The Chemistry & Biochemistry Department welcomes two newest faculty members: Dr. Heather Abbott-Lyon, and Dr. Michele Dean.

**Dr. Heather Abbott-Lyon** is a physical chemist with research interests in reactivity at gas-solid interfaces and teaching interests in undergraduate education. While her love of teaching developed during her undergraduate studies at Emory University, her training in surface science began at the University of Virginia. There, she obtained her Ph.D. for the application of transition state theory to small molecule dissociation reactions on metal surfaces under the guidance of Dr. Ian Harrison. Subsequently, she was awarded an Alexander von Humboldt postdoctoral fellowship to perform experiments exploring the structure-reactivity relationships that govern catalytically relevant model systems with Dr. Hajo Freund’s department at the Fritz Haber Institute in Berlin. Dr. Abbott has spent the past two years working with Dr. Thom Orlando in the School of Chemistry and Biochemistry at Georgia Institute of Technology. Her research with Dr. Orlando’s group focused on the possible radiation induced chemistry occurring on the surface of Titan, Saturn’s largest moon. Here at KSU, Dr. Abbott will establish a research program to expand the fundamental understanding of electron and photon induced chemistry occurring at the ice-mineral interfaces found in extraterrestrial environments such as on icy moons, asteroids and interplanetary dust grains. In addition to her professional interests, she enjoys playing soccer, knitting and traveling and she is excited to be here!

**Dr. Michelle Dean** is a recent graduate from the University of Connecticut where she earned her doctoral degree in Chemistry. Her research background is in both Organic Chemistry and Chemical Education. Prior to this, she received a B.S. in Chemistry and in Adolescent Education in Biology from the State University of New York at Cortland. At this time she received her New York Teaching Certification in Chemistry, but quickly realized her heart was in doing research, and what could be a better mesh than a career in Chemical Education. Her desire work with teachers and chemistry scholars at the post-secondary level is what drew her to the Chemistry program at Kennesaw State University.
She was very impressed with the integration the education program into the Department of Chemistry and Biochemistry and decided to become a northern transplant and make the south her home.

Michelle’s research interests largely focus on student cognition as it relates to the chemistry discipline. Her current focus, an extension of her dissertation research, is on how students translate between two-dimensional and three-dimensional representations of organic structures. Her ultimate goal is to develop an educational tool that would aid in making this translation process easier for students, as well as portray molecular information that is not immediately apparent when looking at a traditional ball-and-stick model. The chemistry teacher preparation program at KSU has also allowed her to begin developing research questions in this area.

We welcome our newest additions to the Chemistry & Biochemistry faculty!

Phi Lambda Upsilon Induction Ceremony Fall 2011

The Beta Upsilon Chapter of the national chemistry honor society, Phi Lambda Upsilon, is an active student organization at Kennesaw State University with dedicated officers, Melissa Missinne, President; Mahatab Chowdhury, Vice-President; Katie Drupiewski, Treasurer; and Clarisse Valdivieso, Secretary. Fall 2011 activities for the organization include an October outing with the Student Affiliates of the American Chemical Society to the Tellus Science Museum in Cartersville, GA, as well as two service activities in November. Some Phi Lambda Upsilon members will visit a local high school with a relatively high percentage of economically disadvantaged students to lead a chemistry activity and act as role models for students in the class. The second service activity will be a review session in the format of a Jeopardy game, which will be held near the end of the semester for General Chemistry I students. This will be our second in what we hope to make a biannual event. This event, which was conceived of and organized by member, Eric Pfeiffer, was very successful in spring 2011, with more than 40 appreciative general chemistry students in attendance.
Thursday October 13, 2011 the Beta Upsilon Chapter welcomed twenty-six new members. We were pleased that Interim Dean of the College of Science and Mathematics, Dr. Ron Matson, Chair of the Department of Chemistry and Biochemistry, Dr. Mark Mitchell, fourteen chemistry faculty members, and several guests of inductees could join us in recognizing Christopher Brown, Adam Chadwick, Morgan Crotty, Daniel Dong, Joycelynn Foster, Erica Francis, Christopher Ghattas, Cheryle Gilmore, Stephanie Hill, Jessica Ippolito, Faizan Lakhani, Amanda Liber, Elliott Mack, James McMichen, Quinton Meisner, Yancy Mitchell, Laurie Mulqueeney, Sundeep Mummaneni, Kathleen O’Rourke, Reepal Patel, Krista Poynter, Dino Romero, Arlene Song, Bertrand Tematio, Ashley Teslicka, Mitchell Tuttle as new members. Bertrand Tematio, who is in the Master of Arts in Teaching chemistry program, was the first graduate student inducted into the Beta Upsilon Chapter. Our appreciation goes to Ms. Wanda Sexton who handled setup and served as hostess at the induction.

