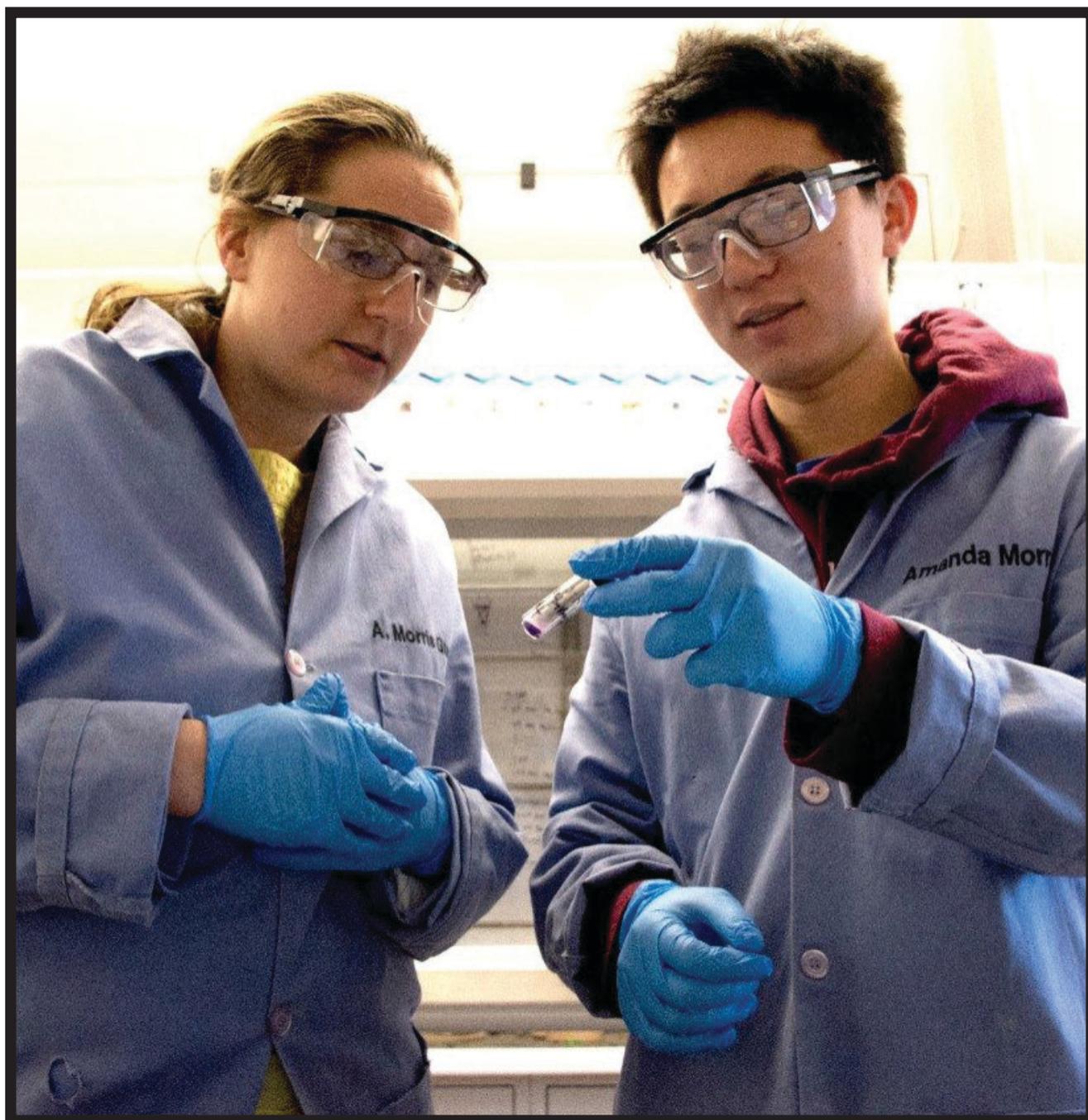


SPRING 2018

# ELEMENTS

THE ALUMNI MAGAZINE OF  
THE VIRGINIA TECH DEPARTMENT OF CHEMISTRY



COLLEGE OF SCIENCE  
**CHEMISTRY**  
VIRGINIA TECH.

