

McNair Scholars Program VOLUME 27: SPRING 2020

CONGRATULATIONS TO THE SUMMER 2019 MCNAIR COHORT ON
COMPLETING THEIR RESEARCH AND PRESENTING AT THE UNIVERSITY
OF NEW HAMPSHIRE ANNUAL RONALD E. MCNAIR SCHOLARS
SYMPOSIUM & THE UNDERGRADUATE RESEARCH CONFERENCE



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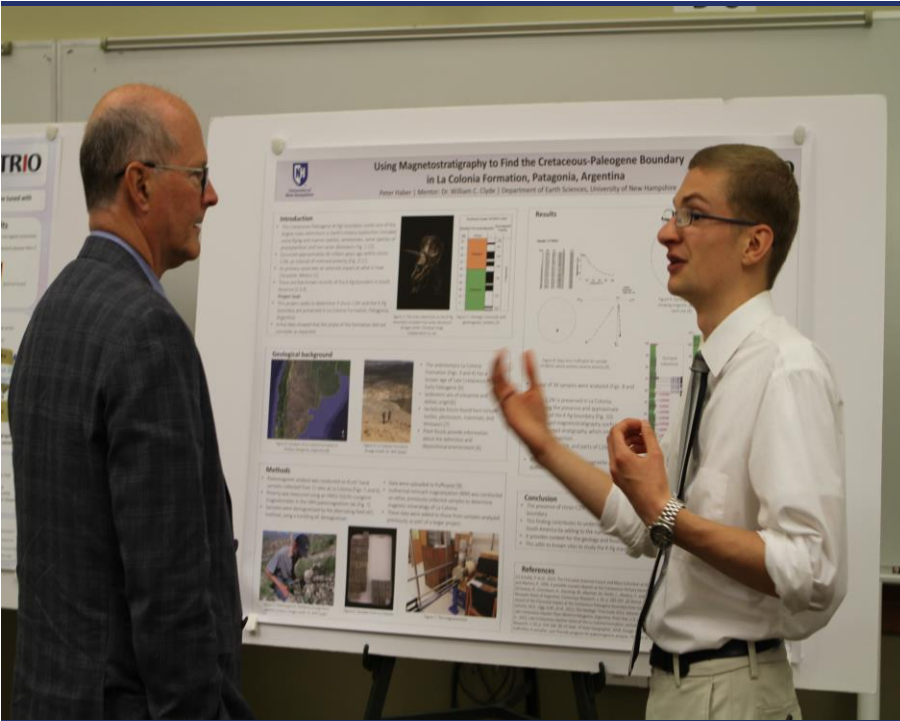
2020 Publications

Author: Peter Haber ('21)

Major: Earth Sciences

Journal: University of New
Hampshire Inquiry

Article: "Using
Magnetostatigraphy to
Find the Cretaceous-
Paleogene Boundary in
La Colonia Formation,
Patagonia, Argentina



Author: Hamida Hassan ('20) &
Dr. Vernon Brooks
Carter

Major: Social Work & Women's
Studies

Journal: Education & Urban
Society

Article: "Black and White
Female Disproportional
Discipline K-12"



AWARDS & REGONITIONS

Congratulations Ashley Doukas, PhD for receiving the **2020 NEOA Achiever Award**! This award is given to outstanding graduates of New England's regional educational opportunity programs, TRIO and other educational opportunity programs alike. Dr. Doukas is an alumna of three TRIO programs at UNH: Talent Search, Student Support Services and McNair.

Congratulations Biyu Wang for receiving this year's **Paul College Student Excellence Award**. The award is given to a graduating senior on the basis of overall excellence in academics, leadership, service, and character. Biyu is a current McNair scholar and UNH undergraduate student double majoring in Finance and Marketing.

McNAIR ALUMNI SPOTLIGHT



Anna Haber
2018 McNair Summer
Participant

Anna Haber is a first year PhD student in the Horticulture program/department at Michigan State. Anna's faculty advisor is Dr. Robert VanBuren. Anna was asked about her experience as current graduate student.

Are you on a Fellowship? Assistantship?

I am on a university fellowship this year, but next year I will be on a research assistantship. I am also part of an NSF Research Traineeship program that promotes the integration of plant and computational sciences, and will be funded through that fellowship during my fourth year.

Why did you choose this field of study? Was it your original plan?

My current fields of study are computational plant science and abiotic (i.e., non-biological: drought, salt, cold) stress biology. I've wanted to study plant responses to abiotic stress since my senior year in high school, when I found out scientists could improve crops' drought tolerance; I immediately thought, "Wow, I want to do that!" Five years later, here I am, working on drought tolerance like I said I would.

The way I work on drought tolerance has changed over the years. My McNair project started as genetic engineering, but to get there I had to do a lot of physiology and biochemistry, which I ended up really enjoying. Now, I work with computers to study large-scale datasets, identifying genes and gene networks that may be involved in drought tolerance. So my research has gotten more basic as I've gone along, and although it wasn't my original goal, I really enjoy it now!

What are your professional goals? What do you hope to do when you obtain your degree?

All I know is that I want research to be a significant part of my job! I'm currently exploring my options, which include tenure-track (professor) and non-tenure-track (e.g. lab tech, research assistant professor) academic positions, as well as jobs in the agricultural biotechnology industry, nonprofit research centers, and the USDA Agricultural Research Service. I plan to do an internship in industry during my Ph.D., and will probably do a postdoctoral fellowship after my Ph.D.

What is your current research project?

Right now, I study the "resurrection plant" *Eragrostis nindensis*, which can lose over 90% of its water, sit that way for months, and then rehydrate as soon as it rains. One of my experiments will determine how *E. nindensis* responds to cold stress and to drying out in the cold, and a future experiment will study how this species reacts to salt stress. My basic question is: Does extreme tolerance to one stress confer tolerance to a different stress, or two stresses at once? This is important to know because scientists usually study only one stress at a time, but in agricultural fields and natural environments, plants often experience multiple stresses at once. If *E. nindensis* proves highly tolerant to multiple stresses, it could be a source of genes for engineering more stress-tolerant crops.

