Research Assistant and Volunteer Opportunities 2023–2024

ROSS UNIVERSITY
SCHOOL OF VETERINARY MEDICINE

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RESEARCH AND GRADUATE PROGRAM

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If you are interested in becoming a Research Assistant or Research Volunteer for any of the listed projects, or would like to inquire for more information about the research, please contact the project's Principal Investigator (PI).

Research Assistant (RA)

The Research Assistant (RA) position is designed to give students hands-on introduction to independent research. RA's devote up to 25 hours (paid) to a specific project during a semester. RA's will gain valuable experience in the field of study and can potentially be an author on a publication if the PI decides to publish data.

Research Volunteer (RV)

The Research Volunteer (RV) position is designed to allow students to observe certain aspects of how research is conducted and provide an opportunity to gain valuable experience in the field of study. RV's have no specified time commitment to a project and will likely not have a focused personal project on which to work. There is no stipend and no expectation of presentation of research results for RV's; however, there is potential to advance to a RA position if funds allow.

Both RA's and RV's can present a poster during Research Day.

Center 1: One Health Center for Zoonoses and Tropical Veterinary Medicine

RUSVM Grant Number	Project Title	PI(s)	SIMMS Account Name	#RAs	#RVs	Description
41025-2024	Gammaherpesvirus-1 identification in cats from St Kitts, and investigation into risk factors associated with infection.	Rolph K, McBride M, Silkworth A, Cavanaugh R	Res Ctr 1 Rolph (GHV1 Cats 41025-2024)	2	3	Gammaherpesviruses (GHVs) establish lifelong infection in many animal species and can cause cancer and other diseases in humans and animals. Since the discovery of FcaGHV-1 in 2014, there have been a handful of studies assessing the virus distribution and route of infection. However, to date, little is understood of the significance of FcaGHV-1 infection or its potential role in tumorigenesis associated with FIV infection. This study is the preliminary step in determining the viability of studies into FcaGHV-1 infection in cats from St Kitts. Blood samples will be collected from 312 feral cats, weighing 1kg or more, and presenting for neutering as a part of a RUSVM trap-and-neuter program. During anesthesia for neutering, 1.5mls of blood will be taken from the jugular vein (maximum 0.2% circulating volume) and placed into EDTA anti-coagulant before being separated and stored at -80 degrees, for later analysis. For each feral cat the approximate age, gender, any illness noted and zone from which they were trapped, will be recorded. In addition, surplus EDTA anti-coagulated blood from 104 client owned cats presenting to the RUVC will be collected from the diagnostic lab. For each sample collected the age (or approximate age), gender, any current illnesses and zone of habituation will be recorded. In addition, in client owned cats access to outdoors will be recorded. PCR will be used to determine the prevalence of FcaGHV-1, FeLV and FIV infection in both domestic and feral cats and associations with other illnesses, geographic zone, age and gender will be explored.

