

ALS 398H, CALS Honors Seminar, Spring 2012
Group 9: Global Drinking Water and Sanitation

Wednesdays, 3-5 PM, Williams Hall 3402

Thursdays, 3-5 PM, Williams Hall 2223

Faculty Mentor:

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Office hours by appointment

Topic Overview: Global drinking water and sanitation: Current trends and future needs

Across the world, 884 million people do not have access to safe drinking water and 2.6 billion people do not use approved sanitation facilities. In this seminar, we will examine global trends and geographical disparities in drinking water and sanitation coverage, discuss the consequences of unimproved water and sanitation, and assess the roadblocks to achieving total access. Through this work, we will evaluate the modes by which drinking water and sanitation demands are being met and identify future needs in research, training, education, and monitoring. Students will review scientific and policy literature, learn from invited speakers, and take a field trip to an NC State water and wastewater training facility. Student participation will culminate with the development of a proposal of recommendations for how the visited facility should be enhanced to include more applications appropriate for developing countries.

Group Policies: see ALS 398H course syllabus, handed out January 11 and 12.

Specific Group Objectives (in addition to broader course objectives)

- Understand the status of global drinking water and sanitation access
- Discuss importance of water quantity, water quality, and sanitation to health
- Understand the challenges with increasing access to water and sanitation
- Critically analyze the metrics used to assess water and sanitation access coverage
- Develop a proposal for how NC State can improve training and education facilities that include international drinking water and sanitation applications

Structure of Group Activities

Each week we will discuss a scientific/policy issue related to global drinking water and sanitation, with the overall goal of working to make recommendations about how drinking water and sanitation training and education facilities can be developed at NC State. We will take a field trip to NC State's Lake Wheeler decentralized water and wastewater training facility in order to gain an appreciation for a variety of educational modes. In addition, time will be devoted in each section meeting to broadly discuss approaches to research. Final project deliverables include a research poster, oral presentation, and written paper, all of which will be completed as a group.

Weekly assignments

In addition to our work towards the final project, every Friday, Dr. Polizzotto will email a document to the group that is to be read for the following class period. Each student is also responsible for searching for an additional document (from a primary source) related to the weekly scientific topic, writing a 1-paragraph summary, and reporting on it to the larger group; the title and source of the additional document must be emailed to Dr. Polizzotto the Tuesday before class. Brief assignments related to the 'Approaches to Research' topic may also be given on Fridays. The weekly schedule is as follows:

- Friday: Documents and Approaches to Research assignments sent to students
- Tuesday: Students email title and source of additional document to Dr. Polizzotto
- Wednesday/Thursday: Group discussion, submit report on individual documents, discuss Approaches to Research assignments

Expectations

- Positive group dynamics
- Participation in discussions and assignments
- Ask questions!
- Provide feedback to your mentor!

Outline of Weekly Topics (subject to change):

- Jan. 18, 19: Introduction: The state of global water and sanitation access
Discussion questions, introductions, syllabus and goals, document
- Jan. 25, 26: Hazards and consequences of ‘unimproved’ water and sanitation; terminology
Approaches to Research: Sources of information
- Feb. 1, 2: Challenges to achieving access to water and sanitation
Approaches to Research: Searching for sources
- Feb. 8, 9: **Field Trip** – Lake Wheeler: NC State decentralized water and wastewater training facility
- Feb. 15, 16: Technologies for ‘improved’ decentralized drinking water and sanitation; water quality
Approaches to Research: Questions, objectives, hypotheses
- Feb. 22, 23: Sustainable (?) solutions
Approaches to Research: Sections of a research paper, poster presentation, and oral presentation
- Feb. 29, Mar. 1: Who is the audience? Who participates in international water and sanitation and what are their needs?
Approaches to Research: Presenting Information: Graphs, figures, and tables
- Mar. 7, 8: **Spring Break, no meeting**
- Mar. 15, 16: **Large group meeting:** Effective Poster and Oral Presentations (Williams 1404)
- Mar. 21, 22: Discussion: What is appropriate for Lake Wheeler?
Discussion: Individual roles in group deliverables
Additional topics as defined by students
Approaches to Research: Oral presentations (if necessary)
- Mar. 28, 29: Discussion of project deliverables – status, problems, strategies going forward
Additional topics as defined by students
Approaches to Research: Draft poster
- Apr. 2 (M): **Abstracts due**
- Apr. 4, 5: **Spring Holiday**, no meeting
- Apr. 10 (T): **Undergraduate Research Symposium** (McKimmon Center)
- Apr. 18, 19: **Oral Presentations to Large Group** (Williams 1404)