April 15th, 2019
A Division of Student Affairs at the University of North Dakota

The McNair Program is one of five federally funded TRIO Programs sponsored by the United States Department of Education at the University of North Dakota. UND’s Ronald E. McNair Program receives 100% of its $267,450 annual budget from the Department of Education.

Equal Opportunity/Affirmative Action Policy Statement

It is the policy of the University of North Dakota that there shall be no discrimination against persons because of race, religion, age, creed, color, sex, disability, sexual orientation, national origin, marital status, veterans’ status, or political belief or affiliation, and the equal opportunity and access to facilities shall be available to all. This policy is particularly applicable in the admission of students in all colleges and in their academic pursuits. It also is applicable in University-owned or University-approved housing, food services, extracurricular activities and all other student services. It is a guiding policy in the employment of students either by the University or by non-University employers through the University and in the employment of faculty and staff.

The Title IX, Section 504, and ADA Coordinator for UND is located in the Affirmative Action Office, 101 Twamley Hall. The mailing address is Box 7097, Grand Forks, ND 58202-7097; Telephone (voice/TDD): 701-777-4171. Concerns regarding Title IX, Title VI, Section 504, and ADA may be addressed to her or to the U.S. Department of Education, Office for Civil Rights, 10220 N. Executive Blvd., Beijing, Kansas City, MO 64108-1367, as prescribed by Title IX, Education Amendments of 1972; Title VI of the Civil Rights Act of 1964; Section 504 of the

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Thank you for attending the 25th Annual McNair Forum

Ronald E. McNair Program
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Grand Forks, ND 58202

Phone: 701-777-4931
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“Before you can make a dream come true, you must first have one.” - Ronald E. McNair
Abdi Abdullahi*  
Major: Medical Laboratory Science  
Mentor: Dr. Othman Ghribi

Mustafa Abdulrahman*  
Major: Mechanical Engineering  
Mentor: Dr. Surojit Gupta

Andrew Abraham  
Major: Mathematics  
Mentor: Dr. Ryan Zerr

Brenda Barragan*  
Major: Psychology  
Mentor: Dr. Doug McDonald

Leah Barry  
Major: Rehabilitation and Human Services  
Mentor: Dr. David Perry

Cecilia Castleberry  
Majors: Biology and Honors

Ashly Hanna  
Major: Criminal Justice and American Indian Studies  
Mentor: Dr. Wendelin Hume

Wendie Hasler  
Major: Biology  
Mentors: Dr. Rebecca Simmons and Dr. Brian J. Darby

Abdiwali Hussein  
Major: Electrical Engineering  
Mentor: Dr. Tavakolian Kouhyar

Julia Kochanowski  
Majors: Forensic Science  
Mentor: Dr. Rebecca Simmons

Paige Michel  
Major: Psychology  
Mentor: Dr. Andre Kehn

Ayla Morehouse*  
Major: Fisheries & Wildlife Biology  
Mentor: Dr. Brian J. Darby

Jacob Nelson  
Major: Physics

Susy Kate Ngale*  
Major: Psychology  
Mentor: Dr. John-Paul Legerski

Makayla Platt  
Majors: Environmental Geoscience and Geology  
Mentor: Dr. Taufique Mahmood

Jason Power*  
Major: Chemical Engineering  
Mentor: Dr. Van Doze

Emily Severinson  
Major: English  
Mentor: Dr. Michelle Sauer

Jaylin Solberg  
Major: Fisheries and Wildlife Biology  
Mentor: Dr. Susan Ellis-Felege

Christine VanBrocklin  
Majors: Forensic Science and Anthropology  
Mentor: Dr. Elizabeth Scharf

Marcus Vivier*  
Major: Communication  
Mentor: Dr. Soojung Kim & Dr. Joonghwa Lee

Emmalee Woods  
Major: Fisheries and Wildlife Biology  
Mentor: Dr. Jay Boulanger

Ronald E. McNair was born on October 21, 1950, in Lake City, South Carolina to Carl and Pearl McNair. He attended North Carolina A&T State University in Greensboro, where, in 1971, he graduated magna cum laude with a BS degree in physics. In 1976 he earned his Ph.D. degree in physics from the Massachusetts Institute of Technology.

