

Letter from the Chair



Greetings Everyone! My name is Dr. Alexei Demchenko, and I am excited to continue serving as Chair of the Department of Chemistry. What attracted me to this role in the first instance is SLU's commitment to developing high quality talent, building new programs, providing opportunities

for research, and creating big ideas that drive economic and scientific progress. There have been no regrets whatsoever, and I am honored by this opportunity to contribute to the rapid uprise of the Department! Among the greatest news and largest developments in the Department that are happening right now are the beginning of the \$11M upgrade of Monsanto Hall that is scheduled to be complete by the end of 2023 and our merger with the School of Science and Engineering (formerly known as Parks College) as of July 1, 2022.

Our Department continually strives to be the premier academic unit at SLU. Our mission is to foster and promote the advancement of the fields of chemistry, biochemistry, and chemical biology with a heavy emphasis on highlighting the amazing students, educators, and researchers who drive it! We embrace the interdisciplinary nature of chemistry and strive to be encompassing and engaging in our efforts. Our faculty are outstanding teachers and researchers, and we are supported by outstanding staff. Our Department has 27 faculty and 9 staff members. In addition, there are 7 post-doctoral research associates in our Department, and 37% of our faculty and staff are female. I am very proud that the Department has been at the forefront of implementing and promoting diversity, equity, and inclusion at all levels. Our faculty have diverse research interests, which cover all major areas of chemistry. We have extensive research instrumentation, which supports our key mission of educating and mentoring students. Our research efforts are currently funded by 19 federal grants, and our current external grant expenditure is more than \$2.5 million/year.

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HIGHLIGHTS

- **Renovations begin in Monsanto Hall**
- **Chemistry moves to new School of Science and Engineering**
- **Two new faculty and three new staff hired**
- **Chuck Kirkpatrick announces retirement**
- **171 undergraduate majors (29 graduated in May)**
- **65 full-time graduate students (recently graduated 5 Ph.D. students)**
- **32 articles, 3 chapters, and 8 patents last year**

There are some personnel changes coming to the Department for the 2022-2023 academic year. I am glad to announce that Dr. Malkanthi Karunananda will be joining the Department as an Assistant Professor. She was previously a Post-doctoral Research Associate at the Scripps Research Institute. In addition, Dr. Ajith Karunarathne will be joining the Department as an Associate Professor. He was previously a tenured faculty member at the University of Toledo; his large research group has already relocated to SLU this summer. There are also some changes in our teaching staff. Ash Winkler will be joining the Department as the Organic Chemistry Laboratory Coordinator, and Dr. Mary Hutchins will be joining us as the General Chemistry Laboratory Coordinator. They will be replacing Kevin Smith and Katie Moorman, respectively, who have recently accepted industrial positions. Using this opportunity, I would like to wish Kevin and Katie well in their endeavors and thank them for their dedicated contribution to our largest laboratory operations.

I am happy to announce that Drs. Chris Arnatt and Paul Bracher have both been promoted to the rank of Associate Professor with tenure. I would also like to recognize Dr. Chuck Kirkpatrick, who retired at the end of June 2022. During his 38.5 years at SLU, Chuck has been an outstanding educator, researcher, and administrator. Since 2016 till his retirement, Chuck served as Associate Department Chair. I would like to acknowledge his immense help to me personally during my first months at SLU while I was transitioning into this new role of Department Chair. His many other contributions, amongst which is his 10-year term as Dean of Parks College of Science and Engineering, are well known to our community. Dr. Kirkpatrick was granted Emeritus status because he wishes to remain active in the Department. He is planning to focus on continuing his research projects and creating new collaborative projects. Dr. Kirkpatrick was a fantastic colleague, and we all want him to be affiliated with our Department for many years to come.

