**Nicholas Wogan**

Department of Earth and Space Science/Astrobiology Program

University of Washington, Seattle, WA

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**Education**

2017-Present **Ph.D Graduate Student**, Dual-title Earth and Space Science and Astrobiology, University of Washington, Seattle, WA.

2012-2016 **B.S.**, Physics major, University of Oregon Honors College.

**Professional Experience**

2017-Present **Research Assistant**, Planetary Science and Astrobiology, University of Washington, Seattle, WA. Advisor: David Catling.

* Research topics include the origin of life, the evolution of the Early Earth atmosphere, and interpretation of exoplanet biosignatures.

2016-2017 **Research Assistant**, Geophysics, University of Oregon, Eugene, OR. Supervisor: Eugene Humphreys

2014-2015 **Undergraduate Research Assistant**, Geophysics, University of Oregon, Eugene, OR. Supervisor: Dean Livelybrooks

2014 **Undergraduate Teaching Assistant**, Introductory Physics, University of Oregon, Eugene, OR. Supervisor: Ben McMorran.

**Awards and Honors**

2017 Department of Earth and Space Sciences Top Scholar Award, University of Washington

2016 Undergraduate Research Award, University of Oregon Physics department

2016 Undergraduate Honors Thesis: Passed with Distinction, University of Oregon Honors college

2012 Presidential Scholarship Recipient, University of Oregon

**Teaching Experience**

2019 **Teaching Assistant: Intro. Astrobiology (ASTBIO 115; Winter)**, University of Washington.

2018 **Teaching Assistant: Intro. Geology (ESS 101; Winter)**, University of Washington.

2014 **Undergraduate Teaching Assistant: Intro. Physics (PHYS 251)**, University of Oregon

**Outreach**

2021-present Mentoring Maanit Goel, a high school student in Seattle, WA.

Mar 2018 Polar Science Weekend Volunteer at the Pacific Science Center, Seattle, WA

2015 Developing physics lessons for Thailand high school teachers.

* We communicated these lessons over five, two-hour video conferencing session from Eugene, OR to Bangkok, Thailand

**Conference Presentations and Peer-Reviewed Publications**

Peer-Reviewed Publications

2021 Joshua Krissansen-Totton, Max Galloway, **Nicholas Wogan**, Jasmeet Dhaliwal, Jonathan Fortney (2021). Waterworlds Probably Do Not Experience Magmatic Outgassing. The Astrophysical Journal. [DOI:10.3847/1538-4357/abf560](https://doi.org/10.3847/1538-4357/abf560).

2021 Joshua Krissansen-Totton, Jonathan Fortney, Francis Nimmo, and **Nicholas Wogan**. Oxygen False Positives on Habitable Zone Planets Around Sun‐Like Stars. *AGU Advances*. [DOI:10.1029/2020AV000294](http://doi.org/10.1029/2020AV000294).

2020 **Nicholas Wogan,** Joshua Krissansen-Totton and David Catling. Abundant Atmospheric Methane from Volcanism on Terrestrial Planets Is Unlikely and Strengthens the Case for Methane as a Biosignature. *The Astrophysical Journal*. [DOI:10.3847/PSJ/abb99e](https://doi.org/10.3847/PSJ/abb99e).

2020 Kevin Zahnle, Roxana Lupu, David Catling, and **Nicholas Wogan**. ﻿Creation and Evolution of Impact-generated Reduced Atmospheres of Early Earth. *The Planetary Science Journal*[. DOI:10.3847/PSJ/ab7e2c](https://iopscience.iop.org/article/10.3847/PSJ/ab7e2c).

2020 **Nicholas Wogan** and David Catling. When is chemical disequilibrium in Earth-like planetary atmospheres a biosignature versus an anti-biosignature? Disequilibria from dead to living worlds. *The Astrophysical Journal*. [DOI:10.3847/1538-4357/ab7b81](https://iopscience.iop.org/article/10.3847/1538-4357/ab7b81).

Talks:

2021 **Nicholas Wogan**, David Catling and Kevin Zahnle. Molecules for the origin of life from impact-generated atmospheres on early Earth. Goldschmidt 2021, remote conference.

2020 **Nicholas Wogan** and David Catling. Atmospheric Synthesis of Prebiotic Molecules on the Hadean Earth. Prebiotic Chemistry and Early Earth Environments Consortium (PCE3), remote conference.

2019 **Nicholas Wogan** and David Catling. When is chemical disequilibrium in Earth-like planetary atmospheres a biosignature versus an anti-biosignature? Investigating disequilibria from prebiotic to post-biotic worlds. American Geophysical Union Fall Meeting, San Francisco, CA.

Posters:

2020 **Nicholas Wogan**, David Calting and Kevin Zahnle. Molecules for the origin of life from impact-generated atmospheres on early. American Geophysical Union Fall Meeting (remote conference).

2020 **Nicholas Wogan** and David Calting. Earth’s Impact History Favors a Late Hadean Origin of Life. Simons Foundation Collaboration on the Origin of Life (SCOL) annual meeting (remote conference).

2018 **Nicholas Wogan**, Dale Winebrenner and Joshua Krissansen-Totton. Chemical Disequilibrium as a Biosignature in an Antarctic Subglacial Lake Analog to Ocean Worlds. American Geophysical Union Fall Meeting, Washington, DC.