



Spring 2022

Department of Chemistry NEWSLETTER

Chair's Letter by Jill Venton

Dear UVA Chemistry Alumni and Friends,
It's been a while since we updated you on the happenings in the UVA Chemistry program. This newsletter will help you catch up on some of the important things that are happening around UVA Chemistry.

Building

The first big news is that the building renovation for old chemistry is basically complete. The building received a 100-million-dollar upgrade. The teaching and research labs were all renovated, and utilities upgraded for all the spaces. The teaching labs were organized into smaller rooms with glass windows to the hallway and are technology-enabled to allow student presentations in the lab. Organic labs have nine hoods each - no more boiling off solvents on the counter tops! In addition, the renovation created new classroom spaces on the second floor, some of which are dedicated to active learning. There is now an open stairwell connecting the third floor lobby to a second floor study area and a maker space for all students to use. They also added a lot of nice, new bathrooms in the common areas as well! **We plan to show off the new building in an academic symposium and an open house this fall on October 7, 2022.**

Undergraduate Programs

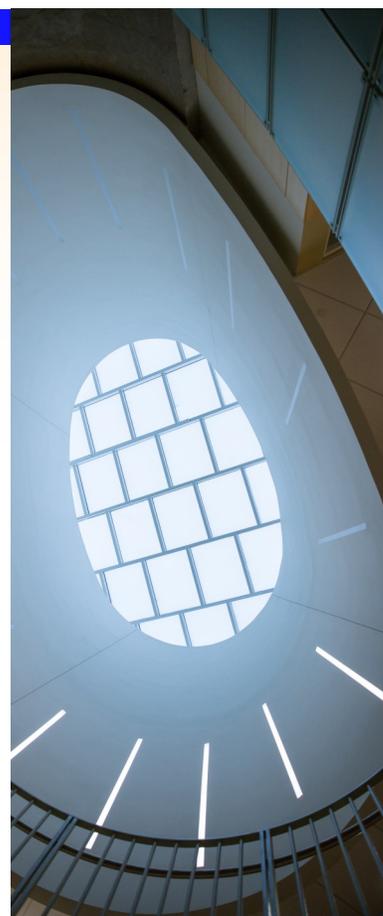
Our undergraduate programs continue to train up the next generation of chemists. Many courses have undergone substantial revision to emphasize active learning and group work. Our general chemistry students now have just one traditional lecture a week and meet in 100 person sections for their other class period, where they work in groups on problem solving meant to help them engage in the material. These problem sessions are led by faculty and graduate students and assisted by an army of undergraduate TAs who help groups critically think about chemical problem solving. Organic chemistry courses also have a 2-hour problem solving session once a week. Our lab courses have been transformed from traditional "cookbook" style labs to guided inquiry where students must design their own experiments in group rather than following a set procedure. Again, the emphasis is on problem solving skills as well as developing lab techniques which will equip them for a variety of jobs and applications. Our undergraduate students continue to have great success in our program and go on to top graduate, medical, and professional schools as well as into quality jobs in a variety of industries.

Continued on page 3

Kenneth Bass Scholarship Winners

For the 2021-2022 academic year, the UVA Chemistry Department awarded three undergraduate students with the Kenneth Bass scholarship. This scholarship assisted the students with tuition. The winners of the 2021-2022 Kenneth Bass Scholarship were fourth year Kohl Ratkovitch, third year Rohan Parikh and third year Brigitte Meyer.

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Newsletter Staff

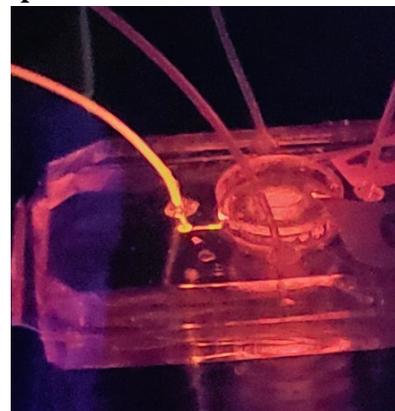
Jill Venton, Department Chair and Publisher

Seth Matula, Department Business Administrator, Editor and Contributor

Delaney Hammond, Undergraduate Student and Contributor

Faculty Focus: Rebecca Pompano

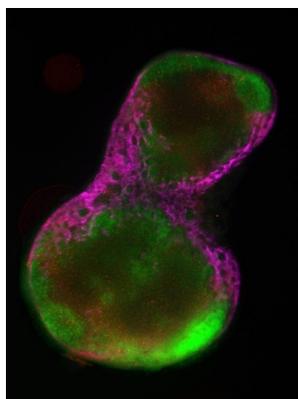
Dr. Rebecca Pompano joined the UVA Chemistry Faculty in July 2014 out of a postdoctoral fellowship at the University of Chicago where she also obtained her Ph.D. with advisor Rustem F. Ismagilov. Additionally, she has a courtesy appointment in the Department of Biomedical Engineering. Dr. Pompano's research revolves around the development of new tools to simplify the complexity of the human immune system. Since her arrival at UVA, her research has been awarded



Fluid flow control device imaged on a fluorescence microscope



Rebecca R. Pompano, Ph.D.



