

reetings to all SLU Chemistry alums, students, faculty, staff, and friends. My name is Alexei Demchenko, and I will be joining the Department of Chemistry as Department Chair on September 1, 2021. I am excited by the opportunity and am confident that I have what it takes to make a dedicated contribution to the upward momentum of the Department and the University. My experiences at research-intensive universities have prepared me well for this role. I was born and educated in Moscow (Russia) where I graduated from the Mendeleev University of Chemical Technology of Russia with a Master's degree in Chemical Engineering and was awarded a Ph.D. in Organic Chemistry by the Russian Academy of Sciences. I then joined Professor Boons' group at the University of Birmingham (UK) as a BBSRC post-doctoral research fellow. When my adviser decided to move to the Complex Carbohydrate Research Center, University of Georgia (USA) I moved with

him as a research associate. In 2001, I joined the faculty at the University of Missouri - St. Louis (UMSL) where I established my own research laboratory, Glycoworld, was promoted through the ranks, and in 2014 was appointed Curators' Distinguished Professor of Chemistry and Biochemistry.

SLU has tremendous opportunity ahead of it based on its role within the local and regional community and economy. Its aspiration is strong, and its goals are clear, requiring energetic and engaged leadership to fulfill them. I bring two decades of faculty and administrative experience at UMSL. My work in the field of carbohydrate chemistry (glycosciences) has resulted in more than 200 peer-reviewed publications, and more than \$10M in federal and private funding. With participation of more than 140 trainees, my research laboratory, Glycoworld, has developed new tools for the synthesis and application of carbohydrates. Twenty one PhD dissertations have been completed, and seven students are currently pursuing doctoral degrees under my supervision. Below, I describe key roles that integrate research and innovation, mentoring, higher education administration, service, and industry collaboration spanning my 20-year independent career.

When I served as Director of Graduate Studies (2007-2011), UMSL Department of Chemistry and Biochemistry set records in increased enrollment and rates of graduation. I focused on improving student success and creating an inclusive environment for underrepresented students including women and minority students. In 2019, I established a multidisciplinary

UMSL Glycoscience Consortium, that serves as a catalyst for accelerating the development and commercialization of glycopharmaeaceuticals. Our aspirations are to meet critical public health needs including advances for treatment in microbial sepsis, new therapeutic treatments for Alzheimer's disease, and personalized anticancer vaccines to expedite the implementation of precision medicine treatment.

In addition to my leadership roles at UMSL, from 2006 I have served in a leadership capacity at National Committees of the American Chemical Society (ACS). Currently, I serve as Chair

Faculty

Asmira Alagic - Chemistry
Education

Christopher Arnatt - Organic

Christy Bagwill - Organic
Chemistry Education

Dana Baum - Biochemistry and
Graduate Program Coordinator

Paul Bracher - Organic

Steven Buckner - Analytical

Alexei Demchenko - Organic
and Department Chair

Sara Drenkhan -

My name is Michael Hankins, and I am joining Saint Louis University as an Instructor in the Department of Chemistry. I will also have a joint appointment as the Assistant Dean for Diversity, Equity, and Inclusion in STEM Education for the College of Arts and Sciences. I graduated from Saint Louis University with my PhD in Integrated and Applied Sciences in 2017 and have since been working as an Instructor and Visiting Assistant Professor at Southern Illinois University in Edwardsville. My research interests include nonlinear chemical dynamics and synchronization studies. Through my administrative role, I plan to

dox series that also contains $\text{Ni}(\text{mnt})_2^{2-}$ and $\text{Ni}(\text{mnt})_2^{3-}$. The rate constant for the electron transfer reaction between $\text{Ni}(\text{mnt})_2^-$ and $\text{Ni}(\text{mnt})_2^{2-}$ was determined using ^{13}C NMR and reported in

Chris Arnatt - The Arnatt lab has graduated three graduate students: Dr. Chelsea DeLeon, Michael Green, and Nick Latzo. We continue to work the Edwards lab on developing novel isotopic tags for metabolomics. Our collaboration with the Salvemini lab (SLU Pharmacology and Physiology) has been very successful in finding compounds that can inhibit neuropathic pain and we are looking forward to developing these into potential therapeutics.

Christy Bagwill - This past year has been a busy one for us in the organic chemistry labs. Excitedly the ISE building opened, and we moved all organic labs over from Monsanto. We were able to add a third lab space, which is needed because of recent enrollment increases. The space provides a state-of-the-art experience for students in organic chemistry where two students share a six-foot hood. Technology was incorporated into the rooms so students could easily see announcements, diagrams, or watch demonstrations from the instrument room. Speaking of instrument room, we now have 9 GC's and 3 IR instruments for students to use to characterize their products, and just last month a 300 MHz NMR was installed. We expect to develop some new labs which will provide a more hands-on experience to analyze products using the NMR. We look forward to updating you next year on future developments.