Do you hold any other positions or roles on campus?

Not so far, though I might seek an officer position in the Horticultural Organization of Graduate Students next year.

What do you do for fun?

I read a lot of books, and sometimes write books too. I also like to play board games and go hiking with friends.

What advice would you offer an aspiring researcher?

Be confident in yourself! If you do research, you are a researcher; if you do science, you are a scientist. You can still be a scientist/researcher even if you are an undergrad. That being said, research can be very stressful; try not to place too much importance on it, and make sure to step back and enjoy the process. You're doing great things; have fun with them too!

McNAIR ALUMNI SPOTLIGHT

Hayden Proborowski is finishing a 5-year accelerated master's program in Political Science at the University of New Hampshire. He was asked about his experience as current graduate student.

Are you on a Fellowship? Assistantship?

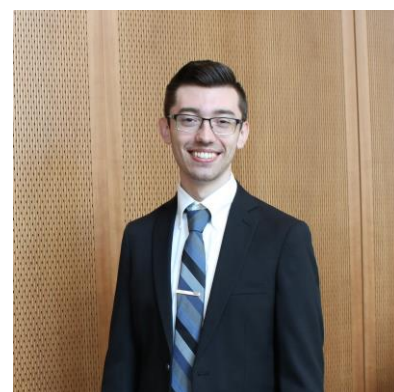
I am on a graduate assistantship.

How far along are you in your current degree program?

I will graduate from the MA program in May 2020.

Why did you choose this field of study? Was it your original plan?

I was originally an Economics major and had wanted to work in finance. I chose Political Science because understanding political processes is vital to comprehending any major issue or event and can provide avenues to seek a lasting change or impact on your community.



Hayden Proborowski
2018 McNair Summer Participant

What is your current research project or focus in your current program?

My Master's thesis is about the interaction between the Ukrainian Greek Catholic Church and Ukrainian nationalist groups in their attempt to form a religio-national identity during the interwar period. Since religious institutions and nationalists failed to fully cooperate in Ukraine during this period, Ukrainians could not harness a unified national identity in the postwar era. This research is useful in judging the fractured nature of the Ukrainian identity today, particularly in understanding the genesis of the 2014 Ukrainian Revolution.

What are your professional goals?

My goal is to become a university professor.

What are you plans for after obtaining this degree?

I plan to take a break this summer and get ready for my transition to Indiana.

What PhD program are you enrolling in the fall and at which institution?

I am enrolling in the Political Science Ph.D. program at Indiana University Bloomington in Fall 2020, specializing in the Political Theory subfield.

Did you receive a Fellowship or Assistantship?

I will receive the Ronald E. McNair Graduate Fellowship while enrolled at Indiana University Bloomington.

Who will be your faculty advisor?

My faculty advisor will be William Scheuerman.

Do you hold any other positions or roles on campus?

I currently hold no other positions or roles on campus.

What do you do for fun?

I like to read, play chess, and explore the outdoors.

What advice would you offer an aspiring researcher or a current McNair scholar?

I would recommend creating a strong relationship with your advisor. Choosing Professor Dante Scala as my McNair mentor was a huge help because he could provide guidance, motivation, and support throughout my research. Also, never be afraid to ask for advice or to ask questions: there are lots of doors that can be opened simply by asking about it.

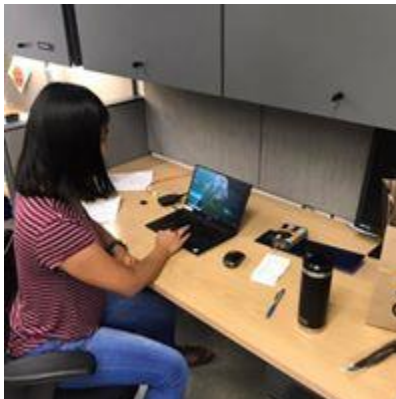
NATIONAL CONFERENCES & RESEARCH



Left Photo: Peter Haber ('21) presents his research virtually at the UNH Undergraduate Research Conference, April 2020

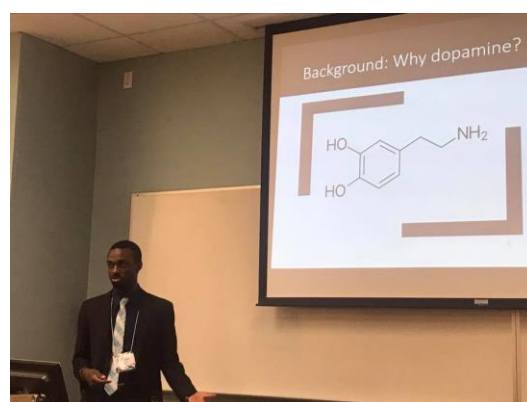
Middle Photo: Kimberly Gravlin ('21), Tammy Gewehr (Director), Kaylan Williams ('20) & Hamida Hassan ('20) attend the McNair Research Conference at Baylor University, September 2019

Right Photo: Kaylan Williams ('20) presenting her research at the McNair Research Conference at Baylor University, September 2019.



Left Photo: Hamida Hassan ('20), Biyu Wang ('20), Stephanie Lo ('20) & Selina Choate (Associate Director) attend the Institute on Teaching and Mentoring Conference in Atlanta, GA, October 2019

Right Photo: Stephanie Lo ('20) spent last summer working on a research project under the guidance of Dr. Mahta Moghaddam at the University of Southern California School of Engineering and Biomedical Engineering.



