

PubPol 754  
Research Seminar in Science, Technology, & Public Policy  
Winter 2018

Location: Room 1120, Annenberg Auditorium, Ford School of Public Policy  
Professor and President Emeritus Jim Duderstadt  
[jjd@umich.edu](mailto:jjd@umich.edu)

Graduate Student Instructors: Karen Yocky  
[afarivar@umich.edu](mailto:afarivar@umich.edu)  
Office Hours: To be arranged

#### Course Description

The aim of this course is to introduce you to topical issues in science and technology policy. The course will meet weekly for a formal seminar. Those currently in the science policymaking arena as well as experts in applied science policy research will be invited to class to participate as seminar speakers. By interacting with those active in science policy circles, it is hoped that you will gain a real appreciation for the processes and underpinnings of current national science policy.

#### Course Requirements and Assignments

This course can be taken for either 1 credit hour or 3 credit hours. Below outlines the requirements for each version.

##### *Course requirements for 1 credit hour:*

Attendance at all Tuesday seminars  
3 reaction papers

##### *Course requirements for 3 credit hours:*

Attendance at all Tuesday seminars  
Attendance at all additional discussion sessions  
3 reaction papers  
1 term paper

##### *Grading for the 1 credit hour course will be determined by:*

40% - attendance  
60% - reaction papers (3 @ 20% each)

##### *Grading for the 3 credit hour course will be determined by:*

30% - attendance  
10% - discussion participation  
30% - reaction papers (3 @ 10% each)  
30% - term paper

### Reaction Papers (all students)

These are intended to give you the opportunity to reflect on and respond to the seminar topics and issues covered in class. You will be required to write three reaction papers during the course of the semester. You may choose any topic covered during the first five (5) classes for the first reaction paper; any topic covered in the first 10 classes for the second reaction paper; and any topic we have covered over the course of the semester for the third reaction paper. You may not repeat a topic in your reaction paper but you may expand on a reaction paper topic for your term paper if you are taking the course for 3-credits.

Each reaction paper should be at most two pages with single or 1.5 line spacing, size 12 font, and 1-inch margins.

#### *General Overview on Reaction Papers*

No outside research or reading is required for your reaction papers; however, reading information beyond that presented in the course may be helpful for your own understanding and may provide a better grounding or justification for positions taken in your reaction paper. Begin by briefly summarizing the topic in a paragraph at the beginning of your paper and then use the remainder of the paper to provide a reaction to the topic as well as to the views/perspectives presented by the speaker.

It is acceptable for you use your reaction paper to address a piece of the presentation that was not the main topic or theme. In this instance, you will probably not be able to react to the views/perspective presented by the speaker. Instead, you should take the opportunity to share your thoughts, using background and factual information to support them.

Example reaction papers are posted on CTools under the resource folder for your reference.

#### *Keys to Effective Reaction Papers:*

1. As a rule of thumb, keep the summary of the lecture to no more than 1-2 short paragraphs. Do not summarize the entire lecture unless it is relevant to the rest of your paper. The summary should be used to set the context for the discussion that follows.
2. Since reaction papers are meant to be short, try to be concise and well organized in your writing. A helpful approach is to focus on 3 or 4 main points you wish to make. Use a topic or thesis sentence at the end of your introduction to summarize the topics you will discuss in your paper. Then, use a paragraph (or so) to discuss each topic.
3. Do not forget to use transition sentences at the end of your paragraphs between each of the topics.
4. Lastly, include a concluding paragraph that summarizes the main points

### Discussion Participation (3 credit hour students)

Students enrolled in the course for 3 credit hours will be required to attend additional discussion sessions. These discussions will be in large groups and allow for greater interaction with each week's speaker. Discussion sessions will take place after the one hour lecture and will last approximately one to one and a half hours (e.g., normal lecture 4:30-5:30 PM with additional discussion 5:30-6:30 PM or 5:30 – 7:00 PM).

