



SoFlacs



Vol. 25, No. 5

South Florida Section ACS

August 2015

Section Seminar Meeting

5:00 PM, Wednesday, August 26

HPD Terry Building, Room 2107, Auditorium A
Nova Southeastern University
3100 South University Dr., Ft. Lauderdale

Global Climate Change: Examining the Atmospheric Chemistry Relevance and Science-Based Policy Making

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Associate Professor of Chemistry
Halmos College of Natural Sciences and Oceanography (CNSO)
Nova Southeastern University



Climate change has emerged as one of the most challenging scientific as well as societal issues for humans. The robust approach to understanding the climate system is rooted in a broad array of physical sciences; this talk discusses the relevance of chemistry. The amplified greenhouse effect is a result of the increasing amounts of IR-absorbing molecules, such as CO_2 , in the atmosphere. Yet greenhouse gases are not the only chemicals modifying the climate. Other atmospheric constituents pose a net warming, cooling or uncertain effect on the climate. Several case studies are discussed, showing how gas-phase and heterogeneous reactions form increased amounts of aerosols that in turn affect the climate differentially. Recent science advance is starting to play a key role in formulating feasible climate policies. In particular, the Montreal Protocol can lend its success to tackling the climate issue for a fundamental, scientific reason: many ozone-depleting chemicals are potent greenhouse gases. This science-policy nexus is illustrated in the proposed strategy of cutting short-lived climate pollutants as a fast-action, near-term measure to mitigate climate change.

For further info contact: Dr. K.V. Venkatachalam (Venk)
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Congratulations to Carlos Montero

Presidential Award for Excellence in Mathematics and Science Teaching

The Presidential Award for Excellence in Mathematics and Science Teaching is awarded annually to outstanding K-12 science and mathematics teachers from across the country. The winners are selected by a panel of distinguished scientists, mathematicians, and educators following an initial selection process done at the state level. Winners of this Presidential honor receive a \$10,000 award from the National Science Foundation to be used at their discretion. They also are invited to Washington, DC, for an awards ceremony, as well educational and celebratory events, and visits with members of the Administration.

Upon receiving the award, Carlos stated: "As a teacher, impacting the life of young students while helping them realize their potential has been my greatest reward. Receiving the Presidential Award is an exhilarating, yet humbling, honor that highlights what has already been a rich and gratifying career. This award actually belongs to all the students, teachers, colleagues, and parents who have played an integral role in my career. They have been, and continue to be, the reason for my continued pursuit of professional excellence."



Carlos Montero became a teacher in 2004 and currently teaches 9th-12th grade AP Chemistry at University School at Nova Southeastern University, where he is also the science department chair. Previously, Carlos taught at Dr. Michael M. Krop Senior High School in the Miami-Dade County school district. Carlos' career was forever changed when he encountered Modeling Instruction for Science Education. In Carlos' classroom, students learn science by doing science. A typical unit begins with careful observation of a chemical phenomenon followed by students developing particle level models to account for their observation. Using multiple representations of their models, students engage in whole-class scientific discourse until consensus is reached. During the process, Carlos is only a facilitator who fosters students' creativity and independent thinking while ensuring that the appropriate scientific model is agreed upon.

Carlos conducts summer workshops to introduce teachers to Modeling Instruction. He enjoys the interaction with teachers and has started STEM Teachers South Florida, to facilitate professional exchange locally. Carlos serves on the Executive Board of the American Modeling Teachers Association. Carlos holds a B.S. in chemical engineering from Penn State University, as well as teaching certificates in chemistry and gifted education. He earned National Board Certification in 2008.

SoFlacs, the publication of the South Florida Section, American Chemical Society, is published periodically. 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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