



Departmental Changes

Chair's message



Chair, George Barnes

Much has changed as we move into the spring of 2023 and begin to resume a more “regular” pace to our personal and professional lives. That is just one of the reasons that I am so happy that the Illinois State University Department of Chemistry is resuming this publication. My name is Dr. George L. Barnes, and I am finishing my first year as chair of Chemistry. I am new to the department and Illinois State. My family and I moved to Bloomington in the summer of 2022. My wife, Samantha, and I enjoy how friendly everyone is here, especially compared to upstate New York, our last location. And my daughter, Alice, has been thrilled to make so many new friends in her first-grade class. The department has also been extremely welcoming, and we are thrilled to be here. The department thanks Dr. Craig Gatto who served as interim chair during the past two years.

By training, I am a theoretical chemist, though my research has moved more into pure computational work since I find it easier to involve undergraduates. Over the years, I have studied systems with as few as three atoms to as many as several thousand, but an overarching theme is the importance of hydrogen bonding and proton transfer in chemical reactivity. I am currently fascinated by developing techniques based on graph theory to automatically analyze the reaction dynamics and reaction networks found in high-energy decomposition systems.

I take great pride in following the teacher-scholar model in which education takes place not just in the traditional classroom but fully involves students in cutting-edge research, which is one of the reasons I am delighted to be at ISU. This is a student-centered, research-active department! Our faculty involve students—both our undergraduate and Master of Science students—as important partners in our research. Moreover, our work is impactful, with many of our faculty successfully obtaining external funding and many students being recognized with local awards and as co-authors on publications.

Within the classroom, I look forward to teaching an honors section of our General Chemistry lecture next fall. A group of us will use a free, open-access textbook from OpenStax in this course. I am pleased to say that the OpenStax text is already in use in our department since I feel it is important to remove economic barriers to learning whenever possible. Our faculty and staff are continually hard at work to improve the student experience, and we have refreshed several of the most frequently used instruments in our teaching spaces. For those of you who have donated to the department, we can't thank you enough! You help us so much in maintaining a high-quality experience for current and future Redbirds.

We hope to see as many of you as possible at future alumni gatherings and Homecoming. The insight and advice you can provide our students are truly valuable. Moving to Illinois State has been a wonderful experience, and I look forward to many more years of being a Redbird chemist!

Faculty Staff Updates

Since our last newsletter, there have been numerous changes in the faculty and staff within the department. Dr. John Baur has retired, as has Dr. Jean Standard and Kelley Thomas—from everything we have heard, they are having a wonderful time! Soon, Dr. Willy Hunter will shift his primary focus away from being in the classroom and “retire” by focusing on his numerous outreach activities. Dr. Tom Zona has also retired. Dr. Chris Weitzel, Dr. Eirin Sullivan, Dr. Jonathan Mills, and Dr. Michael Webb have also moved to new institutions or career paths, and we wish them well. While Tony Ludwig still helps the department with our instruments frequently, he is now at OSHA.

Jean Jordan, who joined in 2019, is our “new” lab manager, while Ginger Beer has taken on Kelley Thomas' old position in the office, and Judy Krautwurst, who joined in 2022, is the first to greet visitors to the chemistry office. Mandy Webster, who joined in 2021, is our current academic advisor for chemistry and physics students. We also have a new face in the stock room with Luke Ludwig, who joined in 2023, as our newest addition to the department. We are thrilled to have each of you here!

Visit our Chemistry Department Home Page at Chemistry.IllinoisState.edu



ISUChemistry



ISUChemistry

Student Awards for 2022

ACS Honorable Mention Student

Chapter Award

Chem Club, 2022

ACS Illinois Heartland Collegiate

Scholar

Alexis Graybeal
And Quyen Lai

ACS Illinois Heartland Inglett Grad

Student Award

Josie Ehlbeck

ACS Division of Inorganic Chemistry

Undergraduate Award

Elahson Swanson

ACS Undergraduate Award in

Analytical Chemistry

Jasmine Taylor

ACS Undergraduate Award in

Organic Chemistry

Seth Corrie

ACS Undergraduate Award in

Physical Chemistry

Tom Arndt

CRC General Chemistry Achievement

Award

Sara Walis

Outstanding Analytical Chemistry

Student

Kevin Diaz

Outstanding Biochemistry Student

Elahson Swanson

Outstanding Inorganic Chemistry Student

Kevin Diaz

POLYED Award in Organic Chemistry

Callie Baker

Outstanding Physical Chemistry Student

Elijah Davis

Outstanding Graduate Teaching Assistant

Josie Ehlbeck

Outstanding Chemistry

Education Student

Anna Criswell

Robert Duty Service Award

Josie Ehlbeck

Department of Chemistry News & Views

Issue 1

Chair: George Barnes

Editor: Marge Jones

Chemistry.IllinoisState.edu

Faculty recognition

Congratulations! Our faculty have been busy, and their hard work has been recognized:



Dr. Lisa Szczepura was named a University Professor in 2020 and recognized as a CAS Distinguished Lecturer in 2021.