Left Photo: Julian Maduro ('21) presents her research at the McNair Research Conference at UCLA, July 2019

Middle Photo: Curtis Linton ('21) & David Temeng ('20) attends the McNair Research Conference at UCLA, July 2019

Right Photo: Jonathan Cooper ('20) presents his research at the McNair Research Conference at Florida International University, October 2019

CONGRATULATIONS GRADUATING McNAIR SENIORS



Stephanie Lo, Electrical Engineering

Faculty Mentor: Dr. May-Win Thein

Research Project: My McNair summer research, conducted under the guidance of Dr. May-Win Thein (Department of Mechanical Engineering), was entitled "The Design and Development of a Modular Robotic Control Board for Multiple Applications." It focused on analyzing the electrical systems of multiple robotic platforms to investigate the possibility of modularization of the electrical control boards.

These robots are part of a larger project whose main purpose is to implement particle swarm optimization algorithm to create an efficient and collaborative swarm of robots working towards a common purpose, such as terrestrial mapping. A modular control board would lower costs and allow for each swarm platform to be replicated more easily. However, due to the different data processing requirements of each platform, only a portion of the electrical system could be modularized, such as the power and actuation systems. The controller and sensors components would have to be designed based on the specific platform.

Highlights: Throughout my time in McNair, I was able to attend four amazing conferences. Through those conferences, I was able to develop professionally and develop relationships with my fellow McNair scholars, both from UNH and other universities. My favorite conference to attend was the Institute on Teaching and Mentoring conference in Atlanta, GA. At the conference, I was able to talk to and listen to stories from current graduate students and students who had already obtained their degree, which helped reinvigorated my drive to apply and attend graduate school. While McNair was a huge help in preparing me for the future, McNair also provided me amazing opportunities outside of academics. One of my favorite experiences was participating in a cultural event where we did a ziplining/high ropes course. While I am not great with heights, it was fun to get out of my comfort zone and spend time with other scholars.

Future Plans: After graduating from UNH, I will be attending graduate school at the University of Southern California in Los Angeles, CA. I will be pursuing a Ph.D. in Electrical Engineering and working on research in the area of applied electromagnetics.



Clio Walsh, Philosophy

Faculty Mentor: Dr. Charlotte Witt

Research Project: This research investigates the process of essentializing others. Essentializing entails observing the traits of others and assuming some of those traits to represent something deeper and essential about the individual. These traits are viewed as crucial to the individual's identity and explanatory of them in a way that allows for extrapolating additional, unproven information about the individual. Because it is assumed that these traits can provide such supplementary information, they are given undue weight in the overall understanding and estimation of a person. This excessive concentration on and potential overvaluation of select traits results in the reduction of the individual to

said traits. This reduction can lead to certain moral harms, due to the issues inherent in possessing any limited view of others, and exacerbated by the extent of the limitation.

Highlights: My experience with the McNair Scholars Program has been exceptional for too many reasons to list here, but chief among them the people I have gotten to work with: the Summer 2019 cohort, Tammy, Selina, Helen, and all of the McNair staff, and my mentor Dr. Charlotte Witt have all been truly wonderful. The opportunity to truly immerse myself in research was invaluable, and has really helped me in deciding on my path going forward.

Future Plans: Beginning Fall 2020 I will be working towards earning my Master's of Social Work at the University of Michigan. I hope to put this degree to practical use in furthering the pursuit of social justice, before continuing to pursue a PhD.



Francis Gesel, Exercise Science

Faculty Mentor: Dr. Dain LaRoche

Research Project: My McNair summer research project investigated the ballistic and static stretching influence the material and contractile properties of the plantarflexor muscle-tendon unit and subsequent counter-movement vertical jump performance. This research was made possible through the guidance of Dr. LaRoche, my mentor for the project, and assistance by Emily Morenz, a recent graduate from the UNH Exercise Science major. As a team, we learned the experimental protocols, recruited participants, collected data, analyzed results, and met many new people who are scientifically referred to as “subjects.”

Highlights: Being awarded the “New England American College of Sports Medicine Student Investigator Undergraduate Award” at the 2018 annual ACSM Fall Conference was the highlight of my McNair experience. Although this singular event stands as the highlight, the steps that led me to present the research serve as the memorable experiences of being a McNair Scholar; long hours working in the lab collecting data, figuring out how to tell a coherent story given quantitative data, writing research abstracts, and meticulously composing presentations that I’d practice until it was “second nature.” While these steps were not all enjoyable, they stand in my mind as acts of discipline and perseverance necessary to actualize the full potential of the research.

Future Plans: Pursuing graduate school in exercise physiology, a doctorate in physical therapy, or a medical degree currently stand at the forefront of my post-UNH plans. I am awaiting a response from graduate admissions at McMaster University, but until then, my choice to pursue a MS or PhD in exercise physiology this coming Fall remains uncertain. On the other hand, the route to achieving a doctorate in physical therapy would entail taking a gap year during 2020-2021, where I would to work in a physical therapy setting to build up my insight to the profession and my application for physical therapy programs. Similarly, if I pursue a medical degree, I will take a gap year during 2020-2021 where I will take prerequisite courses for select medical schools, volunteer in medical facilities, and study for the MCAT to gain acceptance into medical school for the 2021-2022 year.



Hamida Hassan, Social Work & Women’s and Gender Studies

Faculty Mentor: Dr. Vernon Brooks Carter

Research Project: The school-to-prison pipeline represents an educational environment that allows public schools to push many at-risk children out of school and into the juvenile justice or the adult criminal justice system. Consequently, this study explores the disproportionate rates of discipline when comparing Black and White female students in the national public-school system. Specifically, this research explored discipline outcomes for Black and White female students in kindergarten through 12th

grade in five of the best academically performing states in the United States compared with five of the worse academically ranked states in the United States. Using the Civil Rights Data Collection of 2013-2014 data, the exploration found Black female students were disproportionately suspended compared with White female students in both the high and low academically performing states. Similarly, Black female students experienced disproportionality rates (overrepresented) compared with White female students for school-related arrests. Overall, the disproportionality rates for Black female students suspended and arrested compared with White female students were higher in the academically higher-ranked states.

