

Jennifer K. Briggs (Previously Lau)

Aurora, Co | (719) 209-7590 | Jennifer.kl.briggs@gmail.com

Education

University of Colorado Anschutz, Aurora, Co June 2020 – Present

GPA: 4.0

Bioengineering Ph.D. Candidate

Relevant Lab Skills: Computational Modeling, Data Assimilation and Machine Learning, Electrophysiology

Pepperdine University, Malibu, CA

August 2016 – May 2020

GPA: 3.9/4.0, *Suma Cum Laude*

Double Major: Bachelor of Science, *Physics* and *Sports Medicine* with a minor in *Applied Math*

Notable Awards

- Natural Science Student of the Year 2020
- Physics Student of the Year 2020
- Edison Achievement Scholarship 2019, 2018
- Faculty and Staff Scholarship 2019, 2018, 2017
- Pepperdine Grant 2019, 2018, 2017, 2016
- Rosemary Raitt Endowed Scholarship 2019, 2018, 2017, 2016
- Natural Science Award 2018, 2017

Fellowships

Rewarded:

- **National Science Foundation Graduate Research Fellowship** June 2021-June 2025
- **Bioengineering Fellowship** August 2020-Present
- **Werner and Kitty Hirs fellowship** August 2020-Present

Honorable Mention:

- Semi-finalist Hertz Foundation Fellowship

Research Experience (publications below)

Bioengineering Department, University of Colorado Anschutz, Aurora, Co June 2020 - Present

PhD Candidate in Albers Lab and Benninger Lab

- Utilizing network theory and computational modeling to study cellular signaling in Islets of Langerhans
- Developing machine-learning and physiologically informed hemodynamic intracranial model to personalize traumatic brain injury and stroke treatment
- Investigating relationship between machine-learning derived vascular health markers and diabetic state in ICU patients

NASA Goddard, Code 674, Greenbelt, Maryland

June 2019 – August 2019

Heliospheric Research Intern

- Discovered a never documented phenomenon in ionosphere and corresponding magnetospheric signatures and used plasma physics theory to determine possible explanations.
- Manipulated, graphed and analyzed data by coding using IDL and Python.

Physics Division, Pepperdine University, Malibu, CA

August 2017 – May 2020

Undergraduate Research Assistant

- Apprehended \$4600/year of funding and led 13 students to present at American Geophysical Union conference (3 years)
- Analyzed Polar Moving Auroral Formations using IDL, All Sky Camera Data, WIND and ACE satellite data.

Additional Experience

University of Colorado Denver Bioengineering Department, Graduate Teaching Assistant August 2020 – Present

Clear Direction Mentoring, STEM Mentor for underrepresented, underprivileged high schoolers September 2020 – Present

Self-Employed, Physics, Calculus, Physiology, and High School and Middle School Math Tutor February 2017 – May 2020

Pepperdine Physics Club, President August 2018 – May 2020

Mission at Natuvu Creek, Vanua Levu, Fiji, Medical and Educational Volunteer June 2018

- Diagnosed and treated medical and dental needs for ~100 citizens of Vanua Levu, Fiji
- Taught astronomy, math, and physics a class of high school students

Pepperdine University, Spiritual Life Resident Advisor (On-Call)

August 2017 – April 2018

- Facilitated conflict resolution when needed for 50 female students.

Pepperdine University, Math Tutor

August 2016 – May 2017

Emily Shane Foundation, Malibu, CA, Academic mentor for low-income students

January 2017 – May 2017

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Skills

- **Computer Programming:** Matlab, Machine Learning/Big Data, C++, Python, IDL, Mathematica, Latex, expert level Excel
- **Data Analysis and Image Analysis**
- **Network Theory**
- **Language:** Chinese (Basic: reading, writing, speaking)
- **Advanced Leadership and Time Management Skills**
- **Public Speaking**

Press Releases

- American Geophysical Union 'Postcards from the edge of space: New images, new phenomena, and new insights.' AGU Press Release 10 Dec. 2019
 - [NASA](#), [Forbes](#), [Pepperdine](#), [Yahoo News](#), [Business Insider](#), [The Weather Network](#), [Space.com](#)

Publications

- **Briggs, J.**, Fasel, G., Silveira, M., Sibeck, D., Lin, Y., & Sigernes, F. Dayside Auroral Observation Resulting from a Rapid Localized Compression of the Earth's Magnetic Field. *Geophysical Research Letters*, e2020GL088995.
- Benninger, R., Dwulet, J., **Briggs, J.**, 'Small subpopulations of β -cells do not drive islet oscillatory [Ca²⁺] dynamics via gap junction communication' *Accepted with Revisions PLOS Computational Biology*
- Adams, M. T., Dwulet, J. M., **Briggs, J. K.**, Reissaus, C. A., Jin, E., Szulczewski, J. M., ... & Blum, B. (2021). Reduced synchronicity of intra-islet Ca²⁺ oscillations in vivo in Robo-deficient β cells. *Elife*, 10, e61308.

Posters

- **Lau, J.**, Fasel, G.J., Sibeck, D.G., Silveira, M.D., Sigernes, F., (2019, December). *Ionospheric Response to a Transient Event at the Magnetopause*. Poster presented at: American Geophysical Union Fall Conference [Advancing Earth and Space Science], San Francisco, CA.
- Fasel, G.J., Nguyen, A., **Lau, J.**, Lee, L.C., Mann, J.C., Butler, K., Sigernes, F., Lorentzen, D.A., (2019, December). *East-West Brightening in Poleward-Moving Auroral Forms and the Interplanetary Magnetic Field By -Component*. Poster presented at: American Geophysical Union Fall Conference [Advancing Earth and Space Science], San Francisco, CA
- Butler, K., Fasel, G.J., **Lau, J.**, Sigernes, F., Mann, J.C., (2019, December). *Dayside Auroral Oval Shifts Due to Enhanced Solar Wind Dynamic Pressure*. Poster presented at: American Geophysical Union Fall Conference [Advancing Earth and Space Science], San Francisco, CA
- Mann, J.C., Fasel, G.J., **Lau, J.**, Hickmann, L., Sigernes, F., Lorentzen, D.A., (2019, December). *Dayside Auroral Oval Shifts Due to Enhanced Solar Wind Dynamic Pressure*. Poster presented at: American Geophysical Union Fall Conference [Advancing Earth and Space Science], San Francisco, CA
- **Lau, J.**, Fasel, G.J., Sibeck, D.G., Silveira, M.D., Sigernes, F., (2019, August). *Ionospheric Response to a Transient Event at the Magnetopause*. Poster presented at: NASA Goddard Intern Poster Presentations, Greenbelt, MD
- Fasel, G.J., Booth, A., Joubert, J., Chibwe, K., Cook, D., Raeth, S., **Lau, J.**, Sigernes, F., Lorentzen, D.A., (2017, December). *What Solar Wind Conditions Produce Poleward Moving Auroral Forms?*. Poster presented at: American Geophysical Union Fall Conference [Advancing Earth and Space Science], New Orleans, LA

Presentations

- **Lau, J.**, 'Ionospheric Response to a Transient Event at the Magnetopause'. Presented at NASA, Goddard 2019
- **Briggs, J.**, (2019, September) *Space Weather*. Presented at Pepperdine University NASC Seminar Series
- Fasel, G.J., **Lau, J.**, (2019, April) *PMAFs, What Are They?* presented at Berkeley and UCLA 2019
<https://epss.ucla.edu/seminars/space-physics-seminar/spring-2019/1700/>