BMB 960 Sect 301 "Plant Biotechnology Research Forum"
This is an advanced seminar focusing on reading of the literature and student presentations on topics related to plant biotechnology. Topic areas in general address modern problems in human health and environmental sustainability. Specifically in 2017 areas have included the boosting of lipid productivity in oleaginous microalga, synthetic biology and microbial biosynthesis from industrial perspective, abiotic stress tolerance as agronomic trait and its quantification, electronically controlled microorganisms, the organization, function and evolution of plant metabolism and synthetic biology and the future of space exploration. The course is part of the training program in plant biotechnology 'Plants for Health and Sustainability' (https://plantmetabolism.natsci.msu.edu/), though students not participating in the training program are also very welcome to take the course. Confirmed speakers of the Fall Retreat, themed *Leadership*, are representatives from the industry, the editorial office of The Plant Cell, national labs and academia.

Goals for the course include increasing competence in reading scientific literature and oral presentation skills, and to prepare students for engagement in the affiliated Plant Biotechnology Fall Retreat (https://plantmetabolism.natsci.msu.edu/posts/2018-fall-retreat-planned/) at the Kellogg Biological Station. IMPORTANT: Attendance of the Retreat taking place October 26-28 will be a required portion of the course.

During each class, two students will give presentations based on 2-3 published works. The topics and papers will be selected based upon the topics contributed and relevant for the background of the speakers, and thus will vary each year. The course will meet once each week for 6-8 weeks. The actual day/time/location of the course is Wednesdays 3:00-4:30 pm, in MPS3220. While the instructors will provide the students with suggested topics and papers, students are encouraged to go beyond the suggested publications.

If you are not a declared Biochemistry graduate student, you will need to submit the online override request form (http://bmb.natsci.msu.edu/undergraduate/override-request-form/) and then contact the instructors (Drs Björn Hamberger, hamberge@msu.edu, and Rob Last, lastr@msu.edu) for permission to enroll. Enrollment will be limited to 15 students.

The class meeting after the Annual Symposium on Plant Biotechnology for Health and Sustainability, will be used to evaluate the course and the symposium. We hope that each student will participate actively in the symposium.

Format: During each class meeting two students will make **25+5' presentations** each class period, based upon the assigned topics. We suggest that you read the papers that we listed to get you started. Please feel free to include other papers and book chapters in your reading and presentation.

The suggested overall format is:
5' of introduction, suitable for students familiar with molecular techniques but approachable for students with a variety of backgrounds.
15' of discussion of key experiments, making sure to highlight both basic biological insight and applications when appropriate.
5' of conclusions including ideas for future experimental and engineering approaches, insights and ideas for your research that the work gave you or anything else that might be of interest to the class members.
5’ of open discussion, moderated by the speaker

Grading will be based upon class participation (30%) and the research presentation (70%).
Course materials will be made available to enrolled students at D2L.msu.edu.