MBIO 4810/5810 Biocatalysis and Bioremediation (3 credits)

Time: T, R 10:30 am - 11:45 am
Location: TBD
Instructor: Prof. Amy V. Callaghan (Department of Botany and Microbiology)

Course description:
The purpose of this course is to introduce the role of microorganisms in the biocatalysis and bioremediation of relevant pollutants. Course material will focus on soil and water pollution and bioremediation strategies (eg. bioaugmentation, biostimulation). Special emphasis will be placed on the biocatalysis and genetics of biodegradation pathways. The course will involve a combination of lectures and literature review. Undergraduate students will be expected to submit a short paper at the end of the semester; Graduate students will be expected to submit a short proposal. No student may earn credit for both 4810 and 5810.

Course Prerequisites: MBIO 3813 (Fundamentals of Microbiology) AND either CHEM 3013 (Organic Chemistry I) or CHEM 3053 (Organic Chemistry I: Biological Emphasis) OR permission from the instructor.

Course Topics:
History of Superfund and Brownfields programs
Oil Spills
Groundwater Pollution
Soil Pollution
Chemical and Physical Remediation Strategies
Biocatalysis and genetics of biodegradation
Bioremediation Strategies
Emerging contaminants

(http://library.thinkquest.org)