Sara Nawaz, PhD (she/her)

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Sḵwx̱wú7mesh (Squamish), British Columbia, Canada

Interdisciplinary social scientist researching social dimensions of novel climate and environmental technologies, with a focus on carbon removal. 10+ years of research and work experience on climate change, environment, governance, and social impacts.

Professional experience

Jan 2023—present	**Director of Research**, Institute for Carbon Removal Law and Policy, American University, Washington, DC, US
Apr 2023—present	**Honorary Adjunct Professor,** Institute for Resources, Environment and Sustainability (IRES), University of British Columbia (UBC), Vancouver, BC, Canada
Jul 2023—present	**Research Affiliate,** Institute for Science, Innovation and Society, University of Oxford, Oxford, UK
Oct 2021—Jan 2023	**Postdoctoral Fellow**, Institute for Science, Innovation and Society, University of Oxford, Oxford, UK
Sep 2021—Jan 2023	**Postdoctoral Fellow**, Institute for Resources, Environment and Sustainability (IRES), UBC, Vancouver, BC, Canada
Sep 2017—Aug 2021	**Research Assistant** (various appointments), UBC, Vancouver, BC, Canada
Sep 2016—Aug 2017	**Independent Social-Environmental Consultant**, Washington, DC, US
Sep 2014—Jun 2016	**Social Impact Assessment Consultant**, Environmental Resources Management, Washington, DC, US
Sep 2013—Sep 2014	**Research Analyst**, World Resources Institute, Washington, DC, US
Apr—Aug 2013	**Research Assistant**, Oxford Martin Commission, Oxford, UK

Education

Doctor of Philosophy (PhD), Resources, Environment, and Sustainability — 2017—2021
University of British Columbia (UBC), Vancouver, British Columbia, Canada

Master of Philosophy (MPhil), Development Studies — 2011—2013
University of Oxford, Oxford, UK

Bachelor of Arts (BA), major: Economics, minor: Public Policy — 2007—2011
Swarthmore College, Swarthmore, Pennsylvania, US

Peer-reviewed publications

Nawaz, S., Scott-Buechler, C., and Caggiano, H. (accepted) An independent public engagement body is needed to responsibly scale carbon removal in the US. *Environmental Research Letters.*

Satterfield, T., **Nawaz, S.,** and Boettcher, M. (2023) Social considerations and best practices to apply to engaging publics on ocean alkalinity enhancement, in: Guide to Best Practices in

Ocean Alkalinity Enhancement Research, edited by: Oschlies, A., Stevenson, A., Bach, L. T., Fennel, K., Rickaby, R. E. M., Satterfield, T., Webb, R., and Gattuso, J.-P., Copernicus Publications, State Planet, 2-oae2023, 11, https://doi.org/10.5194/sp-2-oae2023-11-2023.

Nawaz, S., & Satterfield, T. (2023) Towards just, responsible, and socially viable carbon removal: Lessons from offshore DACCS. *Environmental Science and Policy, 151(103633).* https://doi.org/10.1016/j.envsci.2023.103633

Nawaz, S., Lezaun, J., Valenzuela, J., and Renforth, P. (2023) Broaden Research on Ocean Alkalinity Enhancement to Better Characterize Social Impacts. *Environmental Science and Technology.* https://doi.org/10.1021/acs.est.2c09595

Nawaz, S., Satterfield, T., and St-Laurent, G. P. (2023) Public evaluations of four approaches to ocean-based carbon dioxide removal. *Climate Policy.* http://doi.org/10.1080/14693062.2023.2179589

Satterfield, T., **Nawaz, S.** and St-Laurent, G. P. (2023) Exploring public acceptability of direct air carbon capture with storage: climate urgency, moral hazards and perceptions of the 'whole versus the parts.' *Climatic Change, 176*(14). https://doi.org/10.1007/s10584-023-03483-7

Nawaz, S., Satterfield, T. & Phurisamban, R. (2022) Does 'precision' matter? A Q study of public interpretations of gene editing in agriculture. *Science, Technology and Human Values.* https://doi.org/10.1177/01622439221112460