Dr. Chris Mulligan was recognized as a CAS Distinguished Lecturer in 2023.



Dr. Andy Mitchell was recognized with the Outstanding College Teaching Award in 2021.



Dr. Jun-Hyun Kim has been designated as one of the "Researchers to Know" by the Illinois Science & Technology Coalition



Kudos: Dr. Sarah Boesdorfer has been tenured and promoted to Associate Professor



Kudos: Dr. Jeremy Driskell is the newest member of ISU Million Dollar Club



The department welcomes assistant professors Dr. Bhaskar Chilukuri, who joined in 2020, and Dr. Susil Baral, who joined in 2022 as our new physical chemists.

Goldwater Scholarship

The department is proud to announce that Sage Lauper-Cook and Katie Helmink have been named 2023 Goldwater Scholars. The Barry M. Goldwater Scholarship is one of the oldest and most prestigious national scholarships within the natural sciences, engineering, and mathematics. This year only 413 awards were made nationally. Both Sage and Katie work under the advisement of University Professor Lisa Szczepura. Congratulations Sage and Katie!



Sage Lauper-Cook and Katie Helmink

Some recent Chem Club fun activities



T-shirt tie-dye



Making felt 'moles'



Making marshmallow ghosts

Updates from Alumni

Kathleen Farley '82, M.S. '88, has over 30 years of experience as a nuclear magnetic resonance (NMR) spectroscopist in support of Medicinal Chemistry at Pfizer. Her current role focuses on managing the Discovery Chemistry small molecule NMR lab at the Pfizer site in Groton, Connecticut. She is the co-instructor of the American Chemical Society (ACS) NMR course, 1D and 2D NMR Spectroscopy: Structure Determination of Small Molecule Organic Compounds. In addition, she is on the editorial advisory board for both the *Journal of Medicinal Chemistry* and *Magnetic Resonance in Chemistry*. Farley's current research interests include the NMR structural characterization of small molecules and peptides using residual dipolar couplings (RDCs), and she was part of the team that developed the novel COVID-19 oral treatment nirmatrelvir.

From the Driskell Lab

Eunice Ebbah, M.S. '22 is working at Qiagen (Maryland).

Tosin Ogunlusi, M.S. '22 is an R&D Conjugation Chemist at Abbie (New Jersey).

McKenzie Riley, M.S. '22, began a Ph.D. program in biomedical sciences at the University of Alabama at Birmingham and is working with Professor Patricia Aguilar Calvo.

Samuel Okyem, M.S. '20, began a Ph.D. program in the Department of Chemistry at the University of Illinois at Urbana-Champaign and is working with Professor Jonathan Sweedler. Okyem received the R. C. Funson Fellowship at UIUC and was awarded a prestigious NSF NRT Fellowship.

Olatunde Awotunde, M.S. '20, began a Ph.D. program in the Department of Chemistry at the University of Notre Dame and is working with Professor Marya Lieberman. Awotunde was named the Lucy Family Institute for Data and Society Scholar at Notre Dame.

Richard Frimpong, M.S. '20, began a Ph.D. program in the Department of Chemistry at the University of Alabama in Huntsville.

Kiran Tripathi, M.S. '18, is pursuing a Ph.D. in the Department of Chemistry at the

Recent external grants

Dr. Jeremy Driskell

NSF RUI (September 2022-August 2025): Chemically modified enzymes to control adsorption on gold nanoparticles for enhanced structure/function; also NIH (September 2022-August 2025): Enzyme-mediated site-specific conjugation of antibodies to nanoparticles.

Dr. Shawn Hitchcock

PRF grant (2022-25): A Curtius rearrangement driven dehomologation from carboxylic acids bearing alpha-leaving groups to aldehydes and ketones.



Dr. Tim Lash

NSF RUI (August 2023-July 2026) New Porphyrinoid Architectures with Extended Conjugation Pathways

Dr. Bhaskar Chilukuri

NSF Collaborative Research (June 2023-May 2026) Cooperative processes at surfaces: Ligand binding at the single molecule level.

Golden Apples

Susanna Angles received a \$5,000 Summer Undergraduate Research Fellowship (SURF) from the ACS for her research (2022); mentor Dr. Andy Mitchell.

