

SAMUEL J. LANE

EDUCATION

Graduate Student; PhD Program, Department of Biological Sciences August 2016 – Present
Virginia Polytechnic Institute and State University, Blacksburg, VA

Bachelor of Science in Biological Sciences
Arizona State University, Tempe AZ December 18, 2013

AWARDS

Undergraduate Grant, Central Arizona-Phoenix Long-Term Ecological Research
Arizona State University May 2012 – December 2012
School of life Sciences Undergraduate Research Apprentice, Arizona State University
Arizona State University May 2011 – September 2011

FIELD/LABORATORY EXPERIENCE

Research Technologist December 2015 – August 2016

The Mayo Clinic, Dr. Frank Porreca, Dr. Christopher Atcherley, Scottsdale, Arizona

- Performed enzyme-linked immunosorbent assays to investigate the role of calcitonin gene-related peptide in migraine pain
- Conducted perfusion fixation surgeries on mice and rats to fix and remove brain tissue for histological experiments
- Set up and simulated minor traumatic brain injury events in mice to investigate the role of repetitive injury on cognitive abilities and behavior
- Fabricated carbon fiber microelectrodes for live action reading of dopamine levels in the brain

Field Research Technician May 2014/2015 – August 2014/2015

University of Montana, Dr. Tom Martin, Flagstaff, Arizona

- Located, identified and monitored nests of Southwestern avian species through behavioral observations and systematic searching.
- Measured and handled a variety of avian species throughout each stage of their development into adulthood
- Set up and operated delicate video and audio recording equipment under volatile field conditions for extended nest and parental behavior observations
- Performed and supervised extensive vegetation surveys in variable mesic environments

Field Research Technician March 2015-May 2015

Kansas Cooperative Fish and Wildlife Research Unit, Dr. David Haukos, Manhattan, KS

- Captured and processed adult male and female Greater and Lesser Prairie chickens utilizing walk-in funnel traps and drop nets
- Attached tracking collars and harnesses and metal and color bands utilizing proper handling techniques for larger avian species
- Took standard measurements of capture specimen utilizing proper handling techniques for larger avian species
- Fitted individual lesser prairie chickens with VHF collars or satellite transmitters tracking purposes
- Tracked and triangulated birds' locations to within 1000 square meters daily via radio telemetry.

- Conducted extensive, daily vegetation surveys requiring knowledge of many grass and forb species of the Midwest.

Laboratory Technician

October 2014 – February 2015

University of Arizona, College of Medicine Phoenix, Dr. Robert Handa, Phoenix, Arizona

- Performed radioimmunoassays to measure amounts of corticosterone, prolactin and/or luteinizing hormone in blood samples taken from mice or rats kept under various experimental conditions
- Attained proficiency of proper techniques for handling adult and juvenile mice and rats of both sexes under experimental conditions
- Performed perfusion-fixation surgery on adult mice brains to fix and dissect out the brains for sectioning and analysis
- Maintained, operated and cleaned a Cryostat machine in order to section and mount juvenile and adult mice and rat brains for further analysis
- Conducted laboratory experiments involving radioactive materials and other extremely dangerous chemicals without incident.
- Performed routine laboratory tasks including maintaining laboratory equipment, preparing buffers and other solutions as needed and by cleaning and prepping all areas of the laboratory
- Worked within the animal care facility under sterile conditions where surgeries were performed and animals kept

Field Research Technician

March 2014 – April 2014

University of California, Davis, Dr. Gail Patricelli, Lander, Wyoming

- Observed and recorded the social and reproductive behavior of lekking Greater Sage-Grouse using video, acoustic array and photographic recording equipment
- Processed and analyzed photographs using Photoshop for future identification of individuals in behavioral research investigations
- Evaluated age of individual grouse using primary and secondary feather condition and measurement/ratio calculations
- Hiked daily with over 50 pounds of equipment to set up observation blinds in extreme cold weather conditions