A live section from a murine lymph node, ~2-mm across, labelled with antibodies to map out specific elements of the tissue (purple is lymphatic vessels; green is B cell regions). A vaccine (red) given earlier can be seen inside the node near the B cell regions.

funding from four NIH awards. Additionally, she has been awarded a Hartwell Foundation research award, the national 2016 Starter Grant Award from the Society of Analytical Chemists of Pittsburgh, a *Lab on a Chip* Emerging Investigator designation, the Rising Star award for Cellular and Molecular Bioengineering, and an inaugural University of Virginia Research Excellence Award. In 2021, she was promoted to Associate Professor. During her time at UVA, Dr. Pompano has mentored four Ph.D. graduates, and a MS graduate. The lab currently has eight Ph.D. students, seven undergraduate researchers, one postdoctoral fellows, and a research scientist.

“Dr. Pompano’s research revolves around the development of new tools to simplify the complexity of the human immune system.”

Department Faculty Leadership

B. Jill Venton

Department Chair

Charlie Grisham

Associate Chair

T. Brent Gunnoe

Graduate Prgms. Dir.

Laura Serbulea

Undergrad Prgms. Dir.

Group members have received numerous awards. See the article on Sophie Cook on page 6.

Undergraduate education and research training is important to Prof. Pompano. The research conducted by undergraduates in the Pompano Group have received many awards including two Chemistry Summer Research Scholarships, three College Science Scholar Summer Research awards (Drake Dixon 2015 & 2016, Rebecca Yoo 2018), two NanoSTAR Summer Research awards (Jacob Woodruff 2015, Alyssa Montalbina 2018), four DoubleHoo Research grants (2022 Isabella Lee with graduate student Jonathan Zatorski, 2021 Erica Kern with Alex Ball, 2016 Benjamin Groff with grad student Maura Belanger and 2019 Timothy Freeman with grad student Meg Catterton), the Edgar F.

Shannon award (Benjamin Goff 2018), a Harrison Undergraduate award (Alyssa Montalbina 2019), a Lester Andrews Summer Research scholarship (Alyssa Montalbina 2020) to name a few. Additionally, Alyssa Montalbina was awarded a 2021 NSF GRFP award, while Benjamin Groff was a NSF GRFP Honorable Mention. Several graduate students have been supported by NIH Training grants (Biotechnology TG-Jennifer Ortiz 2016-18 and Immunology TG-Maura Belanger 2017-18) or by a NSF Graduate Research Fellowship (Jonathan Zatorski 2019-2022) or by a Presidential Fellowship for Collaborative Neuroscience (Sophie Cook 2021). The Pompano Group webpage is www.pompanolab.com.

Chair's Letter *Continued*

Graduate Program

Our graduate programs also continue to train chemists in cutting-edge research. A new focus for the graduate program is career development, and we are partnering with the university's PhD+ program to help students explore careers and skill development throughout their graduate careers. Our students suffered a bit when labs shut down during Covid, but they have recovered well, and



Renovated Research Lab

our research programs are going strong. Several of our students have won national awards, including DOE fellowships, DOJ fellowships, and NSF fellowships. Others have won internal awards, such as Jefferson Scholar Dissertation year fellowships. We have also invested in our master's degree programs. We offer a non-thesis master's degree program in a one-year format, which is a very flexible way for students to get additional chemistry training for a variety of purposes.

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New Instructional Labs

In Memoriam: Richard Sundberg

Richard J. "Dick" Sundberg died on November 1, 2021, in Hickory, N.C. A resident of Charlottesville, Virginia, since 1964. He had relocated to North Carolina in May 2021, to be close to daughter Jennifer Sundberg Deal and her family. He was born on January 6, 1938, at Sioux Rapids Hospital, Sioux Rapids, Iowa, to Ernest and Rosa (Christensen) Sundberg.

Dick received his BS degree in Chemistry, with highest distinction, from the University of Iowa in 1959; a distinguished military graduate of the Army ROTC, he received a commission as a 2nd Lieutenant. He completed his PhD in chemistry in August, 1962 at the University of Minnesota, which honored him as a Distinguished Alumnus in 2001.

After serving two years in the U.S. Army Chemical Corps, Dick began his long and successful academic career in 1964 at the University of Virginia. An excellent teacher and mentor, productive researcher, and skillful administrator, he had a global impact on the field of organic chemistry. He was the author of a number of papers, reviews and monographs in his field, and co-authored the preeminent graduate text in organic chemistry, *Advanced Organic Chemistry*, revising it through five editions.



