

# Huan Q. Bui

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

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## EDUCATION

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Colby College, Waterville, ME

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

**GPA: 4.14/4.00**

### Relevant Coursework:

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

## EXPERIENCE

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

- Experiments on super- & sub-radiance and  $\infty$ -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, Physics & MathStats** Sep 2017—Present

- 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—Present

- Providing physics/calculus help through reviewing course material and solving problems

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

**Technician, Colby College ITS** Aug 2017—Sep 2018

- Troubleshoot 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

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**Phi Beta Kappa Scholastic Achievement Award:** Sep 2019

**Bixler Scholar:** Sep 2018, Sep 2019

**Meritorious Winner:** COMAP Mathematical Contest in Modeling, 2019

**Dean's List:** Fall 2017, Sprint 2018, Fall 2018, Spring 2019

## SKILLS

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

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

## CONFERENCES/PRESENTATIONS

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**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

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**Personal Website/Archive,** [huanqbui.com](http://huanqbui.com) Nov 2018

- A space for my notes from class and independent readings plus other works. [Github](#) repository

**Experimental physics** Sep 2019 —Present

- Advisor: Charles Conover. Topic: Lifetime measurements of ultracold potassium  $4p$ .

**Theoretical physics** Sep 2019 —Present

- Advisor: Robert Bluhm. Topic: Massive gravity

## ACTIVITIES

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