Highlights: Joining McNair was one of the best decisions I’ve made. From the day that I’ve officially become a McNair scholar, I have had nothing but great opportunities and fun. The very first McNair social event I went to was a play called Jersey Boys in Boston. It was one of the best experiences I had. It was the first time I slept in a hotel room and I got to do it with my friends. I loved every one of the McNair conferences I’ve been too. But my favorite one overall was the SAEOPP conference in Atlanta. It was such an amazing experience, being surrounded by people of color who wanted me to succeed, who wanted to listen to my story and loved my research topic. I am so glad that I was part of the 2018 summer cohort. The people in my cohort were very supportive and always found things to do for us. More importantly, I got the best mentor.

Future Plans: 4 years of attending the University of New Hampshire (UNH) was not enough for me. I am happy that I am done with my undergraduate degree but I am not yet ready to leave UNH. This summer I begin my graduate journey at UNH. UNH has a one year Masters of Social Work program that I am part of.



Hannah Nordstrom, Psychology

Faculty Mentor: Dr. Victoria Banyard

Research Project: My McNair summer research project investigated how the perception of school climate factors may influence bystander intervention in high school students. In person surveys (N= 996) measured school climate factors including the student's perception of school opportunity and involvement, school authority, and student autonomy and independence. The purpose and overall goal of this study was to ultimately gain a better understanding as to why high school students may be more or less likely to intervene in instances of sexual violence, and to explore the role that school climate may have on bystander behaviors. The results of this study ultimately highlight the importance of future research in order to further understand the role that the perception of school climate may play

in producing positive bystander behaviors especially among more diverse student populations.

Highlights: There were so many aspects about McNair that made my experience so special, but for me, the people I got to know and meet throughout this program made it all so memorable. All the McNair scholars, staff, and mentors that I've met along the way will always hold such a special place in my heart. Individuals involved with McNair are truly one of a kind - they are without a doubt the most supportive, kind and amazing people I have ever met. I am thankful everyday that I've been able to cross paths with so many of you, it's truly been a blessing. During the program my favorite memory was actually when I celebrated my 21st birthday in Atlanta, Randy and my cohort surprised me with a Key Lime Pie and sang happy birthday to me. This little memory has since stuck with me and it was really clear to me that I was surrounded by so many people that cared for me not only as a scholar, but as a friend as well - it was really a heartwarming moment that I'll always keep close to me.

Future Plans: My future (post-UNH) plans include taking a year or two off to gain more research experience before I further my education. Ultimately, I hope to pursue a PhD in Clinical Psychology with a focus in Trauma when I do decide to further my education. Right now I am working as a Clinical Research Coordinator at Brigham and Women's Hospital in Boston. I'm working in a pain management lab within the department of Anesthesiology, which is currently studying the psychosocial influences on chronic pain, and nonpharmacologic treatments involving mindfulness meditation and cognitive behavioral therapy (CBT) in order to reduce chronic pain and reliance on opioid medications. I hope to learn and continue to strengthen my skills as a researcher in a more clinical setting until I decide to pursue a higher degree!



Julissa Freund, Environmental Engineering

Faculty Mentor: Dr. Jim Malley

Research Project: During the summer of 2018, I had the opportunity to do research under Dr. Jim Malley because of the McNair Scholars Program. I researched how environmental engineers can overcome societal, economical, and environmental challenges in order to deliver clean, safe, and affordable drinking water to Rollinsford, New Hampshire. As a result of our findings, we provided Rollinsford the data to conclude that their best option was to go with the addition of a 50:50 blend by weight of 50% ortho- and 50% poly- phosphate which is a well-known and effective corrosion inhibitor approved for drinking water systems. As a result, their system went from lead and copper violations

to complying with all lead and copper rule to finally having a system where almost all samples are now non-detect for lead and copper concentrations.

Highlights: The McNair Scholars Program has led me to have many extraordinary opportunities and meet many amazing people. A huge highlight in my McNair experience is traveling to conferences. Not only was I able to visit five states, I got to do it with some of my McNair buddies. I got to make so many connections when at these conferences but also make new memories with the group of people I was with. I will never forget the time I was able to go to Seattle, Washington with Brian. We explored all downtown and had some delicious Mexican food. Or the time I got to California with my McNair Cohort. To many memories to write about but I do have my whole life to now cherish those moments. Thank you so much McNair for changing my life for the better and for giving me a new family in my life.

Future Plans: Post-UNH, I hope to either to go to grad school for my masters or continue with my career in environmental engineering.



Nelson Idahosa, Political Science

Faculty Mentor: Dr. Andrew Smith

Research Project: My Research Project focused on partisan redistricting asking the question, *Did Gerrymandering Affect Congressional Elections post 2010 census?* Considering the role that gerrymandering plays in the electoral process in the United States, and the political discourse concerning the practice, it was prudent to understand if the practice impacted congress and what such impact was. The research focused on the states of New Hampshire, Maryland, North Carolina,

Wisconsin, and Ohio. Each chosen for either being swing states or having a partisan redistricting case in court. The baseline in this research was the difference between party vote in all congressional elections in the states (percentage) in pre-2010 elections and congressional seats won by a party in pre-2010 elections and then comparing that to the outcomes congressional elections post the 2010 redistricting process. A conclusion of the research was that in states like Maryland gerrymandering disadvantaged voters especially in its sixth district.

Highlights: McNair has given me an opportunity to experience academics on a different level. I am deeply grateful to Professor Andrew Smith for all his help and guidance throughout my research. Also, I would like to say a big thank you to Selina Choate and everyone else in McNair who helped me practice the presentation of my research and encouraged me along the way. Your help and guidance inspired me, and I will remain grateful for it. Also, to my McNair Cohort Hamida Hassan and Faith Heredia, I am honored to have learned from you and progressed with you. It was through the help of this people that I was possible to present and win an award from the Undergraduate Research Conference. More so, I cherish the opportunity to present across the country with my cohort and learn from amazing McNair scholars across the country. It was a truly Inspiring experience.

