



Periodic Times

Wittenberg University Department of Chemistry
Catalyzing Student Success

2014-15 Highlights:

Ray Dudek and students
publish article in *J. Chem. Ed.*

Garrhett Via ('15) wins best
undergraduate Pittcon poster
award.

Justin Houseknecht
appointed as department
chair.

Chemistry Club wins an ACS
award for Commendable
organization.

Three new chemistry
courses offered in spring
2015.

Fourteen students conduct
chemistry summer research.

Chemistry and BMB
restricted LinkedIn Group
created.

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Volume IX

Summer 2015

Chemistry Department Serves New Program in Nursing

The Chemistry Department now serves students in Wittenberg's new Nursing program through a new course added to the curriculum: Introductory Chemistry for Health Sciences. Pete Hanson designed and taught this course in spring 2015. While the course was developed for the Nursing program, it is also available for any student seeking a General Education science course. The course is taught in a hybrid format, in which students meet in the classroom for about half of the class time, and work online for the other half. The course is being offered again this fall.

The innovative Nursing Pathway Program was announced this spring. In this program, students attend Wittenberg for their freshman year. For the second and third year, they attend Clark State's Nursing program, while remaining in residence at Wittenberg (and they are able to participate in extracurriculars here, including varsity sports); finally, they return to full-time status at Wittenberg as a senior, graduating with a BSN. A year ago, Wittenberg began a related BSN completion program, in which practicing RNs complete the Bachelors of Science in Nursing at Wittenberg. Our new chemistry course serves both of these programs.

Other new courses designed and offered this year were a topics course in Toxicology (taught by Justin Houseknecht) and Chemistry Through Experimentation (a non-science majors course taught by Ray Dudek).

Department Convenes Summer Retreat for Strategic Planning

For three days in June, the Department of Chemistry met together to focus on strategic planning. We set goals and crafted several strategic initiatives to help improve our ability to serve our students and the University. Initiatives that need alumni help: (1) we are eager to share more success stories from our alumni, and would be grateful to receive more information from alumni that we can share. We may contact alumni for the possibility of capturing their stories; (2) we are aiming to establish scholarships for chemistry and BMB majors to help us recruit more good science students to Wittenberg; (3) we are investigating the possibility of establishing an endowed chair for the department. If any alumni would like more information on how to help us achieve our goals, please feel free to contact anyone in the department.

New Department of Chemistry and BMB Program LinkedIn Group

We recently created a Wittenberg University Chemistry Department and BMB Program LinkedIn Group. This Group is intended for sharing information between the Department, Chemistry and BMB alumni, and current Chemistry and BMB majors and minors. Invitations have been emailed. If you have not received your invitation and wish to be part of this group, go to [Linkedin.com](https://www.linkedin.com), search for Wittenberg University Chemistry Department and request to join or email vharkins@wittenberg.edu.

Summer 2015 Research



Top: Ross Cirincione, Chris McCoy, Leo Vo, Maddy Miller, Jayde Glaser, Kyra Peczkowski; Bottom: Harrison Wood, Kathleen Jedreski, Natalie Nguyen, Maggie Cole, Emily Duderstadt, Chelsea Horvath. Not pictured: Sophia Melnyk, MacKenzie Freeman

