

TRIO

McNair Scholars Program
ST. OLAF COLLEGE

St. Olaf TRIO McNair Scholars' Summer Experiences 2017



wp.stolaf.edu/mcnair

Booklet Highlights

During the summer of 2017, seven rising juniors and three rising seniors were each paired with a St. Olaf or Carleton faculty mentor who guided their participation in an intensive summer research experience. Students produced research papers, posters, and presented at the St. Olaf Summer Research Symposium. This booklet highlights summer research experiences at St. Olaf, in addition to Scholars' participation in *off-campus* summer research and internship experiences.

Program Introduction

TRIO McNair is a graduate school preparatory program funded by the U.S. Department of Education and sponsored by St. Olaf College. It was founded in 1989 and initiated at St. Olaf College in 2007 to serve students at St. Olaf and Carleton. Nationally there are 158 McNair programs working with over 4,400 low-income, first-generation, and underrepresented undergraduate students. (The federal government defines "underrepresented" to include: Black; Hispanic; American Indian/Alaskan Native, Native Hawaiians and other Pacific Islanders.)

Program Goals

The goal of McNair is to increase the number of low-income, first-generation, and underrepresented students who participate in undergraduate research, graduate with a B.A., and immediately enter and complete graduate school, with a specific focus on obtaining a Ph.D. The program identifies students with high academic potential and provides opportunities for students to develop skills necessary to gain admission to and successfully complete graduate study. All McNair projects must meet federally approved program objectives each year.

Objective 1: 90% of participants will complete research or scholarly activities each year.

Objective 2: 40% of graduates will enroll in graduate school immediately following graduation.

Objective 3: 80% of first-year graduate students will continue to be enrolled in graduate school.

Objective 4: 10% of participants will attain a Ph.D. within 10 years.

Participants

Annually, 28 undergraduates participate in the St. Olaf TRIO McNair Scholars Program. Two-thirds of the participants meet federal income guidelines and are from a family in which neither parent graduated from a four-year postsecondary educational institution. One-third may be from groups that are traditionally underrepresented in graduate studies. Participants are from St. Olaf and Carleton Colleges and have a GPA of 2.75 or higher.

Services

McNair Scholars receive assistance with:

- On or off-campus internship/research experience - summer of sophomore year
- McNair research experience - summer of sophomore OR junior year. Participants paired with faculty mentors
- Research Writing Course (1 credit and WRI) - summer of junior year to learn how to write an effective proposal, conduct research, prepare a poster and present results
- Preparation for graduate school admissions tests; Graduate school search and application assistance
- Financial aid, fellowship, and scholarship applications assistance.

St. Olaf TRIO McNair Alumni Demographic Summary (2008-2017)

103 Students Served Since 2007 **Females:** 61% **Males:** 39%

Scholar Race/Ethnicity: 37% Asian American; 25% Black/African American; 15% White; 15% Latino; 6% Multiracial; 3% Native American; 2% Pacific Islander

Total Number of St. Olaf Faculty Mentors: 55

Mentored more than one student or have participated in more than one McNair summer: 15 faculty

Post-Graduation Status:

62% of McNair graduates are enrolled in or have completed graduate school (includes Class of 2017).

49% of students have completed or are enrolled in a Master's program.

14% of students have completed or are enrolled in a Ph.D. program.

30% of students completed or enrolled in graduate school in science, technology, engineering, or math.

Biography of Ronald E. McNair

"Before you can make a dream come true, you must first have one."

—Dr. Ronald E. McNair

In 1986, in memory of Ronald McNair, the U.S. Congress established the Ronald E. McNair Post-Baccalaureate Achievement Program, commonly known as McNair.

Dr. Ronald E. McNair's career as a scholar and astronaut stands as an inspiration to all McNair program participants. Ronald McNair, the second African American to fly in space, was born on October 21, 1950 in Lake City, South Carolina. In 1976 McNair earned a Ph.D. degree in Physics at the Massachusetts Institute of Technology and joined the Hughes Research Laboratories. Ronald McNair completed the training and evaluation course for shuttle mission specialists and began working at the Shuttle Avionics Integration Laboratory and later worked for NASA. Even though Dr. McNair's awards and special recognitions are numerous, he will be best remembered as being among those who died on January 28, 1986 when the Space Shuttle Challenger exploded after the launch. Dr. McNair was a mission specialist on that flight. His lifelong commitment to scholarship lives on in the McNair Scholars who are selected each year to participate in the many McNair programs across the United States.



St. Olaf TRIO McNair Scholars Staff

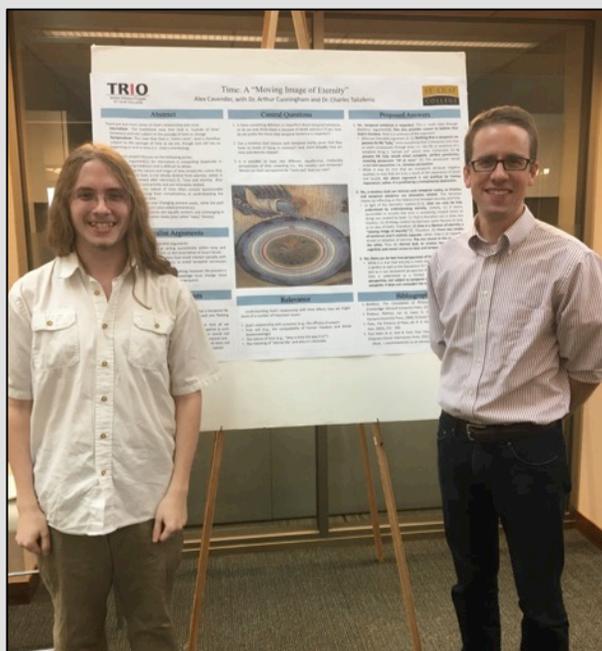
Janis Johnson, Director
johnsonj@stolaf.edu
507-786-3967

Melissa Melgar, Assistant Director
melgar@stolaf.edu
507-786-3003

McNair Scholars Conducting St. Olaf Summer Research

Faculty Mentor: Dr. Arthur Cunningham; St. Olaf

Dr. Cunningham received a B.S. in Physics and a B.A. in Philosophy from the University of Notre Dame, a Ph.D. in Philosophy and an M.A. in Mathematics from the University of Pittsburgh. He has always loved math and science; later complemented by philosophy, his research interests have revolved around the philosophy of science and physics, particularly concerning the interpretation of quantum mechanics and the metaphysics of space and time, free will, logic, and topics concerning the philosophy of religion. He has contributed to encyclopedias and has published a number of articles. He is interested in exploring the relationship between faith and science, and has presented often on this subject. Dr. Cunningham is an Associate Professor deeply committed to undergraduate teaching, a vocation he has always dreamed of, and is currently serving as the Director of the Science Conversation program at St. Olaf. His excellent lecturing abilities and passion for deeply exploring the nature of science are a boon to his students. When he's not grading papers and teaching classes, such as Formal Logic or Philosophy of Science, or contemplating the nature of God and time, he's spending time as a devoted family man with his wife and five wonderful children.