Future Plans: I was accepted to the Political Science Accelerated Master's program at UNH and was awarded a Half Tuition Scholarship by my program as well as a fellowship from the Graduate School. I will be attending in the Fall. After which, I intend to apply to Law School.



Angelique Georges, Sociology

Faculty Mentor: Dr. Catherine Moran

Research Project: For My McNair Scholar's research, I conducted interviews with UNH Alumni and Students regarding how they change language in different social settings (e.g. at work vs. at home, or with professors vs. family). This study focused on those identified as Black/African American, Latinx, and/or Asian, and were/are a UNH student within the past five years. The main goal of the study was to investigate what would trigger a code switch. A code switch, specifically, looks at change in language systems, or the selective use of informal English. From there the study investigated how a minority status individual reacted to a perceived bias or microaggression? Namely, did they stop

speaking a non-english language or did they directly address the microaggression? After that the study shifted from an exploration of minority group interactions with majority group members (e.g. those who identified as caucasian), to one of a study of inter and intra-group interactions.

Highlights: For me what made the McNair Scholar's experience memorable, were my interactions with fellow social science majors, in my cohort. Before starting McNair, I lacked experience in formal research methods in my field of study. Yet, because McNair encouraged peer reviewing each other's presentations, I was able to learn from my peers who already had taken research methods. Likewise, I loved the SEAOPP conferences, and the Black Doctoral Network Conference in North Carolina for that main reason. Moreover, due to the networking at these conferences, I feel like I could grow both as a researcher and as a person. Listening to how my peers conducted research was inspiring and I feel that the presentation competitions at these conferences made me want to try harder academically.

Future Plans: As of now, I have graduated from the University of New Hampshire with a B.A. in Sociology and a minor in French. I am currently applying for the UNH Masters of Educational studies, so that I may become an academic adviser and be as supportive as staff at the McNair program.



Kaylan Williams, Neuroscience & Behavior

Faculty Mentor: Dr. Robert Ross

Research Project: My summer research project looked at how exercise may affect our ability to recall information. Human participants came in for three separate visits over the course of one week. The first visit involved eligibility, determine 40-60% maximum heart rate, and EEG cap size. The second visit involved encoding images using a paradigm I created on E-prime 3.0. Objects were presented on the left or right side of the screen every 850-1250ms and we wanted them to try to remember both the object and the side it was presented on, then 2-3 days later the participants come back in wearing the EEG again and press '1' if the stimuli was previously on the left, press '2' if it was an entirely new stimuli, and press '3' if the stimuli was previously on the right side. Due to COVID-19 only five

participants were able to analyze. None of the behavioral results (accuracy) presented significance but the EEG results showed that after exercising the participants were paying "less attention" (alpha synchrony) and this may be due to the combination of mental and physical exhaustion.

Highlights: I loved having weekly adventures throughout the summer of 2019! We were able to go kayaking, go to the museum of fine arts in Boston, go to the zoo, and even six flags. It was the most exciting summer I have had in a very long time and am forever grateful for the opportunity to explore New England in a new light. I also was able to meet Neuroscience professors and Neurosurgeons at UCLA hospital while presenting my research there this past August, I would have never been given that opportunity if I was not given the confidence from both Selina, Tammy, and other mentors that provided a platform for me to be successful. Not to mention all of the incredible people McNair has blessed me to meet, truly an unforgettable experience.

Future Plans: I have accepted a graduate assistantship at Ball State University in Muncie, Indiana to get my Masters in Clinical Psychology. After completing my masters I would like to apply to medical school. I cannot thank UNH and the McNair Scholars program enough for providing a platform to put me in the position I am today. I am forever grateful for the ability to create my own research project and presenting it to a variety of audiences!



Biyu Wang, Business Administration: Finance & Marketing

Faculty Mentor: Dr. Michael Swack

Research Project: My summer research was a Case Study on Citizen Schools. I wanted to better understand the program's model. They claim by offering middle school students extended time in a day to experience hands-on learning while working with a mentor will enhance their middle school experience while providing the necessarily skills to be successful in the 21st economy. These students are more likely to graduate from high school and college. I wanted to know how Teaching Fellows (mentors) view the program and what they perceive are the student's experiences. In addition, I wanted to know how the 1:1 interviews with the Fellows compare with the official documents Citizen Schools publish on their website and offer to students.

Highlights: My McNair cohort was the highlight. In the summer, we would have 6pm dinners and huddle in the lounge researching or keeping each other company. The way Anupreet and I shared Tan's Coke in a theater, or dancing in the rain with Simfora. Jumping on rocks on a walk with Peter, and the way Kaylan always manage to hide her giggles in class. It was also then we got to hear Adrian's insights and at night, I can hear Julie's laughter from the room next door. Not to mention, all the shopping trips with Lex, working with Clio in the Waysmeet Center, and sneaking candy into the theater with Veronica was a delight. At night, you can catch Curtis singing and cooking something delicious in the kitchen. It's the sense of family that did it for me. The way Jonathan waited for me at the airport and the way David stood up for Kimberly in CA. I wouldn't trade this for the world.

Future Plans: Post- UNH, I will be working as a Research Assistant for two marketing professors at UNH, help run the Paul College Behavior Lab, while being a Data Specialist Intern at Sentient. I am working on securing another RA position with a professor at Northeastern University. In the future, I hope to reapply to get my PhD in Marketing with a concentration in Consumer Behavior and utilize what I have learned in my current and future experiences.



David Temeng, Mechanical Engineering

Faculty Mentor: Dr. Marko Knezevic

Research Project: My McNair Research project over the summer was a manufacturing design research project. Under the guidance of Dr. Marko Knezevic, the objective was to optimize the die geometry of a b-pillar to accommodate for springback. I used the stress and strain data from another research done here at UNH that used an innovative tool to increase the mechanical and cyclic properties of Dual-phase steels. The material

used in b-pillars. I made use of those data to determine the behavior of the blank sheet as it deforms to form the b-pillar.

