

# DEACON CHEMIST

## NEWSLETTER

A Newsletter from the Chemistry Department of Wake Forest University

### A Message from the Department Chair

Dear Friends;

The Chemistry Department might look a bit different than last year – with the welcome addition of a new permanent Lecturer position filled by alumnus John Tomlinson (Ph.D., '05); a new Teacher-Scholar Postdoctoral Fellowship filled by Raj Guddneppanavar; the tenure & promotion of Akbar Salam to Associate Professor; a new Visiting Assistant Professor Jeremy Cooper; a new Staff Assistant, Linda Tuttle, replacing Nancy Cheek upon her retirement after 19 years of service; and increases of more than 5% and 13% in our lower division and upper division chemistry enrollments, respectively. But at its core, the department looks very much the same – a group of staff, faculty and students working together according to our stated values of **cooperation** and **consideration, integrity** and **accountability**, and **intellectual rigor**. These core values underpin the department's mission and vision statement and facilitate our many

accomplishments: three faculty fellowship recipients, two fellows of the American Association for the Advancement of Science; 12 new funded proposals for almost \$1.5 M in additional funding for research and teaching; 34 mentored undergraduate research projects; 32 peer-reviewed manuscripts; 53 research seminars or poster presentations; and the graduation of 30 chemistry majors, 68 chemistry minors, and 9 graduate students in the last academic year alone. In addition to this impressive body of fine work, we must also recognize how our mission, vision and values lead to many other exciting developments, which help to shape this place and its people into a distinctive academic home that – to borrow a phrase from President Hatch – we can believe in. The department's involvement in public engagement (including such initiatives as the Science & Technology Access for Rural Students (STARS) program); our creation of a new track in Materials Chemistry and the definition of a set of core competency courses for all majors; the participation of new graduate students in a "Responsible

Conduct in Research" program and a teaching assistant training program; the expansion of our "Chemistry Clinic" to provide tutoring assistance to students 5 nights per week; and the creation of the new "Friends of Chemistry" alumni group are just a few examples of things we believe in and things we hope will make a difference in our department and beyond. As always, we welcome your suggestions and your help to make sure we realize the full potential of this special place.

Sincerely,  
Christa L. Colyer

Department Chair & Associate Professor



### Faculty Accomplishments

**Akbar Salam's** first book, "Molecular Quantum Electrodynamics: Long-Range Intermolecular Interactions" can be ordered through the publisher at <http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470259302.html>

**Mark Welker**, William L. Poteat Professor of Chemistry and Associate Provost for Faculty Affairs, and **Dilip Kondepudi**, Thurman D. Kitchin Professor of Chemistry, were elected as 2008 Fellows of the American Association for the Advancement of Science. Both professors joined our department in 1987.

Kondepudi was elected for his contributions to the field of non-equilibrium chemistry, particularly the field of chiral asymmetry, and as the co-author of the book

"Modern Thermodynamics." Welker was elected for his contributions to the field of organometallic chemistry, particularly for metal-mediated cyclization and cycloaddition reactions.



Dilip Kondepudi



Mark Welker

### Friends of Chemistry

The department is working to enhance its connection with alumni and other supportive members of the community. Towards this end the *Friends of Chemistry (Friends)* has been established.

The purpose of the *Friends* is to contribute to the wellbeing of the Chemistry Department and its students by participating in an ongoing discussion about sustaining and developing the department while helping to execute specific tasks in support of the department. The first meeting of the *Friends* took place during 2009 Homecoming. A set of bylaws was discussed and approved. They are available on the website.

The inaugural steering committee consists of Chris Bramlett ('60), Tom Mutton ('69), Mike Hager ('76), and Tim Grambow ('01). They came to campus in August to meet with university and department officials to learn a bit about what is going on and how such an organization might be able to contribute.

An email sent in the Spring got about 50 responses from alumni interested in helping the department, many of whom offered to provide career and professional advice to students. Consequently, one of the first activities of the *Friends* is likely to involve opening avenues through which such advice can be given.

For more information, see the webpage, [http://www.wfu.edu/chemistry/friends\\_of\\_chemistry/](http://www.wfu.edu/chemistry/friends_of_chemistry/) or contact Dr. Al Rives ([rivesab@wfu.edu](mailto:rivesab@wfu.edu)).

