

College Chemistry Achievement Awards

February 24, 2022

The College Chemistry Achievement Awards are presented annually by the Chemical Society of Washington to outstanding seniors majoring in chemistry and biochemistry from each of the area colleges and universities.

<p>Keith T. Clark George Mason University Supervisor / Advisor / Sponsor: Dr. Hao Jing Dr. Megan Erb</p>	<p>Keith T. Clark is double majoring in Chemistry (Materials Chemistry concentration) and Mathematics (Applied Mathematics concentration). He is a leader in academic and research settings and will graduate summa cum laude in May 2022. Keith is in the second semester of a research project entitled, "Site-selective Depositions of Palladium (Pd) on Anisotropic Gold (Au) Nano-Triangles". In preparation for doctoral research pursuits, Keith is enrolled in two graduate courses this semester—Solid State Chemistry and Nanoscience & Nanomaterials.</p>
<p>Tabitha Fisanich St. Mary's College of Maryland Supervisor / Advisor / Sponsor: Geoffrey Bowers Kelly Neiles</p>	<p>Tabitha Fisanich is an exemplar student scholar and gifted peer mentor most deserving of recognition by the Chemical Society of Washington. We all hope for students that prioritize learning over grades, and Tabitha is one of those students – in addition to having one of the highest GPAs in her cohort. Tabitha asks outstanding questions, writes exceptional reflections, gives engaging presentations, and it is a joy to simply talk to her about chemistry. Tabitha has engaged in a variety of research opportunities inside and outside the classroom, contributing to projects in the analysis of artwork, synthetic organic chemistry, and quantification of artificial sweeteners in the environment. She also gained experience in the industrial research setting through an internship with DAP Chemical as a rising sophomore. But where Tabitha shines like the sun is being an intentional and unintentional example for her fellow students. Tabitha began her active mentoring career by serving as a laboratory teaching assistant in the second semester of her first year, and you can find her formally assisting with laboratory instruction every subsequent semester. She also actively helps peers and younger students in group tutoring sessions run by our student ACS chapter. Tabitha sets an unintentional example by routinely contributing in the classroom in ways that enhance the experience for classmates and professors alike, from initiating student discussions to asking those great questions I mentioned above. She is an outstanding collaborator and has had productive working relationships with fellow students in every group project I have witnessed. Just walking the halls, you will often find Tabitha interacting with fellow students with the caring, respectful manner of a mentor. For being an excellent chemist, scholar, and person, we are pleased to nominate Tabitha for this award.</p>

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<p>Eero Korpela Georgetown University</p> <p>Supervisor / Advisor / Sponsor: Miklos Kertesz, Professor of Chemistry</p>	<p>I recommend Eero Korpela for the upcoming CSW award. He is a remarkably talented and motivated student majoring in both mathematics and chemistry. He is driven by curiosity and proved to be a very fast learner, who has been able to master modern computational techniques in a short time, and then apply them successfully to a topical chemical problem which deals with the limits of extremely stretched carbon-carbon bonds. In this respect he compares favorably with any of our students both at the graduate and undergraduate level. From the outset he has generated a large number of imaginative chemical models that represent a variety of circumstances under which extremely stretched bonds in highly crowded surroundings might be still stable. Furthermore, these stretched bonds needed to provide unusual pi-delocalized environments. His in-depth analysis of the models yielded new insights into the limiting behavior of carbon-carbon bonds linking them to observable spectroscopic parameters. The work showed that a discovery made by Japanese scientists in 2021 of an observed extremely stretched carbon-carbon bond at 2.04 angstroms has not yet reached the limit by about 10-15%. His work will be published soon, and his results will be presented in an already accepted talk for the “Carbon Allotropes, Materials, Devices & Switches” symposium at the Spring 2022 National Meeting of the American Chemical Society.</p> <p>Eero Korpela is one of the best undergraduate students at Georgetown University and therefore he has my highest recommendation for the CSW award.</p>
<p>Matthew Laskowski University of Maryland, College Park</p> <p>Supervisor / Advisor / Sponsor: Prof. Amy Mullin</p>	<p>Matthew is working on our optical centrifuge experiment that couples ultrafast chirped-pulse optical excitation with high-resolution transient IR absorption spectroscopy to investigate the structure and dynamics of molecules in extreme rotational states. Working with a senior graduate student, Matthew quickly acquired sufficient skills with lasers, IR spectroscopy, and digital oscilloscopes to play a significant role in measuring rotational energy transfer of N₂O with rotational quantum number $J \leq 200$. He is a co-author on this paper.</p> <p>After collecting data on two different optically centrifuged molecules, N₂O and CO, Matthew started an additional project that uses master equation computer modeling to calculate state-to-state energy transfer rate constants for high rotational levels of CO. This project was initiated by Matthew and is being done in collaboration with me and Dr. Millard Alexander, a quantum theorist in our department. Matthew is the lead researcher on this project and is the first author on an invited paper that we are now writing for a Faraday Discussion.</p> <p>Matthew’s outstanding cumulative GPA of 3.86, coupled with his innate curiosity and excellent communication skills, put him in an elite class of undergraduate students who show great promise for the future. In the Fall 2021 semester, he earned an A in a graduate thermodynamics course that is notoriously challenging for many chemistry students. Matthew plans to go to graduate school and do research that involves experiment and theory.</p>

