



Periodic Times

Wittenberg University Department of Chemistry

2010-11 Highlights:

- Ray Dudek and Justin Houseknecht receive tenure and promotion
- Dave Finster completes 30th year at Wittenberg
- Senior Christa Snyder wins national award for research poster
- Chem majors David To and Jill Underwood win Best Poster Awards at Dayton Section ACS meeting
- Alum Jen Knapp wins NSF fellowship
- Chemistry teacher licensure program at Wittenberg approved

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Volume V

Summer 2011

Wittenberg Tenures, Promotes Two Chemists

Dr. Ray Dudek and Dr. Justin Houseknecht were granted tenure and promoted to Associate Professor at the May 2011 Board of Directors meeting. Both started teaching at Wittenberg in 2005.

Dr. Dudek received his Ph.D. in chemistry from Brown University and performed postdoctoral research at the Fritz-Haber Institute, Berlin. Ray is a dedicated and enthusiastic chemistry teacher. Students appreciate his frequent classroom demonstrations and interactive lectures. He received the Omicron Delta Kappa Excellence in Teaching award in 2009. Ray has mentored 12 research students, studying the effect of silver nanoparticles on surface-enhanced Raman spectroscopy and developing experiments for physical chemistry courses (one of which was published in the *Chemical Educator*).

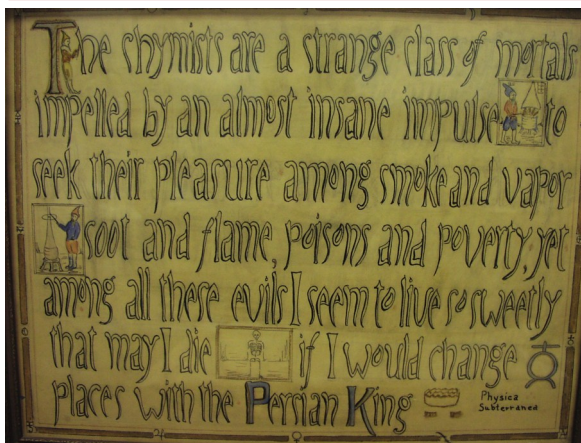
He has made several presentations at national ACS meetings and at the Biennial Conference on Chemical Education. On campus he has helped lead the Saturday Science Program, hosts Trivia Night in the Student Center and a radio program on WUSO. He is active in the local ACS section and advises our chemistry club.

Dr. Houseknecht received his Ph.D. in chemistry from The Ohio State University, performed postdoctoral research at the University of Kentucky and taught at Centre College. Justin is an excellent and highly organized teacher, as demonstrated by his superb lecturing skills and a genuine concern for the future of his students. Justin's article comparing organic chemistry textbooks was recently published in the *Journal of Chemical Education*. Justin has mentored 16 research students, who have presented at a national ACS meeting, the National Council on Undergraduate Research, and MERCURY Conference. His research involves computational and kinetics studies of organic reactions, such as the acetylation of phenol. He and his students have collaborated with researchers at Wright Patterson Air Force Base. Justin recently signed a contract with Cengage for writing a new organic chemistry textbook.

All members of our department are now tenured, and this fall marks the first time since 1979 that a tenured physical chemist is teaching at Wittenberg.



Ray Dudek (l), Justin Houseknecht (r)



Left: Virginia Franta ('36) sent us three chemistry-related pictures from her home. In a note to us, she describes the one pictured here: "During my senior year at Wittenberg, I commissioned a sorority sister art major to make a copy on old parchment of this frontispiece." The quote is from a book on mineralogy (*Physica Subterranea*) by Johann Joachim Becher, a 17th century German physician and alchemist, whose father was a Lutheran minister. It reads "The chymists are a strange class of mortals impelled by an almost insane impulse to seek their pleasure among smoke and vapor, soot and flame, poisons and poverty, yet among all these evils I seem to live so sweetly that may I die if I would change places with the Persian King."

Summer 2011 Research

Despite the smaller number of chemistry majors at Wittenberg this past year, summer research continues to attract a significant number of students. We continue to be indebted to our wonderful donors who have made this work possible. The majority of the funding comes from the Virginia Ellis Franta fund, along with significant support from the Glasoe, and Hove funds. Additionally, one BMB major received an REU position at the University of Wisconsin-Madison and two chemistry majors acquired internships (Cargill and ABS Materials) for the summer.

