

Shannon E.K Joslin

Graduate Student Researcher in Conservation Population Genetics

Contact

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Education

University of California, Davis
Davis, CA, USA
Integrative Genetics and
Genomics PhD (in progress):
Population Genomics of
Endangered Species
2016-2021
GPA: 3.96

University of California, Davis
Davis, CA, USA
Bachelor's Degree: Genetics
2008-2012
GPA: 3.54

Key Skills

Bioinformatics
Scripting
Tutorial Creation
Teaching
Workflow Development

Objective

Big data population geneticist and data analyst seeking to be hired as Quantitative Wildlife Biologist in Yosemite National Park. I am looking to apply my previous experience, working with endangered species, large complex datasets, and teaching, to carrying out data science for wild populations and curating resources such as tutorials and manuals for others.

Experience

Work:

June 2016 – Present (full time: 40+ hours/week)

Graduate Student Researcher with Dr. Mike Miller • PhD Candidate •
Department of Animal Science: UC Davis

- Studying the population genetics of *Hypomesus transpacificus* (Delta Smelt) endemic to CA
- Developed pipeline for estimating historical and contemporary effective population size of wild fish using next generation sequencing (millions of genetic data points), and contemporary and historical field data dating back to 1993 (thousands of data points)
- Assembled first chromosome-level genome assembly for *Hypomesus* genus
- Created python-based pipeline to assemble highly contiguous fish genomes—implemented in delta smelt, planned for longfin smelt
- Identified genetic sex markers used for non-invasive sex identification in wild delta smelt populations
- Worked with field biologists to acquire samples
- Programmatically manipulated data structures of information from sampling sites (used R, perl, bash and python)

June 2017 – Present (part time)

Bioinformatics course developer with Dr. Titus Brown • Instructor • Lab
for Data Intensive Biology: UC Davis

- Co-created graduate level “Tools to support data-intensive research” course at UC Davis. Taught yearly every winter quarter. Course covers an introduction to common tools used in data-intensive research, including the UNIX shell, version control with git, RMarkdown, JupyterLab, workflows with snakemake, high performance computing, and data and project management. Responsible for selecting and co-instructing associated discussion section to connect lab practicals to foundational concepts in data science, including

repeatability/reproducibility, statistics, and publication ethics
[time: approx. 10-20 hrs/week for 10 weeks during winter quarter]

- Contributed to the creation of course modules/tutorials for ANGUS—a yearly intensive 2-week seminar to teach researchers (graduate students, post-docs and professors) how to do biology at the command line *[time: 40 hrs/week for two weeks every summer and roughly 5-10 hrs/week for two months leading up to event]*
- Co-author on two papers: “khmer release v2.1: software for biological sequence analysis” (2017) and “Streamlining data-intensive biology with workflow systems.” (2020)

June 2013 – October 2020 (part time: 10-20 hrs/week & up to 80 hrs/week)

Yosemite Bouldering guidebook • Author • Self-employed

- Co-authored 464-page guidebook to bouldering in Yosemite Valley
- Created detailed maps of boulders and bouldering locations spread throughout Yosemite Valley
- Created website for viewing sample and purchasing guidebook
- Wrote conservation-oriented supplemental essay on endangered species in Yosemite National Park

June 2016 – April 2017 (full time: 40+ hrs/week)

Graduate Student Researcher with Dr. Danielle Lemay • PhD Student •
USDA ARS WHNRC Immunity and Disease Prevention Unit

- Studied population genetics of lactase persistence in human populations of European descent
- Collaborated with statisticians, bioinformaticians and nutritional biologists to investigate the health effects of evolutionarily recent ability for human populations to digest milk
- First author paper: “Association of the lactase persistence haplotype block with disease risk in populations of European descent” (2021)

Skillsets:

- *Computational languages:* bash, Markdown, perl, python, R
- *Resources:* version control with git, binder environments, Jupyter notebooks, communicative and open-source collaborations with other researchers using GitHub
- *Non-command line software:* Microsoft Office (Word, Excel, Powerpoint, OneNote), Adobe Creative Cloud (Indesign, Illustrator, Photoshop, Lightroom)

Communication

Presentations

- 2019 Fisheries Society Conference. Reno, NV.
- 2019 Interagency Ecological Program: Genetics Project Work Team. Sacramento, CA.
- 2018 Bay-Delta Science Conference. Sacramento, CA.

Invited Speaker

- 2018 STEM Squad

Leadership

- 2020 -2021 Integrative Genetics and Genomics Graduate Group Student Executive Committee Elected Official (Admissions Officer)
- 2020 - 2021 Integrative Genetics and Genomics Graduate Group Student Executive Committee Elected Official (Education Policy Chair)
- 2018 - 2019 Integrative Genetics and Genomics Graduate Group Student Executive Committee Elected Official (Education Policy Chair)
- 2016 - 2018 Sacramento Valley American Women in Science (Education Outreach Chair)

References

C. Titus Brown • 517-505-9237 (text only) • ctbrown@ucdavis.edu
More references available upon request.