### Term Paper (3 credit hour students)

Those of you taking the seminar for three credits will be required to write a term paper on a topic of your choice. The term paper is intended to provide you with the opportunity to explore a particular topic/issue covered by one of the seminars in more detail. Again, it is not necessary to choose something that is the main topic/theme of a seminar. Topics can be broader than the seminar presentations. The term paper will not exceed 15 pages (excluding figures, tables, and bibliography), and be double spaced using size 12 font with 1-inch margins.

Like the reaction paper assignments you must provide reasoned, original thought and reflection on the topic (i.e. it should be more than just a factual narrative on the chosen topic). Unlike the reaction papers, the term paper requires background research and outside reading. Such research should be properly documented in your final paper and should provide the background and support for your original thought and reactions to the topic. Your paper should include an executive summary, introduction, background information, discussion (subdivided by headers as appropriate), and conclusion. References should be cited either as in-text citations with a full bibliography at the end or foot/endnotes with full references provided.

You will be asked to submit a topic and brief outline by 4 PM on March 8. The outline is intended to:

- Get you thinking about your term paper topic
- Provide you with an opportunity to think about the direction you want to take in your paper
- Give you a chance to begin to read and collect background materials to help transition to writing

The outline also provides us with an opportunity to give you feedback on your topic selection and proposed research direction as well as suggest avenues for further exploration. The outline can be a formally structured outline with roman numerals, etc. or bullet points. Use the requirement for an outline to your advantage to get a head start on the paper.

An example term paper will be posted online for your reference.

### Grading for Reaction Papers and Term Papers

General guidelines for grading of papers are as follows:

A+: Student work exhibits original and of exceptional intellectual quality, very well

written and presented, supported logically by thoughtful arguments that are well-supported by outside literature, well structured, and complete.

A: Students work exhibits high intellectual quality, well written and well presented, supported logically and well documented, progresses logically, well-organized, and complete.

B+/A-: Students work exhibits average intellectual quality, is written intelligibly, is supported somewhat by some textual documentation, writing progresses logically, and is complete.

B-/B: Students work exhibits below average intellectual quality, written and/or presented poorly, not adequately supported or argued and poorly documented, progresses illogically, and/or is incomplete.

C/C+: Students work exhibits unacceptable intellectual quality, badly written and/or presented, unsupported, illogical, and/or incomplete.

#### Attendance Policy and Make-ups

Attendance at all seminars is important as attendance counts towards a significant portion of your grade. However, we recognize that unexpected events, illnesses, and other situations do occur. As such, there is no penalty for one (1) absence. Points will be deducted from your participation grade for each seminar missed beyond the one allowable absence. If you miss three (3) seminars, you will lose participation points and you will need to write a 4<sup>th</sup> reaction paper. Four or more misses will require a further negotiation with instructors and a possible 'Incomplete' for the course.



The aim of this course is to introduce students to topical issues in science and technology policy. The course will meet weekly for a formal seminar, involving speakers from both scientific and technological disciplines as well as those directly involved in formulating science policy at the national level. By interacting with those active in science policy circles, it is hoped that students will gain an appreciation of the processes and underpinnings of current national science policy.

The course will be offered both as a 1 credit seminar course and as a 3 credit seminar/discussion course. Students in the 3 credit course will also take part in discussions sessions that follow on the seminar presentations (5:00- 6:30).

Note: the 3-credit version of the course is part of the required curriculum for the graduate program in Science, Technology, and Public Policy.

The course is targeted to a broad audience, and no prior science background is necessary.

Among the topics to be covered are national science policy, energy sustainability, global climate change, biomedical research policy, space policy, technology-driven economic development, intellectual property, global issues such as pandemics and nuclear proliferation, exponentiating technologies (info-bio-nano), new research paradigms, higher education policy, graduate education, and postdoctoral training, and faculty research issues.

The instructor is James Duderstadt, President Emeritus, University Professor of Science and Engineering, who also currently serves as Chair of the Policy and Global Affairs Division of the National Research Council (of the National Academies of Science, Engineering, and Medicine).