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Notable Faculty Awards

Brent Gunnoe, 2022 ACS George A. Olah Award

Kateri DuBay, 2022 OpenEye Outstanding Junior Faculty

David Cafiso, 2022 IES Silver Medal in Medicine/Biology

Sen Zhang, 2022 Sloan Fellow

Ilse Cleeves, 2022 Cottrell Scholar

Robert Gilliard, 2022 UVA Research Excellence Award

Sen Zhang, 2022 UVA Research Excellence Award

Jill Venton, 2022 Advances in Measurement Leadership Award

Robert Gilliard, 2021 Packard Fellow

Robert Gilliard, 2021 Kavli Frontiers of Science Fellow

Robert Gilliard, 2021 Beckman Young Investigator Award

Robert Gilliard, 2021 Organometallics Distinguished Author

Robert Gilliard, 2021 Sloan Fellow

Sen Zhang, 2021 CAPA Distinguished Junior Faculty Award

Ken Hsu, 2021 Mark Foundation for Cancer Research Emerging Leader

Laura Serbulea, US National Chemistry Olympiad Mentor

Robert Gilliard, C&EN Talented 12

Sen Zhang, 2020 Scialog Fellow

Robert Gilliard, 2020 Scialog Fellow

Kateri DuBay, 2020 Cottrell Scholar

Ilse Cleeves, 2019 Packard Fellow

Faculty Focus: Robert Gilliard

Robert Gilliard, Ph.D. came to the University of Virginia after completing a UNCF/Merck Postdoctoral Fellowship at Eidgenossische Technische Hochschule (ETH) in Zurich, Switzerland and a Ford Foundation Postdoctoral Fellowship at Case Western Reserve University. He earned his BS from Clemson University and Ph.D. at the University of Georgia.

Since arriving at UVA, Professor Gilliard's research group has grown dramatically in size which is reflective of the success seen in their publications, grant support and numerous national awards. The research done at UVA has produced 30 peer reviewed articles as of April 2022. The research is currently funded with a NSF Career grant and an ACS PRF grant in addition to the funding provided by the other honors Prof. Gilliard has received.

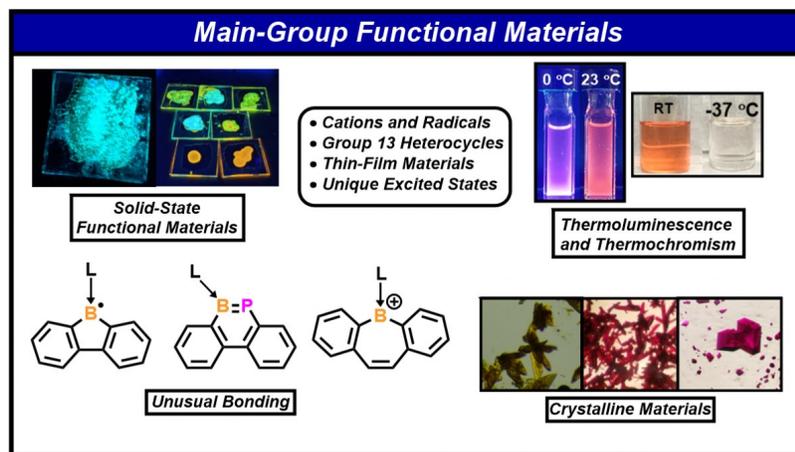
Those include a 2022 UVA Research Excellence Award, a 2021 Packard Fellow, a 2022 Kavli Frontiers of Science Fellow, a 2021 Sloan Fellow, a 2021 Beckman Young Investigator Award, and a 2020 Scialog Fellow. During the Summer and Fall of 2021, he went to the Massachusetts Institute of Technology as a Dr. Martin Luther King Visiting Professor. Prof. Gilliard led the UVA effort in 2020 to secure an NSF MRI grant that expanded and enhanced UVA's X-Ray Diffraction capabilities.

In 2021, *Organometallics* presented him with a Distinguished Author award and in 2020 C&EN named him one of their talented 12.

Group members have also garnered many awards. There have been two Jefferson Fellowships awarded, the first to Luke Freeman in 2019 and the second to AC Obi in 2020. The group has also had two Adam Ritchie Outstanding Graduate Student awardees in Jacob Walley in 2020 and



Robert J. Gilliard, Ph.D.



Kelsie Krantz in 2022. Jacob Walley was also given a 2021 ACS Young Investigator award. Additionally, in 2021, Kim Hollister was awarded a Jefferson Scholars Foundation Research Prize and Kelsie Wentz a UVA GSAS Teaching Relief Fellowship. Many members have been awarded ACS travel awards. The group has three main research areas of focus. They are Main-Group Element-Doped Materials for Energy, Subvalent and Cationic Organometallics for Bond Activation, and Carbene-Mediated Strategies for CO₂ Reduction.

The group is multidisciplinary and utilizes organic, inorganic, main-group, and materials chemistry to accomplish their projects. A variety of characterization methods are utilized which include multinuclear NMR, EPR, UV-vis, photoluminescence, and single-crystal X-ray diffraction.

