

# CURRICULUM VITAE FOR ALAN N. AMIN

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## EDUCATION

- Sept 2023-Aug 2025      **Faculty Fellow at Courant Institute, NYU**  
Hosted by Andrew Gordon Wilson
- June 2023-Aug 2023      **Postdoc at Jura Bioscience**
- Aug 2019-May 2023      **PhD at Harvard University**  
Thesis: **Nonparametric Methods for Building and Evaluating Models of Biological Sequences**  
Advised by Professor Debbie Marks  
Systems Biology Program  
Supported by NSERC Postgraduate Scholarships – Doctoral program: \$21,000 CAD per year for three years, starting July 2022
- Sept 2015- Apr 2019      **Bachelor of Science at the University of Toronto**  
Specialist in **Biochemistry** and Major in **Mathematics**  
Course work: molecular genetics, biochemical methods, measure theory, bounded operator theory, abstract algebra and algebraic geometry  
GPA 3.98

## PUBLICATIONS

- Amin A N**, Weinstein E N\*, Marks D S\* (\*Equal contribution). A Kernelized Stein Discrepancy for Biological Sequences. *ICML*, 2023
- Amin A N**, Weinstein E N\*, Marks D S\* (\*Equal contribution). Kernels with Guaranteed Flexibility for Reliable Machine Learning on Biological Sequences. *Preprint*, 2023, <https://arxiv.org/abs/2304.03775>
- Weinstein E N\*, **Amin A N**\*, Frazer J, Marks D S (\*Equal contribution). Non-identifiability and the blessings of misspecification in models of molecular fitness and phylogeny. *NeurIPS*, 2022 (Oral)
- Weinstein E N, **Amin A N**, Grathwohl W, Kassler D, Disset J, Marks D S. Optimal design of stochastic DNA synthesis protocols based on generative sequence models, *AISTATS*, 2022
- Amin A N**\*, Weinstein E N\*, Marks D S (\*Equal contribution). A generative nonparametric Bayesian model for whole genomes, *NeurIPS*, 2021.
- Amin A N**, Lin Y-H, Das S, Chan H S. “Theory for a Sequence-Specific “Fuzzy” Binding Mechanism Between a Pair of Intrinsically Disordered Proteins”, *J Phys Chem B*, 2020
- Das S, **Amin A N**, Lin Y-H, Chan H S. “Coarse-grained residue-based models of disordered protein condensates: utility and limitations of simple charge pattern parameters.” *Phys. Chem. Chem. Phys.* 2018

Delplace V, Ortin-Martinez A, Tsai E L S, **Amin A N**, Wallace V and Shoichet M S. “Controlled Release Strategy Designed for Intravitreal Protein Delivery to the Retina.” *J. Control. Release* 2018.

## PREVIOUS RESEARCH EXPERIENCE

Sept 2017 – Aug 2019 Undergrad researcher

Advisor: **Dr. Hue Sun Chan**. University of Toronto

Predicting interactions from sequences of disordered proteins using physics models.

June 2018 – Aug 2018 Undergrad researcher

Advisor: **Dr. Clifford Brangwynne**. Princeton University

Measuring mechanics of nuclear membrane-less organelles investigated using microfluidics.

May 2017 - Aug 2017 Undergrad researcher

Advisor: **Dr. Molly Shoichet**. University of Toronto

Designing new hydrogels with desired mechanical properties for drug delivery.

July 2016 – Apr 2017 Undergrad researcher

Advisor: **Dr. Ronald Kluger**. University of Toronto

Designing method of loading tRNAs with alternative amino acids for synthetic biology.

## SERVICE

June 2023 **Reviewer** at ICML 2023

Dec 2022 **Top reviewer** at NeurIPS 2022 - **moderated** deep-dive session 5A

Dec 2022 **Area-chair** at Learning Meaningful Representations of Life workshop at NeurIPS

June 2023 **Top 10% of reviewers** at ICML 2022 - invited to **chair** a session

Dec 2021 **Reviewer** at Learning Meaningful Representations of Life workshop at NeurIPS

Dec 2020 **Reviewer** at Learning Meaningful Representations of Life workshop at NeurIPS

## RECENT PRESENTATIONS

May 2023 Harvard QBio group meeting; **20min talk**

May 2023 Systems Biology department Pizza talk; **1h talk**

April 2023 MIT Readstat Statistics reading group; **1.5h talk**

March 2023 Systems biology program mini symposium; **15 min talk**

March 2023 Stat 300 Seminar series at the Harvard Statistics Department; **30 min talk**

Dec 2022 NeurIPS, Learning Meaningful Representations of Life Workshop; **poster**

Dec 2021 NeurIPS, Learning Meaningful Representations of Life Workshop; **15 min talk**

May 2021 CSHL, Probabilistic Modeling in Genomics; **poster**

May 2021      Broad institute, Models, Inference and Algorithms Talks; **primer (1h talk)**  
Dec 2020      NeurIPs, Learning Meaningful Representations of Life Workshop; **poster**

## ACADEMIC AWARDS

July 2022	NSERC Postgraduate Scholarships Doctoral program ( <b>National</b> )	\$21,000 (1/3 years)
Sept 2019	Ross S. Lang Scholarship ( <b>Institutional</b> )	\$602
Nov 2018	Innis College Exceptional Achievement ( <b>Institutional</b> )	\$740
Nov 2018	The Daniel Wilson Scholarship in Science ( <b>Institutional</b> )	\$82
June 2018	Later Life Learning Scholarship ( <b>Institutional</b> )	\$744
May 2018	Princeton International Internship ( <b>International</b> )	\$Lodging
May 2017	NSERC Undergraduate Student Research Award ( <b>National</b> )	\$4500
Nov 2016	Later Life Learning Scholarship ( <b>Institution</b> )	\$722
Oct 2015	President's Entrance Scholarship ( <b>Institution</b> )	\$2000

## TEACHING ASSISTANT EXPERIENCE

Sept 2021 – Jan 2022    BCMP230 **Principles and practice of drug development** at Harvard University  
Sept 2018 – Jan 2019    MAT224 **Linear Algebra** at the UofT  
Sept 2017 – Apr 2018    MAT135 & MAT136 **Calculus** at the UofT  
Sept 2016 – Apr 2017    MAT137 **Calculus!** at the UofT

## RECENT ORGANIZING

Sept 2020 – May 2023    Harvard Graduate Student Union steward (orientation, education, recruitment)  
Jul 2020 – Jan 2021      Equitable mentorship equity working group in Systems biology department  
Jul 2020                      Systems biology program petition for equity group (writing petition, recruitment)