**KSU STEM**

**Peach State Louis Stokes Alliance for Minority Participation**

Kennesaw State University is proud to join the seven-member Peach State Louis Stokes Alliance for Minority Participation (LSAMP). The STEM Scholars Program at Kennesaw State is committed to preparing underrepresented students for careers in the Science, Technology, Engineering, and Mathematics (STEM) disciplines through academics, research and community outreach.

The participating universities are Fort Valley State, Georgia Perimeter, Savannah State, Southern Polytechnic State, UGA, Georgia Tech and KSU. Of the $5 million NSF/LSAMP grant to these 7 institutions, $500,000 is sub-awarded to KSU. The University of GA serves as the lead Institution.

This NSF-funded program is aimed at increasing the quality and quantity of students successfully completing science, technology, engineering and mathematics (STEM) baccalaureate degree programs, and increasing the number of students interested in, academically qualified for and matriculated into programs of graduate study.

If an effort to ensure that our students receive the best STEM preparation possible, our STEM Scholars advisory committee and students have designed a program that consists for three functional components. The first component provides academic enrichment opportunities. The activities consist of hands-on lab activities that reinforce the STEM principles that are covered in lecture.
During these activities, 3rd and 4th year students serve as facilitators for 1st and 2nd year students. This design helps the younger students get the assistance they need during their early years. It also provides the more advanced students with an opportunity to reinforce what they have learned by teaching others. The second component of the program is a research experience. The goal here is to get every STEM Scholar into a research lab as soon as their second year of studies and to keep them in a lab until they graduate. Research activities for the STEM Scholars begin at KSU but our goal is to have students work in research labs across the globe, which will include national laboratories and International study-abroad programs. The final component of the program is a community outreach program where the STEM Scholars use their knowledge and skills to help prepare pre-college students for the rigors of university studies. The Scholars work with middle and high school students to provide them with hands-on lab experiences during the summer and academic year.

The KSU STEM Scholars program is designed to attract over 100 students each year and is students run with and executive office and committee chairs.

The Scholars take part in all aspects of the program from deciding the activities to be conducted, to evaluating program effectiveness, to helping to develop criteria for stipends. The Scholars are advised by a team of faculty that include Army Lester as the lead PI, Dr Deborah Bromfield (CoPI) Chemistry, co-ordinates academic activities, Dr Michelle Dean, co-ordinates outreach activities and Dr. Premila Achar (CoPI), co-ordinate the research activities of the STEM grantees.

The benefits to the students are many. First the students get to work with a team of the best and brightest students at Kennesaw State. Several of our current participants have 4.0 GPAs. The Scholars also get to develop skills that will assist in improving their GPA. In addition to enrichment activities, the students attend seminars, workshops, and conferences where they get to hone their intellectual skills. The students travel to conferences where they network with students and faculty from other LSAMP program across the nation. Most importantly, I feel that the students get to be a part of history. STEM research and success are more important than any time in history. The countries that are able to take the lead in these disciplines are destined to become the world leaders. It is without doubt, if we can encourage our underrepresented minorities to enter the STEM disciplines at the rates of Asians and Whites, then our country would lead the world in the great discoveries of tomorrow. And, our KSU STEM Scholar will be an integral part of our country’s great 21st century history.
Departmental Seminars