# LETTER FROM THE CHAIR

Dear Alumni and Friends of the Department of Chemistry,

I am pleased to announce that effective August 10, 2018, Alan Esker will succeed me as Chair of the Department of Chemistry. Alan enjoys the support and confidence of both the faculty and the Dean and I have no doubt that he will do extremely well in his new role.

By 11:59 p.m. on August 9, 2018, I will have completed two full four-year terms as chair which, I believe, makes me the longest-serving chemistry department head/chair since Jim Wolfe. At this point, I will leave it to my colleagues to judge my effectiveness, successes and failures. That said, I would like to highlight some of the people who, in my view, made a big difference over the past few years in guiding the department to a bright future.

Chemistry majors at Virginia Tech have always enjoyed what might be dubbed as a “small school experience at a large university.” Recently, we have made huge improvements in the educational experience of our non-majors as well.

Taking advantage of newly introduced lab fees, Associate Chair Hervé Marand negotiated a once-in-a-lifetime deal with Agilent that resulted in a dramatic improvement in the equipment and instrumentation available to our undergraduates, majors and non-majors alike. Our undergraduate lab instructors stepped up to the plate by developing new, interesting and meaningful experiments that take advantage of the infusion of new resources. Specifically, Ms. Vicki Long, who was hired full-time in 2012 to run the non-majors general chemistry labs, has worked with one of our laboratory coordinators, Michelle Dalton, to completely reinvent the lab, introducing new experiments, adopting innovative approaches to laboratory instruction and more. In terms of sheer numbers, over 2,400 students were enrolled in general chemistry lab in Fall 2017: nearly one-third of all incoming freshmen take general chemistry lab in their first semester and enjoy a hands-on experience with modern laboratory instrumentation and techniques that elevates our department above our peers.

Some of you may be familiar with the lyrics to the 1949 jazz classic, “Crazy He Calls Me,” by Sigman and Russell, which talks of moving mountains, going through fire, etc. My favorite line in that song goes, “the difficult I’ll do right now, the impossible will take a little while.” Gordon Yee, who, until last year, served as Director of Undergraduate Education, moved mountains. In my over 30 years at Virginia Tech, we always wanted to have common time/common content exams in general chemistry, but because of the huge number of students, 2,000–3,000 each semester for the past decade, and the resulting space and logistical problems, this was deemed impossible. Working with upper administration, the registrar and others, Prof. Yee made this happen.

For the classroom experience, our Director of General Chemistry, Patricia Amateis, coordinates these exams and recitation sections,

and helps recruit and train our best instructors. This team ensures a quality educational experience for all students in non-majors general chemistry and is one of several reasons the department was recognized as a University Exemplary Department in 2016—for the third consecutive year, incidentally.

On the other end of the academic spectrum, our graduate program has remained strong. Both Paul Deck and John Morris have served as Graduate Program Director during my tenure, and have worked with Joli Huynh to create an organized and structured program that has retained its personal touch. These individuals have helped our students navigate through a myriad of obstacles.

On the administrative end, Hervé Marand’s contributions to the department as associate chair over the past eight years have been extraordinary. Along with being an important confidant to me, he has found creative solutions to long-term problems and his management of the department finances, service centers, and personnel have vastly improved the quality and efficiency of all our operations. These efforts have culminated in a restructuring of both the main and business offices, resulting in a stable administrative structure that will allow future chairs and associate chairs to focus more on the broader academic and scholarship issues associated with running a major department.