Nawaz, S., & Satterfield, T. (2022) On the nature of naturalness? Theorizing 'nature' for the study of public perceptions of novel genomic technologies in agriculture and conservation. *Environmental Science and Policy, 136*, 291-303. https://doi.org/10.1016/j.envsci.2022.06.008

Nawaz, S., & Satterfield, T. (2022). Climate solution or corporate co-optation? US and Canadian publics' views on agricultural gene editing. *PLoS ONE*, *17*(3 March), e0265635. https://doi.org/10.1371/journal.pone.0265635

Hagerman, S., Satterfield, T., **Nawaz, S.,** St-Laurent, G. P., Kozak, R., & Gregory, R. (2021). Social comfort zones for transformative conservation decisions in a changing climate. *Conservation Biology*, *35*(6), 1932–1943. https://doi.org/10.1111/cobi.13759

Gregory, R., Kozak, R., Peterson St-Laurent, G., **Nawaz, S.,** Satterfield, T., & Hagerman, S. (2021). Under pressure: conservation choices and the threat of species extinction. *Climatic Change*, *166*(1–2), 1–21. https://doi.org/10.1007/s10584-021-03102-3

Nawaz, S., Satterfield, T., & Hagerman, S. (2021). From seed to sequence: Dematerialization and the battle to (re)define genetic resources. *Global Environmental Change*, *68*, 102260. https://doi.org/10.1016/j.gloenvcha.2021.102260

Nawaz, S., & Kandlikar, M. (2021). Drawing lines in the sand? Paths forward for triggering regulation of gene-edited crops. *Science and Public Policy*, *48*(2), 246–256. https://doi.org/10.1093/scipol/scab014

Nawaz, S., Klassen, S., & Lyon, A. (2020). Tensions at the boundary: Rearticulating 'organic' plant breeding in the age of gene editing. *Elementa: Science of the Anthropocene*, *8*(1), 34. https://doi.org/10.1525/elementa.429

Publications in review

Nawaz, S. & Lezaun, J. Grappling with scale: Latent assumptions in expert imaginaries of marine carbon dioxide removal.

Goldberg, D., **Nawaz, S.**, Lavin, J., and Slagle, A. Upscaling DAC hubs with wind energy and CO_2 mineral storage: Considerations for meeting Paris removal targets.

Reports and other writing

Nawaz, S. and Batchelor, N. "Breaking ground: Guidance for carbon removal companies and funders on responsible project development." October 31, 2023. https://www.xprize.org/prizes/carbonremoval/articles/breaking-ground-guidance-for-carbon-removal-companies-and-funders-on-responsible-project-deployment

Nawaz, S. "Improving community engagement on carbon removal: Initial reflections and recommendations." May 10, 2023. https://illuminem.com/illuminemvoices/improving-community-engagement-on-carbon-removal-initial-reflections-and-recommendations

Funded grants

Co-I, "Optimizing the integration of aquaculture and ocean alkalinity enhancement for low-cost carbon removal and maximum ecosystem benefit", Department of Energy, Office of Fossil Energy and Carbon Management, $29,500

Co-I, "Assessing efficacy of electrochemical ocean alkalinity enhancement at an existing outfall using tracer release experiments and oceanographic models", PIs David Ho & Matt Long, National Oceanic and Atmospheric Administration—National Oceanographic Partnership Program, co-funded with ClimateWorks Foundation, ~$111,062

PI, "Building best practices for public and community engagement on carbon removal", ClimateWorks Foundation, $109,277

Fellowships, and Awards

Nominee for Social Sciences, UBC, CGS/ProQuest Distinguished Dissertation Award (2022)
Freda Pagani Outstanding Thesis Award for UBC IRES (2022)
UBC Four-Year Fellowship (2017-21) & UBC International Tuition Award (2017-21)
ERM Service Excellence Award (2015)
ERM Star Award (2015)
Oxford Department of International Development Fieldwork Award (2012)
Swarthmore Lucretia Mott Graduate Fellowship (2011—2013)
Swarthmore Foundation Grant (2011)
Swarthmore College Writing Associate Fellowship (2008—2011)
Swarthmore College Quadir Summer Research Fellowship (2009)