Alex Cavender, 2019

Majors: Religion, Philosophy, and Classics

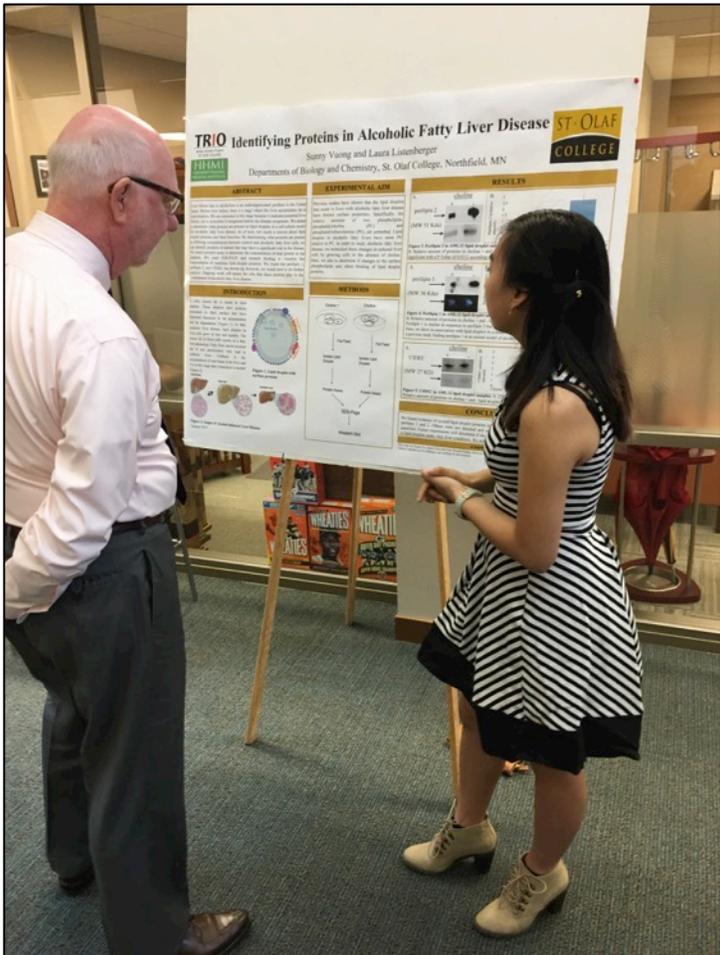
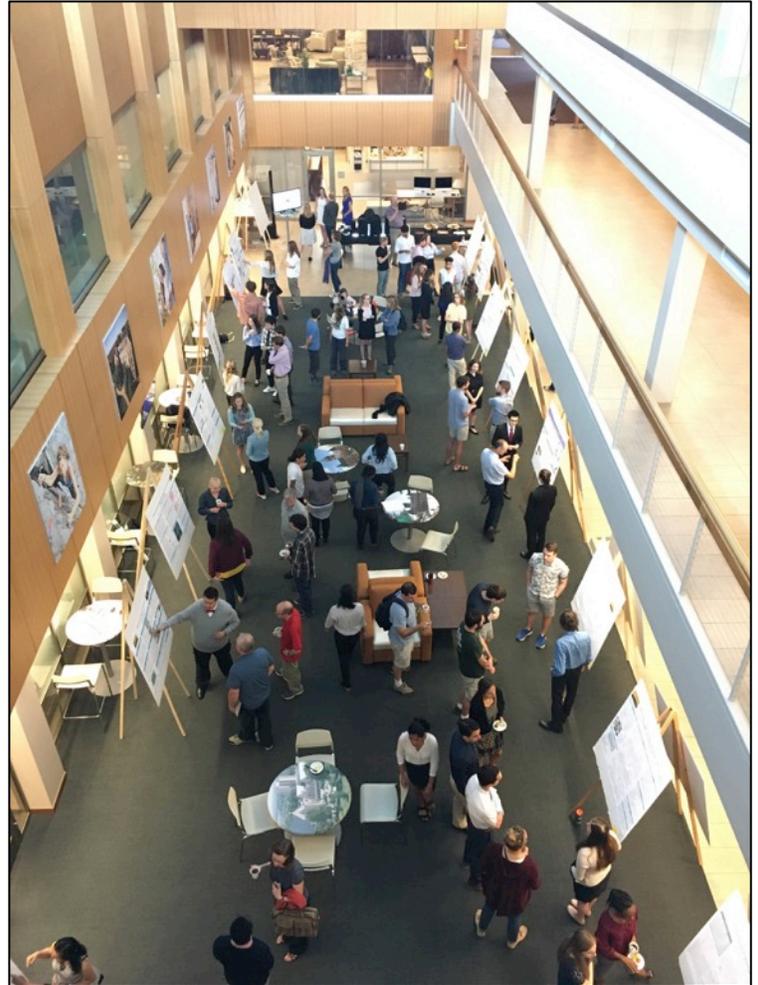
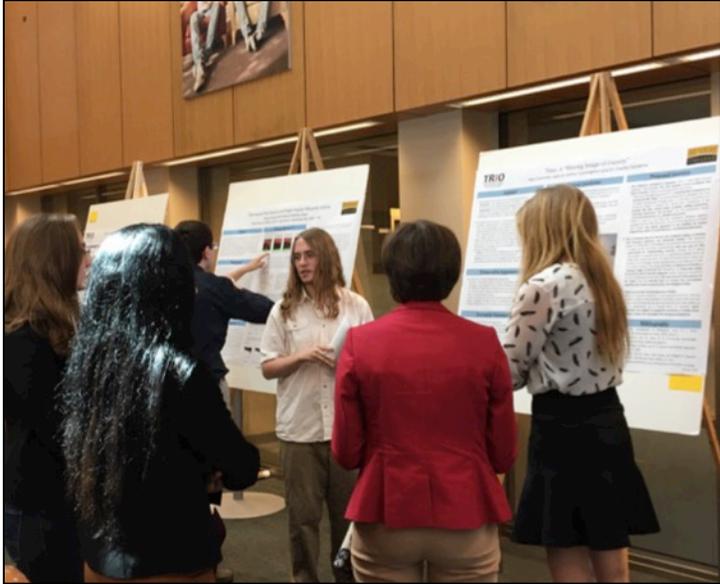
"My mentors and I frequently met together to discuss and debate contemporary issues in our area of research. I have a better idea of what graduate school might be like, and I feel more prepared and excited for it. I am interested in pursuing graduate studies in theology and philosophy, and gaining my Ph.D. because I currently plan on becoming a professor."