Ryan Davis (class of '13, BMB major from Amanda, OH), Jesse Mackojc ('14, Chemistry, Abridge, PA), and Andrew Muir ('13, BMB, Canton, OH) worked with Dr. Anderson on computational studies of glucose-galactose binding protein. Erik Werstler ('12, Chemistry, Portland, OR), Kevin To



Above: Research students left to right. Top row: Patrick Westmoreland, Derek Thompson, Kevin To, Erik Werstler, Andrew Muir. Bottom: Ryan Davis, Megan Utter, Jesse Mackojc, Heepke Wendroth, Chelsea Williams. Not pictured: Nicole Mangas.

('13, Chemistry, Springfield, OH) and Megan Utter ('12, Biology, East Grand Rapids, MI) pursued computational projects under Dr. Houseknecht. All six traveled to the MERCURY Conference on Computational Chemistry at Bucknell University with Drs. Anderson and Houseknecht. Nicole Mangas ('14, Chemistry, Sylvania, OH) worked on silver colloids and Chelsea Williams ('13, Biology, Ft. Wayne, IN) worked on spectroscopy of UV-absorbing polymers with Dr. Dudek. Heepke Wendroth ('13, BMB & Music, Lexington, KY) and Patrick Westmoreland ('13, BMB, Granville, OH) synthesized a variety of diazonium ions for the modification of carbon electrodes, working with Dr. Cline. Derek Thompson ('12, BMB, College Station, TX) worked with Pete Hanson on new synthesis methods.

Alumni Notes

Both Doug Arbuckle ('82) and David Brown ('89) relayed thanks for our previous newsletter and noted their appreciation for professors Nelson Sartoris and Howard Curry.

Lauren Baxter ('09) moved to Cleveland and is working as a technician for Boehringer Ingelheim.

Adeline Brym ('10), a BMB major, will be attending North Carolina State University this fall in their Marine, Earth, and Atmospheric department and will likely study chemical oceanography.

Bridget Casey ('05), also a BMB major, attended Xavier University and earned a Masters in Health Services Administration in 2007. She then enrolled at A.T. Still University – Kirksville College of Osteopathic Medicine and has completed clinical rotations in Detroit. She received her D.O. in May, and has begun her residency in Psychiatry at SUNY Buffalo.

Virginia Franta ('36) celebrated her 96th birthday with a trip to Minneapolis where she attended "Science and Technology Day" at the Minnesota State Fair.

Jennifer Knapp ('10) a grad student at University of Wisconsin-Madison, was recently awarded a 3-year National Science Foundation Graduate Fellowship.

Craig Lods ('10) is an office technician at the Summit Dental Group in Indiana.

Zach Miller ('10) reported that his first year of grad school at the University of Michigan went very well as he was accepted into the Montgomery Lab there.

Natalie Muir ('05) graduated from Indiana University School of Dentistry and after a one-year internship in OMFS (Oral and Maxillofacial Surgery) at The Ohio State University, she began OMFS training in Indiana in July 2010.

Kristen Ricchetti-Masterson ('07) is in her third year of a PhD program in epidemiology at UNC, Chapel Hill and will also soon receive her Master's in Public Health. She married Witt alum, Seth Masterson last October.

Richard W. Pretorius ('80) is chair of Wright State University's Boonshoft School of Medicine's Department of Family Medicine. He earned his medical degree from the University of Virginia and completed a residency in family medicine at Case Western. He also received his master of public health degree from the Medical College of Wisconsin.

Jerilyn Vrabel Schmidt ('05) and her husband moved to Louisville, Kentucky, in July 2010. She is working as an R&D chemist at Sud-Chemie in their catalyst division.

Tara Sharif ('10) is a process analyst at Alere, Inc., in San Diego, California.

Ryan Spray ('04) is a Consulting Scientist in Exponent's Mechanics and Materials practice in the Boston area. He specializes in surface chemistry and structure-function property relationships of thin film and porous materials with emphasis on applications to lithium-ion battery electrodes and solar energy conversion. He received his PhD from Purdue in 2009.

