

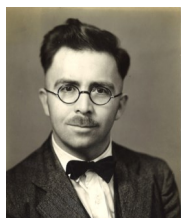
Periodic Times

Wittenberg University Department of Chemistry
Catalyzing Student Success

VOL. 15

ACADEMIC YEAR 2021-2022

Top stories in this newsletter



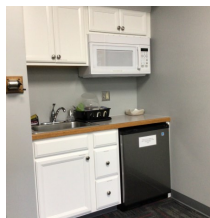
John W. Barker Chair
Established in
Chemistry Department



Capital Campaign
approaches goal (p.2)



Dan Marous wins
teaching award
(p.3)



Summer brings room
renovations (p.6)



Class of 2022
graduates in the Hollow
(p.7)

Inaugural John W. Barker Chair in Chemistry Established at Wittenberg

In October 2021, the Wittenberg University Board of Directors announced the establishment of the John W. Barker Chair in Chemistry, funded by an anonymous donor. Professor Barker taught at Wittenberg between 1926 and 1960, taking a leave to serve in WWII as a First Lieutenant in the Army Air Corps in which he was a specialist on aircraft instruments and conducted electronics research. Barker's legacy includes teaching 18 students who later earned PhDs in chemistry. He found ways to support many students through employment in the department, and 14 students lived in his home over the years. He wrote a text for use at Wittenberg: *Physical Chemistry, an Elementary Study*, and published with Paul Glasoe a textbook: *First Year College Chemistry*. The creation of an endowed chair in Chemistry is particularly important for sustaining our department at five full-time faculty members, the minimum required by the ACS for an approved department.

The Barker Chair recognizes "a senior faculty member at the rank of professor whose record indicates teaching excellence and distinction in the discipline." The department nominated Professor Kristin Cline as the first recipient. Dr. Cline joined the department in 1993 and served as department chair 2004-2015. She regularly adapts her courses to improve student engagement and learning. Her electrochemistry research with students has resulted in two publications and numerous conference presentations. She serves on the Board of Directors of the Society for Electroanalytical Chemists.

Department Acquires New Instrumentation

In the past year, the Chemistry department purchased a new gas chromatograph-mass spectrometer (GC-MS) to replace a failed 30-year old instrument. The new Shimadzu QP2020NX has been used so far in Intermediate Organic Chemistry and Advanced Instrumentation courses in the spring and was the subject of a research project this summer. We have been pleased with the performance of this instrument and appreciate the updated software controls, general ease of use and availability of technical support.

Last summer, Dr. Cline's electrochemistry workstation ceased working after over 25 years of summer research projects. Funds from the Barker Chair and from the department gift account were used to purchase a portable electrochemistry instrument—a PalmSens4. Despite its small size, this instrument has an amazing array of experiments that can be performed. It was used daily during summer research.

Additionally, a second new shaker bath was purchased this year to sustain several projects in Biochemistry/Molecular Biology research and teaching. See p. 8 for new equipment photos.

Capital Campaign Continues

Wittenberg's [Having Light: The Campaign for Wittenberg University](#) is well on its way to raising \$100 M. President Frandsen reported to the faculty on August 24 that \$99.3 M in pledges have been received. Professor Stephanie Eveland Parrot took over the role of campaign ambassador this year. We extend our sincere thanks to all who have contributed to the Campaign.

Funds given explicitly to the Chemistry Department and our endowment earnings have been used this year for equipment (see p. 1), to fund the summer research program, for twelve students who have received Chemistry Special Interest scholarship awards and for need-based Virginia E. Franta Chemistry Awards (four awards in fall 2021 and four in spring 2022, totaling \$32K.)