Highlights: The highlights of the McNair experience have to be all the social events hosted by the graduate peer mentors, Steven and Simone. I enjoyed the trip to Six Flags New England and the lake. Last summer was the first time I went to Six Flags. The experience was exciting and exhilarating! My favorite ride was the "Superman." Kayaking on the lake was relaxing and fun. I was able to spend time by myself and reflect about life, school and research. Not only were the trips nice, I also was in a fantastic cohort. They made being alone on campus in the summer, more bearable. I keep up with some of them.

Future Plans: In the near future, I plan on gaining work experience in the industry. I want to bring to life all the things I learned at UNH. This can either be in a company or at a non-profit organization. In the far future, like 5 years from now, I hope to be in a PhD program and close to completing my dissertation.



Veronica Bodge, Wildlife & Conservation Biology

Faculty Mentor: Dr. Matt Tarr

Research Project: My McNair summer research project was on how field management the previous season and vegetation structure of the field influenced male bobolink (*Dolichonyx oryzivorus*) abundance in fields across southern New Hampshire. During the 2019 nesting season, we conducted vegetation surveys and counts of male bobolinks occurring in 42 fields located in southeastern NH to determine if vegetation conditions could be used to predict which fields were most likely to support nesting bobolinks. Pearson's correlation and multiple linear regression

indicated that fields with high proportion of grass and low portion of litter were those most likely to support an abundance of bobolinks and these conditions were most common on fields managed for hay production. This suggests that hayfields may serve as biological traps by attracting bobolinks to vegetation conditions preferred for nesting, but then nests are likely to be destroyed when these fields get mowed prior to nest completion in late-July

Highlights: My McNair experience was nothing short of amazing. I had a fully funded research experience that I was able to design myself which was great in itself. On top of that, my cohort and I were very close and we got to on social events with each other to get to know each other including, the movies, the zoo, six flags and many trips out to eat. In July, I was able to fly out to Niagara Falls and present my research at an undergraduate research conference and network with other McNair scholars who were presenting their research as well. It was an all-around great summer and experience. I still have the friendships that I made over the summer and I am so thankful to have been able to have this experience in my college career.

Future Plans: My future plans after UNH include complete if an internship with the Greenland Conservation Commission. I will be working in the field to get more experience in my field and learn what I want to do with my degree. After that I plan on going back to school for Master's degree.



Jaylene Velasquez, Health Management & Policy

Faculty Mentor: Dr. Barbara White

Research Project: My research was on the use of stimulant medication and opioid medication by college students. The misuse of both stimulant medication and opioid medications has been of concern for some time and may be growing, especially on college campuses (Drazdowski, 2016; CDC, 2012; ONDCP, 2012). It is critical to investigate both stimulant and opioid medication misuse trends among college students in order to better understand current use patterns, accessibility pathways, and to better prepare intervention approaches. This study explores possible motives, practices, and perceived health effects related to prescription stimulant and opioid use on campus. Results provide insight into students' outlook on misusing prescribed stimulants and opioid medications, and how prevalent their misuse continues to be on campus. Research about drug use on campuses, particularly opioids and stimulants, is critical in educating students about the risks associated with misusing and to implement effective interventions. This research was conducted working alongside my mentor, Dr. Barbara Prudhomme White, PhD, OTR/L.

Highlights: The highlights of my McNair experience involved attending research conferences to present my research study. I was fortunate to have the opportunity to present at SEAOPP McNair/SSS Scholars Research Conference in Georgia, National McNair Scholars Conference at UCLA, and FIU McNair Scholars Research Conference in Florida. I have grown in ways unimaginable both mentally and academically. Most importantly, I am grateful for the continuous support and mentorship that I received as a McNair Scholar. The McNair Scholars program has positively impacted my life and I will treasure the memories with my cohort, advisors, and mentor. Thank you!

Future Plans: Upon graduation, I plan to attend nursing school in the Fall. Until then, I will be working in my field, Health Care Management, in Stamford CT.



Simfora Bangasimbo, Political Science & International Affairs

Faculty Mentor: Dr. Alynna Lyon

Research Project: My McNair summer research project was on the United Nations and female peacekeepers. In 2000 the United Nations Security Council passed Resolution 1325 on women, peace, and security that said that women needed to be protected during conflict because they are the most affected and the resolution also acknowledged that women can make a difference when it comes to peace and security so they need to be involved. For my research I was looking at whether the United Nations has implemented this resolution by increasing the number of female peacekeepers in peacekeeping missions. The United Nations peacekeeping missions have been tainted with reports of sexual and gender based violence (SGBV) committed by peacekeepers, so then I was looking at whether the increase in female peacekeepers has had a positive effect on the numbers of SGBV

committed.

Highlights: The highlights of my McNair experience were in the summer. Although doing the research for 40 hours a week, writing and revising my question, and taking classes was hard and sometimes frustrating, the summer was really fun. My cohort was very nice and supportive, I loved how we helped each other out with presentations, with posters and anything else that was needed. My favorite times were when we had dinners together and the conversations that we had. I also loved our trip to Six Flags, and not just because it was on my 21st Birthday, our picnic at the lake, when we went to watch fireworks, our paid dinners, movies, and my favorite all time thing is when we went to Los Angeles. My McNair summer was very memorable and I am very grateful for the experience.

Future Plans: My future plans are to take a semester or a year off to do an internship and work. After that I plan to continue my education by doing my masters (maybe PhD) in International Relations.