Matthew Stewart ('02) recently joined a Massachusetts company, Diagnostics for All, which makes microfluidic paper-based diagnostic devices to distribute to those in need in less developed countries.

Tabi Thompson ('06) has begun a new job at Cordis Corporation (owned by Johnson and Johnson) in Pennsylvania as an SEM technician.

Nick Pierson ('08) was recently married. He is coauthor of a recent JACS article ("Multiple Bradykinin States Revealed") which is highlighted in the August 29, 2011 C&EN issue.

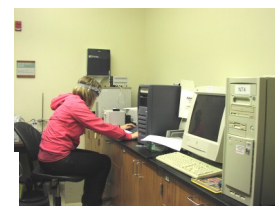
Emily Daniels ('09) is mentioned on the back page of this C&EN issue for her participation as an extra in the new Batman movie.

To include your
updates in the next
department
newsletter please
send to
kreed@wittenberg.edu



Above: Jen Knapp ('10)
recipient of NSF
graduate fellowship.

Below: Nicole Mangas ('14)
measures absorption
spectra of silver colloids.



To ensure receipt
of future
newsletters, please
send changes in
e-mail addresses to
kreed@wittenberg.edu
Hard copies of the
newsletter are
available upon
request.

Chemistry and BMB Majors Receive Department and University Awards

Sartoris Award for the Outstanding Senior Chemistry Major: David To

Outstanding Senior BMB Major: Benjamin Hanf and Hope Parker

Patterson Award for Outstanding Junior: Xiao Shou

James T. Gregory Award: Christa Snyder

Organic Award: Derek Thompson

General Chemistry Award: Kevin Bond and Andrew Franjesevic

Alma Mater: Sarah Watson

Phi Beta Kappa: Melanie Muszelik, Christa Snyder

Presidential Scholars: Melanie Muszelik

Community Service Champion Award: Melanie Muszelik

Elmer Blackwell Award (Music Dept): Heepke Wendroth

Three Students Win Awards for Research Posters

Christa Snyder ('11) spent summer 2010 at the University of Kansas optimizing a technique to separate and detect compounds that can be indicators of cardiovascular disease. Her research poster from this project was subsequently named the winner of the 2010 ASDL-ALA Young Scientist Poster Award. She presented her poster at the LabAutomation 2011 conference in Palm Springs, CA, in January and at the Pittsburgh Conference in March. Her poster: "Analyzing Methylated Arginines Using Capillary Electrophoresis and Laser Induced Fluorescence Detection" may be viewed at www.asdlib.org.

In March, six Wittenberg students presented research posters at the Dayton Section ACS meeting. David To ('11) won the ACS Best Poster Award for his poster "Thermosensitive 2-Alkyl-2-Oxazoline Polymers for Gene Delivery" from his summer research at Johns Hopkins University. Jill Underwood ('12) won the Applied Spectroscopy Award for her poster "Towards the Quantitative Enhancement of Silver Colloids in Surface Enhanced Raman Spectroscopy" based on her work with Dr. Dudek. This is the third year in a row that Wittenberg students have won a best poster award at the Dayton ACS meeting, and David's second time to win this award.

To contribute to the chemistry department, send donations to:

The Wittenberg Fund
Wittenberg University,
PO Box 720
Springfield, OH 45504

or go to:
www.wittenberg.edu
and select Giving (under
the Alumni heading).

Be sure to designate
your donation to the
chemistry department.

Thanks to these recent chemistry department contributors

The department received generous gifts the past year from the following:

Franta Fund: Virginia Franta

Glasoe Fund: Cynthia and Paul Loeffler, Timothy Knilians

Sartoris Fund: William Bunnelle and Leslie Evans

Chemistry Department Gift Account:

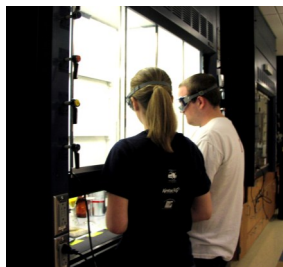
Despina Paulson Sung-Ho Hong

Tracey Murray Lynn Carlton

Robert Hrebek Michelle Peace

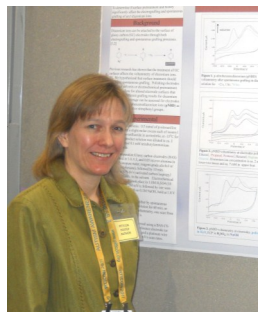
Lydia Kisley George Bennett

Faculty & Staff Notes



Above: Cline students
Heepke Wendroth and
Patrick Westmoreland
synthesize a diazonium salt.