Thank you to these Donors from the Past Fiscal Year:

Sartoris Fund: Dr. William H. Bunnelle & Ms. Leslie V. Evans
AbbVie Foundation
Mr. Douglas S. Arbuckle Mrs. Sandra J. Arbuckle
Schwab Charitable Fund

Glasoe Fund: Dr. Timothy K. Knilans & Mrs. Teri M. Knilans

Chemistry Department Gift Account:

American Chemical Society
Dr. Amil G. Anderson
Dr. Richard S. Bellows
Dr. Lynn N. Carlton & Mrs. Betty Lou Carlton
Caterpillar Foundation
Dr. Christopher Colenda, III & Mrs. Kathryn W.
Colenda (in honor of Dr. Howard Curry)
Mrs. Jennifer DeCerbo & Mr. Anthony DeCerbo
Dr. Thomas A. Gallo
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Mr. Andrew P. McKusick & Mrs. Susan McKusick (In memory of Music Professor John W.
Williams)
Dr. Terrence L. Pansino & Dr. Elizabeth A. Prosser
Dr. Jessica L. Skoglund
Mr. Brad D. Snider & Mrs. Tina Snider
Mr. Jack C. Snider
Mrs. Paula A. Voltz & Mr. Charles E. Voltz

To contribute to the chemistry department and/or the Wittenberg Fund, [click here:](#)

Or mail donations to:
Wittenberg Fund
Wittenberg University
PO Box 720
Springfield, OH 45504

Biochemistry/Molecular Biology Gift Account:

Mr. Jeffrey D. Sumption & Mrs. Kelly A. Sumption
Synchrony Financial

Staff News, Presentations and Publications



Jennifer Gile, our laboratory coordinator and chemical hygiene officer (CHO), received CHO certification by the National Registry of Certified Chemists. Certification requires education in the basic sciences, at least one year of experience in chemical health and safety, and considerable self-study to pass a 3-hour exam. Jennifer has been working toward this goal since joining Wittenberg in 2018, including completing a course that we and several other Ohio chemistry departments sponsored in June titled *How to be a More Effective Chemical Hygiene Officer*. The certification is a significant achievement for both Jennifer and Wittenberg. All universities with chemistry labs are required to have a CHO that has completed some training, but most schools don't have a certified CHO. The additional training Jennifer pursued has given her many ideas for improving the safety culture at Wittenberg.

Dr. Daniel Marous received the Collegium Award for Excellence and Innovation in Teaching. This award, chosen by a Wittenberg faculty committee, recognizes outstanding teaching and a commitment to growing and improving as a teaching scholar.



Dr. Stephanie Eveland Parrott was appointed to a tenure-track position in the department. She completed three years as a Visiting Assistant Professor this spring and joined VIPER (Virtual Inorganic Pedagogical Electronic Resource) this year.

Dr. Justin Houseknecht served as Senior Active Learning Expert for the Lodz University of Technology in Poland from July 2021 to January 2022. (See also [featured story](#) on Wittenberg's web page).



Dr. Ray Dudek has created a number of teaching videos for use in our courses. Check them out on this [YouTube Channel](#).

Dr. Kristin Cline was named as the recipient of the John W. Barker Chair in Chemistry, a five-year appointment. She was also appointed as Wittenberg's Director of General Education.



All five chemistry faculty and four students attended and presented at the Biennial Conference on Chemical Education, July 31-August 4 at Purdue University. (photos, p. 10)

Workshops

Active Learning in Organic Chemistry: Backward Design, Justin Houseknecht, Biennial Conference on Chemical Education, West Lafayette, IN, August 1, 2022.

Active Learning in Organic Chemistry. Justin Houseknecht, University of North Dakota, June 13-17, 2022.

Student-Centered Instruction and Assessment. Justin Houseknecht, University of Memphis, August 10, 2021.

Publications

Sinner, E.K., Li, R.F., **Marous, D.R.**, and Townsend, C.A. ThnL, a B₁₂-dependent radical S-adenosylmethionine enzyme, catalyzes thioether bond formation in carbapenem biosynthesis. *Proc. Natl. Acad. Sci. USA* **2022**, 119 (34), e2206494119.

Sinner, E.K., **Marous, D.R.**, and Townsend, C.A. Evolution of Methods for the Study of Cobalamin-Dependent Radical SAM Enzymes. *ACS Bio Med Chem Au* **2022**, 2, 4-10.

Presentations

What is Specifications Grading and Can it Work for an Undergraduate Analytical Course?, Kristin K. Cline, Midwestern Universities Analytical Chemistry Conference, Columbus, OH, October 14, 2021. oral.

A Card Game for Reviewing Chemical Instrumentation, Kristin K. Cline, Biennial Conference on Chemical Education, Purdue University, West Lafayette, IN, Aug. 1, 2022. poster.