Dr. McNair’s many distinctions include: Presidential Scholar (1967-71), Ford Foundation Fellow (1971-74), and National Fellowship Fund Fellow (1974-75). He was also named Omega Psi Phi Scholar of the Year (1975), was honored as the Distinguished National Scientist by the National Society of Black Professional Engineers (1979), and received the Friend Of Freedom Award (1981).

Ronald E. McNair was nationally recognized for his work in the field of laser physics. In 1978, he was one of 35 applicants selected from a pool of ten thousand for NASA’s space shuttle program and assigned as a mission specialist aboard the 1984 flight of the shuttle Challenger. On his first space shuttle mission in February 1984, McNair orbited the earth 122 times aboard Challenger. He was the second African American to fly in space.

In addition to his academic achievements, he received three honorary doctorates and numerous fellowships and commendations. He was also a sixth degree black belt in karate and an accomplished jazz saxophonist. He was married to Cheryl Moore and had two children, Reginald Ervin and Joy Cheray.

On the morning of January 28, 1986, McNair and his six crew members died in an explosion aboard the space shuttle Challenger.
Ronald E. McNair Postbaccalaureate Achievement Program

The Ronald E. McNair Postbaccalaureate Achievement Program at the University of North Dakota is a program within the Division of Student Affairs, funded by the United States Department of Education.

Program participants are undergraduates, juniors, or seniors, who are first generation and low income, or who are from a group underrepresented at the doctoral level of the targeted departments. The McNair Program encourages students to prepare for graduate studies by providing opportunities to define goals, engage in research, and to develop the skills and student faculty mentor relationships vital to success at the doctoral level.

Program Benefits:
• Faculty mentor/student relationship established.
• Research skills developed both library and laboratory.
• Personal and emotional counseling.
• GRE preparation.
• Aid in graduate school admissions.
• Research stipends.
• Tutoring and support group involvement.
• Assistance in securing appropriate financial aid.
• Academic advisement.
• Various seminars and workshops related to graduate education.
• Conference travel and possible graduate school visitation.
• Tuition assistance

Federal TRIO Programs:
The Federal TRIO Programs are educational opportunity outreach programs designed to motivate and support students from disadvantaged backgrounds. TRIO includes six outreach and support programs targeted to serve and assist low-income, first-generation college students, and students with disabilities to progress through the academic pipeline from middle school to postbaccalaureate programs.

25th Annual McNair Forum
Monday, April 15
Oral Presentations, Memorial Union - River Valley Room
10:20 a.m. to 3:40 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:20 - 10:40 a.m.</td>
<td>Leah Barry</td>
<td>Early Recollections and Attitudes Towards People with Disabilities</td>
</tr>
<tr>
<td>10:40 - 11:00 a.m.</td>
<td>Julia Kochanowski</td>
<td>Identifying Sex of Caterpillars of the White Marked Tussock Moth</td>
</tr>
<tr>
<td>11:00 - 11:20 a.m.</td>
<td>Ayla Morehouse</td>
<td>Are You My Mommy? Nest Parasitism in the Lesser Snow Goose (Anser caerulescens)</td>
</tr>
<tr>
<td>11:20 - 1:00 p.m.</td>
<td>Lunch (on your own)</td>
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</tr>
<tr>
<td>1:00 - 1:20 p.m.</td>
<td>Christine VanBrocklin</td>
<td>Exploring how Grand Forks Climate affects the rate of decomposition</td>
</tr>
<tr>
<td>1:20 - 1:40 p.m.</td>
<td>Jason Power</td>
<td>Exploring the role of Norepinephrine in Epilepsy</td>
</tr>
<tr>
<td>1:40 - 2:00 p.m.</td>
<td>Susy Kate Ngale</td>
<td>Fluctuations of Public Interest in Tragedies Over Time</td>
</tr>
<tr>
<td>2:00 - 2:20 p.m.</td>
<td>Emmalee Woods</td>
<td>Historical Mountain Lion Sightings (Puma concolor) in North Dakota</td>
</tr>
<tr>
<td>2:20 - 2:40 p.m.</td>
<td>Jaylin Solberg</td>
<td>Social Interactions of Translocated American Bison at Theodore Roosevelt National Park</td>
</tr>
<tr>
<td>2:40 - 3:00 p.m.</td>
<td>Paige Michel</td>
<td>Juror Perceptions of Child Alibi Witnesses</td>
</tr>
<tr>
<td>3:00 - 3:20 p.m.</td>
<td>Brenda Barragan</td>
<td>Traditional Masculinity and Hunting/Fishing Attitudes</td>
</tr>
<tr>
<td>3:20 - 3:40 p.m.</td>
<td>Wendie Hasler</td>
<td>Assessing the Health of Pollinator Communities in North Dakota</td>
</tr>
</tbody>
</table>