Faculty Mentor: Dr. Charles Taliaferro; St. Olaf

Dr. Charles Taliaferro received his B.A. in Philosophy and Literature from Goddard College, an M.A. in Philosophy from the University of Rhode Island, an M.T.S. from Harvard University, and an M.A. and a Ph.D. in Philosophy from Brown University. His research interests are centered around the philosophy of religion/philosophical theology, as well as philosophy of mind, value theory, aesthetics, and environmental ethics. His publishing record is extensive, including over 100 chapters/journal articles, 70 book reviews, and 24 books (with 12 in process). His dissertation, "Cartesian Dualism," has remained foundational to his research as a stalwart defender of mind-body dualism, in which he defends the thesis of "integrative dualism." Dr. Taliaferro is also a strong proponent of interreligious dialogue, particularly Muslim-Christian dialogue, and has long been an advocate for closer relations between the U.S. and Iran. He has also received many grants and fellowships and currently serves as the chair of the Philosophy department at St. Olaf College. He has an intense devotion to teaching, and a love of collaborating on articles and popular philosophy books, such as *Star Wars and Philosophy*, with talented students. His passion of enriching the lives of others with the love of wisdom has impacted (and will continue to impact) the lives of countless individuals.

Research Title: *The Eternity of Time*

Abstract: In this paper, I seek to defend the thesis that God is “outside of time,” or timelessly eternal, by evaluating the traditional arguments for the thesis that are often ignored or misunderstood in some of the contemporary literature. I further argue that what is most essential to time (defined by Plato as a “moving image of eternity”) is the idea that it is a copy, or model, created by God as a lesser form of eternity; subsequently, I argue that there is no contradiction in the two different perspectives of time (God’s and our own) being true simultaneously. In this process, I arrive at a defense of the traditional notion of divine timelessness, which draws heavily on interpreting the work of its ancient proponents.



Faculty Mentor: Dr. Lisa Moore; St. Olaf

Dr. Moore obtained a B.A. in Political Science from Davidson College and a Master's of Social Work from Smith College School for Social Work. Lisa earned a Ph.D. from California Institute of Integral Studies in Social and Cultural Anthropology. Her research interests include intergenerational caretaking in public housing, children of activists, community activism, and psychological empowerment, the relationship between family relationships and family owned land, the military and deployment experience of army women, HIV/AIDS in black and Latino gay populations, and the impact violence has on identity in mother-daughter relationships within the African American community. Dr. Moore has contributed to many publications and has published several articles. Her most recent publication was an encyclopedic entry in *Wiley Blackwell Encyclopedia of Race, Ethnicity, and Nationality of 2015*. Dr. Moore has received over four awards to acknowledge her perseverance and charisma. She received the Alumni of Color Association Thesis Award at Smith College School of Social Work and received a grant through the Bertha Capen Reynolds Teaching Fellowship at Smith College School for Social Work. Dr. Moore received the Excellence in Teaching Award at Boston University School of Social Work, a grant from the American Psychoanalytic Association honor, the Teachers Academy Fellowship and the Excellence in Teaching Award from the Boston University School of Social Work.

Tiara Davis, 2018

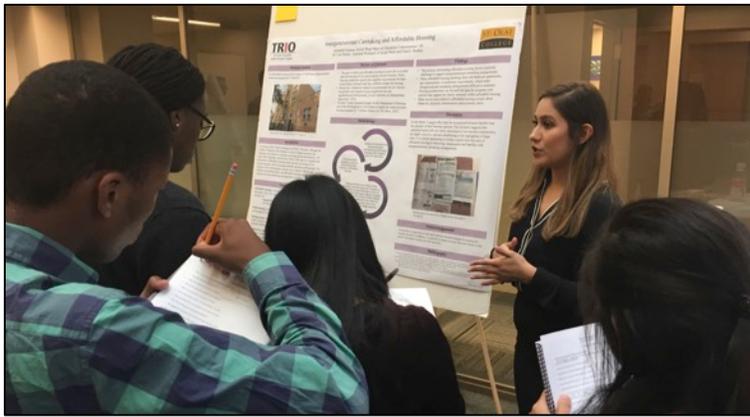
Majors: Social Work and Race & Ethnic Study

"This summer I was able to gain experience in how to conduct research. From conducting interviews to coding to transcribing, I was able to learn so much from my faculty mentor and peers. A highlight from the summer was interviewing activists. I gained skills in brainstorming and communication this summer. This experience impacted my future career/graduate school goals by helping me realize what I am passionate about and where I can see myself in the next five years."



Research Title: *Children of Activists*

Abstract: Reading the *Children of the Movement*, by John Blake, provided a lens that allowed one to enter the lives of the children of activists. While reading the book some key themes came about emotional turmoil, African American single mothers, unheard voices, absence of the black father, and permissive and uninvolved parenting styles. Seeing these key themes brought up the following questions: What is the family relationships/dynamics between children of activists and their parent(s)? How did the child of the activist feel growing up with both parents and/or one parent? What are the parenting styles of activist parents? I then began to read other articles, documentaries, books, and videos that would help answer my potential questions. Many of the stories I read mentioned how having the lack of a father in the house caused emotional and mental turmoil. I conducted interviews to learn more about the activist emotions, thoughts, work process, and household dynamics. Phase one of this research is to collect interviews from activists to learn more about what drives them to do what they do on a daily basis. Phase two of this study is to gain more interviews from actual children of activists to learn more about where they are today, what was it like being a child of an activist, and whether or not they continued on with their parents' legacy.

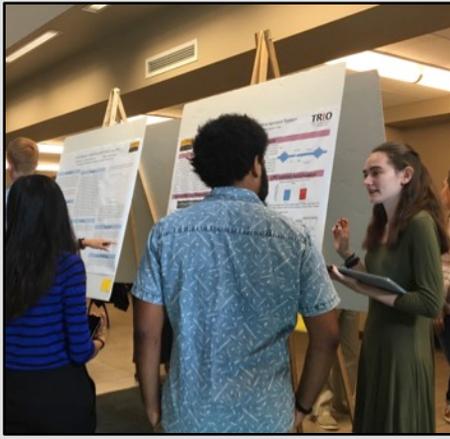


Elizabeth Guzman, 2018
Major: Social Work

“I continued last summer’s research project on intergenerational caretaking and public housing. The purpose of this ethnographic study was to determine if public housing policies support or challenge intergenerational caretaking arrangements of families. The highlight of my summer was working alongside Professor Lisa Moore. I learned how to be more assertive, and to be persistent. In the future, I would like to work in higher education administration. Graduate school is important to my goals because I have to acquire various skills and background knowledge before I can make a difference at an institutional level. I want to create the most beneficial impact for disadvantaged students as I can, and graduate school will help me reach that goal.”