Paul DeJong '15, a current member of the St. Louis Cardinals, has donated to a new baseball-specific hitting facility named the "Paul DeJong Baseball Training Facility."

Dr. Taiwo Durowade '09, who is now a board-certified OB-GYN physician, was the keynote speaker at the eighth annual Charles Morris Stem Social in November 2022.

Chemist **Candice Halbert** '01 of the Oak Ridge National Laboratory in Tennessee, and her colleague Clarice Phelps were recognized in *People Magazine's* "Women Changing the World in 2023" article. In their off-hours, Halbert and Phelps work with underserved Knoxville-area youth through Youth Outreach in Science Technology Engineering and Math—YO-STEM, for short—a nonprofit organization that Halbert started in 2017.



University of Texas at Dallas and is working with Professor Sheena D'Arcy.

Dr. Seth Filbrun, M.S. '17, earned a Ph.D. in chemistry from Georgia State University under the direction of Ni Fang. Filbrun is currently working as a senior consultant for Simon Kucher in Boston, Massachusetts.

Dr. Alexandra (Mandl) Filbrun '16 earned a Ph.D. in chemistry from Georgia Tech and is currently working as a senior consultant in Boston, Massachusetts.

From the Friesen Lab

Jacob Walker '17, M.S. '19, currently lives in Colorado and works for Agilent in the nucleic acids solutions division (NASD). This facility manufactures oligonucleotides for various customers. He is involved in phosphoramidite chemistry.

From the Jones Lab

Jessica Wickline '18 defended her Ph.D. dissertation (University of Texas Health Science Center, San Antonio) March 13 and has accepted a post-doc position at the CDC.

Daniel Hart, M.S. '17, is a quality control specialist at DPH Biologicals.

David Platt, M.S. '19, is a research consultant with SGX Medical LLC.

Daniel Breyne '20 is a chemist at Italmatch Chemicals.

Victoria Nguyen, M.S. '12, is a research chemist at the USDA in Peoria and remains active in the local ACS section and is a part-time instructor at Heartland Community College.

Amy Christenson, M.S. '14, works at St. Joseph Hospital in the clinical lab.

Nancy Thomas, M.S. '02, has now retired and enjoying spending time in Wyoming as well as in the Bloomington–Normal area (her husband, David, is still working at Illinois State). She is active with the Environmental Action Center doing cleanup along the Sugar Creek area behind Fairview Park.

Christopher L. Cooper '05 is the global director of sales at Pion Inc.



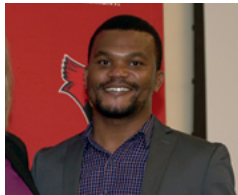
Alumni at AbbVie, from left: Pascal Eyimegwu, M.S. '19 (Kim), Mark Oblazny '15, M.S. '17 (Friesen), Stephan Germann '14 (Hamaker), Jake Grabowski, '18, M.S. '21 (Mitchell), Mark Servos '14, M.S. '16 (Peters), Justin Simanis '12, M.S. '14 (Mitchell), Christian Zwick '15 (Mitchell), Brad Greiner '05, M.S. '07 (McLauchlan).

Dr. Christian Zwick '15 (Mitchell) graduated from The Scripps Research Institute (TSRI) in 2020 where he completed his Ph.D. under the direction of Professor Hans Renata. His training involved total synthesis of peptide, alkaloid and polyketide based natural products with an emphasis on chemoenzymatic strategies. Zwick has since moved to AbbVie where he is part of the Center of Catalysis (Process R&D). His career experience includes commercial route scouting, reaction development and optimization, high throughput experimentation (HTE), and reaction discovery.

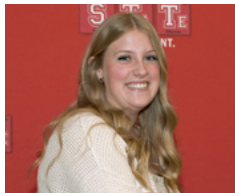
2022-23 ISU CHEMISTRY DEPARTMENT AWARDS

It is a departmental tradition to celebrate our students' academic achievements at the end of each academic year. This year the annual department awards banquet occurred on May 5, at the Bone Student Center. Once again, congratulations to our award winners. We are incredibly proud of everything you have accomplished in the 2022-2023 academic year!

