CURRICULUM VITAE FOR ALAN N. AMIN

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EDUCATION

Aug 2019-May 2023	**PhD at Harvard University** (anticipated) 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. *To appear in 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-Martinex 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; **talk**

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

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

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

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

Dec 2021 NeurIPs, Learning Meaningful Representations of Life Workshop; **talk**

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

May 2021 Broad institute, Models, Inference and Algorithms Talks; **primer (talk)**

Dec 2020 NeurIPs, Learning Meaningful Representations of Life Workshop; **poster**

ACADEMIC AWARDS

July 2022	NSERC Postgraduate Scholarships Doctoral program (**National**)	$63,000 (3 years)
Sept 2019	Ross S. Lang Scholarship (**Institutional**)	$602
Nov 2018	Innis College Exceptional Achievement (**Institutional**)	$740
Nov 2018	The Daniel Wilson Scholarship in Science (**Institutional**)	$82
June 2018	Later Life Learning Scholarship (**Institutional**)	$744
May 2018	Princeton International Internship (**International**)	$Lodging
May 2017	NSERC Undergraduate Student Research Award (**National**)	$4500
Nov 2016	Later Life Learning Scholarship (**Institution**)	$722
Oct 2015	President's Entrance Scholarship (**Institution**)	$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)