

# Kelly L. Sovacool

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🌐 [sovacool.dev](http://sovacool.dev)

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🌐 [kelly-sovacool](https://www.github.com/kelly-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
- o Maintained the *Epichloë festucae* genome project database.
  - o Analyzed RNA-seq data of *Chenopodium quinoa* and coffee ringspot virus.

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## Awards

- Dec 2017 **Oswald Research & Creativity Award**, *University of Kentucky*
- o Awarded a \$200 prize for second place in the Biological Sciences category.
  - o Manuscript title: "Developing a Global Homology and Collinearity Analysis Framework for Identifying Gene Duplication Events."
  - o Advisor: Prof. Hunter NB Moseley.
- May 2017 **Summer Research Grant**, *University of Kentucky*
- o Awarded a \$2,000 grant by the UK Office of Undergraduate Research to work full time on a research project during the summer.
  - o Project title: "Developing a Global Homology and Collinearity Analysis Framework for Identifying Gene Duplication Events."
  - o Advisor: Prof. Hunter NB Moseley.

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## Presentations

- Apr 2018 **Developing a Global Homology Analysis for Comparative Genomics**,  
*Advisor: Prof. Hunter NB Moseley*
- o Poster, *Showcase of Undergraduate Scholars*, University of Kentucky
  - o Oral, *Systems Biology & Omics Integration Seminar*, University of Kentucky
  - o Poster, *National Conference on Undergraduate Research*, University of Central Oklahoma
- Apr 2016 **Processing RNA-seq Reads of Plants Infected with the Coffee Ringspot Virus**, *Advisor: Prof. Jerzy W Jaromczyk*
- o Poster, *Showcase of Undergraduate Scholars*, University of Kentucky
  - o Poster, *UT-KBRIN Bioinformatics Summit*, Cadiz, KY
- Apr 2015 **The Effect of Meditation on Performance**, *Advisor: Prof. Bruce OHara*
- o Poster, *Showcase of Undergraduate Scholars*, University of Kentucky

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## Service

- 2019-present **Executive Committee Member**, *plan and develop curriculum for a weekly club teaching programming and data science to high school women*, [Girls Who Code at UM-DCMB](#)  
University of Michigan
- 2019-present **Graduate Student Coordinator**, *organize monthly meetings for researchers to sharpen their data analysis skills*, [Data Analysis Networking Group](#)  
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.*
- Setting up, maintaining, repairing, and operating front of house, monitor, and recording systems during sound checks, rehearsals, services, and concerts.
  - Training new sound techs in the art and science of live sound.

## Teaching Experience

- 01-02 July 2019 **Software Carpentry instructor**, *taught version control with Git during a 2-day [workshop](#) on Git, the Unix Shell, and R programming.*  
University of Michigan
- 22-23 May 2019 **Software Carpentry helper**, *during 2-day [workshop](#) teaching the Unix shell, version control with Git, and Python programming.*  
University of Michigan
- 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
- 01 Mar 2019 **Software Carpentry helper**, *during 2-day [workshop](#) teaching the Unix shell, version control with Git, and Python programming.*  
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
- 17-18 Dec 2018 **Software Carpentry helper**, *during 2-day [workshop](#) teaching the Unix shell, R programming, and version control with Git.*  
University of Michigan
- 2012-2017 **Tutor**, *for high school and college students in Biology, Calculus, Chemistry, Computer Science, and Bioinformatics.*