The Department of Chemistry Advisory Council (DCAC) has played a huge role in the department over the past few years. I am grateful for their efforts and support of the department and its people, as well as their friendship. They have played key roles in our media and public relations efforts (website, Facebook, *Elements*), fundraising, and so much more. Members of DCAC are the key architects behind the upcoming Celebration of Chemistry, an event designed to commemorate the reopening of Davidson Hall later this year. Our strong and active advisory council has caught the attention of upper administration and has reaped benefits for the department that are simply unprecedented. I particularly want to acknowledge and thank the two DCAC chairs I have worked closely with, Frank Akers and Tom Piccariello, vice-chair Ann Norris, and the three other DCAC members (along with Frank Akers) who attended the first meeting I hosted and have since helped elevate and reinvigorate DCAC to what it is today: Beth Calvey, Bill Coleman, and Bill Starnes.

Finally, I want to acknowledge the support of all alumni and friends of the Department of Chemistry. We appreciate all you have done for the department and I hope you are able to join us at the Celebration of Chemistry on October 19–20, 2018. To borrow a quote from the Beatles, “a splendid time is guaranteed for all.”



# ELEMENTS *spring 2018*

## Department of Chemistry

Jim Tanko	Department Chair
Patricia Amateis	Director of Undergraduate Programs
John Morris	Director of Graduate Program

## Contact

Tell us what you think of this magazine. Write, call or email at

Department of Chemistry (0212)  
c/o Corrin Lundquist  
Davidson Hall Room 480, Virginia Tech  
1040 Drillfield Drive  
Blacksburg, VA 24061

540-231-5392 / chemdept@vt.edu

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## *about the cover*

Professor Amanda Morris (left) and her graduate student Jie Zhu look over a coarse powder that could bring a new leap in the mission to convert carbon dioxide into storable energy. Courtesy of Steven Mackay, College of Science.

# FEATURE STORY



## CELEBRATION of CHEMISTRY

October 19 – 20, 2018

BY CORRIN LUNDQUIST

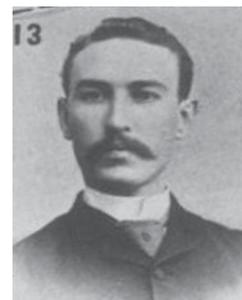
In the Fall 2017 edition of *Elements*, we introduced the Department of Chemistry Advisory Council (DCAC) and the Celebration of Chemistry event scheduled for Fall 2018. We are happy to report that the DCAC has welcomed several new members and the details for the celebration have solidified.

The Celebration of Chemistry is the brainchild of Professor Emeritus Mike Ogliaruso, affectionately referred to as Dr. O by students and faculty alike. What was originally a rededication of Davidson Hall, the hallmark building of the Department of Chemistry since its opening in 1926, has now evolved into a combination of the Davidson Hall reopening and a celebration of the rich history of the Virginia Tech Department of Chemistry.

Originating with the founding of the university in 1872 as the Department of General and Analytical Chemistry, the department has seen not only the growth of the university, but the development of chemistry as a field. At the time of the department's beginnings, the American Chemical Society had not yet been founded, neither the electron nor the neutron had yet been discovered, and the first Nobel Prize in Chemistry had not yet been awarded. In fact, the first version of the now-ubiquitous Periodic Table of the Elements was formally presented to the Russian Chemical Society by Dmitri Mendeleev only four years prior.

In the 142 years since, the university and the department have undergone many changes from reorganization to name changes. During the first eight years, the university, then known as Virginia Agricultural and Mechanical College, started out with six to eight members of the faculty for the entire school. Because the number of subjects outnumbered the number of faculty members, instructors had to be versatile, teaching several different subjects at once. Now, the university boasts 1,520 full-time instructional faculty and nine colleges and graduate school.

