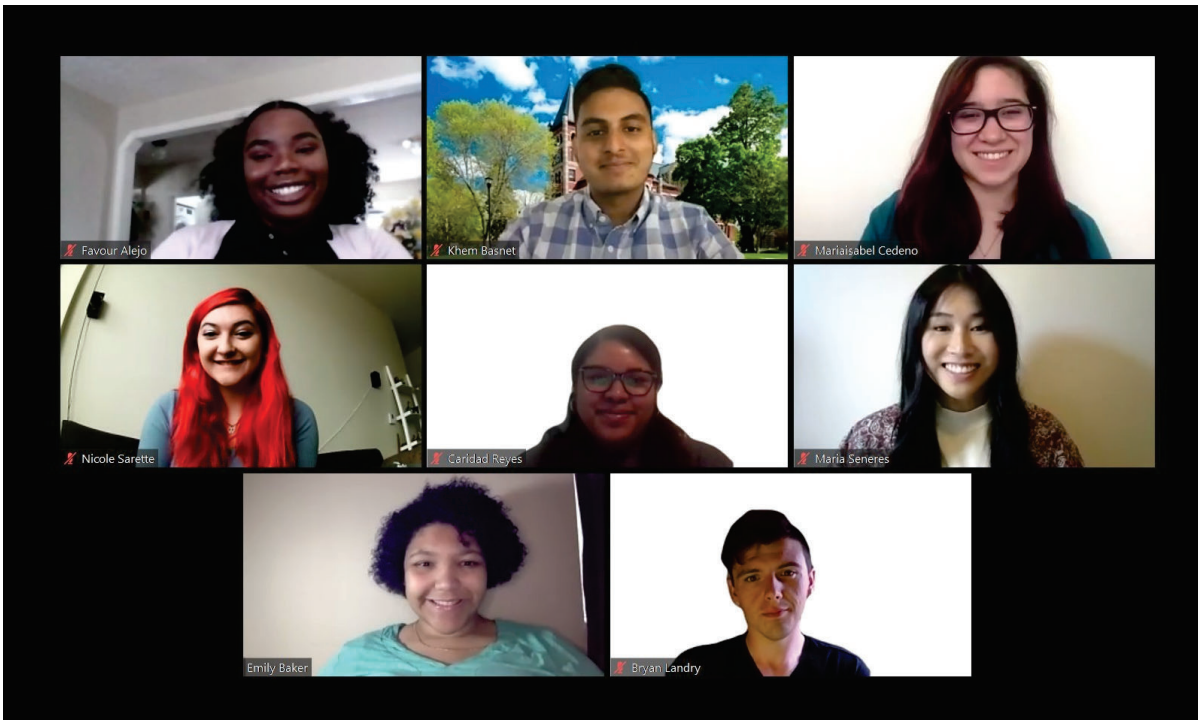
THE ORBITER

UNH McNair Scholars Program



2020 SUMMER COHORT

It has been an incredible journey as our UNH McNair Scholars navigated through the changes that came with the COVID-19 pandemic. This transition to remote learning did not stop our scholars from from participating in the Summer Research Fellowship Program last year.

Congratulations to the summer 2020 McNair Cohort on completing their research and presenting at the University of New Hampshire annual Ronald E. McNair Scholars Symposium & The Undergraduate research Conference.

University of New Hampshire TRIO

UNH MCNAIR NEWSLETTER

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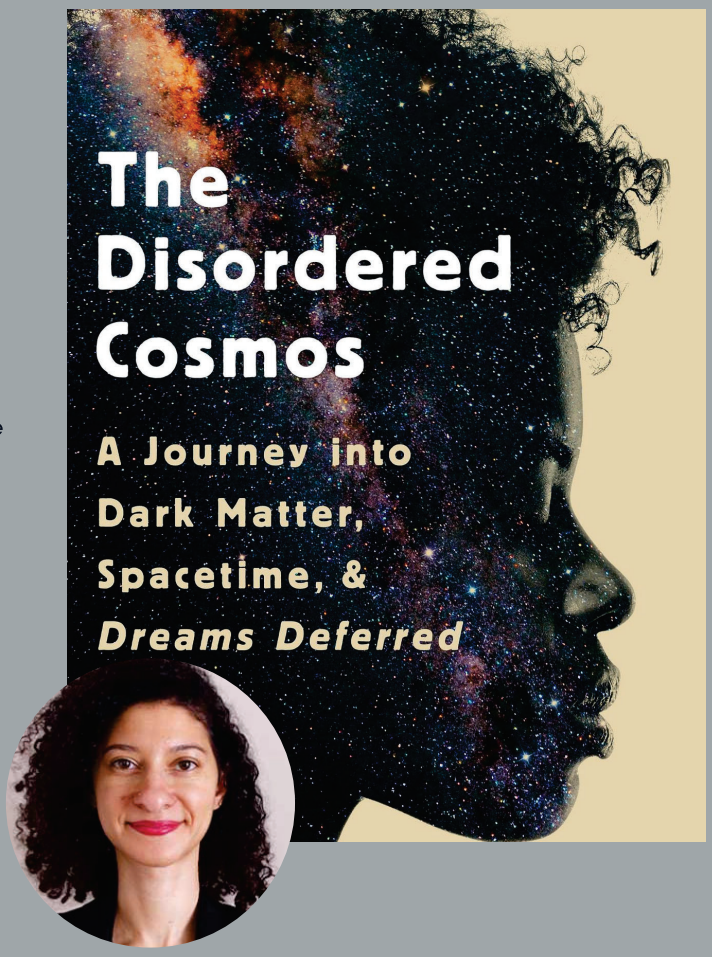
SHOUT OUT TO OUR MCNAIR MENTORS

