

CRAIG HOLLIMAN
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EDUCATION

UNIVERSITY OF CALIFORNIA SANTA BARBARA, Santa Barbara, CA

Physics Ph.D. Candidate, December 2023

Concentration: Precision Timekeeping, Fundamental Physics, and Quantum Information Science

Fellowship: Worster Summer Research Fellowship

Activities: Family Ultimate Science Exploration
Materials Research Lab Outreach Education Program

BATES COLLEGE, Lewiston, ME

B.A. in Physics and Math, Minor in Chinese, June 2017

Senior Thesis: *Analyzing the Irregularities of Vertical-Cavity Surface-Emitting Lasers*

Fellowship: Purposeful Work Fellowship

Activities: Chess Club, President
Rugby Club

RESEARCH EXPERIENCE

DR. A. M. JAYICH LAB, University of California, Santa Barbara

Graduate Student Researcher, Summer 2017 - Present

Exploring fundamental physics and quantum information science with trapped and laser-cooled radium ions. Demonstrated the first radioactive optical clock.

DR. HONG LIN LAB, Bates College

Undergraduate Research Assistant, Fall 2016

Analyzed the irregularities of vertical-cavity surface-emitting lasers subject to optical feedback for thesis work.

DR. ALBERTO MARION LAB, The University of Oklahoma

Undergraduate Research Assistant, Summer 2016

Worked in a quantum optics lab as part of the university's physics REU program.

TEACHING EXPERIENCE

UNIVERSITY OF CALIFORNIA, SANTA BARBARA, Santa Barbara, CA

Physics 127A, Analog Electronics, Spring 2020

Physics 15AH, Experimental Honors Physics, Fall 2019

Physics 15CH, Experimental Honors Physics, Spring 2019

Physics 6BL, Introductory Physics Lab - Lead TA, Winter 2019

Physics Department Head TA, Fall 2018

PUBLICATIONS

Demonstration of a Radioactive Optical Clock

C. A. Holliman, M. Fan, A. Contractor, and A. M. Jayich

In preparation

Optical Mass Spectrometry of Cold RaOH^+ and RaOCH_3^+

M. Fan, C. A. Holliman, X. Shi, H. Zhang, M. W. Straus, X. Li, S. W. Buechele, and A. M. Jayich

Physical Review Letters **126**, 023002 (2021)

Direct measurement of the $7s\ ^2S_{1/2} \rightarrow 7p\ ^2P_{3/2}$ transition frequency in $^{226}\text{Ra}^+$

C. A. Holliman, M. Fan, A. Contractor, M. W. Straus, and A. M. Jayich

Physical Review A **102**, 042822 (2020)

Measurements of electric quadrupole transition frequencies in $^{226}\text{Ra}^+$

C. A. Holliman, M. Fan, and A. M. Jayich

Physical Review A **100**, 062512 (2019)

Measurement of the $7p^2P_{3/2}$ state branching fractions in Ra^+

M. Fan, C. A. Holliman, S. G. Porsev, M. S. Safronova, and A. M. Jayich

Physical Review A **100**, 062504 (2019)

Laser Cooling of Radium Ions

M. Fan, C. A. Holliman, A. L. Wang, and A. M. Jayich

Physical Review Letters **122**, 223001 (2019)

OTHER EXPERIENCE

THE AMERICAN CHAMBER OF COMMERCE IN CHINA, Beijing, China

Communications Intern, Summer 2015

Facilitated high-level events supporting US-China bilateral relations. Helped other authors proofread and edit.

NATIONAL SECURITY LANGUAGE INITIATIVE, Changchun, China

Student Ambassador, Summer 2012

Participated in an immersion program under the auspices of the Department of State and Department of Defense.

ADDITIONAL INFORMATION

Programming/Design Skills: Python, MATLAB, Mathematica, Autodesk Inventor

Languages: English, Conversational in Japanese and Chinese