Presentations, continued

Ray Dudek and Kevin Pate, "An Overview of External Review", Biennial Conference of Chemical Education, Purdue University, West Lafayette, IN, oral.

Ray Dudek "Contemporary Chemist Project", Biennial Conference of Chemical Education, Purdue University, West Lafayette, IN, poster.

Annie Miloser and Ray Dudek, "Extraction of Oleuropein from Olive Leaf Nutritional Supplements and Oleuropein Levels Created by White Fringe Trees", 14th Annual Summer Undergraduate Research Symposium, July 2022 University of West Virginia, Morgantown, WV, poster.

Maya Hagander and Daniel Marous. "Demonstrating Bacterial Resistance to Antibiotics" Poster, Biennial Conference on Chemical Education, West Lafayette, IN, August, 2022.

Amanda Lam and Stephanie Eveland Parrott, Assessment tools for a Forensic Chemistry Capstone, 2022. Oral presentation at 27th Biennial Conference on Chemical Education, West Lafayette, Indiana.

Paige Kaiser and Stephanie Eveland Parrott, Investigating the Corundum Rainbow Computationally, 2022. Poster presentation at 27th Biennial Conference on Chemical Education, West Lafayette, Indiana.

Katie Wisniewski and Stephanie Eveland Parrott, Creating a Chemistry Capstone, Poster presentation at 27th Biennial Conference on Chemical Education, West Lafayette, Indiana.

Amanda Lam and Stephanie Eveland Parrott, Assessment tools for a Forensic Chemistry Capstone, August 11, 2021. Poster presentation at Exploring Innovation in Appalachia: an Undergraduate Research Symposium.

Leontyev, A.; Houseknecht, J. B.; Muzyka, J.; Welder, C. *Transforming Organic Chemistry Instruction through Faculty Workshops and a Community of Practice*. 2022, NSF-IUSE Summit, Washington, D. C.

Claire DeWeese and Daniel Marous. "Development of a Model for Bacterial Antibiotic Resistance in *E. coli*" Poster, American Chemical Society National Spring Meeting, San Diego, CA , March, 2022.

Lucy Bates and Daniel Marous. "Antibiotic Resistance in *E. coli*: Tracking Plasmid Stability." Poster, American Chemical Society National Spring Meeting, San Diego, CA .

Sarah Ruhe and Justin Houseknecht, *Impacts of the 2021 and 2022 Active Learning in Organic Chemistry Workshops*, 2022, Biennial Conference on Chemical Education, West Lafayette, Indiana, 2022.

Alumni Updates

The 2021 Chemistry and Biochemistry/Molecular Biology (BMB) alumni panel included 2021 graduate Jillian Poska (Graduate University Fellow, The Ohio State University), from the class of 2019: Jack Snider (Scientist 1, Analytical Research and Development, Hikma Pharmaceuticals), Brad Malott (Associate Quality Scientist, MilliporeSigma), and Marshall Eippert (Medical Student, Ohio University), and from the class of 2010: Tara (Sharif) Phillips (Manager, Strategic Solutions, Hikma Pharmaceuticals).

Rusmir Niksic ('96) is now Managing Director at North America Croda, Princeton, NJ

Chelsea (Horvath) Winter ('16) is employed as a QA Chemical Scientist II for Johnson & Johnson Vision in Jacksonville, FL.

Riley Alexander ('17) is an EHS Regulatory Compliance Specialist at Arcadis in Indianapolis.

Braden Crouse ('17), Jessica Skoglund ('18) and Keaton Wood ('18) all graduated from Ohio University College of Osteopathic Medicine in May.

Maggie Cole ('16) is an Analytical R&D Technician at Avery Dennison.

Justin Unternaher ('19) has a new position as Sr. Clinical Research Coordinator, HIV Prevention and Treatment at Children's National Hospital in Washington, D.C.

