Kaitlyn J. Howell

Burleson, TX 76028

E-mail: Kaitlyn.howell@mavs.uta.edu **Phone:**

Job Announcement Number:
Position:
Country of Citizenship: United States of America
Veterans Preference: No
Highest Government Grade: GS-11
Availability: Full-time
Desired Locations:

EDUCATION

Doctor of Philosophy (Ph.D.) in Quantitative Biology *with a focus in Aquatic Evolutionary Ecology*
University of Texas at Arlington, Arlington, TX – 2022
GPA: 4.0; 89 credits; Good Standing

- completed coursework in Intro GIS, biostatistics, biogeography, and more
    - Intro GIS included 'map of interest' project in which I created a map of Texas Wetlands
    - Biogeography included a presentation and paper on the biogeography of a species of our choice
- Developed and executed original studies to complete my dissertation
    - This involved: literature searches, background research, planning, designing, and implementation of studies, grant writing to acquire funding, budgeting funds, reporting and publishing findings in presentations and published articles, etc. (see additional skills)
    - Led field and lab work giving instructions and teaching protocols to undergraduate and other graduate students
    - Worked with a species of fish for 5 years (Trinidadian killifish) in the lab and field; cultured, reared, and bred fish in the lab; conducted field work in tropical streams under various conditions (see additional skills)
- Dissertation: *The Evolution of Neurosensory Structures: Evaluating Ecological Drivers of Brain and Eye Size Variation*

Bachelor of Science in Biology
University of Texas at Arlington, Arlington, TX – 2016
GPA: 3.8, *Magna cum laude*; 121 credits; Good Standing, Honor Roll

- completed coursework in evolution, ecology, zoology, limnology, genetics, and more

High School Diploma
Nolan Catholic High School, Fort Worth, TX. 2013. *Summa cum laude*; 15 A.P. credits

Courses Taken and Education Requirements: Fish Biologist – GS-0482

AQUATIC SUBJECTS (6 Sem Hrs)
Limnology (Biol 3318), 3 credit hours

Directed Study (Biology 4379: Directed Study in Aquatic Ecology), 3 credit hours

- From course catalog: "Research or independent study by individual students in biology under the supervision of a biology faculty member."
- My course topic focused on undergraduate research in Aquatic Ecology. I studied freshwater zooplankton and their interactions with the environment, as well as environmental impacts on zooplankton across generations
- I conducted experiments with zooplankton: reared and maintained stock zooplankton in the lab, set up common garden rearing, and maintained algae food stocks.

Advanced Research, Fish Biology (Biol 6391, Fall 2017), 3 credit hours

- From course catalog: "Faculty supervised individual research."
- This course focused on advanced research with fish as part of my PhD degree.
- Course included literature searches and reading relevant literature on fish topics, learning and conducting fish care (e.g., hatching, rearing, and maintaining fish in lab, monitoring and maintaining water quality and flow-through aquaculture systems), and planning and conducting lab and field experiments.

ANIMAL SCIENCE (12 Sem Hrs)
General Zoology (Biol 3454), 4 credit hours
General Ecology (Biol 3457), 4 credit hours
Genetics (Biol 3315), 3 credits hours
Cell Biology (Biol 1441), 4 credit hours

WORK EXPERIENCE

Graduate Teaching Assistant – part time (20hrs/week)
September 2017 – May 2022, Salary $2000/month
University of Texas at Arlington, Arlington, TX
Supervisors: Matthew Walsh (matthew.walsh@uta.edu, 817-272-1546) Corey Roelke (croelke@uta.edu, 817-272-2872); both may be contacted

- Taught the lab component of Biology courses to undergraduates (Ecology, Zoology, Anatomy and Physiology 1 & 2, ~48-64 students per semester)
- Coordinated with other teaching assistants and supervisors
- Communicated effectively with undergraduate students, fellow teaching assistants, and supervisors; instructed and guided students
- Set and managed course expectations, evaluated student work and participation, created and gave weekly presentations to communicate relevant information

Directorate Fellows Program – fellowship (40hrs/week)
May 24, 2021 – August 6, 2021. Salary $540/week
U.S. Fish and Wildlife, Carlsbad, CA
Supervisors: Sandra Hamilton (Sandra_hamilton@fws.gov, 760-431-9440 x242), Mary Crawford (mary_crawford@fws.gov, 760-431-9440 ext. 333); both may be contacted

