

Syllabus for SCIE 628-01 - **Living in a Polluted World**

Summer term 2011, Monday/Wednesday 1-4 PM

Johan C. Varekamp, E&ES, Wesleyan University

July 6	Introduction to broad element geochemistry in nature, basic geochemistry, water rock interaction, weathering, typical element concentrations in waters, Clean Water Act (Textbook – Ch. 1)
July 8	Trace elements in nature and human health – essential nutrients, required element levels, toxic levels (handouts, articles and textbook chapter 2)
July 11	The environmental geochemistry of the heavy metals and arsenic (articles, text book chapter 4)
July 13	Field day – Weathersfield cove (if weather plays a role, July 18)
July 18	Natural archives of element pollution – lakes, marshes, wetlands, ice cores, (articles, text book chapter); collection of hair samples
July 20	Analytical techniques-Hg analyzer, XRF, ICP (handout); movie
July 25	Organic pollutants in water (textbook chapters 3-5); legislative issues
July 27	Lab day with sample preparation, Hg analyses
August 1	XRF Analyses – lab day. report writing assignments; short lecture
August 3	Presentation and discussion of the project results, local sources of pollutants, grading on lab/research performance. Take home exam on background science.