Below: Dr. Cline at Pittcon
poster session.



Amil Anderson was on sabbatical Fall semester 2010 beginning his 23rd year at Wittenberg. He continued his work on the energetics of sugars binding to proteins using molecular dynamics simulations. He took advantage of his flexible schedule to visit his alma mater, St. Olaf College in Northfield, Minnesota in September. Besides seeing the local river 3 feet over its historical high with the consequent flooding, he was able to hold a mini-reunion with a number of his college friends who live in the area. In the spring, Amil taught 2nd semester general chemistry and advanced experimental biochemistry course. He now maintains Wittenberg's two scientific computing clusters. This summer, Amil worked with three students; in July they all traveled to the MERCURY Undergraduate Computational Chemistry conference where the students presented their results. Amil also taught a summer non-science major's chemistry course. He finished the summer with a trip to New Mexico, as Ohio had run out of 90+° weather. It was nice in Carlsbad Caverns where the average temperature year round is 56°. In his spare time, Amil continued his study of the classical guitar and attended the occasional soccer game and school concert played by his daughter, Amelia (9th grade) and son, Aidan (7th grade).

Kristin Cline enjoyed a productive summer of research, working with two BMB majors who continued in the shadow of Rachel Saylor and Christa Snyder, and were successful with a new diazonium ion synthesis method. As department chair, she was gratified at the positive outcomes of the tenure and promotion processes for Ray Dudek and Justin Houseknecht. She presented a poster at the Pittsburgh Conference in Atlanta in March and gave a conference talk on teaching safety in analytical courses at Purdue in November. Inspired by her own recent experience as a hospital patient, she developed a new assignment for Chem 281, in which students selected a clinically relevant blood analyte, researched information on it and presented it to the class. Last fall her Chem 382 students developed a method for analyzing allergens in perfumes. Daughter Merrill enters middle school this fall and will play saxophone in the 6th grade band, and Rachael begins kindergarten. Her husband Matt is training to become a yoga instructor and is continuing his photography work.

Ray Dudek received tenure this spring, and is grateful for all the assistance given to him by the department during the past 6 years. He especially acknowledges the letters and other input given by students and alumni that went into the tenure package. This past year he taught the usual courses in general chemistry and physical chemistry. The physical chemistry courses continue to evolve, and this year saw a new project involving grant proposals in Quantum Chemistry (Chem 352). Alumni served as reviewers of student mock grant proposals, and gave some excellent feedback. (Thank you!) His summer research students continued experiments with silver colloids and Raman Spectroscopy

and additional work in developing new physical chemistry experiments. One of Ray's students, Jill Underwood ('12), presented two posters at the National ACS meeting in Denver. Ray continues as the Vice Chair for the Honor Council, and regularly runs trivia at Founders. He still travels when possible.

Dave Finster completed his 30th year of teaching at Wittenberg this past spring. In addition to teaching general chemistry courses this past year, he taught an Honors course titled "Climate, Energy and Sustainability" and a Chem 100 subtitled "The Chemistry of Emergency Response." He presented papers at ACS national and regional meetings on "Comprehensive safety instruction for an undergraduate chemistry program" that showcased how Wittenberg is using his new textbook, *Laboratory Safety for Chemistry Students* throughout the curriculum. Dave became a member of the Dayton Regional Hazmat Response Team while continuing to volunteer with Miami Township Fire-Rescue in Yellow Springs. He also volunteers in the YS schools and continues to perform with WittFREE and the Yellow Springs Community Band. His daughter, Whitney, graduated as a music education major from the Baldwin-Wallace Conservatory and his son, Michael, graduated from high school. His wife, Susan, has expanded her pottery work, continues to work as a programming analyst, and is beginning a career switch by enrolling in a one-year program at Antioch University to pursue certification as health care advocate.