Robert James Davidson (pictured right) came to the university in 1891 as an Adjunct Professor of Chemistry and advanced to a full professorship by 1894. In 1904, he was made Dean of the Department of Applied Sciences. During his career, Davidson was a member of the Washington Academy of Science, a fellow of the American Association for the Advancement of Science, a member of the American Chemical Society, and a member of the National Association of Official Agricultural Chemists. He died suddenly in his home on December 19, 1915. In 1927, as the



R. J. Davidson, c. 1895, from the Harry Downing Temple Photograph Collection, courtesy of Virginia Tech Special Collections

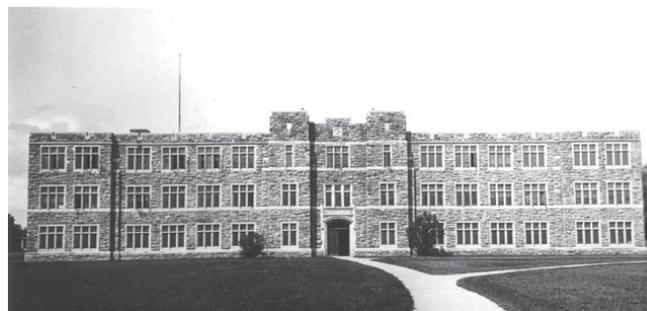
new building was nearing completion, a recommendation was made to and approved by the Board of Visitors to name the building after the late professor.

One of the oldest buildings on campus, Davidson Hall's original front portion was completed in 1928 with the fourth floor, center addition and rear section added in the 1930s. The Celebration this October will mark the end of only the fourth renovation in the building's 90-year history.

The complete renovation of the building has been implemented over several years. The first phase of Davidson Hall's renovation began in 2011 with the demolition of the deteriorated and outdated center and rear sections. These were replaced with modern laboratory and research spaces, as well as a new 349-person lecture hall. This phase of the project was completed in January 2014.

The second and final phase of the project began in the winter of 2016–2017. Improvements to the historic front section include exterior repairs to masonry (the original façade will remain untouched), window replacement, air conditioning installation (some alumni may remember the rather warm climate in the main office), and a full overhaul of the interior into a modern teaching-and-research building.

Along with members of DCAC, the students, faculty and staff of the department are eagerly awaiting the reopening of the front section, and would love for you to join us this October for the reopening. The Celebration of Chemistry is open to all chemistry alumni; whether you received your bachelor's or your doctorate, we'd like for you to be apart of this special occasion.



Davidson Hall in 1931. Courtesy of Virginia Tech Special Collections.



Davidson Hall in 1952. Courtesy of Virginia Tech Special Collections.



Davidson Hall In 1989. Courtesy of Virginia Tech Special Collections.

## DETAILS

### DATES

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October 19–20, 2018

### PRICING

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Early Bird Rate (until July 31st)	\$40
Regular Rate	\$50
Children Under 18	Free
VT Alumni Graduate Students*	Free

\*Applies to both current graduate students and undergraduate alumni who are currently enrolled in a graduate or professional program at another institution.

### REGISTRATION

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Online registration will be available and can be accessed through our website: [www.chem.vt.edu](http://www.chem.vt.edu)

### EVENTS

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Events include a Friday Night Social at Sinkland Farms; tours of Davidson Hall, including the front section; Chemical Illusions, a family-friendly chemistry magic show hosted by the American Chemical Society Student Associates; Hokie Talks by selected faculty members; and much more.

# DEPARTMENT NEWS

## Virginia Tech Giving Day 2018



Giving Days are 24-hour online fundraising events hosted by universities and other non-profits in an effort to raise funds to help provide opportunities for students. This March, alumni, students, faculty, staff and friends of Virginia Tech were invited to participate in the first-ever Virginia Tech Giving Day. Gifts to the university—and to the department—are vital to the continued growth and progress of the university and directly impact the quality of the programs offered.

Over the course of the Virginia Tech Giving Day, the university raised \$1.6 million, with just over \$3,000 allocated to the Chemistry Department Annual Fund. This fund provides immediate support to our exceptional students through academic scholarships and educational events, including the weekly Highlands in Chemistry seminar series and the Undergraduate Poster Session held at the conclusion of every semester. To all of our supporters, our faculty, staff and students thank you for your generous support.

