

Huan Q. Bui

Colby College, 8347 Mayflower Hill, Waterville, ME, 04901

hqbui21@colby.edu | huanqbui.com | [in](#) | 301-704-6958

EDUCATION

Colby College, Waterville, ME

Bachelor of Arts, Majors: Physics & Mathematics, Minor: Statistics, June 2021

GPA: 4.14/4.00

Relevant Coursework: (*) denotes "Independent Study"

- **Physics:** Quantum Information, Quantum Mechanics, Massive Gravity*, Topics in Classical Field Theory*, General Relativity, Classical Mechanics, E&M, Thermo & StatMech, Special Relativity & Quantum Physics
- **Mathematics:** Algebraic Geometry, Abstract Algebra, Real & Complex Analysis, Ordinary & Partial Differential Equations, Matrix Analysis, Linear Algebra, Probability, Vector Calculus, Honors Calculus
- **Statistics:** Statistical Inference (theory), Applied Longitudinal Data Analysis, Statistical Modeling

EXPERIENCE

Research Assistant, Joint Quantum Institute - NIST & Univ. of Maryland, College Park Jun 2019—

PI: Steven Rolston, University of Maryland, College Park

- Studying ∞ -range interactions of Rb near an optical nanofiber (ONF) via collective decay measurements
- Built a polarization optimization system for a future ONF standing-wave dipole trap
- Developed an stand-alone experimental control program with NI-DAQmx in Python

Research Assistant, Colby College Department of Physics & Astronomy Nov 2017—

PI: Charles Conover, Colby College

- 2017-2019: Precision measurement experiments on ultracold potassium in Rydberg states
- 2019-2020: Lifetime measurements of ultracold potassium $4p$.
- Data acquisition & analysis
- Built external-cavity diode lasers (ECDL's) & frequency-stabilizer electronics for ECDL's
- Controlled photon-counting modules, waveform generators for MOT field-switching, spectroscopy, etc.

Teaching Assistant, Colby College Dept. of Physics & Dept. of Math & Stats Sep 2017—

- Current course: Ordinary Differential Equations.
- Past courses: Linear Algebra, Modern Physics, EM & Optics, Intro to Mechanics
- Grade psets and conduct weekly TA sessions; Prepared lab equipment for EM & Optics

Physics & Math Tutor, Colby College Dean of Studies Nov 2018—

- Provide academic assistance through reviewing course material and solving problems

Math Mentor, Colby College Department of Mathematics & Statistics Sep 2019—

HONORS, AWARDS, FUNDS

Linda K. Cotter Internship Fund, for Jan 2020 internship at JQI Jan 2020

Phi Beta Kappa Scholastic Achievement Award Sep 2019

Julius Seelye Bixler Scholar Sep 2018, Sep 2019

Meritorious Winner, COMAP Mathematical Contest in Modeling S'19

Dean's List F'17, S'18, F'18, S'19, F'19

CONFERENCES/PRESENTATIONS

DAMOP19: Millimeter-wave precision spectroscopy of d - d transitions in potassium Rydberg states

CLAS 2019: Matrices in Quantum Computing: A 2-qubit entanglement circuit

CUSRR2018: Precision measurement of potassium energy levels at highly excited states

PROJECTS

Personal Website/Archive, huanqbui.com: notes from class and independent readings plus other projects.

Experimental Physics: Advisor: Charles Conover; Lifetime measurements of ultracold potassium $4p$

Theoretical Physics: Advisor: Robert Bluhm; Massive Gravity

Applied Mathematics: Advisor: Evan Randles; Convolution powers of complex functions & harmonic analysis.

SKILLS

Technical: IGOR Pro, R, Python, NI-MAX, Mathematica, \LaTeX , Adobe Illustrator, HTML & CSS, MS Office

Languages: English (fluent/proficient), Vietnamese (native)