Undergraduate and graduate programs in the Department of Chemistry are in many ways a microcosm of the University. There are about

200 undergraduate majors. In any semester, 40-50 undergraduates are engaged in research. There are more than 50 graduate students in the Department. This has been a very challenging time for our students in many ways. As the 21st century unfolds with rapid changes and ways of learning, new challenges in research emerge. An unexpected pandemic revealed our unpreparedness, and this period was particularly challenging for our student researchers. Their progress was affected by new social distancing, reduced work hours, and time shift protocols. Nevertheless, they showed a great deal of dedication and managed to show progress to graduate on time. I am so proud of our students and all of their achievements! Additionally, I would like to recognize a very special group, who have been the greatest supporters of our students. I would like to thank parents, families, spouses, and loved ones of our students. Thank you so much for all of your support. Thank you for allowing us to have your loved ones in our classrooms and labs.

Finally, it cannot be understated how proud we all are of our alums and their accomplishments. This past academic year, we graduated more than 30 majors, and more than 10 students received their graduate degrees, PhD or Master's. We are also grateful for the continuing support by many of our distinguished alums who contribute to our Chemistry Development Fund. Many of our alums choose to donate by going to <https://www.slu.edu/alumni-and-donors/give/index.php>, clicking on "Make a Gift," and selecting the "Chemistry Development Fund" because these donations go directly to our Department. If you have specific ideas about donations, or if you want to help in other ways, please feel free to contact me or anybody in the Department. Please correspond with Dr. Znosko, our new Associate Department Chair, and update him with your new contact information and career moves, and send him some relevant information for our future newsletters.



Meet the Faculty



Faculty

Asmira Alagic - Chemistry Education and Undergrad Program Coordinator

Christopher Arnatt - Organic and Director of Chemical Biology program

Christy Bagwill - Organic Chemistry Education

Dana Baum - Biochemistry

Paul Bracher - Organic

Steven Buckner - Analytical

Alexei Demchenko - Organic and Department Chair

Sara Drenkhan-Weinaug - Instructor

James Edwards - Analytical

Michael Hankins - Instructor

Melissa Hopfinger - Chemistry Education

Paul Jelliss - Inorganic

Malkanthi Karunananda -

Inorganic

Ajith Karunaratne - Analytical

Istvan Kiss - Physical

Piotr Mak - Physical

Scott Martin - Bioanalytical

Ryan McCulla - Organic

Marvin Meyers - Medicinal & Organic and Graduate Program Coordinator

Jennifer Monahan - Analytical

Jamie Neely - Inorganic

Robert Perkins - Chemistry Education

Natalie Schleper - Instructor

Daria Sokic-Lazic - Chemistry Education

John Throgmorton - Instructor

Brian Woods - Chemistry Education

Brent Znosko - Biochemistry and Associate Chair

Emeritus Faculty

Charles Kirkpatrick

Bruce Kowert

Alexa Serfis

Staff

Mike Briscoe - Machinist and Glass Shop

Ian Brown - Principles of Chemistry Laboratory Coordinator

Fahu He - NMR Lab Manager

Mary Hutchins - General Chemistry Lab Coordinator

Angela Jouglard - Grants Development Specialist

Damon Osbourn - Instrument Lab Manager

Leah Trimble - Post-Award Specialist

Shontae Williams - Administrative Assistant

Ashlynn Winkler - Organic Chemistry Lab Coordinator

Meet the New Faculty



Dr. Malkanthi Karunananda completed her undergraduate degree at the University of Kelaniya, Sri Lanka majoring in chemistry and graduated with first class honors in 2010. She then joined the PhD program at the University of Illinois, Chicago in 2012 and carried out research integrating both experimental and computational chemistry with Prof. Neal Mankad on the development of heterobimetallic catalysts for E-selective alkyne semihydrogenation reactions and was awarded the Benjamin B. Freud graduate research fellowship. Upon completion of her thesis work in 2017, she started her postdoctoral work at The Scripps Research Institute with Prof. Keary Engle. Her postdoctoral research was centered on building theoretical models to study mechanisms of regio- and stereoselective alkene functionalization reactions. During her final year, she was awarded the Cottrell Postdoctoral Fellowship and continued her computational work in collaboration with Prof. Kendall Houk at UCLA. In fall 2022, she joined the department of chemistry at Saint Louis University as an Assistant Professor in Chemistry. Her research will leverage a combination of synthetic inorganic, organometallic, and computational chemistry techniques to solve pressing challenges in catalysis.