## Staff Focus

It takes a lot of supplies, equipment and personnel to keep our department at the cutting edge of teaching and research. Funds to cover these needs are provided by a combination of internal budget items, external research funds and donations and it is Business Manager **Melissa Doub**'s job to keep track of these financial resources. Department Chair Christa Colyer says "Melissa's performance is perhaps best characterized by the simple phrase: 'above and beyond'. She facilitates research and teaching excellence in the department by managing the many diverse budgets that govern these central activities in our day-to-day operations. Her performance has been noticed by those outside the department, too -- recently her outstanding work has served as the model for the creation of a similar position in another department. Although the equivalent of her position may be created elsewhere, it is hard to imagine anyone filling it with the integrity and diligence that Melissa offers to the Chemistry Department."

Melissa has been in her current position for over 10 years, and been employed by Wake Forest University since 1994. She received her B.S. degree from High Point University in 2001. Above and beyond her duties as Business Manager, Melissa has completed professional training in Excel and Access; has served as the departmental coordinator of the United Way Campaign, and has completed three certificate programs with the Society of Research Administration.



Melissa Doub

### Please note two changes in faculty status....

**Dr. John Tomlinson** (PhD 2004), who has served as a visiting faculty member for the last 2 years has been appointed a Lecturer in Chemistry. Additionally, **Dr. Akbar Salam** was promoted to Associate Professor in 2009. We applaud the strengths both bring to our department's teaching and research endeavors.

## Alumni News

**Want to know what your classmates are up to?** They do, too! Please send us a note ([kingag@wfu.edu](mailto:kingag@wfu.edu) or 336-758-5511) and we'll do our best to let others know in the next volume of *The Deacon Chemist*.

**1952**

**William E. Moffitt** (BS) retired in 1994 after serving 42 + years with the Eveready Battery Company, ending as Senior Area Production Director for Europe, Africa and the Middle East. He notes that since his retirement, he has attended all of the WFU home football and basketball games.

**1958**

**David R. Bryant** (BA) received the Perkin Medal, one of the chemical industry's most prestigious awards, in 1998. David was a senior corporate fellow at Union Carbide and the award recognized his accomplishments on a low pressure oxo process for producing aldehydes.

**1976**

**Thomas J. O'Hara** (BS; MS, 1981) currently serves as the Vice-President of US Operations for Sagentia Catella (headquartered in Stockholm, Sweden). Prior to this appointment, Tom had worked for 21 years in Engineering and then Program Management at Energizer's R&D facility in Westlake, OH.

**1984**

**Gretchen Frieland** (BA) earned a master of counseling degree and is now working as a family therapist in Phoenix, AZ.

**1979**

**David A. Dunn** (BS) earned his PHD in physical organic chemistry from New York University and then completed post-doctoral work at Columbia University and the Harvard Medical School. He served as chemistry instructor at the Harvard Medical School and then as a Senior Research Scientist at Abbott Laboratories from 1992-1998. David currently is the Director of Drug Discovery at Pharmacopeia Inc., in Princeton, NJ.

**1988**

**Dorothy Talley Holley** (BA) received her certification/teacher licensure at the University of North Carolina – Chapel Hill and currently teaches chemistry and physics at East Wake School of Integrated Technology in Wake County, NC.

**1990**

**Cathy Owens Welder** (BS) joined the Dartmouth College chemistry

department faculty as a Senior Lecturer in the summer of 2009. Responsibilities include directing the undergraduate organic laboratories in addition to teaching graduate and undergraduate lecture courses. Her husband, **Frank Welder** (PhD 2004) also relocated to the Hanover, New Hampshire area.

**1995**

**James Jian Ho** (PhD) joined the Chinese Academy of Medical Sciences & Peking Union Medical College as Professor in 2004 and also serves as the director of its Center for Clinical Laboratory Development. He founded the Peking Union Lawke Biomedical Development Co. (a reference laboratory company) and serves as its Chairman and CEO.

**1996**

**Christine Fang Dai** (PhD) served as a Professor in the Pharmacy School of Shanghai Jiaotong University and is now the Vice-President of Peking Union Lawke Biomedical Development Co.

**1997**

**Torrey Adams** (PhD) is employed with Cherokee Pharmaceuticals, a contract services company providing development and chemical manufacturing of active pharmaceutical ingredients for a range of human and animal health products.

**1999**

**Jeff Blackburn** (BS) is a senior scientist at the National Renewable Energy Laboratory in Golden CO. He returned to campus in October 2009 to give a seminar on his current work on advancing renewable energy materials.

**Mimi Coker** (BS) joined LabCorp in Burlington, NC as a Senior Laboratory Technologist upon graduation and in 2006 transferred to their RTP location as a Technologist in Customer Service. She started taking classes at the Martha & Spencer Love School of Business at Elon University in 2007.

**2002**

**Michael Ellis** (BS) completed postdoctoral training with Larry Overman and is now working in Merck Pharmaceutical's medicinal chemistry group in West Point, PA.

