

## Sean Benevedes

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## Education

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B.S. **Physics**, *University of California, Santa Barbara*, Santa Barbara, CA Expected 2021  
GPA: 3.98

## Research Experience

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*The Muon Smasher's Guide*, Advisor: Prof. Nathaniel Craig 2020-Present  
Working in a small team to simulate particle collisions as part of a larger effort to evaluate the physics reach of muon colliders.

*Deep Neural Networks for Long-Lived Particles*, Advisor: Prof. Nathaniel Craig 2020-Present  
Evaluating the prospects of deep neural networks to improve the reach of experimental searches, specifically for hadronically decaying long-lived scalars pair produced through decays of the Higgs Boson.

*Timing Methods for Long-Lived Particles*, Advisor: Prof. Nathaniel Craig 2018-2019  
Analyzed possible applications of a near future timing detector at the Compact Muon Solenoid experiment for long-lived particle searches.

## Publications

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H. Al Ali, N. Arkani-Hamed, I. Banta, **S. Benevedes**, T. Cai, J. Cheng, T. Cohen, N. Craig, J. Fan, I. Garcia Garcia, S. Homiller, S. Koren, G. Koszegi, Z. Liu, Q. Lu, K. Lyu, A. McCune, P. Meade, I. Ojalvo, U. Oktem, M. Reece, R. Sundrum, D. Sutherland, T. Trott, C. Tully, K. Van Tilburg, L. Wang, and M. Wang, *The Muon Smasher's Guide*, in prep.

**S. Benevedes** and N. Craig. *Deep Neural Networks for Long-Lived Particles*, in progress.

## Presentations

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Undergraduate Physics Research Symposium Summer 2019, talk, "Timing Methods for Long-Lived Particle Searches". <http://online.kitp.ucsb.edu/online/undergrad19/benevedes/>

Research and Creative Activities Conference 2019, general audience talk and poster, "Timing Methods for Long-Lived Particle Searches".

Undergraduate Physics Research Symposium Summer 2020, talk, "Deep Neural Networks in Long-Lived Particle Searches".

## Teaching Experience

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### **Learning Assistant for Upper Division Quantum Mechanics**

Winter 2020

Collaborated with graduate student teaching assistants and another undergraduate learning assistant to facilitate active learning through six weekly problem-solving sessions. Guided students through conceptually important problems.

## Awards

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Edison Research Fellowship

Fall 2020

Edison Summer Research Fellowship

Summer 2020

Goldwater Scholarship Campus Nomination

Winter 2020

Create Fund Summer Undergraduate Fellowship

Summer 2019

Regents Scholarship

Fall 2017

## Other Activities

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### **Educational Opportunity Program Mentorship**

Fall 2020-Present

Mentoring two first-generation college students in their first year through the Educational Opportunity Program Peer Mentorship Program.

### **College of Creative Studies Mentorship**

Fall 2019-Present

Have mentored two first year physics students in the College of Creative Studies, one through the 2019-2020 school year and one for the duration of the present (2020-2021) school year.

### **Regents Mentorship**

Fall 2019-Present

Have mentored two first year physics students in the College of Letters and Sciences through the Regents' Scholar Association, one during 2019-2020 and the other through the present (2020-2021) school year.

### **First-Generation Faculty Panel**

Fall 2020

Worked with a faculty advisor to organize a panel of first-generation college student physics faculty in order to answer questions from first year students.

### **Physics Circus**

Winter 2020

Visited local schools and performed physics demonstrations illustrating concepts such as conservation laws, waves, and electromagnetism.