Pete Hanson worked with Wittenberg School of Community Education Junior Derek Thompson to develop a new method for the hydration of alkynes. The research was very successful, and manuscripts for both the *Journal of Chemical Education* and *Tetrahedron Letters* are in preparation. Pete began serving on the Educational Policies Committee in Spring, 2011, and is chair of the committee for the 2011-12 academic year. He has also continued to volunteer at the Dayton Society of Natural History. On the home-front, July saw the addition of both a chicken coop and eight chickens to the Hanson Homestead. Later in the summer Pete, Lynn and the kids (Max, 10 and Cole, 12) took a family vacation to the St. Louis area. On their trip they toured the Gateway arch, St. Louis Zoo, Cahokia Mounds World Heritage Site and the Missouri Botanical Gardens. They also had many wonderful opportunities to supervise construction along Interstate 70 throughout Indiana. Lynn and Pete highly recommend all but the construction.



Dr. Hanson in his research lab.

Justin Houseknecht taught Organic I and II, Biochemistry I, and Computational Chemistry during 2010-11. He is grateful for everyone's support as he applied for and received tenure, promotion, and a sabbatical leave for 2011-2012. He worked with three research students this summer, all of whom attended the MERCURY computational chemistry conference in August. He is back into doing triathlons and has begun racing time trials in southwest Ohio to improve his biking. His family is doing well with Anna (6) enjoying first grade and Nathan (3) making it through his first year of pre-school. His wife, Valerie, continues to explore her career options in psychiatry picking up two days a week in private practice. He looks forward to completing the first edition of his organic textbook, writing a few papers, spending more time with the family, racing, and completing a few projects around the house during his sabbatical leave.

Kay Reed will soon complete 20 years as the Academic Department Assistant in the Chemistry Department as well as the Physics Department and the Biochemistry/Molecular Biology Program. In addition to reaching this milestone, Kay and her husband Roger will celebrate their 40th wedding anniversary this fall with a cruise to the Bahamas. But the best news for Kay and Roger is the upcoming birth of their first grandchild, a baby boy due in November. The parents-to-be are their son Adam and his wife Erin. The rest of the family including Kay's 87-year-old father and her 86-year-old father-in-law are also excited about the new addition.

Dick York is still trying to adjust to measuring computer memory in gigabytes instead of kilobytes and to the fact that IBM 1620 machine code won't run as an Excel macro. Lately he has been upgrading and creating backups for some of our instrumentation computers and helping plan for replacing our now eight-year-old fleet of laboratory laptops. In the lab, he is investigating ways to store solar heat in thermochemical systems in order to balance collection and loads. He is looking forward to the new Springfield Symphony season, especially the opportunity to play the slow movement clarinet solo in the Rachmaninoff 2nd Symphony. He is planning a wind chamber music recital for the spring semester that will be mostly music of French composers and will include an appearance by the science building trio, Triple Bond.



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www.wittenberg.edu/chemistry



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Chemistry Department



2011 Chemistry Graduates

Michael Merz will be working on a master's degree in physiology and biophysics at Georgetown University.

Drew Pille, also a Physics major, will be completing his chemistry degree in the fall.

Christa Snyder will pursue a PhD in chemistry at Indiana University.

David To will be attending Wright State University's Boonshoft School of Medicine.



Left: Chemistry majors, left to right: Michael Merz, Christa Snyder, David To, Andrew Pille.

Right: BMB majors and professors, left to right: Dr. Margaret Goodman, Michelle Graham, Rhiannon Stryker, Benjamin Hanf, Hope Parker, Dr. Amil Anderson



2011 Biochemistry/Molecular Biology Graduates

Michelle Graham is searching for employment.

Ben Hanf is employed by Children's Hospital as a Clinical Research Assistant working in the Biospecimen Core Resource Lab and will apply to medical school.

Hope Parker is pursuing a Masters of Science in Forensic Science at Virginia Commonwealth University in Richmond, Virginia.

Rhiannon Stryker got married this summer and is seeking employment.

Homecoming 2011 events in the Kuss Science Center

Friday, October 21

3-4 p.m., Campus-wide student poster session in the Hobson Atrium

4-5 p.m. Chemistry & Physics alumni careers panel, Room 248

Visiting the chemistry department during Homecoming weekend? Let us know!

Contact kreed@wittenberg.edu or call 937.327.6435.