One of our McNair Mentor's has published her book called, "The Disordered Cosmos- A Journey into Dark matter, Spacetime, & Dreams Deferred". Dr. Chanda Prescod-Weinstein is an Assistant Professor of Physics and Astronomy and Core Faculty in Women's and Gender Studies at the University of New Hampshire.

She is also a columnist for New Scientist. Her research in theoretical physics focuses on cosmology, neutron stars, and particles beyond the standard model. She also does research on feminist science studies, with a specific focus on the experiences of Black women in physics. Essence Magazine recognized her as one of "15 Black Women Who Are Paving the Way in STEM and Breaking Barriers". She has been profiled in several venues, including Tech Crunch, Ms. Magazine, Huffington Post, Gizmodo, Nylon, and the African-American Intellectual History Society's Black Perspectives.

She received the 2017 LGBT+ Physicists Acknowledgement of Excellence Award "For Years of Dedicated Effort in Changing Physics Culture to be More Inclusive and Understanding Toward All Marginalized Peoples." She divides her time between the New Hampshire Seacoast and Cambridge, Massachusetts. She also received the 2021 Edward A. Bouchet Award.



Dr. Judy Sharkey, Professor and Chair of the Department of Education at UNH, was selected as a Fulbright Scholar to Ireland for the spring 2022 semester. Dr. Sharkey will be hosted by the Teacher Education Programme in the School of Education at the National University of Ireland: Galway. The title of her project is: "Exploring multilingualism with educators in Irish schools: Portraits and possibilities".

Dr.Andrew E. Smith, Director of the University of New Hampshire Survey Center, received the John M. Kennedy Achievement Award from the Association of Academic Survey Research Organizations.

UNH McNair Alumni Shersingh Joseph Tumber-Dávila Shares What he is Researching

Joseph's research addresses the ways terrestrial plants interact with the global carbon cycle, and how trees are affected by climate change and resource limitations. His graduate research with Dr. Rob Jackson focused on unearthing the complex dynamics governing the architecture of plant root systems via three distinctly unique avenues: 1) built the largest global database on plant root system size and shape for which we implemented a high dimensional data analysis scheme via R to understand the factors determining the depth and spread of plant root systems; 2) created a novel plant image analysis software and deep learning algorithm to determine the volumetric allometry of plant growth above- and belowground using a Python and Java workflow; 3) led an inter-institutional collaboration to understand the vertical distribution of belowground carbon and the depths of plant resource uptake under resource limitation and competition using stable isotope biogeochemistry at the Northern Forest DroughtNet in New Hampshire.

Joseph's graduate work is supported by the National Science Foundation Graduate Research Fellowship Program (NSF-GRFP), the Ford Foundation Predoctoral Fellowship from the National Academy of Sciences, and the Enhancing Diversity in Graduate Education (EDGE) Fellowship from Stanford University. Prior to attending Stanford, Joseph earned his bachelor's degree from the University of New Hampshire (UNH) in environmental conservation and sustainability with a focus in terrestrial ecology and a minor in forestry. While at UNH, Joseph conducted research in the Terrestrial Ecosystems Analysis Laboratory with support from the Ronald E. McNair Post-baccalaureate Achievement Program. Joseph was also recognized as a Udall Foundation Scholar for his commitment to environmental issues.

