



Jacob Bryon

Curriculum Vitae

"The thing that doesn't fit is the thing that's the most interesting: the part that doesn't go according to what you expected." - Richard Feynman

Education

- 2014–2018 **Bachelors in Physics, Honors**, *The University of California*, Berkeley, *GPA – 3.6.*
Graduate with honors
- 2013–2014 **Community College**, *Cape Fear CC*, Wilmington, NC, *GPA – 4.0.*
Dual enrollment while in high school
- 2010–2014 **High School**, *Eugene Ashley High School*, Wilmington, NC, *GPA – 4.0.*

Honors Thesis

- Title *Effect of Strain on the Charge Density Wave State in Low Dimensional Materials*
Supervisor Professor Alex Zettl
Description Thesis explores the influence of strain applied to both quasi-one dimensional and quasi-two dimensional materials, specifically NbSe_2 and NbSe_3 . The project focusses on strain's affect on sliding behavior in the charge density wave state.

Experience

Research

- May 2015– **Condensed Matter Physics Researcher**, ALEX ZETTL GROUP, UC Berkeley.
Present Undergraduate Research. Research focused on electrical transport measurements of low dimensional materials, engineering equipment used in experimentation. Worked with machining, cryogenics, electrical measurements.
Selected Projects:
 - Crystal Growth in Carbon Nanotubes
 - Electrical Probe Design and Implementation
 - Design and Creation of High Vacuum systems
 - Design and Machine Heterostructure Transfer Station
 - Crystal Synthesis via Chemical Vapor Transport

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- June 2017– **Nuclear Physics Researcher**, *Huan Huang Group*, UCLA.
Nov. 2017 Summer Program through UC LEADS. Research for the STAR collaboration at the Relativistic Heavy Ion Collider (RHIC). Work focused on data analysis and event simulation using the AMPT model.

Other

- June 2016 – **MCAT Physics Instructor**, *The Princeton Review*, Berkeley, CA.
Present Create lesson plans and teach a course preparing students to take the Physics portion of the MCAT
- Aug. 2014 – **Gallery Attendant**, *Berkeley Art Museum Pacific Film Archive*, Berkeley, CA.
Present Protect art work in exhibitions and act as a liaison to patrons
- May 2016 – **House President -Ridge House**, *Berkeley Student Cooperative*, Berkeley, CA.
Dec. 2016 Oversee motions and bylaw changes, manage house level managers and run house councils
- Aug. 2015 – **Administrative Committee Board Member**, *Berkeley Student Cooperative*.
Aug. 2016 Make administrative decisions on cases brought to the Berkeley Student Cooperative, to benefit both the students and the Berkeley Student Cooperative

Publications

- 2018 (Submitted) Fufang Wen, **Jacob Bryon**, Liwen Wen, and Gang Wang. *Event-shape-engineering study of charge separation in heavy-ion collisions*
- 2017 (Acknowledgement) Seita Onishi (2017). *Low-Dimensional Materials at the Nanoscale: Transition Metal Chalcogenides, Carbon Nanomaterials and Organic Semiconductors* (Doctoral Thesis)

Research Presentations

- Aug. 2017 UCLA; Summer Research Symposium: "*Search for the Chiral Magnetic Effect in Heavy-Ion Collisions and Quantification of the Background with the AMPT Model*"
- Apr. 2017 UC Berkeley; Physics Undergraduate Research Showcase: "*Strain for Sliding Charge Density Wave in Quasi-Two Dimensional Materials*"
- Mar. 2017 UCLA; UC LEADS State Symposium: "*Synthesis and Electrical Transport Measurements in Low Dimensional Materials*"
- Aug. 2016 UC Berkeley; NERDS Berkeley Research Showcase: "*Synthesis and Electrical Transport Measurements in Low Dimensional Materials*"
- May 2016 UC Berkeley; NERDtopia-STEM Conference: "*Synthesis of Low Dimensional Materials for Study of Charge Density Wave and Superconductivity in van der Waals Heterostructures*"
- Apr. 2016 UC Berkeley; Physics Undergraduate Research Showcase: "*Synthesis of Low Dimensional Materials for Study of Charge Density Wave and Superconductivity in van der Waals Heterostructures*"

Awards

- 2016-2018 UC LEADS Scholar
Fall 2017 Berkeley Physics Undergraduate Research Scholar
Spring 2017 UC Berkeley: Dean's List

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Spring 2017 Berkeley Physics Undergraduate Research Scholar
Fall 2016 UC Berkeley: Honors to Date
Fall 2016 Berkeley Physics Undergraduate Research Scholar
Spring 2016 Berkeley Physics Undergraduate Research Scholar

Relevant Coursework

Math Linear Algebra, Differential Equations, Multi-variable Calculus
Physics Classical and Quantum Mechanics, Electricity and Magnetism
El. Eng Solid State Physics, Semi-Conductor Circuits, Integrated-Circuit Devices

Computer skills

Basic Mathematica, Autocad, Microsoft Office
Intermediate Matlab, Python, JavaScript, CSS & HTML, LaTeX
Advanced C/C++, ROOT

Languages

English **Mothertongue**
German **Intermediate** *Conversationally proficient*

Affiliations

- UC LEADS Scholar
- CAL NERDS
- PEACE Tutoring
- Society of Physics Students (Officer)
- American Physical Society
- UC Berkeley German Film Club