Dr. Ajith Karunarathne is an associate professor in the Department of Chemistry. The interdisciplinary research projects in Ajith's lab bridge biological-bioanalytical chemistry, chemical biology, and molecular pharmacology. The group takes a reductionist approach when dissecting biological processes at the subcellular level and multiplexing nature-endowed properties of signaling molecules to engineer molecular tools and signaling pathways to uncover the chemistry behind diseases while fueling discovery and therapy. Altmetric named the Ajith lab's research article on the phototoxicity of blue light a top 100 global attention-grabbing publication in 2018.

Dr. Karunarathne has a Ph.D. in biological chemistry from Michigan State University and postdoctoral training in signal transduction from Washington University School of Medicine. Multidisciplinary research projects in Ajith's lab include (i) chemical biology-oriented, photopharmacological tools engineering to control signaling and behaviors of intact and genetical unmodified cells, (ii) bio-analytical and molecular signaling-based cellular assay development and screening of less addictive ligands for opioid receptors, and (iii) decoding chemistry of photopigment proteins and their re-engineering for in vivo applications. His group has published numerous peer-reviewed publications (<https://www.ncbi.nlm.nih.gov/myncbi/welivitiya.karunarathne.1/bibliography/public/?sortby=pubDate&sdirection=descending>). In 2019, Dr. Karunarathne received the Excellence in Research Award from the College of Natural Sciences and Mathematics. Ajith's lab is looking forward to welcoming highly motivated undergraduate, graduate, and postdoctoral sci-

We also welcome new staff members **Dr. Ian Brown**, Principles of Chemistry Laboratory coordinator, **Dr. Mary Hutchins**, General Chemistry Lab coordinator, and **Ash Winkler**, Organic Chemistry Lab coordinator.

Chuck Kirkpatrick Announces His Retirement



As a junior student in 1972 in my first chemistry class at Jennings High School (North St. Louis County), I never dreamed that I would have the opportunity to spend the next 50 years exploring different areas of chemistry. It was certainly the most interesting high school class I had taken up to that time, and the next year when I took the advanced chemistry class as a senior, I was certain that chemistry was the right field for me.

As a chemistry major in the B.S. degree program at the University of Missouri-Columbia I encountered the same first-

year challenges that I saw with students in my general chemistry classes at SLU. While I knew bits of chemical information and I could plug numbers into equations and get answers, I fell short in my ability to use chemical information to solve new problems. While organic chemistry in the next year was not my favorite chemistry class, in hindsight, it was excellent training for learning how to think like a chemist. In the summer of 1976, I worked on an undergraduate research project under the direction of Dr. Kent Murmann and also took a computer programming class (FORTRAN). From that time forward, chemistry and computers were at the center of my academic interest.

Graduate school at Indiana University-Bloomington was challenging and exciting. I worked in the lab of Dr. Malcolm Chisholm and was fortunate to have done the first oxidative addition reaction to a metal-metal bond. Specifically, chlorine and bromine molecules react with molybdenum alkoxide molecules containing triple bonds and generate addition products with metal-metal double bonds. These were beautiful yellow, red, green, and purple colored compounds that were difficult to work with (all were air sensitive), and, over time, we were able to show that metal-metal bonds undergo many of the well-known reaction types that are found in carbon chemistry, in addition to some bonus reactions that can only occur with the assistance of metal d-

orbitals.

After completing graduate school, I worked for Dow Chemical in Louisiana for 1.5 years and then returned to St. Louis in 1984 to the Department of Science and Mathematics at Parks College, Cahokia, Illinois. This was a perfect opportunity, as my teaching responsibilities were split evenly between engineering chemistry and computer programming classes for engineers. Over time, I was able to offer classes to engineers in FORTRAN, Pascal, C++, and Ada, and we also introduced new data-collection and computational labs with our new (and at that time modern) PDP-11 minicomputer.

