

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.



Maura Fletcher

American University

Prof. Monika Konaklieva, Supervisor

Ms. Fletcher will graduate with a BS degree in chemistry from American University in May 2025. Ms. Fletcher is excited about the field of biochemistry as demonstrated by her choice of a major during her undergraduate studies. Ms. Fletcher joined my research group in the Spring of 2023 and is presently continuing the work she started on a synthetic project which involves preparation of a fragment library of novel lipid enzyme modulators. Ms. Fletcher demonstrates the capacity and innate skills necessary for excelling in a graduate research program. She is an independent research student who shows a strong ability to master new material by working well with others. She is well accepted and respected by her peers. I expect Ms. Fletcher to be an outstanding chemistry graduate student. She will be pursuing a Ph.D. degree in a chemistry program of her choice. Some of her other achievements include the National Dean's List, the Likens Scholarships award (University-wide), 2024-2025, Schwartz Summer Research Award, 2023, NIH Summer Research Award, 2024 and the ACS Division of Organic Chemistry Undergraduate Award, 2025 recipient.



Alexa Fox

Georgetown University

Sarah Stoll, Supervisor

The department of chemistry at Georgetown University has nominated Alexa Fox for the CSW College Chemistry Achievement Award. Alexa Fox is a senior chemistry major, with a strong GPA and has been engaged in research in the Stoll lab continuously since the spring of her freshman year. She was one of the top students in her class, and as a result was selected by the department to be a Teaching Assistant for General Chemistry. Her research project was a joint project with the medical center, the Stoll lab and the Van Keuren lab in Physics. The project, funded by the National Institutes of Health, is to synthesize Magnetic Resonance Imaging contrast agents, and investigating the formation of nanobeads of 50-70nm polymer nanobeads with highly paramagnetic Mn-Fe oxo clusters coating the surface. She has worked independently towards her honors thesis, and has studied the effect of surfactants on these cluster-nanocarrier beads. She has been an important member of the group and is currently the primary researcher in our lab on this project.



Jacqueline Jessen-Hegelbach

American University

Prof. Alex Zestos, Supervisor

Jacqueline (Jackie) Jessen-Hegelbach is originally from Colorado and is a current senior Chemistry major at American University. Jackie joined the Zestos laboratory with Prof. Alexander Zestos at American University at the end of her freshman year. Jackie's research involves the use of carbon fiber microelectrodes (CFMEs) to measure neurotransmitters with fast-scan cyclic voltammetry (FSCV). During the summer of 2024, Jackie received the prestigious Schwartz fellowship to perform original electroanalytical chemistry research in the Zestos laboratory. Jackie contributes greatly to the laboratory and was a co-author on a recent publication from the Zestos lab that was published in the journal *Nanotechnology* that used CFMEs and FSCV to measure several phenolic molecules. Jackie's current project is to use electroanalytical methods to measure important dopamine metabolite, homovanillic acid (HVA). Outside of the laboratory, Jackie has served as supplementary instructor (SI) for General Chemistry II and was very helpful with the course instruction. Jackie is currently applying for post-baccalaureate (postbac) programs before applying to graduate school.



Tamani Kingsland

St. Mary's College of Maryland

Prof. Pamela Mertz, Supervisor

Tamani Kingsland will graduate in May 2025 from St. Mary's College of Maryland with B.S. degrees in biochemistry and biology. She did research in summer 2024 under our eight-week interdisciplinary Seahawk Undergraduate Research Fellowship (SURF) program, supported with a competitive American Society for Biochemistry and Molecular Biology (ASBMB) Undergraduate Research Award. The goal of her project is to investigate quercetin's cytotoxicity on a mammalian cell line; this work has continued for her St. Mary's Project, an eight-credit independent senior thesis project in the current academic year. She is studying cytotoxicity with a caspase assay. Tamani is a leader in various arenas on campus; in particular she has served in a number of leadership roles for our DeSousa Brent program, a community of scholars that proactively recruits students from groups underrepresented in higher education. Tamani also served as a head mentor of the DeSousa Brent (DB) Light program in 2023, a summer program for incoming students. In 2022 she served as an assistant and mentor for one of the DB summer courses, and she served as a teaching assistant in 2023 for the DB Leadership Seminar course. Tamani also served as a senator for the Student Government Association in 2022, and she currently serves as the president for our ASBMB student chapter. She will be presenting her research in April at Discover BMB in Chicago.

