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| September 11, 2014 | 12:30 pm – 1:30 pm CL 1009 | **Dr. J. Carson Meredith**  
Professor and Associate Chair for Graduate Studies,  
J. Carl Pirkle Sr. Faculty Fellow  
School of Chemical & Biomolecular Engineering  
Georgia Institute of Technology | **Bioinspired Adhesives based on Pollen: Lessons from Nature** | ![View flyer](link) |
| September 18, 2014 | 12:30 pm – 1:30 pm CL 1009 | **Dr. Jacob Stewart**  
Postdoctoral Research/Teaching Fellow  
Emory University | **High-resolution infrared spectroscopy using quantum cascade lasers** | ![View flyer](link) |
| October 30, 2014  | 12:30 pm – 1:30 pm CL 1009 | **Department of Chemistry and Biochemistry Faculty**  
Kennesaw State University | **KSU Chemistry and Biochemistry Faculty Research Presentations** | ![View flyer](link) |
| November 13, 2014 | 12:30 pm – 1:30 pm CL 1009 | **Dr. Sharani Roy**  
Assistant Professor  
University of Tennessee, Knoxville | **Chemistry at Surfaces and Interfaces: From Fundamentals to Applications** | ![View flyer](link) |
Nature provides remarkable examples of adhesive bioparticles that function in a wide range of environmental and dynamic conditions including marine diatoms, plant pollens, and fungal spores. These microparticle systems provide robust examples of nature’s solutions to adhesion in wide-ranging habitats (land, water, air) and on surfaces with a variety of structures and chemistries. This talk will detail recent discoveries of the mechanisms of pollen adhesion, and fabrication of inorganic and magnetic mimics based on these design principles.
High-resolution infrared spectroscopy using quantum cascade lasers

Dr. Jacob Stewart
Postdoctoral Research/Teaching Fellow
Emory University

Infrared spectroscopy is a powerful tool for measuring the vibrational energy levels of molecules, which can provide important information about their structure and properties. Infrared spectroscopy is most commonly done using Fourier Transform Infrared (FTIR) spectrometers, but additional gains in resolution and sensitivity are possible using lasers as the light source for a spectrometer. Obtaining laser sources in the infrared has traditionally been difficult, but with the advent of quantum cascade lasers (QCLs), infrared lasers are now available throughout the mid-infrared spectral region. This talk will present work done at the University of Illinois developing a highly sensitive infrared spectrometer based on a QCL operating near 8.5 μm and present data collected on two classes of molecular systems using the QCL spectrometer.
Come and learn about undergraduate research opportunities, ask questions, and enjoy some snacks!

**When**

Thursday, October 30
12:30 – 1:30pm

**Where**

CL 1009

SAACS and The KSU Department of Chemistry and Biochemistry Seminar Series present:

**Undergraduate research: a discussion and panel regarding research opportunities at Kennesaw State University**

Hosted by SAACS and by The KSU Department of Chemistry and Biochemistry Seminar Series

For more info on SAACS (Student Affiliates of the American Chemical Society) and upcoming events, visit our facebook page at

www.facebook.com/KSU.SAACS

-or-

Email us at: SAACS@kennesaw.edu
Chemistry at surfaces and interfaces are both interesting from a fundamental point of view and relevant in a wide range of applications. Complex chemical processes ranging from heterogeneous catalysis, gas storage, chemical sensing, to corrosion, nanolithography, and solar cells arise from the scattering, adsorption, diffusion, and reactions of molecules on solid surfaces. I present three independent theoretical studies, including investigations of gas-surface scattering on metal surfaces, controlled chemical dynamics induced by the scanning tunneling microscope, and heterogeneous catalysis using metal-organic frameworks. These endeavors demonstrate the importance of detailed, mechanistic studies to examine fundamental theories as well as exciting applications of surface chemistry.