Center 1: One Health Center for Zoonoses and Tropical Veterinary Medicine

RUSVM Grant Number	Project Title	PI(s)	SIMMS Account Name	#RAs	#RVs	Description
41027-2024	Is there colonization of the human oral cavity with canine Capnocytophaga spp. and vice versa?	Toka F	Res Ctr 1 Toka (Human Oral Canine 41027-2024)	2	0	Capnocytophaga spp. are Gram-negative bacteria found in the oral cavity of humans and dogs. Capnocytophaga canimorsus causes infection in humans following dog-bites but can cause infection simply through interaction with carrier dogs. We want to investigate whether canine Capnocytophaga spp. colonize the human oral cavity and vice versa. We will collect oral cavity swabs from healthy dogs and their owners and test them for the presence of Capnocytophaga spp. The bacteria will be studied in-depth using molecular methods. Saliva from the same dogs and humans will be tested for the presence of Capnocytophaga antibodies. Phagocytosis will demonstrate the resistance or susceptibility of isolated Capnocytophaga spp to elimination in the oral cavity. These studied aspects will show colonization possibility, the prevalence of colonization and the mechanism possibly responsible for colonization or elimination of bacteria in the oral cavity of humans and dogs. For students volunteering or those selected as Research Assistants, this project will offer an opportunity to learn laboratory research techniques. The students will be expected to learn how to receive laboratory samples designated for bacterial culture, how to prepare the samples for inoculation on media, how to inoculate solid media with samples, how to inspect and read the growth characteristics of bacteria on solid media, how to identify the bacterial colonies of interest, how to subculture bacteria onto other media. Students should expect to learn isolation and quantitation of bacterial DNA. For the student invited to pursue a MSc degree, he/she will be introduced to bacterial genomics, learn how to perform antimicrobial susceptibility testing, serological analysis of salivary antibodies and carry out phagocytosis assays using mammalian cell culture.
41015-2023	Virulence factors of Trichomonas tenax	Yao C	Res Ctr 1 Yao (Trich 41015-2023)	4	0	Student RAs/RVs will mainly be involved in collecting cell cultures, preparing them for further analysis such as SDS-PAGE, zymogram and LC-MS/MS analysis. They will be predominantly working with postgraduates Ms. Nawu (Sophie) Yang and Mr. Maurice Matthew.
41019-2023	One Health approach to Q fever in St Kitts—understanding the transmission	Muller A, Chapwanya A, Aljay P, Conan A, Mertens-Sholz K, Becker A	Res Ctr 1 Muller (Qfever 41019-2023)	0	4	A DVM-MSc student will be targeted for working under the umbrella of the project. The DVM-MSc will participate on the qPCR reactions of sheep positive samples, IFA serology testing of human samples, and analyses of sequencing results for the MLVA assignment. One Research volunteer will be trained to apply Questionnaires A and B to humans. A total of 3 Research volunteers will be trained to work on the laboratory, to participate on serological analyses.
41017-2023	Detection and molecular characterization of viruses in wildlife on the Caribbean islands of St. Kitts and Nevis: Peeping into a potential Pandora's box?	Ghosh S, Hooper S, Bolfa P, Navarrete Talloni MJ, Becker A, Gainor K	Res Ctr 1 Ghosh (Wildlife Virus 41017-2023)	0	14	The RVs are/will be assisting in the laboratory work. RVs have been acknowledged in publications from this FY23 intramural.
41002-2022	Serologic surveillance for equine parvovirus-hepatitis (EqPV-H) DNA and anti-EqPV-H antibodies in Caribbean horses and donkeys	Xue, C	Research Ctr 1 Xue (Equine Parvo-Hep 41004-22)	0	3	Students will be given the opportunity to practice venipuncture. Students specifically interested in a career in equine medicine will benefit from this very clinically relevant procedure. Furthermore, students will also be able to practice venipuncture on donkeys. Slight anatomic differences exist in donkeys that affect the ease of jugular venipuncture. Therefore, the opportunity for increased practice in this species will give students clinically relevant experience regarding comparative anatomy between horses and donkeys.