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https://sjtumber.weebly.com/educator.html

Joseph was born and raised in Puerto Rico where he experienced the environmental and educational inequalities affecting predominantly under-represented minorities first-hand; therefore, he works closely with under-served communities to increase environmental engagement and expose them to higher education. He created the Pertenecer & Con Ciencia En Las Américas programs to introduce careers in the sciences to primarily Hispanic communities. Joseph is passionate about increasing the involvement of Hispanics in the geosciences, a field where they are the most under-represented, and he aspires to join the professoriate.

Thank you to our 2020 Summer Instructors

Dr. Catherine Moran, is a 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, Goodbye to one of our summer staff. Randy Schroeder's focus was on academic and personal support and major career decision making with undergraduates, as well as preparing them for the Graduate Record Exam (GRE) and graduate school. Randy taught his "GRE Preparation" course for McNair Scholars during the summer research fellowship at UNH. After many years of working for the TRIO-SSS (Student Support Services) and the Center for Academic Resources (CFAR), Randy recently made the decision to transition from UNH to pursue other endeavors. We would like to thank Randy for his many years of service at UNH and his continued support of the McNair Scholars Program. We wish you well, Randy!

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:

Carmela Amato-Weirda
Per Berglund
Steven Arias
Margaret Greenslade
Randy Schroeder
Jeanne Sokolowski
Daniel Howard
Arturo Andrade
Dennis Britton
Michelle Leichtman
Allison Giannotti
Chris Reardon
Andres Mejia

UPCOMING EVENTS

Summer Research Fellowship Program
Hosted by: UNH McNair Scholars Program
Begins June 7, 2021

Virtual McNair and SSS Undergraduate Research Conference
Hosted by: University of Central Florida
June 23-25, 2021

McNair Research Symposium
July 28, 2021
Hosted by: UNH

Weekly Research Seminars Every Wednesday
June 9-July 21, 2021
Hosted by: UNH

WSU Graduate Programs Showcase and "Boot Camp" w/Don Asher
July 13-15, 2021
Hosted by: Washington State University

Undergraduate Research Conference
Hosted by:University of Buffalo
July 22-23,2021

2021 McNair Conference
Hosted by: UCLA
July 27-30,2021

Create Your Own Story Award Recipient

“Curtis Linton, a Wildcat Football Player, a McNair Scholar and UNH Graduating Senior, is the recipient of the Create Your Own Story Award for 2020-2021. Each year, the university features students that have made the most of their experience at UNH. We want to congratulate, Curtis!”

PUBLICATIONS

Francis Gesel had his research published November 16, 2020, "Acute Effects of Static and Ballistic Stretching on Muscle-Tendon Unit Stiffness, Work Absorption, Strength, Power, and Vertical Jump Performance ", in the Journal of Strength and Conditioning Research- National Strength and Conditioning Association.

Alexis Efraimson and Dr. Andrew Conroy had their research published in the NH Department of Agriculture Markets and Food Weekly Market Bulletin on April 28, 2021. The title of the article is “The Prevalence of Cryptosporidium and Giardia in Pre-weaned Dairy Claves in New Hampshire”.

McNair Current Stats

Since the UNH McNair Scholars Program began in 1991, it has served over 380 students. Of those, 177 alumni have gone on to receive a master’s degree and 38 have earned a PhD degree. 19 alumni have gone on to earn other professional doctorates and 25 alumni are currently in a graduate program.There are currently 32 UNH McNair Scholars enrolled in the program.

CONGRATULATIONS 2021 GRADUATING MCNAIR SENIORS

Emily Baker, Anthropology

Mentor: Dr. Svetlana Peshkova, Department of Anthropology

Research

"My research focuses on Indigenous tribes that inhabit New England and how they conceptualized their own identity. Working in collaboration with various Indigenous leaders from around New England, I was able to design and execute a collaborative ethnographic study focused on how modern Indigenous individuals came to understand their identity and history in New England.

My study became part of a larger ethnographic study of Dr. Svetlana Peshkova. Dr. Peshkova along with the head speaker for Cowasuck Band of the Pennacook - Abenaki People, Paul Pouliot are working in collaboration to conduct an ethically and socially conscious ethnographic report."

Highlights

"My highlights of being a part of the McNair programs is developing my interview skills as well as learning about how to decolonize the field of anthropology and how to conduct collaborative research."

Accomplishments

"Some of the accomplishments that I have made as a UNH student are: being a part of the Dean's List for three consecutive years as well as being a student leader and a member of the Beauregard Center student staff since my first year here at UNH. I have also had the privilege of being asked to present and educate individuals on diversity issues."

Future Plans;

"I am attending The University of Vermont in the fall to start to achieve a Master's in Historic Preservation."

