

Kelly L. Sovacool

✉ sovacool@umich.edu

🖥 sovacool.dev

🌐 [kelly-sovacool](#)

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Education

- 2018-present **PhD Bioinformatics**, *University of Michigan*,
Dept. of Computational Medicine and Bioinformatics
- 2014-2018 **BS Biology**, *University of Kentucky*,
Dept. of Biology, Minor: Computer Science

Research Experience

- 2019-present **Graduate Student Researcher**, [Schloss Lab](#),
Dept. of Microbiology and Immunology, University of Michigan
- Developing bioinformatics pipelines & open source software for microbial ecology.
 - 16S rRNA sequence and tandem mass spectrometry data analysis.
- 2018-2019 **Rotation Student Researcher**, *Program in Biomedical Sciences*,
University of Michigan
- 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

Grants & Fellowships

- 2020 **Conference Travel Grant**, *Rackham Graduate School*, (\$800)
University of Michigan

- 2019-2021 **NIH T32 Bioinformatics Training Program Fellow**
University of Michigan
- Dec 2017 **Oswald Research & Creativity Award**, *UK Office of Undergraduate Research*, 2nd place in the Biological Sciences category (\$200)
University of Kentucky
- May-Aug 2017 **Summer Research Grant**, *UK Office of Undergraduate Research*, (\$2,000)
University of Kentucky
- 2014-2018 **Presidential Scholarship**, (out-of-state full tuition)
University of Kentucky
- Honors
- May 2018 **Graduated Cum Laude with Departmental Honors in Biology**
University of Kentucky
- May 2018 **Biology Undergraduate Research Award Nominee**
University of Kentucky
- 2014-2018 **Lewis Honors College**
University of Kentucky

Service

- 2018-present **Executive Committee Member: Open Source Technical Lead**, *Girls Who Code at UM-DCMB*, github.com/gwc-dcmb
- Plan, apply for funding, develop curriculum, and maintain resources to teach introductory Python programming & data science to young women.
 - Facilitate collaborative development and maintenance of our teaching resources.
 - Organize our year-round Club for high school women.
 - Organize our annual Data Science Summer Experience for high school women in the Detroit area.
- 2019-present **Organizer and Maintainer**, *U-M Software Carpentry*, umcarpentries.org
- Co-lead development & maintenance of a [custom curriculum](#) for workshops teaching programming skills for reproducible research.
 - Maintain the website and organize workshops.
- 2019-present **Graduate Student Coordinator**, *Data Analysis Networking Group*, University of Michigan, um-dang.github.io
- Organize monthly meetings & a one-day symposium for researchers to sharpen their data analysis skills.
 - Funded by a Rackham Interdisciplinary Workshop grant.
- 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 **Facilitator & Capstone Project Mentor**, *Girls Who Code at UM-DCMB*
- 12-22 July 2021. Virtual Data Science Summer Experience.
 - Aug 2020 - May 2021. Weekly virtual Club for high schoolers.
 - 06-16 July 2020. Virtual Data Science Summer Experience.
 - Aug 2019 - May 2020. Weekly Club for high schoolers.
 - 15-19 July 2019. Data Science Summer Experience in Detroit, MI.
 - Jan-May 2019. Weekly Club for high schoolers.
- 2018-present **Software Carpentry instructor**, *U-M Carpentries*, umcarpentries.org
- 11-12 Jan 2021. Lead instructor for [U-M WISE](#)-sponsored virtual workshop.
 - 06-07 Jan 2020. Lead instructor for [U-M WISE](#)-sponsored workshop.
 - 01-02 July 2019. Workshop instructor.
 - 22-23 May 2019. Workshop helper.
 - 01 Mar 2019. Workshop helper.
 - 17-18 Dec 2018. Workshop helper.
- 25 Apr 2019 **DNA Day Ambassador**, *MI DNA Day*, Epigenetics & scientific journeys, Ann Arbor, MI
- 20 Mar 2019 **Workshop helper**, *Graduate Society of Black Engineers and Scientists*, Data visualization with Python workshop, University of Michigan
- 16 Mar 2019 **Capstone Activity Leader**, *Females Excelling More in Math, Engineering, & Science*, Binary numbers through Ozobots with GWC at UM-DCMB, University of Michigan
- 2012-2018 **Tutor**, *freelance*, for high school and college students in Biology, Calculus, Chemistry, Computer Science, and Bioinformatics.

