

Research Experience:

Walpole Island Heritage Center

Project Assistant, Clint Jacobs

May 2015-Currently Employed

- Assist sea lamprey control team in field work by assessing larvae type in surrounding waters of Walpole Island
- Writing toxicology based proposals, specifically in assessing heavy metals in duck and fish
- Participating in water testing, particularly to detect various organic compounds and harmful bacterium
- Using ponar dredge to determine sediment type
- Operating deep water electro-fisher to stimulate lamprey larvae
- Using GPS to determine target of destination
- Initiating and developing curriculum for a science club at the middle schools
- Leader and coordinator for science educational outreach programs
- Develop curriculum and lesson plans for student science club

Peacor Aquatic Laboratory

January 2014-May 2014

Undergraduate Research Assistant Scott Peacor, PhD

- Understanding the non-consumptive effects on zooplankton communities and its overall effect on the ecosystem.
- Assessed chlorophyll, nitrate, ammonia and total dissolved phosphorous concentrations in various water samples from different tanks of all experiments
- Used fluorometer and spectrophotometer
- Data retrieval and entry

Aquatic Animal Health Laboratory

December 2012-March 2014 **Undergraduate Research**

Assistant Mohamed Faisal, DVM, PhD, Pathology and Diagnostic Investigation

- Developed understanding proper sterile cell-culturing techniques with various fish cell-lines.
- Cultured, plated and infected cells.
- Ran quantitative ELISA for a variety of tissues.
- Virology and ELISA processing.
- Analyzed different viruses in fish cell lines.
- Identified different parasites under compound microscope.
- Assisted with fish cases and performed necropsies as well as removed various organs such as the heart, kidney, gill arch and spleen from different fish species. Also removed blood from fish and found PCV of blood samples.
- Performed external exams on fish. Collected mucous and gill scrapes.
- Collected and preserved various tissue samples
- Also provided assistance with fish care, particularly feeding the fish, siphoning and maintaining proper, healthy parameters for the tank and analyzing the fish for any odd behavior or change in physical characteristics.
- Basic understanding of DNA extraction and biochemical tests used to identify particular bacteria

CVM NIH R-25 Grant Summer Research Program in Biomedical Science

May-Aug 2012

Summer Research Assistant Ning Li, PhD, Pathology and Diagnostic Investigation

- Became familiar with adverse health effects of ambient particulate matter, particularly diesel exhaust particles.
- Characterized a new collection of diesel exhaust particles from Japan for their ability to induce pro-oxidative and toxic effects at a cellular level.
- Performed necropsies on mouse models for research purposes
- Further analyzed the protective capabilities of antioxidant, N-acetyl cysteine at a cellular level.
- Performed cell culture as well as cell scraping, centrifuging, dilutions with cell stock and plated cells.
- Performed trypan blue assay to quantitatively assess cell viability under microscope.
- Presented my poster at Michigan State University Phi Zeta Day in October of 2012

Leadership/Writing Experience:

Consortium for Freshwater Science and Technology (C-FrST) Grant Proposal

November 2014-January 2015

Minority Education Outreach Coordinator/Grant Writer

- Contributed ideas for the creation of outreach programs to gear students from K-12 for a career in freshwater biological sciences
- Networked with various education outreach directors in hopes to collaborate on summer, or year-round outreach programs

Michigan State University College of Veterinary Medicine, Vetward Bound Program
May 2014

April 2011-February 2013 & August 2013-May 2014

Peer Advisor Leader (PAL)

- Tutored high school and undergraduate students.
- Served as mentor to MSU freshmen undergraduate students.
- Participated in outreach programs, including science club at Lansing elementary schools. Assisted these students with science fair experiments and many other science related projects.
- Created lesson plans and helped with development of science club curriculum
- Organized and planned many events, including a suture workshop as well as a behind the scenes trip to Potter Park Zoo with veterinarian Tara Harrison.

MSU North American Indigenous Student Organization (NAISO)
2014

October 2010-May 2011 & September 2013-May 2014

Executive Board Member: Public Relations Representative & Fundraising Chair for Pow Wow Committee

- Networked with other organizations and helped to promote events we were hosting.
- Assisted with planning and organizing events.
- Contacted a variety of departments, tribal councils and other businesses to fundraise for the pow wow.

