

BIOL 450/540 Syllabus Spring 2014

Science and Ethics (Biology 450/540) Syllabus Spring Semester, 2014; 1 credit

- Instructor** Dr. Kathryn A. Hanley
Foster Room 479
Phone: 646 4583
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- Class Meetings** Tuesdays 4:00-5:00 Foster 146
additional discussion section Tuesdays 3:00-4:00 Foster 230
- Office Hours** Mondays 10:30-11:30; Tuesdays 1:00-2:00; or by appointment
- Webpage** The course web page is available in Canvas. General course information as well as required and supplementary readings will be posted on this site. Official course communication to you will often come through your Canvas e-mail. Please access it regularly. To email me, please use khanley@nmsu.edu rather than the Canvas email function
- Overview** Research misconduct leads to publication and utilization of flawed data and undermines public trust in the scientific process. This course will help students to identify accepted, ethical practices in science and will enable debate of issues on which there remains honest disagreement, such as dual-use technologies and regeneration of extinct species.
- Prerequisites** There are no prerequisites for this class, but clear communication in written and spoken English is expected. If you have difficulties in either, I encourage you to seek help and feedback from me and from classmates prior to final submission of oral or written presentations.
- Evaluation** Final grades will be assigned based on scores in these activities:
- | | BIOL540 | BIOL450 |
|---------------------------------------|----------------|----------------|
| Class participation | 45% | 50% |
| Individual tutorial | 5% | 10% |
| Oral presentation of individual topic | 25% | 40% |
| Write-up of individual topic | 25% | |
- Maximum cutoffs of total scores for the following letter grades are as follows: 90% (A), 80% (B), 70% (C), 60% (D), < 60% (F)
- Unexcused late work will be penalized by 10% of the final score for each day the work is late.
- Honor** It is almost a tautology to state that academic honor is required in a course entitled Science and Ethics. **See the NMSU student code of conduct at <http://deanofstudents.nmsu.edu/student-handbook/1-student-code-of-conduct/index.html>**. I expect each student to submit his/her own original work in every exercise. Cheating, plagiarism (both intentional

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and unintentional), and other academic misconduct will not be tolerated. Intentional or unintentional plagiarism will result automatically in failure on that assignment and, depending on the extent of the plagiarism and at the discretion of the instructor, may result in failure of the class. If a student is unsure whether he or she is being academically dishonest, then he or she should ask one of me for clarification (in person or via email) prior to completing the exercise. Plagiarism is using another person's work without acknowledgment, making it appear to be one's own. PRIOR TO THE SECOND MEETING OF THE CLASS, every student is required to read in its entirety the definition of plagiarism presented at the NMSU Library website: <http://lib.nmsu.edu/plagiarism/>.

Attendance Lecture attendance is expected except for documented university business or extreme emergencies, and regular participation will greatly improve your success in the course. You will be graded on your participation in class (see above). Both university business and extreme emergencies must be documented.

Syllabus I reserve the right to modify the syllabus to accommodate individual or university exigencies, to better facilitate class learning, or to delve more deeply into topics of interest to the class.

Disabilities & Accommodations

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) covers issues relating to disability and accommodations. If a student has questions or needs an accommodation in the classroom (all medical information is treated confidentially), contact:
Trudy Luken, Director
Student Accessibility Services (SAS)
Corbett Center, Rm. 244
Phone: (575) 646-6840
E-mail: sas@nmsu.edu
Website: www.nmsu.edu/~ssd/

NMSU policy prohibits discrimination on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex, sexual orientation, spousal affiliation and protected veterans status. Furthermore, Title IX prohibits sex discrimination to include sexual misconduct, sexual violence, sexual harassment and retaliation. For more information on discrimination issues, Title IX or NMSU's complaint process contact:
Gerard Nevarez, Executive Director or Agustin Diaz, Associate Director,
Office of Institutional Equity (OIE)
O'Loughlin House
Phone: (575) 646-3635
E-mail: equity@nmsu.edu
Website: <http://www.nmsu.edu/~eeo/>

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Date	Topic	Readings
1/21	Course Overview Research Misconduct: The Scope and the Roots of the Problem	Interlandi 2006 (NY Times article-required) Fang et al. 2012 (optional)
1/28	Data Stewardship	http://ori.hhs.gov/education/products/wsu/data.html On Being a Scientist pgs 8-14
2/4	Mentor and Trainee Responsibilities Conflict Resolution	On Being a Scientist pgs 4-7
2/11	Publication Practices Responsible Authorship Peer Review	On Being a Scientist 29-38
2/18	Research Misconduct: Fabrication, Falsification and Plagiarism	On Being a Scientist 15-18 Cromey 2010
2/25	Detecting and Responding to Research Misconduct	On Being a Scientist 19-23 Enserink 2013
3/4	Use of Non-Human Animal Subjects	On Being a Scientist 24-17 Ferdowsian and Beck
3/11	Use of Human Subjects <i>Last Day to Withdraw from the Course as "W"</i>	The Nuremberg Code: http://www.hhs.gov/ohrp/archive/nurcode.html
3/18	Collaboration Data Sharing Intellectual Property	On Being a Scientist: 39-50 The Montreal Statement: http://www.wcri2013.org/Montreal_Statement_e.shtml Macrina 1995
3/25	Spring Break-No Class	
4/1	Student Presentations	
4/8	Student Presentations	
4/15	Student Presentations	
4/22	Student Presentations	
4/29	Student Presentations	
5/6	Student Presentations	

Bibliography

COMMITTEE ON SCIENCE, E., AND PUBLIC POLICY, NATIONAL ACADEMY & OF SCIENCES, N. A. O. E., AND INSTITUTE OF MEDICINE. (2009). *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*.

CROMEY, D. W. (2010). Image Manipulation as Research Misconduct. *Science and Engineering Ethics*, 16, 639-667.

ENSERINK, M. (2012). Scientific ethics. Fraud-detection tool could shake up psychology. *Science*, 337(6090), 21-22.

FANG, F. C., STEEN, R. G. & CASADEVALL, A. (2012). Misconduct accounts for the majority of retracted scientific publications. *Proc Natl Acad Sci U S A*, 109(42), 17028-17033.

FERDOWSIAN, H. R. & BECK, N. (2011). Ethical and scientific considerations regarding animal testing and research. *PLoS One*, 6(9), e24059.

MACRINA, F. L. (1995). Dynamic Issues in Scientific Integrity: Collaborative Research, pp. 1-16. *American Academy of Microbiology*.