Laboratory/ Field Assistant

August 2011 – December 2013

Arizona State University, Dr. Pierre Deviche, Tempe, Arizona

- Located, observed and recorded reproductive and territorial behavior of Rufous-winged sparrows, House sparrows, Northern Mockingbird and Abert's Towhee
- Observed and assisted the collection and plasma extraction of avian blood samples in the field
- Helped in the sectioning of male House sparrow brains and the counting of cell bodies using a microscope in the POA, PVN and BNST areas of the brain
- Facilitated field research by setting up equipment including mist nets, cameras and data collection equipment
- Performed strenuous, outdoor labor by hiking and carrying equipment on and off trail for up to 12 hours a day
- Contributed in gathering experimental data by insuring proper handling and treatment of blood samples, conducting behavioral observations and making detailed, accurate records of data recorded
- Discussed and critiqued scientific publications read the previous week and current and future projects with laboratory members in weekly meetings

Undergraduate Researcher

May 2012-September 2012

Arizona State University, Dr. Pierre Deviche, Tempe, Arizona

- Planned, managed and conducted a research project funded by an undergraduate grant.

- Independently conducted extensive field work in rural and urban environments involving locating individual male Northern Mockingbirds that were patrolling or defending a territory through the use of song within 2 hours of sunrise.
- Made song recordings using a PCM D50 Linear PCM Recorder and analyzed recordings using Raven Pro Sound Analysis Software.
- Captured Northern Mockingbirds using conspecific call backs and Japanese mist nets. The individuals were euthanized and their brains were perfused, treated, sealed in gelatin and frozen for sectioning.
- Conducted brain sectioning, mounting on vectobonded slides, rehydration, staining with Thionin, dehydration and sealing with cover slips

Undergraduate Research Apprenticeship under Stephanie Bittner and Dr. Pierre Deviche 2011

School of Life Sciences Undergraduate Research Apprentice, Arizona State University

- Assisted Ms. Bittner in field research investigating the relationship between corticosterone blood levels and parental investment in the Rufous-Winged sparrow

TEACHING EXPERIENCE

Arizona State University

Teaching Assistant- General Biology Laboratory 2

August 2012 – December 2013

- Developed weekly homework assignments, laboratory lectures and structure.
- Managed assignment grading and grade administration
- Instructed multiple weekly lower level laboratory classes every semester with 24 students per class
- Assisted students with class work and addressed questions through PowerPoint presentations, comprehensive lesson plans, office hours and one-on-one tutoring
- Proctored three lecture exams of over 100 students per semester, assisting students with exam questions and insuring academic integrity by watching for and addressing cheating
- Reviewed and discussed the current week's lesson plan and homework with lab coordinator and fellow TAs in weekly TA meetings to share best practices and identify opportunities for improvement

Assistant Teaching Assistant Animal Physiology Laboratory

August 2014-December 2013

- Assisted the TA during laboratory sections by answering questions and serving as an additional resource for the students
- Aided the TA by grading assignments/quizzes and assisted with all lab exams
- Provided input for exam questions and composed lab quizzes
- Assisted the lab coordinator by setting up equipment, cleaning stations, making solutions, and preparing the room for recitations and experiments.
- Attended weekly TA group meetings.
- Designed and constructed respiration chambers to measure metabolic rate.

PAPERS

Davies, S., Lane, S., Meddle, S. L., Tsutsui, K., & Deviche, P. (2016). The ecological and physiological bases of variation in the phenology of gonad growth in an urban and desert songbird. *General and comparative endocrinology*, 230, 17-25.

Deviche, P., Beouche-Helias, B., Davies, S., Gao, S., Lane, S., & Valle, S. (2014). Regulation of plasma testosterone, corticosterone, and metabolites in response to stress, reproductive stage, and social challenges in a desert male songbird. *General and comparative endocrinology*, 203, 120-131.

POSTERS

Lane, Samuel; Deviche Pierre; Davis Scott;. City Sounds: The effects of urbanization on Bird Song, Poster session presented at: 15th Annual Central Arizona-Phoenix Long-Term Ecological Research and Poster Symposium, 2012; Tempe, AZ