**Brian Hoskins** (BA) completed his PhD in solid state fermentation at the International Center for Brewing & Distilling in Scotland. He is currently working as a project

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In the past year, faculty worked hard to bring in over \$1.6 M of external support to the department and institution. The following is a list of some of the newly funded proposals/projects:

**Rebecca Alexander** was awarded \$5,750 from the North Carolina Biotechnology Center for her project "Biotechnology Partners Fellowship Program".

**Uli Bierbach** received a 4-yr award, worth a total of \$917,809, from the National Institutes of Health for "Novel DNA-metalating Hybrid Anticancer Agents."

**Willie Hinze** received \$26,850 in funding from the NC Biotechnology Center for a project "Surfactant Mediated Extractive Preconcentration of Nanomaterials".

**Angela King** (with co-PI Leah McCoy of WFU Education) received \$893,753 from the National Science Foundation for "WINS: Wake Forest Innovative Noyce Scholars", a five year teacher training program. For more information or to apply, see <http://www.wfu.edu/education/WINS/>.

**Bruce King** received a grant of \$650,000 for two years from the National Institutes of Health for his proposal "The Nitroxyl/Nitric Oxide Producing Reactions of Hydroxyurea and Related Compounds".

**Bruce King** (with co-PI Leslie Poole of WFU Biochemistry) received \$15,331 from the National Institutes of Health for a two year project "Proteomic Profiling of Cancer-Related Redox Signaling Pathways".

**Bruce King** (in collaboration with Fred Salsbury of WFU Physics) was awarded \$150,000 from the National Institutes of Health for a five year project "Targeting the MSH2-Dependent Apoptotic Pathway".

**Bruce King** was awarded \$53,612 from the National Institutes of Health for a two year project "Nanotubes in Tumor Imaging and Therapy".

**Abdou Lachgar** received \$124,882 in funding from RJR for a project titled "Design and Synthesis of Metal-Organic Materials for Waste Water Treatment".

## Student Awards

The **AICF Outstanding Graduate Student Award** is annually awarded to an outstanding graduate student planning on graduating within the next year. The 2009 recipient was **Zhidong Ma**. Zhidong is completing his graduate work with Uli Bierbach.

Graduate student **Lei Chen** received a NSF-funded International Center for Materials Research scholarship to attend the Spring School on Thermal Conductivity and Related Transport Properties of Oxides at the University of Florida. Lei also received funding from the Chambers Family Endowment Fund for Entrepreneurship to develop a web-based calendar resource.

Graduate student **Chris Junker**, a member of Dr. Mark Welker's lab, was selected as a WFU nominee for the ORAU/Lindau award. This award supports graduate student travel to a conference of Nobel Laureates in Lindau, Germany in the summer of 2010.

Graduate student **Tara Massie** received a Richter Award during Summer 2009 to work at Osaka Prefecture University, Japan on "Synthetic strategies for squarylium dyes". Tara also received a Graduate School Alumni Travel Award to attend the Oct. 2009 FACSS Meeting, Louisville, Kentucky.

The **2008 John W. Nowell Award for Outstanding Senior Chemistry Major** was awarded to **Evelyn Eisele** ('09), now pursuing a PhD in Pharmacology & Molecular Sciences at Johns Hopkins University.

May graduate **R. Eric McNally** ('09) received the **2009 Hypercube Scholar Award**. Eric conducted independent research under the direction of Ron Noftle and is now working on his Ph.D. at the University of Southern California.

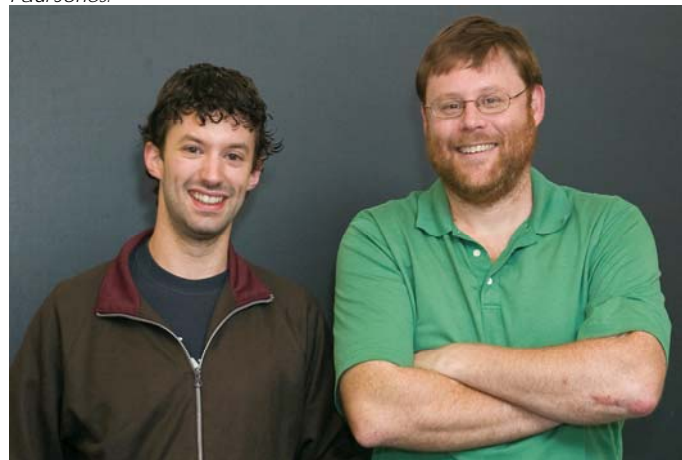
Jenny Nesbitt ('10) received the **2009 ACS Analytical Award**. The **2009 CRC Press Outstanding Freshman Chemistry Award** was shared by **Brian Koepnick** ('12) and **Thomas Rusher** ('12).

