Example 1 - Research or Artistry

Project Title

Background

Explain the present state of knowledge and understanding of the community you will be working with or in your field of study, using proper citations when necessary. Provide the background of the topic in an engaging manner (e.g.; relate topic to reader, raise interesting questions, note topics importance in field, etc.). Include descriptions of any partnering organizations. Make it clear why you want to do this project and why it needs to be undertaken to fill a gap in knowledge.

The “stress response,” or how an animal responds to external stressors, transpires from a litany of external factors. Such factors can include social relationships both within and between groups, ecological reasons including diet and disease, or environmental reasons like habitat depletion or predation (Beehner and Bergman, 2017). Often, this association between stressors and the stress response becomes muddled (Beehner and Bergman, 2017) and leads to an incorrect conclusion that all stressors are bad and that the subsequent stress response (usually labelled the ‘fight, flight, or freeze’ response) is inherently bad. Indeed, stressors can be negative in nature, for example, an oncoming predator is perceived as a threat to an animal’s fitness. However, this does not mean that the stress response itself is negative, for it motivates the animal to evade predation. It is when the stress response becomes persistent, or chronic, that it begins to negatively impact an animal’s health. A wide range of physical ailments have been attributed to chronic stress response, including “hypertension, atherosclerosis, insulin-resistant diabetes, immune suppression, reproductive impairments, and affective disorders” (Sapolsky, 2005, p. 648). Understanding the stress response and its transition from adaptive to maladaptive is crucial to assessing the health of animals as they face such external factors as habitat disturbance and food scarcity.

If you are working with a nonprofit community or agency, please include their information below.

N/A

Impact

With the expanding human population, wildlife the world over faces persistent stressors in the forms of habitat depletion and food scarcity. The aim of my study is to assess behavioral and hormonal differences between less competitive and more competitive breeding pairs of Coquerel's sifaka (i.e. smaller families and larger families) and to determine if competitiveness and sex influence the stress response (i.e. cortisol production). The hypothesis of this study is that the behavioral analysis and cortisol analysis will both show that increased competition and cortisol production among a larger group versus a smaller group. If both groups inhabit the same given space (e.g. a cage, or enclosure), then the larger group should produce more cortisol (i.e. there is an inverse relationship between competition and cortisol production). This study should elucidate a potential scale for rating sifaka health and the degree to which various zoological institutions are caring for these animals. Additionally, since the female sifakas are dominant within the groups and must defend their territory while nursing/raising offspring,
another hypothesis is that females will have an increased cortisol production when compared to males, both within groups and as an overall average between groups. To my knowledge, little research has been performed on the analysis of stressors on captive sifakas, so this research is not only beneficial, but novel as well.
Project Objectives
Assess sifaka behavioral patterns through their daily activity budget
Measure presence of cortisol in sifaka fecal samples
Determine the relationship (if any) between behavior and cortisol production among sifaka groups of varying competitiveness
It is my hope that by coupling this proposed research on captive sifakas with research conducted over the summer for my ANTH 493 course that different stressors may be quantified
In doing so, my hope is that the results of this study will address the impact of increased competition on sifaka health

Methodology: Action Steps/Process
For this study, cortisol will serve as a proxy for stress. The best means of cortisol sample collection is fecal because it is the least invasive and has been utilized previously in determining stress response among sifakas, specifically Propithecus verreauxi (Brockman, Cobden, & Whitten, 2009; Fichtel, Kraus, Ganswindt, & Heistermann, 2007). Specifically, Fichtel et al. (2007) found higher cortisol levels in males during the reproductive season and Brockman et al. (2009) found higher cortisol among the breeding males when infants were present. While both studies show an increase in male cortisol, since this study is only examining the breeding males and females of each group, the hypothesis that females will be higher is due to the added bodily stress of providing nourishment for both the female and her offspring.
Overall, the implementation of glucocorticoid analysis should provide insight into the effect of stressors in P. coquereli as seen in P. verreauxi. I have already collected 26 samples from wild sifakas over the summer and it is my estimate that given the nine days of sample collection and the easier setting (i.e. a confined space versus the rain forest) that the number of samples should be double for captive sifakas for a total of around 70 to 75 samples.

Data collection methods will consist of instantaneus sampling of behavior type, height from ground, and nearest neighbor at 5 minute intervals and continuous sampling that consists of the aforementioned variables plus the duration of each behavior (entered as a start/stop time and then converted into seconds). Unfortunately, the species (P. coquereli) must be different from the species examined in Madagascar (P. diadema) as there are no P. diadema held in captivity in the United States. Subjects for the captive study will consist of a convenient sample of 4 individuals (the breeding male and female from two different groups) housed at the Duke Lemur Center (DLC). Given the abundance and quality of food available in captivity, behavioral foci will be time conducting and not conducting prosocial behavior (i.e. grooming). The measure of competitiveness between the two groups will be habitat size (square feet) per kilogram (total mass of all group members). These measures will allow the study to assess whether the restrictive habitat of the captive sifakas impacts sifaka health differently than the reduced food quality observed in the wild sifakas.