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<p>Rachel Palmer Georgetown University</p> <p>Supervisor / Advisor / Sponsor: Christian Wolf, Professor of Chemistry</p>	<p>It is with great enthusiasm that I recommend Rachel Palmer for the CSW award. She is a very talented and highly motivated student who has been involved in research since her first year at Georgetown. Working in the Warren and the Wolf laboratories, Rachel has acquired an absolutely unique set of advanced laboratory skills spanning organic, inorganic and analytical chemistry. She has learned to run reactions under nitrogen atmosphere using Schlenk techniques, to purify reaction products by flash chromatography, and to perform NMR or GC-MS spectroscopic analysis to identify the structures of new compounds. She is very focused, works independently and has made outstanding scientific discoveries about C-H and C-F bond functionalization chemistry – two challenging fields that receive considerable attention in the synthetic methodology arena. Her work has culminated in a co-authorship of a paper published in a very prestigious journal (Chem. Sci., 2021,12, 15733) and I expect another manuscript to be submitted within a few months. Her academic performance is equally impressive. She took my graduate class Chem-502 (Synthesis) last semester as the only undergraduate student and received an A which is far above average. Rachel is the president of the Chemistry Club, an active student leader and valued mentor for undergraduate chemistry and biochemistry majors. In brief, Rachel has been very successful on all accounts and she one of our very best students at Georgetown. I am extremely impressed with her intellectual engagement, positive attitude, maturity and skills, and I recommend her wholeheartedly.</p>
<p>Philip Parel The George Washington University</p> <p>Supervisor / Advisor / Sponsor: Dr. LaKeisha McClary Dr. Martín Zysmilich</p>	<p>Philip Parel is currently a senior at The George Washington University intending to graduate as a Bachelor of Science with a major in both biology and chemistry. He began research under the mentorship of Dr. Nehal Mehta examining PET-CT scans to determine the relationship between vascular inflammation, psoriasis, and cardiometabolic diseases. Philip is a nationally registered Emergency Medical Technical as well as an associate investigator of an NIH-sponsored and IRB-approved clinical trial with the aim of “Evaluating New Radiation Techniques for Cardiovascular Imaging.” In his free time, Philip volunteers for the local non-profit organization Miriam’s Kitchen where he serves Friday breakfast at the local soup kitchen. He also enjoys mentoring high school students through the GW Upward Bound Program where he works with students to prepare for undergraduate education. Along with mentoring, he tutors his peers at GWU in General Chemistry, Organic Chemistry, Physical Chemistry, and Biochemistry. A few of his hobbies include Tae Kwon Do, Korean BBQ, and eating & pizza. In the future, Philip plans to attend medical school and become an orthopedic surgeon.</p>

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Thomas Scharfenberger

The Catholic University of America

Supervisor / Advisor / Sponsor:

Dr. Greg Miller

The recipient of the College Chemistry Achievement Award for 2022 from the Catholic University of America is Thomas Scharfenberger. Tom will graduate from Catholic University in May with a B.S. in Biochemistry and a minor in neuroscience. Maintaining a 3.98 GPA, he has pursued a rigorous schedule while finishing his biochemistry degree, working on his various research projects, and engaging in a number of extracurricular activities. On-campus he initially became involved with Dr. Portugal of the Biology Department and, most recently, has worked with Dr. Greg Miller, a biochemist in the Chemistry Department. In April of 2021, he presented his work on inositol polyphosphate multikinases (IPMK) at our University Research Day. He has volunteered with the Office of Campus Activities as an orientation advisor. As such, he worked closely with new students, helping them to transition into college life. He currently serves as a resident assistant (RA) and has forged meaningful relationships while guiding his residents throughout the college experience. He also currently tutors students at the University in organic chemistry – a valuable resource for the course and a demanding job. He has also volunteered with a local education organization that focuses on tutoring K-12 D.C. students in mathematics and reading comprehension. As a freshman and sophomore, he volunteered at the George Washington University Hospital, where he was trained at the Concierge Desk, in the Emergency Department as a supply tech, and in the Critical Care/ICU as a patient care volunteer. Additionally, Tom has devoted a lot of his time to CUA's Habitat for Humanity chapter as he currently holds the position of Spring Break Coordinator within the organization. In 2020, he attended a trip to San Diego, CA, and this March he will lead a trip to Charleston, SC. Even with his extensive involvement in his community, he still sails through the rigors of his classes.

