Nicholas Wogan
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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.

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.

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.

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.

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.

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.