

Assignment #3 for **Environmental and Resource Economics**  
Economics 359M, Spring 2017

**Due date:** Wednesday, March 22, 2017

**Readings:** Chapters 7 and 8 in

Kolstad. *Environmental Economics*, 2<sup>nd</sup> ed. OUP.

T. Gayer and R. W. Hahn. Designing environmental policy: lessons from the regulation of mercury emissions. *Journal of Regulatory Economics*, 30(3):291–315, 2006.

P. R. Portney. Trouble in Happyville. *Journal of Policy Analysis and Management*, 11(1):131–132, 1992.

R. Costanza, R. D’Arge, R. De Groot, S. Farber, M. Grasso, B. Hannon, K. Limburg, S. Naeem, V. O’Neill, Robert, J. Paruelo, R. G. Raskin, P. Sutton, and D. B. Van. The value of the world’s ecosystem services and natural capital. *Nature*, 387(6630):253–260, 1997.

Demand for Environmental Goods

- A. Kolstad, Ch. 7, problem 4.
- B. Kolstad, Ch. 7, problem 5.

Hedonic Pricing

- C. Kolstad, Ch. 8, problem 1.
- D. Kolstad, Ch. 8, problem 2.
- E. Kolstad, Ch. 8, problem 3.
- F. Kolstad, Ch. 8, problem 6.

On the readings

- G. These next questions refer to the Gayer and Hart article (2006 J. Regul. Econ.).
  - (1) How large is the estimated cost savings to achieving the given level of mercury reduction using the cap-and-trade versus the regulatory approach?
  - (2) In lecture, we analyzed the efficiency of cap-and-trade programs as consequences of the equalization of marginal costs of reduction across different sources. Unlike those analyses of cap-and-trade programs, the authors discuss flexibility not only across sources, but across time. Why might this provide additional savings to society? What margins are being equalized with this that were not considered in lecture?

- (3) The authors base their estimates of benefits by valuing the decline in babies' IQ's. How were these estimates derived? How does the choice of discount rate affect the estimates?
  - (4) Mercury is but one of the pollutants emitted by coal-burning sources. How do the authors try to achieve separation between mercury reduction benefits and the reduction of other pollutants?
- H. One of the two main methods for establishing the value of an environmental good is directly challenged by the Portney (1992 *J. Policy Anal. & Mgmt*), article on "Happyville." Which? In which direction does Portney's example bias the valuations? Give an environmental good or bad which might have the opposite bias, and explain what evidence there might be for this bias.