One of the good things about working for a university is the diversity of career opportunities that are available. I became chair of the department for two years and was dean of the college from 1994-2003. During that time period, Parks College relocated all of the academic programs from Cahokia, Illinois to the main campus of SLU; Parks had been a part of SLU since 1946, and the purpose of this move was to create new opportunities for students and also for the university. The recent merger of Parks Engineering and Aviation with select science departments (including chemistry) from Arts & Sciences is one of the many changes that would never have occurred if Parks had continued in Cahokia.

After nine years as dean, I started to miss chemistry and computing. In Fall 2003, I moved to the SLU chemistry department and since then have been heavily involved in the general chemis-

try courses. In addition, I have been the instructor for inorganic chemistry and computational chemistry courses. I have had the opportunity to be the research mentor for undergraduate and graduate students working on computational chemistry problems, and I have also been fortunate to have had research collaborations with other members of the SLU chemistry department.

Why retire now? It's not a complete retirement but a change in priorities. I will no longer be teaching but plan to continue working on some of the computational projects I have been working on for years; perhaps I will now have enough time to finish some of them! All I need is an Internet connection and I can work while sitting in the screened porch in my backyard and listen to the birds, watch my bee hives, and cringe as the deer eat my plants. In addition, I have hobbies and interests that I would like to spend more time with, including bee keeping, flying my drone, camping, fishing, and doing home renovations that never seem to end. Finally, we welcomed our first grandbaby this spring, and we are regular travelers to see him in Kansas City.

Most retirement stories include a comment that the time has "passed quickly." That's not entirely true, as there have been some very long nights grading labs and tests and some very long days attending boring and sometimes contentious meetings. What passes quickly is the positive time spent with colleagues and students, and these are the things I will miss the most.

Faculty News

The faculty of Saint Louis University's Department of Chemistry are highly regarded in their fields. They are known for their extensive research across a diverse group of specialties that include the areas of analytical, biochemistry, inorganic, organic, and physical chemistry.

Dana Baum - This past year has been an exciting time for the Baum Lab. Dr. Jack Samuelian defended his dissertation and had two papers accepted in *Analysis & Sensing* (available online now) and in *Nature Chemical Biology* (available soon). We also continue to make great progress with our collaborators as part of our NASA ICAR grant and in other projects. Dr. Baum has stepped out of the role of Chemistry Graduate Program Coordinator and has taken on a new role as the Associate Dean for Graduate Affairs in our new School of Science and Engineering (SSE). She looks forward to the opportunities this new position will provide. Keep up with our latest news on Twitter (@BaumLabSLU), Instagram (baumlabslu), and our website (www.danabaumlab.com).

Alexei Demchenko - Alexei Demchenko, Professor and Department Chair, has been pursuing a vigorous externally funded research program in the area of Chemical Glycosciences. With participation of more than 150 co-workers/trainees, his laboratory (Glycoworld) has developed many innovative tools for the synthesis and application of carbohydrates. During 2021 and the first half of 2022, his research group Glycoworld, published 17 research articles, nine of which were since he joined SLU in September 2021. Over the same period, Professor Demchenko and his group members presented 25 posters and talks at the regional, national, and international conferences. The Glycoworld currently consists of two post-doctoral fellows, eight doctoral students, six undergraduates, and their research is funded by grants from the NIH and the NSF. The most recent Glycoworld graduates Dr. Catherine Alex (Ph.D., August 2021) is a Senior Scientist at Pfizer and Dr. Samira Escopy (Ph.D., Dec 2021) is a post-doctoral research assistant at Harvard University. Professor Demchenko is the National Representative of the USA for the International Carbohydrate Organization and President of the U.S. Advisory Committee for the International Carbohydrate Symposia. Updated information on current research, teaching, and outreach activity of the Glycoworld is available at: www.glyco-world.com or @Glycoworld (Twitter)