Center 2: Center for Integrative Mammalian Research

RUSVM Grant Number	Project Title	PI(s)	SIMMS Account Name	#RAs	#RVs	Description
42025-2024	Pharmacokinetics and pharmacodynamics of intravenous and intramuscular morphine in donkeys	Maney J, Dzikiti B, Escobar A	Res Ctr 2 Maney (PK-PD Donks 42025-2024)	2	2	This study will inform the clinical use of morphine in donkeys by reporting complete pharmacokinetics (IV) and a comparison with intramuscular morphine, which is a common route of administration. The antinociceptive effect will be described, and combined with the previous study may estimate an antinociceptive plasma concentration of morphine and metabolites in donkeys. Comprehensive PK/PD data may be used to direct future studies using morphine as an analgesic in donkey patients. The focus of IMR is "understanding cellular and molecular mechanisms underlying the function of body systems during health and disease." Determining what a healthy donkey does to morphine (PK) and what the morphine does to the donkey (PD) will inform the use in donkeys suffering from painful conditions. One abstract presentation/poster and one full-length manuscript may be expected from this data. External grants that may follow from this project include PK/PD evaluation of combinations of morphine and alpha-2 agonists, MAC-sparing effects of morphine, and exploring additional opioid drugs using the same research framework.
42026-2024	Effects of an 18-hour fast period on bodyweight, hematology, blood chemistry and acid-base balance in male sheep	Dzikiti TB, Maney JK, Escobar AE, Chapuis R	Res Ctr 2 Dzikiti (Fasting Sheep 42026-2024)	1	2	This is a research project entitled 'Effects of an 18-hour fast period on bodyweight, hematology, blood chemistry and acid-base balance in sheep' led by Dr Brighton Dzikiti. The research will assess basic clinical, hematological, biochemical, and metabolic parameters observed before and after a standard pre-anesthetic fast period in a group of 35 RUSVM sheep housed at the LATF sheep holding pens. Data collecting activities will likely on Monday and Wednesday afternoons from 2:30pm–3:30pm, and again on Tuesday and Thursday morning from 10:00am–11:00am during Weeks 5 to 8 of Spring semester 2024. Students will be involved in such activities as handling and performing physical examinations, including weighing, sheep. In addition, students may assist with blood draws from the jugular vein, and processing blood samples for submission to the RUSVM Clinical Pathology lab and for blood gas analysis using an i-STAT blood gas analyzer. Experience in working with sheep would be useful, but not necessary as training in performance of activities involved will be provided.
42027-2024	Endometrial inflammation in jennies inseminated with frozen jack semen: effect of anti-inflammatory and hormonal therapy	Segabinazzi L, French H, Gilbert R	Res Ctr 2 Segabinazzi (Endo Jennies 42027-2024)	2	>30	This is a research project entitled 'Effects of an 18-hour fast period on bodyweight, hematology, blood chemistry and acid-base balance in sheep' led by Dr Brighton Dzikiti. The research will assess basic clinical, hematological, biochemical, and metabolic parameters observed before and after a standard pre-anesthetic fast period in a group of 35 RUSVM sheep housed at the LATF sheep holding pens. Data collecting activities will likely on Monday and Wednesday afternoons from 2:30pm–3:30pm, and again on Tuesday and Thursday morning from 10:00am–11:00am during Weeks 5 to 8 of Spring semester 2024. Students will be involved in such activities as handling and performing physical examinations, including weighing, sheep. In addition, students may assist with blood draws from the jugular vein, and processing blood samples for submission to the RUSVM Clinical Pathology lab and for blood gas analysis using an i-STAT blood gas analyzer. Experience in working with sheep would be useful, but not necessary as training in performance of activities involved will be provided.
42028-2024	Evaluation of coagulation function in cats with chronic kidney disease	Bucknoff M, Rolph K	Res Ctr 2 Bucknoff (Cats Kidney 42028-2024)	1	2	At least one research assistant and one or two research volunteers will be needed to facilitate sample collection and to perform viscoelastic testing. Each assistant will be trained on how to perform TEG, as well as basic TEG maintenance and operation of corresponding software. Research assistants will participate in abstract preparation, presentation, and scientific writing of manuscript. A poster presentation for RUSVM research day is expected, as well.
42029-2024	Validation of FAMACHA in Sheep on St. Kitts	Larde H, Ketzis J, Liburd K, Walker J	Res Ctr 2 Larde (FAMACHA Sheep 42029-2024)	3	7	RAs and RVs will perform FAMACHA scoring, body condition scoring and blood draws pre-slaughter at the St. Kitts' abattoir. RAs and RVs also will perform Modified McMaster fecal egg counts and Haemonchus contortus worm counts.

