

EDUCATION

The J. David Gladstone Institutes Postdoctoral Scholar Center for Cell Circuitry, Institute for Virology Advisor: Dr. Leor Weinberger	2020 –
The University of North Carolina at Chapel Hill PhD Chemistry, Certification in Biophysics Dissertation: Spatiotemporal coordination of signaling at single molecule resolution Advisors: Dr. Timothy Elston, Dr. Klaus Hahn	2015 – 2020
Northeastern University BS Chemistry, Minor in Mathematics, <i>summa cum laude</i>	Boston, MA 2011 – 2015

RESEARCH EXPERIENCE

The J. David Gladstone Institutes, Postdoctoral Scholar - Modeling SARS-CoV-2 dynamics to aid epidemiologic analysis and therapeutic development - Investigating human cytomegalovirus latency establishment experimentally and computationally	2020 –
University of North Carolina at Chapel Hill, Graduate Researcher - Built simulations to study the effects of molecular fluctuations on yeast mating and proliferation. - Developed computational tools to analyze microscopy and single-particle tracking data -	2015 – 2020
Northeastern University, Undergraduate Researcher - Investigated post-translational modifications using bioorganic chemistry and mass spectrometry	2012 – 2015
Amgen, Undergraduate Co-op - Conducted analytical chemistry to support medicinal chemistry and process chemistry teams. - Guided kg-scale synthesis of a specific API polymorph with Raman spectroscopy and modeling	2013 – 2014

AWARDS, HONORS, AND FELLOWSHIPS

2021	Poster Prize in Immunobiology & Infection, <i>Society for Mathematical Biology</i>
2020	Poster Prize in Mathematical Epidemiology, <i>Society for Mathematical Biology</i>
2020	Travel Award, <i>Biophysical Society</i>
2019	Graduate Student Transportation Grant, <i>UNC Chapel Hill</i>
2016	T32 Training Grant in Molecular & Cellular Biophysics, <i>National Institutes of Health</i>
2016	Honorable Mention, <i>NSF Graduate Research Fellowship Program</i>
2015	Matthew Stuart Morrison Summer Fellowship, <i>UNC Chapel Hill</i>
2014	Provost Undergraduate Research and Creative Endeavors Award, <i>Northeastern University</i>
2011	National Merit Scholarship, <i>National Merit Scholarship Corporation</i>

PUBLICATIONS

1. Liu B*, Stone OJ*, **Pablo M***, Herron JC, Nogueira AT, Dagliyan O, Grimm JB, Lavis LD, Elston TC, Hahn KM. Sensitive biosensor approach probes conformations of individual Src molecules in live cells. *Cell*. 2021, 184, 1-16
2. Ramirez SA, **Pablo M**, Burk S, Lew DJ, Elston TC. A novel stochastic simulation approach enables exploration of mechanisms to regulate polarity lateral dynamics. *Public Library of Science Computational Biology*. 2021, e1008525.
3. Clark-Cotton MR, Henderson NT, **Pablo M**, Ghose D, Elston TC, Lew DJ. Exploratory polarization facilitates mating partner selection in *Saccharomyces cerevisiae*. *Molecular Biology of the Cell*. 2021, E21-02-0068
4. Elston RN*, **Pablo M***, Pimenta FM*, Hahn KM, Watanabe T. Optogenetic inhibition and activation of Rac and Rap1 using a modified iLID system. BioRxiv. 2020
Preprint: <https://www.biorxiv.org/content/10.1101/2020.12.11.421990v1>
5. Henderson N, **Pablo M**, Ghose D, Clark-Cotton MR, Zyla TR, Nolen J, Elston TC, Lew DJ. Ratiometric GPCR output enables directional sensing in yeast. *Public Library of Science Biology*. 2019, e3000484
6. **Pablo M**, Ramirez SA, Elston TC. Particle-based simulations of polarity establishment reveal stochastic promotion of Turing pattern formation. *Public Library of Science Computational Biology*. 2018, e1006016
7. Qu W, Catcott KC, Zhang K, Liu S, Guo JJ, Ma J, **Pablo M**, Glick J, Xiu Y, Kenton N, Ma X, Duclos RI Jr, Zhou ZS. Capturing unknown substrates via *in situ* formation of tightly bound bisubstrate adducts: S-adenosyl-vinthionine as a functional probe for AdoMet-dependent methyltransferases. *Journal of the American Chemical Society*. 2016, 138, 2877-2880

