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: Massive Gravity*, Topics in Classical Field Theory*, Quantum Mechanics, General Relativity, Classical Mechanics, Electromagnetism, Thermodynamics & Statistical Mechanics, Special Relativity & Quantum Physics
- Mathematics: Complex Analysis, Ordinary & Partial Differential Equations, Matrix Analysis, Linear Algebra, Abstract Algebra, Probability, Vector Calculus, Honors Calculus
- Statistics: Applied Longitudinal Data Analysis, Statistical Modeling, Introduction to Statistics

EXPERIENCE

Research Assistant, Joint Quantum Institute - NIST & Univ. of Maryland, College Park Jun 2019—
PI: Steven Rolston, University of Maryland, College Park

- Experiments on super- & sub-radiance and ∞-range interactions in ultracold Rb near an optical nanofiber
- Built a standing-wave optical dipole trap for future nanofiber experiments
- Developed an stand-alone experimental control program with NI-DAQmx in Python

Research Assistant, Colby College Department of Physics & Astronomy Nov 2017—Present
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, building frequency-stabilizer circuits & external-cavity diode lasers
- Controlling photon-counting modules & waveform generators for spectroscopy and MOT fast field-switching

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
- Grading psets and conducting weekly TA sessions; Prepared lab equipment for EM & Optics

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

- Providing academic assistance through reviewing course material and solving problems

Math Mentor, Colby College Department of Mathematics & Statistics Sep 2019—
Technician, Colby College ITS Aug 2017—Sep 2018

- Troubleshot classroom equipment & provided help over the phone and in person

Tutor, 7AStar Tutoring Jun 2017—Aug 2017

- Prepared Vietnamese high school students for the SAT Subject and AP tests

HONORS, AWARDS, FUNDS

Linda K. Cotter Internship Fund 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

SKILLS

Technical: IGOR Pro, R, Python, Mathematica, LaTeX, Adobe Illustrator, MS Office, HTML & CSS, NI-MAX
Languages: English (fluent/proficient), Vietnamese (native)

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 works. Github
Experimental physics: Advisor: Charles Conover. Topic: Lifetime measurements of ultracold potassium $4p$
Theoretical physics: Advisor: Robert Bluhm. Topic: Massive Gravity
Applied Mathematics: Advisor: Evan Randles. Topic: Convolution powers of complex functions on $\mathbb{Z}^d$.

ACTIVITIES

Colby Society of Physics Students (board member), Colby Photography Club, Colby Ultimate Frisbee