

Erin Angelini

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🌐 [eeangelini](https://eeangelini.github.io)

🌐 eeangelini.github.io

Education

University of Washington

PhD in Applied Mathematics

Seattle, WA

Expected Graduation: June 2023

Pomona College

BA in Mathematics

Claremont, CA

May 2018

Relevant Coursework: Probability and Stochastic Processes, Dynamical Systems, Partial Differential Equations, Stochastic Models in the Life Sciences, Perturbation Theory, Optimization

Programming Languages: Python, Matlab, Julia

Research Experience

University of Washington

Graduate Research Associate

Advisor: Dr. Hong Qian

Seattle, WA

2019-present

Epigenetic Landscape for Cellular Differentiation

2020-present

- Apply concept of an “epigenetic landscape” to the phenotypic evolution of cancer.
- Gain functional insight into the non-genetic heterogeneity observed in tumors.
- Develop a mathematical framework to infer phenotype transition rates from single-cell lineage tracing experiments.
- Collaboration with Dr. Sui Huang at the Institute for Systems Biology in Seattle, WA and Dr. Joseph X. Zhou at Novartis Institutes in Cambridge, MA.

Evolutionary Dynamics of Tumor Recurrence

2019-2022

- Analyzed a dynamical model for cancer population dynamics during chemotherapy.
- Investigated relation between induced drug-resistance and inevitability of tumor recurrence.
- Derived general conditions for the inherent limit to the success of continuous therapy.
- Collaboration with Dr. Sui Huang at the Institute for Systems Biology in Seattle, WA.

Publications & Preprints

- **E. Angelini**, Y. Wang, J.X. Zhou, H. Qian, and S. Huang. “A model for the intrinsic limit of cancer therapy: Duality of treatment-induced cell death and treatment-induced stemness.” *PLoS Comput Biol* 18(7): e1010319 (2022). doi: [10.1371/journal.pcbi.1010319](https://doi.org/10.1371/journal.pcbi.1010319)

Presentations

- “From single-cell data to equation of state via new stochastic thermodynamics.” E. Angelini, S. Huang, and H. Qian. Poster presentation at the *Stochastic Physics in Biology Gordon Research Conference (GRC)*. Ventura, CA (2021). Available online at https://eeangelini.github.io/files/Angelini_GRC_Poster.pdf.

Teaching Experience

University of Washington

Teaching Associate

Seattle, WA

2019

- Calculus with Analytic Geometry I (Fall 2019)
- Partial Differential Equations and Waves (Spring 2019)

Leadership & Service

University of Washington

Seattle, WA

Society for Industrial and Applied Mathematics (SIAM)

Student Chapter Treasurer

2021-2022

- Managed budget for weekly meetings and other events.

Student Chapter President

2020-2021

- Coordinated weekly events, including student-led panels and technical tutorials.
- Organized Q&A sessions for students with guest speakers.

Association for Women in Mathematics (AWM)

Student Chapter President

2019-2020

- Hosted quarterly events to build community among graduate students.
- Sponsored events for students to meet with visiting speakers.

Awards & Honors

University of Washington

Seattle, WA

SIAM Certificate of Recognition

2021

- For outstanding work as SIAM student chapter president.

Achievement Rewards for College Scientists Fellowship

2018-2021

- Awarded to select incoming PhD students.