Research Title: *Intergenerational Caretaking and Affordable Housing*

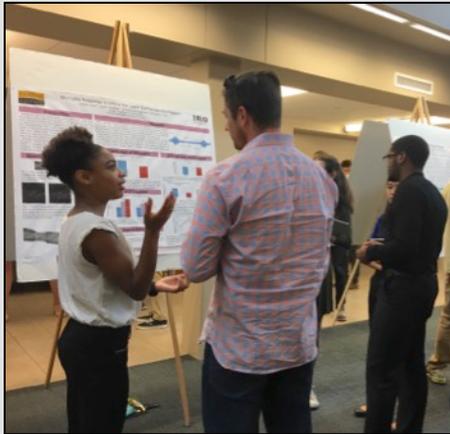
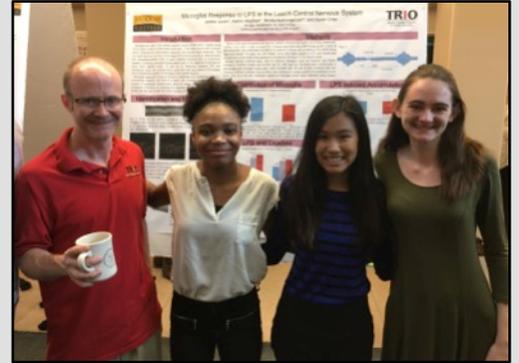
Abstract: According to the Center on Budget and Policy Priorities, although the number of families with children in need of rental assistance has increased, the number of families receiving aid has decreased (Mazzara, Sard & Rice, 2016). This data led us to question the allocation of housing funds and the well-being of intergenerational families in Chicago and in Minneapolis. The purpose of this project was to determine if affordable housing policies support or challenge intergenerational caretaking arrangements of families. Based on the findings from last summer, I expected to learn that although these policies do not overtly challenge this family structure, they make it more difficult to maintain. The research was conducted by analyzing current affordable and public housing budgets and policies, and by interviewing housing professionals. The interviews were transcribed and coded to identify common themes. I found that there is a lack of funds and policies and programs that support intergenerational caretaking arrangements of families.



Amber Juran, 2019

Major: Biology

“Over the summer, my team researched the effect of LPS on microglial accumulation in the leech central nervous system. The highlight of my research experience was getting to research and test staining protocols. Prior to this summer, I already knew that I wanted to go into research in the future, but this experience helped confirm in my mind that it is something I would enjoy as a career. My goals are to get a Ph.D. in a biological field and use that to get a career conducting medical research.”



Aislinn Mayfield, 2019

Majors: Biology

“This summer I worked in the lab with Dr. Crisp where we examined microglia cells in the leech central nervous system and their response to bacterial infection. One of the highlights of my summer was devising a way to collect and analyze data from a group of fluorescent images, which ended up yielding statistically significant results! This was my first intensive research experience in which I was able to play an active role, and it helped solidify that I do want research to be a part of my future career. I am interested in both graduate school and medical school and am considering pursuing a combined M.D./Ph.D. program.”

Faculty Mentor: Dr. Kevin Crisp; St. Olaf

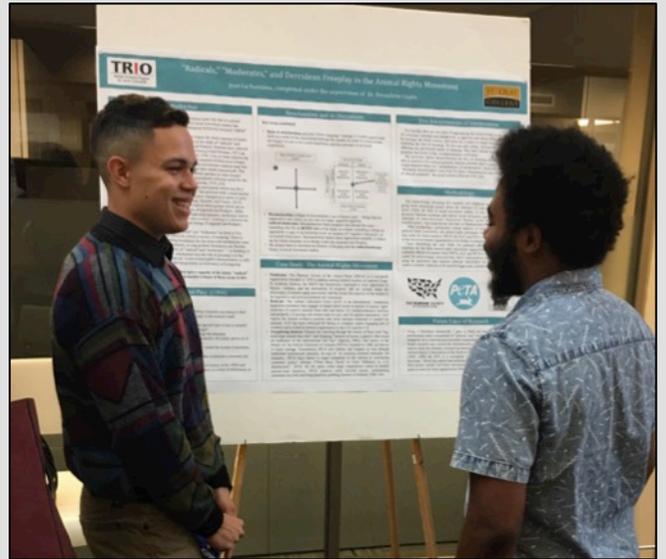
Dr. Crisp received a B.A. in Psychology from Haverford College and a Ph.D. in Neuroscience from the University of Minnesota. His research interests include neurophysiology, computational modeling, and biological applications of wireless technologies. The trajectory of his studies has shifted from psychology to neuroscience, and now to a focus on physiological aspects of the nervous system. This has culminated in his current research on the nervous systems of both leeches and earthworms. Throughout his career he has published numerous articles in many journals such as *Impulse!* and *The Journal of Undergraduate Neuroscience Education*. Additionally, over the course of the last decade he has mentored 14 McNair Scholars and 29 other students in biological research.

Research Title: *Microglial Response to LPS in the Leech Central Nervous System*

Abstract: Microglia are cells in the central nervous system which migrate along nerve cords to sites of inflammation and injury. There they accumulate to devour debris, modulate the inflammatory response, and secrete repair molecules. This microglial response is known to be triggered by mechanical injury, but the response to bacterial infection has not been widely studied. Here, we examined if LPS, a bacterial toxin, is capable of inducing microglial accumulation in leech nerve cords. To test a possible interaction between LPS and mechanical injury, we crushed nerve cords both with and without LPS present and compared microglial counts in the crushed regions. *Results suggest LPS does not alter accumulation of microglia when coupled with a mechanical crush in leech nerve cords.*

Faculty Mentor: Dr. Dev Gupta; Carleton

Professor Devashree Gupta received her Ph.D. in Government from Cornell University. Her research focuses on issues of nationalism, social movements and protest, and political extremism, with a particular focus on the politics of Britain, Ireland, and South Africa. She has published her work in the journals *Mobilization*, *PS: Political Science & Politics*, *Comparative Politics*, and *Comparative European Politics*. She is currently working on a book manuscript that explores the dynamics of radicalization and competition in social movements. She is also working on smaller projects on social movement coalitions as well as the political engagement of diaspora and immigrant communities in Europe. At Carleton, she teaches the introductory class in comparative politics as well as courses on social movements, comparative nationalism, ethnic conflict, religion and politics, and research methods. Professor Gupta holds a special place in her heart for Scottish tartans and terriers as well as the theatrical blend of culture and politics that is the annual Eurovision Song Contest.



Jean LaFontaine, 2019

Majors: Political Science/Spanish

“This summer I learned that although I love political issues, I am interested in studying them less as a political scientist and more as a political theorist. The highlight of my summer was definitely having the opportunity to build a strong relationship with my faculty mentor. I want to go to graduate school and complete a Ph.D. in some field informed by theory/philosophy. I would like to become a professor of continental/political philosophy, conduct original research, and publish books and essays that take abstract philosophical ideas and apply them to contemporary social, cultural, and political problems.”

Research Title: *“Moderates,” “Radicals,” and Derridean Freeplay in the Animal Rights Movement*

Abstract: Historically, the field of social movement studies has incorporated and applied some version of the conceptual distinction between “radical” and “moderate” social movement organizations. In past work, however, the tendency among scholars has been to treat “radicals” and “moderates” as more or less fixed terms circulating within a relatively closed economy of meaning. There is nothing automatically wrong in setting boundaries for the terms and mechanisms used to study the dynamics of social movements. Nevertheless, in freezing the categories of “radicals” and “moderates” – in thinking of them as absolute and self-standing – researchers run the risk of glossing over the importance of historical context. With the goal of retaining the descriptive capacity of the labels “radical” and “moderate,” I use a Derridean deconstruction to flush out the example of PETA, problematizing static conceptions of “radicals” and “moderates”; thus, opening these categories up to renewed and renewable interpretation and usage.