Students, Staff and Faculty are all welcome. You may come and go to separate presentations according to your interests.
Abstract
Our early recollections, or memories, have a significant impact on how we view and treat certain individuals in our present lives. This study specifically focuses on how our very first memory to about age 10, affect our attitudes toward people with disabilities (PWD). This study has been done many times in the past, the most recent being from graduate Rehabilitation Counseling students in 2017. However, I have made it a goal of mine to expand on who this study will be distributed to, in hopes to get more diverse data. Not only will I be discussing what aspects of past studies I’ve expanded on, but I will also be giving some background information on who began this work and giving more insight about inclusion of PWD.

Hello, my name is Leah Barry. I am currently a Junior here at UND majoring in Rehabilitation and Human Services with a special interest area in mental health and a minor in Psychology. I will be pursuing my Master’s degree in Rehabilitation Counseling this upcoming Fall at UND and graduating in December with my Bachelor’s as well. I am very thankful to have been given the chance to work alongside Dr. David Perry as he has helped me reach my academic goals. I hope to work alongside children and adolescents who struggle with mental health issues and also reduce the stigma that accompanies mental health.

Mentor: David Perry, Ph.D., I have been a faculty member at UND since 1975 and am currently Professor and Program Coordinator for the Rehabilitation and Human Services Program within the Department of Education, Health, and Behavior Studies. I really enjoy working at UND and I find teaching, conducting research, and providing professional service activities quite invigorating. I also have found Grand Forks to be a great place to live and raise a family.

I grew up in Missoula, Montana and received my Bachelor’s Degree in Psychology from the University of Montana, a Master’s Degree in Rehabilitation Counseling from Florida State University, and my Ph.D. in 1983 from UND in Counseling with a Psychology minor. I have been a Certified Rehabilitation Counselor since 1979.

I am currently Co-Chair of the Committee on Rehabilitation Accreditation, the Treasurer of the National Rehabilitation Counselors Association, and a Board member for the American Board of Vocational Experts. In the past I served as President of the National Council on Rehabilitation Education (NCRE), on the NCRE Board for eight years, and was Chair of the Council on Rehabilitation Education’s (CORE) Committee on Undergraduate Education. I also serve as a Vocational Expert for the Social Security Administration and am occasionally asked to provide testimony for Social Security Disability hearings and other forensic rehabilitation cases.

I maintain an active research agenda that focuses on a wide variety of disability and rehabilitation issues. While not always recognized, disability is an important aspect of diversity in our society. Rehabilitation certainly should be part of our commitment to social justice and human rights in our communities. In my work, disability is broadly defined and includes physical disabilities, mental illnesses, developmental disabilities, substance abuse, brain injuries, etc. I have been especially interested in attitudes toward persons with disabilities, how they are formed, how they are maintained, and how they can be changed. Adlerian Psychology serves as the theoretical underpinning of my understanding of how attitudes develop, with special recognition of the importance of early memories.

Mentor: Rebecca Simmons, Associate Professor of Biology, received her Ph.D. in 2001 from the University of Minnesota. Her research interests include: systematics of Lepidoptera, especially Tiger moths (Arctiidae) and Cutworms (Noctuidae), evolution of mimicry and courtship behaviors, and identification of pest species. She is interested in the evolution of mimetic tiger moths, members of the arctiid tribes Euchromiini and Ctenuchini. One of Dr. Simmons long-range research objectives is to construct an evolutionary tree (phylogeny) for both of these tribes. With this phylogeny, Dr. Simmons and her collaborators will be able to track the evolution of mimetic type and other behaviors. This phylogeny will be constructed from multiple sources of data, such as anatomical (morphological) data and from mitochondrial and nuclear DNA.