Melissa Hopfinger - Melissa Hopfinger has been focusing on improving first-year experiences for STEM students and chemistry majors. She has worked with a team of interdisciplinary faculty to develop a new summer course Introduction to Scientific Problem Solving (ISPS) that aims to better prepare incoming freshmen for success in their introductory STEM courses at SLU. In its pilot year, the incoming ISPS Fall 2021 cohort had higher pass rates than their peers across various introductory biology, chemistry, and mathematics courses. She has worked with Daria Sokic-Lazic to institute faculty research talks for first year chemistry majors to expose them to various research groups and faculty in the department. Additionally, she has been a part of the committee planning monthly events with Drs. Alagic, Bracher, Hankins, and Monahan for chemistry majors and is co-mentoring undergraduate research students with Dr. Brent Znosko as they work on computational research projects involving modified nucleic acids.

Istvan Kiss - The members of the Kiss lab finally made it to in-person conferences at the Regional ACS meeting, in Dresden (Germany), and the Gordon Research Conference in Stonehill College. We managed to organize a group reunion in Boston and the current group met with former graduates Yifan Liu (postdoc at Harvard University), Michael Sebek (postdoc at Northeastern University), and Yanxin Jia (programmer at Google). Jorge Ocampo won 1st place award at the 2022 Graduate Research Symposium for his paper presentation on "Leveraging Diversity for Synchrony in Chemical Reaction Networks". The group received funding from a DARPA MINT program on modeling morphogenic instabilities of corrosion damage evolution. We were also excited to develop a new international collaboration with Tiago Pereira (Brazil) and Deniz Eroglu (Turkey) and the results were published in Nature Communications. Dr Kiss organized a minisymposium at the PACIFICHEM, but unfortunately the conference was held virtually from Hawaii.

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Bruce Kowert - Dr. Bruce Kowert, who “officially” retired on June 30, 2021, gave a departmental seminar on December 9, describing the research he carried out in collaboration with his undergraduate and graduate research students while a tenure track faculty member. Remaining active, he taught Math Techniques during the 2022 spring semester, had a paper on the diffusion of squalene accepted this summer, and is working on another dealing with the diffusion of chain molecules.

Piotr Mak - Our graduate student Tapiwa Chiura received CRC Press Chemistry Achievement Award (PhD) and our undergraduate student Talia Thambyrajah won the prestigious Marcus Award for presenting her research at the annual Chemistry Department meeting. This award, established by Jack Marcus, owner and founder of Missouri Analytical Laboratories, is given to a senior student in the Saint Louis University Department of Chemistry who has demonstrated outstanding work in research and academics.

Scott Martin – The Martin Research group had another productive year. Beth Hayter (who will be defending in August of 2022), Emily Currens (received her MS in June of 2022), Major Selemani (starting year 3), Kham (starting year 3), and Samuel Azibere (starting year 2) all submitted papers over the past year, with 4 being accepted and 2 others currently under review. Morgan Ward received her BS in chemistry in May and is starting graduate school at George Washington. Emily has a job at the FDA (joining several author Martin-group alums) and Molly Melzer (undergraduate) is taking over her project. We all are big users of the new SLU -Center for Additive Manufacturing (SLU-CAM, see: <https://www.slu.edu/research/research-institute/big-ideas/slu-cam/index.php>). We are hoping to add a few new group members this year and continue our work on using developing microfluidic devices for study cell-to-cell communication.

Marvin Meyers - We are continuing our drug discovery efforts against a number of bugs affecting human health: *Cryptosporidium*, Hepatitis B virus, *Cryptococcus*, and *Mycobacterium tuberculosis*. Last fall, four new students joined the lab: Katie Richter (first year grad student), sophomores Lane Hartman and Caroline Christ, and junior Ethan James. During the course of the year, two new postdocs joined the lab: Dr. Soumitra Guin (Indian Institute of Technology Indore) and Dr. Suvajit Koley (Purdue). We also said goodbye to three graduating seniors: Hannah Peek (gap year), Aaron Burroughs (industry), and Miguel Campos

(grad school at Northwestern), as well as Dr. Nick Jentsch who took a med chem position at Fimbrion Therapeutics here in St. Louis and Dr. Makafui Gasonoo who took a process chemistry position at Millipore Sigma in Sheboygan, Wisconsin.

