Sean Michael Keogh

Education

University of Minnesota – Twin Cities
PhD Student
Ecology, Evolution, and Behavior
Fall 2018-Present

University of Minnesota – Twin Cities
Master of Science
Conservation Sciences
"Species Delimitation of *Lampsilis teres*"
2015-2018

Fellowships

Bell Museum Dayton Fellowship - $25,000
Spring & Fall 2019

Moos Graduate Research Fellowship in Aquatic Biology - $7,340 (Stipend)
"*Uncovering cryptic diversity within freshwater mussels (Bivalvia: Unionoidea) using molecular phylogenetics and geometric morphometrics*"
June-August 2017

Bell Museum Summer Joyce Davenport Fellowship - $5,917
June-August 2016

John Dobie Fellowship for Graduate Students in Fisheries - $16,218
September 2015-May 2016

William Hatfield Scholarship – Colorado State University - $600.00
Spring 2012

Grants

Melbourne R. Carriker Student Research Award - $1,000
"*Testing for convergent evolution in shell shape of lampsiline freshwater mussels (Unionidae)*"
June 2018

Conchologists of America Academic Grant - $2,300

"*A holistic approach to species delimitation of the Lampsilis straminea species complex (Bivalvia: Unionidae)*"
June 2018

Conservation Sciences Travel Grant - $400
"*Molecules & morphology reveal 'new' divergent, widespread North American Lampsiline species (Bivalvia: Unionidae)*"
American Malacological Society – Oahu, Hawaii
June 2018

Dayton Wally Wildlife Fund - $2,500
"*A lesson in 'ecophenotypic plasticity': uncovering cryptic diversity within the polymorphic Lampsilis teres (Rafinesque 1820) species complex*"
June-August 2017

Moos Graduate Research Fellowship in Aquatic Biology - $2,000 (Grant)
"*Uncovering cryptic diversity within freshwater mussels (Bivalvia: Unionoidea) using molecular phylogenetics and geometric morphometrics*"
June-August 2017

Conservation Sciences Travel Grant - $300
"*Molecular phylogenetic & geometric morphometric evidence for cryptic taxa within Lampsilis teres*"
Freshwater Mollusk Conservation Society – Cleveland Ohio
March 2017

Dayton Bell Museum Summer Research Grant -$1,500
"Species delimitation of a widespread, morphologically diverse freshwater mussel"
June-August 2016

Undergraduate Research Opportunities Program - $1,700
"Population dynamics of the round pigtoe (Pleurobema sintoxia) and Wabash pigtoe (Fusconaia flava) and their host fishes in the Yellow River, WI"
September-December 2013

Society Memberships

Society for the Study of Evolution – Student Membership

Society of Systematic Biologists – Student Membership

American Malacological Society – Student Membership

Freshwater Mollusk Conservation Society – Student Membership

Publications

Keogh, S. & Simons, A. In Revision. Molecules & morphology reveal divergent, widespread Lampsiline species (Bivalvia: Unionidae).

Hove, M., Sietman, B., Berg, M., Bump, S., Davis, M., Hansen, H., **Keogh, S**., Luebke, C., Marr, S., Maynard, A., Murphy, K., Secrist Z., and Hornbach, D. 2013. Pleurobema sintoxia Early Life History. Ellipsaria, 15(3), pp.14-16.

Presentations

***Received presentation award**

***Keogh, S.** & Simons, A. June 20-22 2018. Molecules & morphology reveal divergent, widespread Lampsiline species (Bivalvia: Unionidae). American Malacological Society. Oahu, Hawaii.

Keogh, S. & Simons, A. March 26-30 2017. Molecular phylogenetic & geometric morphometric evidence for cryptic taxa within the *Lampsilis teres* (Rafinesque, 1820) species complex. Freshwater Mollusk Conservation Society. Cleveland, OH.

Employment

Freshwater Mussel Surveyor – Subcontractor for Daguna Consulting
2017-Present

- *Duties*
    - Survey waterways for freshwater mussel species richness, abundance, density, and habitat suitability often using SCUBA
    - Conduct freshwater mussel relocations

Invertebrate/Fish Bell Museum Curatorial Assistantship
Spring 2017, Spring-Summer 2018

- *Duties*
    - Assisted Bell Museum Curator with curation, data management, & collection maintenance

Teaching Assistantships
FW 4136/5136 – Ichthyology – Laboratory Instructor - Fall 2016 (2 sections)
FW 4136/5136 – Ichthyology – Laboratory Instructor - Fall 2017 (2 sections)
FW 4136/5136 – Ichthyology – Laboratory Instructor - Fall 2018 (2 sections)