Name (class year)	Hometown	Major	Summer Project
Ross Cirincione ('16)	Medina, OH	BMB	Measuring the Change in Free Energy of Mutated Glucose/Galactose Binding Protein Using Molecular Dynamics Simulations
Maggie Cole ('16)	Novelty, OH	BMB	Grafted and untreated activated carbon for use as solid phase extraction media for preconcentrating copper and lead ions
Emily Duderstadt ('16)	Cincinnati, OH	BMB	Preliminary Studies of the Synthesis of Dibenzoxanthenes for Use in Photodynamic Therapy
MacKenzie Freeman ('18)	Lewis Center, OH	BMB	Sulfate Concentrations and Dynamics in the Maumee and Great Miami River
Jayde Glaser ('17)	Bellaire, OH	Chemistry	Sodium and Chloride Concentrations and Seasonal Behavior in the Ohio River and its Subwatershed, The Great Miami River
Chelsea Horvath ('16)	Bay Village, OH	Chemistry	Solid-state grafting of aryl groups to glassy carbon electrodes using diazonium salts
Kathleen Jedreski ('17)	Medina, OH	BMB	Measuring the Free Energy Change of the Glucose/Galactose Binding Protein Utilizing Molecular Dynamic Simulations
Chris McCoy ('16)	Dublin, OH	BMB	Measuring the Free Energy Change of the Glucose/Galactose Binding Protein using Molecular Dynamics and Umbrella Sampling with Limited Position Restraints
Sophia Melnyk ('16)	Cincinnati, OH	Chemistry	Electrografting and solvent-free synthesis-grafting methods to modify glassy carbon electrodes
Maddy Miller ('16)	Fishers, IN	BMB	Evaluating the Effectiveness of the Active Learning in Organic Chemistry Conference
Natalie Nguyen ('17)	San Jose, CA	BMB	The Free Energy Effects of Harmonic Restraints on a Protein-ligand Complex
Kyra Peczkowski ('16)	Harvard, IL	BMB	Metabolism of Gluten by Intestinal Bacteria
"Leo" Phuc Vo ('17)	Ho Chi Minh City, Vietnam	Chemistry	Investigations into the Mechanisms of Nucleophilic Substitution Reactions with M06-2X
Harrison Wood ('16)	Mansfield, OH	Physics	Nucleophilic Acyl Substitution of Acetic Anhydride with Substituted Phenolates: MP2

Alumni Notes

Adeline Brym Bock ('10) is an Environmental Chemist at URS. She was one of our alumni panelists on October 24, 2014.

Isaac Boye-Arthur ('06) is an Associate Development Scientist, Formulation and Freeze-Drying Global Biologics, Bayer Healthcare.

Melissa Cederqvist ('10) received her Masters in International Health in June and has moved to Uganda, where she continues to run Fourmore Innovation. She is also looking for projects and consultancy work in public health in Uganda.

Betty Cheney ('10) graduated from the Wright State University Boonshoft School of Medicine on May 22 and was the recipient of their Excellence in Public Health Award. She returned to campus on October 24 to be one of our alumni panelists.

Jeff Domingus ('04) is a family physician at McDowell Hospital in Marion, North Carolina.

Steve Harsh ('89) is a Development Chemist with Gold Key Processing near Akron, Ohio.

Lydia Kiskey ('10) received her PhD from Rice University in April, and, in October, will begin a new position as a post doc at the University of Illinois at Urbana-Champaign, working for Professors Deborah Leckband and Martin Gruebele. She was the presenter at our November 18, 2014 Seminar class, speaking on "Resolution at the ultimate concentration limit—single molecule spectroscopy and applications to pharmaceutical separations and nanomaterials".

Dawn Kramer-Wayt ('94) visited the department on July 2. She is the Director of Marketing at American Greetings, and is one of the artists who painted the mural that remains on the wall of Room 248 Science!

Jacqueline McClaran ('66) graduated with an MD from the University of Cincinnati in 1971, and has been on the faculty at McGill University since 1972. She spent 8 years in Oxford as Lecturer in Medicine, Balliol College and Associate Dean of the Medical School for Faculty Development. She is now semi-retired and back at McGill University Health Center caring for patients in the step-down unit. She is married to Dr. Jonathan Larmonth Meakins.

Gail Miesko ('84) is a medical representative. She visited the department Friday of Homecoming weekend.

Zachary Miller ('10) has accepted a postdoctoral position in the lab of Prof. Tehshik Yoon at the University of Wisconsin-Madison, where he is studying photocatalysis. He was given the University of Michigan chemistry department's "Alumni Fund Outstanding Graduate Student Research Award" for 2014. His paper *Organic Letters* was published in October, 2014.

Tom Mori ('13) is employed at Galbraith Laboratories, and was one of our alumni panelists on October 24.

Dave Mowrey ('08) is a graduate student at the University of Pittsburgh, and was one of our alumni panelists on October 24, 2014.

Nicole Perry ('14) is a graduate student at Vanderbilt University Medical Center.

Rachel Saylor ('10) is a graduate research assistant at the University of Kansas. She spoke about *On-Line Microdialysis-Microchip Electrophoresis with Electrochemical Detection for On-Animal Sensing* at the Junior/Senior seminar on April 7, 2015.

Xiao Shou ('12) is a Product Safety Coordinator at L Brands in Columbus, OH.

Jill Underwood ('12) is a Clinical Trial Manager with Procter and Gamble, and was one of our alumni panelists on October 24, 2014.