Summer 2022 Research



Summer researchers, top row, l-to-r: Emma Lindsey, Katie Wisniewski, Maya Hagander, Paige Kaiser.
 Middle row: Leeanne Davis, Alexa Repp, Annie Miloser
 Bottom row: Justin Katona, Jimmy Pedersen, Parker Hayes, Sarah Ruhe

Name (class year)	Hometown	Major(s)	Summer Project
Leeanne Davis (*24)	Springfield, OH	Chemistry	Development of an Undergraduate Forensic Chemistry Lab
Maya Hagander (*23)	Stafford, VA	BMB	Demonstrating Bacterial Resistance to Antibiotics
Parker Hayes (*24)	Cincinnati, OH	BMB and Data Science	Comparing Headspace to Solution Injection in a GCMS Procedure for an Undergraduate Organic Chemistry Lab
Paige Kaiser (*24)	New Philadelphia, OH	Chemistry	Colorful Corundum
Justin Katona (*25)	Cincinnati, OH	Chemistry	Elemental Analysis of Heavy Metal in Eggshells and Egg Yolks in Proximity to a Manganese Plant
Emma Lindsey (*24)	Powell, OH	BMB	Exploring Essential Oils and Antibiotics Along With Their Synergistic Properties with E. Coli
Annie Miloser (*25)	Saline, MI	BMB	Extraction of Oleuropein from Olive Leaf Nutritional Supplements and Oleuropein Levels Created by White Fringe Trees
Jimmy Pederson (*23)	Huntley, IL	BMB	Diazonium Grafting of Glassy Carbon Electrode with 5-Amino-8-Hydroxyquinoline for Metal Ion Binding Affinity
Sarah Ruhe (*24)	Urbana, OH	BMB	Impacts of the 2021 and 2022 Active Learning in Organic Chemistry Workshops
Katie Wisniewski (*24)	Sylvania, OH	Biology	Creating a Chemistry Capstone

Wittenberg Students Featured in ACS Video Series

Six American Chemistry Society (ACS) [videos](#) about safety in academic chemistry labs were filmed in the Wittenberg chemistry labs last summer and feature recent Wittenberg graduates Lucy Bates ('21), Carly Carafa ('22), Christi Davis ('22) and Saqib Rasheed ('22). Professor Emeritus Dave Finster led a team of chemistry faculty that wrote the scripts. We are looking forward to incorporating these videos into our general chemistry safety program.



Saqib Rasheed ('22) and Dave Finster

Chemistry Department Summer Renovations

Wittenberg's skilled Physical Plant staff renovated two rooms in the department this summer – converting the chemistry student lounge into a study space with computers and updated kitchen facilities, and turning the former computational chemistry lab into a lounge and group study space. This new design will be more functional for the current needs of our students.

Our administrative assistant, Mary Kelly, also painted several bulletin boards in the department giving them a clean, professional look. More photos of these projects are on p. 9.



2022 Student Award Winners

Sartoris Award for Outstanding Senior Chemistry Major: Rachel Kaiser

Outstanding Senior BMB Major: Rachel Boyette

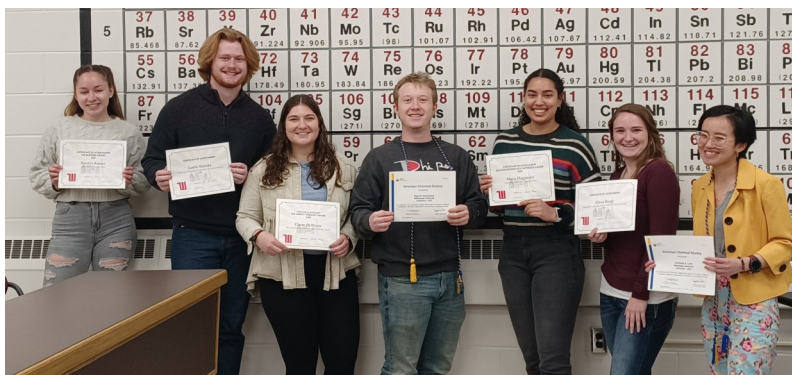
Patterson Award for Outstanding Junior Chemistry Major: Maya Hagander

James T. Gregory Award: Claire DeWeese

Organic Award: Emma Lindsey

General Chemistry Award: Justin Katona and Alexa Repp

Franta Chemistry Interest Scholarship: Jenna Hallet, Ashlyn Hillenbrand, Justin Katona, Ethan Libby, Victoria Pipinich, Caroline Sproule, Derek Stinefield



Winners and ACS-certified majors, left-to-right:
Rachel Kaiser, Justin Katona, Claire DeWeese, Paul Schmelzer, Maya Hagander, Alexa Repp, Amanda Lam

Class of 2022



BMB graduates, left-to-right: Christi Davis , Lucy Bates, Emma Scritchfield, Michael Bates, Rachel Boyette, Lilye Morrison, Nehaal Patrick.

