SoFlacs

Vol. 26, No. 4 South Florida Section ACS September 2016

SECTION SEMINAR MEETINGS

12:00-Noon, Friday, September 23
Wiegand Science Bldg, Auditorium 116W
Barry University
11300 NE 2nd Ave., Miami Shores

Dr. John Berry

Department of Chemistry & Biochemistry
Florida International University

The Zebrafish as a Model System of "Fishing for Toxins"

Proliferation of algae in marine, coastal and freshwater systems is a growing global concern, particularly when associated with toxin-producing species - as part of so-called "harmful algal blooms" (HABs) - and has been linked to various human impacts on the environment including both input of nutrients (e.g., nitrogen, phosphorous) from agricultural, urban, sewage and industrial waste waters, and contributions to global climate change (e.g., global warming). The cyanobacteria are photosynthetic prokaryotic organisms, and are perhaps best recognized as the "blue-green algae" associated with algal blooms and proliferations in freshwater (e.g., lake, pond) and coastal waters. Moreover, the cyanobacteria are recognized producers of a diverse array of toxic or otherwise bioactive metabolites, several of which have been linked to human and animal intoxications, as well as chronic effects on human health (e.g., cancer, neurodegenerative disease). Although several toxic metabolites, and particularly a number of water soluble peptides and alkaloids, have been identified, characterized and linked to poisonings and other environmental health concerns, much remains to be discovered with respect to the remarkable chemical diversity of the bioactive, and potential toxic, molecules from cyanobacteria. To explore this chemical diversity, and toxic potential, particularly in relation to possible contributions to human and animal health, as well as deterioration of ecosystems, we have employed the zebrafish (*Danio rerio*) as an aquatic vertebrate animal model to identify, and subsequently isolate and characterize toxic metabolites from a collection of freshwater and coastal cyanobacteria. This approach has pointed us to previously unrecognized toxic metabolites, and through the various biotechnological tools available to the zebrafish model system, we have been able to elucidate toxicity (e.g., mechanisms, targets, pathways), and moreover, develop hypotheses regarding possible contributions of these compounds with respect to human, animal and ecosystem health. Examples of this approach, and particularly identification of the previously unrecognized contribution of various lipophilic metabolites to the toxicity of the blue-green algae, will be presented.

B.Sc. University of Michigan; Ph.D. Cornell University; NIH/NCI Postdoctoral Fellow, Cornell University; NIH/NIEHS Postdoctoral Fellow, University of Miami; Assistant Professor of Marine Chemistry, FIU – Biscayne Bay Campus, North Miami.

5:30 PM, Friday, October 7
Florida Gulf Coast University, Whitaker Hall 101
10501 FGCU Blvd. South, Ft. Myers
Refreshments immediately following seminar in Holmes Hall Room 406

Dr. Greg Boyce

Department of Chemistry
Florida Gulf Coast University

Recent Progress in Strain-Releasing Methodologies and the Synthesis of Bioactive Natural Products

This seminar will focus on our recent progress on the development of new transformations for the efficient synthesis of natural products and relevant medicinal targets. We will present our recent studies on harnessing the strain-releasing reactivity of highly functionalized small rings in novel reactions. In addition, the concise syntheses of thujone and ginkgotoxin will be presented. Collaborative work on the detection of thujone and ginkgotoxin in plants will also be discussed.

Dr. Boyce received his Ph.D. in Organic Chemistry from the University of North Carolina at Chapel Hill in 2011, under the guidance of Prof. Jeffrey S. Johnson where he studied cascade reactions and silyl glyoxylate chemistry. He then began teaching as a Visiting Assistant Professor of Chemistry at Mercyhurst University in Erie, Pennsylvania before joining the faculty at FGCU in 2013 where he is currently an Assistant Professor of Chemistry. His research focuses on the development of synthetic methods and natural product synthesis.

IN MEMEORY OF DR. LEONARD KELLER

It is with great remorse to announce that SoFL-ACS treasurer Dr. Leonard S. Keller, Professor of Chemistry at Florida International University, passed away on Sunday, July 17, 2016, after a long battle with cancer. Dr. Keller served as chairman of the Miami Subsection of the Florida Section in 1977 and was treasurer of the South Florida Section since 1998. Dr. Kenneth Furton, FIU Provost, stated that "Len was a true institution - an exceptional university representative, a scholar, advisor, mentor and administrator."

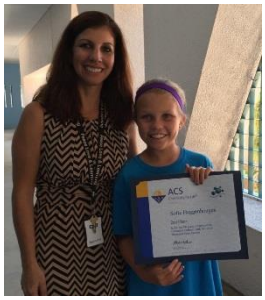
Dr. Keller earned a B.A. in chemistry from Rutgers University in 1965, and M.S. and Ph.D. degrees in organic from Yale University (1970). After Yale, he completed an NSF teaching post-doctoral fellowship in the Department of Chemistry at Brandeis University. In 1972 he joined FIU as an Assistant Professor of chemistry in the Department of Physical Sciences and thus was a "Founding Faculty". His scholarly focus and research interests were in organic chemistry, organic synthesis, development of new synthetic methods, and the use of transition metal organometallics in synthesis.