September 28, 2011 - Dr. Richard Arrendale, Emory Institute for Drug Discovery
October 4, 2011 - Dr. Nicole Horenstein, University of Florida “Adventures in Azasugar Biosynthesis”
October 11, 2011 - Dr. Anne-Freances Miller, University of Kentucky “Nitroreductase: A Plastic Explosive Degrading Enzyme”
October 19, 2011 - Dr. Giovannl Gadda, Georgia State University “Mechanistic Enzymology and other opportunities for research at GSU”
November 9, 2011 - Dr Norbert Reich, University of California, Santa Barbara “Bacterial and human DNA methytransferases: Mechanism, regulation and in vivo function”
November 30, 2011 - Dr. Micheal A. Duncan, University of Georgia “Metal Carbide Nanoclusters: From the Lab to Space”

Molecular Biology Interest Group Seminars

September 16, 2011 - Dr. Scott Nowak, KSU Biology Dept. “Gene Regulation During Muscle Development: Akirin helps Brahma do the Twist”
October 7, 2011 - Dr. Premila Achar, KSU Biology Dept., “Detection of Carcinogenic Mold In Peanuts and Integrated Pest Management Control”
October 28, 2011 - Maja Funk Heidelberg University, Heidelberg Germany “Transgene mapping in the mouse genome & a progress report on Hox gene function during paddlefish fin development”
November 4, 2011 - Dr. Alex Angerhofer, University of Florida “EPR and ENDOR Spectroscopy on Oxalate Decarboxylase”
November 11, 2011 - Ms. Erica Miller, UGA Department of Microbiology “The role of glutamine synthetase in urease-mediated acid resistance strategy of Helicobacter pylori.”
December 2, 2011 - Dr. Swapan Jain, Bard College “Binding Interactions of purine analogs with Xanthine Phosphoribosyl Transferase mRNA”
Dr. Koether was awarded a 2011 Tommy and Beth Holder Award at the School’s Opening Ceremony. This award provided funds to further develop the Pharmaceutical Analytical Chemistry Lecture and Laboratory courses by allowing her to attend the weeklong Tablet course (www.tabletcourse.com) offered by the University of Tennessee in Memphis. This course had 15 hours of lectures and 20 hours of laboratory time. The entire process of preformulation techniques, formulation selection, mixing, blending, granulation, excipient selection, tablet pressing and coating and physical and chemical analysis was described in the lectures and experienced in the lab setting. In addition, Near Infrared Analysis (NIR) was introduced and was one of the main reasons for Dr. Koether’s trip. The Department has recently acquired a NIR and it will be hopefully implemented in the fall of 2012 when the next offering of Pharmaceutical Analytical Chemistry Lecture and Laboratory will be offered. Dr. Nancy Jo Kirk has joined Dr. Koether in teaching the laboratory. In fall 2012, there will be two sections of the laboratory due to the increased interest and demand for the course. Dr. Koether is also writing a textbook for the course and she presented her results of her progress at the ACS National Meeting in Denver in August 2011.