I've spoken to him at length about his future plans. Tom is currently in the middle of applying to medical school with the hopes of beginning this upcoming fall. We wish him the best of luck as he continues on his academic journey!

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<p>Korina Vlahos University of Maryland, College Park</p> <p>Supervisor / Advisor / Sponsor: Asst. Prof. Leah Dodson</p>	<p>Korina joined my group in 2021, the summer following her Sophomore year. I paired her with a grad student to shadow but it quickly became clear that she was eager and able to take the lead on her own research endeavors. I gave Korina several small projects that she could do with guidance from the grad student, including a mixture of instrument design and troubleshooting. She proved herself adept at navigating challenging instrumentation and fearless at working directly with tech support to bring several inherited, decrepit instruments back to life.</p> <p>Korina is now working independently to design and build a new instrument that will be integral to my research program. This instrument will produce para-hydrogen from the mixture of dihydrogen spin isomers, which will be an important matrix for us to carry out state-of-the-art spectroscopy. Korina researched the project, made CAD drawings, selected all materials, and upcycled items she found in the lab to use in her project. She has already obtained the machine shop and NMR training training necessary to complete her project. She has successfully presented journal clubs and group meetings that provided the rest of the group insight into the advances she has made. I am excited to see where her project leads. Korina has accomplished all of this while continuing to aid the grad student on the original project and will be second author on a paper to be submitted. Korina helped collect and analyze the data, aided in interpreting her results, and contributed to writing the manuscript. Korina has done all of this while maintaining a 3.8 GPA. She is Vice President of our AXE chapter, and she is an officer in the Flower STEM mentorship program at UMD. Korina plans to apply to grad schools in Fall 2022.</p>
<p>Jake Wellek St. Mary's College of Maryland</p> <p>Supervisor / Advisor / Sponsor: Shanen Sherrer</p> <p>Geoffrey Bowers Kelly Neiles</p>	<p>Jacob (Jake) Wellek is a recipient for the Chemical Society of Washington College Chemistry Achievement Award from St. Mary's College of Maryland. As a phenomenal senior Biochemistry major, Jake demonstrates excellence in the classroom, research and through community engagement in numerous ways. Besides maintaining a competitively high GPA, he was a teaching assistant for both Biochemistry I lab and General Chemistry II lab courses and is currently working on a capstone research project in Dr. Shanen M. Sherrer's lab while being the student vice president of the Biomolecular Organization of St. Mary's Students club, and volunteering within the Maryland Medical Reserve Corps. Based on these achievements and the numerous informal activities in which he participates, Jake has had a largely positive impact on classroom discussions, community engagements and research. With guidance from Dr. Sherrer, Jake first developed his research approach and techniques during his St. Mary's Summer Undergraduate Research Fellowship (SURF). This research experience led to his current senior research project on contaminant-induced protein expression changes in oysters, which still reflects his desire to help the community while exploring a mix of topics including protein expression in a marine organism, environmental regulations for contaminants, and environmental toxicology. Jake also wrote a research proposal for his capstone project, and it won financial support from the Cove Point Natural Heritage Trust's Ruth Mathes Scholarship Program. When he is not in class, participating in service activities or doing research, Jake enjoys a number of extracurricular activities such as playing basketball, golfing and running. After completing his college degree, Jake plans to pursue a career in biomedical research.</p>

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Jade Witter

University of the District of Columbia

Supervisor / Advisor / Sponsor:

Dr. Xeuqing Song

The Chemistry Program strongly recommends Jade for the American Chemical Society CSW award. Jade is a chemistry senior who since she joined UDC in Spring 2018 has demonstrated scholarship and leadership in academics, research, and service. Jade maintains an excellent academic record in both course work and research. She maintains a 3.8 GPA and is a recipient of the District of Columbia University Partnership (DCUP) four-year scholarship award. She has also been on the dean's list since 2018. Her involvement in UDC STEM center as a student researcher for the last three years is worth mentioning. She represented UDC at the 2019 Annual Biomedical Research Conference for Minority Students (ABRCMS), where she received an award for her poster presentation titled "Synthesis and Structural Analysis of an Ionic Diphenyltin Complex with Oxalic Acid" – a work that highlights the design of a possible chemotherapeutic drug synthesized from triorgantins. Jade provides leadership to her peers on-campus. She consistently shares with them opportunities that abound in the STEM discipline through the university's professional development seminar series, an event that she anchors.

Through the seminar series, invited speakers mentor students about career opportunities that abound in the profession post-graduation. In addition, Jade also provides leadership as the current president of UDC NOBCChE chapter and Bio-Chem Club where she conducts programs that promote networking among students.