*Denotes equal contribution

SERVICE AND PROFESSIONAL MEMBERSHIPS

Guest Speaker	<i>Curioscity</i> science podcast (Episode 55: Yeast)	2020
Member	Society for Mathematical Biology	2020 –
Member	Biophysical Society	2019 –
Executive Board	STEM Pride of the Triangle	2019 – 2020
Writer & Editor	NC DNA Day Blog	2016 – 2020
Science Ambassador	NC DNA Day	2016 – 2017
Member	American Chemical Society	2013 – 2016
Member	Northeastern University Civic Engagement Program	2011 – 2015

TEACHING AND MENTORING

The University of North Carolina		Chapel Hill, NC
Graduate Mentor	Kaiyun Guan (Undergraduate with Honors Thesis)	2019 – 2020
	John Cody Herron (PhD rotation)	2017
Teaching Assistant	Summer Research Program in Biophysics	2017
Guest Lecturer	Essentials of Macromolecular Science	2016 – 2017
Teaching Assistant	Analytical Chemistry Lab	2015
Northeastern University		Boston, MA
Tutor	Organic Chemistry I & II	2012 – 2014
Lead Mentor	Proactive Recruitment in Science and Mathematics	2012

SELECT PRESENTATIONS

1. **Pablo M**, Chaturvedi S, Vasen G, Du K, Kumar A, Illouz S, Rodick R, Weinberger LS. *Multiscale modeling of a self-renewing, self-deploying antiviral for SARS-CoV-2*. Society for Mathematical Biology 2021. Online. May 2021. Received SMB Poster Award for Immunobiology and Infection. (Poster)
2. **Pablo M**, Lewis DD, Chen X, Rodick R, Weinberger LS. *Early phase decoupling between population mobility and death rates*. Society for Mathematical Biology 2020. Online. Aug. 2020. Received SMB Poster Award for Mathematical Epidemiology. (Poster)
3. **Pablo M***, Liu B*, Stone OJ*, Dagliyan O, Elston TC, Hahn KM. *Binder/tag: A versatile approach to probe and control the conformational changes of individual molecules in living cells*. The 64th Annual Meeting of the Biophysical Society. San Diego, CA. Feb. 2020. (Oral)
4. **Pablo M***, Liu B*, Stone OJ*, Hahn KM, Elston TC. *Uncovering single-molecule kinetics and nanoscale architecture of Src activation*. The 7th Winter Q-Bio Conference. Oahu, HI. Feb. 2019. (Oral)
5. **Pablo M***, Liu B*, Stone OJ*, Hahn KM, Elston TC. *Uncovering single-molecule kinetics and nanoscale architecture of Src activation*. The Biennial Carolina Biophysics Symposium. Chapel Hill, NC. Nov. 2018. (Poster)
6. **Pablo M**, Ramirez SA, Liu B, Watanabe T, Hahn KM, Elston TC. *Computational modeling of stochasticity in cell signaling and its effect on polarity establishment*. The Biennial Carolina Biophysics Symposium. Chapel Hill, NC. Nov. 2016. (Poster)
7. Cohen D, **Pablo M**. *Process Raman in early phase API process development at Amgen*. The North Eastern Raman Symposium. Cambridge, MA. May 2015. (Oral)
8. **Pablo M**, Zhou ZS. *Towards understanding aging: a new method to detect isoaspartic acid in biological samples*. Northeastern University Research, Innovation and Scholarship Expo (**RISE**). Boston, MA. Apr. 2015. (Poster)

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