Chemistry graduates, : Claire DeWeese, Amanda Lam, Rachel Kaiser, Paul Schmelzer.

Chemistry and BMB Graduates

Post graduation plans for our Biochemistry/Molecular Biology majors:

Lucy Bates is a graduate student in Biochemistry/Molecular Biology at the University of Cincinnati. Lucy graduated in December 2021 from Wittenberg.

Michael Bates is a graduate student in Biochemistry/Molecular Biology at the University of Cincinnati.

Rachel Boyette has moved to Seattle and is seeking employment.

Christi Davis has not shared her plans with us.

Lilye Morrison is applying for a research job and plans to apply to medical school.

Nehaal Patrick is pursuing a Masters in Biochemistry/Molecular Biology at Wright State University.

Emma Scritchfield is pursuing a Masters in Data Analytics at Wittenberg.

Post graduation plans for our Chemistry majors:

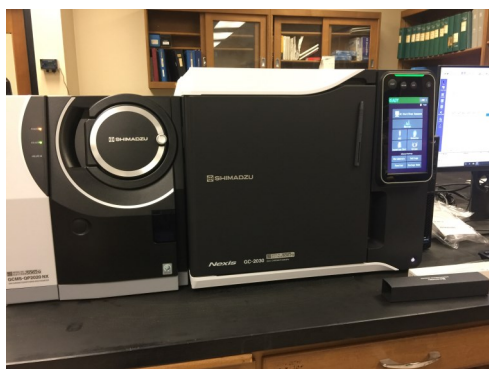
Claire DeWeese is attending the University of Kentucky Pharmaceutical Science Ph.D. program.

Rachel Kaiser is working as a veterinarian assistant at The Ohio State University.

Amanda Lam is attending North Dakota State University in the Chemistry Ph.D. program and plans to join the STEM Education Ph.D. program.

Paul Schmelzer has applied for officer candidate school in the US Marine Corps.

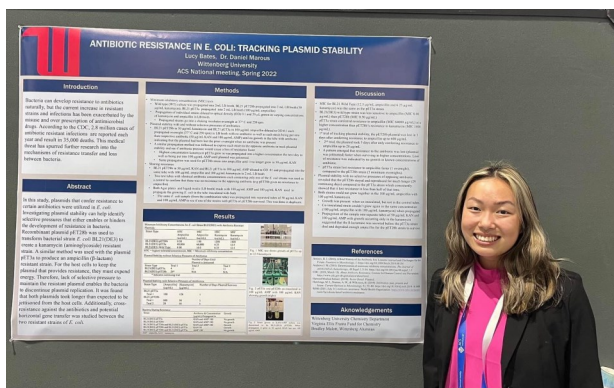
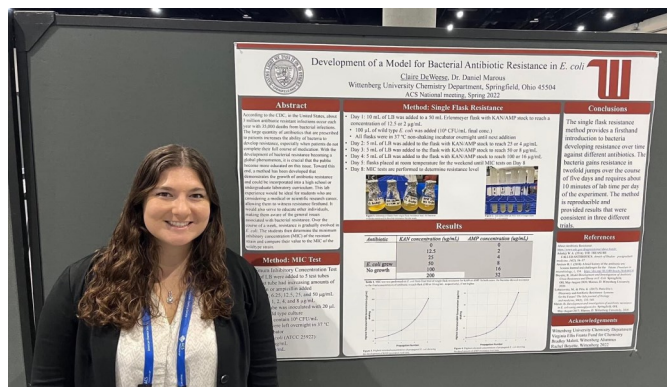
Photo Gallery



New GC-MS



Tiny new PalmSens4 electrochemical instrument



Top: Claire DeWeese. Bottom: Lucy Bates presenting at the Spring National ACS Meeting in San Diego.

Wittenberg Homecoming—September 30-October 2, 2022.

