



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 **Mother tongue**
German **Intermediate**

Con conversationally proficient

Affiliations

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