Faculty Mentor: Dr. Dipa Kalyani; St. Olaf

Dr. Dipannita Kalyani received her Ph.D. in Organic and Organometallic chemistry from University of Michigan, Ann Arbor. Specifically, her research focuses on discovering greener and more economically friendly ways of making compounds that are commonly found in many chemicals with applications, such as fuels, crop protection, and pharmaceuticals. Over the past 5 years she has published 10 research articles detailing the discoveries made by St Olaf undergraduates. Dr. Kalyani is the recipient of the NSF-Career Award, Henry Dreyfus Teacher-Scholar Award, and the Cottrell Scholar Award.

Sonam Palmo, 2019

Major: Biology

“My research group and I worked on the mechanism of Nickel-Catalyzed C-H Arylation. The highlight of my summer was getting to know my research group and learning a lot from them since they were more experienced than me. As for my research, I have learned numerous lab skills such as doing a Column chromatography or using the glove box properly that will be very helpful in the future. I am exploring both the grad school field and the medical school field.”

Research Title: *Mechanistic Studies on Nickel-Catalyzed C-H Arylation*

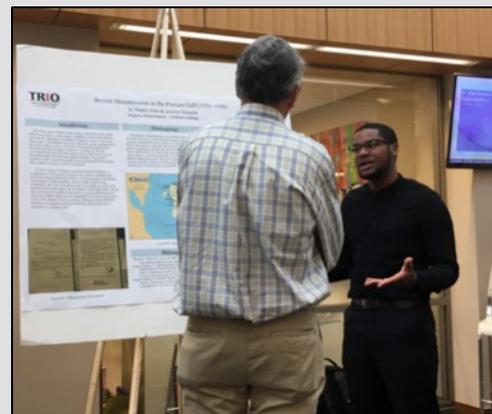
Abstract: We studied the mechanism of Ni-catalyzed C-H arylation. Mechanistic studies are important for understanding reactions in more depth and allow us to learn how to streamline the methods. In-depth mechanistic study of Ni-catalyzed C-H Arylation has not been examined before, thus the exact mechanism is not fully known. Our aim is to find the mechanism of Ni-catalyzed C-H arylation, and we have mainly focused on mesylates. To elucidate the overall mechanism of the reaction, we performed kinetic studies, competition studies, optimization reactions and large-scale isolations.



Faculty Mentor: Dr. Thabiti Willis; Carleton

Dr. Willis received his Ph.D. from Emory University in 2008. He spent two years conducting research on the masquerades of the Yoruba people in Nigeria, serving as a Fulbright scholar in 2006. He has participated in international faculty seminars in Cape Town, South Africa. His courses cover the pre-colonial, colonial, and post-independence periods and include such topics as the slave trade, gender and ethnicity, nationalism, expressive culture and performance, religion and the African Diaspora in the Arab world.

Dr. Willis invites students to approach African history as a journey in collective self-discovery. He and his students explore names, places, events, and practices that may initially seem foreign and tend to carry a stigma of backwardness. As a step toward overturning the sense of Africa as a foreign or backward place, he introduces the historical origins and politics of this perspective. He incorporates secondary literature that identifies it as a consequence of the biases, misconceptions, and exploitations of the continent, whether by westerners, easterners, or segments in African societies for their own parochial interests. Drawing inspiration from humanistic values in many African societies, e.g. "ubuntu" (which means "I am because we are") in South Africa, he cultivates a learning environment in which students may come to see themselves as co-participants in reconstructing the African past. He bridges interactive teaching and international sharing using global web-dialogues with foreign institutions and students to help to cultivate a respectful appreciation of differences and perspectives across cultures.



Jamontè Strawder, 2019
Major: Sociology and Anthropology

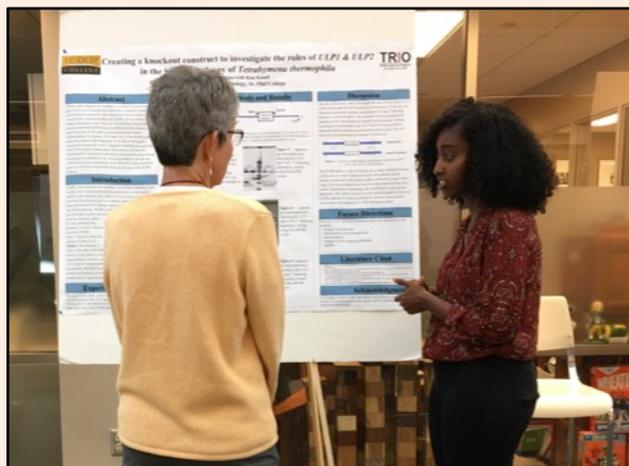
“This summer I completed research and tasks such as cross referencing primary documents with an original dataset, transcribing interviews, and pursuing a related, but independent research question. The highlight was the poster session. Having this experience as an aspiring professor is invaluable because it gives me insight into what it means to present research to an audience within and outside of your department. This summer I worked on honing my ability to utilize resources and learned the value of consulting research librarians, colleagues, and professors from other departments as well. Attending the graduate school workshop was definitely a pivotal moment during the summer. My goal is to become a professor in sociology.”

Research Title: British Manumission in the Persian Gulf (1926-1938)

Abstract: From the years 1926 to 1938, there was an influx of runaway Arab slaves seeking manumission - freedom (emancipation) certificates - in the island country of Bahrain, in the Persian Gulf. From all over Saudi Arabia and the surrounding countries, slaves with stories of neglect or maltreatment traveled to recount their journey to Bahrain in hopes of being granted manumission by the British Agency facilitating the process. In 2013, the manumission documents were collected into a database by Professor Alaine S. Hutson. By offering information about slaves such as their reported origin, gender, and occupation, the database equips scholars interested in the Arab slave trade with a dataset to manipulate and contribute to. Having this information available in such a public way substantiates literature that will broaden the scope of the subject matter allowing for a greater understanding of the nuances of the field. This research aims to investigate the influences of slavery in the Persian Gulf in order to understand the methods used by British agents to document slave narratives during this 12 year span.