Methodology: Expected Results
Given it is not breeding season, I expect a higher amount of cortisol in females than in males because the dominant female (i.e. breeding female) experiences more stressors through overseeing the group and the act of nursing causes added stress on the body. As for competitiveness, the group with higher competitiveness (i.e. less space per capita) will exhibit higher levels of cortisol. Overall, it will be
interesting to see which stressor, less space (captive sifakas) or poorer food quality (wild sifakas) has a larger effect size. Because this has not been examined in past research, I cannot speculate which will be greater.

Final Product
Submitting as my Honors capstone project and for a poster presentation and publication.

Student Academic Experience
Given my double major in psychology and anthropology, this project has already (through ANTH 493) given me an incredibly unique field experience that I would like to enhance through further research in a different setting. This way, I will have a basic understanding of the differences in behavioral analyses in multiple settings. I chose this topic prior to enrolling in ANTH 493 with the hope of expanding it for my senior capstone for both university and departmental honors. Another reason I chose this project is that as a psychology major, understanding behavior is of interest to me regardless of whether it is human or nonhuman and my hopes is that through this research, specifically the cortisol analysis, I will gain an understanding of how hormonal extraction works, but equally important, how to write about hormonal analysis/results; something that I have yet to do throughout my tenure here at NIU. Lastly, I believe that this experience will separate me from my peers and improve my odds for enrolling in graduate school, a near-term goal of mine.

Does this project tie into a specific course?
Yes – ANTH 498H & 499H
Example 2 - Community Based Research

Project Title
Green Team Database Development

Background

*Explain the present state of knowledge and understanding of the community you will be working with or in your field of study, using proper citations when necessary. Provide the background of the topic in an engaging manner (e.g., relate topic to reader, raise proper citations when necessary. Provide the background of the topic in an engaging manner (e.g., relate topic to reader, raise interesting questions, note topics importance in field, etc.). Include descriptions of any partnering organizations. Make it clear why you interesting questions, note topics importance in field, etc.). Include descriptions of any partnering organizations. Make it clear why you want to do this project and why it needs to be undertaken to fill a gap in knowledge.*

This community-based research proposal is meant to facilitate new environmental ideas at NIU by documenting NIU’s previous accomplishments. The NIU Green Team, comprised of faculty, staff, and students, was formed to help the university evolve into a more sustainable campus by instituting environmentally sustainable policies and practices that promote responsible stewardship of existing resources and the environment. Members of the Green Team have contributed to sustainability initiatives such as energy efficiency improvements, water conservation, recycling expansion, and sustainable transportation. These initiatives not only reduce NIU’s carbon footprint, but also save the university money and reduce resource consumption and waste. The NIU Green Team is developing a sustainability plan for the university to encourage NIU to continue to make decisions with environmental sustainability in mind. The phases for creating the sustainability plan are as follows: 1) Initial benchmarking (complete) 2) Communicating current practices to NIU constituent groups (ongoing) 3) Generating interest and buy-in (starting in summer 2017) 4) Deciding on the components of the plan (starting in summer 2017) 5) Developing the plan for implementation (starting in fall 2017) The initial phases involved making NIU’s achievements more widely known through web and press communications. The NIU Green Team is ready to start deciding on the various components of the sustainability plan. Since the Green Team is comprised of individuals who volunteer their time, engaging a student in developing a searchable database of past sustainability achievements will help the Green Team to identify current strengths and areas for improvement. Several universities in Illinois and across the country have established sustainability or climate action plans: Eastern Illinois University, Illinois Institute of Technology, Southern Illinois University at Carbondale, University of Illinois - Urbana/Champaign University of Illinois at Chicago, University of Illinois Springfield, Ball State University, California State University at Sacramento, Colorado State University, University of New Hampshire, and the list continues on the Princeton Review 2016 Green Guide to Colleges.

If you are working with a nonprofit community or agency, please include their information below.

Name of Agency: NIU Green Team
Impact
Faculty, staff, and students continually generate ideas for environmental improvements at NIU. Identifying previous environmental successes at NIU will help students, staff, and faculty to be more productive in generating new ideas to address NIU’s environmental impact. With NIU taking a leadership role in the community, along with the City of DeKalb Environmental Commission, there will likely be good collaboration in environmental initiatives that affect the region. As leaders, institutions of higher education have a responsibility to the planet to be environmentally conscious in its actions.

Project Objectives
The student working on the project during the spring 2017 will be responsible for taking information that has been gathered on environmental initiatives at NIU and turning them summary files with links to supporting documents as necessary. The result will be a searchable database for the Green Team to post on its website. The database will be like one developed by the Association for the Advancement of Sustainability in Higher Education (https://hub.aashe.org/).

Methodology: Action Steps/Process
The student will identify fields and search terms for the database. Once those are identified, the student will review materials that have been collected from departments across campus. Those materials will be classified to meet the field and search parameters, summarized in abstract format, and electronically “filed” with supporting documentation. Edits to the field and search terms will be made as necessary during the process.

