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Kelly L. Sovacool

Education

2018-present **PhD Student - Bioinformatics**, *University of Michigan*,
Dept. of Computational Medicine and Bioinformatics,
Medical School | Rackham Graduate School
Advisor: Pat Schloss

2014-2018 **BS Biology**, *University of Kentucky*

- Minor: Computer Science
- 4-year full tuition Presidential Scholarship
- Graduated Cum Laude
- Departmental Honors in Biology
- Lewis Honors College

Research Experience

2019-present **Graduate Student Research Assistant**, *Schloss Lab*,
Dept. of Microbiology and Immunology, University of Michigan

- Developing bioinformatics tools & pipelines for microbial ecology.
- 16S rRNA sequence analysis and tandem mass spectrometry data analysis.

2018-2019 **Rotation Student Researcher**, *Program in Biomedical Sciences*,
University of Michigan

- Arvind Rao lab: identifying master transcription factors in glioma progression.
- Pat Schloss lab: benchmarking clustering algorithms for microbiome research.
- Lana Garmire lab: characterizing lncRNA variation across cancer types.
- Muneesh Tewari lab: exploring the miRNA profiles of healthy individuals.

2015-2018 **Undergraduate Lab Assistant**, *Moseley Bioinformatics Lab*,
Dept. of Molecular and Cellular Biochemistry, University of Kentucky

- Developed a computational tool for identifying sets of orthologous and paralogous gene products in whole genomes to facilitate collinearity analysis and detection of gene duplication events.

2016-2018 **BIO395 Independent Research Student**, *Weisrock Lab*,
Dept. of Biology, University of Kentucky

- Developed scripts and a SNP calling pipeline for amplicon sequence data.
- Population structure analysis of the *Ambystoma tigrinum* species complex.
- Bayesian species delimitation of the *Desmognathus fuscus* species complex.

2015-2016 **Undergraduate Lab Assistant**, *Jaromczyk Lab*,
Dept. of Computer Science, University of Kentucky
- Maintained the *Epichloë festucae* genome project database.
- Analyzed RNA-seq data of *Chenopodium quinoa* and coffee ringspot virus.

Awards

Dec 2017 **Oswald Research & Creativity Award**, *University of Kentucky*
- Awarded a $200 prize for second place in the Biological Sciences category.
- Manuscript title: "Developing a Global Homology and Collinearity Analysis Framework for Identifying Gene Duplication Events."
- Advisor: Prof. Hunter NB Moseley.

May 2017 **Summer Research Grant**, *University of Kentucky*
- Awarded a $2,000 grant by the UK Office of Undergraduate Research to work full time on a research project during the summer.
- Project title: "Developing a Global Homology and Collinearity Analysis Framework for Identifying Gene Duplication Events."
- Advisor: Prof. Hunter NB Moseley.

Presentations

2018 **Developing a Global Homology Analysis for Comparative Genomics**, *Advisor: Prof. Hunter NB Moseley*
- Poster, *Showcase of Undergraduate Scholars*, University of Kentucky
- Oral, *Systems Biology & Omics Integration Seminar*, University of Kentucky
- Poster, *National Conference on Undergraduate Research*, University of Central Oklahoma

2016 **Processing RNA-seq Reads of Plants Infected with the Coffee Ringspot Virus**, *Advisor: Prof. Jerzy W Jaromczyk*
- Poster, *Showcase of Undergraduate Scholars*, University of Kentucky
- Poster, *UT-KBRIN Bioinformatics Summit*, Cadiz, KY

2015 **The Effect of Meditation on Performance**, *Advisor: Prof. Bruce OHara*
- Poster, *Showcase of Undergraduate Scholars*, University of Kentucky

Service

2019-present **Graduate Student Coordinator**, *organize monthly meetings for researchers to sharpen their data analysis skills*, Data Analysis Networking Group
University of Michigan

2019-present **Executive Committee Member**, *plan and develop curriculum for a weekly club teaching introductory programming & data science to high school women*, Girls Who Code at UM-DCMB
University of Michigan

2018-present **Summer Experience Committee Member**, *plan, apply for funding, and develop curriculum for our Data Science Summer Experience for high school women in downtown Detroit*, Girls Who Code at UM-DCMB.
University of Michigan

2009-present **Live Sound Engineer**, *for various churches and non-profit organizations.*

- Set up, maintain, repair, and operate front of house, monitor, and recording systems during sound checks, rehearsals, services, and concerts.
- Train new sound techs in the art and science of live sound.

Teaching Experience

2019-present **Software Carpentry instructor**, *The Carpentries*

- 01-02 July 2019. Workshop teaching the Unix shell, version control with Git, and R programming. U-M Software Carpentry

25 Apr 2019 **DNA Day Ambassador**, *taught an epigenetics lesson to high school biology students*, MI DNA Day, Pioneer High School
Ann Arbor, MI

20 Mar 2019 **Workshop helper**, *during GSBES meeting teaching data visualization with Python*, Graduate Society of Black Engineers and Scientists.
University of Michigan

16 Mar 2019 **Capstone activity leader**, *taught binary numbers with Ozobots at FEMMES capstone event for middle school students*, Females Excelling More in Math, Engineering, & Science.
University of Michigan

Jan-May 2019 **Capstone project mentor**, *guided high school women through a data science project and presentation*, Girls Who Code at UM-DCMB.
University of Michigan

2018-present **Software Carpentry helper**, *The Carpentries*

- 22-23 May 2019. Workshop teaching the Unix shell, version control with Git, and Python programming. U-M Software Carpentry
- 01 Mar 2019. Workshop teaching the Unix shell, version control with Git, and Python programming. U-M Software Carpentry
- 17-18 Dec 2018. Workshop teaching the Unix shell, R programming, and version control with Git. U-M Software Carpentry

2012-2017 **Tutor**, *for high school and college students in Biology, Calculus, Chemistry, Computer Science, and Bioinformatics.*