

JULIA OLIVIERI

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RESEARCH AREAS

Computational Biology, Genomics, Data Science, RNA Sequencing

EDUCATION

Stanford University

Ph.D. Candidate, Institute for Computational & Mathematical Engineering

M.S, Institute for Computational & Mathematical Engineering

Reading Committee: Julia Salzman, Chiara Sabatti, Trevor Hastie

Sep 2016 - Sep 2022

Stanford, CA

Oberlin College

B.A., Mathematics (*Highest Honors*)

B.A., Biology

Aug 2012 - May 2016

Oberlin, OH

TEACHING EXPERIENCE

Assistant Professor of Computer Science

University of the Pacific

Aug 2022 - Present

Stockton, CA

- *Courses taught:* Advanced Algorithms (graduate), Graph Theory for Computer Science (graduate), Data Analytics Programming (undergraduate and graduate), Computational Biology (graduate)

Graduate Teaching Assistant

Stanford University

Sep 2018, Jul 2019, Sep 2019, Sep-Dec 2021

Stanford, CA

- *Courses TAed:* Statistical analysis of RNA sequencing data in high dimensions, Introduction to Analysis of RNA Sequence Data, Discrete Mathematics and Algorithms

WiDS Workshop Leader

WiDS Workshops

May-Aug 2021

Virtual

- *Lectures delivered:* What is a graph and What Can We Do With It?, Traversing the tree and beyond, Characterizing graphs in the real world

Discrete Mathematics and Algorithms

Refresher Course Leader

Sep 2018, Sep 2019

Stanford, CA

- Designed a three-lecture course to teach incoming ICME students the background in discrete math necessary to succeed in ICME classes.

FELLOWSHIPS & HONORS

- Gene Golub Thesis Award, 2022
- Lieberman Fellowship, 2021-2022
- NSF Graduate Fellowship, 2018-2021
- Ben Rolfs Memorial Award, 2020
- Stanford Graduate Fellowship, 2016-2022
- EDGE Doctoral Fellowship, 2016-2022
- Young Botanist Award, 2016
- Goldwater Scholarship, 2015

FUNDED RESEARCH AND ACTIVITIES

Committee on Academic Planning and Development, Small Project Grant Dec 2022
University of the Pacific \$1,550

- “Teaching Academic Time Management in Graduate Level Computer Science Courses with the Help of the Faculty Success Program,” PI: J. Olivieri

SERVICE

“Be the Place” Working Group Sep 2022 - Present
Committee member Stockton, CA

- Worked to transform University of the Pacific to the “place to be” for a successful, diverse, and supportive engineering and computer science community.

Women in Data Science Workshop Committee Jan 2022 - Dec 2022
Committee member Stanford, CA

- One of a group of five committee members who organize the monthly [WiDS workshops](#) as an extension of the WiDS yearly conference.
- Coordinate speakers, plan workshops, shape the direction of the series.

Women in Mathematics, Statistics, and Computational Engineering Mar 2018 - Sep 2022
Co-Founder, Secretary, & Co-President Stanford, CA

- Co-founded an official student organization to support female graduate students across ICME, Mathematics, Management Science & Engineering, and Statistics departments.
- Helped organize events ranging from panels of industry professionals giving career advice to community-building paint nights.
- Encouraged networking between graduate students and professors by organizing small-scale lunches with female faculty members.
- Petitioned for and regulated funding from various Stanford sources.

Stanford Science Penpals Dec 2020 - Present
Penpal Stanford, CA

- Exchange letters with a high school student interested in pursuing STEM to answer questions about higher education and encourage him to continue studying science.

Stanford Women in Math Mentoring Sep 2017 - Jun 2018
Mentor Stanford, CA

- Mentored a Stanford undergraduate prospective math major, reaching out for lunches every month and attending group events focused on retaining women in STEM.

ICME Mentoring Sep 2017 - Jun 2018
Mentor Stanford, CA

- Mentored an ICME first-year student, meeting up 2-3 times per quarter with the purpose of providing advice and support through the hectic and stressful first year of graduate school.

SOFTWARE

SpliZ

<https://github.com/salzmanlab/SpliZ>

A statistical pipeline to quantify splicing at a single cell level from scRNA-seq data

SICILIAN

<https://github.com/salzmanlab/SICILIAN>

A statistical method for identifying RNA splice junctions using alignments reported from a spliced aligner.