Mentor: Brian J. Darby, Ph.D., is an associate professor in the Biology Department studying soil ecology and ecological genomics. He received his M.S. from the University of Toledo and Ph.D. from the University of Vermont, and completed post-doctoral studies at Kansas State University before arriving at the University of North Dakota in 2011. His research is a combination of soil ecology and ecological genomics: to molecular the genome-enabled tools to understanding the abundance and distribution of soil organisms. Lately, though, this has expanded to include wildlife species such as muskrats, snow geese, and common eiders. Dr. Darby teaches General Ecology, Biometry, Genomics, and Soil Ecology.
Assessing the Health of Pollinator Communities in North Dakota

Wendie Hasler, Madison Jochim, Carrie Pratt, Abby Keller, Brian Darby, and Rebecca Simmons

Abstract
In 2006, Colony Collapse Disorder (CCD) swept across North America as thousands of honey bee colonies died. Currently, 30 percent of hives are lost each year just through normal over-wintering and, according to a recent report5 put out by the UN, 40% of pollinating species are at risk of extinction under the current circumstances. Pollinating bees have suffered major losses in recent years. Viruses, mites, poor nutrition, and pesticides are just a few of the many issues contributing to their decline. There is still not a single cause known for why pollinators are declining at such alarming rates; however, in honey bees, failed hives have greater levels of pathogens when compared to healthy hives. This greater susceptibility points to weakened immune response. Microorganisms play a major role in the immune system development of the honey bee as well as in other corbiculate bee species1,4. The gut microflora of corbiculate insects is thought to be comprised of a small number of specialized organisms that are not routinely found outside of the gut or a bee colony2. Assessing pollinator numbers and understanding the composition of the gut microbiome may give key insights as to why these important species are dying5. This notion was tested by conducting a study on pollinators of the Northern Great Plains. The first phase was focused on the identification of many pollinating species through high throughput sequencing, in order to develop a rapid sequencing pipeline. In the second phase, specimens from various corbiculate species were collected and illumina sequencing was used to: 1. test the pipeline and 2. gain a comprehensive understanding of gut microflora composition. Through this study we were able to identify over 200 pollinating species and sequence 74 different bacterial taxa, specifically from corbiculates. Streamlining the processes of pollinator identification and various health markers such as microbiome composition may give us valuable insight as we seek to improve pollinator health and abundance.

Hello, my name is Wendie Hasler. I was born in Austin TX and I have traveled around the US for most of my life. For as long as I can recall I have been supremely interested in the details of the world around me. This interest is central to my educational drive. Currently, I am working on a B.S. in biology and wish to move directly into a PhD program after I graduate. I am married with two children and hope that I can inspire them to work hard and realize their goals. I enjoy being outdoors and plan, one day, to settle down in southeast Alaska where I can pursue my professional carrier as a research scientist and enjoy the beauty of nature.

Identifying Sex of Caterpillars of the White Marked Tussock Moth

Julia Kochanowski, Madison Jochim, Carrie Pratt, Abby Keller, Brian Darby, and Rebecca Simmons

Abstract
The white marked tussock moth is a forest pest. The spread of the Orgyia leucostima species is limited by loss of wings in females. Females, unlike males, are unable to fly. Females develop wings, which are then re-absorbed in the pupal stage. It is likely that genes that cause the loss of wings are expressed in caterpillars, but it is impossible to determine if caterpillars are male/female by visual inspection. I am assisting a graduate student in finding genes that will distinguish male and female caterpillars. Because females have 2W sex chromosomes and males have ZZ sex chromosomes, we are trying to find genes on the W chromosome. I am using PCR methods to amplify genes on the W chromosome in the WMTM, based on previous studies in other species.

My name is Julia Kochanowski. I am 20 years old. I am originally from Howell, Michigan and lived most of my life there until I was 18 when I moved to Grand Forks. This is my third year at the University of North Dakota, and my second semester as part of the McNair program. I am double majoring in forensic science and biology with a minor in chemistry. I am also part of the US MASTERS program for students pursuing a STEM major. Right now, I am doing my research in the biology department assisting graduate students with their research, with Rebecca Simmons as my mentor. My goal is to continue on with school after I graduate with my bachelors and become a forensic pathologist. I would love to work in a big city down south.