Dana Baum - The Baum lab is excited to be part of a NASA Interdisciplinary Consortium for Astrobiology Research (ICAR) award that was selected for funding this past year! It expands upon our on-going collaboration with the Burke Group at the University of Missouri and has us partnering with researchers at 6 other institutions to explore the limits of RNA's catalytic abilities. We are also collaborating with researchers in Biology and Biomedical Engineering to explore how aptamers can be used to facilitate wound healing and are a part of the SLU Institute for Drug and Biotherapeutic Innovation (IDBI). We are still interested in small molecule detection using nucleic acids and are now working with a class of pharmaceutical targets. You can follow our progress on Twitter (@BaumLabSLU) and Instagram (baumlabslu) and at our new internet home: www.danabaumlab.com

Paul Bracher - In 2020, the Bracher Group weathered the COVID-19 pandemic in style, with Zoom group meetings and socially distant experimentation. We celebrated the sunset of the NSF-NASA Center for Chemical Evolution with a presidential symposium at the

ACS Spring 2021 National Meeting. Our ongoing work on possible origins of life on Saturn's moon Titan will be supported with the award of a NASA FINE SST fellowship to Steven Skaggs, a G2 in the group. Outside of the laboratory, the Bracher Family welcomed twin boys, Mark Octavian and John Augustus, in June 2020.

Melissa Hopfinger - Melissa Hopfinger joined the department as a faculty member in August 2020 and has been primarily focused on teaching the General Chemistry sequence lectures and labs. She has been working on re-shaping the General Chemistry for Majors Lab with Daria Sokic-Lazic and has been collaborating with an interdisciplinary team of STEM faculty to develop \$ oQ & d_

was invited to present his research at two prestigious

Alagic

C., DeLeon, T., Tabibi, A. Alagic. Characterization and Electrochemical Analysis of Microelectrodes

10.1002/mabi.202000085

photodeoxygenation of polycyclic selenophene Se-oxides." *Journal of Physical Organic Chemistry*, 2021, 34, e4144.

Chintala, S. M.; Maness, P. F.; Petroff, J. T.; Throgmorton, J. C.; Zhang, M.; Omlid, S. M.; McCulla R. D. "Photo-oxidation and Thermal Oxidations of Triptycene Thiols by Aryl Chalcogen Oxides." *ACS Omega*, 2020, 5(50), 32349-32356.

Isor, A.; O'Dea, A. T.; Petroff, J. T.; Skubic, K. N.; Grady, S. F.; Arnatt, C. K.; McCulla R. D. "Synthesis of triphenylphosphonium dibenzothiophene S-oxide derivatives and their effect on cell cycle as photodeoxygenation-based cytotoxic agents." *Bioorganic Chemistry*, 2020,

PhD Awards

Winner Award
Ankita Isor Carol M. and Joseph R. Franks Graduate Award in Chemistry

MS Awards

Winner Award
Emily Currens CRC Press Chemistry Achievement Award
Ali Parvez Royal Society of Chemistry Certificate of Excellence
Bree Bozsoki American Institute of Chemists Student Award

Senior Awards

Winner Award
Conor Honan James D. Collins Award for Student Excellence
Allyson Stanley CRC Press Chemistry Achievement Award
Jon Bostic Royal Society of Chemistry Certificate of Excellence
Minh Pham American Institute of Chemists Student Award

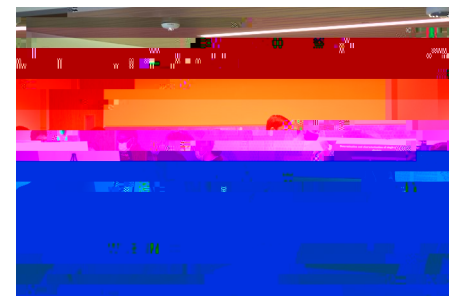
Conor Honan Senior Legacy Symposium
Alesia Gjoni Senior Legacy Symposium
Jon Bostic Senior Legacy Symposium

Junior Award

Winner Award
Morgan Ward ACS Outstanding Junior Chemistry Award

Additional Awards

Winner Award
Roe Dar ACS Division of Organic Chemistry Undergraduate Award
Kathleen Rosfelder ACS Undergraduate Award in Analytical Chemistry



Alumni Update

Mark Ryan (BA Chem : I am married to Ann (Ladd) Ryan (Med '99) and live in Denver, CO with two kids. I've spent my time in coatings and plastics and for the past 21 years worked for The Shepherd Color Co. which specializes in inorganic colorants.