Jonathan Cooper, Bioengineering

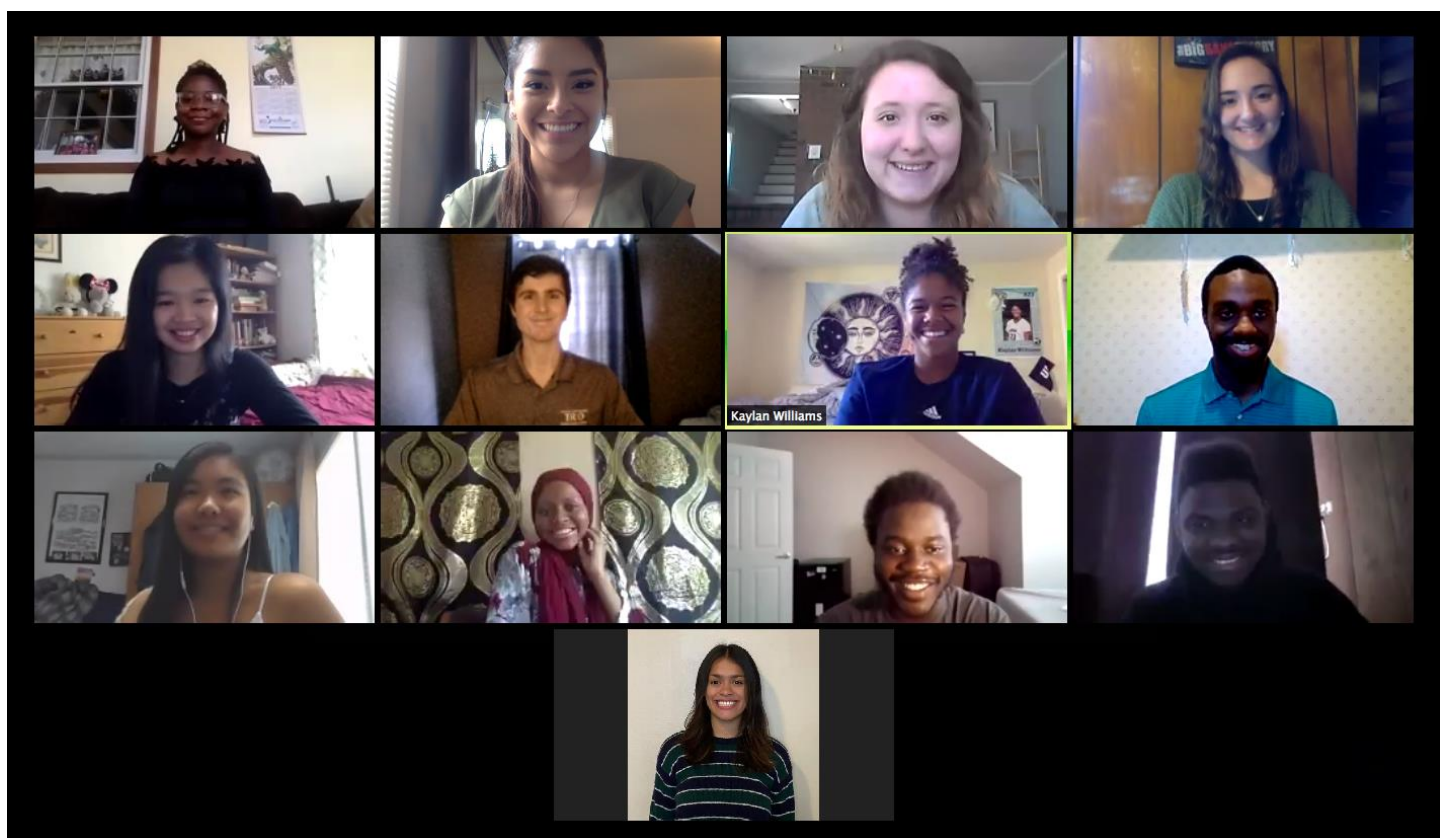
Faculty Mentor: Dr. Edward Song

Research Project: This summer I worked with Dr. Edward Song of the Electrical Engineering Department and his graduate students to build a graphene field effect transistor (GFET) for the selective detection of the neurotransmitter dopamine, which is an important biomarker in maladies such as Parkinson's or schizophrenia. The device utilized aptamers (single-stranded oligonucleotides), a microfluidic channel made of polydimethylsiloxane, and graphene (a carbon sheet one atom thick). As the solution was pushed through the channel, the dopamine molecules would bind to the aptamers, inducing a shift in Dirac voltage that was then recorded. The devices proved to be sensitive up to the micromolar scale, with potential to sense even lower concentrations. The future hope is to use this sensing mechanism in a low cost, cheap, and effective clinical biosensing device.

Highlights: There aren't many words to describe how incredible McNair was. It was one part highly fascinating field work with long hours in a lab, one part school project with many papers to read and a big one to write, and one part summer camp, where you bonded with your cohort and went on adventures together. I learned so many skills transferrable to all parts of life. From the lab work, I learned much about presenting, concisely summarizing complicated topics, project management, and time management. From the classes and McNair paper, I improved in comprehensive reading skills, critical thinking, and test preparation. (Randy's class is why I crushed the GRE!) And lastly, from the bonding of the cohort I made dear friends for life with whom I will forever cherish memories of exploring life with, from Durham to Portsmouth to LA. McNair has made a permanent positive impact on me.

Future Plans: Although I was accepted into a doctorate program, I have decided to place graduate school on hold and take a job with the United States Patent and Trademark Office as a Patent Examiner, while I plot out my next career steps. An advanced degree is still a highly prioritized goal of mine, but in each life the path forward must sometimes be a little out of the ordinary.

2020 MCNAIR SENIOR PHOTO



SPECIAL THANKS TO OUR McNAIR SUMMER INSTRUCTORS



Dr. Catherine Moran, is Principal Lecturer in Sociology at the University of New Hampshire. Dr. Moran teaches the two-credit Introduction to McNair Research course we offer during the summer for our McNair research scholars. She prepares our summer scholars for local and national symposiums and conferences. We would like to thank Dr. Moran for her continued support of the McNair Scholars

Program.