Robert Duty Service Award
Ebenezer Bondzie



General Chemistry
Achievement Award
Mia Sloan



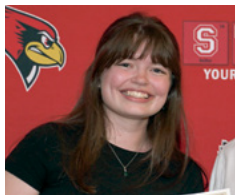
Outstanding Chemical
Education Student
Sydney Leonard



ACS Illinois Heartland Collegiate Scholar
and ACS Division of Inorganic
Chemistry Undergraduate Award
Kalli Ingram



ACS Undergraduate Award in
Analytical Chemistry
Faith Breausche



Outstanding Inorganic
Chemistry Student
Katie Helmink



ACS Illinois Heartland Inglett Graduate
Student Award and Outstanding
Graduate Teaching Assistant
Joseph Santarelli



Outstanding Analytical Chemistry
Student and ACS Undergraduate
Award in Physical Chemistry
Brian Carpenter



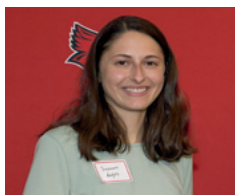
Outstanding Organic
Chemistry Student
Joshua Kellenberger



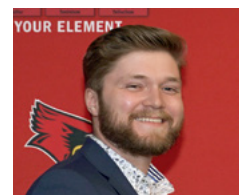
Robert G. Bone Scholar
Shariq Zaman



Outstanding Biochemistry Student and
ACS Undergraduate Award in
Organic Chemistry
Susanna Angles



Outstanding Physical
Chemistry Student
Jared Salrin



Graduation

The department congratulates our newest bachelors's and master's graduates. We were thrilled to see your successes here at Illinois State and are looking forward to learning about your future accomplishments as Redbird alumni!

B.S. recipients

Fall 2022

Elijah Davis	Jared Moore
Nick Klepac	Marcus Mozayani
Jasmine Taylor	Katelyn Wallace

Spring 2023

Susanna Angles	Kalli Ingram
Callie Baker	Sydney Leonard
Brian Carpenter	Rebecca Lipczynski
Austin Carter	Alexis Oria
Claire Fuhlhage	Kenneth Pauley
Ashten Gentry	Jared Salrin
Nathan Gilmore	Cameron South

M.S. recipients

Spring 2023

Eunice Ebbah (fall 2022)	Faith Eyimegwu
Adewale Adehin- moye	Lauri Johnson
Ebenezer Bondzie	Evan Strandquist
Jonathan Brewster	Jordan Witte

August 2023 (anticipated)

Rosemary Addo	Elise Kerkemeyer
Emmanuel Ayim	Jarrod Sage
Andy Barnes	Joseph Santarelli
Kwabena Darko	Victoria Ujah
Temitayo Falola	

M.C.E recipients

Jennifer Cuddy	Sue Trejo
Mark Norrman	

M.S.C.E recipients

Brendan Dutmer	Matthew Wells
Lauri Johnson	Veronica Wylie
Ryan Stoens	

Research in Focus

As a community of teacher-scholars, maintaining active research groups is a primary focus of the faculty within the department. Research is challenging and involves countless hours of work in the laboratory, culminating in the presentation and publication of new scientific discoveries. Our faculty have published over 30 peer-reviewed articles this past year, with over half featuring student co-authors. In addition, results were presented at 14 conferences, with three-fourths involving student presenters.



Student presenters at the Spring 2023 National ACS meeting. *From left:* Kalli Ingram (Szczepura Group), Katie Helmik (Szczepura Group), Susanna Angles (Mitchell Group), Joe Santarelli (Peters Group), Jared Salrin (Lash Group), and Thomas Arndt (Nagorski Group).

New Undergraduate Research Support

This summer, the department has initiated two new programs to support undergraduate research: the Antonini Research Fellowship and the Redbird Research Fellowship. The Antonini Research is made possible through a generous donation by Dr. Jerry M. Antonini, while the Redbird Research Fellowship is made possible through contributions to the Undergraduate Research Fund through events like Birds Give Back. This summer, the Antonini Research Fellow (Shariq Zaman) and the Redbird Research Fellows (Katie Helmink and Faeq Zaman) will conduct research under the advisement of Professors Jones, Szczepura, and Friesen. We look forward to hearing about their progress. Thank you to all of the friends of the department who helped make these awards possible.



Antonini Research Fellow—Shariq Zaman



Katie Helmink and Faeq Zaman

Our newest alumni!

Welcome to some of our newest ISU Chemistry alumni, who graduated in 2022.



M.S.

