

John C. Russell

johncrussell25@gmail.com • (201) 661-1448
LinkedIn • Github • Personal Website

EDUCATION	Harvard University , School of Engineering and Applied Sciences	Sep 2017 – Present
	<ul style="list-style-type: none">• Ph.D. Candidate in Applied Physics – GPA 3.63/4.0• Secondary Field in Computational Science and Engineering	
	Williams College	Sep 2012 – Jun 2016
	<ul style="list-style-type: none">• B.A. in Physics with Honors and Philosophy – GPA: 3.65/4.0• Thesis: Phenomenology of a UV Complete Model for a Top-Friendly Z'	
	Cold Spring Harbor Laboratory , Yeast Genetics and Genomics	Jul 2018
	Completed three week intensive laboratory course on approaches to addressing complex problems with the model organism <i>Saccharaomyces cerevisiae</i> .	
RESEARCH EXPERIENCE	Graduate Research Assistant , Hekstra Lab, Harvard University	Sep 2017 – Present
	My research uses optical microscopy to measure changes in cellular physiology associated with aneuploidy in single cells. For this project, I have:	
	<ul style="list-style-type: none">• Implemented extensive upgrades to a laser scanning microscope to enable automated multiphoton microscopy especially Stimulated Raman Scattering,• Worked in clean rooms to fabricate microfluidic devices that I later used for timelapse fluorescence microscopy experiments, and• Performed PCR based cloning and genetic manipulation of budding yeast.	
	In parallel with my experimental work I have	
	<ul style="list-style-type: none">• Written a high-performance library for analyzing timelapse microscopy datasets using the scientific python stack (numpy, pandas, scikit-image, dask),• Implemented a deep learning pipeline for instance segmentation in pytorch,• And contributed to existing projects in the python-microscopy ecosystem.	
	Honors Thesis Student , Tucker-Smith Group, Williams College	Jun 2015 – Jun 2016
	I conducted Monte Carlo simulations of particles beyond the Standard Model and devised ways of detecting them in future experiments.	
	Winter Study Research Assistant , Doret Lab, Williams College	Jan 2015
	I designed radio-frequency electronics and assembled them with the corresponding optical system for use in ion trapping experiments.	
OTHER EXPERIENCE	Business Development Fellow , Office for Technology Development	Jun 2020 - Jun 2021
	I assessed the market potential and competitive landscape of inventions from a wide range of Harvard labs across the physical sciences. I wrote detailed reports for the business development team which summarized the technology and identified potential licensees for each invention.	
	Biology Director New England Society for Microscopy	Dec 2021 - Present
	I will organize quarterly meetings by inviting speakers, planning workshops, and publicizing events for the microscopy community.	

AWARDS AND FELLOWSHIPS	Quantitative Biology Student Fellowship , Harvard University	Jul 2019 – Jun 2020
	I was awarded financial support for a promising research program from the NSF-Simons Center for Mathematical and Statistical Analysis of Biology.	
	Helmsley Charitable Trust Fellowship , Cold Spring Harbor Laboratory	Jul 2018
	I received this award for scientists transitioning into biology from other fields to attend the Cold Spring Harbor Yeast Genetics and Genomics course.	
	Dean's List , Williams College	2013 – 2016
	For attaining a semester GPA of at least 3.5.	
TEACHING EXPERIENCE	SEAS Python Bootcamp Instructor	Spring 2020, 2021
	I developed and taught a three day intensive workshop on the fundamentals of scientific computing to about sixty undergraduates in person and virtually.	
	QBio REU Intermediate Python Workshop	Summer 2020, 2021
	I taught weekly lessons to a group of summer research assistants about how to use common python libraries for high performance data analysis.	
	Teaching Fellow, Applied Mathematics 50 , Harvard University	Spring 2019
	<ul style="list-style-type: none"> • I taught mathematical modeling and scientific computing in sections, • Designed, wrote, and graded problem sets and lab assignments, and • Assisted with in class computer labs and modeling activities. 	
	Winter Tutor , Vail Ski and Snowboard Academy	Oct 2016 – Apr 2017
	I worked one-on-one with middle and high school students to help them complete math and science classes taken online or remotely.	
	Teaching Assistant , Williams College Physics Department	Sep 2013 – Jun 2016
	As a teaching assistant I led homework help sessions and graded for courses in statistical physics, modern physics, philosophy of physics, and others.	