The applications for the Gilliard Group research are wide ranging from current energy problems by targeting catalysts to OLED technologies and molecular electronics to exploring future applications in medical chemistry through synthesizing novel conjugated heterocycles.

The Gilliard Group website is: <https://gilliardgroup.chem.virginia.edu/>.

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Faculty Focus: Sen Zhang

Professor Sen Zhang arrived in Charlottesville in 2016 after completing his postdoctoral fellowships at Oak Ridge National Laboratory and the University of Pennsylvania. In 2014, he earned his Ph.D. from Brown University.

Prof. Zhang was selected for a Sloan Research Fellowship (2022), a National Science Foundation CAREER Award (2022), a CAPA Distinguished Junior Faculty Award (2021), a Scialog Collaborative Innovation Award (2021), and a UVA Research Excellence Award (2021). The *Frontiers in Chemistry* named him a Rising Star in 2020. He was also named “Emerging Investigator” by the *Journal of Materials Chemistry* (2019) and *Nanoscale* (2020). The research in the Zhang Group has received funding from four National Science Foundation grants, two 4-VA Collaborative Research grants, an ACS PRF grant and a DOE EERE grant.

Group members have also been given many awards that reflect on the quality of the research. New group member Bukuru Anacleot has recently won a GEM fellowship and a NSF Graduate Research fellowship. Chang Liu was recognized as the 2021 Adam Ritchie Outstanding Graduate Student and also received a Jefferson Scholars Foundation Dissertation Year Fellowship and a Materials Research Society Graduate Silver Award. The U.S. Department of Energy has recognized Grayson Johnson and Perrin Godbold with Graduate Student Research Fellowships.

The research of the Zhang Group aims to create new advances in catalysis, magnetism, plasmonics, and biosensing. The three main thrusts are the Synthetic Methodology for Atomically Precise Materials, the Catalysis for Clean Energy and Environmental Sustainability, and studies on the Functional Magnetic and Plasmonic Materials. This research utilizes colloidal chemistry, electrochemistry and catalytic processes coupled with operando spectroscopic and structural

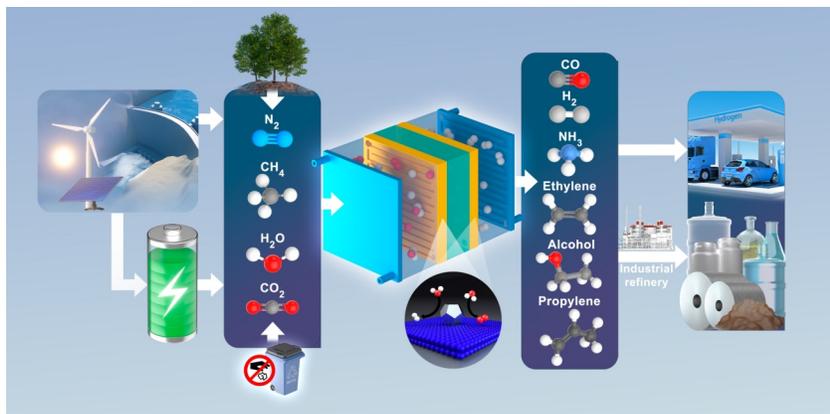


“...the Zhang Group aims to create new advances in catalysis, magnetism, plasmonics, and biosensing.”

probes including X-ray absorption spectroscopy (XAS), X-ray photoelectron spectroscopy (XPS), small angle X-ray scattering (SAXS), environmental electron microscopy, differential electrochemical mass spectrometry (DEMS), and infrared spectroscopy.

Since joining UVA, the group has published 40 peer-reviewed articles and as of April 2022 has at least another six in press or under consideration. In 2021, the Zhang group and collaborators published on breakthrough research in *Nature Catalysis*, “Oxygen Evolution Reaction over Co Catalytic Single-Site in a Well-Defined Brookite TiO₂ Nanorod Surface” that has received a lot of attention. It can be found at <https://www.nature.com/articles/s41929-020-00550-5#Sec9>. This research could greatly change how we utilize solar energy by creating a new catalytic material with the more abundant elements cobalt and titanium. Currently, the process of using solar energy to split water molecules in order to utilize the hydrogen molecules as fuel is highly inefficient and expensive, which makes the process impractical to use on a large scale. This more efficient and cost-effective catalytic materials that can be scaled up for practical use, may advance catalytic process to the point where solar energy can be used more readily and fundamentally change how the world consumes energy.

The Zhang Group website is <https://zhanglab.as.virginia.edu/>.



Using green electricity and electrochemical processes, valuable chemicals and fuels are produced from the electrochemical conversion of small molecules (H₂O, CO₂, N₂, O₂, CH₄ etc.) and renewable feedstocks (biomass, wastes). Developing active and durable catalysts from earth abundant materials is critical to improve and optimize energy efficiency and cost-effectiveness of the electrochemical transformations.