Brianna Watson ('13) is a graduate student at the University of Tennessee, and was one of our alumni panelists on October 24, 2014

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

Wittenberg University
Chemistry Department
LinkedIn Group



See pg. 1 for further
information about joining
our group.



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

Chemistry & BMB Majors Receive Department and University Awards 2014-15

Sartoris Award for the Outstanding Senior Chemistry Major: Garrhett G. Via

Outstanding Senior BMB Major: Austin G. Holmes and Adam R. Kapusinski

Patterson Award for Outstanding Junior: Rebecca M. Shreffler

James T. Gregory Award: "Iris" Xiazi Qiu

Organic Award: Brandon D. Miner

General Chemistry Award: Kayla A. Burkhardt and Seth R. Quay

Department and University Honors: "Iris" Xiazi Qiu and Garrhett G. Via



To contribute to the chemistry department and/or Wittenberg's Annual Fund, send donations to:

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

or go to:
www.wittenberg.edu
and, under Alumni,
choose Give Now
Online.

Thanks to these recent chemistry department contributors

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

Franta Fund: Mrs. Virginia Franta

Glasoe Fund: Dr. Timothy and Mrs. Teri Knilians

Sartoris Fund: Mr. Doug and Mrs. Sandra Arbuckle

Chemistry Department Gift Account:

Dr. & Mrs. Lynn Carlton
Dr. and Mrs. Vincent Davisson
Ms. Mary Ann Felker
Mr. Robert Hrebek
Dr. Lydia Kisley
Dr. and Mrs. Robert Kohut
Dr. Marissa Matarrese

Mr. Paul and Mrs. Laura Merchak
Dr. Tracey N. Murray
Mrs. Despina Paulson
Ms. Michelle Peace
Dr. Tyler Stepsis
Mr. David Wackerow
Dr. Kimberly Walker & Mr. Paul Banta

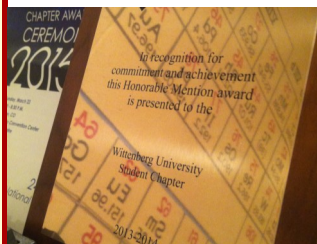
We also express our appreciation to all of our alumni and friends who have contributed to Wittenberg University.

SAVE THE DATE

Thursday, 2/18/2016
**IBM Endowed Lec-
ture in the Sciences**
at Wittenberg
Dr. John Warner

4:00 p.m.
Entropic Control in
Materials Design as an
Example of Green
Chemistry

7:30 p.m.
Green Chemistry: The
Missing Element



Student ACS chapter award.

Department Papers and Conference Presentations, 2014-15

Garrhett Via '15, Chelsey Williams '17, John Dudek, Ray Dudek, *Decay Kinetics of UV-Sensitive Materials: An Introductory Chemistry Experiment*, *Journal of Chemical Education*, 2015, 92 (4), 747-751.

Belford, R., Stoltzfus, M., Houseknecht, J. B. ConfChem Conference on Flipped Classroom: Spring 2014 ConfChem Virtual Poster Session. *J. Chem. Ed.* accepted.

Houseknecht, J. B. (2015) Go "Old School" with New Technology. In *It Works for Me, Flipping the Classroom* (pp. 16-18). Stillwater, OK: New Forums Press.

Molecular Dynamics with Ligand Restraints on Glucose Bound to Glucose/Galactose Binding Protein, **Austin G. Holmes '15**, and Amil Anderson, Poster presentation, 13th MERCURY Conference on Computational Chemistry, Lewisburg, Pennsylvania, July 24-26, 2014.

Measuring the ΔG of Binding of Glucose to Mutated Glucose/Galactose Binding Protein via Molecular Dynamics and Umbrella Sampling, **Bryanna Jay '16** and Amil Anderson, Poster presentation, 13th MERCURY Conference on Computational Chemistry, Lewisburg, Pennsylvania, July 24-26, 2014.

Measuring Free Energy Change for Solvation of Glucose and Galactose as Part of Glucose/Galactose Binding Protein Thermodynamic Cycle, **Phuc Vo '17**, and Amil Anderson, Poster presentation, 13th MERCURY Conference on Computational Chemistry, Lewisburg, Pennsylvania, July 24-26, 2014.

Investigation of a One-Step Synthesis-Grafting Method to Modify Glassy Carbon Electrodes, **Garrhett G. Via**, Kristin K. Cline, Pittcon, New Orleans, LA, March 9, 2015. (Garrhett Via received the James Manner scholarship for best undergraduate poster at this event).

