

# Department of Chemistry and Physics

## Newsletter

Summer 2020

### Highlights from the Past Year

- Three faculty members receive promotions—see page 3.
- Prof. Fan Zuo receives grant from Indiana Space Grant Consortium for research on solar cells—see page 3.
- Outstanding graduating physics and chemistry majors honored this spring with video tributes—see page 2.
- Annual SURE program canceled for Summer 2020—see page 3.
- Students and faculty unable to present research at national meetings this spring due to the pandemic—see page 3.



*Family-friendly science demonstrations and hands-on activities were provided for the public in the Science Building during the “Night at the Museum” event.*

### Stay Connected with the Department

- Facebook: [@isuchemphys](#)  
[@SycamorePhysics](#)
- Twitter: [@sycamorephysics](#)  
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### Department Responds to the Need for Online Instruction in Spring

On March 12 the University announced that all instruction would be moving to online delivery as of March 16. With only a few days to prepare, ISU faculty stepped up to the unexpected challenge of needing to convert all courses to be delivered online. Chemistry and Physics faculty used a variety of strategies to deliver course content and keep students engaged, while not sacrificing rigor and assessment of student learning. Some faculty chose to prepare pre-recorded videos of lectures or problem-solving; others used zoom or other platforms to give live lectures at the usual class times so that students could participate and ask questions. Exams and other assignments were administered, graded, and returned electronically. While these changes to course delivery were time-consuming and sometimes fraught with technical issues, the Chemistry and Physics faculty rose to the moment and should be applauded for their efforts. Student evaluations at the end of the semester were overwhelmingly positive with regard to appreciation of the work faculty did to continue delivering content and helping students succeed in their courses.

Converting laboratory courses to online delivery was a unique challenge in the sciences. The Chemistry and Physics faculty continued to provide valuable learning opportunities for students in lab courses through “dry lab” experiences. Faculty found videos online which demonstrated techniques (e.g., titrations), or pre-

pared their own videos of experiments so that students could visualize the steps and expected outcome. Students were given data sets to analyze so that they could complete their lab reports.

### Give to Blue Day and Night at the Museum

March 11, 2020, was Indiana State’s *Give to Blue* day, a one-day fund-raising event for the University. A total of \$679,247 was contributed by 2418 donors. The funds will support a variety of programs across campus, including student scholarships and the SURE program, and donors can choose the programs to which they wish to contribute. Look for announcements about the 2021 Give to Blue day which will take place next March. We hope you will consider a donation to the SURE program or the Department!

Various activities were held around campus to promote Give to Blue day, including *Night at the Museum*, an annual open-house in which the public is invited to the Science Building for an evening of family-friendly science demonstrations and activities. Faculty and students from the Department conducted chemistry and physics demonstrations and hands-on activities designed to engage children of all ages and their parents. The Departments of Biology, Earth and Environmental Systems, and Science Education participated with their own demonstrations, and the event was co-sponsored by the Vigo County Library.

## Outstanding Graduating Senior Chemistry and Physics Majors

The outstanding graduating seniors from all departments in the College of Arts & Sciences are traditionally honored at a ceremony and reception in April. The event was canceled this year due to the coronavirus pandemic, so students were honored with video tributes on a website instead:

<https://www.indstate.edu/cas/honors>

**Courtney Nuyen** is the outstanding graduating senior **Chemistry** major. She is the daughter of John and Anne Nuyen, and the sister of Cole and Kendall Nuyen. She graduated from Plainfield High School in 2016. At ISU Courtney has been active in many organizations, including the American Chemical Society Student Chapter, Timmy Global Health, Phi Sigma Iota, Honors Council, and Campus Outreach. She traveled to Guangaje, Ecuador, three times as a member of Timmy Global Health's international medical service trip team. Courtney has served the chemistry program at ISU as a supplemental instructor, teaching assistant, laboratory assistant, and Help Center tutor. She also participated in the ISU Summer Undergraduate Research Experiences (SURE) Program for two summers, working under the mentorship of Dr. Ryan Van Hoveln. Courtney is the second author on a 2019 review article in an academic journal discussing copper-catalyzed carbon-silicon bond formation. She has received several awards recognizing her academic achievement including the P.D. Wilkinson Award, the ACS Outstanding Senior Organic Chemistry Student Award, the ACS Undergraduate Award in Physical Chemistry, and the Excellence in Spanish Award. Courtney is graduating with honors with a chemistry major and a language studies minor in Spanish. Beginning in August 2020 Courtney will be attending Purdue University to pursue a Ph.D. in organic chemistry. Courtney's video tribute is available here:

<https://www.indstate.edu/cas/honors>

**Gregory "Matthew" Siner** is the outstanding graduating senior **Physics** major. He is the son of Greg and Tammy Siner, and the brother of Rachel Siner. Matthew graduated from Sullivan High School in 2015. In the fall of that year, he came to Indiana State University as a Chemistry major but then added a second major in Physics after taking his first physics course. He has been active in the Society of Physics Students and the American Chemical Society Student Chapter. Matthew has served the Department of Chemistry & Physics as a laboratory assistant and Science Help Center tutor for three years, and helped develop the experiments for a new applied physics course that will be offered for the first time next fall. He has been recognized for his academic achievement and work ethic as the recipient of the Outstanding Modern Physics Student Award and the Gary Erwin Memorial Scholarship in 2019, as well as the Outstanding Physics Student Worker Award in 2020. Matthew is graduating with B.S. degrees in both Physics and Chemistry and plans to pursue a career in applied physics. Matthew's video tribute is available here:

<https://www.indstate.edu/cas/honors>

### Annual Student Awards

Outstanding Senior Organic

Chemistry Student—

**Courtney Nuyen;**

John McCarthy Outstanding Junior

Physics Major Award—

**Conner Walts;**

Undergraduate Award in Physical

Chemistry—

**Anthony Froehlich;**

Outstanding Achievement in

Organic Chemistry—

**Courtney Hoene;**

Outstanding Achievement in

General Chemistry—

**Connor Tierney;**

Outstanding Physics Teaching

Assistant—**Gregory "Matthew"**

**Siner.**

## Chemistry Major Receives Hines Medal

Sierra Crowe was one of six graduating seniors to receive ISU's 2020 Hines Medal. The Hines Memorial Medal goes to students who entered Indiana State as first-time college freshmen and are completing their bachelor's degrees with the highest cumulative grade point average. It is named after Linnaeus Hines, the University's fourth president, who served 1921-1933. Sierra graduated with a double major in chemistry and biology. She is originally from Wisconsin Dells, Wisconsin, and will attend the Indiana University School of Medicine in the fall. She plans to become a physician practicing obstetrics and gynecology.



**Sierra Crowe**

## Twenty-One Students Receive Chemistry and Physics Degrees

Twenty-one students graduated in December 2019 or May 2020 with majors in chemistry and/or physics. The chemistry graduates were Chalen Chambers, Krystiauna Cole, Sierra Crowe, Bryce Currey, Philipa Debra-Pinamang, Lauren Hixon, Madison Hutchings, Mykenzie Kostka, Conner Lubbehusen, Madison McDonald, Sarah McDonald, Brandon Mikesell, Courtney Nuyen, Shan Patel, Jarett Posz, Claire Seelen, Bryan Walker, and Jake Wilkinson. Anthony Froehlich graduated with a physics major. Two students graduated with double majors in chemistry and physics, Ahmad Ahmad and Gregory "Matthew" Siner.

## Physics Professor and Chemistry Alumna: “People of State”

Indiana State’s website features short articles that highlight the accomplishments of faculty, students, and alumni—termed People of State. Physics professor Guoping Zhang and chemistry alumna Rachael Schulte (class of 2008) were featured in the past year.

