

## EDUCATION

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<b>Ph.D., University of Washington, Seattle</b> Atmospheric Sciences, Advisor: Abigail Swann; Graduate Certificate in Astrobiology	2021 – 2024
<b>M.S., 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

## PROFESSIONAL EXPERIENCE

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<b>Postdoctoral Researcher</b> SPARCCLE EU Horizon Project, Vrije Universiteit Brussel	2024 –
<b>Graduate Research Assistant</b> University of Washington	2018 – 2024
<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

## RESEARCH PROJECTS

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- **Modelling and emulating climate impacts for EU policy, October 2024 - present**  
I am currently a postdoc on the EU Horizon project, SPARCCLE, advised by Prof. Wim Thiery. The project is broadly focused on building climate risk assessment tools to inform economic and social policy in the EU. I work on climate and impact modelling and emulation, which includes running the ISIMIP 3a and 3b simulations in CTSM, the land component of CESM2 (funded the EU and UK Research & Innovation).
- **Assessing carbon cycle uncertainty in simple models, July 2023 - October 2024**  
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).
  - Publication: **Shum, G. E. M.**, O. J. Truax, J. Y. S. Yoon, D. M. W. Frierson, A. L. S. Swann: Simple models agree on everything but the carbon sink. *In preparation*.
  - Publication: **Shum, G. E. M.**, A. L. S. Swann: Compensating feedbacks in carbon cycling within the FaIR model. *In preparation*.
- **Modelled 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. *In review, AGU Advances*. Preprint: doi:10.22541/au.171156551.19606238/v1.
- **Modelled 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.

## SKILLS

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- Expertise in NetCDF, Python, NCO/CDO, Bash, Git, R, FORTRAN, and MATLAB.
- Expertise in running climate models in custom configurations (CESM, SLIM, FaIR, and HECTOR).
- Expertise in scientific research principles, statistical data analysis, academic and non-academic writing.
- Experience with securing funding, proposal writing, project management, teaching, and mentoring.
- 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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- Sean O’Leary, **Greta Shum**, Logan Arnold, Tyler Cox & Ben Hunkler (2021): Destined to Fail: Why the Appalachian Natural Gas Boom Failed to Deliver Jobs & Prosperity and What It Teaches Us *Ohio River Valley Institute* URL
- **Greta Shum** & Tamara Pico (2016): Does English Have to Be the Dominant Language of Science? *Scientific American Blog* URL

## TEACHING EXPERIENCE

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<b>Lab Teaching Assistant</b>	Vrije Universiteit Brussel	Autumn 2024
<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

*Last Updated January 30, 2025.*