Kinetics of Silver Colloid and Quantum Dot Nanoparticle Synthesis, **Rebecca Shreffler** and Ray Dudek, Dayton Section of the American Chemical Society Poster Session, April 9th, 2015

Revising "Safety in Academic Chemistry Laboratories" (poster), David C. Finster, 23rd Biennial Conference on Chemical Education, August 5, 2014, Grand Valley State University,

Department Papers and Conference Presentations, 2014-15

Comprehensive Safety Instruction Across the Chemistry Curriculum, David C. Finster, 23rd Biennial Conference on Chemical Education, August 7, 2014, Grand Valley State University.

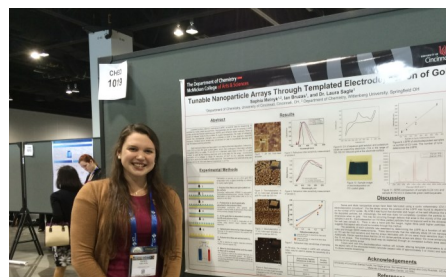
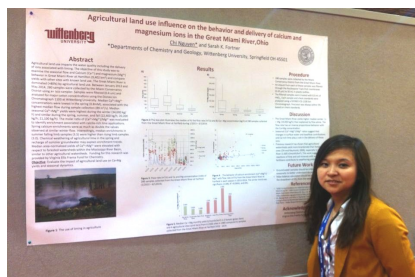
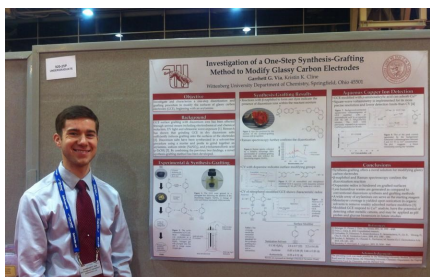
"Green Chemistry is Safe Chemistry", David C. Finster, Fall 2014 National ACS Meeting, August 12, 2014 San Francisco, CA

Houseknecht, J. B. Flipping the Organic Chemistry Classroom Using the Explain Everything App. Oral presentation, 2014, 23rd Biennial Conference on Chemical Education, Allendale, MI.

Green, T. C.; Houseknecht, J. B. Computational Investigation of the Nucleophilic Acyl Substitution Reaction of *m*-Methyl and *m*-Nitrophenols with Acetic Anhydride in the Gas Phase. Poster presentation, 2014, 13th MERCURY Conference on Computational Chemistry, Lewisburg, Pennsylvania.

McCloy, K.; Houseknecht, J. B. Effects of SMD and SM8 Solvation Models on the Nucleophilic Acyl Substitution Reactions of *m*-Methyl and *m*-Nitrophenol in Acetic Anhydride. Poster presentation, 2014, 13th MERCURY Conference on Computational Chemistry, Lewisburg, Pennsylvania.

Wood, H. J.; Houseknecht, J. B. Investigating the Nucleophilic Acyl Substitution Reaction using the Polarizable Continuum Model. Poster presentation, 2014, 13th MERCURY Conference on Computational Chemistry, Lewisburg, Pennsylvania.



Presenting at Pittcon 2015: Garrett Via (left); Chi Nguyen (center). Presenting at the Denver ACS National Meeting: Sophia Melnyk (right)

Justin Houseknecht Appointed to Chair of Chemistry



Printing a sign seemed significantly simpler than switching offices.

As of July 1, 2015, the new chair for the Department of Chemistry is Justin Houseknecht. Justin replaces Kristin Cline, who served as chair since 2004. She returned to teaching a full load of analytical and general chemistry this fall, including a first-year student advising section. Justin has taught at Wittenberg since 2005. He will continue to teach organic chemistry.



Dr. Justin Houseknecht



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www.facebook.com/WittChemistry

2015 Chemistry Graduates

Travis Green will attend Bowling Green State University's Ph.D. Program in Photochemistry.

Steven La Count is working for the Springfield Arts Council, Springfield, OH.

Jeff Mengerink is interning with the Central Ohio CRU, Delaware, OH.

Xiao "Iris" Qui will attend the University of Kansas' MS-Ph.D. Program in Pharmaceutical Chemistry.

Stephanie Smith will be teaching chemistry and physical science at the Global Impact STEM Academy in Springfield, OH.

Garrhett Via will attend The Ohio State University School of Medicine.