Going paperless has become a national trend and this trend is also being experienced in the Quantitative Analytical Chemistry Laboratory course taught by Dr. Koether. The summer 2011 laboratory classes did not use lab notebooks but instead used Excel as their lab notebook with the use of tabs to represent pages in a lab notebook. Thus, no paper was allowed in the Quant Laboratory as students use their own laptops or ones provided by the Department during the laboratory time. Students submitted lab notebooks for pre-lab and post-lab grading online through the assignment submission link on the Georgia View Vista Classroom Management System. The positive results of this were presented at the ACS National Meeting in Denver in August 2011 which can be viewed at http://www.softconference.com/ACSchem/sessionDetail.asp?SID=288733.
Elizabeth Bennett - 2011 - Chemistry Ph.D. program at Georgia State University
Joanna Bronny - 2011 - Accepted position at Bioburden Department of WuXi in Marietta, GA.
Edwin Estime - 2011 - Graduate of MAT program at KSU, teaching at Sprayberry High School.
Joshua Francis - 2011 - Ph.D. student at Emory University’s Cell & Developmental Biology
Marcus Harrison - 2011 - Forensic Special Chemist at Aegis Laboratories Nashville, TN
Eric Hoffer - 2011 - Ph.D. student in Biomedical Science at Emory University
Robert Kuruvilla - 2011 - Ph.D. student Pharmaceutical Engineering New Jersey Institute of Technology
Nicole McAlister - 2011 - MAT student at Kennesaw State University
Courtney Phillips - 2011 - Principal Chemist at Cott Beverages, Columbus, GA.
Gary Richoux - 2011 - Ph.D. student at Virginia Tech
Timothy Routh - 2011 - Projects Chemist at Ajay North America in Powder Springs, GA.
Clarisse Valdivieso - 2011 - finishing a second degree at KSU
John Ballard - 2010 - Ph.D. program at University of California, San Diego.
Traci Benedict - 2010 - Accepted into Mercer University School of Pharmacy.
Jacob Blair - 2010 - Accepted into Marine Biology Program at Nova Southeastern
Stephanie Day - 2010 - is a nanny.
Brian Forsberg - 2010 - Medical student at William Carey University School of Medicine
Katie Freeman - 2010 - Chemistry Teacher at River Ridge High School in Woodstock GA.
Michele Gouws - 2010 - MAT student at Kennesaw State University
Judith Heitz - 2010 - working as a research scientist at CDC.
Jacob Hicks - 2010 - working as a chemist at FAI Materials Testing Inc.
Haifa Khan - 2010 - Accepted position at Georgia Pacific as a lab technician.
Gerhard Kummerow - 2010 - working as a Research Scientist at the CDC.
Lanny Lovell - 2010 - working as a technician at Wu-Xi Application Technology.
Anh Le - 2010 - Pharmacy student at Nova Southeastern University
Ben Mitchell - 2010 - working in sales at CryoLife.
Jonathan Parker - 2010 - Senior Chemical Technician at Columbian Chemicals Company.
Harshad Patel - 2010 - Pharmacy student at Sullivan University
Michele Razumov - 2010 - Ph.D. Student & Research Assistant GA Tech
Krystle Roberts - 2010 - Accepted to Franklin Pierce Law School
Israel Scott - 2010 - Ph.D. student at UGA
Victoria Sumner - 2010 - student in Master in Public Health at Emory University
Jo Wilson - 2010 - Working as Research Specialist Emory Univ. School of Medicine
Mandy Basaly - 2009 - Second year student in Optometry School in Memphis
Zuzana Berrong - 2009 - Ph.D. program at Medical College of Georgia
Scott Burley - 2009 - Graduate student at San Diego State University
Brittney Cardon - 2009 - student in Nursing Program at KSU
Stephanie Hankes - 2009 - Accepted into medical school at LSU Shreveport.
Hilary Herak - 2009 - Ph.D. student at University of Washington
Jamison Jackson - 2009 - Employed by Coca-Cola, & Young Chemists, Georgia Section ACS
Nicky Keer - 2009 - D.O. student at PCOM Gwinnett
Lewis Kraft - 2009 - Ph.D. student at Vanderbilt University.
Phillip McClellan - 2009 - Ph.D. student at University of Akron