- worked with the Carlsbad Field Office Ecological Services Listing and Recovery division
- completed a Short Form 5-Year Review for the endangered San Bernardino Mountains bladderpod (*Physaria kingii bernadina*) and evaluated new information about threats and occurrences; contacted partners to update population information
- completed a Rapid Species Status Assessment for the at-risk Santa Catalina Island ornate shrew (*Sorex ornatus willetti*) to identify knowledge gaps, threats, and needed conservation actions.
- contacted partners to gather new information and documents to update species status
- organized an expert workshop with researchers and partners across organizations and agencies to gather information and consensus on the Santa Catalina Island ornate shrew
    - scheduled meeting, set meeting agenda, kept meeting on topic, synthesized new information from the meeting into the species assessment
- presented findings and information synthesis to Legacy Region 8 (Pacific Southwest) and to the Carlsbad Field Office

Graduate Research Assistant – part time (20hrs/week)
January 19, 2021 – May 4, 2021. Salary $2000/month
University of Texas at Arlington, Arlington, TX
Supervisor: Matthew Walsh (matthew.walsh@uta.edu, 817-272-1546); may be contacted

- assisted in conducting mesocosm experiments for a grant investigating phenotypic plasticity in *Daphnia* (National Science Foundation: CAREER: Does behavioral plasticity promote or impede adaptation? A test using resurrection. PI: Matthew R. Walsh, Ph.D.)
- oversaw each aspect of the experiment was conducted properly and on schedule
- responsibilities included: sampling mesocosms, photographing *Daphnia* samples, collecting algae samples, data management, and coordinating with and supervising undergraduate researchers to achieve goals

Undergraduate Lab Manager – part time (20hrs/week)
May 20, 2015 – May 19, 2017. Salary $13/hr
The Walsh Lab, University of Texas at Arlington, Arlington, TX
Supervisor: Matthew Walsh (matthew.walsh@uta.edu, 817-272-1546); may be contacted

- assisted in experiments conducted in the Walsh Lab investigating the ecological mechanisms driving evolutionary change in *Daphnia*, with particular emphasis on the transgenerational response of *Daphnia* to ecological variables and phenotypic plasticity
- responsibilities and skills included: maintenance of *Daphnia* clones, preparation of stock solutions, algae culturing, identifying *Daphnia* using microscopy, hatching ephippia, and spectrophotometry

- coordinated with the Principal Investigator and graduate students to ensure the lab had all needed materials and priority tasks were completed
- conducted field work at Toolik Field Station in Alaska, summer 2016
    - I assisted a PhD student in collecting live *Daphnia* samples from Arctic (ARC) Long Term Ecological Research (LTER) lakes to analyze long term data across ecosystems.
    - Responsibilities included: zooplankton sampling, sorting samples, and organizing/packing samples

Soccer Referee – part time, seasonal (~5-10hrs/week)
August 29, 2009 - May 20, 2017, Salary varied per age group
Burleson Independent Soccer Association, Burleson, TX
Supervisor: Cindy Curd (rcurd@att.net, 817-980-1033); may be contacted.

- responsible for knowing and enforcing the laws of the game fairly
- worked as a team with other referees to enforce laws in a professional manner
- mentored and taught new referees
- handled conflicts among players and/or coaches

ADDITIONAL SKILLS

Field Skills: Mark-recapture, benthic sampling, water quality measuring and probe calibration, zooplankton sampling, marking fish with elastomer, fish sampling, working in various weather conditions, carrying heavy samples through rough terrain, planning and executing field experiments.

Laboratory Skills: Maintenance and running of various experiments (*Daphnia* trials, fish trials), data collection and analysis, data management, maintenance of *Daphnia* clones, maintenance of fish in lab (includes rearing and breeding), knowledge of flow-through systems, preparation of stock solution, algae culturing, identifying *Daphnia* using microscopy, hatching ephippia, spectrophotometry, fish dissections.

Misc. skills: Mounting, sorting, and digitizing plant collections; MS Excel, MS Word, SPSS, basic knowledge of GIS, data analysis, scientific writing, teamwork, collaboration, team/group management, planning and supervising execution of experiments, securing and managing research funds.

OUTREACH AND VOLUNTEER ACTIVITIES

EarthX: Public Outreach**,** 2017-2019 (2020-2021 cancelled/online due to COVID-19); *Dallas, Texas*

- event aimed at educating and raising awareness about a more sustainable future
- assisted with the UTA Biology Department outreach booth and engaged with the public about research in my lab and other labs

Ecofest: Public Outreach, 2017; *Arlington, Texas*

- event aimed at raising environmental awareness
- assisted with the UTA Biology Department outreach booth and engaged with the public about research in my lab and the department

Botanical Research Institute of Texas: Herbarium volunteer, 2010-2012; *Fort Worth, Texas*

- worked in the Herbarium mounting, sorting, and digitizing plant collections

PROFESSIONAL ACTIVITIES

Publications:

Howell, K.J., M.R. Walsh. 2022 (*in review*). Experimental evidence demonstrating that larger brains increase fitness in novel environments in Trinidadian killifish (*Anablepsoides hartii*). *Ecology Letters*, MS ID: ELE-00530-2022.