## President Sands visits Undergraduate Poster Session

At the end of each semester, undergraduate students who have been doing research with chemistry faculty members culminate their undergraduate research experience by preparing a poster to present to the department and their peers. This April, the undergrads had two special guest appearances with both College of Science Dean Sally Morton and President Tim Sands taking time to speak with students about their research.

As in previous years, the Spring Undergraduate Poster Session is judged by members of the Department of Chemistry Advisory Council, with winners chosen based on criteria including quality of research and presentation. This year, the council decided to award four first-place winners:

**Madison Bardot** (Michael Schulz) “Functionalization of fabric substrate for increased doxorubicin (DOX) capture”

**Kyle Duca** (Joseph Merola) “Synthesis of Iridium Indenyl Phosphines with Catalytic Potential”

**Rachael Langlois** (Amanda Morris) “Transition Metal Redox Mediators for Quantum Dot Sensitized Solar Cells”

**Robert Smith** (Robert Moore) “Processing-Morphology-Property Relationships of New Multi-Acid Sidechain Perfluorinated Ionomers”



President Sands listens to Jordan Watts from the Matson Group present her poster.

# DEPARTMENT NEWS

## Introducing Alan Esker, Department Chair



BY CORRIN LUNDQUIST

Alan Esker is no stranger to service. He has served on and held leadership positions on a number of departmental committees. Nineteen years after he joined the department, Alan will embark on his newest role: Department Chair. With just under two months until he takes the reins, Alan reflects on everything leading to this moment and shares some of his goals for the future.

### **Going back to the beginning, what made you choose chemistry for undergrad and then want to pursue your Ph.D.?**

I did not decide on an undergraduate major until my junior year when I took thermodynamics. The merging of mathematics, physics and chemistry was and remains to this day something I find truly beautiful.

As for the Ph.D., it all comes down to my Ph.D. advisor, Professor Hyuk Yu at the University of Wisconsin. He was my undergraduate thermodynamics professor and one of the sharpest people I have ever known. Even though I was a transfer student, he gave me the opportunity to do undergraduate research in his lab, groveled to his colleagues on the graduate admissions committee to allow me to stay at Wisconsin as a Ph.D. student, encouraged me to do a post-doc in Germany and a second one at the National Institute of Standards and Technology, and sent me the advertisement for the position at Virginia Tech with an emphatic “apply there.” I would not be where I am without him.

### **Why did you want to serve as Chair?**

I knew I wanted to better serve the department and the timing was just right, as the girls will still be in elementary school when my term is up. (Alan and his wife Candace have two daughters, Stella, 3, and Malene, 2.)

### **Are there any specific goals you'd like to accomplish?**

I'd like to see the department grow, both in terms of faculty members and in terms of students. We've also taken some steps already this summer to participate in the Howard Hughes Medical Initiative to try to improve student success in general chemistry.

### **Is there anything you'd like to tell the alumni?**

When you chose Virginia Tech to study Chemistry, you joined a family. Don't be a stranger. This fall, we are having the Celebration of Chemistry on October 19 and 20. While this event coincides with the completion of the Davidson Hall project, our department is much more than any building. Virginia Tech Chemistry is the faculty, staff, students and alumni, and we all have a role to play in the continued success of the department. We hope you can participate in the Celebration of Chemistry and reconnect with the department. If you can't make it, we hope you will stop in and check out the changes in the department the next time you are in Blacksburg. You are always welcome and I look forward to working with all of you in the future!



Alan with his wife, Candace, and their daughters.

# FACULTY NEWS

## Faculty Research

**Professor Nick Mayhall** has been awarded a five-year National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award through the Division of Chemistry. The Mayhall Group will focus on better understanding strongly-correlated molecules by building computer-based methods that can create new algorithms to be run on supercomputers. The \$575,000 award will aim to exploit certain aspects of a molecule's structure or approximate the point of separation to enable more accurate approximations for simulations. The CAREER award is the NSF's most prestigious award and is given to creative junior faculty considered likely to become academic leaders of the future.



