

Recent Department News

great year for Chemistry faculty and students. Here are some of our latest accomplishments.

Award-Winning Faculty and Students

Dr. Linda de la Garza, advisor for our Student Members of the American Chemical Society (SMACS), received VSU's Advisor of the Year award. This is a highly competitive, university-wide award that recognizes the outstanding efforts that faculty provide to our student organizations.

Dr. de la Garza goes far beyond expectations to advance SMACS by providing dedication and outstanding leadership.

Meet an Outstanding Alum

Accomplishments of VSU Chemistry alumni always impress and inspire our students and faculty. For this Newsletter, we highlight a recent alumnus and rising star, Dr. Kory Burns.

Kory was born in Atlanta and joined the VSU Chemistry Department in 2013. He earned an ACS-certified Chemistry in 2017. He pursued graduate studies at the University of Florida, Materials Science and Engineering in 2020, then a Ph.D. in the same discipline in 2022. He is currently a research scientist at University of Virginia and has accepted an Assistant Professor faculty position there, beginning in 2024.

methods to study the ability of gold nanoparticles to act as a catalyst for the electrochemical reduction of carbon dioxide. In 2018, Kory worked with Dr. Arvind Ramanathan at Oak Ridge National Laboratory as an artificial intelligence (AI) research resident. In this position, he used AI and machine learning to predict the growth of cancer cells.

Kory started his graduate research in 2018 under the mentorship of Professor Assel Altkaliyeva at the University of Florida. His Ph.D. research focused on the structure-property relationships of two-dimensional semiconductors, their fabrication in a clean room, modification using laser and ion beam techniques, and their characterization.

While in graduate school, Kory collaborated with researchers at Sandia National Laboratory to study nanoscale features on surfaces using high resolution imaging and machine learning algorithms. He worked at Texas Instruments as a Device Physics Research Affiliate to better understand properties of semiconductors and predict their performance in electronic circuits.

Although his research definitely keeps him busy, Kory finds the time to talk with younger students about science, research, and their professional goals. Kory has spoken several times to our students, including as a guest speaker for the 2020 Southwest Georgia LSAMP Alliance meeting at VSU.

Kory earned his Ph.D. in 2022 and joined the Department of

Student Award Winners

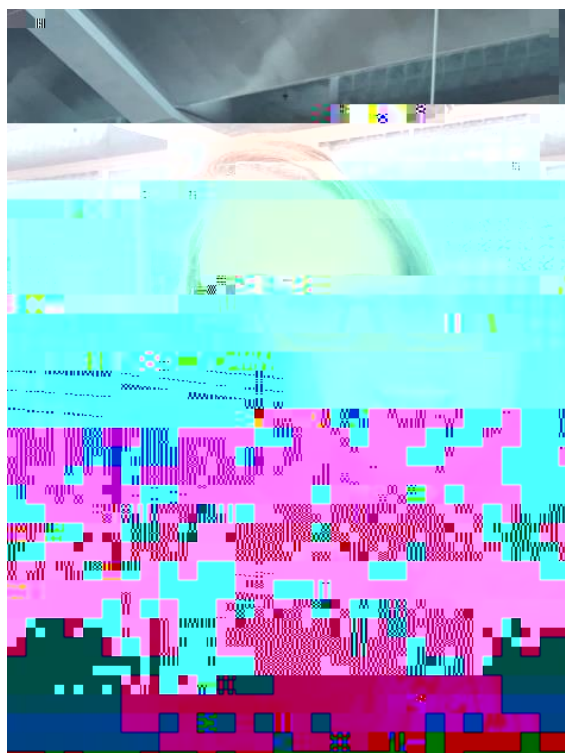
Join us in congratulating our 2021-2022 Chemistry Student Award winners. Chemistry faculty select each award recipient. It is always a difficult choice due to the strong competition. The College of Science and Mathematics held its awards ceremony on April 21 in the Bailey Science Center auditorium and broadcast on Facebook so that family and friend0000094gri.aMc

Thomas J. Falckhausen (Physical Chemistry Award) is

Chemistry Faculty Updates

Chemistry faculty engage in teaching, scholarship, and service to VSU, their profession, and the Valdosta community. We want to share with you our latest accomplishments.

Dr. Linda de la Garza



Dr. Linda de la Garza, Valdosta State University Associate Professor of Chemistry, received her doctorate in Chemistry from Arizona State University in Tempe, AZ. She worked as a post-doctoral appointee at Argonne National Laboratory, located in the Southwest Chicago suburbs.

