

Astronomy 408/508 Science Policy
Dr. Kevin B. Marvel, kmarvel@mac.com

Syllabus for Astr. 408/508 Science Policy

Wednesdays 10:00 am; Steward Observatory (SO) 202

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Office Hours: Wednesdays after class session 1.5 hours (or by appointment)

Course Objectives: To expose advanced science students (Junior-Senior-Graduate) to the policy process, the interaction between science and policy and policy and science, to understand the role of advocacy and the media in stimulating policy change and to appreciate that understanding and interacting with the policy process at the federal, state and local levels should be an expected part of a career in science.

Grade Policies: The grade for this class will be derived from a student project analyzing a science policy issue of their choosing and presenting a strategy for advancing the policy matter from the point of view of a scientist, institution or non-profit entity. Graduate students will have to augment research of their chosen topic with interviews with policy makers and insiders.

Absence Policies: As this course meets only once per week, absences will seriously impact a student's understanding of the material. Except for illness certified by a medical doctor, absences will incur a letter-grade reduction per absence, with the following exceptions: All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion and absences that are pre-approved by the UA Dean of Students (or Dean's designee). Note that exceptions may be approved in advance or in truly exceptional cases after the fact. Also, the schedule presented below is subject to change based on the availability of external speakers, who will be key to augmenting the course material with real-world perspectives and experiences.

Required Texts: **Beyond Sputnik**, U.S. Science Policy in the Twenty-First Century Homer A. Neal, Tobin L. Smith, and Jennifer B. McCormick. **Pasteur's Quadrant: Basic Science and Technological Innovation**, Donald E. Stokes. Other materials will be made available or pointed out online. In course reading of current materials will be required.

The course grade will be determined by the completion of a student project, documented in a student paper and augmented, in the case of graduate students, with one-on-one interviews with policy makers and insiders.

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The use of cell phones or pagers in class will not be permitted. Laptops may be used only for taking notes or for in-class reading or research (supplementary texts and materials will be made available online).

The University's policies against plagiarism and threatening behavior (<http://dos.web.arizona.edu/uapolicies> & <http://policy.web.arizona.edu/~policy/threaten.shtml>) will apply.

Although not confirmed at this time, a field trip to the Arizona State Legislature may be available to students, if it can be scheduled successfully. It will not be a formal part of the grade however.

Students who are registered with the Disability Resource Center must submit appropriate documentation to the instructor if any accommodations are required (see <http://drc.arizona.edu/teach/syllabus-statement.html>).

Material presented in this syllabus regarding the content and schedule of the course may be subject to change, as deemed appropriate by the instructor.

Objectives of this Course

- a) Understand the relationship between science and public policy
- b) Explore how science informs the creation or modification of policy and how policy impacts the scientific enterprise
- c) Understand the federal funding process and its impact on science in the United States
- d) Develop an appreciation for how advocacy can impact policy.
- e) Analyze, in detail, a science policy issue of the student's choice and develop a strategy for acting on the issue.

Schedule (Wednesdays 10:00am to 11:15 am)

Date

Topic (Reading...for next course)

Week 1 (August 28): Introduction & overview of course; What is science policy? & A Brief Introduction to Funding R&D for Astronomy (Chapters 1-5).

Week 2 (September 4): No class, Marvel in DC (AAAS R&D Website Review...investigate on your own: <http://www.aaas.org/spp/rd/> ; prepared to discuss, bring questions).

Week 3 (September 11): Science Policy in the Federal government and who makes science policy? How is science policy made? (Pasteur's Quadrant)

Week 4 (September 18): External Speaker (TBD). (Chapters 7, 8 & Watch video at: http://pointers.audiovideoweb.com/stcasx/il80win10115/OLGA/speaking_for_science.wmv/play.aspx)

Week 5 (September 25): Science lobbying; Science and politics. (Chapter 11, 12 & 13)

Week 6 (October 2): Issues in the physical sciences, engineering and technology. (In class reading and discussion)

Week 7 (October 9): Issues in the biological, environmental and medical sciences. (In class reading and discussion) (Chapters 6 & 9)

Week 8 (October 16): External Speaker (TBD) (Chapters 10 & 14).

Week 9 (October 23): University research policy issues; Scientific ethics and integrity. External Speaker: Dr. Richard Green, Deputy Director for Federal Relations (Chapters 11, 15 & 16)

Week 10 (October 30): Science and engineering education & workforce, Science for National Defense)

Week 11 (November 6): Science and the public; Impact of globalization on science and science policy. (Chapter 17, 18)

Week 12 (November 13): Grand challenges for science and society, Science policy and the future. (Chapter 19 & 20)

Week 13 (November 20): External Speaker

Week 14 (November 27): No class, Thanksgiving Break

Week 15 (December 4): Student presentations & Class Discussion

Week 16 (December 11): Student presentations & Class Discussion