Curtis Linton, Mechanical Engineering

Mentor: Dr. May-Win Thein, Department of Mechanical Engineering

Research

"I developed a device to mitigate the negative effects of microgravity on the body by modeling a torque response against a motor to induce muscular fatigue."

Highlights

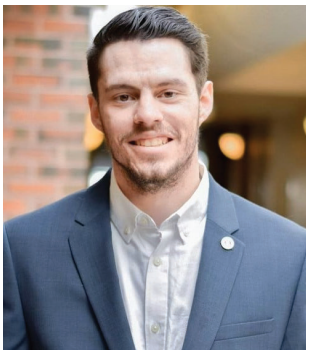
"Presented at UCLA, UT-Austin, and Baylor University conferences. Listed as inventor on a provisional patent."

Future Plans

"Plan to pursue a dual PhD degree in Mechanical Engineering and Computer Science and starting a company of my own."

Accomplishments and Awards

"President of the National Society of Black Engineers at UNH and Region 1 Programs Chair, Student-Athlete, CEPS Student Advisory Board, Sit on the committee's of the Dean of Students and also the Director of Diversity Equity and Inclusion. Recipient of the Create Your Own Story Campaign, Black Lives Matter Seacoast Leaders."



Will Rolfe, Social Work

Mentor: Dr, Robert Ross, Department of Psychology

Research

"I couldn't do any research because of COVID and medical complications that I had. However, the title of my research proposal was, "The effect biological sex has on effective connectivity between the dorsal medial prefrontal cortex, temporoparietal junction, and the dorsal lateral prefrontal cortex during task-switching."

Highlights

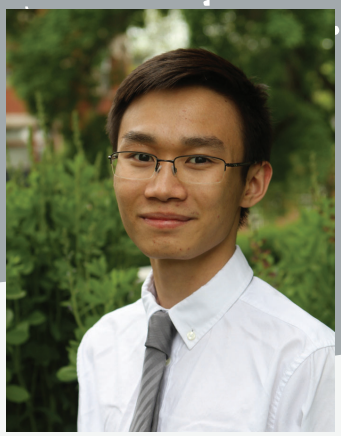
"The highlight of my McNair experience was getting to work with Dr. Ross to not only draft my research proposal, but to also learn about cognitive neuroscience. I am a social work major, so I had to study a lot of neurosciences to be able to draft my research proposal. It was nice to work with a professor who was willing to give me the time I needed to do this."

Future Plans

"I start the advanced standing Master's Social Work (MSW) program this summer. While I am completing my MSW I will be studying for the LSAT and applying to JD/Ph. D programs. My goal would be to get my Ph.D. in clinical psychology."

Accomplishments

"I've learned a great deal while at UNH and have had wonderful opportunities thanks to McNair. I will be graduating with a Bachelor's of Science in Social work with a 3.94 GPA (If this semester ends as I am expecting). I made the dean's list every semester at UNH. I am also a member of the Phi Alpha Honor Society. "



Tan Dao, Physics

Mentor: Dr. Shawna Hollen and Dr. Jiadong Zang, Department of Physics

Research

"In my undergraduate study, I have conducted research in experimental physics and computational physics. My experimental physics research was to study the electronic properties in strained two-dimensional semiconductor for electronic applications. The computational physics research was to characterize the topological spin structures in magnetic systems. The motivation for the computational research was to better understand the spin structures in materials that can be used in future memory technology."

Highlights

"I enjoyed the summer on campus where I worked along with other McNair scholars. I enjoyed the trip to Six Flags with my cohort and the McNair Scholars Conference at UCLA. I enjoyed the discussions that everyone brought to the dinner table."

Future Plans

"My next step is attending Harvard University for a PhD in physics to study the electronic properties in quantum materials, in particular topological insulators - materials that can only conduct electricity on its surface with 100% efficiency. After obtaining a PhD, I want to continue doing research in industry or academia."

Accomplishments

"I conducted multiple research projects funded by the Hamel Center for Undergraduate Research and the McNair Summer Fellowship. I presented my research at a few conferences including the American Physical Society March Meeting. I received an honorable mention for the NSF-GRFP. I received an internship at Lawrence Berkeley National Laboratory, but it was canceled due to Covid. "

Julian Maduro, English and Justice Studies

Mentor: Dr. Laura Smith, Department of English

Research

"The research on current high school reading lists is limited; however, studies suggest that high school literary curricula have remained nearly unchanged for the last thirty years. These lists lack titles written by authors of diverse racial and gender backgrounds, and due a possible lack of evolution, it appears that they have not adapted to fit the demographics, interests, and ideologies of current students, potentially negatively impacting student reading engagement. This survey study investigated whether or not high schools reading lists -- specifically those in New Hampshire -- have evolved since the 1990s. New Hampshire high school English teachers were asked to describe texts they used in their classrooms and their perceptions of student engagement in relation to these texts. The findings from this study provide preliminary evidence that students respond more positively to diverse reading lists and to texts that have been published in the past 14 years. This study also found that although current New Hampshire reading lists contain the same texts found on the lists from the 1990s, they appear both to have expanded and to be more diverse than the reading lists used thirty years ago."

