

BIOL 4850Q - Problems Bacterial Metal Home

Fall 2026 Syllabus, Section 01, CRN 40514,

Credit hours: 3

Public Instructor Information

Jonathan Caguiat

Professional Qualifications:

Postdoctoral, Microbiology, The University of Georgia

Ph. D., Microbiology, The Michigan State University

Bachelor's, Biology – Cell & Molecular Biology, The University of Michigan

Office: Ward Beecher Science Hall

Office Phone: 330-941-2063

Course Description

4850Q. Problems Bacterial Metal Home. Special biological problems for which materials and equipment are available and for which the student is qualified. Prereq.: Senior standing or consent of the chairperson. 1-3 s.h.

Course Readings

Group	Title	Author	ISBN
Optional	Suggested Reading		

Caguiat J. J. (2014). Generation of Enterobacter sp. YSU auxotrophs using transposon mutagenesis. *Journal of visualized experiments : JoVE*, (92), e51934. <https://doi.org/10.3791/51934>

Holmes, A., Vinayak, A., Benton, C., Esbenshade, A., Heinselman, C., Frankland, D., Kulkarni, S., Kurtanich, A., & Caguiat, J. (2009). Comparison of two multimetal resistant bacterial strains: Enterobacter sp. YSU and Stenotrophomonas maltophilia ORO2. *Current microbiology*, 59(5), 526–531. <https://doi.org/10.1007/s00284-009-9471-2>

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Week of	Proposed Topic	Due/To Prepare for Class
8/24	Transformation by Electroporation	
8/31	Colony Counting and Gridding	
9/7	Preparation of Growth Medium	
9/14	Replica Plating	
9/21	Mutant Identification	
9/28	Streaking of Transposon Mutants	
10/5	Replica Plating - Mutant Verification	
10/12	Genomic Preparations	
10/19	DNA Partial Digestions and Gel Electrophoresis	
10/26	DNA Ligation and E. coli Transformation	
11/2	Plasmid Preparations	
11/9	Sanger Sequencing Reactions	
11/16	Sequencing Reaction Clean Up	
11/23	Thanksgiving - No Class	

11/30	Basic Local Alignment Search Tool (BLAST) Analysis of Mutant Sequences
12/7	Finals Week - No Class

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.