Center 2: Center for Integrative Mammalian Research

RUSVM Grant Number	Project Title	PI(s)	SIMMS Account Name	#RAs	#RVs	Description
42033-2024	Analysis of synovial fluid from clinically normal radiocarpal and tibiotarsal joints of adult donkeys (Equus asinus)	Larde H, Robinson C, Thrall MA, Chapuis R, Munoz F	Res Ctr 2 Larde (Synovial Donks 42033-2024)	2	2	The PhD or MSc student will be actively involved in the data collection: assessment of the donkeys within the week prior the day of arthrocentesis (including physical exam, lameness exam, and radiographs), with the help of the research assistant and either the PI or one of the veterinarian collaborators on the project. The PhD or MSc student will be in charge of collecting the synovial fluid samples on Tuesdays and Thursdays of weeks 3, 4, and 5 of the semesters. A research assistant will be needed to help with the recording of the data (in a shared spreadsheet). The PhD or MSc student and research assistant will be responsible of the realization of the smears and storage of the slides, identification of the EDTA-containing tubes and transportation to the diagnostic lab for storage until reading. The PhD or MSc student with the help of the research assistant will be involved in the analysis of synovial fluid samples. Students will be involved in the interpretation of radiographs (reading of all views by 2 veterinarians with a specialty in large animal surgery). The PhD or MSc student will be involved in the statistical analysis of all data, and writing of the results in one (MSc) or two (PhD) scientific articles. Student will be encouraged to submit an abstract in an international veterinary conference, and to submit an article in a well-recognized scientific journal.
42034-2024	Microbiome on pig carcasses (Sus scrofa domesticus) in the Island of St. Kitts for forensic applications	Navarrete Talloni MJ, Mukaratirwa S, Tembe D, Herve Calude LP	Res Ctr 2 Navarrete (Pig Forensic 42034-2024)	1	1	Estimating the post-mortem interval (PMI) is an important aspect of forensic sciences since it helps to determine the time of death, but it can be challenging due to the body's decomposition process. Methods like thanatochemistry and entomology are used for PMI estimation but have limitations. In the search for a more accurate method, the postmortem microbiome has been studied. The changes in the microbial communities at each stage of decomposition are important and could be a relevant tool in understanding the post-mortem variations. Bioinformatics and next-generation sequencing (NGS) have expanded our knowledge of microbiomes, offering more accurate results to determine microbial diversity. NGS-based technology has resulted in the increased significance of the microbiome analysis for forensic applications in PMI estimation. In post-mortem microbiological studies, swine represent an excellent animal model since their decomposition is similar to that of humans. This study aims to characterize the temporal shifts and spatial heterogeneity between peri-mortem (at time of death) and post-mortem (after death) microbiomes in pig carrions during rainy and dry seasons in St. Kitts. The focus will be on the microbial communities associated with skin, buccal cavity, and perianal area. The findings will provide preliminary data for the potential forensic use of post-mortem epinecrotic communities in both humans and animal crimes. Students involved in this project are expected to participate actively in laboratory, mainly with the DNA extraction of the samples. Students will be supported and guided during the study and will be highly encouraged to present the results data at a scientific conference or meetings during the length of the project (2023–2024). The selected students will be working under the direct supervision of Dr. María José Navarrete Talloni.
42035-2024	APGAR scoring and lactate sampling in newborn kittens	Rolph K	Res Ctr 2 Rolph (APGAR Kittens 42035-2024)	0	1	RV already ID'd.
42019-2023	Early pregnancy termination in donkeys	French H, Segabinazzi L, Gilbert R, Xue C	Res Ctr 2 French (Donkey Preg 42019-2023)	1	>30	Previous research projects utilizing jennies have been very popular amongst the students. Research assistants are trained to transrectally palpate and ultrasound jennies and gain experience in theriogenology. Research volunteers are trained to perform physical exams, jugular blood collections, and gain experience while watching transrectal ultrasonography.

Center 2: Center for Integrative Mammalian Research

RUSVM Grant Number	Project Title	PI(s)	SIMMS Account Name	#RAs	#RVs	Description
42015-2023	Prevalence of the ABCB-1 gene mutation in feral cats on St. Kitts and the effects of topical macrocyclic lactone (eprinomectin) application in the affected population	Silkworth A, Cavanaugh R, Peda A, Ketzis J, Rolph K	Res Ctr 2 Silkworth (ABCB1 42015-2023)	3	3	The student's responsibilities will include procurement and documenting of cheek swab samples, applying the parasiticide to study subjects, monitoring of the study subjects for adverse events, recording and documenting outcomes, and assisting with medical intervention should the need arise.
42003-2021	Pathology, gastrointestinal parasites, and survey of Angiostrongylus cantonensis in rats from St. Kitts and Nevis	Bolfa P, Ketzis J	Research Ctr 2 Bolfa (Rats Pilot 42003-21)	1	3	Parasites ID, reading of histopathology slides, DNA extraction
42022-2023	Molecular detection, characterization and quantification of Bartonella spp. in formalin fixed paraffin embedded hemangioma and hemangiosarcoma tissues from dogs	Bolfa P, Muller A, Cavanaugh R	Res Ctr 2 Bolfa (Bartonella 42022-2023)	1	4	The RUSVM database contains PDF reports of biopsies and autopsies back to 2014. The following keywords "hemangioma and hemangiosarcoma" a PDF document retrieving all reports will be generated. Using the Avimark or Provet platforms, outcome information from the patients enrolled in the study will take place. Information regarding the recurrence of the tumor, time of recurrence, cause of death, and overall animal condition will be recorded and then evaluate with the parameters evaluated by the pathologist and analyzed using Kaplan-Meier curve.
42037-2024	Effects of a 4-hour fast period on hematology, blood chemistry and acid-base balance in healthy chickens	Escobar A, Dzikiti B, Maney J	No funding needed	2	20	This is a research project entitled 'Effects of a 4-hour fast period on hematology, blood chemistry and acid-base balance in chickens' led by Dr. Andre Escobar. The research will assess hematological, biochemical, and metabolic parameters observed before and after a standard pre-anesthetic fast period in a group of 20 chickens belonging to a local farm. Data collecting activities will likely be on two Saturdays one week a part during November of 2023. Students will be involved in activities such as handling and performing blood draws from the basilic vein, jugular vein, or medial metatarsal and processing blood samples for blood gas analysis using an i-STAT portable blood gas analyzer. Experience in working with chickens would be useful, but not necessary as training in execution of activities involved will be provided prior to or during the sample collection.

