

## EDUCATION

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<b>Ph.D., University of Washington, Seattle</b> Atmospheric Sciences, Advisor: Abigail Swann; Graduate Certificate in Astrobiology	2021 – 2024 (exp.)
<b>M.A., University of Washington, Seattle</b> Atmospheric Sciences, Advisor: Abigail Swann	2018 – 2021
<b>B.A., Princeton University with High Honors</b> Comparative Literature, Advisor: Peter Brooks; Minor in Planets and Life (Astrobiology)	2010 – 2014

## RESEARCH PROJECTS

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- **Assessing carbon cycle uncertainty in simple models, July 2023 - May 2024 (current)**  
Assessing structural uncertainty and global carbon budgets by (1) coordinating inter-model comparison project (MIP) of net-zero pathways across simple climate models and emulators of the carbon cycle and (2) progressively increasing model complexity within one model, FaIR (funded by UW PCC).
- **Modeled nearly-enclosed bays as refugia on Snowball Earth, July 2021 - January 2024**  
Simulated influence of land surface albedo and CO<sub>2</sub> on Snowball Earth refugia using CESM2 (CAM5, SLIM, CICE5) (funded by NSF).
  - Publication: **Shum, G. E. M.**, M. M. Laguë, A. L. S. Swann, C. M. Bitz, E. D. Waddington, S. G. Warren: Ocean bays surrounded by desert land could support life on Snowball Earth. *Submitted*.  
Preprint: doi:10.22541/au.171156551.19606238/v1.
- **Modeled impact of forest-atmosphere interactions on forest expansion, Aug 2018 - June 2021**  
Developed novel, idealized experimental design in CESM2 to test influence of forest establishment on forest expansion (funded by NSF).
  - Publication: **Shum, G. E. M.**, M. M. Laguë, S. S. Rushley, and A. L. S. Swann (2023): Beautiful Days in the Neighborhood: Land–Atmosphere Interactions as Drivers of Forest Expansion. *Earth Interact.*, 27, e220017, doi:10.1175/EI-D-22-0017.1.

## PROFESSIONAL EXPERIENCE

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<b>Graduate Research Assistant</b> University of Washington	2018 –
<b>Graduate Student Volunteer</b> ACORN, University of Washington	2020
<b>Communications Strategist</b> School of Engineering, Princeton University	2017 – 2018
<b>Research Analyst/Multimedia Journalist</b> Climate Central	2016 – 2017
<b>Multimedia Journalism Fellow</b> Climate Central	2014 – 2016
<b>Media Services Student Technician</b> Princeton University	2010 – 2014
<b>Scientific Affairs Intern</b> AAMC	2013

## SKILLS

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- Proficiency with coding languages and tools Python, R, FORTRAN, MATLAB, Git, and GitHub.
- Experience with scientific research principles, statistical data analysis.
- Experience with securing funding, proposal writing, project management, teaching, and mentoring.
- Experience with running climate models in custom configurations (CESM, SLIM, FaIR, and HECTOR).
- Strong science communication (e.g. Shum Show); proficiency in French and German languages.

## AWARDS & FELLOWSHIPS

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<b>PCC Climate Research Accelerator Award</b>	University of Washington	2023 –
<b>High Meadows Fellowship</b>	High Meadows Foundation	2014 – 2016
<b>ThinkSwiss Fellowship</b>	Swiss Embassy	2014
<b>Dale Award</b>	Princeton University	2012
<b>German Book Award</b>	Princeton University	2011, 2012, 2013
<b>Scheide Scholarship</b>	Princeton University	2010 – 2014
<b>Helzberg Kansas City Symphony Scholarship</b>	Shirley and Barnett Helzberg Foundation	2007 – 2014

## CONFERENCE PRESENTATIONS

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<b>CESM Land Model &amp; BGC Working Group Meeting</b>	Boulder, CO (remote oral)	2024
<b>AGU 2023 Fall Meeting</b>	San Francisco, CA (poster)	2023
<b>CESM Working Group Meeting 2023</b>	Boulder, CO (oral)	2023
<b>AbSciCon 2022</b>	Atlanta, GA (virtual poster)	2022
<b>AGU 2022 Fall Meeting</b>	Chicago, IL (oral)	2022
<b>CESM Paleoclimate Working Group Meeting</b>	Virtual (oral)	2022
<b>CESM Land Model Working Group Meeting</b>	Virtual (oral)	2021
<b>Graduate Climate Conference</b>	Virtual (poster)	2021
<b>Graduate Climate Conference</b>	Virtual (oral)	2020
<b>Ocean Observers Workshop</b>	Brest, France (oral, <i>invited speaker</i> )	2017

## NON-ACADEMIC PUBLICATIONS

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- **Shum, Greta** & Tamara Pico (2016): Does English Have to Be the Dominant Language of Science?  
*Scientific American Blog* URL

## TEACHING EXPERIENCE

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<b>Graduate Teaching Assistant</b>	University of Washington	Autumn 2019, Winter 2024
<b>Grader</b>	Atmospheric Sciences, University of Washington	2022
<b>Lead Teaching Assistant</b>	University of Washington	2020 – 2021
<b>Astrophysics Instructor</b>	Prison Teaching Initiative, Princeton University	2014 – 2015

## RESEARCH ADVISING

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<b>Esmeralda Chavelas</b>	co-advised CICOES Summer Internship at University of Washington	2020
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## SERVICE ACTIVITIES

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<b>Peer reviewer</b>	<i>Geophysical Research Letters</i> and <i>Journal of Climate</i>	2022 –
<b>Session convener</b>	AGU 2021 Fall Meeting	2021
<b>Co-Founder, Co-Lead</b>	PCC ACORN Program on co-production of science	2020
<b>Co-Chair</b>	Graduate Climate Conference	2020
<b>Co-Organizer</b>	Graduate Climate Conference	2019, 2020, 2021
<b>Graduate Student Representative (elected)</b>	Program on Climate Change, UW	2019 – 2021
<b>Graduate Steering Committee Member</b>	Program on Climate Change, UW	2019 – 2021

## REFERENCES

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1. **Dr. Abigail L. S. Swann** (aswann@uw.edu)  
Professor of Atmospheric Sciences & Biology, University of Washington (Ph.D. advisor)
2. **Dr. Stephen G. Warren** (sgw@uw.edu)  
Professor of Atmospheric Sciences & Earth and Space Sciences, University of Washington (Collaborator)
3. **Dr. Dargan M. W. Frierson** (dargan@uw.edu)  
Professor of Atmospheric Sciences, University of Washington (Collaborator)
4. **Dr. Cecilia M. Bitz** (bitz@uw.edu)  
Professor of Atmospheric Sciences, University of Washington (Collaborator)
5. **Dr. Marysa M. Laguë** (marysa.lague@utah.edu)  
Professor of Atmospheric Sciences, University of Utah (Collaborator)

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