**Professor Lou Madsen** has received a three-year, \$440,000 grant from the NSF to support his investigation "Multi-Scale Self-Assembled Structure and Properties in Polymeric Molecular Composites." This work builds on a new material platform invented by Madsen's group known as "molecular ionic composites." These materials are nonflammable solids with high mechanical stiffness but with ions inside that move like a liquid. Madsen's group will explore structure, dynamics and transport in these materials over multiple length and time scales with NMR, X-ray, microscopy and molecular dynamics simulations. These materials show promise for use in safer and higher energy density batteries as well as a range of molecular separations applications.

**Professor Guoliang (Greg) Liu** has been awarded a five-year NSF CAREER Award through the Polymers Program in the Division of Materials Research. Liu's group will focus on polymer nanocomposites containing plasmonic nanoparticles, which will enable the design of next-generation functional composites capable of maneuvering light as desired. With tunable light adsorption and reflection, the polymer nanocomposites have potential applications in solar cells and light-reflecting windows for energy-efficient buildings. This \$585,000 CAREER Award will facilitate the synthesis and characterization of both plasmonic nanoparticles and polymers. The assembly of the two materials will help researchers to better understand the polymer-nanoparticle interactions at the nanometer scale.



**Professor Robert Moore** has been awarded a three-year NSF award through the Polymers Program in the Division of Materials Research. This \$450,000 award, titled "Tailored Chain Sequences of Pendant Functional Groups and Resulting Phase Behavior of Gel-State Functionalized Blocky Copolymers," will focus on a fundamentally new way to create blocky sequences of comonomer units along a polymer chain using a post-polymerization modification of commercially-available homopolymers. By avoiding complicated synthetic schemes required in the polymerization of conventional block copolymers, this novel approach will provide cost-effective, readily available materials alternatives needed to meet critical demands for water purification membranes, fuel cell membranes for clean energy conversion, and environmentally-friendly materials for the medical and healthcare industries.

# FACULTY NEWS

## Faculty Awards



**Dr. Jeannine Eddleton** has received the 2018 University Sporn Award for Teaching Introductory Subjects. The award is sponsored by the Center for Excellence in Teaching and Learning and the Virginia Tech Academy for Teaching Excellence to recognize a Virginia Tech faculty member nominated and selected by undergraduate students. Eddleton has been a valuable asset to the department as the sole instructor of Chemistry in Context, the introductory chemistry course for non-science majors. She has also created a culture of service and laid the groundwork for the outreach programs that led to the department's 2014 University Exemplary Department Award.

**Professor John Matson** has been honored as a 2018 Camille Dreyfus Teacher-Scholar by The Camille and Henry Dreyfus Foundation. This prestigious award honors faculty who have created an “outstanding independent body of scholarship and are deeply committed to education”. This five-year, \$75,000 award recognizes Matson's commitment to education and research and, more specifically, his research group's efforts to understand and exploit the roles of hydrogen sulfide in biological systems through the development of new small molecules, polymers and hydrogels.



**Professor Gary Long** has been awarded the Sally Bohland Excellence in Access & Inclusion Award by Virginia Tech Services for Students with Disabilities. The award was established in 2011 to recognize a faculty member who serves as a model for others and whose leadership fosters a culture of access and inclusion. Long was recognized for his commitment to bringing and implementing technology in the classroom as well as his tenacity as he navigated the complex funding request process for additional accommodations that were outside the annual budget.



**Professor Amanda Morris** has received the 2018 Presidential Principles of Community Award, sponsored by the Office of the Vice Provost for Inclusion and Diversity. The honor is awarded to faculty and staff members who exemplify and promote a welcoming and inclusive environment in accordance with the university's Principles of Community. In addition to supporting the success of female students, Morris works with Career Services to find meaningful employment for LGBT students in welcoming communities and serves as the co-chair of the LGBT Caucus of Faculty and Staff at Virginia Tech.



