

Nicole Pagane

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<https://github.com/npagane>

Education	Johns Hopkins University	2015 - 2019
	Biophysics B.A. & Space Science and Engineering Minor 3.82 GPA, Deans List (all semesters) & graduated with general honors <i>Relevant Coursework:</i> Models and Algorithms in Biophysics, Biological Physics, Statistical Physics and Thermodynamics, Data Structures, Molecular and Cellular Systems Biology, Intermediate Programming, Introduction to Probability, Project in Design: Pharmacokinetics	
Research	Research Assistant in the Risca Lab	2019 - present
	Laboratory of Genome Architecture and Dynamics, Rockefeller University – Building bioinformatic pipelines for data processing and analysis of genomics datasets – Developing a worm-like chain model of DNA to simulate mesoscale chromatin structures in collaboration with the Spakowitz Lab (Chemical Engineering, Stanford University) – Investigating the intra and inter-fiber geometries and entanglement of multiple fiber systems that form condensates	
	Undergraduate Research Assistant in the Roberts Lab	2017 - 2019
	Department of Biophysics, Johns Hopkins University – Used an information theoretic approach to analyze stochastic simulations of yeast cell chemotaxis decision-making processes with the RDME software Lattice Microbes – Developed a computational chromatin modification model in yeast to study the effects of transcriptional frequency on nucleosome positioning along the linear genome	
	Summer Intern with the LISA Pathfinder Team	2017
	Gravitational Astrophysics Laboratory, NASA Goddard Space Flight Center – Assisted in constructing a pipeline to detect micrometeorite impacts on the space-based gravitational wave instrument LISA Pathfinder under the mentorship of Ira Thorpe	
Other Work	Undergraduate Research Assistant in the Marchionni Lab	2016 - 2017
	Department of Oncology, Johns Hopkins University School of Medicine – Curated publicly available omics datasets from GEO for a machine learning study on divergence analysis to create predicative models of cancer diagnosis and prognosis	
	Lead Software Developer for GermCraft	2018
	Department of Biophysics, Johns Hopkins University – Developed a Meteor web application to teach biophysics and coding through Blockly visual programming to be used in the Biophysics Research for Baltimore Teens program – Mentored two high school students on front-end development and biophysical concepts	
	Teaching Assistant for Protein Engineering & Biochemistry Lab	2017 - 2019
Publications	Department of Biophysics, Johns Hopkins University – Prepared stock for lab sections throughout the week and assisted Dr. Carolyn Fitch in material development to refine this exploratory novel protein laboratory course	
	Micrometeoroid Events in LISA Pathfinder J. I. Thorpe, J. Slutsky, J. Baker, T. Littenberg, S. Hourihane, N. Pagane , P. Pokorny, D. Janches, & the LISA Pathfinder Collaboration <i>The Astrophysical Journal</i>	Sep. 2019
	Digitizing omics profiles by divergence from a baseline W. Dinalankara, Q. Ke, Y. Xu, L. Ji, N. Pagane , A. Lien, T. Matam, E. Fertig, N. Price, L. Younes, L. Marchionni, D. Geman <i>Proceedings of the National Academy of Sciences</i>	Apr. 2018

Police Reform versus Abolition: A Numbers Perspective

Nicole Pagane

Medium

Jul. 2020

Presentations

* = poster

† = talk

Coarse-graining DNA mechanics to study mesoscale chromatin geometries and interdigitation

* Joint Mathematics Meeting (*submitted abstract*)

Jan. 2021

† Asilomar Chromatin, Chromosomes, and Epigenetics (*submitted abstract*)

Dec. 2020

Computational biology and the Risca lab

† RockEDU Science Cafe Series for High School Students

Jul. 2020

Optimal hospital selection for EMS transport of COVID-19 patients

† Johns Hopkins CBID COVID-19 Design Challenge

Mar. 2020

Probing mesoscale chromatin structure: bridging experiment and theory with computation

* Tri-Institutional Computational Biology & Medicine Open House

Feb. 2020

The 'fragile' nucleosome and RICC-seq in mouse embryonic stem cells

* Stem Cells, Development, and Cancer Retreat at Rockefeller University

Sep. 2019

Nucleosome dynamics: modulating repair and transcriptional frequency

* JHU Biophysics Undergraduate Research Festival

May 2019

Micrometeorite science with LISA Pathfinder

* 231st American Astronomical Society Meeting, Washington D.C.

Jan. 2018

* NASA Goddard Space Flight Center Summer Intern Research Symposium

Aug. 2017

Technical Proficiencies

Python, Fortran, C, C++, Linux/Unix, Git, MATLAB/GNU Octave, Java, R, JavaScript, HTML, CSS, Mathematica, PyMOL, LaTeX, Lattice Microbes, Meteor Web Dev, Slurm

Other Experiences

Intern with the Correctional Association of New York

2019 - present

Computational consultant under the guidance of Evan Misshula

– Optimized a web scraper application to monitor and assess the location and well-being of New York state inmates

Coordinator and Camp Counselor with Camp Kesem

2017 - 2019

Volunteer & Outreach Coordinator with Camp Kesem at Johns Hopkins University

– Summer camp counselor for children (aged 6-18) who have a parent affected by cancer

– Led volunteer recruitment, counselor selection and training, and general body meetings

– Promoted awareness of our services to the Baltimore community and acted as a main point of contact for the organization