Center 3: Center for Conservation Medicine and Ecosystem Health

RUSVM Grant Number	Project Title	PI(s)	SIMMS Account Name	#RAs	#RVs	Description
43025-2024	Nematopsis spp. in Marine Organisms on Saint Kitts and Nevis	Atherley N, Freeman M, Krismundsson A	Res Ctr 2 Larde (Synovial Donks 42033-2024)	3	1	Student involvement is anticipated to be 4 individuals over the course of three semesters. All 4 of these students have been trained in the lab and have participated in lab and field work. This is however a new project for them. The proportion of research volunteers to research assistants is expected to change, as below: First Semester: 3 research assistants, 1 research volunteer Second Semester: 2 research assistants, 2 research volunteers Third Semester: 1 research assistant, 3 research volunteers These persons will be involved in specimen collection from the marine environment. Gastropods will be collected from rocks along the coast of the island, predominantly those located at RUSVM and Gong Beach. This project will be screening other marine molluscs for Nematopsis and collection will be via snorkeling and free-diving. Within the lab setting, crabs and molluscs will be dissected in Necropsy and microscopy and preparation of samples for histology will be done. Participants will also be expected to perform DNA extraction and PCR on infected tissue in the Research Laboratory. It is also expected that PCR product will be prepared for sequencing carried out by an external company. Students will be trained in all relevant laboratory techniques used in this study.
43015-2023	Phenotypic, biochemical, genomic, and proteomic characterization of a novel Bartonella species	Muller A, Breitschwerdt EB, Maggi R, Butaye P	Res Ctr 2 Navarrete (Pig Forensic 42034-2024)	0	3	A total of 3 RVs will be trained to work on the Laboratory, to participate on the phenotypic and biochemical characterization of the isolates.
43008-2022	Integrating molecular and histopathological techniques in the study of tissue loss of hard corals on the reefs off St Kitts	Becker A, Freeman M, Dennis M	Research Ctr 3 Becker (Hard Corals-43008-22)	1	0	Most of the work in the field and the laboratory has been completed. This continuation will support one student assisting in remaining molecular work (1/2 of the samples still require DNA extractions) and final sample preparation.
43007-2021	Sea fan Mycobiota: a metagenomic next generation sequencing (mNGS) approach	Freeman M, Becker A, Dennis M	Res Ctr 3 Freeman (Sea Fan 43007-2021)	2	2	Existing RAs and RV will assist in the collection of sea fan material from one site (Whitehouse Bay) and perform DNA extraction in the lab under the guidance of Dr Becker.
NA	Sea turtle management, health assessment, and tissue sampling/sea turtle conservation study	Stewart K, Norton T, Picknell A, Dennis M	Research Ctr 3 Stewart (sea turtle conservation)			

