Georgia Power Endowed Professorship

discussion and guest seminars series 2022

Topic: 50 years of US Clean Water Act and water quality

Freshwater is our most precious natural resource, as essential to life as the air we breathe. Fortunately, most of us in the United States don't have to give it much thought, thanks, in large part, to the federal Clean Water Act of 1972, turning 50 years this year.

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Georgia's Public Liberal Arts University
THINK INDEPENDENTLY. LEAD CREATIVELY

January 19th
Dr. Kalina Manoylov, GCSU
Title: *Discussion of new book:* **DIATOM GLIDING MOTILITY**
10 AM EST, Virtual (link was provided by request to state biologists, phycology and aquatic ecology interested students)

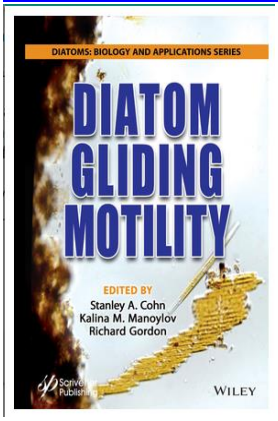
DIATOM GLIDING MOTILITY
Edited by Dr Stanley Cohn, DePaul University, Chicago IL, Dr. Kalina Manoylov, GCSU and Dr Richard Gordon, Wayne State University, Detroit, MI
Moving photosynthetic organisms are still a great mystery for biologists and this book summarizes what is known and reports the current understanding and modeling of those complex processes.

The book covers a broad range of work describing our current state of understanding on the topic, including: historic knowledge and misconceptions of motility; evolution of diatom motility; diatom ecology & physiology; cell biology and biochemistry of diatom motility, anatomy of motile diatoms; observations of diatom motile behavior; diatom competitive ability, unique forms of diatom motility as found in the genus *Eunotia*; and models of motility.This is the first book attempting to gather such information surrounding diatom motility into one volume focusing on this single topic. Readers will be able to gather both the current state of understanding on the potential mechanisms and ecological regulators of motility, as well as possible models and approaches used to help determine how diatoms accomplish such varied behaviors as diurnal movements, accumulation into areas of light, niche partitioning to increase species success. Given the fact that diatoms remain one of the most ecologically crucial cells in aquatic

ecosystems, we hope that this volume will act as a springboard towards future research into diatom motility and even better resolution of some of the issues in motility.

Audience Diatomists, phycologists, aquatic ecologists, cellular physiologists, environmental biologists, biophysicists, diatom nanotechnologists, algal ecologists, taxonomists.

Diatom Gliding Motility: Biology and... book by Richard Gordon (thriftbooks.com)



February 24th

Dr. Paula Furey, St. Catherine University, St Paul, MN
Title: *Use of fine level taxonomy of microbial organisms in aquatic ecology*
11 AM EST, Virtual (link was provided by request to phycology and aquatic ecology interested students)

February 25th

Dr. Paula Furey, St. Catherine University, St Paul, MN and **Dr Rex Lowe,** Center for Limnology, University of Wisconsin, Madison
Title: *Humidophila keelyei Furey, Manoylov, Lowe comb. nov*. and other aerophiles collected from the Great Smoky Mountains National Park
11 AM EST, Virtual (link was provided by request to phycology and aquatic ecology interested students)

March 2nd

Dr. Thomas Smith, Arkansas State University – Beebe, AR
Title: *Eastern USA and Puerto Rico Cyanobacteria, occurrences, and ecology*
10 AM EST, Virtual (link provided by request)

March 9th

Dr. Kalina Manoylov, GCSU
Title: *Discussion published special issue of Frontiers in Plant Science Freshwater and Marine*
10 AM EST, Virtual (link provided by request)
Metabolic Regulation of Diatoms and other Chromalveolates | Frontiers Research Topic (frontiersin.org)

Microalgae, including cyanobacteria, are amongst the most abundant aquatic organisms. Since the appearance of cyanobacteria, algae diversified to occupy every niche of the planet. Being photosynthetic organisms, microalgae convert sunlight energy into chemical energy in their plastids using CO_2 from the environment. To this end, they rendered and still render enormous ecosystem services through O_2 emission and CO_2 fixation, contributing significantly to the biogeochemical cycles. The colonization of niches could only be possible thanks to the highly diverse and original metabolisms, which is tightly regulated in order to acclimate to specific conditions. This tight regulation of the metabolism appears to be enhanced in the photosynthetic organisms, such as diatoms, that evolved

through successive endosymbiotic events. To understand the ecological success of microalgae, the mechanisms and regulatory circuits by which they modify their metabolism must be elucidated.

March 22nd

Dr. Sylvia Lee, EPA Washington DC

Title: *Professional development in the aquatic sciences towards research at the science-policy interface*

Description

Dr. Sylvia Lee is a biologist in the Office of Research and Development at the U.S. Environmental Protection Agency based in Washington, D.C. Dr. Lee will describe her professional development experience and how she and other aquatic scientists at the U.S. EPA conduct research at the science-policy interface. Students and mentors will learn Dr. Lee's perspective on how their research findings can be more accessible to federal and state decision-makers working to protect aquatic resources. Dr. Lee will also share some lessons learned and the skills that she has found to be useful for her day-to-day work as a federal scientist.

Note: this is joint event with GCSU Aquatic Center and The John E. Sallstrom Honors College by the invitation for collaboration by Dr. Newsome. I arranged the virtual talk Dr Lee will give for the Saladin Scholars Award Ceremony on March 22nd, at 6 PM EST, GC Magnolia ball room (F2F) and virtual (link provided by request). I will introduce her and talk about Clean Water Act.

You are cordially invited to the Saladin Scholars Awards Ceremony on Tuesday, March 22 at 6:00 p.m. in Magnolia Ballroom. Heavy hors d'oeuvres will be followed by a keynote address from U.S. EPA Biologist Dr. Sylvia Lee. We will also hear from last year's Saladin Scholars on their experiences and distribute scholarships to this year's recipients. Special thanks are extended to the Department of Biological and Environmental Sciences, particularly Dr. Kalina Manoylov, who partnered with the Honors College to secure Dr. Lee's participation. Please register by March 11 via this link or by using the QR code in the insert.

March 23rd

Dr. R Jan Stevenson, Michigan State University

Topic: *Uses of algae in Bioassessment in the US*

(research seminar 40-45 min), followed by questions and discussion

5 PM EST, virtual WebEx meeting room:

https://gcsu.webex.com/meet/kalina.manoylov

Note: collaboration with GC Shades of Green

April 6th

Dr. Sylvia Lee, EPA Washington DC

Title: TBD

(research seminar 40-45 min), followed by questions and discussion

5 PM EST, virtual WebEx meeting room:

https://gcsu.webex.com/meet/kalina.manoylov
Note: collaboration with GC Shades of Green

April 12th
Dr. Kalina Manoylov, GCSU
Title*: Diatom based assessment of the Savannah River*
(research seminar 40-45 min), followed by questions and discussion
10 AM - 11 AM (mountain time, US and Canada)
18:00 Central European Time, virtual link
Diatom Web Academy 2022 | News - Diatoms of North America