**Professor John Morris** has been named the Dr. A.C. Lilly Jr. Faculty Fellow in Nanoscience by the Virginia Tech Board of Visitors. The Fellowship was established in the College of Science through an endowment by Dr. A.C. Lilly Jr., a Virginia Tech alumnus, to provide support for an outstanding faculty member in the field of nanoscience. Morris and his group are working to develop nanoscience approaches that can be used to build new catalysts and to provide insight into how small-scale materials affect the environment.

# STUDENT NEWS

## Undergraduate Student News

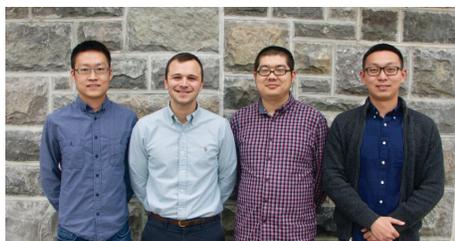
**Kyle Kirkpatrick** (B.S. '18) was featured on Virginia Tech News as part of their Class of 2018 Student Profiles series. Kyle's student profile highlighted his research in Professor Harry Dorn's lab, which focused on using the single-molecule magnet azaheterometallofullerene to store data in an effort to make quantum computing a reality. Quantum computing is a hot field of research as some of the biggest computer companies and institutions are involved in its development. As an undergraduate researcher, he will have co-authored five to six papers in the fields of dynamic nuclear polarization, single-molecule magnetism and quantum computing before he begins graduate school at the University of California San Diego in August.



## Graduate Student News



**Lin Ju**, a third-year polymer chemistry graduate student in Professor Robert Moore's group, was selected as a winner of the 2017 Eastman Chemical Company Fellowship, which was established to assist outstanding students in their research. Lin will receive a \$5,000 stipend to help fund her dissertation project studying the application of new phosphonated polyesters as compatibilizers in polyester/polyamide blends. The Advanced Materials Technology Division of Eastman has been a proud sponsor of Virginia Tech for many years and Lin continues the tradition of excellence in the prestigious fellowship program.



Each academic year, the Graduate School, through the College of Science, provides assistantships through the Graduate School Doctoral Assistantship program. In the Department of Chemistry, research advisors nominate their students based on strong evidence of research productivity; demonstrated leadership, creativity and independence; and excellent academic performance in the core and foundation requirements. This spring, the Department of Chemistry awardees were (pictured above, left to right): **Chong Peng** (Valeev Group), **Tyler Grissom** (J. Morris Group), **Yongle Du** (Kingston Group) and **Shaoyang Lin** (A. Morris Group).



**Ryan Mondschein**, of Professor Tim Long's group, was awarded the 2017 Eastman Chemical Student Award in Applied Polymer Science at the Spring 2018 American Chemical Society (ACS) National Meeting in New Orleans. The award is sponsored by Eastman Chemical Company and administered by the ACS Division of Polymeric Materials: Science and Engineering (PMSE) and recognizes research excellence by a graduate student in applied polymer science. Ryan presented his winning paper, titled "Structure-property relationships of amorphous bibenzoate polyesters: A potential PET and BPA-PC replacement," at the Eastman Chemical Award Symposium, part of the PMSE program at the Fall 2017 National ACS Meeting in Washington, D.C.



**Brittany Nichols**, a graduate student studying with Professor Kevin Edgar, a professor of biomaterials in the College of Natural Resources and Environment, was awarded a Fulbright U.S. Student Grant. The Fulbright U.S. Student Program offers recent graduates and graduate students opportunities to research, study and teach in more than 140 countries. Brittany will be traveling to the Helmholtz Institute for Pharmaceutical Research Saarland in Germany to study drug delivery and will be specifically looking for biological barriers that could interfere with a drug's effects.

# 2018 AWARD CEREMONY

Each spring, the Department of Chemistry hosts an award ceremony to recognize the achievements of students faculty, and staff. Many of the awards would not be possible without the generous support and philanthropy of our alumni and friends.