In 1982, Dr. Keller was elected Chair of the Department of Physical Sciences and served as chairman of Physical Sciences and then the Chemistry Department for the next 13 years. During those formative years, he helped build and shape the department and laid the foundation for what it is today. Under his guidance, the Bachelor of Science degree program in chemistry received ACS certification and the Master of Science degree program was inaugurated. He also helped lay the groundwork for a subsequent doctoral program. Dr. Keller also administered and advised in the Liberal Studies program, first as Associate Director and later as Director from 2006 to 2012. Since 2003, Dr. Keller served as secretary of the FIU chapter of Phi Beta Kappa.

In recognition of his profound contributions to FIU, in 2014 Dr. Keller received the University Service Medallion at a faculty convocation. While excelling as a leader and an administrator, Dr. Keller's passion was teaching the notoriously difficult, but essential subject of organic chemistry. He taught thousands of students many of whom went onto to be successful scientists and physicians. While battling his illness, he still taught organic in Spring of this year.

Dr. Keller is survived by his wife Barbara and sons Daniel and Robert. A celebration of his life will be held at the FIU Faculty Club on the Modesto Maidique's campus on Tuesday, September 20th from 4 to 6 PM. SoFL-ACS will also honor Dr. Keller by establishing a chemistry student service award.

Congratulations to Sofie Heggenhaugen, 4th grader from Virginia Shuman Young Elementary School in Fort Lauderdale and her teacher Michelle Frails



One of our students, Sofia Heggenhaugen, received Second Place in the 3rd-5th grade category of Chemists Celebrate Earth Day Illustrated Poem Contest National Competition! The theme of this year's competition was: "The Great Indoors–Your Home's Ecosystem". The student received a cash price, a certificate from ACS and a letter of congratulations.

Congratulations also to other SoFL-ACS students who won the local section CCED Illustrated Poem Contest:

K-2 Category: Dante Acevedo, 1st grade, Howard Drive Elementary School, Miami

6th – 8th Category: Nicole Alvarez, 8th grade, Bob Graham Education Center, Miami

9th – 12th Category: Madison Burmeister, 10th grade, A. W. Dreyfoos School of the Arts, West Palm Beach

Each winner's creative art illustrated poem was sent to ACS to participate in the national competition.

We thank all students who participated and especially the teachers who encouraged their students to enter the competition, and also thank the FIU-BBC students who judged the local section entries.

Call for Nominations for 2017 Officers

SoFL-ACS solicits members who would be interested in serving as section officers for 2017:
Chair-Elect, Secretary, Treasurer, Councilor, Alternate Councilor.
If you are interested and willing to be nominated for the November election,
please let George Fisher (editor, gfisher@barry.edu) know by early October.

2016 SoFL-ACS Officers

Chair: John Reilly, Florida Gulf Coast University, Ft. Myers, 219-590-7200, FAX 239-590-7200, johnreilly@fgcu.edu

Chair-Elect: Jesse Bernstein, Miami Country Day School, 601 NE 107 St., Miami, FL 33161, 305-779-7260, bernsteinj@miamicountryday.org

Past Chair:: K.V. Venkatachalam (Venk), Department of Biochemistry, College of Medical Sciences and College of Osteopathic Medicine, Nova Southeastern University, Ft. Lauder-dale, FL 33328, 954-262-1870, FAX 954-262-1802, venk@nova.edu

Secretary: Milagros Delgado, Department of Chemistry, FIU Biscayne Bay Campus, AC1-382A, 3000 NE 151st Street, North Miami, FL 33181, 305-919-5966; delgadom@fiu.edu.

Interim Treasurer: George Fisher (2016), Barry University, 305-899-3430, gfisher@barry.edu.

National Councilors: Zaida Morales-Martinez (2018), 305-386-3206, moralesz@fiu.edu; Milagros Delgado (2016), FIU, 305-919-5966, delgadom@fiu.edu; George Fisher (2016), Barry University, 305-899-3430, gfisher@barry.edu.

Alternate Councilors: Vic Shanbhag (2018), Nova Southeastern University, 954-262-8331, shanbhag@nova.edu; Lisa V. Milenkovic (2016), Broward County Public Schools, 754-321-2620, lisa.milenkovic@browardschools.com

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EDITOR and BUSINESS MANAGER: George Fisher, Department of Chemistry, Barry University, 11300 N.E. 2nd Ave., Miami Shores, FL 33161, (305) 899-3430, FAX (305) 899-3479; e-mail: gfisher@barry.edu.

CIRCULATION: Send post office form 3579 to Circulation Dept. SoFlacs, c/o George Fisher, Department of Chemistry, Barry University, 11300 N.E. 2nd Ave., Miami Shores, FL 33161.
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