

## College Chemistry Achievement Awards

February 14, 2019

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><b>Claire Anne Abijay</b> Georgetown University Jennifer Swift</p>	<p>Claire Anne is a senior Biochemistry major at Georgetown University. Originally from Midland, TX, she has a distinguished record both inside and outside the classroom. She has been engaged in undergraduate research in Dr. Jennifer Swift's lab for the past 4 years. Her research, which will culminate in an Honors Thesis, has examined the solid state dehydration of several small molecule crystalline hydrates and the effects of dopants on those reactions. In addition to her Georgetown Research, she held summer research internships at both the US Army Institute for Surgical Research (San Antonio, TX) in 2017 and at the Center for Food Safety and Applied Nutrition (College Park, MD) in 2016. Outside of lab, she has been active in volunteer work, Club Filipino and the Georgetown Orchestra where she is the principal flutist. After graduation this May, Claire Anne plans to attend medical school at U-Texas Southwestern.</p>
<p><b>Nicole Barnes</b> American University Monika Konaklieva</p>	<p>A senior undergraduate majoring in Biochemistry, Ms. Nicole Barnes is a highly dedicated student with a perfect GPA, and is highly passionate about her studies. Nicole is deeply inquisitive and her interests and abilities are diverse. She has been working with Dr. Monika Konaklieva on the development of new antiviral compounds. Nicole has showed a strong ability to master new materials, to research a problem and formulate a solution. She has continued to make a good, steady progress in her research. As a result, Nicole will be a co-author of a manuscript to be submitted soon. Her achievement has been recognized by Likins fellowships. Nicole has been a wonderful member of our department and we are delighted that she is being honored with this award from CSW.</p>

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<p><b>Karina Bursch</b> The Catholic University of America Dr. Greg Brewer</p>	<p>Karina Bursch will graduate summa cum laude with a BS in Biochemistry and a minor in Philosophy from the Catholic University of America in May 2019. She has excelled in her coursework, earning a 4.0 GPA. Karina is a member of the University Honors Program and the University's chapter of Phi Eta Sigma. She works in the lab of Dr. Justin Chung in the CUA Biology Department, studying the role of Keratin 19 in MCF7 breast cancer cell proliferation. During the summer of 2017, she worked in the lab of Dr. Gregory Vercellotti and Dr. John Belcher through the University of Minnesota Life Sciences Summer Undergraduate Research Program, determining the binding site of free heme on the MD-2/TLR4 transmembrane protein complex. This project culminated in a presentation at the 2017 Annual Biomedical Research Conference for Minority Students in Phoenix. In the summer of 2018, Karina worked in the lab of Dr. Powell Brown through the CPRIT-CURE program at the MD Anderson Cancer Center, studying the effects of the rexinoid IRX 4204 on the growth of multiple breast cancer cell lines.</p> <p>Karina is not always in lab. She spent a semester in Rome in the fall of 2016 studying the Italian language and culture and has played the cello as a member of the University's symphony orchestra for the past three years.</p> <p>Karina is currently applying to MD-PhD programs and has interviewed at the University of Minnesota, the Medical College of Wisconsin, and the University of Alabama at Birmingham.</p>
<p><b>Casey Culhane</b> American University Shouzhong Zou</p>	<p>A senior undergraduate majoring in Biochemistry, Ms. Casey Culhane is a highly dedicated student with an impressive GPA, and is highly passionate about her studies. Casey has been working on developing heteroatom doped porous carbon materials for fuel cell catalysts in Dr. Shouzhong Zou's lab. While maintaining high GPA in her course work, she is also very productive in her research project. She presented her work as a poster at the 232nd ECS Meeting at National Harbor in October 2017 and delivered an oral presentation at the 28th Robyn Rafferty Mathias student research conference in April 2018. She received "Best Oral Presentation in the Natural Sciences by an Undergraduate Student" award for her presentation at the latter conference. Her achievement has been recognized by a Likins fellowship. Casey has been a wonderful member of our department and we are delighted that she is being honored with this award from CSW.</p>
<p><b>Elizabeth Diessner</b> George Mason University Kimi S. Hatton, Ph.D.</p>	<p>The recipient of the CSW College Chemistry Achievement Award from George Mason University this year is Elizabeth Diessner. This candidate for the B.S. degree in Chemistry is outstanding and is unanimously supported by all the faculty. I join all the faculty in the department in congratulating her. Well done Liz!</p>

