Riley Juenemann

720-438-8077 | rjuenemann@tulane.edu | linkedin.com/in/rjuenemann/

Research Interests

Applied mathematics, computational science, mathematical biology, machine learning, topological data analysis, biotechnology, fluid dynamics, nanomaterials, live-cell data

Education

Tulane University, New Orleans, LA
Bachelor of Science, Mathematics and Computer Science — May 2021
Management Minor | GPA: 4.0
Advisors: Tewodros Amdeberhan, Brian Summa

Research Experience

Tulane University, New Orleans, LA

- Undergraduate Research in Computational Biology — May 2018 – Present
  - Developed a dashboard of statistical tools using R and Python to automatically categorize particle trajectories from live-cell data
  - Systematically executed simulations and used topological data analysis to investigate the formation of ring channels in cells for submission of publication

Duke University, Durham, NC

- NSF REU for Meeting the Grand Challenges — May 2019 – July 2019
  - Investigated the internalization of titanium dioxide nanoparticles into human lung cells
  - Developed skills in live-cell culture, fluorescence microscopy, and transmission electron microscopy

Internship Experience

Eli Lilly and Company, Indianapolis, IN

- Information and Digital Solutions (IDS) Intern — May 2020 – August 2020
  - Devised a manufacturing value stream model in R using discrete event simulation to assess interrelationships and enhance the ability to analyze proposed improvements
  - Deployed R Shiny application to be used by manufacturing personnel

Teaching Experience

- Honors Colloquium Undergraduate Teaching Fellow — Spring 2019
- Girls in STEM at Tulane (GiST) Workshop Leader — Spring 2019 – Present
- New Orleans Charter Science & Math High School Tutor — Fall 2018

Languages and Skills

Python, R, Shiny, LaTeX, Matlab, GitHub, Java, SQL, C, C++, JavaScript, D3, Rails, Ruby on Rails, HTML, CSS, Haskell, ImageJ

Publications

MV Ciocanel, **R Juenemann**, AT Dawes, SA McKinley. Topological data analysis approaches to uncovering the timing of ring structure onset in filamentous networks. In revision (2020). arXiv preprint: 1910.05850.

Awards

Student Award – American Mathematical Society (AMS)
- Virtual JMM 2021 Undergraduate Study Grant — December 2020

Research Award – NSF-Simons Center for Quantitative Biology
- First Place Prize for Undergraduate Research — November 2020

Poster Award – SIAM Texas-Louisiana Section Annual Meeting
- First Place Poster — October 2020

Poster Award – National Collegiate Honors Council
- First Place Poster in Natural Sciences and Mathematics — November 2019

Student Awards – Tulane University
- David R. Filo Endowed Scholarship — August 2017 – May 2021
- Deans' Honor Scholarship — August 2017 – May 2021

Conferences and Workshops	• Conference on Quantitative Approaches in Biology (Talk) NSF-Simons Center for Quantitative Biology, Northwestern University, virtual due to COVID-19	November 2020
	• SIAM TX-LA Section Annual Meeting (Poster) Texas A&M University, virtual due to COVID-19	October 2020
	• Heidelberg Laureate Forum Heidelberg, Germany, virtual due to COVID-19	September 2020
	• Graduate Research Opportunities for Women University of Chicago, virtual due to COVID-19	September 2020
	• Society for Mathematical Biology (SMB) Annual Meeting Heidelberg, Germany, virtual due to COVID-19	August 2020
	• Math for All in New Orleans (Talk, Poster) Tulane University, New Orleans, LA	March 2020
	• National Collegiate Honors Council Annual Conference (Poster) New Orleans, LA	November 2019
	• Emerging Research Trends in Computer Science The Cornell, Maryland, Max Planck Pre-doctoral Research School Saarbrucken, Germany	August 2019
	• Undergraduate Summer Research Symposium (Poster) Duke University, Durham, NC	July 2019
	• Particle Tracking Techniques and Live-Cell Imaging Workshop Southeast Center for Mathematics and Biology (SCMB) Tulane University, New Orleans, LA	February 2019
	• SIAM TX-LA Section Undergraduate Conference (Talk, Poster) Lousiana State University, Baton Rouge, LA	October 2018
	• Undergraduate Capstone Conference (Talk, Poster) Mathematical Biosciences Institute at Ohio State University, Columbus, OH	August 2018
Community Engagement	• Math for All in New Orleans Conference Organizer, Research Poster Workshop Leader	Spring 2020 – Present
	• Cookies and Code (Computer Science Club) President, Vice President, Executive Board Member	August 2017 – Present
	• Math Club Secretary	August 2017 – Present
	• Circle K K-Family Relations Chair, Founding Member	May 2018 – Present
Professional Societies	• Society for Industrial and Applied Mathematics (SIAM)	April 2019 – Present
	• Mathematical Association of America (MAA)	December 2020 – Present