Professor Wetzler’s current research utilizes peptoids (N-substituted polyglycines) as a synthetic platform for developing applications in medicinal chemistry, materials and nanotechnology. Modi earned a B.A. (1999) from the State University of New York at Buffalo, where he double-majored in Chemistry and English. At SUNY, he conducted undergraduate research in inorganic chemistry with Professor Kenneth Takeuchi and subsequent MacArthur Award winner Dr. My Hang Huynh. He then received his Ph.D. (2007) in Bio-organic Chemistry from the University of California at Berkeley, under the aegis of Professor David Wemmer studying improved synthetic techniques toward DNA-binding polyamide ligands. Modi completed his postdoctoral studies at Stanford University (2007-2011) with Professor Annelise Barron in the Bioengineering Department focusing on an exciting peptidomimetic system, peptoids, with which he continues his independent research at Clemson today.

Professor Whitehead’s research focuses on the development of new organic methodology for the efficient transformation of readily available feedstock chemicals to generate richly functionalized, high value small molecules for a variety of applications. Dan received his B.S. (2002) and M.S. (2003) degrees from Furman University working in the labs of Professor Larry Trzapek on the synthesis of benzodifuranone-based colorant compounds. He earned his Ph. D. (2009) from Michigan State University under the direction of Professor Babak Borhan. His work at MSU was on the development of novel asymmetric olefin halogenation reactions culminating in the establishment of an asymmetric chlorolactonization protocol. While at MSU he was a nine-time recipient of the Departmental Merit TA award. Dan completed his post-doctoral studies (2009-2011) in Bio-organic Chemistry in Professor Christian Melander’s labs at North Carolina State University, where he studied the development of novel therapeutics for the treatment of HIV infections.

In terms of students, our ACS student affiliates group has once again received an Honorable Mention Award from the ACS for their activities in the 2010 – 2011 academic year. Both they and their faculty advisor, Dr. Dennis Taylor, are to be congratulated. Congratulations! This newsletter also includes stories about our 2011 summer undergraduate research program. We continue to experience near-record enrollments in general and organic chemistry, and our official count of undergraduate majors was 148 this fall, another all-time high in recent memory. Hunter labs is seeing more traffic than ever before!

Our faculty continue to be productive in teaching and research. This newsletter lists all the new faculty research grants from the past year with titles and sponsors. I am continually impressed by the breadth of research being pursued by chemistry faculty and students. Chemistry faculty and students published 97 peer-reviewed papers and were responsible for $4.6 million in research last year, which continues a long string of research productivity. Our undergraduate program continues to grow and we continue to be among the most prolific graduate departments at Clemson, with 21 graduate degrees awarded last year. We have much to be proud of in terms of both scholarly works produced, and graduates graduated.

This past year was also a very busy year in terms of people. Three of our faculty, Drs. Dominy, Christensen, and (Rhett) Smith, were promoted to Associate Professor and awarded tenure, and one, Dr. Arya, was promoted to Professor. Congratulations to all! We also had several new faculty hires; Dr. Dan Whitehead was hired as Assistant Professor, Dr. Modi Wetzler was hired as Research Professor, and Dr. Tom Hickman was hired as Lecturer. Tom and Modi have connections to Clemson; Tom earned his PhD working with Dr. Darryl DesMarteau in 2009, and Modi is married to Professor Julia Brumaghim on our faculty. Further details are given in stories in this newsletter. Welcome to all! We also experienced the passing of a longtime Clemson chemistry faculty member, Dr. Harvey Hobson, at the age of 93. Harvey lived right here in town and has been active in the community since his retirement from teaching in 1980. He will be sorely missed.

There is much talk on campus about the “Clemson 2020” plan which will be a guiding document for Clemson’s near future. Based on our experience, it seems likely that this future will include a lot of chemistry, at all levels. We have much to look forward to.

I wish you all a healthy and happy holiday season, and offer my best personal wishes for 2012!