Mentor: Rebecca Simmons, Associate Professor of Biology, received her Ph.D. in 2001 from the University of Minnesota. Her research interests include: systematics of Lepidoptera, especially Tiger moths (Arctiidae) and Cutworms (Noctuidae), evolution of mimicry and courtship behaviors, and identification of pest species. She is interested in the evolution of mimetic tiger moths, members of the arctiid tribes Euchromiini and Ctenuchini. One of Dr. Simmons long-range research objectives is to construct an evolutionary tree (phylogeny) for both of these tribes. With this phylogeny, Dr. Simmons and her collaborators will be able to track the evolution of mimetic type and other behaviors. This phylogeny will be constructed from multiple sources of data, such as anatomical (morphological) data and from mitochondrial and nuclear DNA.
Abstract

Conspecific brood parasitism is a common behavior in many bird species, where one individual (parasitizer) lays eggs in the nest of conspecifics (hosts). Although conspecific brood parasitism is commonly identified as a parasitic behavior, theoretical models suggest that conspecific brood parasitism could provide an inclusive fitness benefit to the host mother if it is closely related to the parasitizer. Since some migratory waterfowl are thought to nest in kin-related social groups, it is also possible that brood parasitism has a spatial dynamic as well. Thus, the larger objective of this project is to test the hypothesis that conspecific brood parasitism in migratory arctic waterfowl occurs between closely related kin that also tend to nest close together. In this poster we present the non-invasive molecular method of estimating the rate of nest parasitism in snow geese (Anser caerulescens) in their breeding grounds in Churchill, Manitoba, Canada. In 2016 and 2017, we collected and extracted genomic DNA from down feathers and membranes from nests that had either hatched or been destroyed by predation. We then amplified and sequenced microsatellite loci using high-throughput sequencing, which allowed us to capture a molecular “fingerprint” for each shell and feather that could be used to reconstruct the relationships between offspring from each clutch and identify parasitically laid eggs.

Are You My Mommy? Nest Parasitism in the Lesser Snow Goose (Anser caerulescens)

Hello my name is Ayla Morehouse. I am from Valley, NE. I am currently finishing my fourth year at UND and my second year in the McNair program. I am majoring in Fisheries and Wildlife biology. Currently, I am researching under Dr. Brian Darby on the up and coming topic of conspecific brood parasitism of lesser snow geese. I am highly interested doing research on species that may have more to them than initially meets the eye and aspire to make a career of doing such research. After completing my undergrad, I plan to enter graduate school and ultimately earn a Ph.D. My goal is to provide information to pique the interest of peers, colleagues and future generations. In addition, I hope to produce research that will have a positive impact on future wildlife management.

Mentor: Brian J. Darby, Ph.D., is an associate professor in the Biology Department studying soil ecology and ecological genomics. He received his M.S. from the University of Toledo and Ph.D. from the University of Vermont, and completed post-doctoral studies at Kansas State University before arriving at the University of North Dakota in 2011. His research is a combination of soil ecology and ecological genomics: to molecular the genome-enabled tools to understanding the abundance and distribution of soil organisms. Lately, though, this has expanded to include wildlife species such as muskrats, snow geese, and common eiders. Dr. Darby teaches General Ecology, Biometry, Genomics, and Soil Ecology.

Traditional Masculinity and Hunting/Fishing Attitudes

Hello my name is Brenda Barragan. I am from Melrose Minnesota. I am a senior at the University of North Dakota majoring in psychology. I will be attending the Counseling Psychology PhD program at the University of North Dakota this coming Fall. My mentor is Dr. Justin Douglas McDonald. My research interests include: child psychology, effects of child abuse, Hispanic psychology, and cultural differences among US and non-US born Mexicans.

Mentor: J. Doug McDonald, Ph.D., is a tenured Associate Professor of Psychology at UND. He is an Oglala Lakota Sioux tribal member. His research interests include Cross-Cultural scale development, and the effects of Biculturalism on psychopathy and coping behavior among American Indians. He directs the UND Indians into Psychology Doctoral Education program. He was twice elected National President of the Society of Indian Psychologists and currently serves on APA’s Board for the Advancement of Psychology in the Public Interest. He has served as a mentor for many McNair students. Also his fishing prowess is legendary, at least according to him!
Juror Perceptions of Child Alibi Witnesses