John Macon - 2009 - medical student at Morehouse College
Esha Patel - 2009 - Pharmacy student at Union University
Chris Pulley - 2009 - MS student at Georgia State University
Carol Schumacher - 2009 - student in Emory University Chemistry Ph.D. program
Julie Turner - 2009 - Chemistry Technician at Applied Technical Services
Steve Valdes - 2009 - Pharmacy student at Mercer University
Jennifer Yancey - 2009 - Medical student at Morehouse School of Medicine
Amine Faizi - 2008 - Working at FAL, Inc.
Danye Fraser - 2008 - Ph.D. Program at University of Alabama
Dustin French - 2008 - Accepted into Nova Southeastern Medical School
Adam Freeman - 2008 - Investigator with the FDA in Berkeley, CA.
Lindsay Harris - 2008 - Working in Forensic Toxicology with the GBI
Sean Hipps - 2008 - Working for GBI.
Brandon Huskins - 2008 - Forensic Scientist with the US Army
Edwin Kamau - 2008 - Research technician at University of Pittsburgh Biological Sciences
AnneMarie Kananja - MBA student at Kennesaw State University
Suk Kim - 2008 - Medical student at Medical College of Georgia
Adam Kleg - 2008 - Working as a compliance officer at Medical Neurogenetics in Atlanta, GA.
Ivett Kyriacou - 2008 - Medical student at UAG
Natalia Kyriacou - 2008 - Medical student at Mercer University
Suzanne Mayo - 2008 - Employed at Emory University - Emory Institute for Drug Discovery
John Moffitt - 2008 - MS Univ. of Connecticut, Senior Research Associate at Jole Unlimited
Viet Nguyen - 2008 - Accepted into Mercer School of Pharmacy
Mary Rau - 2008 - P.A. student at South University
Matthew Rosenberg - 2008 - Ph.D student at University of Memphis
Ken Staples - 2008 - Ph.D. student at University of Pittsburgh.
Nickolas Smith - 2008 - Doctor of Pharmacy program at East Tennessee State University
Carl St. Louis - 2008 - Chemistry Ph.D. program at University of Alabama
Nicole Straub - 2008 - Working as a research technician at Anitox
Deborah Gaddis-Ask - 2007 - Lab supervisor at OPSU Murphy-Brown Water Quality Testing
Monir Clark - 2007 - working at CDC
Caroline Cushman - 2007 - Teaching school in Canton, GA.
Michael East - 2007 - Grad student at Emory University.
Tasia Knapp - 2007 - Chemist at CryoLife
Olawale Olagbende - 2007 - PharmD. program, University of New England
Nick Patel - 2007 - Working as a Technical Service Engineer/Chemist at Atotech,
Sheel Patel - 2007 - Anesthesiology Residency Program at Wake Forest University
Dennis Pratt - 2007 - student at Escuela Latinoamericana de Medicina (ELAM) medical school.
Kendall Smart - 2007 - teaching at Kell High School in Cobb County
Laura Brooks - 2006 - Works in Pharmaceutical Sales at Takeda Pharmaceuticals.
Bradley McKinney - 2006 - MS in Health Science, Emergency & Disaster Mgt. from Touro Univ.
Allen Stokes - 2006 - Received M.D. from Mercer University.
Ivan Stefanov - 2006 - PhD Research Assistant at Ghent University in Gent, Belgium.
April Stevens - 2006 - PhD student at Clark Atlanta University.
John Cagle - 2005 - Attending Medical School at GA-PCOM.
Kim Kellett Arrowood - 2005 - Working as a lab instructor at Kennesaw State University.
Tiffany Bryant - 2005 - Working as a Laboratory Analytical Chemist at Ajay North America LLC.
Angela Carmack - 2005 - Working at Deerland Enzymes.
Hazem Kanaan - 2005 - Received his D.O. from WV School of Osteopathic Medicine.
Ryan Moore - 2005 - Executive VP at ChemLink Laboratories LLC in Kennesaw, GA.
Turanza Jackson - 2004 - Received ME, Science Education, Georgia State University
Nicholas Marshall - 2004 - Received Ph.D from University of Georgia, teaching at College of Charleston
Ikenna Okpareke - 2004 - Received MD from Albany Medical College in Albany, New York.
Swsapan Jain - 2001 - Assistant Professor at Bard College, New York
Nokuthula Msimanga - 1998 - Received MD from the Medical College of Georgia
Michael Hawks - 1998 - Received MD from the University of South Florida
Guillermo Ramirez - 1984 - Working as a Facility Manager for Ashland, Inc.