STEVE CREAGER, DEPARTMENT CHAIR
WHERE ARE THEY NOW?  -- Julio R. Pinzon, PhD

Upon receiving his PhD in December, 2010, Julio (Back row, center) returned to his native Colombia. In January, 2011 he moved to Bucaramanga (Santander - Colombia) and started working at the Environmental Chemistry Department at Saint Thomas Aquinas College teaching an instrumental chemistry class for junior students, focused mainly in HPLC, NMR and mass spectroscopy. Bucaramanga is the fifth largest city in Colombia with a population of just above one million. The headquarters of the local oil Company (Ecopetrol) is located in Bucaramanga and they are the main funding agency for research in the area. He currently has four students working in association with them. The first two have a project looking to improve the quality of the biodiesel obtained from palm oil and the other two are developing an HPLC method for measuring toxic phenols in waste water. Dr. Pinzon is looking forward to starting his own lab and a research project on organic photovoltaics.
New Faculty Research Grants

The following new research grants were awarded to chemistry faculty members between July 1, 2010 and October 1, 2011. These are in addition to continuing grants from prior years.

Ken Marcus received a grant from the National Science Foundation for a project titled “Capillary-Channeled Polymer (C-CP) Fiber Stationary Phases for High Speed and Preparative Protein Separation”. Dr. Marcus was also awarded 120 hours (3 weeks) of instrumentation time on a ThermoScientific Exact Orbitrap mass spectrometer system at the W. R. Wiley Environmental Molecular Science Laboratory, a national scientific user facility sponsored by the U.S. Department of Energy.

George Chumanov received a grant from the US Department of Energy for a project titled “Asymmetric Hybrid Nanoparticles”.

Dvora Perahia was awarded 30 days of neutron beam time for student of structure and dynamics of polymers for clean energy, and seven million computation hours on NSF and DOE computers to study polymers and polymer-nanoparticle complexes for functional materials.

Steve Stuart received a grant from High Performance Technologies Inc for a project titled “Using AIREBO Potentials to Optimize Properties of SiC Composites Reinforced with Carbon Nanotubes”.

Melanie Cooper received three grants from the National Science Foundation, for the following projects: “iRespond: iPhone/iPod Touch/iPad as Interactive Personal Response System”; “SocraticGraphs: A Free-Form Interactive Graphical Recognition System”; and “Collaborative Research: BeSocratic: A Freeform, Interactive System to Investigate the Development of Representational Competence”. Dr. Cooper was also co-investigator along with Dr. Gautam Bhattacharyya from chemistry and Dr. Michael Padilla from Clemson’s School of Education on a grant from the National Science Foundation titled “Tigers Teach: Noyce Scholarship”.

Steve Creager received a grant from the Advanced Research Projects Agency – Energy (ARPA-E), a part of the US Department of Energy, for a project titled “Electroalcoholgenesis: Bioelectrochemical Reduction of CO2 to Butanol”. Dr. Creager is also co-investigator on a Research Experiences for Undergraduates grant titled “REU Site: Advanced Functional Membranes” which was awarded by NSF with Dr. Scott Husson from Clemson’s Department of Chemical and Biomolecular Engineering as PI.

Joe Kolis received two grants (Phase I and II SBIR Grants) from the National Science Foundation through a private company called Advanced Photonic Crystals, for a project titled “Hydrothermal Growth of Potassium Beryllium Fluoroborate (KBBF) for deep UV Nonlinear Optical Applications”. Additionally, Dr. Kolis is co-investigator on a planning grant from the NSF titled “Collaborative Research: Planning Grant: I/UCRC for the Ceramic, Composite and Optical Materials Center”, for which Dr. Phil Brown from Clemson’s School of Materials Science and Engineering is PI.

Jason McNeill received a grant from the National Science Foundation for a project titled “Conjugated Polymer Nanoparticles for Nanoscale Chemical Microscopy”.