## Student Awards Undergraduate Awards

### ACS Analytical Chemistry Award

Virginia Grey Fritz

### ACS Inorganic Chemistry Award

Ericka Bruske

### ACS Organic Chemistry Award

Daniel Marron

### ACS Physical Chemistry Award

Claire Neice

### ACS-Hach Land Grant

#### Undergraduate Scholarship

Emily Barritt

Margaret Eddleton

### ACS-Virginia Blue Ridge Section James Lewis Howe Award

Donald Clark

### Academic Excellence Award

Emily Barritt

Donald Clark

Amy Davis

Daniel Marron

Ann Marie May

Steven Miller

Claire Neice

Robert Smith

Benjamin Zydlewski

### General Chemistry Viers

#### Achievement Award

Kevin Chen

William Lowe

Matthew Poling

Morgan Van Davelaar

Jay Utiz

### Karen J. Brewer Memorial Award

Carol Ann Rosenblum

Emily Stacy

## Department of Chemistry Undergraduate Research Scholarships - Summer 2018

James Alatis

Justin Martinez

Gregory Traversa

## Graduate Awards

### William H. Starnes, Jr. and Sofia M. Starnes Endowed Chemistry Fellowship

Assad Khan

### Harold M. McNair Alumni Award

Johnathan Bowen

### Graduate Research Award

Kyle Arrington

Yongle Du

Russell Fritzeimer

Jie Zhu

### Graduate Teaching Award

Kristen Felice

Ashley Gates

Matthew Kessinger

### Graduate Service Award

Katherine Heifferon

## Faculty and Staff Awards

### Harold M. McNair Staff Service Award

Steve Breeding

### Alan F. Clifford Faculty Service Award

Alan Esker

### John C. Schug Research Award

Judy Riffle

### Jimmy W. Viers Teaching Award

Patricia Amateis

## Undergraduate Academic Scholarship Recipients

### Dr. Roy H. Bible '48 Memorial Scholarship

Claire Neice

### Julius P. Bilisoly Endowed Scholarship

Donald Clark

### John B. and Sarah Hopper Harvie Endowed Scholarship

Amy Davis

### Dallas A. Kinser & Robert T. Johnson Scholarship

Casey Smith

### John William May '42 Scholarship

Daniel Marron

### Ogliaruso Family Scholarship

Linda Allworth

### Charles B. Walker Scholarship

Ericka Bruske

### Hypercube Scholar Award

Kyle Kirkpatrick

### Timothy E. and Victoria K. Long Undergraduate Science Scholarship

Tyler Flournoy

Jordan Watts

### James E. McGrath Undergraduate Research Award

Jonathan Hostetler

### James P. Wightman Macromolecules and Interfaces Institute Student Award

Shantel Schexnayder



Department of Chemistry (0212)  
Davidson Hall Room 480, Virginia Tech  
1040 Drillfield Drive  
Blacksburg, VA 24061

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U.S. Postage  
PAID  
Blacksburg, VA 24060  
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## SUPPORT THE Department of Chemistry Annual Fund

As you consider your philanthropic gifts, we encourage you to support the department's annual fund. Your support is essential to the department's future success. Contributions from our alumni and friends help our many deserving students by providing state-of-the-art facilities, expanding research activities, and allowing the department to respond to new opportunities immediately.

When you receive your College of Science Annual Fund letter or phone call, please earmark your support for the Department of Chemistry Annual Fund. Simply make a notation on the gift card or let the caller know that you want to direct your donation to Chemistry.

To make an immediate contribution, you may visit the university's website at [givingto.vt.edu](http://givingto.vt.edu) or contact the Office of Gift Accounting at (800) 533-1144.

For more information or to learn about other ways to support the College of Science, please contact Wade Stokes, Assistant Dean of Advancement, at (540) 231-4033 or [lwstokes@vt.edu](mailto:lwstokes@vt.edu).

We thank you in advance for your support.