Highlights

"I sincerely enjoyed working along side a group of people who were passionate about their research. The fact that we could all learn about topics from completely different disciplines from people who were excited to teach us about it was incredible. Truly an invaluable experience. I also really appreciated the mentorship both from Selina and Tammy and from my mentor. Having these resources to go to and ask questions to helped make my entire college experience that much better."

Future Plans

"I am unsure as of right now, but I will eventually be getting my PhD either in Criminal Justice or Social Work. I would like to get my Master's in Social Work (MSW) and get licensed as well. I would like to involve myself in prison reform."

Accomplishments

"Received the Alice Margarette Mitchell Award."

Khem Basnet,Sustainable Agriculture and Food Systems

Mentor: Dr. Iago Hale, Department of Agriculture, Nutrition, and Food Systems

Research

"My McNair research focused on finding the evidence of the Xenia Effect or the effect that pollen source has on the overall fruit quality of kiwiberries. Kiwiberries are increasingly becoming more popular around the world and are considered to be one of the most nutrient dense fruit. There is little research done on this novel fruit and there is much room for improvement. One of the ways they can be improved is by improving their quality. My research focused on how quality can be improved when different male pollonizers are used on a single female variety."

Highlights

"I enjoyed working outside in the field for my research over the summer, learning to harvest pollen from flowers, processing them and hand pollinating has to be one of the most amazing and interesting things I have done during my college career. I also enjoyed talking and working with my 2020 cohort and getting help from the McNair staff whenever I needed help."

Future Plans

"I am planning on going to graduate school pursuing a Master's in Environmental Science at the New Jersey Institute of Technology."

Accomplishments

"At UNH, I have been able to achieve 2 supervisor positions as a student employee where I advise and work with at least 35-40 students in 2 departments. I have been involved in several different student organizations. I have also had the opportunity to study abroad and spent a summer in London, United Kingdom, when I was a sophomore. I have received the Gilman International Scholarship and was nominated as a rising alumni leader. I am also part of the TRIO scholars program and alumni of the UNH Leadership Camp. "

Anupreet Saini, Accounting & Financing

Mentor: Dr. Stephen Ciccone, Department of Accounting & Finance

Research

"My McNair research project examined the relationship between background and risk in CEOs in the S&P 500. By looking at the immigrant status of CEOs and comparing it multiple financial figures, we found that immigrant CEOs are less associated with risk taking compared to their native born counterparts. This is a departure from the trends seen in small businesses where immigrant CEOs are seen taking greater risks."

Highlights

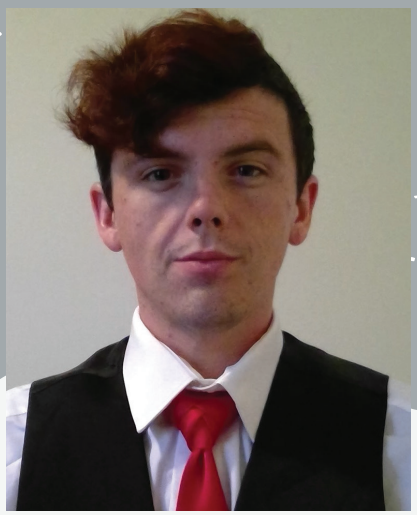
"My favorite part of McNair was meeting so many amazing people who have a strong drive to take ahold of their futures and make a change in academia and their fields. My favorite part of the research process was creating strong relationships with professors and learning the methods used in my field."

Future Plans

"After graduation, I will be working at KPMG as a dual path audit and advisory associate. Only a select number of individuals are chosen to be a part of this program and my McNair research experience gave me a leg up in the application process. "

Accomplishments and Awards

"At UNH I was a RA for 2 years and worked with housing my senior year, being heavily involved in student affairs. This allowed me to help students find their place on campus and get a better understanding of all UNH has to offer! I have received the Paul excellence award over the last 4 years at UNH."