- *Duties*
    - Taught two lab sections each semester
    - Lab sessions focused on fish anatomy and identification
    - Restructured lab manual

Freshwater Mussel Research Technician
Summer 2012, 2013, & 2015

- *Supervisor Information*
  - **Bernard Sietman & Mike Davis**
  - Minnesota Department of Natural Resources
- *Duties*
  - Surveyed and monitored native mussels in lakes and rivers by SCUBA diving and snorkeling across the state of Minnesota
  - Propagation and subsequent reintroduction of imperiled mussel species
  - Operated boats, 4WD trucks, and trailers
  - Collected and entered data on GPS devices and field computers
  - Captured, handled, and identified fishes for mussel host trials
  - Assisted in the inoculation and monitoring of host suitability trials
  - Maintained fishes and aquaria in lab

Stream Ecology Research Assistant
Summer 2014

- *Supervisor Information*
  - **David Leer & Nathan Chelgren**
  - Oregon State University & United States Geological Survey
- *Duties*
  - Worked as a part of the Paired-Watershed Studies in both the Alsea and Trask watersheds to determine the effects of current forest practices on small stream populations of amphibians and salmonids
  - Capture-mark-recapture of Coastal tailed frog (*Ascaphus truei*), Pacific giant salamander (*Dicamptodon tenebrosus*), Columbia torrent salamander (*Rhyacotriton kezeri*), Coastal cutthroat trout (*Oncorhynchus clarki clarki*), Steelhead (*Oncorhynchus mykiss*) and Coho salmon (*Oncorhynchus kisutch*) in headwater streams of coastal Oregon
  - Employed backpack electro-shocker, MS-222, elastomer, PIT tagging and 4WD truck
  - Performed work independently and part of a team with minimal supervision
  - Constructed and maintained seven fish weirs
  - Hiked with 50+ pounds of gear in steep, brushy terrain in adverse weather conditions
  - Worked in remote field locations with camping accommodations

Fish Identification and Fish Collection Student Worker
2013-2014

- *Supervisor Information*
  - **Dr. Andrew Simons**
  - Fish Collection of the Bell Museum of Natural History at the University of Minnesota
- *Duties*

- Processed and identified lentic and lotic fishes sent from IBI surveys of the Minnesota Department of Natural Resources and Minnesota Pollution Control Agency
- Organized data collected from processed fishes
- Entered data from cataloged fishes into program Specify
- Safely handled formalin and ethanol
- Maintained and cleaned lab equipment

Undergraduate Freshwater Mussel Researcher
2013-2014

- *Supervisor Information*
  - **Mark Hove**
  - Undergraduate Research Opportunities Program at the University of Minnesota
- *Duties*
  - Researched life history connections between native mussels and host fishes in a small stream in western Wisconsin
  - Lead group of high school students in sampling of fishes and mussels
  - Used GIS and GPS to delineate and mark sampling location
  - Conducted a mark-recapture study of common shiners (*Luxilus cornutus*), marked fish with fin clips
  - Used quadrat sampling to extrapolate density of mussel population
  - Synthesized literature regarding mussel life history characteristics
  - Utilized statistical program Rstudio to model mussel population dynamics

Public Outreach & Mentorship

Development of Freshwater Mussel Species Pages for Bell Museum Biodiversity Atlas
In Progress

Mentorship of Curation of D.W. Taylor Mollusk Collection – Alex Franzen
In Progress

Mentorship of Macalester College undergraduate project "Digitization of the Bell Museum Mollusk & Crustaceans Collection" – Adam Rogowski
Fall 2018

***Explore Lake Pepin's Freshwater Mussels* – Public engagement and interpretation of new freshwater mussel exhibit during the opening weekend of the Bell Museum of Natural History**
July 15, 2018

Review & Provide Content for Lake Pepin Freshwater Mussel Exhibit in the new Bell Museum of Natural History
2017-2018

Mentorship of Macalester College undergraduate research project "Morphometrics of Freshwater Mussels" – Michelle Buse, Matthew Glasenapp, & Jose Fernandez
Fall 2017

Led Students on Tours of the Fish & Invertebrate Collections at the Bell Museum for *Conservation Corps Youth Outdoors Career Day*
November 2015, May 2016, November 2016, May 2017, November 2017, May 2018

Led Middle School Students in Aquatic Biology Field Work *Cedar Creek Eco-Extravaganza*
May 2016 & May 2018

***Saturday with a Scientist* at the Bell Museum, Educating Youth on Aquaponics**
January 2016