# Gabe I. Schumm

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## Education:

**Boston University** September 2020 - Present
Ph.D. Candidate in Physics

**University of California, Berkeley** August 2015 - May 2019
Bachelors of Arts – Physics
Highest Honors in Physics, High Distinction in General Scholarship
GPA: 3.89, 3.94 in Physics

## Technical Skills:

**Programming languages:** Python, SQL, IDL
**Formatting languages:** LATEX, HTML
**Software:** Adobe Photoshop, Microsoft Office, LabVIEW

## Research Experience:

**Junior Specialist** June 2019 - July 2020
**Space Sciences Laboratory** (*ssl.berkeley.edu*)
**University of California, Berkeley**
- Perform data analysis for the electric field measurement instruments on the Van Allen Probes and Parker Solar Probe missions.

**Undergraduate Research Assistant** June 2016 - May 2019
**Zettl Group – Experimental Condensed Matter Physics** (*research.physics.berkeley.edu/zettl*)
**University of California, Berkeley**
- Assisted graduate student mentor with procedures, conducted experiments to supplement senior honors thesis, and mentored new undergraduate research assistants.
- Honors Thesis: *The Precise, Deterministic, and Dynamic Placement of 2D Materials*

**Baseball Research Team Member** August 2016 - May 2019
**Sports Analytics Group at Berkeley** (*sportsanalytics.berkeley.edu*)
**University of California, Berkeley**
- Modelled real Major League Baseball pitch trajectories to classify pitcher skill sets and pitch effectiveness.
- Collaborated with UC Berkeley Men's Division I Baseball coaching staff as analytics consultants.

## Teaching Experience:

**Teaching Fellow**
**Physics Department at Boston University** September 2020 - Present
- Courses taught: PY211/212 (General Physics I/II for science majors and engineers)

**Physics and Math Tutor** August 2018 - May 2019
**Athletic Study Center**
**University of California, Berkeley**
- Tutored student athletes as part of an academic support service for members of the NCAA
- Held weekly group and individual tutoring sessions.

**Math Tutor** Summer 2017 & 2018
**Summer Bridge Program**
**University of California, Berkeley**
- Tutored incoming Freshman as a part of an intensive Summer program focused on preparing for the rigor of University-level classes

## Research Publications:

- Mozer, F. S., Bonnell, J. W., Halekas, J. S., Rahmati, A., **Schumm, G.,** & Vasko, I. V. (2021). Whistlers in the Solar Vicinity That Are Spiky in Time and Frequency. *The Astrophysical Journal*, 908(1), 26. https://doi.org/10.1029/2020JA027944
- **Schumm, G.**, Bonnell, J. W., Wygant, J. R., & Mozer, F. S. (2020). Calculation of the atomic oxygen fluence on the Van Allen Probes. *Journal of Geophysical Research: Space Physics*, 125, e2020JA027944. https://doi.org/10.1029/2020JA027944
- Mozer, F. S., Agapitov, O. V., Bale, S. D., Bonnell, J. W., Goetz, K, Goodrich, K. A., Gore, R., Harvey, P. R., Kellogg, P. J., Malaspina, D., Pulupa, M., & **Schumm, G.** (2020). Time domain structures and dust in the solar vicinity: Parker Solar Probe observations. *The Astrophysical Journal Supplement Series*, 246(2), 50. https://arxiv.org/abs/1912.09234
- Mozer, Forrest & Bonnell, John & Bowen, T. & **Schumm, Gabe** & Vasko, Ivan. (2020). Large-amplitude, Wideband, Doppler-shifted, Ion Acoustic Waves Observed on the Parker Solar Probe. *The Astrophysical Journal*. 901. http://doi.org/10.3847/1538-4357/abafb4

- Gilbert, S., Pham, T., Dogan, M., Oh, S., Shevitski, B., **Schumm, G.**, Liu, S. Ercius, P., Aloni, S., Cohen, M., Zettl, A. (2018), Alternative Stacking Sequences in Hexagonal Boron Nitride. *Nano Letters*, https://arxiv.org/abs/1810.04814
- Gilbert, S., Liu, S., **Schumm, G.**, & Zettl, A. (2018). Nanopatterning Hexagonal Boron Nitride with Helium Ion Milling: Towards Atomically-Thin, Nanostructured Insulators. *MRS Advances*, 1-5. doi: https://doi.org/10.1557/adv.2018.117

## Poster Presentations:

- **Schumm, G.**, Gilbert, S., Kahn, S., Unger, A., Zettl, A. *Precise, Deterministic, and Dynamic Placement of 2D Materials*, Physics Undergraduate Poster Session, Berkeley, CA, April 2019.

## Relevant Coursework:

**Physics:** Classical Mechanics, Classical Electromagnetism, Optics, Quantum Mechanics, Statistical Mechanics, Basic Semiconductor Circuits Instrumentation Lab, Advanced Experimentation Lab, Solid State Physics

**Math:** Multivariable Calculus, Linear Algebra, Differential Equations, Complex Analysis

**Computer Science:** Structure and Interpretation of Computer Programs (Python, SQL), Principles and Techniques of Data Science

## Awards and Scholarships:

- 2018-2019 Isidore Pomerantz Scholarship Award Recipient
- 2018-2019 Berkeley Physics Undergraduate Research Scholar (BPURS)
- 2019 Phi Beta Kappa National Honor Society

- Degree Honors: High Distinction in General Scholarship

## Service and Outreach:

**Science in Oakland Elementary Schools** Spring 2018-Fall 2019
**University of California, Berkeley**

- Volunteered in program that visited Garfield Elementary School in Oakland every other week to engage in hands-on science experiments with academically-struggling second graders.

**Be a Scientist Mentor Program** Spring 2019
**Community Resources for Science**

- Provided guidance and mentorship to a group of seventh graders at Martin Luther King Middle School in Berkeley as they designed, executed, and presented an independent science project.