Bryan Landry, Genetics

Mentor: Dr. W. Thomas Kelley, Department of Life Sciences & Agriculture

Research

"My research focuses on two genes that are believed to be the result of a duplication given the homology in their nucleotide sequences. The two genes are the coagulation factor genes FV and FVIII. FV is the co-factor that complexes with factor X to cleave prothrombin into thrombin. FVIII is the co-factor that will complex with factor IX in order to activate factor X in the coagulation pathway before the formation of the Factor X/V complex. By looking at where this duplication event occurred it could give us better insight into how humans have evolved. The second part of my research aims to identify potential missense mutations within the factor V gene. These missense mutations could be beneficial in the prediction of new disease-causing mutations."

Highlights

"Working within the McNair Scholars Program has taught me so much, specifically how to convey my research in a way that individuals in other fields are able to understand and follow. This program has provided me with excellent opportunities. The skills and the tools I have gained from this program are of the most valued things I've learned in my entire time in college."

Future Plans

"Currently my future plans are to obtain my Master's in Genetics at UNH then enroll in a PhD program. . I will also actively help the McNair Program where I am able to whether its recruiting new scholars or even assisting in setting up connections at new institutions, or even simply speaking to new students in the program about the incredible opportunities the program allows students. "

Awards and recognition

"I made Dean's List for the Fall 2020 semester."

Peter Haber, Earth Science

Mentor: Dr. William Clyde, Department of Earth Sciences

Research

"For my McNair research project, I worked with Dr. William Clyde to study a geologic record of the mass extinction event that killed the dinosaurs (among other groups) called the Cretaceous-Paleogene (K-Pg) Boundary. This extinction occurred approximately 66 million years ago and was caused primarily by a meteorite impact. My mentor and I used the technique of magnetostratigraphy (measuring the magnetic polarity of a rock, preserved from when it formed) to study the boundary. Earth's magnetic field has reversed direction through time, and these reversals are recorded in rock formations. Chron C29r is an interval of reversed magnetic polarity that formed at the time of the K-Pg boundary. Samples taken from strata in La Colonia Formation in Patagonia, Argentina, were analyzed to find their magnetic polarity. We successfully identified Chron C29r in samples taken from La Colonia. This information will help us better understand the mass extinction, especially the extent of it in South America."

Highlights

"McNair provided me an opportunity to conduct in-depth research, which I found to be a very valuable experience. The program also provided many opportunities to present my research and refine those skills. One of the most memorable parts of the summer research fellowship was getting to know my fellow members of the cohort, and they helped make it one of the best parts of my time at UNH. Travelling to the UCLA conference was also a great experience because of the opportunity to present my research and the opportunity to explore Los Angeles."

Future Plans

"After graduating from UNH, I will enroll in a Master of Science program in Earth Sciences at The Ohio State University for Fall 2021."

Accomplishments and Awards

"One of the biggest accomplishments that I have made while at UNH is the research that I have conducted. McNair has played a large part in this, through the summer research fellowship and the National McNair Scholars conference. I have also presented at the Undergraduate Research Conference and published my work in the UNH Inquiry journal. While at UNH, I have received three merit scholarships from the College of Engineering and Physical Sciences. I have also been named to the Dean's List several times."

Alexis Efriamson, Equine Science

Mentor: Dr. Andrew Conroy, Department of Agriculture, Nutrition, and Food Systems

Research

"My McNair research was conducted in the summer of 2019 by Dr. Andrew Conroy and I where we traveled across all ten counties of NH to sample preweaned dairy calves in order to find the prevalence of Cryptosporidium and Giardia on farms. A survey was conducted on farmers to find whether or not they have ever experienced symptoms of either disease and the results were compared to the presence of either disease on their farm to possibly point research in the direction of exposure immunity."

Highlights

"One of the highlights of my summer was just plainly traveling around New Hampshire with one of my favorite professors and learning the history of NH dairy farms as well as seeing and going to beautiful farms. Another big highlight of my research was presenting this at the URC, going to the UCLA conference, and finally getting my research published in the Weekly Market Bulletin."

Future Plans

"My future plans are immediately going to work as an intern/groom at Coyote Springs farm for the summer of 2021. Then in the fall I am hopeful that I will be accepted to an equine internship program in Lexington Kentucky, where I will be responsible for breeding, training, and rehabbing horses. In the future I hope to have a successful career in the equine industry in either nutrition or sports medicine and would also like to attend graduate school after working for a year or two."