Dr. de la Garza was selected to the 2021-2022. She recently coauthored an article, with Drs. Focsan, Gosnell, Salami, and Zheng in

the Gateways to Completion Case Study Anthology Volume 2. During 2021-2022, her students presented one poster at a national meeting and five posters at local and regional meetings describing their work on photoelectrochemical cells and methods of water analysis.

Dr. de la Garza was awarded the Student Life 2022 Advisor of the Year Award for her work as SMACS advisor. Dr. De la Garza and SMACS students hosted a mentoring luncheon for chemistry majors in September 2021 with support from ACS Innovative Grants.

Dr. de la Garza is a leader in the National Science Foundation's (NSF) Southwestern Georgia STEM Pathways Louis Stokes Alliance for Minority Participation (LSAMP) program. She serves as VSU's LSAMP Data Liaison and Research Coordinator. In that role, she organized a summer research camp in June 2021 and a virtual summit in February 2022.

Dr. de la Garza is a VSU Leadership Academy Scholar (2019-2020) and past President of MESA (2019-2020), a faculty and staff group focused on Hispanic/LatinX students at VSU. She is currently serving as SMACS advisor and Councilor of the Southwest Georgia Local Section of the American Chemical Society (2021-2023).

Dr. Dean Duncan

Dr. Dean Duncan teaches first-year Chemistry lecture and laboratory courses for science majors and the General, Organic, and Biochemistry (GOB) courses for Allied Health Science majors. In consultation with the VSU Nursing program, he and Dr. Winkelmann have continued to restructure

of membranes can be commercially viable. I began by growing *Ulva lactuca*, a sea lettuce (sea weed/macroalgae) with the intent of purifying its aquaporins. I chose this plant because it thrives in salt water. However, the potential yield of aquaporin directly from sea lettuce is quite low.

Dr. Tom Manning

We had a busy year, between teaching and projects with our students. In chronological order:

Last summer we were in the Florida Keys for 5 days camping and checking out our coral restoration site. We have a permit from NOAA to test our novel approach. In the fall, two students advanced to the national finals of the Ocean Exchange business pitch contest that was held in Fort Lauderdale over three days. We had a paper published in the *Journal of Ocean Technology* entitled Pharmaceutical Aquaculture, with two students were co-authors. We had our 22nd and 23rd novel cancer drug complexes get accepted for pre-clinical trials at the National Cancer Institute. We filed a New Drug Application for a COVID treatment developed and utilized by a medical doctor off label, with good results. Unfortunately, the EUA (Emergency Use Application) we filed with a pulmonologist from Mississippi was declined.

Teighlor Livingston, a VSU grad, biomedical degree at PCOM in Moultrie. She conducted her thesis at VSU in our lab. The title was Synthesis and Characterization of Novel Reformulated Bioactive Paclitaxel Complexes and Considerations for

Administration Via Inhalation Method for Targeted Lung Cancer Treatment. She passed with flying colors and is in DO school now.

for potential publication. Teighlor also co-authored a short paper for an education journal entitled Turning Element Abbreviations into a Strategic Exercise. We also had two student groups (five students total) advance to the second round of a business pitch contest held in Atlanta. Competing in Atlanta with groups from UGA, GA Tech, Emory, Auburn, Clemson, etc. in front of investors was an exciting experience. Two students were selected for

the VSU Undergraduate Symposium in the

to familiarize students of all ages with different chemistry facts so they feel comfortable with the topic. We have proposed to co-develop it with the ACS National Education Committee and they have expressed a strong interest in the project.

Dr. Tolulope Salami

Our current research focus is on the synthesis of electrocatalysts for the electrochemical reduction of carbon dioxide.

Another area of interest is the synthesis of two-dimensional porous materials that can be used in sensor applications and drug delivery. One important highlight is the successful modification of porous materials using halochromic dyes and the adhesion of the hybrid material to a fabric towards the development of fabric sensor with potential for chemical recognition.

We also work extensively in chemical

natural product extraction project in collaboration with Dr. Focsan. Research in the Sreenilayam lab is focused on developing protein-polymer nano-constructs as reusable biocatalysts in non-aqueous media. We are also investigating the feasibility of performing aerobic biocatalysis in novel deep eutectic solvents. Last year, our lab started a collaborative project with Dr. Focsan lab to explore the extraction of natural products using environmentally friendly, biodegradable, green solvents. We

Dr. Yakov Woldman

Hello, reader! My name is Yakov Woldman. I got my undergraduate and graduate degrees in Chemistry from Novosibirsk State University, one of the leading Russian universities in Natural Sciences. I am teaching at VSU now for 18 years, biochemistry and general chemistry lecture and lab courses. My teaching principles are based on my belief that chemistry is an experimental science and experiment goes first, only later to be explained by theory. From here is my attention to experimental details in teaching laboratory and my love of laboratory work with students.