Michigan State University GEAR-UP (Gaining Early Awareness & Readiness for Undergraduate Programs)
September 2011-January 2014

Counselor & Mentor

- Helped with this outreach program held on various weekends at MSU's campus assisting the same group of 9th grade students up until the freshman year of college.
- Served as tutor and mentor to students
- Discussed time management, transitioning from one grade levels to the next and introduced them to different college majors and careers.

IYEP (Indigenous Youth Empowerment Program)

October 2012-April 2013

Counselor & Mentor

- Worked with indigenous students, particularly Native Americans ranging from ages 5-13 in an afterschool program.
- Provided them with academic help as well as cultural enrichment activities.
- Developed agendas and assisted with development of curriculum for students

MSU Zoological Student Association (ZSA)

January 2012-January 2013

Executive Board Member: Public Relations Representative

- Created many flyers for various ZSA events as well as organized and helped plan fundraisers and ZSA events.
- Hosted monthly and sometimes, bi-weekly committee meetings to make poster-boards, flier and discuss potential ZSA field trips. Also participated in many outreach programs with students.

MSU Pre-College Leadership Program

July 8-15th 2011 & July 12th-19th 2013

Camp Counselor

- Transported Students to various places on campus to presentations regarding different majors.
- Served as a role-model for the students and promoted academic success and involvement in their school organizations and club.

Speaking Experience:

Michigan State University, East Lansing Michigan

April 2015

Guest Lecturer

- Conducted a lecture that focused on climate change, various marine and freshwater population declines as well as health issues facing indigenous communities in the United States and Canada.

Marygroove College, Detroit Michigan

October 2014

Guest Lecturer

- Conducted a lecture that focused on current and past concerns facing indigenous communities, with a particular focus on fisheries related issues.

Animal Experience:

Alaska Sealife Center

Mid-May 2014-Mid-September 2014

Marine Animal Stranding Intern

- Prepared food and medications for animals
- Restrained and tube fed birds and seals
- Administered medications and injections
- Assisted in necropsies with sea otters, seals and belugas
- Collected and preserved various tissue samples
- Assisted in blood work analysis
- Completed records and daily animal rehabilitation updates
- Cleaned and prepared pools for animals

Zeeb Pet Health Center

October 2011-May 2013

Live-In Intern/Vet Assistant. Stephen Thimmig, DVM.

- Administered medications to animals.
- Boarded and provided food and all other needs to overnight or long staying patients
- Ran pack cell volume (PCV) and total protein as well as heart worm tests.
- Set up fecal samples and analyzed under microscope.
- Performed necropsies on various small animals
- Lived above the veterinary hospital and provided after hour care of patients or any possible emergency calls.

Pruess Pets

January-August 2011

Fresh and Salt Water Associate & Breeding Room Assistant

- Became familiar with fresh and salt water fish species as well as invertebrates.
- Did frequent salt and fresh water tank testing for the customers to assess what was wrong with their tank.
- Assisted with frequent water changes, preparing diets for and feeding fish along with classifying fish.
- Shadowed veterinarian in quarantine room as he performed necropsies.

Cat Project

January-April 2011 & November 2011-January 2012

Animal Caretaker. Nancy Bischoff, DVM.

- Fed, medicated and provided care for and handled cats, rabbits, dogs and horses.

Patterson Dog and Cat Hospital

May-August 2010

Veterinary Assistant. Glynes Graham, DVM.

- Assisted veterinarian technician and veterinarian in daily medical procedures/surgery and in appointments
- Developed x-rays.
- Spun and read PCV and prepared and viewed fecal and ear wax samples.
- Handled animals, while veterinarian/veterinarian technician drew blood, administered vaccines or fluids
- Placed catheters in animals.

Field Experience:

Field Study in the Galapagos and Amazonian Rainforest

May 2013

Field Biologist Dr. Hill, Marine Biologist, Michigan State University

- Snorkeled several times a week to analyze marine mammal and fish diversity as well as behavioral aspects.
- We specifically focused on physiological aspects of various birds and sea lions.
- Analyzed and made comparisons between mangrove species in the Galapagos and on the mainland of Ecuador, followed by further viewing research papers that studied the red, white, black and buttonwood mangrove.
- Also observed different mutualistic relationships particularly amongst plants and insects in the Amazonian rainforest.
- Became knowledgeable on the importance of plants as medicine and what type of healing properties certain plants encompassed