

# Michaela Leung

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## EDUCATION

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### University of California, Riverside

*Doctor of Philosophy in Earth and Planetary Sciences*

Riverside, CA

*Sept. 2020 – Present*

### University of Washington

*Bachelor of Science in Earth and Space Sciences*

Seattle, WA

*Sept. 2016 – June 2020*

- Cum Laude with Departmental and Interdisciplinary Honors.
- Early entrance at age 15 through UW Academy for Young Scholars program

## RESEARCH EXPERIENCE

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### Graduate Research Assistant

*Department of Earth and Planetary Sciences, University of California, Riverside*

July 2020 – Present

*Riverside, CA*

Advisor: Dr. Edward Schwieterman

- Substantial updates and revisions to the atmos 1-dimensional coupled climate photochemistry model including addition of new gaseous species.
- Interdisciplinary and vertically integrated approaches for evaluating novel process based biosignatures
- Climate, photochemical, and spectral simulations of terrestrial exoplanets.

### Undergraduate Research Assistant

*Virtual Planetary Laboratory, University of Washington*

October 2017 – September 2020

*Seattle, WA*

Advisor: Dr. Victoria Meadows

- Used 1-dimensional coupled climate photochemical model for terrestrial planets in circumbinary orbits
- Used SMART radiative transfer model to analyze oxygen false positives
- Developed python scripts and modified existing FORTRAN code. Wrote two first-author papers and gave poster presentations.

## PUBLICATIONS

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- **Leung, M.**, Zuckerman, A., Lincowski, A., & Meadows V. Effects of Atmospheric Photochemistry on Circumbinary Planets. *In Preparation for submission to AAS Journals*
- **Leung, M.**, Meadows, V., & Lustig-Yaeger, J. (2020). High-resolution Spectral Discriminants of Ocean Loss for M-Dwarf Terrestrial Exoplanets, 160(1). <https://doi.org/10.3847/1538-3881/ab9012>

## PRESENTATIONS

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- **Leung, M.** & Meadows V., (2021) Impact of Photochemistry in Terrestrial P type Circumbinary Exoplanetary Atmospheres: poster presented at Habitable Worlds 2021, February 23
- **Leung, M.**, Meadows V. & Lustig-Yeager, J. (2021), High Resolution Spectral Discriminants of Ocean Loss for M Dwarf Terrestrial Exoplanets: oral presentation at AAS 237, Virtual Meeting, January 15
- **Leung, M.**, Meadows V., & Lincowski, A. (2020) Effects of Atmospheric Photochemistry in Circumbinary Planets: poster presented at the 52nd Annual Meeting of the Division of Planetary Sciences AAS, Virtual Meeting, October 26.
- **Leung, M.**, Meadows V., & Lincowski, A. (2020) Effects of Atmospheric Photochemistry in Circumbinary Planets: presented at Exoplanets in Southern California, Virtual Meeting, September 15.
- **Leung, M.** & Meadows V. (2020) Effects of Atmospheric Photochemistry in Circumbinary Planets: poster presented at the Undergraduate Research Symposium
- **Leung, M.**, Meadows V. & Lustig-Yeager, J. (2019), How to Discriminate Signs of Life from Ocean Loss on Earth-like Exoplanets Using High Resolution Ground Based Spectroscopy: poster presented at the Undergraduate Research

## DIVERSITY, EQUITY, AND INCLUSION EXPERIENCE

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### Comittee Member

November 2020 – Present

*Professional Culture and Climate Subcommittee*

*Division of Planetary Sciences, AAS*

- Worked on analyzing results from DPS meeting survey, and proposed ideas to improve culture and climate in DPS.

### Undergraduate Representative

May 2019 – June 2020

*Earth and Space Sciences Curriculum Committee, University of Washington*

*Seattle, WA*

- Represented undergraduate students in discussions and decisions about curriculum updates and overhauls.
- Led discussions about equity and initiated review of teaching goals in required courses

## OUTREACH

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### Astrobiology Guest Speaker / Skype a Scientist

October 2020 – Present

- Conducted multiple virtual presentations with 200 students in elementary and middle school science classes.

### Undergraduate Research Leader

September 2019 – June 2020

*Undergraduate Research Program, University of Washington*

*Seattle, WA*

- Communicated about research opportunities at outreach events to first year and transfer students.

## RELEVANT WORK EXPERIENCE

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### Technical Editor

May–July 2020

*Math for Programmers*

- Edited manuscript for technical accuracy and clarity. Created high quality figures and confirmed Python code functionality.

### Undergraduate Peer Tutor and Mentor

*Odegaard Writing and Research Center, University of Washington*

*Seattle, WA*

*Peer Tutor: September 2018 – June 2020 | Peer Mentor: August 2019 – June 2020*

- Worked with graduate and undergraduate student writers on various writing projects through question based, non-directive strategies.
- Developed mentorship and organization skills through supporting and training staff as well as planing events and programming.
- Supported transition to remote in April 2020. Led initiative to connect staff through COVID-19 induced isolation.

### Interpretive Science Educator

February 2015 – June 2018

*Pacific Science Center*

*Seattle, WA*

- Facilitated informal science education. Examples include presenting interactive activities about remote sensing and transit detection of exoplanets.
- Learned strategies for science communication across age groups and utilized these skills to work primarily with families with young children
- Developed hands-on activities and planned event celebrating 2017 total solar eclipse using multimedia strategies including themed music and crafts
- Wrote successful grant application for \$165k to fund solar panel array. Worked with contractors and assessed bids. Developed educational signage and hands-on science communication activities.

## HONORS AND AWARDS

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- Provost's Research Fellowship, University of California, Riverside (2020-2025, full funding 2020-2021)
- Undergraduate Student Speaker, Earth and Space Sciences Graduation, 2020
- Husky 100, 2020
- Mary Gates Research Scholarship, Spring 2020
- University of Washington Dean's List: 9 quarters
- Husky Leadership Certificate, University of Washington