Randy Schroeder, is an Associate Director for TRIO, Student Support Service (SSS). Randy's focus is on academic and personal support and major career decision-making with undergraduates, and preparing for the Graduate Record Exam (GRE) and graduate school. Randy teaches his "GRE Preparation" course for McNair Scholars during the summer research fellowship at UNH. We would like to thank Randy for his continued support of the McNair Scholars Program.



Allison Giannotti, is doctoral candidate in Composition and Rhetoric as well as a Graduate Teaching Assistant. Allison serves as our writing tutor and teaches the Writing seminar for our program over the summer. Allison works with our students to develop and hone critical writing skills our scholars will need to be successful in the program and in graduate school. We would like to thank Allison for her continued support of the McNair Scholars Program.

The McNair Scholars Program wishes to acknowledge the McNair Advisory committee for their service and continued support of our program and scholars:

Faculty:

Dr. Carmela Amato-Wierda, PhD

Dr. Per Berglund, PhD

Dr. John Collins, PhD

Dr. Michelle Leichtman, PhD

Dr. Margaret Greenslade, PhD

Dr. Dennis Britton, PhD

Dr. Lawrence (Chris) Reardon, PhD

Dr. Dennis Howard, PhD

Staff:

Andres Mejia, Coordinator, NH Listens

Randy Schroeder, TRIO- SSS

Jeanne Sokolowski, Office of National Fellowships

Students:

Steven Arias, PhD Candidate, Physics

Allison Giannotti, PhD Candidate, English

McNair Current Stats

Since the UNH McNair Scholars Program began in 1991, it has served over **380** students. Of those, **164** alumni have gone on to receive a master's degree and **37** have earned a PhD degree. **17** alumni have gone on to earn other professional doctorates and **23** alumni are currently in a graduate program.

There are currently **32** UNH McNair Scholars enrolled in the program and **9** Pre-McNair participants are currently on their way

UPCOMING EVENTS

June 1st:

UNH McNair Summer Session Begins

June 4th, 2:15-3:

Virtual Fulbright Workshop with Jeanne Sokolowski

June 10th, 10-4:

Virtual Graduate School Prep Workshop with Dr. Don Asher, hosted by Suffolk University

July 9th, 2:15-3:

Virtual National Science Foundation: Graduate Research Fellowship Program Workshop with Jeanne Sokolowski

JUST PAY IT FORWARD

By Dr. Jim Malley, UNH Department of Civil and Environmental Engineering

Past McNair Faculty Mentor

Why do I love McNair and TRIO faculty staff and students? First, mentoring McNair scholars is my chance to directly give back for all that has been done for me by so many others. I had the greatest parents in the world and I miss them every day. My mom went to the sixth grade and worked her fingers to the bone her whole long life. I remember her getting home at 3am from closing down Gross' Bar and Grill in North Bergen, NJ or later working in the factory in Patterson, NJ in an old building that looked like it was about to fall down. Dad went to WWII "for the duration" came home and then worked six days a week for most of his life as an auto mechanic. I loved going to work with dad because he would let me play on the lifts and in the big trucks he worked on - a paradise for a fairly typical boy of the 1960's. Those two great people gave me examples and words to live by "all work is honorable" or my dad telling me whenever things got kind of hard like my broken leg playing high school football "it builds character Jimmy" and the one that really stuck because they showed it to me every single day "refuse to fail Jimmy". It was also very clear from my 4' 11", fireball, woman made of steel mom that I was going to college to get a better job than her and daddy got or she was going to "kill me". Fast forward through the great mentors I had in K-12, as an undergraduate at Rutgers and then to a PhD mentor who taught me another lifelong lesson "it is all about the students". In one form or another I owe so much too so many people that I could never repay. Even when I would try to thank or repay them, their message always was "**just pay it forward**".



Second, helping, mentoring, and teaching gives and has given me JOY. I have been very fortunate (with a lot of hard-work and a lot of luck) in my career. I have been able to work on exciting research providing clean drinking water to people all over the world as well as doing some very interesting and needed UNH related, national and international professional service. On long days I can even glance at a wall full of awards to give me a lift. BUT seeing the McNair students, other kids like I was when I started college, grow, try, fail, get up, try again and then SUCCEED. I have gotten to watch Miguel Miranda grow in confidence, learn to perform research, improve presentation skills, design a treatment system for his Uncle's school in the Dominican Republic and then go on to work a major water utility in Washington, D.C. Alexandria 'Lexy' Hidrovo help others with her McNair research at UNH, receive numerous accolades and awards including a UNH CYOS honor, go on to graduate school at UNH with a world class mentor, Professor Mouser and receive a coveted NSF Graduate Research Fellowship. I have learned so much from them and from working with this year's graduating senior Julissa Freund. Julissa led a project on the monitoring and control of distribution system lead and copper levels in the community of Rollinsford, NH. Julissa has excelled and she received a 2nd Place Award for her October 2018 presentation "The Societal, Economic, and Environmental Aspects of Providing Clean and Safe Drinking Water to Small Communities" at the FIU McNair Scholars Research Conference.

I urge my faculty colleagues who I know need to balance teaching, scholarship, and service, to mentor McNair scholars, I know first-hand that they will bring to each of your research groups enthusiasm, heart, a drive to learn, a hunger to succeed, as well as ever improving research, writing and oral presentation skills. They will help you get out meaningful papers for high impact journals while presenting your joint work at some of the most prestigious Universities in the US. There will also be untold intangible benefits to your career and to your own personal growth. If you are really lucky and are open too it, they will also BRING YOU JOY!



UNH McNAIR IS MOVING

After spending many years in Stoke Hall, we are finally relocating and moving to the second floor of the Hood House on May 21, 2020. We are thrilled for this opportunity to be more centered on campus.

McNAIR SCHOLARS PROGRAM STAFF

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