Grad Student Profile: Sophie Cook

Sophie Cook came to the UVA Chemistry graduate program in 2018. She promptly joined the research group of Rebecca Pompano. More recently, she was awarded the 2022-23 Sidney Hecht Fellowship. Prior to being named the Hecht Fellow, Sophie was awarded a 2021 Presidential Fellowship for Collaborative Neuroscience. Both these fellowships covered tuition, fees and stipends.

“Sophie is excelling in her PhD studies. She is especially notable for her creativity and intellectual ownership of her research project, and has in fact taken the lab in a whole new direction. In her pursuit of studying the chemistry of neuroimmunity and chronic pain, she is developing a tiny fluid control system that will eventually be able to maintain samples of immune tissue with brain tissue. In addition to her research, she is a talented science communicator, and was recruited to help teach a course on the subject last year. She is also active in

promoting inclusivity in our research group and in affinity groups on campus, and currently runs an Instagram page for science outreach, Lowkey Science. I look forward to seeing her next steps as part of the Hecht Fellowship,” says Dr. Pompano about Sophie.

Currently, Sophie is working on developing a novel 3D-printed multi-organ-on-chip platform that connects tissue slices via recirculating fluid flow to model communication between two or more tissues. The device uses an integrated magnetically-driven pump called the impeller pump (publication for the pump listed below, also patented) to enable user-friendly fluidic control within the device at biologically-relevant flow rates. This platform will be used to study immunity by integrating lymph node slices on-chip, working towards neuroinflammation and autoimmunity.

“Sophie...is especially notable for her creativity and intellectual ownership...”

Department Staff

Seth Matula, Business Administrator

Cecelia Cropley, Scientific Program Administrator

Cindy Knight, Undergrad Prgms. Coord. & Asst. to Chair

Susie Marshall, Grad. Prgms. Coord.

Victoria Beamer, Finance Specialist

Cameron Hawley, Storeroom Manger

Debbie Scott, Purchasing Specialist

Madi Alvis, Inventory Line Lead

Ed de Bary, Infrastructure Manager

Jerry Shiflett, Service Technician

Jarrad Reiner, Computing Services

Chuck Arrington, Org. Chem. Lab Coord.

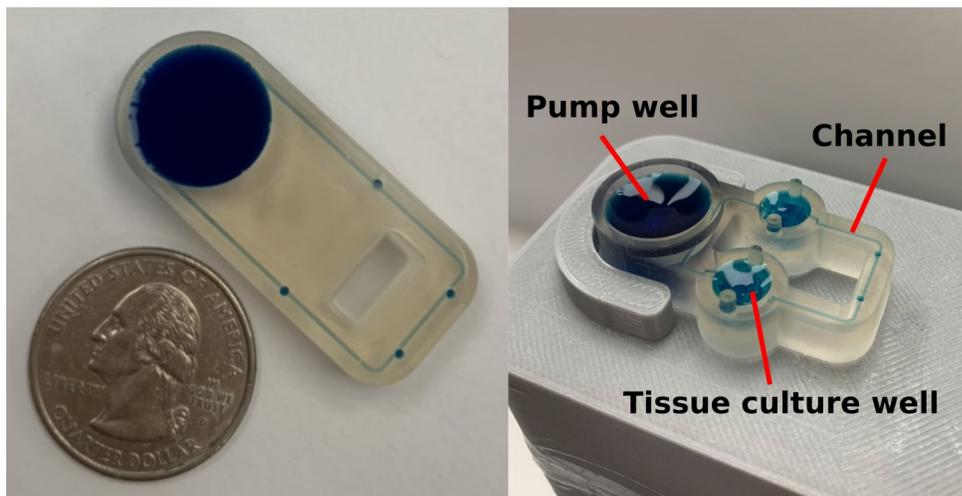
Jan Dean-Clemmer, Gen. Chem Lab Coord.

Carol Price, Biochem. Lab Coord.

Earl Ashcraft, Instrument Technician

This work was recently published: Cook, S. R. et al., "Microscale impeller pump for recirculating flow in organs-on-chip and microreactors", *Lab on a Chip*, January 2022.

The image included below shows the 3D-printed device filled with blue food dye. On the left, there is a device with just a channel loop compared to a quarter for size. On the right, there is a device with



two tissue culture wells to enable the co-culture of two slices connected by a channel. The device is resting on the impeller pump external platform.

The Hecht Fellowship was created through the generosity of former UVA Chemistry Prof. Sidney Hecht. Prof. Hecht's mid-career spanned 28 highly prolific and influential years in the Department of Chemistry at the University of Virginia. Currently at Arizona State University (<https://www.biodesign.asu.edu/sidney-hecht>), Professor Hecht is a leader in biological chemistry and a great friend and benefactor of our Department.