BMB and Chemistry Alumni Panel 4:00-5:00 p.m., Friday, Sept 30 in room 248 of the Barbara Deer Kuss Science Center. See [Homecoming web page](#) for schedule of events and other information.

Summer renovations



New glass in door to computer lab



New lounge (formerly the computational chemistry lab)



New computer lab (formerly the lounge)

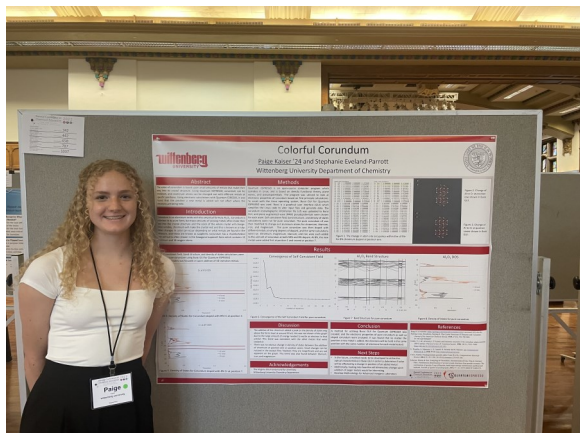


New kitchen area

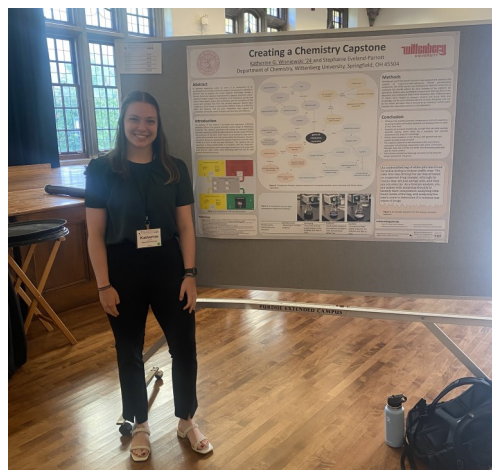


Painted bulletin boards

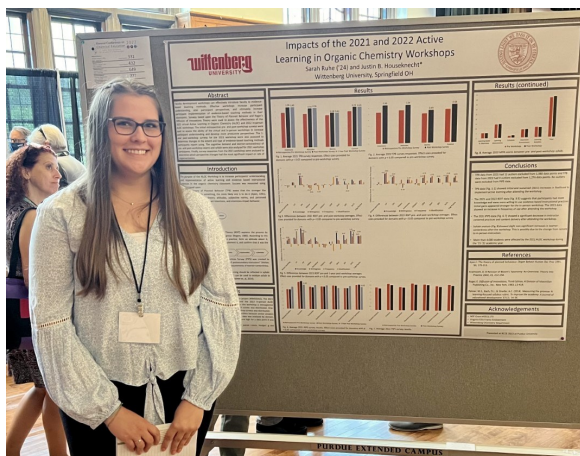
BCCE 2022 (Biennial Conference on Chemical Education)



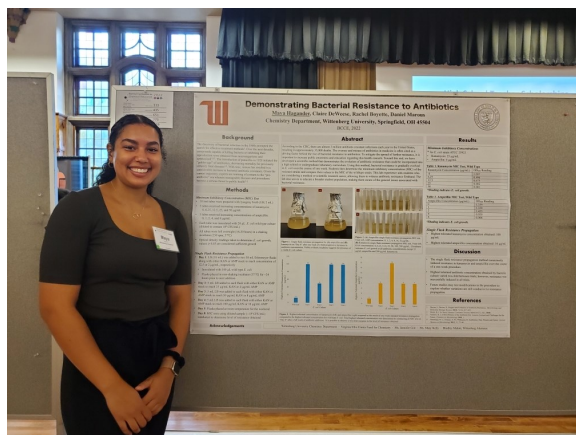
Paige Kaiser



Katie Wisniewski



Sarah Ruhe



Maya Hagander

To include your updates in the next department newsletter or to volunteer for serving on the alumni panel or presenting a seminar, send information to Mary Kelly at kellym21@wittenberg.edu

Check out the department postings on [Youtube](#), Instagram and [Facebook](#).



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Wittenberg University Department of Chemistry

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