Fall 9-1-2020

BIOB 594.R04: Seminar in Biology

Jim Elser
University of Montana, Missoula, jim.elser@flbs.umt.edu

Matt Church
University of Montana, Missoula, matt.church@umontana.edu

Brian Hand
University of Montana, Missoula, brian.hand@umontana.edu

Yang Kuang
Arizona State University

Irakli Loladze
Arizona State University

See next page for additional authors

Instructor

Jim Elser, Matt Church, Brian Hand, Yang Kuang, Irakli Loladze, and Puni Jeyasingh

Syllabus

Joint Rules of Life Graduate Seminar

BIO594: "Advances in Biological Stoichiometry" (1 credit)

Responsible faculty: Jim Elser, Matt Church, Brian Hand (FLBS, U Montana), Yang Kuang, Irakli Loladze (ASU), and Puni Jeyasingh (OSU)

Overview: This seminar seeks to develop improved understanding of growth rate / resource limitation of growth from ecological, physiological, biochemical, and evolutionary perspectives. Readings will encompass both foundational and modern literature and integrate both empirical and theoretical studies encompassing diverse biota and ecosystems.

Learning outcomes:

1. Mastery of classic and contemporary papers in biogeochemistry, growth physiology, and biological stoichiometry.
2. Broadening of interdisciplinary perspectives.
3. Improved abilities in analysis and presentation of published work.
4. Enhancement of collaboration and communication skills.

Expectations: Each registered participant will co-lead 2 or 3 class sessions, working to develop and stimulate rewarding explication and discussion of assigned papers. All participants are expected to complete the assigned readings before each class and to actively engage in discussion each week. Note for our pandemic times: if you find yourself unable to attend during a given week for whatever reason, please contact one of your (local) instructors to discuss what, if anything, might be needed to make up that week's work. If you are assigned to lead a discussion during a week when you cannot attend, please discuss swapping your slot with a classmate. We will flexibly work with students who might run into any sort of complication this semester.

Approach: Our approach in the seminar will be based on CREATE pedagogy (https://teachcreate.org/). In this approach, we will try to connect foundational papers to modern papers while also pointing to the future regarding further work needed. Each student is asked to: 1) Focus on understanding both why and how each part of the study was done, 2) Examine the hypotheses underlying each aspect of the study, and 3) Analyze/discuss the data represented in each figure and table. Thus, each student, in their summary and discussion of their assigned paper, will include the following:

1) What hypothesis or question was addressed by each of the figures/tables presented in this paper?
2) What is the major result from this paper?
3) Propose what you think is the next logical set of experiments to conduct as follow up to this study.

Students with Disabilities: The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you have a disability that adversely affects your academic performance, and you have not already registered with Disability Services, please contact Disability Services at 406-243-2243. We will work with you and Disability Services to provide an appropriate accommodation.

Zoom link: (PW: 321974)
https://umontana.zoom.us/j/99927004677?pwd=dGZmcXRudjB1SUo3amhEaFBFZy9JQT09