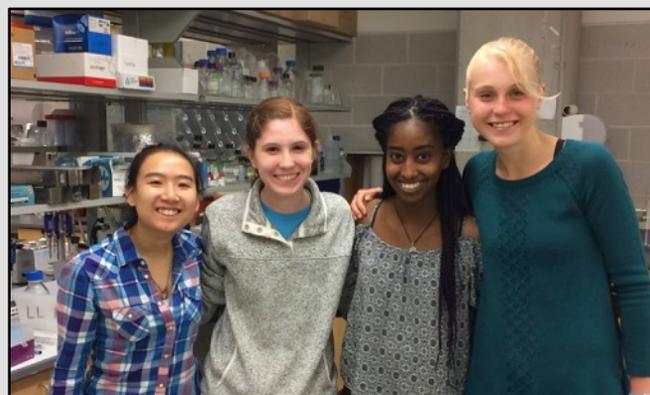
Faculty Mentor: Dr. Kim Kandl; St. Olaf

Dr. Kandl received her undergraduate degree in Biology from Grinnell College and Ph.D. in Biological Sciences with an emphasis in Cell and Molecular Biology from Purdue University. She worked as a graduate assistant at Purdue University, looking at Dynein heavy chains in *Paramecium* and the social impact of biological sciences and plant biology. Her research experience and publications cover a wide variety of topics within the field of molecular biology. Some of her studies looking at dynein genes in *Paramecium* and actin in yeast have been published in *Molecular Biology of the Cell*, *Molecular and General Genetics*, *J. Biological Chemistry* and *J. Cell Science*. Since then she has worked as a professor of biology at Purdue, Grinnell and St. Olaf College teaching courses such as Genetics, Cell Biology and Molecular Biology. Dr. Kandl has also mentored over 25 students who have studied yeast, *Tetrahymena thermophila* and bacteria.



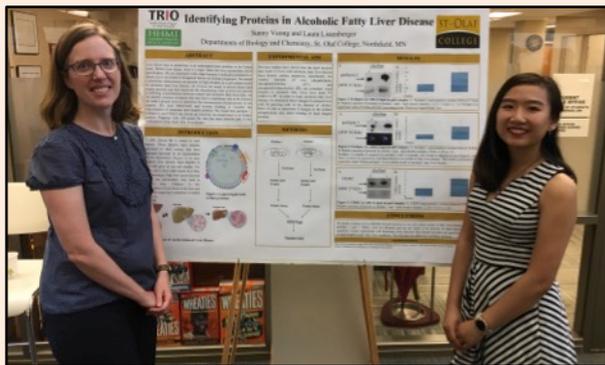
Liya Tessema, 2018
Major: Biology

“I worked with Professor Kim Kandl in the St. Olaf biology department to understand the function of two genes. I really enjoyed the people and the environment I worked in. I feel like I have learned to be more independent while working on experiments and learned to ask questions to better understand procedures. In the future, my goal is to pursue a graduate degree in Cell Biology or Molecular Biology.”



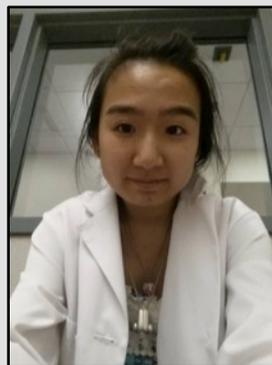
Research Title: *Creating a knockout construct to investigate the roles of ULP1 & ULP2 in the SUMO pathway of Tetrahymena thermophila*

Abstract: SUMO, small ubiquitin like modifier, is a family of proteins known to play a role in post-translational modification of other proteins. So far, most of what is understood about the SUMO pathway comes from studies conducted in yeast. In this study we aimed to develop a better understanding of two genes in the SUMO pathway using the model organism *Tetrahymena thermophila*. To do this, we designed a plasmid containing the sequences flanking each gene. The plasmid was then introduced into *Tetrahymena* and used to knockout the genes through homologous recombination. By observing changes in growth rate, viability and cellular morphology in the absence of these functional genes, we hope to better understand what role they play in the SUMO pathway.



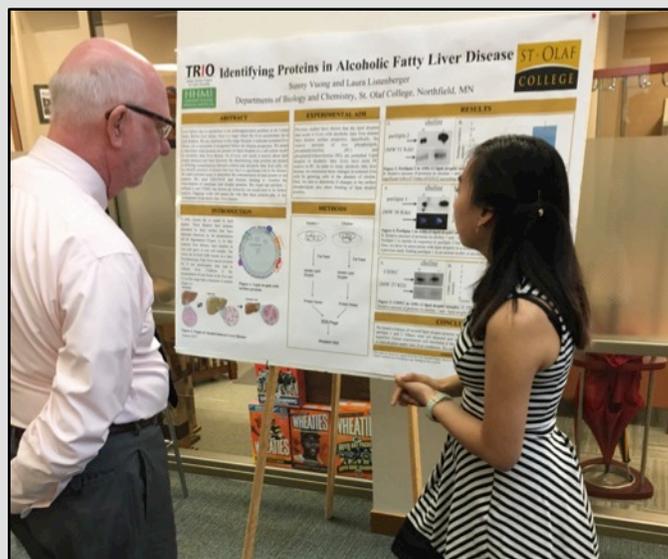
Faculty Mentor: Dr. Laura Listenberger; St. Olaf

Dr. Listenberger is an associate professor at St. Olaf who received a Ph.D. in Molecular Cell Biology at Washington University School of Medicine in St. Louis. Her research interests include how to store excess fat, lipid droplets, and lipotoxicity. She has published numerous articles, most recently publishing an article *Using molecular visualization to explore protein structure and function and enhance student facility with computation tools*. Dr. Listenberger has been invited to give multiple lectures and presentations about her research. Due to her accomplishments, she was awarded with the Janet Anderson Lecture Award, from the Mid-states Consortium for Math and Science in 2015, and NIH Kirschstein Nation Research Service Award for postdoctoral fellowship in 2005-2008. Besides completing her Ph.D., this provided her the credentials to teach and do research as well as mentor students in their own research.



Sunny Vuong, 2019
Major: Chemistry

“This summer, I worked with Dr. Listenberger and two partners on a research project about proteins in Alcoholic Fatty Liver Disease. I was able to improve on my presentation skills, which helped decrease my fear of public speaking. This experience helped me learn more about who I am and what I enjoy doing. Through all of this I learned I love working in the lab and doing research. My future career goal is to work in the lab and analyze health issues.”



Research Title: *Potential Proteins in Alcoholic Fatty Liver Disease*

Abstract: Liver failure due to alcoholism is an underappreciated problem in the United States. Before liver failure, there is a stage where the liver accumulates fat in lipid droplets. We are interested in this stage because it indicates potential liver failure, yet is reversible if recognized before the disease progresses. We aimed to determine what proteins are present on lipid droplets in a cell culture model for alcoholic fatty liver disease. As of now, not much is known about lipid droplet proteins and their functions. By determining what proteins are present in differing concentrations between control and alcoholic fatty liver cells, we can identify proteins of interest that may have a significant role in Liver failure. We used a protein assay to determine the concentration of total protein in our samples. We used SDS-PAGE and western blotting to visualize the concentration of candidate lipid droplet proteins. We found that perilipin 1, Perilipin 2, and CIDEC has shown up; however, we would need to do further analysis. Ongoing work will assess the role that these proteins play in the development of alcoholic fatty liver disease.

