**STUDY QUESTIONS**

*Detailed Instructions for Study Questions:*

During the live sessions, Professor Stavins will randomly select participants to share their answers for each Study Question. Study Questions are based closely on the recorded lectures. We suggest that you:

* Read the Study Questions once, *prior*to viewing the recorded lectures;
* Have the Study Questions available for reference *while*you view the recorded lecture;
* Prepare notes for yourself in response to each question *after*viewing the lecture – in case you wish to respond during the live session (or are called upon to do so!). (NOTE: You will not be required to submit written responses at any time during the week.)
* Refer to the MS PowerPoint presentations as needed. For each recorded Lecture by Professor Stavins, you will find two PDF versions of his slides: one in color, one slide per page; and one in black and white, two slides per page, for easy printing.
* Discuss your thoughts and notes on the study questions with your fellow-Study-Team members each morning before the live sessions.

**Session 1: Introduction: Science, Economics, and Policy**

1. Describe the “greenhouse effect.”
2. What are the primary sources of emissions of greenhouse gases?
3. Briefly describe the relationships among: emissions of greenhouse gases (GHGs), concentrations of GHGs in the atmosphere, (global average surface) temperature, and damages from climate change. Describe the chain of causality among these.
4. What are three major approaches to addressing global climate change?
5. Describe the trends in total greenhouse-gas emissions from 1980 to today for the following: the European Union, China, and the United States. Describe the trends in CO2 emissions per capita for developed and developing countries. What are the implications of your answers for fairness/justice?
6. Define “carbon [or emissions] intensity.”

**Session 2: Fundamentals of an Economic Perspective**

1. Why is an economic perspective important for understanding global climate change?
2. What is a “global commons problem”? *Why* is climate change a global commons problem? If climate change is a global commons problem, why is international cooperation therefore necessary to address climate change?
3. Are damages (adverse impacts) from climate-change a function of the concentration of greenhouse gases in the atmosphere (the "stock") or of annual emissions of greenhouse gases (the “flow”)? Why?
4. What is an “externality?” Are all externalities negative?  Can some be positive?
5. How do we define the *benefits*of policy that reduces pollution? (Hint: How do the benefits of environmental protection relate to environmental damages?) What are 1 – 2 examples of the *costs* of implementing policy to reduce pollution?
6. What is the difference between total cost, average cost, and marginal cost?
7. What is meant by the “efficient level of pollution control?”
8. Explain as precisely as you can the difference between “efficiency” and “cost effectiveness”. What are the appropriate uses of each in evaluating environmental policies?
9. Define the “social cost of carbon” (SCC). How does the choice of discount rate affect the SCC? Why is the choice of whether or not to include *global* damages so important in determining the SCC?
10. In economics, what is the difference between a “progressive” policy and a “regressive” policy?