Center 4: Center for Research and Innovation in Veterinary and Medical Education

RUSVM Grant Number	Project Title	PI(s)	SIMMS Account Name	#RAs	#RVs	Description
44025-2024	Identifying minimum deliberate practice needed to identify normal and abnormal structures on the canine fundoscopy teaching model	Hooper S, Artemiou E	Res Ctr 4 Hooper (Canine Teach 44025-2024)	2	1	RA's will assist the MSc student and Supervisor's on the day of the fundoscopy training laboratories and OSCE's and assisting with tasks outside of these days such as entering survey results.
44026-2024	Understanding how social determinants impact Golden Retriever owner's choice in feeding practices and how this impacts the risk of the development of neoplastic diseases	Hooper S, Artemiou E	Res Ctr 4 Hooper (Golden Neoplastic 44026-2024)	2	0	Students will assess with preparation of the data for analysis including categorizing the diet types, adding the proximate analysis available for the diets, and adding some additional social determinant data from US Census data based upon the owner's zip codes.
44027-2024	Assessment of the impact of an advanced clinical oncology elective rotation on global EPA ratings for students in their final year of pre-clinical veterinary training	Cavanaugh R, Rolph K, Bouillon J	Res Ctr 4 Cavanaugh R (Elective Rotation 44027-2024)	1	0	A student has already been identified to participate in this research project. She will be the lead on data acquisition and manuscript preparation. RUSVM faculty will support her with data analysis and manuscript refinement/submission.
44028-2024	Feminization of the veterinary profession and women representation in veterinary science	Navarrete Talloni MJ, Palmieir C, Daniela S	Res Ctr 4 Navarette (Women Vet Sci 44028-2024)	9	3	The feminization of Veterinary Sciences refers to the increasing proportion of women in the field of Veterinary Medicine. This trend has been observed in many countries around the world and it is generally considered to be a positive development, and it is likely to continue. This fact is often lauded as a success for female inclusion in STEM, however, the feminization of Veterinary Sciences also raises some concerns. The culture of veterinary medicine still remains stereotypically masculine with gender bias, societal expectations, and misogynistic structures still prevailing in the veterinary industry. This project aims to delineate the gender factor in the triad undergraduate students—veterinary practitioners—academics through quantitative data collection and questionnaires in order to thoroughly understand the gender landscape in veterinary medicine. The methodology includes a combination of a search-based study, online surveys, and interviews. DVM students will participate as student volunteers or research assistants in the scholarly analyses of the factors that influence gender equity in veterinary medicine. Students involved in this project are expected to participate actively in the literature review, online search and data collection and recording, as well as in the survey/interview design and implementation. There will also be opportunities to participate in the manuscripts and data analysis. The students are highly encouraged to present the results data at a scientific conference or meetings during the length of the project (2023–2024). The selected students will be working under the direct supervision of Dr. María José Navarrete Talloni.
44029-2024	Incorporating Immersive virtual reality (IVR) into the DVM program: Evaluation of Student's interaction with the VR horse and environment	Hooper S	Res Ctr 4 Hooper (VR Horse 44029-2024)	2	5	Students will be able to experience each of the 3 training scenarios (equine behavioral training and halter placement (1) in the VR environment, (2) on a low-fidelity model, and (3) on the live animal) before helping the VR and live animal training. Students will also help with mini-OSCEs.

Center 4: Center for Research and Innovation in Veterinary and Medical Education

RUSVM Grant Number	Project Title	PI(s)	SIMMS Account Name	#RAs	#RVs	Description
44030-2024	Evaluating the use of Lego Tigers for Teaching and Assessing Localization of Neurology Lesions	Hooper S, Kehl M	Res Ctr 4 Hooper (Lego Tigers 44030-2024)	2	12	Students will help prepare the case-studies for workshops using Lego tigers and to pilot all the cases and surveys. Students will also help with the self-directed OSCE by assisting with movement of students through the stations, helping resolve any potential problems (i.e. a tablet's battery dies), and help administer the learning styles survey.
44018-2023	Assessment of Communication Skills During Service-Learning Exercises in Improving Client Adherence Surrounding Monthly Parasite Prevention for Household Pets in St. Kitts	Peda A, Artemiou E, DeRosayro R, Betance L, HerveClaude LP	Res Ctr 4 Peda (Comm Skills 44018-2023)	0	2	Research assistants/volunteers will receive communications training to allow them to serve as communication assessors. They will participate in owner questionnaire administration and oversight as well as data collection and review. They will assist in creating appointments for the day 30 and 60 return visit for preventatives. This will include tracking the clients who do not return and contacting them to inquire about the reason for no return. Students research assistant and volunteer participants will assist with publication creation, poster presentations, and will have their names included on all publications.