Jamie Neely - The Neely group graduated its first Ph.D. candidate, Corey Richards, in May 2022. Corey is now a postdoc in the Tomson Lab at the University of Pennsylvania. We also welcomed new graduate student Celia McGhiey to the group last fall.

Brent Znosko – Dr. Znosko continues to teach biochemistry courses, run a research lab investigating the stability and structure of nucleic acids, and serve as the department’s undergraduate program coordinator. In July, Dr. Znosko will fill the Associate Chair position vacated by Dr. Kirkpatrick’s retirement. In the fall of 2021, Bree Bozsoki and Megan Rudolphi successfully defended their MS theses. They took positions at EAG Laboratories and Boehringer Ingelheim, respectively. In the summer of 2022, Dr. Sharear Saon successfully defended his thesis and accepted a post-doctoral position at Penn State. In July, MacKenzie Hertel and Danyang Liu joined the group. They join current graduate student Sebastian Arteaga. In the past year, we published one article while continuing our NIH-funded research on RNA thermodynamics and structure. The lab’s research was cited 70 times in 2021, including in review articles published in *PLOS Computational Biology*, *Chemical Reviews*, *Topics in Current Chemistry*, *Accounts of Chemical Research*, *Cancer Genomics and Proteomics*, and *Computational and Structural Biotechnology Journal*. Dr. Znosko gave a virtual seminar for Wichita State University, University of the Sciences, UNC-Asheville, and Ball State and in-person at WashU. When he’s not working, Dr. Znosko is watching his boys play baseball, basketball, football, flag football, and martial arts (yes, it’s tiring).

Department News

Organic Chemistry Teaching Labs - This past year has been another busy one for us in the organic chemistry teaching labs. We have adjusted quickly to our new lab spaces in the Interdisciplinary Science and Engineering building. As mentioned in the previous newsletter, we have added several new instruments to our organic lab space with one being a 300 MHz NMR. Capitalizing on this opportunity, Brian Woods and Christy Bagwill partnered with Marv Meyers to design a multi-week synthesis project for the organic majors lab. Student partners worked together to design and carry-out a two-step synthesis of an analogue related to one of Dr. Meyer's drug discovery projects. Students used Combiflash chromatography and our new rotovaps to purify and collect the final product. Their results were analyzed using the new NMR. We are excited to share this new project in a future journal publication.

ACS Workshop - Daria Sokic-Lazic, Brian Woods, and Christy Bagwill were excited to partner with the American Chemical Society (ACS) to offer a weekend workshop on General Chemistry and Organic Chemistry hands-on lab skills. The workshop was offered completely free to aid students that had seen their time in labs and lab skill development affected by the pandemic. All St. Louis area college students, as well as students in the SLU 1818 Advanced College Program, were invited to attend. The workshop was held in-person at the new Interdisciplinary Science and Engineering building on SLU's campus on April 9th and 10th. Participants received an ACS certificate of completion. We appreciated the support offered by SLU Chemistry Department covering the cost of chemicals and supplies needed to host the conference.

Conference on Chemical Education - SLU Chemistry was well represented at the Biennial Conference on Chemical Education held at Purdue University in early August. Christy Bagwill, Jennifer Monahan, and Daria Sokic-Lazic organized and hosted the symposium, "Training, mentoring, and managing laboratory teaching assistants," and Daria also presented a talk on the subject. Christy Bagwill presented her work with Brian Woods and Ian Brown on "A research-based capstone project for sophomore level organic chemistry labs." Jennifer Monahan presented a talk on "Student posters as a way to modernize the PChem Lab when new equipment is not an option." Brian Woods gave a

talk on his work with Robert Perkins titled, "Precursor to active learning: Engaging students with lightboard videos."