**Melissa Donaldson** ('10) is a senior student working in the research lab of Ron Noftle. As a result of a resume that includes extensive research experience, both on and off of our campus, including an internship with the Process Research and Development Department of the pharmaceutical company

Bristol-Myers Squibb and an international REU at the Technical University of Graz, Melissa was awarded a highly competitive **Barry M. Goldwater Scholarship** for the 09-10 academic year. The Barry M. Goldwater Scholarship and Excellence in Education Program was established by Congress in 1986 with the purpose of providing a continuing source of highly qualified scientists, mathematicians, and engineers by awarding scholarships to college students who intend to pursue careers in these fields. After graduation Melissa plans on pursuing a PhD in organic chemistry.

Established in memory of Dr. and Mrs. Charles Black, the **Blackbyrd Scholarship** is awarded to an outstanding senior chemistry major. The 2009-2010 recipient is **James Blair** ('10). James is currently conducting independent research on a general asymmetric synthesis of 1,3-cyclohexadienes in Paul Jones' lab. After completing his B.S. at Wake Forest, James plans on attending graduate school.

*Blackbyrd Scholarship recipient James Blair ('10) and research mentor Dr. Paul Jones.*



## Condolences

We sadly report the passing of the following friends:

**William E. Amos** (1952, BS) died on July 1, 2009. He earned his MD from WFU Bowman Gray School of Medicine and started a Dermatology practice in Phoenix in 1964 from which he retired in 1995.

**Frank S. Blaylock** (BS) died on January 2, 2008. He was a retired chemist from E. I DuPont & Co.

**James L. Chestnutt** (1950, BS) died on March 13, 2008. He worked in basic research at Virginia Carolina Chemical Co., packaging research at Reynolds Metals Co. and then RJR Archer where he retired in 1987 as Vice-President of Technology; after which he founded & served as the President of Packaging Consultants, Inc. until his final retirement in 1996. He was named as a member of the Packaging Hall of Fame.

**John Wesley Cox, Jr.** (1963, BS; 1965, MS) died on June 22, 2009. Wes earned his PhD from the University of Cincinnati and was employed with a number of companies working in the area of Materials Science; most recently Alldyne Powder Products where he served as Director of Research & Development until his retirement in 2007. He had toured and visited the Department on May 8<sup>th</sup>.

**Frederick W. Glass, Sr.** (1946, BS) died on December 2, 2007. He earned his MD from the Bowman Gray School of Medicine and practiced general and thoracic surgery in Lake Worth, FL for 15 years after which he returned to Winston-Salem in 1973 to found the Residency Program in Emergency Medicine at the WFU School of Medicine.

**William F. Owens, Jr.** (1959, BS) died on February 13, 2009. He was the founder and owner (along with his wife, Joyce) of Owens Orchids in Pisgah Forest, NC and was a longtime friend of the Department.

**Robert W. Weaver** (1938, BS) passed away on July 14, 2009.

### Wake Forest University Deacon Chemist Newsletter

#### Phone

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**Please Note:** Friends who have registered their email address with Alumni Relations receive this newsletter faster than those who must wait for hard copies to be mailed. Please update your information at <http://www.wfu.edu/alumni/updates.php> to receive future electronic copies.

#### We're on the Web!

[www.wfu.edu/academics/chemistry](http://www.wfu.edu/academics/chemistry)

## Alumni News (cont. from page 2)

manager for Alltech, Inc.'s enzyme production facility in Ciudad Serdán, Mexico, and graciously returned to campus to speak with our new majors about his experiences in the chemical industry in March 2009.

#### 2003

**Natalee Sheppe French** (BA) earned her MD degree from the Medical University of South Carolina where she is now pursuing a residency in Pediatrics.

#### 2004

**Edward Perry** (BA) is teaching at a community college in northern Virginia after earning a Masters in Chemistry from UNC-Chapel Hill.

#### 2008

**Catherine Denkler** (BS) is working as a Cancer Research Training Award recipient at the NCI labs in Bethesda, MD

#### 2009

**Geoffrey (Britt) Turner** (BS) is working as a Quality Lab Associate at Baxter Healthcare in North Cove, NC.

**McKillip (Mick) Erlandson** (BA) is working as a congressional intern for Anthony Weiner (NY).

**Colleen Downs** (BA) is currently enrolled in medical school at the University of Texas.

*Alum Cathy Owens Welder (1990) makes sure the Demon Deacon wears his safety goggles in organic lab!*



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