhD students/candidates). The online training will be designed to have a style and delivery that resembles the online training mandated by federal grants. The content of the online training will be derived from documents related to the Virginia Tech Honor code and from available resources at professional societies, such as AGU, GSA, ACS, AIP and AAAS. Furthermore, author guidelines of major publishers of scientific journals will be taken into account for topics like authorship. We plan on using Scholar as the online platform to provide the necessary study material and administer a quiz. We propose to employ the 'Wiki Tool' of Scholar to provide the study material. The 'Wiki Tool' has the advantage that the source file can be edited online without third-party software, access to edit the source file can be restricted, and collaborative writing is possible to create comprehensive study materials. The 'Quizzes Tool' will be employed to administer the quiz. Question pools can be created containing a large amount of questions to avoid often-repeating questions. Furthermore, this tool has a variety of options to guarantee that the quiz:

   1. Not timed
   2. Deadline
   3. Retake
   4. Pass threshold

Again, the source information of the questions is online within the Scholar framework. Therefore, questions can be easily added, deleted or changed without third-party software. It also allows us to define different questions types ranging from multiple-choice, numeric answers to fill-in-the-blank, which provides the opportunity to create an interesting, challenging and suitable test that also would transfer the message of the seriousness of ethics in geosciences.