Scholars Participating in Off Campus Research/Internships

Jasmin Aramburu, 2019

Major: Social Work

Position: Student Research Assistant

Location: University of IL Urbana-Champaign

Title of Project: Effects of Positive Emotion in Hemodialysis

Faculty Mentor: Dr. Rosalba Hernandez, School of Social Work

“The highlight of my summer was meeting other students of color that hope to accomplish many things in life; they made me realize that graduate school is worth pursuing. I learned how to read and search for research articles effectively related to my research. I also learned how to manage my time, how to be in charge of my own schedule and learned more about the graduate school process and got a taste of what it is like to be in graduate school. I hope to earn my Master’s degree and Ph.D. I am interested in becoming a college professor but also hope to have hands-on experience related to social work and building human and social capital.”

Emily Hynes, 2018

Major: Vocal Performance

Position: Student Research Assistant

Location: University of IL Urbana-Champaign

Title of Project: Contemporary Commercial Music: The Voice of Social Justice for the Marginalized in Musical Theater

Faculty Mentor: Yvonne Redman, Music

“I conducted independent research for which I set my own schedule and my own timeline for completing research. This taught me how to manage my time and hold myself to my own schedule. The summer research experience solidified that I want to go to graduate school at a small university or tight-knit program. My goal is to pursue a Ph.D. in Musicology/Music History and become a musicology professor at a private college.”



Ajibola Opakunle, 2018

Major: Biology

Position: Student Researcher

Location: Blandy Experimental Farm in Boyce, VA

Title of Project: The Effect of Climate Change on Butterfly Wing Morphology

Faculty Mentor: Dr. Rebecca Forkner, Biology

“This summer I studied the Painted Lady butterfly to find out the effect of heat shock and diet had on the wings of a butterfly. We reared 300 butterflies from caterpillars to their adult stage and applied treatments to find significant results. The highlight of my summer was working with 300 butterflies and working with my mentor one-on-one because it gave me the experience of a beginning graduate student. I also learned how to write a grant proposal for my research, something I knew nothing about prior. I also learned how to use a Leica microscope with a photo imaging software while analyzing morphological components using image J. My future goal is to become an epidemiologist.”



**Nadine
Dogbe, 2019**
Major: Biology



Position: Amgen Scholar
Location: National Institute of Health
Title of Project: Participants' Perceptions of the Receipt of a Negative Secondary Finding Report
Faculty Mentor: Umstead Kendall, National Human Genome Research Institute

“Conducting research at the NIH, the goal of my project was to investigate how genetic testing and results affect patients’ lives. My summer project focused on doing some quantitative and qualitative analysis of data collected through several sequencing projects. The highlight of my summer was attending weekly roundtables with guest speakers from NIH and other organizations. The themes of our discussions included: postpartum depression, depression, precision medicine and human genome, addiction, obesity, and mental health. This experience allowed me to learn more about health disparities and how precision medicine can help reduce the gap. In the future, I hope to apply for a Fulbright Research opportunity and ultimately pursue a Master’s in Public Health.”

Dua Vang, 2019
Major: Biology

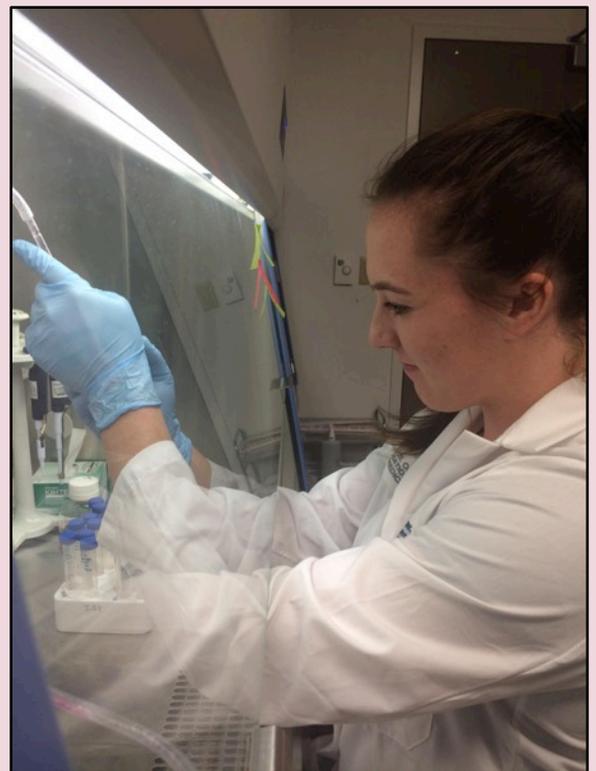
Position: Lab Analyst
Location: MN Department of Agriculture

“My main responsibility consisted of performing tests on plant samples as they are submitted into the Plant Pathology lab for plant disease testing. The highlight of my experience was working with the people in the lab. It was inspiring to hear their stories and relate to their passions and interests. I have also acquired useful lab skills. I was also able to connect with an Ole alum working as a plant pathologist. My future goal is to pursue a graduate program in microbiology and fulfill my lifelong goal to work for the CDC.”

Margeaux Cohen, 2019
Majors: Exercise Science/Chemistry

Position: Research Intern
Location: Steadman Research Institute
Faculty Mentor: Dr. Johnny Huard, Center for Regenerative Sports Medicine

“I spent the summer working with human muscle derived stem cells. The highlight was attending a research symposium in Houston with my research team. It was amazing to learn about other clinically relevant research from around the country and it was a wonderful networking opportunity. Through my summer research experience I learned the techniques required for successful, thorough cell culture for several types of stem cells, two staining techniques, the western blot procedure, and how to section tissue. This experience made me realize that I would much rather be on the patient and treatment side of this field. I am currently interested in a career in orthopedic medicine or physical therapy. I am also interested in pursuing a career in military medicine with the navy.”



Sydney Gieger, 2018

Majors: Biology/Math

Position: Student Research Assistant

Location: University of Costa Rica

“This summer I researched breast cancer, interviewed women, and took DNA samples for genetic testing. The goal was to gain an understanding of genetic and non-genetic risk factors associated with breast cancer in Costa Rica. All of the work was performed in Spanish, giving me the opportunity to improve my language abilities. My favorite part of the experience was meeting the patients, practicing my Spanish, and learning about the Costa Rican culture. I really enjoyed my time working in a lab that exists on the border of science and medicine. I had the opportunity to ask questions and explore the unknown as a scientist, while also improving my ability to communicate with and understand patients as a physician. I would love to have a career that embodies both of these things. I am interested in earning an M.D./Ph.D. and working as a physician-scientist.



Tamira Fuentes, 2019

Majors: Psychology/Spanish

Position: Community Corp Volunteer Facilitator

Location: Lurie Children’s Hospital

“This summer I traveled throughout Chicago facilitating workshops and advocating for childhood safety. Alongside hospital staff I taught parents and children the importance of poison control, window safety, bike safety and nutrition. The highlight was getting to branch out outside of the South side of Chicago and host events in the North side. Through this experience I have gotten better at facilitating events and public speaking. I know that I want to work with families in the future as I enjoy interacting with children and their parents. I am considering a career as a child life specialist and pursuing child and family studies in graduate school. Graduate school will help me develop the knowledge and skills that are needed in order to help those in need and help create a different image of what ‘ability’ and ‘able’ means.”

