JONATHAN LIU

505 Life Sciences Addition, UC Berkeley ⋄ Berkeley, CA 94720
jhliu42@berkeley.edu
www.jonathanhliu.com

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RESEARCH INTERESTS

Quantitative biology, gene regulation, synthetic biology, systems biology, stochastic processes

EDUCATION

University of California, Berkeley *Aug 2016 - Present*
PhD in Physics
Advisor: Hernan Garcia

California Institute of Technology *Sept 2011 - June 2015*
BS in Applied Physics with Honors

APPOINTMENTS

NDSEG Graduate Research Fellow - UC Berkeley *Aug 2017 - Present*

Graduate Student - UC Berkeley *Aug 2016 - Aug 2017*

Fulbright Visiting Student - Ludwig Maximilian University of Munich *Sept 2015 - July 2016*

HONORS AND AWARDS

2017 NDSEG Graduate Fellowship
2015 U.S. Fulbright Student Fellowship
2015 Caltech B.S with Honors
2014 DAAD RISE Research Internship
2013 Caltech SURF Fellowship
2012 Caltech SURF Fellowship

PUBLICATIONS

1. **Jonathan Liu**, Donald Hansen, Hernan Garcia. "Dynamic modeling of the eukaryotic transcription cycle using live imaging." Under preparation.
2. Elizabeth Eck*, **Jonathan Liu***, Shelby Blythe, Hernan Garcia. "Non-equilibrium regulation of chromatin accessibility and transcription in development." Under preparation. (*equal authorship)
3. Matthias Morasch, **Jonathan Liu**, *et al.* "Heated gas bubbles enrich, crystallize, dry, phosphorylate, and encapsulate prebiotic molecules." *Nature Chemistry*, Jul 2019.

TALKS PRESENTED

Aug 2019	Contributed	DoD NDSEG Graduate Conference
May 2019	Invited	DoD STIx on the Hill: Science, Technology, and Innovation Exchange
Jan 2019	Contributed	Gordon Conference: Stochastic Physics in Biology
Dec 2018	Invited	DoD Science, Technology, and Innovation Exchange
Nov 2018	Invited	UC Berkeley Physics Compass Lecture Series
Feb 2018	Contributed	Biophysical Society 62nd Annual Meeting
Aug 2017	Invited	Canadian-American-Mexican Graduate Student Physics Conference
Mar 2016	Invited	German Fulbright Berlin Conference

TEACHING AND MENTORING

Graduate Student Mentor - UC Berkeley SURF Office *May 2019 - Aug 2019*

Graduate student mentor for undergraduate research program
Designed and organized professional development workshops and oversaw Math and Physical Sciences undergraduate summer research programs

Teaching Assistant - Caltech Physical Biology Boot Camp *Sept 2018*

Assisted with week-long physical biology course for incoming graduate students
Designed and ran experimental module on live imaging of transcription in fruit flies

Graduate Student Instructor - Physics for Engineers and Scientists (7B) *Aug 2016 - May 2017*

Taught small sections for large undergraduate physics course
Prepared section material, supervised lab projects, graded exams

Student Tutor - Caltech Undergraduate Dean's Office *Sept 2012 - June 2015*

Tutored undergraduate students in STEM courses

Students mentored:

Donald Hansen (graduate, 2019)
Liya Oster (graduate, 2018)
Aaron Perez (undergraduate, 2018)

OUTREACH AND SERVICE

Member - UC Berkeley Physics Faculty Search Committee *Jan 2019 - Mar 2019*

Graduate student member of department faculty search committee for AY 2019-2020

Organizer - Grounds for Science *July 2018 - Present*

Organizer for local public science lecture series, run by and for graduate students

Reader - UC Berkeley SURF Office *Mar 2018*

Reviewed applications for summer undergraduate research fellowship program in the Math and Physical Sciences division

Organizer - Berkeley Physics Graduate Student Seminar *Jan 2017 - Aug 2018*

Started and helped run seminar series for graduate students in UC Berkeley Physics

Member - Berkeley Physics Admissions Committee *Jan 2018 - Mar 2018*

Member of committee planning and organizing admitted graduate student visit program

Member - Caltech Academics and Research Committee *Sept 2013 - June 2015*

Member of undergraduate committee overseeing undergraduate curriculum and research issues
Chaired 2015 committee on updating Applied Physics department curriculum requirements

WRITING

1. "Machine Learning: Chapter 3 (Particle Physics)." *Berkeley Science Review (Fall 2018).* `http://www.berkeleysciencereview.com/article/machine-learning-chapter-3/`
2. "Why (anti)hydrogen matters." *Berkeley Science Review (Spring 2017).* `http://berkeleysciencereview.com/article/why-antihydrogen-matters/`

MISCELLANEOUS

Programming languages:	MATLAB, Python, Java, Mathematica, LabVIEW
Software:	Autodesk Inventor, Adobe Illustrator, COMSOL
Experimental skills:	Fluorescence microscopy, molecular biology, *Drosophila* husbandry, gene editing
Analytical skills:	Statistical inference, modeling, computational and theoretical physics
Mathematical knowledge:	Calculus, linear algebra, differential equations, probability, statistics
Languages:	English (native), Mandarin (proficient), German (proficient)