Service

Expert Governance Reviewer, Frontier Climate	2022—present
Science Advisor, Carbon to Sea Initiative	2023—present
Science Advisor, Ocean Visions' Nutrient Fertilization Suitability Analysis	2023—present
Committee member, IRES Director Search Committee, UBC	Mar—May 2022

Co-president, IRES Student Society, UBC	Jul 2018—Jun 2019
Co-Leader, Oxford Global Food Security Forum, University of Oxford	Jun 2012—Jun 2013
Organizer, Women in Development Forum, University of Oxford	Feb 2013
Writing Associate, The Writing Center, Swarthmore College	Sep 2008—May 2011

I have served as a reviewer for *Carbon Management, Journal of Environmental Management*, *Agriculture and Human Values*, and *Elementa: Science of the Anthropocene.*

Presentations and guest lectures

"The challenges of gigaton thinking: Designing deliberations on (ocean-based) carbon removal." 4S (Society for Social Studies of Science) Annual Meeting, Honolulu, Hawaii/online. November 2023.

"A social science research agenda on ocean-based carbon removal." Presentation for panel on ocean-based CDR at NYC Climate Week, hosted by Ocean Visions and the Sabin Center at Columbia University. September 2023.

"Community engagement on carbon removal." Carbon Removal Deployment Symposium, co-hosted by the Carbon Business Council, American University, XPRIZE, and Arizona State University. Washington, DC. June 2023.

Panel on "Elevating Social Science, Partnership, and Ethics in Ocean-based Carbon Dioxide Removal". Capitol Hill Ocean Week (CHOW). Online. June 2023.

"Incorporating social considerations for ocean iron fertilization field studies." Exploring Ocean Iron Solutions workshop. Moss Landing, California. May 2023.

"Making carbon removal more just, equitable and socially acceptable." Massachusetts State Senate Committee on Global Warming and Climate Change. Online. April 2023.

"Improving community engagement for mCDR." Presentation for panel on "Responsible CDR governance in practice." Ocean Visions Biennial Summit. Online/Miami, Georgia. April 2023.

Panel on marine CDR, hosted by the Foundation for Climate Restoration. Online. March 2023.

"Survey design with analysis in mind." Co-led with Erika Gavenus. Resources, Environment and Sustainability (RES) 504 seminar: Survey Design in Interdisciplinary Environmental Research. Vancouver, BC. October 2022.

"Testing the waters: Expert imaginaries of marine CDR." Earth Systems Governance 2022 Conference, Toronto/online. October 2022.

"Engineering carbon removal: New technologies and social considerations." RES 520 seminar: Climate Change: Science, Technology and Sustainable Development. Online. March 2022.

"Rearticulating 'organic plant breeding' in the age of gene editing?" Co-presented with Susanna Klassen. Organic Seed Grower's Conference. Online. February 2022.

"Social comfort zones in a transforming climate." American Association of Geographers Annual Meeting. Online. April 2021.

"Beyond naturalness? Social dimensions of gene editing in agriculture." Institute for Resources, Environment and Sustainability Student Symposium. Online. April 2021.

"Beyond 'precision': A Q-method study on public perceptions of gene editing and gene drives for agriculture." Conference on Gene Editing in Agriculture and Food. Online. October 2020.

"Owning seeds, owning sequences?" RES 507 seminar: Human Technological Systems. Vancouver, BC. February 2020.

"From seed to sequence: Making sense of debates over the dematerialization of agricultural genetic resources." Canadian Anthropology Association/American Anthropology Association Annual Meeting. Vancouver, BC. November 2019.

Languages | Spanish (Working proficiency).
Software | R, Qualtrics, NVivo.