Chemistry Club - The "SLU Chemistry Club" is the Saint Louis University Student Chapter of the American Chemical Society. Each year, the undergraduate club completes many hours of community outreach and service events, including Merit Badge clinics and elementary STEM nights. The club's undergraduate charter strives to "provide opportunities for professional development growth and to further the education of and awareness for chemistry in the St Louis community." During the 2021-2022 academic year, the Chemistry Club responded to an ACS call for college students to help create demonstration videos for inclusion in the on-line ACS Chemistry Engagement Library. Our club created a video focused on polymerization called "Goo Worms." The chemistry behind the demonstration used calcium chloride to cross-link sodium alginate. The multi-month project included video planning, filming, and editing. The project was an opportunity for students to gain professional experience around product deadlines and simultaneously expand our science communication to a broad public audience. We anticipate an official video release sometime in Fall 2022.

The SLU Chemistry Club is looking for professional development opportunities for the future. Please contact the Chem Club's faculty mentor, Dr. Jennifer Monahan (jennifer.monahan@slu.edu) if your company would be willing to host undergraduate students for a tour OR be willing to send a company representative to one of our Chem Club meetings. We are eager to discuss career opportunities for students majoring in chemistry, biochemistry, or chemical biology.



FACULTY PUBLICATIONS

Baum

Samuelian, J.S. and Baum, D.A. (2022), Identification of DNA Aptamers for Benzodiazepine Detection in Synthetic Urine. *Anal. Sens.*. Accepted Author Manuscript. <https://doi.org/10.1002/anse.202200044>

Buckner

Kader, M.S.; Zeng, W. ; Johnston, E.; Buckner, S.W.; Jelliss, P.A.; “A Novel Method for Generating H₂ by Activation of the μ Al-Water System Using Aluminum Nanoparticles”, *Appl. Sci.*, 12(11), 5378 (2022).

Kader, M.S.; Weyer, C.; Avila, A.; Stealey, S.; Sell, S.; Zustiak, S.P.; Buckner, S.W.; McBride-Gagy, S.; Jelliss, P.A.; “Synthesis and Characterization of BaSO₄-CaCO₃-Alginate Nanocomposite Materials as Contrast Agents for Fine Vascular Imaging”, *ACS Materials Au*, **2**, 260-268 (2022).

Demchenko

S. A. Geringer, G. A. Kashiwagi, and A. V. Demchenko. Broadening the scope of the reverse orthogonal strategy for oligosaccharide synthesis. *J. Org. Chem.*, 2022, 87, in press PMID: IP <https://doi.org/10.1021/acs.joc.2c00905>

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S. Escopy, Y. Singh, K. J. Stine, and A. V.

Demchenko. HPLC-Based Automated Synthesis of Glycans in Solution. *Chem. Eur. J.*, 2022, 28, e202201180 PMID: 35513346 <http://doi.org/10.1002/chem.202201180>

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G. Shrestha, G. A. Kashiwagi, K. J. Stine, and A. V. Demchenko. Streamlined access to carbohydrate building blocks: methyl 2,4,6-tri-O-benzyl- α -D-glucopyranoside. *Carbohydr. Res.*, 2022, 511, 108482 PMID: 34856429 <https://doi.org/10.1016/j.carres.2021.108482>

C. Alex and A. V. Demchenko. Recent advances in stereocontrolled mannosylation: focus on

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glycans comprising acidic and/or amino sugars. *Chem. Rec.*, 2021, 21, 3278-3294 PMID: 33885577 <https://doi.org/10.1002/tcr.202100201>

Kiss

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Kowert

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Mak

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Martin

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Znosko

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2021 – 2022 Department Awardees

PhD Awards

Winner	Award
Jorge Ocampo Espindola	Carol M. and Joseph R. Franks Graduate Award in Chemistry
Tapiwa Chiura	CRC Press Chemistry Achievement Award
Beth Hayter	SLU Chemistry Certificate of Excellence
Corey Richards	American Institute of Chemists Student Award