Undergrad Spotlight: Lauren Schmidt

Lauren Schmidt is a fourth year student from Westport, Connecticut studying music and chemistry. She conducts research with the Gunnoe group on organometallic catalysts. Schmidt admits



Lauren Schmidt

that while she has always loved STEM subjects, she did not discover a proclivity for chemistry until high school. “I realized how interested I was in learning about what makes up everything and how molecules interact, and also found it easy to understand the patterns and behavior of elements,” she said. Although she is passionate about chemistry, Schmidt plans on pursuing music full-time after graduation. She will be working at the Aspen Summer Music Festival as an Operations Assistant this summer. Later, she plans on pursuing a Master’s degree in Arts Administration. While music and chemistry may seem incongruous, Schmidt illustrates that students do not have to give up their passions in order to follow another unrelated path. “I hope that my involvement in a variety of subject areas proves that you don’t just need to confine yourself to one community at UVA,” she said. Outside of Chemistry, Schmidt is a Student

Supervisor at the Music Library and works as a promotions assistant for the Music Department. She is also a violinist for the Charlottesville Symphony.

Grad Student Profile: Bukuru Anaclet

Bukuru Anaclet is a first year graduate student from Chicago, Illinois. Before coming to the University, he studied chemistry at Pomona College in California. Anaclet was heavily involved in campus life— he was a member of the track and cross country teams and served as a liaison and TA for the Chemistry department. “Coming from a close community at Pomona, I wanted the program I became a part of to be close and supportive, too,” said Anaclet. He noted that working with his mentor, Kelly Dunham, and advisor, Sen Zhang, has been a highlight of his time here at UVA. Anaclet is the recipient of the National GEM consortium PhD Fellowship and National Science Foundation Graduate Research Fellowship, and will soon begin a research internship at the National Renewable Energy Laboratory. Prior to his entry into UVA, he interned



Bukuru Anaclet

with the pharmaceutical company Merck. “I helped develop a high-throughput colorimetric assay for Merck conjugate vaccine drug product samples to meet quality attributes at lower cost and with increased sensitivity,” said Anaclet of his work with the lab. “This project was later continued upon the conclusion of my time by the Vaccine Manufacturing team at Merck to be implemented.” In addition, he has presented his research at the 2021 American Chemical Society National Meeting and Exposition, and at the 2021 National Conference on Undergraduate Research. During his time here at the University, Anaclet will continue to work on nano-material research. After receiving his Ph.D., Anaclet hopes to conduct post-doctoral studies at a university or national laboratory, and one day lead his own research team.

2021-22 Undergraduate Awards

David DiMeglio, ACS Section outstanding Senior Award

Natchanon Sittipongpittaya, The American Institute of Chemists, Inc. Outstanding Senior Award

Zoe Ziff, ACS Division of Analytical Chemistry Undergraduate Award in Analytical Chemistry

Adam Lee, ACS Division of Inorganic Chemistry Undergraduate Award in Inorganic Chemistry

Kohl Ratkovich, ACS Division of Organic Chemistry Undergraduate Award in Organic Chemistry

Erika McCormick, ACS Division of Organic Chemistry Undergraduate Award in Organic Chemistry

Tatiana Kennedy, ACS Division of Physical Chemistry Undergraduate Award in Physical Chemistry

Christine Lewis, Oscar R. Rodig Alpha Chi Sigma Chemistry Award

Morgan Foster, Alpha Chi Sigma Chemistry Award

2022 Oscar Rodig Summer Undergraduate Research Awards

Caitlin McSorley (Hsu Lab)

Rohan Parikh (Ratan Lab)

James Sappington (Machan Lab)

2022 Lester Andrews Summer Undergraduate Research Awards

Louis Diment (Harman Lab)

Sean Wood (Kilbanov Lab)

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Long Time Staff Retiring

After many years of service to UVA and the Chemistry Department, long time staff Debbie Scott and Susie Marshall are retiring. Debbie, retiring Dec. 2022, serves as a purchaser and



Debbie Scott

financial specialist in the Chemistry stockroom, a position she has held for 45 years. Susie, retiring July, 2022, has worked at UVA for 29, many as the department's Graduate Programs Coordinator. Their dedicated service to the department and University will be missed but we are happy for them.



Susie Marshall

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Bass Scholarship Winners *continued*

Kohl Ratkovich is a third year chemistry major from Virginia Beach, Virginia. Along with receiving the Bass Scholarship, he was also a recipient of the 2021 Harrison Undergraduate Research Award, which allowed him to dedicate the summer between his second and third year to research. Ratkovich's interest in chemistry reaches back all the way to his childhood. "I was prescribed numerous medications in an attempt to remedy my Tourette's Syndrome, and I was always fascinated by them," he said. This fascination continued to grow into a passion and a desire to pursue an education and career in chemistry. Ratkovich plans on earning an M.S. in Chemistry through the department's 3+1 program, and then would like to pursue a Ph.D. in chemistry in hopes of conducting research as a career. Outside of the Chemistry department, Ratkovich is actively involved in the American Red Cross, serving as the Vice President of Membership at UVA. In addition, he is a resident of the French House and serves on its social committee, is active in his church community, and plays the cello.