SELECTED PUBLICATIONS

1. **Julia E Olivieri**, Roozbeh Dehghannasiri, Julia Salzman. 2022. *“The SpliZ generalizes” Percent Spliced In to reveal regulated splicing at single-cell resolution.* Nature Methods 19(3), 307-310. <https://doi.org/10.1038/s41592-022-01400-x>.
2. **Julia E Olivieri**, Roozbeh Dehghannasiri, Peter Wang, Antoine de Morree, Serena Tan, SoRi Jang, Timothy Wu, Julia Salzman. 2021. *“RNA splicing programs define tissue compartments and cell types at single cell resolution.* eLife 10:e70692. <https://doi.org/10.7554/eLife.70692>.
3. Roozbeh Dehghannasiri*, **Julia E Olivieri***, Julia Salzman. 2021. *“Specific splice junction detection in single cells with SICILIAN.* Genome Biology 22, 219. <https://doi.org/10.1186/s13059-021-02434-8>.
4. The Tabula Sapiens Consortium. 2021. *“The Tabula Sapiens: a single cell transcriptomic atlas of multiple organs from individual human donors.* bioRxiv 2021.07.19.452956, July. <https://doi.org/10.1101/2021.07.19.452956>.
5. The Tabula Microcebus Consortium. 2021. *“Tabula Microcebus: A transcriptomic cell atlas of mouse lemur, an emerging primate model organism.* bioRxiv 2021.12.12.469460, December. <https://doi.org/10.1101/2021.12.12.469460>
6. Gregory McInnes, Yosuke Tanigawa, Chris DeBoever, Adam Lavertu, **Julia E Olivieri**, Matthew Aguirre, Manuel A Rivas. 2019. *“Global Biobank Engine: enabling genotype-phenotype browsing for biobank summary statistics.* Bioinformatics 35 (14): 2495-2497. <https://doi.org/10.1093/bioinformatics/bty999>.
7. Guhan Ram Venkataraman, **Julia E Olivieri**, Christopher DeBoever, Yosuke Tanigawa, Johanne Marie Justesen, Alexander Dilthey, Manuel A Rivas. 2020. *“Pervasive additive and non-additive effects within the HLA region contribute to disease risk in the UK Biobank.”* bioRxiv 2020.05.28.119669, May. <https://doi.org/10.1101/2020.05.28.119669>.
8. Ning Wang, Ya Yang, Michael J Moore, Samuel F Brockington, Joseph F Walker, Joseph W Brown, Bin Liang, Tao Feng, Caroline Edwards, Jessica Mikenas, **Julia E Olivieri**, Vera Hutchison, Alfonso Timoneda, Tommy Stoughton, Raúl Puente, Lucas C Majure, Urs Egli, Stephen A Smith. 2019. *“Evolution of Portulacineae marked by gene tree conflict and gene family expansion associated with adaptation to harsh environments.”* Molecular biology and evolution 36(1): 112-126. <https://doi.org/10.1093/molbev/msy200>.
9. Naomi R Latorraca, Jason K Wang, Brian Bauer, Raphael JL Townshend, Scott A Hollingsworth, **Julia E Olivieri**, H Eric Xu, Martha E Sommer, Ron O Dror. 2018. *“Molecular mechanism of GPCR-mediated arrestin activation.”* Nature 557 (7705): 452-456. <https://doi.org/10.1038/s41586-018-0077-3>.
10. Joseph F Walker, Ya Yang, Tao Feng, Alfonso Timoneda, Jessica Mikenas, Vera Hutchison, Caroline Edwards, Ning Wang, Sonia Ahluwalia, **Julia E Olivieri**, Nathanael Walker-Hale, Lucas C Majure, Raúl Puente, Gudrun Kadereit, Maximilian Lauterbach, Urs Egli, Hilda Flores-Olvera,

- Helga Ochoterena, Samuel F Brockington, Michael J Moore, Stephen A Smith. 2018. “*From cacti to carnivores: Improved phylotranscriptomic sampling and hierarchical homology inference provide further insight into the evolution of Caryophyllales.*” *American Journal of Botany* 105 (3): 446-462. <https://doi.org/10.1002/ajb2.1069>.
11. Ya Yang, Michael J Moore, Samuel F Brockington, Jessica Mikenas, **Julia E Olivieri**, Joseph F Walker, Stephen A Smith. 2019. “*Improved transcriptome sampling pinpoints 26 ancient and more recent polyploidy events in Caryophyllales, including two allopolyploidy events.*” *New Phytologist* 217 (2): 855-870. <https://doi.org/10.1111/nph.14812>.
 12. Robert Bosch, **Julia E Olivieri**. 2014. “*Designing Game of Life mosaics with integer programming.*” *Journal of Mathematics and the Arts* 8 (3-4): 120-132. <https://doi.org/10.1080/17513472.2014.982483>.
 13. Robert Bosch, **Julia E Olivieri**. 2014. “*Game-of-Life mosaics.*” *Bridges*: 325-329. <https://archive.bridgesmathart.org/2014/bridges2014-325.html>.