

## Scientific Integrity and Responsible Conduct in Research NYU School of Medicine

**GSAS Course #:** G16.2000.001 Semester: Spring 2012

**Course Director:** Keith Micoli, Ph.D.

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**Description:** The purpose of this course is to familiarize postdoctoral and pre-doctoral trainees (including MD/PhD candidates) with basic ethical issues confronting scientists in biomedical science research. The course includes reading, lectures, and movies combined with discussion sections. Each student is assigned to a discussion section, and is required to attend all 11 sessions of the course. Attendance is taken, and students missing more than two sessions must retake the course. If a student misses a discussion section, they are required to complete a 2-page essay on the case study assigned by the section leader (due by the next discussion section). Trainees in certain programs are required to retake the course every 4 years.

The course addresses ethical considerations for human and animal subjects, scientific integrity in data management, analysis, authorship, and publication. Additional topics include peer review, scientific fraud, conflict of interest, mentoring, intellectual property, collaborations (including industry) and the role of scientists in society.

The course is designed to meet or exceed all NIH requirements for instruction in the responsible conduct of research, as updated in NOT-OD-10-019 Nov. 24, 2009. Specifically, topics are addressed as follows in the 2012 syllabus:

- conflict of interest – personal, professional, and financial (2/29 discussion)
- policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices (2/1, 2/8, 3/21 discussions)
- mentor/mentee responsibilities and relationships (2/15 discussion)
- collaborative research including collaborations with industry (2/29, 3/7, 4/11 discussions and lecture)
- peer review (3/7 and 4/11 discussion and lecture)
- data acquisition and laboratory tools; management, sharing and ownership (2/29 discussion)
- research misconduct and policies for handling misconduct (3/9, 3/28 discussions)
- responsible authorship and publication (3/7 lecture)
- the scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research (3/14 and 4/11 lectures, Movie discussions 2/8 and 2/22)

Although direct involvement of the student's laboratory mentors is expected to occur coincident to the course, experienced faculty members give lectures and lead discussions throughout. The course director has experience as a

researcher at the student, postdoctoral, and faculty level, and our invited speakers all have decades of experience from the faculty level to Vice-president of Research. Senior graduate students and postdoctoral fellows also participate as discussion leaders. Although less experienced than faculty, we believe this format provides fertile ground for meaningful dialogue that educates both the students and the discussion leaders as well.

The duration and frequency of the course exceeds the 8 hours suggested by the NIH, with a 11-week duration course with 90-minute sessions for 16.5 hours of contact time.

**Textbook:** *Scientific Integrity* by Francis L. Macrina, ASM Press, Washington, D.C., 3rd Edition (2005).

This text is on reserve in the NYU School of Medicine Frederick L. Ehrmann Medical Library, Ground Floor and at the Sterling Forest library.

**Locations & Times:**

- All discussion sections are held on Wednesdays from 6:30 – 7:30 in either the Coles Seminar Rooms (1-4) on the first floor of the Coles Building, or the Schwartz Lecture Hall Rooms C and C. See attached schedule for Discussion Section Room Assignments.
- Special lectures and movies are in a different venue and replace the normal discussions held in Coles.

**Course Structure & Communication:** The introductory lecture familiarizes students with the layout and requirements of the course, and highlights the mandates from the National Institutes of Health. A guest lecturer will also present current topics in scientific ethics. Seven sessions are discussion sections, and two relevant movies will be shown with discussion following.

Students are responsible for completing the reading assignment prior to attending their section. Each reading will be reviewed at the beginning of each session and key points will be posted on ALEX.

Individual discussion leaders may recommend additional readings for your session. The final take-home exam will be distributed on April 9 and is due back no later than 5:00 pm on April 20.

## Course Schedule:

Date	Topic	Readings
Session 1: Introduction & Special Lecture <b>Wednesday, January 25</b>	<b>6:00 p.m.</b> <b>Smilow Seminar Room</b> <b>Course Introduction to Scientific Integrity and Responsible Conduct in Research</b> Keith Micoli, Ph.D <b>Fraud &amp; the Public Trust</b> <b>Guest Lecturer:</b> Richard H. Kessin, Ph.D., Professor, Anatomy & Cell Biology, Columbia University	Macrina, FL, <i>Scientific Integrity</i> , Chapters 1 & 2  Kevles, D.J., The Assault on David Baltimore, <a href="#">New Yorker</a> . 1996 May 27, 72 (13): 94-98, 100-104, 106-109.
Session 2: Discussion <b>Wednesday, Feb 1</b>	<b>6:00 p.m.</b> <b>Ethical Consideration for Human Subjects</b> Small groups meet in Coles Seminar Rooms	Macrina, FL, <i>Scientific Integrity</i> , Chapter 5
Session 3: Discussion <b>Wednesday, Feb 8</b>	<b>6:00 p.m. Smilow Seminar Room</b> <b>Movie and Discussion: Miss Evers' Boys</b> <b>Introduction by Joel Oppenheim, PhD</b>	Macrina, FL, <i>Scientific Integrity</i> , Chapter 6
Session 4: Discussion <b>Wednesday, February 15</b>	<b>6:00 p.m. Mentoring</b> Small groups meet in Coles Seminar Rooms	Macrina, FL, <i>Scientific Integrity</i> , Chapter 3
Session 5: Discussion <b>Wednesday, February 22</b>	<b>6:00 p.m. Smilow Seminar Room</b> <b>Movie and Discussion: And the Band Played On</b>	
Session 6: Special Lecture <b>Wednesday, February 29</b>	<b>6:00 p.m. Data Management, Conflict of Interest and Intellectual Property</b> Small groups meet in Coles Seminar Rooms	Macrina, FL, <i>Scientific Integrity</i> , Chapters 7, 9, 11
Session 7: Movie and Discussion <b>Wednesday, March 7</b>	<b>6:00 p.m. Smilow Seminar Room</b> <b>Reporting Research</b> Linda Miller, Ph.D. Associate Dean for Basic Science	Article: "On Being A Scientist – RCR
Session 8: Special Lecture <b>Wednesday, March 14</b>	<b>6:00 p.m. Smilow Seminar Room</b> <b>Science Fraud-Guest Lecturer:</b> Laurel Southard, Director Undergraduate Research, Cornell University	
Session 9: Discussion <b>Wednesday, March 21</b>	<b>6:00 p.m. Smilow Seminar Room</b> <b>Special movie and discussion: The Lab</b>	
Session 10: Discussion <b>Wednesday, March 28</b>	<b>6:00 p.m. Special Topics</b> Small groups meet in Coles Seminar Rooms	Additonal Reading TBA
Session 11: Special Lecture <b>Wednesday, April 4</b>	<b>Authorship &amp; Peer Review</b> <b>6:00 p.m. Smilow Seminar Room</b> <b>The Changing Dimensions of Scientific Authorship</b> <b>Guest Lecturer:</b> Dr. Francis L. Macrina Vice President for Research & Professor of Micro & Immunology, VCU	Macrina, FL, <i>Scientific Integrity</i> , Chapter 4  Additional Handouts will be available online