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Alex Kotsanos

University of Maryland College Park

YuHuang Wang, Supervisor

Mr. Alexander Kotsanos is the University of Maryland, College Park nominee for the CSW Award in Chemistry. Alexander is a top graduating senior, pursuing dual degrees in Chemistry and in Finance, with a minor in Classics. He has maintained an outstanding academic record, earning induction into Phi Beta Kappa in Spring 2024. Alexander has demonstrated exceptional aptitude for scientific research in Professor YuHuang Wang's Laboratory, which he joined in August 2024. He has contributed significantly to projects focused on creating organic color centers in single-walled carbon nanotube systems. He has become adept at acquiring and analyzing data from spectroscopic techniques including UV-Vis-NIR absorption, near-infrared fluorescence, and Raman scattering. He also quickly mastered synthetic skills, from nanotube dispersion and diazotization reactions to aqueous two-phase extraction procedures. His efforts have substantially advanced the group's research, and his contributions are featured in a manuscript in preparation.

Beyond his technical skills, Alexander stands out for his collaborative spirit and positive engagement with all team members. He communicates effectively, is always willing to learn from others, and takes the initiative in problem-solving discussions. In addition, Alexander's well-rounded background in finance, classics, and chemistry underscores his intellectual curiosity and capacity to bring fresh perspectives to scientific challenges.



Morgan Rice

Georgetown University

Esther Braselmann, Supervisor

The department of chemistry at Georgetown University has nominated Morgan Rice for the CSW College Chemistry Achievement Award. Morgan is a senior biochemistry major who excels both academically and in pursuing research on the honors track at Georgetown University. Morgan has co-authored one research publication, she is co-author on a second research publication currently in review, and more publications are forthcoming. Weekly meetings of the Braselmann lab (where Morgan performs independent research) include ongoing discussions of pertinent literature. Morgan consistently selects primary research articles to discuss with the group that are relevant for her own project and align with her interests of applying research in the biomedical field. For example, she brought a publication to the group's attention that inspired her to define her own independent research project. Here, she is visualizing RNA molecules in cell protrusions, a model system relevant for cancer biology and metastasis. Morgan independently identified this research application, in line with her own interest of pursuing medical-related research as her next career step. Her drive for independent research lead Morgan to receive competitive research fellowships in summer 2023 (Clare Boothe Luce Research Scholarship, Baker Fellowship), and the prestigious national Goldwater fellowship. She was selected to attend a national conference of Clare Boothe Luce Research Scholars in 2023 and she attended the annual national Biophysical Society Meeting in spring 2024 (where she was selected to present an oral flash talk and a poster) and spring 2025 (where she is presenting an oral presentation and was selected to moderate a session). For her Senior Honors thesis, Morgan proposed an independent research project by identifying a very interesting gap in the literature independently. Morgan's plan is to continue her research path in the UK at Cambridge, and add this medical-research focus as the clear next step in her career.

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Mary Sigrist

University of Maryland College Park

Myles Poulin, Supervisor

Mary Sigrist is the University of Maryland, College Park nominee for the CSW award in Biochemistry. Her research mentor, Prof. Myles Poulin, states that she has the drive and motivation to be a truly exceptional independent researcher. She has been one of the most productive undergraduate researchers in his history at Maryland. Mary started working in the lab as a sophomore, on a new project characterizing the structure and function of a new bacterial exopolysaccharide biosynthesis system, under the supervision of a former graduate student. When that student decided to graduate with a master's degree, Mary enthusiastically took over the project completely. When they started the project, nothing was known about the structure or biological function of this new exopolysaccharide system, though it was known that bacterial biofilms often include exopolysaccharides, proteins and nucleic acids. Mary was able to show that this novel exopolysaccharide induces a biofilm-like aggregation and adhesion of bacterial cells and forms a protective matrix. She has also been instrumental in developing new tools that have allowed the lab to detect and characterize the chemical structure of this exopolysaccharide.

In addition to being an excellent researcher, Mary is also an exceptional student and a great laboratory citizen and collaborator. She now collaborates routinely with graduate students in the lab. Dr. Poulin has no doubt that she will continue to grow and progress as an exceptional independent researcher.



Gina Verrengia

The Catholic University of America

Greg Miller, Supervisor

The recipient of the College Chemistry Achievement Award for 2025 from The Catholic University of America is Gina Verrengia. Gina will graduate in May with a B.S. in Biochemistry with a minor in Data Analytics. Gina is a recipient of a University Honors Scholarship, is a regular on our Dean's List, and is a member of the Phi Beta Kappa, Gamma Sigma Epsilon, Phi Eta Sigma honor societies. When not working as a surf instructor during the summer, Gina is the Co-President of the CUAdventures Club at Catholic U, for which she organizes hiking trips in Maryland and nearby states. Gina is also the Co-President of our Biology Club and is a tutor in chemistry and biology. Gina has participated in research involving intrinsic disorder in proteins and biomolecular condensates. Her prodigious data analytic and programming skills contributed substantially to a project exploring the evolution of intrinsic disorder in a family of inositol phosphate kinases. Her contributions have led to identification of localized regions of sequence conservation as potential binding platform for multiple proteins