Prof. Zhang’s article focuses on a research project involving proteins implicated in the pathology of Alzheimer’s disease. In the article, two of his undergraduate research students, Paul Wells and Tyler Jenkins, explain what drew them to the project.



**Prof. Zhang and research student Paul Wells**

For the full article, see:

<https://peopleofstate.com/guoping-zhang/>

In her article, Rachael Schulte describes her experience in the ISU chemistry program and how undergraduate research opportunities led to medical school, an M.S. in Clinical Investigation, and eventually a position as an Assistant Professor in pediatric hematology/oncology at Riley Children’s Hospital in Indianapolis.



**Rachael Schulte**

For the full article, see:

<https://people.indstate.edu/rachael-schulte/>

## Faculty Promotions

**Adrienne Gilbert** was promoted to Senior Instructor.

**Jennifer Inlow** was promoted to Full Professor.

**Elsun Seung** was promoted to Full Professor.

## Students Present Research at Regional Meetings in Fall ‘19

### *Ohio Inorganic Weekend*

*University of Toledo, Nov. 2019.*

Four students presented posters: Bryce Currey (with Prof. Zuo), Courtney Nuyen, Jarett Posz, Jake Wilkinson (all with Prof. Van Hoveln).

### *Interdisciplinary Research Collaborative Undergraduate Research Symposium*

*Rose-Hulman Institute of Technology, Oct. 2019.*

Two students presented posters: Rachel Worthington and Baylee Sparks (both with Prof. Fitch).

### *National Meetings Canceled*

Six students had poster abstracts accepted for national meetings in the spring, but these meetings were canceled due to the coronavirus pandemic:

- National American Chemical Society Meeting
- American Physical Society March Meeting
- National Council on Undergraduate Research Meeting

The students were: Beixi Hao (with Prof. Bartz); Ahmad Ahmad and Bryan Walker (both with Prof. Glendening); Courtney Nuyen, Jarett Posz, and Jake Wilkinson (all with Prof. Van Hoveln).

## Annual SURE Program Canceled Due to Coronavirus Pandemic

2020 would have been the 15<sup>th</sup> year of the Summer Undergraduate Research Experiences, or SURE program. Plans were in place for 35 students to work with 15 faculty mentors from 5 departments across the University. Unfortunately, the popular and highly successful program was canceled shortly before its traditional start in mid-May due to the coronavirus pandemic. This was a disappointment to students and faculty alike, but the Department is hoping and planning for the program to resume next summer.

To view student research posters from the 2019 SURE program, see the SURE website:

<https://www.indstate.edu/cas/node/2355>

As noted on Page 1, the Department hopes to promote the SURE program and raise money for student SURE fellowships on **Give to Blue day** next spring.

## Faculty Publications and Grants Received

**Fan Zuo** received a grant from the Indiana Space Grant Consortium to conduct research into transparent photon absorbers for potential use in solar cells. The funds will provide opportunities for students to participate in his research program.

Faculty published in the following journals over the past year:

**E. Glendening:** *Inorganic Chemistry*; *Journal of Computational Chemistry*.

**R. Noll:** *Journal of Chemical Education* (3 papers).

**E. Seung:** *Journal of Science Teacher Education*; *Research in Science Education*.

**R. Van Hoveln:** *ACS Catalysis*.

**G. Zhang:** *Journal of Physics: Condensed Matter* (2 papers); *Physical Review B* (3 papers).

**F. Zuo:** *International Journal of Hydrogen Energy*.

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**ISU Department of  
Chemistry and Physics  
Newsletter**

All our newsletters are available *electronically* at  
the alumni link on the department website:

[http://www.indstate.edu/cas/chem\\_phys/](http://www.indstate.edu/cas/chem_phys/)

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**We want to hear from you!**

Please inform us if you have a change of address, and keep us up-to-date  
on your activities. Send an email to Jennifer Inlow (jinlow@indstate.edu) or  
complete the form on the insert and mail it to the Department.

**Questions or  
comments?**

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