Kohl Ratkovich

Rohan Parikh is a third year biochemistry student from Ashburn, Virginia. Rohan has been awarded the Bass Scholarship for undergraduates. During his time in the chemistry department, he cites being able



Rohan Parikh

to study topics such as organic chemistry, biochemistry, and quantum theory as highlights. "I think chemistry provides the perfect lens with which to view the world, as it provides the perfect level of abstraction within which we can understand the processes that govern our environment and ourselves at a foundational level," he said. Parikh is the professional chair of Alpha Chi Sigma, UVA's professional chemistry fraternity, and has served as a TA for the introductory and organic chemistry laboratory classes. This allowed him the opportunity to build connections with chemistry faculty, such as Dr. Morkowchuk and Dr. Chruma. "My involvement with the chemistry department has been very fulfilling and allowed me to engage with the university community deeply," Parikh noted. After graduation, Parikh plans to work for a local hospital while applying to medical school. He hopes to become a practicing physician as well as conduct clinical research in the future, citing a "hope to shape the landscape of personalized medicine" as a motive

Brigitte Meyer is a third-year biochemistry student from Chevy Chase, Maryland. She is also a recipient of the Bass Scholarship. While she was passionate about chemistry in high school, Meyer solidified her interest in biochemistry after taking the 800 chemistry lecture series and an introductory biology course. "When I came to UVA I started taking some of the intro bio classes. Most recently I took cell biology, and I absolutely fell in love," Meyer explained. In the spring of her first year, Meyer joined the Kenworthy Lab at the Center for Cell and Membrane Physiology. There, she studies mutants of caveolin-1, a protein involved in endocytosis and mechanotransduction. "I think most of my favorite professors have been through the chem department," Meyer said, citing Professor Grisham and Professor Serbulea as notable examples. After graduation, Meyer hopes to continue to be involved in research and plans to pursue a PhD in either molecular biology or biochemistry. Outside of the chemistry department, Meyer is pursuing a minor in English and writes for the Health and Sciences section of the Cavalier Daily.



Brigitte Meyer

Grad Student Profile: Kelsie Wentz



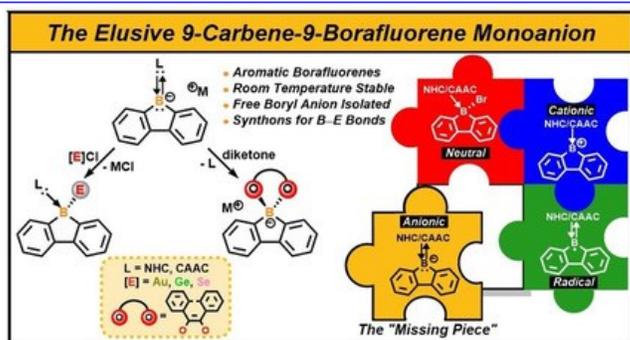
Ph.D. Candidate Kelsie Wentz

Kelsie Wentz is a fifth year doctoral candidate in the research group of Dr. Robert Gilliard. Kelsie arrived at UVA in 2017 after receiving her B.S. in Chemistry from West Virginia Wesleyan College in Buckhannon, West Virginia. Gilliard says of Kelsie, "Kelsie joined my lab when I started at UVA and she has been an exemplary scientist and leader, and it is nearly impossible to properly articulate the key role she has played in our success, truly invaluable. I will greatly miss having her around on a daily basis but I look forward to seeing all that she will accomplish as a postdoctoral researcher in the Klausen Laboratory at Johns Hopkins University."

Kelsie was recently awarded the 2022 Adam Ritchie Outstanding Graduate Student Award. The Ritchie Award is an annual award given to a top

graduate student in memory of alumnus Adam Ritchie. During her time at UVA, Kelsie has also won an ACS Division of Organic Chemistry Travel Award and first place at the rising 5th year graduate student Poster Session. During the 2021-22 academic year, Kelsie was supported by a UVA Graduate School of Arts & Sciences Teaching Relief Fellowship. This fellowship is awarded to worthy students to allow them to focus on their research and dissertation without the need to be a Graduate Teaching Assistant.

"...it is nearly impossible to properly articulate the key role she has played in our success."



Angew. Chem. Int. Ed. **2021**, 60, 13065-13072.

In March of 2021, Kelsie was the lead author on a paper published in *Angewandte Chemie* that soon garnered a lot of attention. The article, *Stabilization of the Elusive 9-Carbene-9-Borofluorene Monoanion*, was named a "Hot Paper" by the journal as well as highlighted in *ChemistryViews*, *Science Daily*, *Phys.org*, and *EurekaAlert*. The simple uniqueness of the study in the article was it is "the first isolated and structurally authenticated examples of the elusive 9-carbene-9-borofluorene monoanion."