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<p><b>Caroline Doherty</b> Georgetown University  Prof. Esther Chang and Prof. Steven Metallo</p>	<p>Caroline Doherty is an outstanding student and researcher at Georgetown University. One of her professors remarked that Caroline is extremely dedicated and perseverant, especially in the quantitative aspects of the course, and that overall she is a student that has the discipline and stamina to go far (not a surprise given that she was a professional ballerina). She has been conducting research in Prof. Esther H. Chang's lab in the Lombardi Comprehensive Cancer Center. Caroline's research project involves tumor-targeted liposomal nanocomplexes for use in delivery of molecular medicines selectively to cancer cells. These nanocomplexes are currently in human clinical trials for delivery of gene therapies where they have been shown to be safe and effective. Initially Caroline research involved determining the pharmacokinetics of the nanocomplex used for p53 gene delivery (SGT-53) in a trial in pediatric cancer patients. Her current research project centers on preclinical studies of SGT-94, this nanocomplex encapsulates another tumor suppressor, which is a truncated, more effective form of the human retinoblastoma gene. Caroline is trying to understand if SGT-94 is involved in immune regulation in a lung cancer mouse model.</p>
<p><b>Matthew Lish</b> The George Washington University  Dr. Cynthia Dowd</p>	<p>Matthew Lish is currently a senior at The George Washington University majoring in chemistry. Matthew started his research in the Dowd Lab in the fall of 2017 working to synthesize phosphonate analogs to inhibit the methyl erythritol phosphate pathway in microbes. After receiving the Madeleine Reines Jacobs scholarship in the summer of 2018, his project grown to include the synthesis of nucleoside analogs to inhibit microbial Coenzyme A biosynthesis. He has continued to conduct research on this project in the lab under the mentorship of Dr. Cynthia Dowd through the current academic year.</p> <p>Outside of research, Matthew is a fitness instructor as well as an active member and past treasurer of Alpha Chi Sigma, the chemistry fraternity. This group provides tutoring for introductory chemistry courses, participates in ALIVE food donations, and mentor's future scientists. Additionally, Matthew has served three semesters as an Undergraduate Learning Assistant for both General and Organic chemistries. After GWU, Matthew plans to pursue a doctoral degree in Organic chemistry.</p>

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<p><b>Mary Katherine Robey</b> St. Mary's College of Maryland Aileen Bailey</p>	<p>Mary (Katie) Robey is a model student at St. Mary's College of Maryland, one who demonstrates how exceptional time-management skills combined with drive, organization, and a keen intellect, can allow someone to flourish in many different ways. She is a student athlete who balances academics, with a near 4.0 GPA, along with research, volunteer work, and service to the Department of Chemistry and Biochemistry. Her research in neuroscience involves investigating a novel fast-acting antidepressant drug PIAGRAs (Partial Inverse Agonists of GABA Receptors containing <math>\alpha 5</math> subunits) on rats. She was a co-author on work presented at the Society for Neuroscience on 2017, and she recently received a Sigma Xi Grants-Aid of Research Award to support her senior research project, the St. Mary's Project. While making noted progress on her research and maintaining outstanding grades, Katie also found time to not only be a member of the Women's Varsity Basketball team, elected as Team Captain last year, but she has also volunteered for food drives and at a surgical practice. She has served as a dedicated teaching assistant for both Organic Chemistry and Biochemistry. Her Organic Chemistry lab instructor mentioned that when it came time to grade lab reports he would dig out Katie's to see what the new gold standard was, search for something to criticize, and then grade the rest of the lab section's reports accordingly. Katie is planning on attending medical school after a gap year, and the entire St. Mary's community is excited about watching this fine young woman's career unfold.</p>
<p><b>Sophia Sommerkamp</b> University of Maryland, College Park Lenea Stocker</p>	<p>Ms. Sommerkamp was nominated independently by two faculty members, Drs. Lenea Stocker and Bryan Eichhorn. She has demonstrated excellent classroom performance, and she has been actively involved in two research groups in the Department of Chemistry and Biochemistry. She began in Dr. Lyle Isaac's lab where she worked on the synthesis of cucurbiturils. After catching the inorganic chemistry bug from an advanced course, she decided to shift her research into Dr. Bryan Eichhorn's lab, in which she is solely responsible for a project on iron gall ink. This is a historic ink found in Library of Congress documents whose composition is still unknown, leading to degradation of the documents in spite of current preservation techniques. Ms. Sommerkamp researches the best separation techniques to remove precipitate from the ink. This will allow her to discover the extinction coefficient of the ink itself as a function of concentration and pH. These data will aid in the discovery of the mechanism of formation and the structure of the iron gallate complex in the ink. Ms. Sommerkamp is a co-recipient of the Francesco Barone Scholarship Fund in the department. She has presented her work at both the University of Maryland Bioscience Day and the ADSE Young Researcher Conference. She plans to attend graduate school in Chemistry.</p>

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**Cassandra Ruth Youshaw**

St. Mary's College of Maryland

Daniel T. Chase

Cassandra (Cassy) R. Youshaw started out as a shy freshman in the General Chemistry II course. Despite this shyness, she expressed a razor sharp wit, effortlessly earning top marks on all exams. Initially a self-described physics major, she soon came to realize the error of her ways and switched over to chemistry. Cassie also earned top marks in Organic Chemistry I and II and decided that organic synthesis was a worthwhile venture. She applied for a St. Mary's Undergraduate Research Fellowship (SURF), our institution's highly competitive summer research program. To our delight, Cassy was awarded a position in SURF where she began researching ways to synthesize conjugated Aza-BODIPY dyes. During this summer program, Cassy demonstrated tremendous academic growth and continued her research into the 2017–2018 academic year. Cassy was further awarded a scholarship through our institution's NSF STEM Navigators program which is dedicated to students that exhibit superior academic talent who also demonstrate academic need. Cassy presented a poster detailing her Aza-BODIPY research at the 255<sup>th</sup> ACS national meeting in New Orleans. Last summer Cassy had the opportunity to undertake an internship at MedImmune, a subsidiary of AstraZeneca where she applied her freshly learned biochemistry concepts into developing new therapeutics. For her senior year, Cassy is continuing her Aza-BODIPY work for her St. Mary's Project (SMP), our institution's research-focused capstone experience. As Cassy's time at St. Mary's draws to a close, she already has her sights set toward graduate work with one offer from Temple University already in hand and the anticipation of more offers to come. Having the opportunity to watch Cassy grow and develop as a mature and outstanding young chemist has been a delight, and we wish to warmly congratulate her on receiving this award.