Presentations

- Jun 2020 **ASM Microbe**, *OptiFit: a fast method for fitting amplicon sequences to existing OTUs*, Poster, Cancelled due to COVID-19.
- Apr 2018 **Showcase for Undergraduate Scholars**, *Developing a Global Homology Analysis for Comparative Genomics*, Poster, University of Kentucky
- Apr 2018 **Systems Biology & Omics Integration Seminar**, *Developing a Global Homology Analysis for Comparative Genomics*, Talk, University of Kentucky
- Apr 2018 **National Conference on Undergraduate Research**, *Developing a Global Homology Analysis for Comparative Genomics*, Poster, University of Central Oklahoma
- Apr 2016 **Showcase for Undergraduate Scholars**, *Processing RNA-seq Reads of Plants Infected with the Coffee Ringspot Virus*, Poster, University of Kentucky
- Apr 2016 **UT-KBRIN Bioinformatics Summit**, *Processing RNA-seq Reads of Plants Infected with the Coffee Ringspot Virus*, Poster, Cadiz, KY
- Apr 2015 **Showcase for Undergraduate Scholars**, *The Effect of Meditation on Performance*, Poster, University of Kentucky

Continuing Education

- 27-30 Jan 2020 **Building Tidy Tools workshop at rstudio::conf**, *RStudio, PBC*
San Francisco, CA
- 17-19 Dec 2019 **Winter School in Research Software Engineering**, *US Research Software Sustainability Institute*
Seattle, WA
- 03-04 Jun 2019 **Software Carpentry Instructor Training**, *The Carpentries*
University of Michigan
- 01-05 May 2019 **PyCon Education Summit & Conference**, *Python Software Foundation*
Cleveland, OH
- 24-26 Apr 2019 **MICROBIOL 612.2**, *Riffomonas minimalR workshop*
University of Michigan

Software Contributions

- mikropml User-Friendly R Package for Supervised Machine Learning Pipelines.
Co-author and maintainer. <https://github.com/SchlossLab/mikropml>
- mothuR R package to work with mothur output files.
Co-author and maintainer. <https://github.com/SchlossLab/mothuR>
- mothur Command-Line Tool for Processing 16S rRNA Gene Sequence Data.
Contributor. <https://github.com/mothur/mothur>

Publications

- B. D. Topçuoğlu, Z. Lapp, K. L. Sovacool, E. Snitkin, J. Wiens, and P. D. Schloss. Mikropml: User-Friendly R Package for Supervised Machine Learning Pipelines. *JOSS*, 6(61):3073, May 2021.
- K. M. Everson, L. N. Gray, A. G. Jones, N. M. Lawrence, M. E. Foley, K. L. Sovacool, J. D. Kratovil, S. Hotaling, P. M. Hime, A. Storfer, G. Parra-Olea, R. Percino-Daniel, X. Aguilar-Miguel, E. M. O'Neill, L. Zambrano, H. B. Shaffer, and D. W. Weisrock. Geography is more important than life history in the recent diversification of the tiger salamander complex. *PNAS*, 118(17), Apr. 2021.
- A. K. Hagan, N. A. Lesniak, M. J. Balunas, L. Bishop, W. L. Close, M. D. Doherty, A. G. Elmore, K. J. Flynn, G. D. Hannigan, C. C. Koumpouras, M. L. Jenior, A. J. Kozik, K. McBride, S. B. Rifkin, J. M. A. Stough, K. L. Sovacool, M. A. Sze, S. Tomkovich, B. D. Topcuoglu, and P. D. Schloss. Ten simple rules to increase computational skills among biologists with Code Clubs. *PLOS Computational Biology*, 16(8):e1008119, Aug. 2020.
- M. M. Goodin, M. Farman, H. Inocencio, C. Jang, J. W. Jaromczyk, N. Moore, and K. Sovacool. Processing RNA-Seq data of plants infected

with coffee ringspot virus. In *Proceedings of the 15th Annual UT-KBRIN Bioinformatics Summit 2016: Cadiz, KY, USA. 8-10 April 2016*. BMC Bioinformatics, Aug. 2016.