Howell, K.J., S. Muh*, B. Parajuli*, M.R. Walsh. 2022 (*in review*). Experimental test of the influence of light availability on the evolution of eye size and behavior in Daphnia. *Evolution*, MS ID: 22-0268

Howell, K.J., S.M. Beston, and M.R. Walsh. 2022. Sex-specific evolution of brain size, brain structure, and covariation with eye size in Trinidadian killifish. *Biological Journal of the Linnean Society.* https://doi.org/10.1093/biolinnean/blac033

Howell, K.J., S.M. Beston, S. Stearns*, and M.R. Walsh. 2021. Coordinated Evolution of Brain Size, Structure, and Eye Size in Trinidadian killifish. *Ecology and Evolution.* https://doi.org/10.1002/ece3.7051

*indicates undergraduate author

Grants and Awards:

Beta Phi Chapter of Phi Sigma Biological Honor Society: Research Grant for $3000, 2018

- competitive award offered to assist graduate students in research

Beta Phi Chapter of Phi Sigma Biological Honor Society: Travel Grant for $750, 2019

- Travel grant awarded to help fund graduate travel to scientific conference

Beta Phi Chapter of Phi Sigma Biological Honor Society: Research Grant for $3000, 2019

- competitive award offered to assist graduate students in research

RC Lewontin Early Award, Society for the Study of Evolution: Research grant for $2500, 2019

- The Graduate Research Excellence Grant (GREG) RC Lewontin Early Award is a competitive research grant awarded to PhD students in their first two years of their program.

I-Engage Mentor Program Scholarship, Office of Graduate Studies, UTA: $2000, 2019

- The I-Engage Mentor Program brings undergraduate and graduate students together in a summer long research experience. The program offers PhD students an opportunity to practice mentorship skills and exposes undergraduates to cutting edge research.
- Participants must apply and be accepted into the program.
- My application was successful, and both my mentee and I received a scholarship for the summer.

Grant-In-Aid of Research, Sigma Xi: The Scientific Research Society: Research grant for $800, 2020

- competitive award offered to assist graduate students in research

William F. Pyburn Fellowship, Department of Biology, UTA: awarded $1180, 2021

- offered by the UT-Arlington department of Biology
- presented to a full-time graduate student studying Natural History, especially in the areas of systematics, ecology, or behavior. To be eligible, students must have a 3.5 GPA and have produced significant publications and/or presentations.

Job Related Training:

NCTC Training: BLM-TC-1730-36/FWS-CSP3114 Endangered Species Act of 1973 Overview (2021*), CSP3157 Introduction to Conservation Genetics (2021*)

*Taken during 2021 DFP fellowship

Mentorship:

Mentored the following undergraduates while at UTA: Dua Malik, Sarah Muh, Bibek Parajuli, Aleah Levine, Nisha Gamadia (I-engage mentor program), Anum Zobairi, and Sara Stearns

- Mentorship included teaching students about research: helping them with hands-on experience, learning lab skills, teaching students the background of the research topic, etc.
- I also helped interested undergraduates learn about graduate school (applying, how to search for schools and contact professors, resume/letter help, etc.)

Other Professional Activities:

Beta Phi Chapter of the Phi Sigma Biological Honor Society: Member, 2017-Present

- Active member who attended monthly meetings at University of Texas at Arlington
- Secretary for 2021-2022 academic year
    - Planned and attended events such as social picnics, non-academic jobs seminars, and other professional development activities; assisted President in duties

The Society for the Study of Evolution (SSE): Member, 2017-Present

- Active member who attended scientific conferences hosted by SSE

The American Association of University Women (AAUW): Member, 2019-Present
- Active member who attended meetings

American Society of Naturalists (ASN): Member, 2019-Present
- Active member who attended scientific conferences hosted by ASN

Manuscript Reviewer for *Ecology and Evolution*: Reviewer, 2020
- Reviewed a manuscript at the request of the journal, based upon my area of expertise

Presentations:

2019: **Howell, K.J.** and M.R. Walsh. Connecting brain size, behavioral flexibility, and dispersal in Trinidadian killifish (*Rivulus hartii*). Poster at Evolution 2019, Providence, RI.

2021: **Howell, K.J.** and M.R. Walsh. Evaluating the ecological drivers of evolved brain size differences in Trinidadian killifish. American Society of Naturalists. Contributed Talk at Virtual Asilomar 2021.

REFERENCES

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