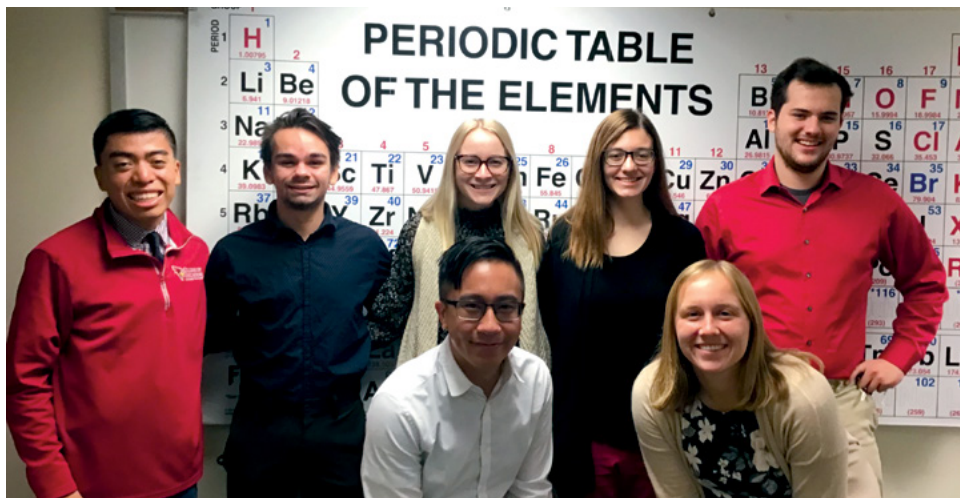


B.S.



2023 Alumni

Passing on a love of science



Chemistry education graduates from the Class of 2022 are out educating students and showing off the skills they learned at Illinois State. We are proud of the impact these recent graduates are making in students' lives. Here is where some of them ended up (as reported by Dr. Sarah Boesdorfer):

- Anna Criswell—Rochelle Township High School, Rochelle
- Kevin Diaz—Blanson CTE High School, Houston, Texas
- Julie Harris—Franklin STEAM Academy, Champaign
- Luke Madden—West Chicago Community High School, West Chicago
- Jared Moore—Kumon Math and Reading Center
- Tori Schmid—Rantoul Township High School, Rantoul
- Richie Taylor—Coal City High School, Coal City

The College of Education has reported that Illinois State University was the largest preparer of teachers in the Midwest and the second largest producer of teachers in the nation from 2016-2021, and within Illinois, almost one in six teachers are alumni of the University.

Image of Research

Isabella Rohrig won two awards (second place in Undergraduate Division and People's Choice Award) for:

“Silver Winter Crystalscapes: Where Molecules Lay To Be Discovered” at the Illinois State Image of Research Competition. (Mentor, Dr. Gregory Ferrence)

This research was supported by a BirdFEEDER grant from the Office of Student Research.

Please stay in touch

Alumni of the Department of Chemistry are an important component to the continued success of our program. By going forth and making us proud, our alumni represent the department well around the city, state, country, and world. We are always excited to hear what our alumni are up to now and to keep them involved in the happenings in and around the Department. Drop a line to Chemistry@IllinoisState.edu.

Save the Date: Illinois State Homecoming

Parade on Saturday, October 14, 2023!
Starting at 10 a.m. and followed immediately after by the Chemistry Department Tailgate Party in the Fell Parking Lot east of the SLB. Come by and enjoy food, friends, and faculty. For more information, contact Chemistry@IllinoisState.edu.





ILLINOIS STATE UNIVERSITY

Illinois' first public university

Department of Chemistry

Campus Box 4160

Normal, IL 61790-4160

This document is available in alternative formats upon request by contacting the Department of Chemistry at (309) 438-7661 or Chemistry@IllinoisState.edu.
An equal opportunity/affirmative action university encouraging diversity • University Marketing and Communications 23-25103 printed on recycled paper ♻️

YOUR GIVING HELPS REDBIRDS TO SOAR!

PLEASE DESIGNATE MY GIFT TO THE FOLLOWING:

CHEMISTRY STUDENT RESEARCH FUND (4165001)

PAYMENT OPTIONS

___ **OPTION 1:** Check. A check for my gift of \$ _____ payable to
Illinois State University Foundation is enclosed.

___ **OPTION 2:** Credit Card:

VISA MASTERCARD DISCOVER AMERICAN EXPRESS

A single gift in the amount of \$ _____.

A recurring gift in the amount of \$ _____,
ending on ____/____/____ (month/day/year),

to be paid: monthly quarterly semiannually annually

Name on card

Account number

CVV

Expiration date

Signature

Email

___ **OPTION 3:** Make a gift online at Giving.IllinoisState.edu.

Name(s)

Address

City

State

ZIP

(_____)

mobile home

Preferred phone number

OTHER WAYS TO SUPPORT ISU

I (and/or my spouse/partner) work for a matching gift company:

 Please send me information about ways to support ISU through a provision in my will, trust, retirement plan, or other deferred gift arrangement.

I have already included ISU in my will, trust, retirement plan, or other deferred gift arrangement.

Please mail this form to:

Illinois State University Foundation

Campus Box 8000

Normal, IL 61790-8000