Abstract

Three hundred and sixty-four people have been exonerated to date based on postconviction DNA evidence. One crucial aspect of their wrongful conviction was an alibi that was not believable. Perceptions of alibis, particularly child alibi witnesses, is an understudied area within psychology and law research. Despite, knowing that child witnesses play an integral role in our criminal justice system since the early 90s when high profile cases, such as the Kelly Michaels case, resulted in lengthy prison terms for innocent individuals. The multitude of such cases has led psychologists to investigate children’s ability as witnesses, including how suggestible children are and most importantly for the current study, how jurors assess child witness credibility. The proposed study will build on past findings and examine perceptions of child alibi witnesses through mock juror methodology. Past findings suggest that young children are seen as more believable because they are perceived as more honest. On the contrary, older children can be seen as less credible if related to the defendant because they could be lying for their family member. The current study aims to build on past findings by further investigating how age, relationship to the defendant, child mental ability, and case specifics influence how mock jurors make decisions in cases involving child alibi witnesses.

Hello, my name is Paige Michel. I am a junior here at UND studying psychology. I have been a McNair Scholar since Fall 2018. I hope to pursue a Ph.D. in clinical psychology after graduating in the spring of 2020. My goal is to work in both a clinical setting and continuing further research. My research interest lies in sexual violence, investigating both victims and perpetrators. My current research for the McNair program is under Dr. Kehn studying how mock jurors perceive children as alibi witnesses. I am very grateful to be a part of the McNair program as it has opened many doors for me and helped me become a more confident person and scholar.

Mentor: Andre Kehn, Ph.D., is an associate professor in the department of psychology. He earned his Ph.D. in Experimental Psychology with a concentration in Psychology and Law from the University of Wyoming in 2010. Dr. Kehn joined the faculty at UND in the fall of 2010 and has been a core member of the Experimental and Forensic Faculty since his arrival. In general, Dr. Kehn’s work tries to understand psychological mechanisms relevant to legal decision-making, specifically, juror decision making. He teaches courses in Psychology and Law, Developmental and Social Psychology.

Exploring how Grand Forks Climate affects the rate of decomposition

Abstract

In some homicide cases the time of death is unknown. Time of death is a critical piece of information to help solve homicide cases as it relates to the alibi of the suspect. One way in which time of death or approximate time since death can be determined is by the condition of the body at the crime scene. The degree of decomposition is used as an indicator to determine time of death because bodies follow a general but not uniform pattern. Although decomposition follows a pattern, it is also greatly effected by environmental conditions, especially temperature. In areas of colder climate, a typical decomposition pattern cannot be followed. Grand Forks is one of the coldest cities in the United States and UND is the second coldest college campus in the United States. Grand Forks provides an ideal environment to understand how the colder temperatures impact the rate of decomposition. In this study, one pig weighing approximately 45lbs, was placed in a scavenger box on January 7th 2019. Photos to record changes were taken daily along with air and ground temperature readings every 30 minutes. The data collected in this study is from January 7th to March 27th. Although this study is not complete, the preliminary findings will be discussed in this presentation.

Hello my name is Christine VanBrooklin. I am currently majoring in both forensic science and anthropology. I was born and raised in Minneapolis Minnesota and transferred to UND after completing my associates degree at Normandale Community College. After I graduate from UND I plan on pursuing my Ph.D. in forensic anthropology. I am currently being mentored by Elizabeth Scharf and am studying how the climate in Grand Forks affects the rate of decomposition. The McNair program has helped me navigate my educational journey and has given me the opportunity to conduct research under Dr. Scharf who has helped me reach my academic goals.

Mentor: Dr. Elizabeth Scharf received her Ph.D. in Anthropology at the University of Washington, after getting a biological geology BS and anthropology BA at Brown University. Her research mainly involves using plant and mammal remains to answer indirect questions about the past. Most of her recent work has focused on long-term human impacts on the environment in North America, covering the past one to six thousand years. Her teaching interests range from cultural anthropology to human bone anatomy, with most of her classes falling more squarely in the subject of archaeology.
Exploring the role of Norepinephrine in Epilepsy