Chemistry majors, left to right: Garrhett Via, Xiazhi (Iris) Qiu, Jeff Mengerink, Travis Green.
Not pictured: Stephanie Smith.

BMB majors, left to right: Sean Murphy, Jamie Bowermaster, Lukas Cason, Mia Simpson, Adam Kapuscinski, Kathryn Waddell, Austin Holmes



2015 Biochemistry/Molecular Biology Graduates

Jamie Bowermaster is looking for employment and plans to apply to the University of Cincinnati Master's Program within the next year.

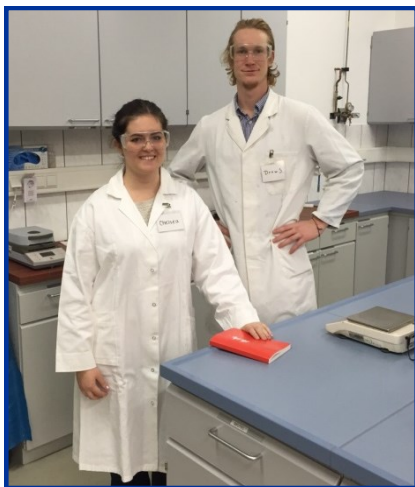
Lukas Cason is travelling in Europe and, once he arrives in Austria, will be looking for work in Biochemistry.

Austin Holmes will be attending Loyola University's MS Program in Molecular Biology, Research Intensive.

Adam Kapuscinski will be working for Americorps this year and then applying for medical school.

Sean Murphy is attending Johns Hopkins University's Masters of Biotechnology, with a focus on Bioinformatics, Program, and is working as a Lab Tech with Sure Tech, Indianapolis, IN.

Mia Simpson has not shared her plans with us.

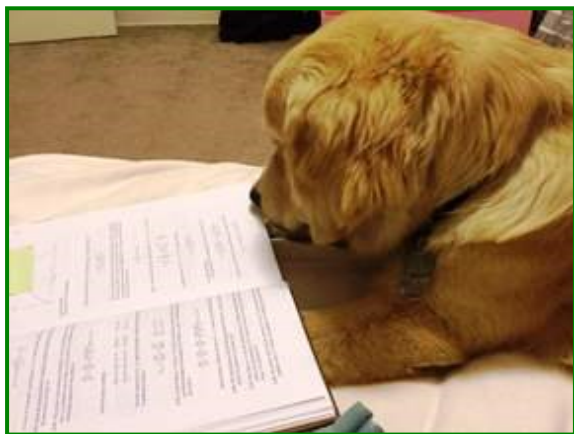


Above: Chelsea Horvath '16 and Drew Schaller '16, chemistry majors, participated in the Witt-in-Witt Study Abroad Program during Spring Semester 2015. They are shown here in the DBFZ lab in Leipzig, Germany.

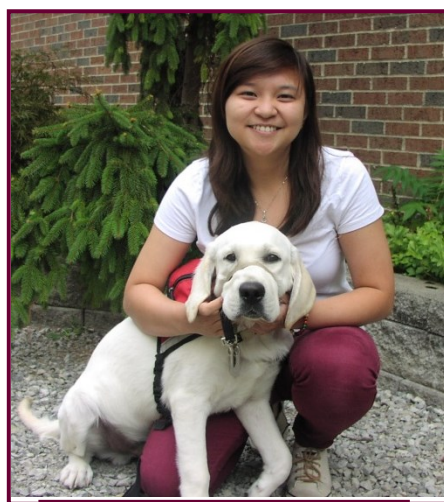
At right: Dr. Jackie Barton (seen here signing copies of C&EN) and Sophia Melnyk '16 at the 2015 Annual ACS meeting, held in Denver, CO. Dr. Barton is the 2015 recipient of the Priestley Medal.



At right: Travis Green '15, chemistry major and his service dog, Chuckles, at Commencement 2015. Chuckles became a regular fixture in classes and around the Chemistry Department.



At left: Blackhawk, 4-Paws service dog of Sophia Melnyk '16, studying Quantum Chemistry.



Above: Chi Nguyen '16 and her 4-Paws service dog, Rayman, taking a break in the courtyard.



At left: Stephanie Smith '15 student teaching at Urbana High School in Urbana, Ohio, spring semester 2015.

At right: Garrhett Via '15 and Dr. Justin Houseknecht participated in the Witt Triathlon, April 2015.