MS Awards

Winner	Award
Major Selamani	CRC Press Chemistry Achievement Award
Sebastian Arteaga	SLU Chemistry Certificate of Excellence
Lawrence Bordoh	American Institute of Chemists Student Award



Senior Awards

Winner	Award
Morgan Ward	James D. Collins Award for Student Excellence
Grace Murphy	CRC Press Chemistry Achievement Award
Hayden Snyders	SLU Chemistry Certificate of Excellence
Elisabeth Johnston	American Institute of Chemists Student Award
Elisabeth Johnston	Senior Legacy Symposium
Grace Murphy	Senior Legacy Symposium



Junior Award

Winner	Award
Jonah Koch	ACS Outstanding Junior Chemistry Award

Faculty and Staff Awards

Winner	Award
Chuck Kirkpatrick	Arts and Sciences Service Excellence Award
Damon Osbourn	Arts and Sciences Technical Staff Excellence Award



Asmira Alagic
Melissa Hopfinger

Student Government Association Faculty Excellence Award
Student Government Association Faculty Excellence Award

Additional Awards

Winner

Aaron Burroughs
Caroline Christ
Hayden Snyders
Grace Murphy
Lauren Bergfeld
Maxwell Gao
Talia Thambyrajah
Sebastian Arteaga
Ashley Dent
Michael Armbruster
Mohammad Kader

Award

ACS Division of Organic Chemistry Undergraduate Award
ACS Undergraduate Award in Analytical Chemistry
ACS Undergraduate Award in Physical Chemistry
ACS Division of Inorganic Chemistry Undergraduate Award
Outstanding Freshman Chemistry Student
Hugh B. Donahue Award for Excellence and Achievement
Marcus Award Winner
SLU Chemistry Department Teaching Award
SLU Chemistry Department Teaching Award
SLU Dissertation Fellowship
SLU Dissertation Fellowship



Commendable Award to the SLU ACS Student Chapter

Gamma Sigma Epsilon Inductees:

Aparajita Chandra Chunduri
Grace Marie Eftink



Scholarships

Winner

Emma Mize
Emma Mize
Kathleen Rosfelder
Jonah Koch
Caroline Christ

Award

Spaziano Scholarship
Giminez Upperclass Chemistry Scholarship
Giminez Upperclass Chemistry Scholarship
Rubber Group Scholarship
Barber Scholarship



Alumni Update

John Lamming (MS Chem '95): I retired from E.I. du Pont de Nemours and Company several years ago as Intellectual Property Corporate Counsel and currently serve as Outside Counsel - Patent Portfolio for Lockheed Martin Corporation where my work in the energy sector focuses on organometallic chemistry.



Carl Oberle (BS Biochem '10): I've recently celebrated my four-year work anniversary at EAG Laboratories, and I'm enjoying my position here as Senior Scientist/Team Leader!



Gaurav Nigam (BA Biochem '21): After graduating in 2021, I worked as a certified nursing assistant to assist patients in their activities of daily life. After nearly a year of this work and a difficult reapplication process, I was accepted into and have begun classes at the Carle Illinois College of Medicine in Urbana-Champaign. I am really happy to be here as the curriculum seeks to integrate the physical sciences and engineering into the traditional medical sciences.



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Alumni Visits

For any alumni who want to come back to the Department for a visit, just send the chair or any faculty member you know an email, and we would be happy to show you around and have you meet some of our current students.

Alumni Support

Are you interested in helping support the department? You can do so monetarily by going to this site: <https://www.slu.edu/alumni-and-donors/give/index.php>, clicking on “Make a Gift”, and checking “Select the fund(s) for your gift”. If you go under the heading of College of Arts and Sciences, you can select the Chemistry Development fund and those donations will go directly to our department. If you have specific ideas around donations or if you want to help in other ways (such as working with students on resume review, etc.) feel free to contact the Department Chair (alexei.demchenko@slu.edu).

Previous Newsletters

Previous newsletters, dating back to 2019, can be found at <https://www.slu.edu/science-and-engineering/academics/chemistry/student-resources/>.