Abstract
Norepinephrine (NE) is a neurotransmitter which plays a significant role in epilepsy. Although NE is known to have antiepileptic properties, it is still unclear as to which adrenergic receptor (AR) subtype is responsible for these effects. Currently, drugs used to treat epilepsy have adverse effects which interfere with the daily lives of patients. Alternative treatments must be discovered to eliminate or reduce these unwanted effects. Prior research has been done concluding that the CA3 region of the hippocampus plays a large role in regulating epileptiform activity which, when using NE as an agonist, can decrease epileptiform burst activity. By using phenylephrine (a synthetic NE alternative), the agonist binding site responsible for decreasing this activity can be discovered thus leading to the development of a drug to target this receptor. This study utilized brain slices of α1A-AR knockout (KO), α1B-AR-KO and wild type (WT) control mice which were then used to record the change in frequency in epileptiform burst activity using electrophysiology. During in vivo testing, a 0 Mg cerebral spinal fluid model was utilized to mimic epileptiform behavior. Once epileptiform behavior was reached, phenylephrine was administered to the brain slices in set intervals with an increase in drug concentration over time. The electrophysiology data was then analyzed to determine which KO mice had a stronger correlation to the decrease in the recorded epileptiform burst frequency. Briefly the WT and α1B-AR-KO mice had displayed a decrease in frequency of epileptiform burst activity. The α1A-AR-KO however did not show any decrease in burst frequency, but rather the frequency had increased. Based on these results, the α1A-AR has a role in regulating epileptiform activity which, when activated with an agonist, reduces epileptiform burst activity and shows promise for future antiepileptic drug targeting.

Hello, my name is Jason Power. I am currently a senior here at the University of North Dakota (UND) and I am studying chemical engineering. I moved to Grand Forks two years ago, but I was born and raised in sunny California. I was recently accepted into UND’s Biomedical Sciences Ph.D program which I am excited to begin in the upcoming fall. I am hoping to continue my research in neuroscience in graduate school by continuing to work with my mentor, Dr. Van Doze. As of now, I am currently working on one research projects with Dr. Doze and his graduate student Joseph Biggane. I am very glad to be apart of the McNair program as it has helped me flourish during my time here at UND and prepare me for my all-around success in graduate school. My future plans after UND is to get my graduate school by continuing to work with my mentor, Dr. Van Doze. As of now, I am currently working on one research projects with Dr. Doze and his graduate student Joseph Biggane. I am very glad to be apart of the McNair program as it has helped me flourish during my time here at UND and prepare me for my all-around success in graduate school. My future plans after UND is to get my Graduate School of Medicine and Biological Sciences degree in Chemical Engineering and get one step closer to my career goal of becoming a chemical engineer. I really enjoy working on this project and I will be continuing working on it this summer 2019. This research is also helping me get one step closer to my career goal of becoming a Wildlife Biologist in the National Park Service. After I graduate from UND, I plan on getting my Master’s and then pursuing my Ph.D in Wildlife Biologist. I am grateful to be apart of the McNair program, as it has helped me flourish during my time here at UND and prepare me for my all-around success in graduate school. In addition, I am appreciate to work under Dr. Felege again, who continues to inspire and support me to go beyond my career and academic goals.

Mentor: Dr. Van Doze received his B.S degree in Chemistry & Mathematics from Wichita State University, Ph.D. degree in Molecular and Cellular Physiology from the Stanford University School of Medicine, and two postdoctoral fellowships in Neurophysiology and Neuropharmacology at Stanford University. Born in Kansas, he lived and worked on farms during high school, traveling throughout the northern Great Plains including the Red River Valley as well as on the Standing Rock reservation in North Dakota. His research focuses on applied problems in wildlife ecology, particularly how management actions for these species or others affect their populations or their behaviors or how land use such as agriculture or gas/oil development impacts their populations or behaviors. I use a variety of technology such as cameras at birds nest, trail cameras, and unmanned aircraft systems (UAS/drones) to answer these questions and try to discover the underlying mechanisms of why animals respond the way they do. In addition to technology, I use highly collaborative approaches such as working state and federal wildlife and natural resource agencies and recently working a lot with computer science to filter and process this data more efficiently so we can use this information to inform management. Because of the nature of the work in the field and the vast amounts of digital data I accrue, a strong team approach is required. As a result, I encourage and mentor several undergraduates in my lab each year to help with the major projects and to develop their own individual research projects.