Last summer I worked with a collaborator at West Virginia University to develop a technique for detecting aggressive short-lived molecules in living organisms. These molecules play an important role in an chemical warfare against invading bacteria and viruses. They are also involved in inflammation, Alzheimer's, and

Every semester, several students work with me on research projects; their work is always presented on the Undergraduate Research Symposium at VSU and sometimes at regional and national research conferences.

Dr. Xiaomei Zheng

Dr. Xiaomei Zheng received a PhD in chemistry from Wesleyan University in Middletown, Connecticut. Before joining VSU, Dr. Zheng was a faculty member at Albany State University (ASU) and served as a laboratory and research skills trainer for the NIH RIMI program, as well as a co-leader for an NSF supplemental grant to the Targeted Infusion program at ASU.

She joined VSU in 2017 as a lecturer in chemistry, and currently teaches both Principles of Chemistry I and II, and Survey of Chemistry I and II labs. She is the lab coordinator of the Chemistry Department. In this role, she coordinates lab activities for first-year chemistry courses, she supervises and mentors stockroom student assistants to

Chemistry Faculty Spotlight

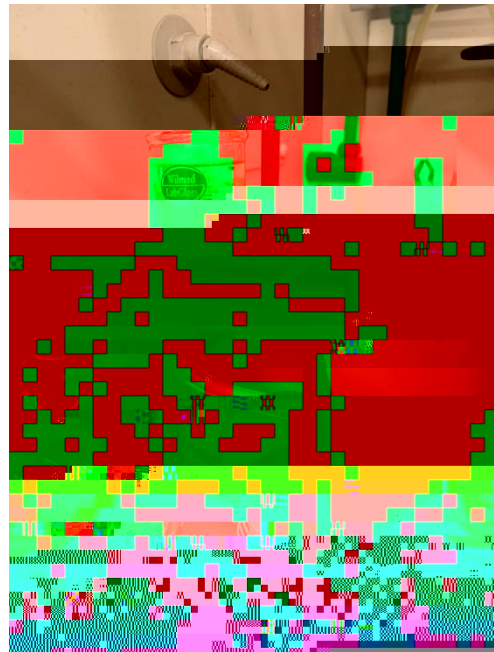
dual purposes of a university: to share knowledge (teaching) and create knowledge (research). Learning in the classroom is important but participating in research - creating knowledge that did not exist before - is another critical component of a education.

In each Newsletter,

these good carotenoid radical species. You have most probably heard of the carotenoid called beta-carotene found in carrots, that gives its orange color and is a precursor to vitamin A. As seen in I



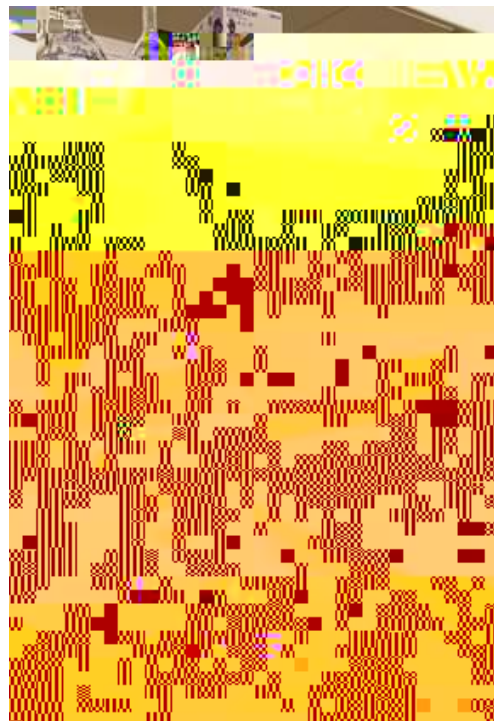
Grinding Spinach with solvent.



Filtration of the extract.



Ground spinach in six different solvents.



Separation of the top organic phase containing the carotenoid from the aqueous phase at the bottom.

Congratulations to Our Graduates!

We celebrated seven Chemistry students becoming our newest alums this year! A Chemistry degree is

Show your Support

Would it be a school newsletter without an appeal for your support? You can make a difference with VSU Chemistry. Giving is easy and all donations benefit our students. Donations from generous alums like you provide financial support for student awards, fund undergraduate research projects, and enable students to attend research conferences. These are just some examples of how your giving positively impacts our students. Imagine all the ways that your donation can help.

To make a donation, visit valdostastate.org/give. In the Designation section of the form, select Other and indicate the Chemistry Account number and name in order for your donations to help the