Jeff Anker received a grant from the SC Space Grant Consortium for a project titled “Magnetic Surface Enhanced Raman Spectroscopy (SERS) Sensors”. Dr. Anker is also co-investigator on a Research Experiences for Undergraduates grant titled “REU Site: Interfaces and Surfaces, Exploring and Experiencing Science” which was awarded by NSF with Dr. Marian Kennedy from Clemson’s School of Materials Science and Engineering as PI.

Ya Ping Sun received three grants from the SC Space Grant Consortium for the following projects: “Palmetto Academy Site on Advanced Space Materials”; “GRA: Toward a Career on Advanced Materials Research for Space Applications”; and “Light-Weight Nanocomposites of Superior Thermal and Electrical Properties for Space Applications”. Additionally, he received a grant from the University of Dayton for a project titled “Nanoenergetics-Fundamental Exploration and Technological Development”.

Joe Thrasher, one of our newest faculty members, has won two grants since starting at Clemson in July 2011. The first is from the National Science Foundation for a project titled “International Collaboration in Chemistry; Preparation and Utilization of SF5-Containing Building Blocks”. The second is from a major fuel-cell-related company for a project titled “High Temperature Membrane Development”.

Congratulations to all of these faculty for their hard work and success in winning grant support for their research!

Other Personnel News

Welcome Back Tom Hickman

Prof. Thomas Hickman rejoined the department this fall as a lecturer in General and Organic Chemistry. Previously (’09-’11), Tom taught at South Georgia College, where he was the sole chemistry instructor, responsible for a variety of chemistry related courses. This is Tom’s second stint with Clemson’s chemistry department as he graduated with his Ph.D from Prof. Darryl DesMarteau’s group in 2009. Tom’s graduate research involved synthesis of room temperature ionic liquids including low viscosity ionic liquids for use in lithium ion batteries and polymeric ionic liquids for potential use as exchange membranes in fuel cells. Tom grew up in Asheville, N.C. and worked for a number of years in the electroplating industry. While working and attending UNC-Asheville, he developed an interest in chemistry which led to a degree in 2001 and his eventual enrollment in Clemson.

Welcome Jon Paul Hooks

Jon Paul (JP) Hooks will begin work as our new organic chemistry teaching stockroom manager on December 1. Mr. Hooks replaces Mr. Adam Kelley, who left Clemson earlier this fall to move with his family to the Charlotte area. JP earned his BA in Chemistry from Clemson in 2005. He worked as a high school chemistry teacher for 2 years and most recently as a field chemist in Columbia, SC. He has previous experience dealing with hazardous waste, training new field chemists and of course, students. JP is very excited to be moving back to Clemson.
HARVEY HOBSON (1917-2011)

Professor Harvey Hobson passed away on September 2, 2011. Dr. Hobson served Clemson University and the Department of Chemistry for forty years until his retirement in 1980. He taught a wide range of courses in the Department, but most of the classes he taught were in the area of physical chemistry. Harvey received his B.S. Degree from the University of South Carolina and while teaching at Clemson went to Emory University in Atlanta where he received his Master’s and Ph.D. in the early 1950’s. Harvey served on many University committees and at least twice as interim Department Head when the regular Department Head was on sabbatical leave. He was the first in the Department to become a Distinguished Alumni Professor. Professor Hobson was married to the late Martha Horton Hobson for 62 years. He enjoyed gardening and was a recognized authority in the growing of iris and day lilies. Harvey contributed much to his church and community and will be greatly missed by all who knew him.

CHEMISTRY HOSTS VISITORS FROM CHILE

In August, 2011, the Chemistry Department was pleased to host four visiting chemistry undergraduate students and one faculty member from the Universidad de Concepción (UdeC) in Concepción Chile. The group visited as part of a prospective student exchange program between Clemson and UdeC that is under discussion and stayed for ten days. UdeC is one of four PhD-granting institutions in chemistry in Chile. It is a predominantly residential campus with approximately 19,000 full-time students and similar in size and character to Clemson. In their chemistry program they have 50 faculty, 100 undergraduate and 35 graduate chemistry students. The students worked with Drs. Anker and Tennyson during their visit and did some lab work with Mr. Alfredo Picado and others.