Awards and Accomplishments

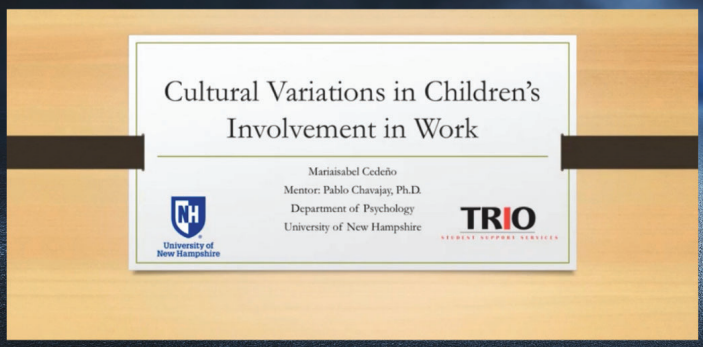
"As a UNH student I think that besides the McNair program being one of my biggest accomplishments; I have been on the deans list every semester since the end of my freshman year, I have been awarded several scholarships, been a TA for 4 semesters, and have had so many great experiences in TRIO as well. I think that I have made many connections in college as well which I am very proud of. Importantly, I am proud of myself. I have always worked at least 1 job if not 2 during school to pay all of my bills and now I have a dog added onto all of this. Throughout the past four years I can say that I am proud that I have taken on at least 18 credits every semester if not more and have always worked on top of all of my extra-curricular activities such as competing on the UNH Woodsman team.

I have been awarded with the TRIO/ Donovan scholarship since freshman year, the McNair scholarship award, I have been high and Highest honors on the deans list since sophomore year, I have been recognized as the receiver of the Lou and Lutza smith equine Scholarship for two years. In 2018 I was also the receiver of the UNIQUE endowment scholarship.

I have been very thankful for my experience here at UNH and I will miss all of my professors, students, peers, and mentors dearly as I am leaving here this month."

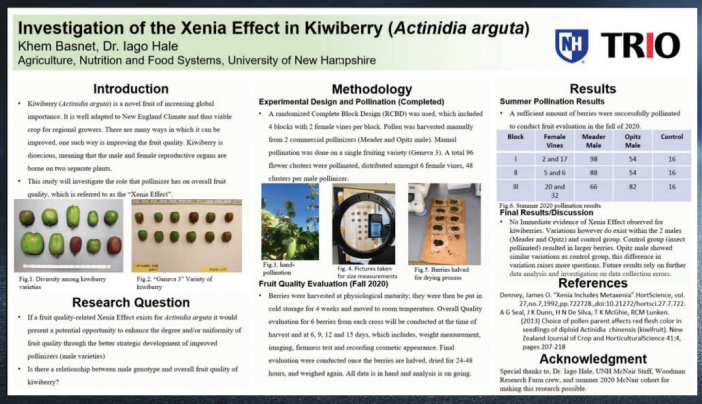
McNair Scholars Presented at the 2021 UNH Virtual Undergraduate Research Conference at UNH