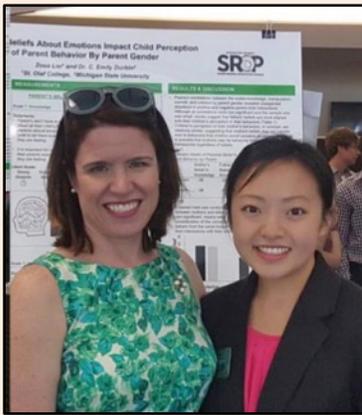
Taylor Okonek, 2018

Majors: Math/Religion

Position: Data Science Intern

Location: Windlogics

“This summer I conducted a sensitivity analysis of a battery control algorithm, measuring the impact of various issues arising in operation on financial returns. I learned a great deal about the energy industry and the future of renewables. I have a better understanding of what the daily life of a data scientist in industry looks like. This experience has given me a clearer idea of what I look for in an employer and a work environment. I plan to pursue my Ph.D. in either statistics or biostatistics and will be applying to schools in the fall. Graduate school is important to me because I want to do meaningful work and research. I want to do novel and cutting edge work that is intellectually challenging.”



Zoua Lor, 2019
Major: Psychology

Position: Student Research Assistant
Location: Michigan State University
Title of Project: Parents' Beliefs About Emotions Impact Child Perception of Parent Behavior by Parent Gender
Faculty Mentor: Dr. C. Emily Durbin

"This summer, I had the privilege of conducting research with Dr. C. Emily Durbin as a participant in the Summer Research Opportunities Program, researching children's perception of parent behavior in relation to parents' beliefs about children's emotions. In addition to writing a research paper, creating an infographic, giving an oral presentation, and presenting at a poster symposium, I assisted data collection as a part of an ongoing longitudinal study in Dr. Durbin's lab since the 1980s. My responsibilities consisted of setting up experiment episodes, completing informed consent with family members, and interacting with children as an experimenter. Having acquired two different off-campus summer research experiences now, I have learned a great amount about myself that I could not have learned otherwise, and I have grown more confident in the academic and vocational interests that I will pursue in graduate school. Thanks to the TRIO McNair Scholars Program, I have learned how to take advantage of opportunities that arise, such as networking with faculty from all over at research conferences, maintaining professional relationships at both my home institution and my summer research institutions, and initiating conversations with others whom I would like to learn from. These out-of-class opportunities to develop as a scholar could not have been possible without the guidance of the TRIO McNair Program! My goal is to pursue a Ph.D. in Counseling Psychology."

Jewel Lee, 2019

Major: Biology

Position: Science SI Leaders/T.A.
Location: TRIO Student Support Services (SSS) Program, St. Olaf College

"The goal of SSS is to help students transition to college. I ran SI sessions every day and assisted in study hall and tutoring in the evenings. The highlight of the summer was being able to help students understand the ideas and concepts in class and seeing the students mature and build college skills. This experience helped me learn how to teach, facilitate discussion, and explain concepts to others. Working for SSS inspired me to not only focus on my goals but also to make a positive impact on others along the way. My goal is to attend optometry school to become an optometrist."

Prince Kendema, 2018

Majors: Economics/Japanese

Position: Business System Analyst
Location: U.S. Bank

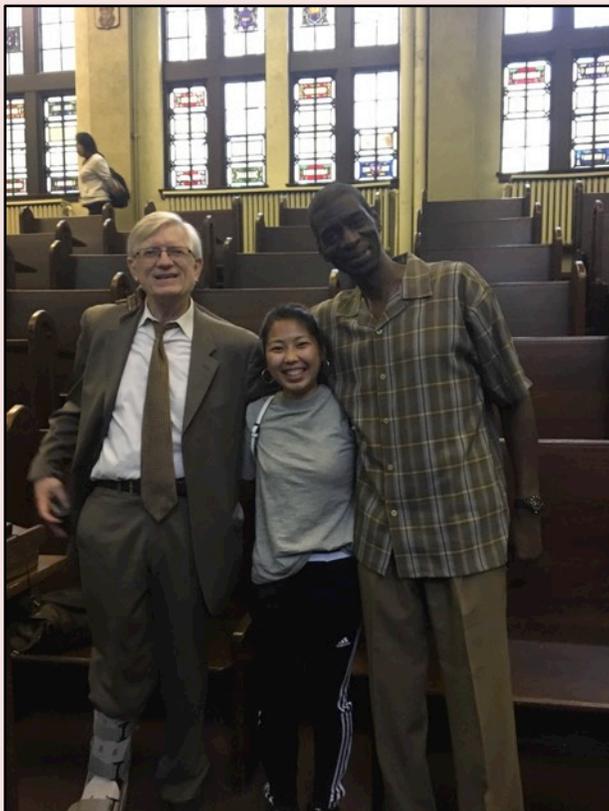
"This summer I was able to assess technology needs for U.S. Bank to determine where improvements can be made. I was able to work in group and individual environments to expand skills with hands-on assignments or projects addressing business problems. The highlight of the summer was our professional development sessions. I reviewed my resume and participated in mock interviews. I was also able to hear keynote speakers talk on building your personal brand and always seeking strong opportunities. Communication was the biggest skill that I acquired during my experience. I also had the chance to speak to U.S. Bank senior leaders and work with employees on various projects. This experience made me want to pursue a career in strategic planning and pursue an MBA in business school."

Tracy Xiong, 2018
Majors: Asian Studies/Psychology

Position: Case Manager Intern

Location: Engage Chicago (affiliated with Northwestern University), Thresholds Young Adult Program (YAP)

“My summer consisted of class and field experience on civic engagement in Chicago, weekly topics ranged from segregation, public housing racism & resilience, education, gun violence, etc. Every week we met with different organizations and learned about their work. In addition to this I interned with Thresholds YAP, where we helped youth manage their mental health and becoming independent. One of the highlights was learning about Chicago and it's rich neighborhoods, history, and culture. I learned about the power of organized people and how important it is to be involved or educated on current events, news, and politics. I also learned how to work and interact with youth with mental illnesses, DCFS system, and how education, public housing, poverty, racial issues, and various other issues are interconnected. I want to use my knowledge and education to help those who are struggling gain power and graduate school is vital to helping me do that.”





Other Scholar Experiences

Marnicia Johnson, 2018

Majors: Psychology/ESL/American Studies

Location: Study Abroad in Argentina

Karina Mojica, 2019

Majors: Psychology/Spanish

Location: Consuelo Lee Corretjer Day Center – Puerto Rican Cultural Center, Volunteer

Diane Vargas, 2019

Major: Environmental Studies

Location: REU in Sustainable Land and Water Resources at Salish Kootenai College - Montana



A special thank you to **ABBEY SMITH**, TRIO McNair alum, for all of her help this summer as our McNair Program Assistant!

We wish you all the best in graduate school in the fall!