Graduate Programs Student Activities

New graduate student initiatives in the UVA Chemistry graduate program are aiming to increase the enjoyment and success of our graduate students while they are here studying and after graduation. The first year mentor program is designed to match an incoming student with a current graduate student in a mentoring capacity. In 2021-22 the first year mentors are Annika Kraft, Kelly Dunham, Kim Hollister and Fanji Kong. The Career Seminar Series committee of Abigail Graham (Chair), Ethan Sesco, Renna Nouwari, Zoe Gehman and AC Obi target this new seminar series

to provide graduate students an experience that will enhance their knowledge of post-graduation career options.

The UVA ChemSciComm Program was founded to provide multimedia platforms for chemistry students to become effective communicators at the interface of research and society, within a community that promotes equity, diversity, and inclusivity. Participating students build digital portfolios of media projects, receiving practical training in science communication skills. More information can be found here: <https://wordpress.its.virginia.edu/>



OPEN HOUSE

SAVE THE DATE

For an academic symposium and open house this Fall to show off our new building renovations.

SAVE THE DATE

October

7

2022

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Chair Letter *continued*

We have also recruited students into the new Bridge to the Doctorate program, which helps underrepresented and first-generation students prepare for the PhD program. Overall, our graduate students continue to find good jobs in academia, industry, and government.



Renovated Chemistry Student Space

Faculty

Our faculty have continued to innovate through the time of Covid. Every faculty member had to put their course online in spring 2020, and many remained online during 2020-2021 academic year. However, this year we are back in person! Our faculty learned a lot during the shift online and we are now more flexible to implement Zoom or Microsoft Teams content along with our traditional classroom and lab experiences. We've added to our general faculty (i.e., teaching track) by welcoming back Prof. Jason Chruma. On the tenure-track side, we have had many promotions lately. In the past 2 years, Ken Hsu, Mike Hilinski, and Rebecca Pompano have all received tenure and been promoted to Associate Professor. We have 3 more in the process right now! Our faculty continue to win national awards, including two Sloan Fellowships in the last year, NSF CAREER awards, and American Chemical Society National Awards.

UVA Chemistry 2021 Retreat Group Photo



Staff Spotlight: Earl Ashcraft, Ph.D.

Earl Ashcraft holds three degrees in chemistry. A BS from Juniata College, a MS from Indiana University and a Ph.D. from the University of Tennessee. Upon graduation in 2010, Earl began work as a Chemist for a government contractor here in Charlottesville. That work focused on supporting the analysis of samples using a variety of techniques including FTIR, Raman, XRD, GC-MS to name a few. The variety of instrumentation Earl worked with was key to preparing him for becoming UVA Chemistry's Instructional and Research Chemical Instrument Technician in 2017.

In this role, his primary job is to guarantee the functionality of equipment through repair and scheduled maintenance. Additionally, he trains faculty and students on regular maintenance needs and proper instrument usage. This requires a very broad knowledge on a lot of different types of instruments. Earl says, "The most important goal of my job is to have as much knowledge about an instrument as a field service engineer for as many instruments as possible, and therefore minimize the number of expensive service calls. I need to be able to diagnose, repair, and maintain an instrument, as well as verify system performance. I need to be able to do the job as well as a trained engineer without having any training myself, which requires self training and contacting the manufacturer for assistance." Each of Earl's days are challenging and different. He enjoys when he can prevent a service call and working on the smaller projects with students.



Earl Ashcraft, Ph.D.

"Our staff play such an important role in the success our department achieves. Earl and Cecelia are among the best at what they do," Jill Venton, Dept. Chair

Staff Spotlight: Cecelia Cropley

Cecelia Cropley holds a BS in Chemical Engineering from UVA and initially worked as a Process Engineer at Union Carbide in South Charleston, WV. When she moved with her husband to the Boston area, she began a research career at a small R&D firm, Giner, Inc., which focused on development of electrochemical devices, primarily fuel cells, electrolyzers and electrochemical sensors.

In 2008, they moved to Charlottesville and she joined UVA as a Grants Administrator in Emergency Medicine and the Center for Applied Biomechanics. Cecelia moved to the Chemistry Department in 2011 as the Scientific Program Administrator for the Center for Catalytic Hydrocarbon Functionalization headed by Brent Gunnoe. She was also an editorial assistant with John Yates.

In her current position as Grants Administrator in Chemistry, she helps faculty with all grants related activities from proposal submission to closeout. She is also very crucial in the management of graduate student funding and scheduling. Cecelia feels, "The most important goal of my job is to enable faculty to focus on their research rather than administrative tasks to the extent possible. My favorite aspect of grants administration is working with the faculty to submit high-quality proposals." Professor Brent Gunnoe, who has worked with Cecelia from the beginning says, "Cecelia's positive impact, first on the Center for Catalytic Hydrocarbon Functionalization and subsequently on the Chemistry Department, has been tremendous. She is very well informed about proposal and grant processes. Cecelia has become an essential member of the Chemistry team, and her efforts not only facilitate proposal preparation, but they improve our proposals. Further, it is a pleasure to work with Cecelia. She is always ready to answer questions and help with new tasks, and she does so with a 'can do' attitude."



Cecelia Cropley

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