Mariaisabel Cedeno
URC Presentation

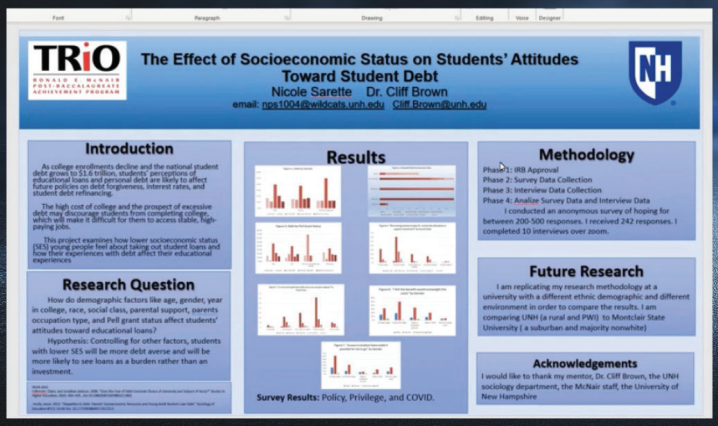


Favour Alejo
URC Presentation

Khem Basnet
URC Presentation

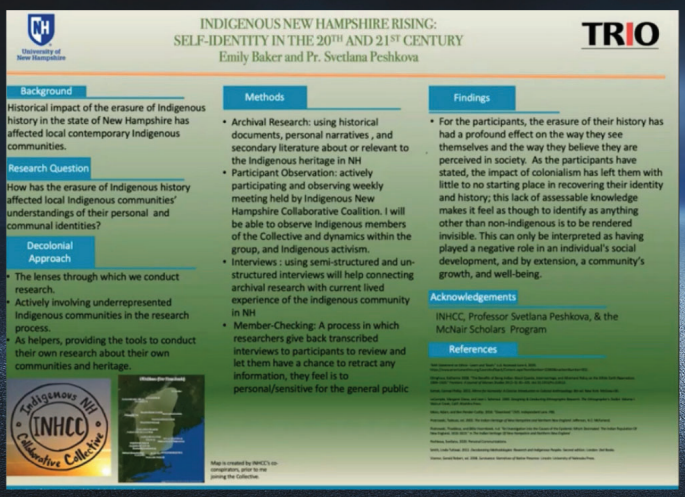


Nicole Sarette
URC Presentation



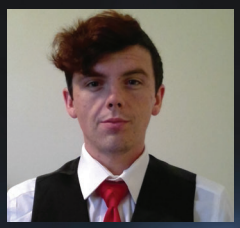
McNair Scholars Presented at the 2021 UNH Virtual Undergraduate Research Conference at UNH

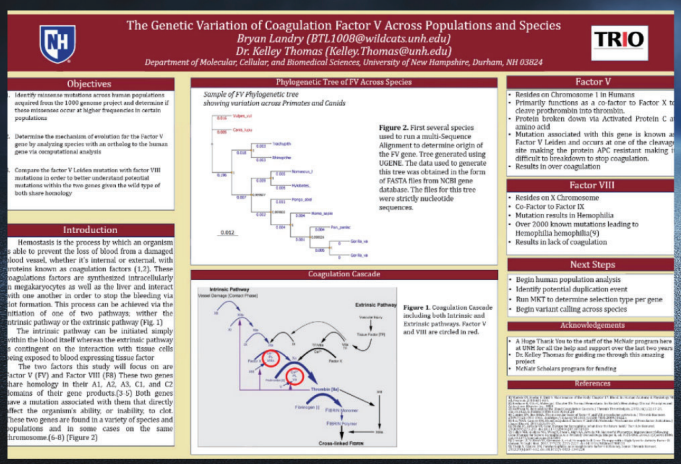
Emily Baker URC Presentation



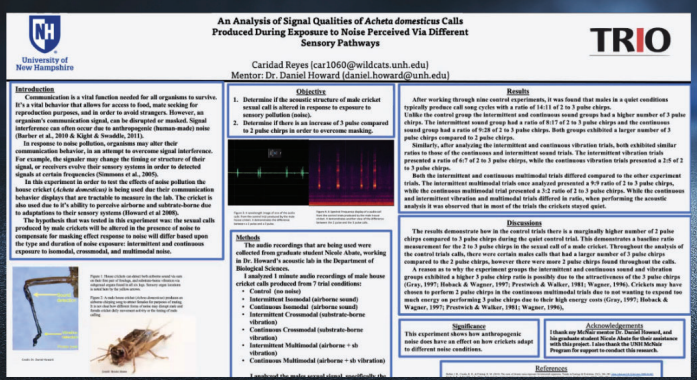
Julian Maduro URC Presentation

Bryan Landry URC Presentation





Caridad Reyes URC Presentation



Social/ Cultural Events

2020-2021

Virtual Paint Night @ MUSEPAINT BAR

Seacoast African American Cultural Center

Black Heritage Trail of NH Tour

"I really enjoyed the recent cultural event in Portsmouth."
Maria Chouinard, 2021 Cohort

"I absolutely love the program. Not only do we get hands on experience with the whole research process, but we also get to experience a ton of fun social events that help us get to know other scholars/peers and the program coordinators."
Samantha DiNatale, 2021 Cohort

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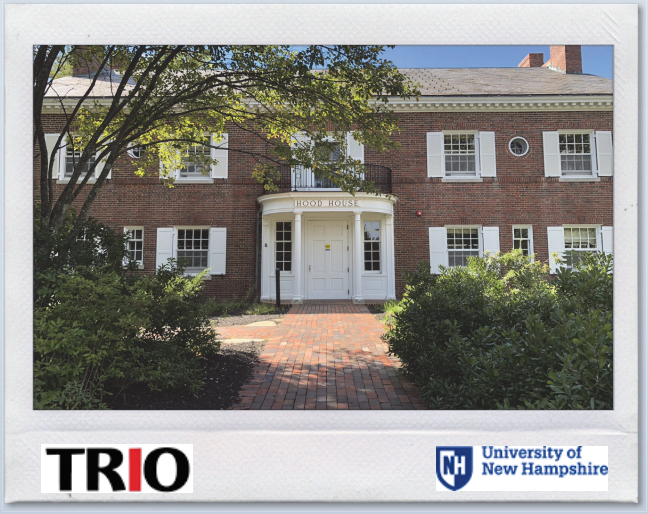

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