Methodology: Expected Results
It is expected that the student will produce a searchable online database of sustainability efforts for the past five years. Efforts will be documented from departments including Grounds, Architecture and Engineering, Physical Plant, Heating Plant, Dining, Building Services, Environmental Health and Safety, Extension campuses (Naperville, Lorado Taft), Division of Information Technology, and others as appropriate.

Final Results
The final products for the spring semester will be a searchable online database, an improved website (because of the database), and a poster for the Community Engagement Showcase.

Student Academic Experience
The student selected for this opportunity will greatly improve their written communication skills and qualitative data organization skills. Working with the Green Team on the sustainability items will assist the student in her/his career preparation regardless of major.

Does this project tie into a specific course?
No
Example 3 - Study Abroad/Away Programs and Field Schools

Program/Trip/Project Information
Title of program/trip/project: NIU at Oxford
Destination (include address): Oxford University
Start date of trip (Month/Day/Year): 06/25/17
End date of trip (Month/Day/Year): 07/28/17
Anticipated project completion date (Month/Day/Year): 12/06/17

Describe what you want to achieve from this experience:
Personal growth is often prompted from cultural experiences outside your own. Having the courage and means to travel and learn more about the world is essential for me. I know that my participation in the Oxford program will help shape me as a student, educator, professional, and citizen. I am really excited for the prospect to push through my comfort zones, challenge myself, and be an active traveler who is determined to take advantage of every opportunity. The gains, skills, experiences that this abroad experience will prompt will influence my future career and life.

Final Product
How do you plan for your project to be disseminated? Examples include poster, report, a publishable article or chapter, a performance, a policy recommendation, or other. Be as specific as possible.

Studying in Oxford and traveling the UK is an unparalleled experience to help me make Shakespeare more accessible to students and to garner and hold their attention in class. Teaching Shakespeare can prove to be incredibly difficult because of the complexity of his work and the preconceived ideas students may have about his work. Shakespeare’s legacy reverberates in all classrooms around the world and I want to bring back the live and opulent presence in my classroom for a more transformative experience for my students and myself. As I begin my student teaching internship in the fall, I will have many resources, from the trip, that I can use to facilitate better classroom experiences. Throughout the summer abroad, I will keep a detailed photo blog and I will collect artifacts from my travels that I can then use in the classroom to bring the literature to life.

Student Academic Experience
Indicate how the proposed experience is expected to enhance your or your student's academic experience and future career.

After over three years of university education, I will be completing the final step, a student teaching internship in the fall semester of 2017. When sitting with my cooperating teacher, she informed me that I will be responsible for teaching Shakespeare’s work during my time student teaching. Shakespeare’s poems and plays have captivated audiences from all over the world for hundreds of years. From Romeo and Juliet’s tragic love story to the gentle and humorous melody of “Shall I Compare Thee to Midsummer’s Day,” Shakespeare has long been a commonly quoted and revered author. Having the opportunity to have an authentic experience learning Shakespeare at Oxford University and going to the Royal Shakespeare Theatre and the Globe Theater to see his works performed will benefit and
supplement my knowledge in the classroom. This summer, the Globe Theater will have performances of classic and alternative versions of his most notable plays like “Much Ado About Nothing,” “Twelfth Night,” “Romeo and Juliet,” and “Tristan and Yseult.” I will be able travel independently and see these plays performed and collect various artifacts and information that will give my students a wide, complete, and rich look into Shakespeare. This experience will increase my aptitude and literacy in subjects and literature that I will be instructing.
Example 4 - Travel to Conferences/Competitions

Sponsoring Agency: Southern Political Science Association
Conference Title: Annual Meeting of the SPSA
If this is a professional meeting, is it: state – regional – national – international
Conference website: http://spsa.net/annual-meeting/2017-conference-overview
Conference start date: 1/12/2017
Conference end date: 1/14/2017
What will be student's role in this conference: presenter – organizer – participant – volunteer
If you selected presenter, please write you presentation title: Pregnancy Discrimination and the Supreme Court

Describe what do you want to achieve from this experience?
Throughout my past two years at NIU, I have been fortunate to receive so many tremendous research opportunities through Research Rookies and the Student Engagement Fund. I have presented at Undergraduate Research and Artistry Day in both 2015 and 2016 and at the National Conference on Undergraduate Research in the spring of 2016. While these experiences have greatly enhanced my ability to present my research, attending the Southern Political Science Association's Annual Conference would be my first professional research presentation. My ultimate goal from this experience to receive feedback from judicial politics experts in the hopes that I can publish my paper within the next year. Also, I want to use this experience to network with other scholars in my field of study. This conference specifically is know to have many editors of law reviews attend to scope out future publications. I would attend this conference with my research mentor, Dr. Artemus Ward, who has attend the Southern Political Science Association’s meetings numerous times throughout his academic career. I believe that this experience will be crucial to further developing my research project, professional connections, and obtaining my goal of a publication in a law review or political science journal.