Social Interactions of Translocated American Bison at Theodore Roosevelt National Park

Abstract:
American Bison (Bison bison) were almost hunted to extinction in the 1880s with less than 1000 individuals. Currently, less than 5% of bison are being managed by conservation efforts. Theodore Roosevelt National Park (THRO) in Western North Dakota manages a population of bison at two units at the park within a fenced enclosure. In order to promote genetic diversity, animals are often translocated between populations. In 2017, 12 females were translocated from Badlands National Park to the North Unit of THRO and were fitted with Global Positioning System (GPS)/Very High Frequency collars upon arrival. 10 resident females were also collared. GPS and Radio telemetry collars provide location information but do not produce information on social interactions, especially when only a subset of the resident population is marked. Therefore, our primary objective was to document aggressive and reproductive behaviors between residential and translocated bison. We conducted 33 focal and 17 scan observations of bison during winter of 2018 to determine social interactions among translated and resident animals. We did not document any aggression from or towards translocated individuals. The primary behavior we documented was grazing, standing or resting. We observed two behaviors (non-aggressive, passive avoidance) from resident females, which were not directed at or from translocated individuals. Our observations suggest that translocated females in the herds are integrating with residents during the winter.

Hello, my name is Jaylin Solberg. I am from Moorhead, MN, and I am a junior studying Fisheries and Wildlife Biology. I am currently researching the social behaviors of bison at Theodore Roosevelt National Park under Dr. Susan Ellis-Felege. I really enjoy working on this project and I will be continuing working on it this summer 2019. This research is also helping me get one step closer to my career goal of becoming a Wildlife Biologist in the National Park Service. After I graduate from UND, I plan on getting my Master’s and then pursuing my Ph.D in Wildlife Biologist. I am grateful to be apart of the McNair program, as it has helped me flourish during my time here at UND and prepare me for my all-around success in graduate school. In addition, I am appreciate to work under Dr. Felege again, who continues to inspire and support me to go beyond my career and academic goals.

Mentor: Susan Ellis-Felege, Ph.D., is an associate professor of Wildlife Ecology in the Biology Department. My research focuses on applied problems in wildlife ecology, particularly how management actions for these species or others affect their populations or their behaviors or how land use such as agriculture or gas/oil development impacts their populations or behaviors. I use a variety of technology such as cameras at birds nest, trail cameras, and unmanned aircraft systems (UAS/drones) to answer these questions and try to discover the underlying mechanisms of why animals respond the way they do. In addition to technology, I use highly collaborative approaches such as working state and federal wildlife and natural resource agencies and recently working a lot with computer science to filter and process this data more efficiently so we can use this information to inform management. Because of the nature of the work in the field and the vast amounts of digital data I accrue, a strong team approach is required. As a result, I encourage and mentor several undergraduates in my lab each year to help with the major projects and to develop their own individual research projects.

Mentor - Dr. Susan Ellis-Felege, Ph.D.

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Fluctuations of Public Interest in Tragedies Over Time

Abstract
Mass shootings have become increasingly common in the United States. Comparing reporting of mass shootings on open source media outlets, like Wikipedia, can provide a means to evaluate fluctuations in public interest in these tragedies over time. As a continuation of research conducted by Legerski and colleagues, we used data available from Wikipedia to compare differences between the size of posts, frequency of edits, and number of views across time with event, shooter, and victim characteristics taken into account. Statistical analysis comparing Wikipedia posts of various mass shootings in the last decade revealed that the size of these posts, and the number of edits, have decreased in recent years, when controlling for the number of fatalities during the shootings. In summary, these results suggest US media consumers may be becoming less interested in mass shootings. Limitations and implications for future research, public policy, gun control policy, and prevention efforts are discussed in the context of public health and the increased occurrence of these shootings.

Hello my name is Susy Kate Ngale. I am currently a senior here at the University of North Dakota majoring in psychology and minoring in biology. I was born in Cameroon (West Africa) but moved to Minnesota when I was 11. I am planning on pursuing my Ph.D. in clinical child and adolescent psychology. My long term career goals are to earn my Ph.D. and do research on the long term effects of trauma experienced during our childhood and adolescent years. The McNair program has helped me so much in the past year by offering opportunities such as research, graduate school information sessions, and faculty-student mentoring. These opportunities have helped me solidify my career goals and create a foundation that will aid in my future success.

Mentor: Dr. JP Legerski

Graduated with his Ph.D. in Clinical Child Psychology from the University of Kansas. He is currently a member of the clinical psychology faculty at the University of North Dakota, where he has taught graduate and undergraduate course for the last 8 years. He is a director at the Northern Plains Community Clinic located on the UND campus and is a licensed child psychologist. His primary research interests focus on the interplay between emotional development, memory, and psychopathology.