

Mark England

University of Exeter,
Exeter, Devon.

email: m.England2@exeter.ac.uk

website: markrossengland.com

orcidID: [0000-0003-3882-872X](https://orcid.org/0000-0003-3882-872X)

Academic positions

- Senior Research Fellow at Exeter University, Royal Commission for the Exhibition of 1851 Research Fellow, February 2023 to present.
- Postdoctoral researcher at University of California Santa Cruz, June 2021 to February 2023. *PI*: Nicole Feldl
- Postdoctoral researcher at Scripps Institution of Oceanography and University of North Carolina Wilmington, July 2019 to May 2021. *PIs*: Ian Eisenman and Till Wagner

Education

- Ph.D., Applied Mathematics and Atmospheric Science, Columbia University, New York, ‘Understanding Observed and Projected Climate Changes in the Antarctic, and their Global Impacts’, 2019. *Advisor*: Lorenzo Polvani
- M.Sc., Applied Mathematics and Atmospheric Science, Columbia University, New York, 2015. *Advisor*: Tiffany Shaw
- M.Eng., Civil and Environmental Engineering, Imperial College, London, 2013. *Advisor*: Maarten van Reeuwijk

Publications

- 21 Bushuk, M., L. Polvani, and **M. England** (2023), Comparing the impacts of ozone-depleting substances and carbon dioxide on Arctic sea ice loss, accepted in *Environmental Research: Climate*
- 20 **England, M.** and L. Polvani (2023), The Montreal Protocol is delaying the occurrence of the first ice-free Arctic summer, *PNAS*, **120**, e2211432120, doi: [10.1073/pnas.2211432120](https://doi.org/10.1073/pnas.2211432120)
- 19 Sigmond, M., L. Polvani, J. Fyfe, C. Smith, J. Cole and **M. England** (2023), Large contribution of ozone-depleting substances to global and Arctic warming in the late 20th century, *Geophysical Research Letters*, **50**, e2022GL100563, doi: [10.1029/2022GL100563](https://doi.org/10.1029/2022GL100563).
- 18 **England, M.**, I. Eisenman and T. Wagner (2022), Spurious climate impacts in coupled sea ice loss simulations, *Journal of Climate*, **35**, 3801–3811, doi: [10.1175/JCLI-D-21-0647.1](https://doi.org/10.1175/JCLI-D-21-0647.1).
- 17 Wyburn-Powell, C., A. Jahn and **M. England** (2022), Modeled interannual variability of Arctic sea ice cover within observational uncertainty, **35**, 3227–3242, *Journal of Climate*, doi: [10.1175/JCLI-D-21-0958.1](https://doi.org/10.1175/JCLI-D-21-0958.1).

- 16 Santer, B., et al. including **M. England** (2022), Robust anthropogenic signal identified in the seasonal cycle of tropospheric temperature, **35**, 6075-6100, *Journal of Climate*, doi: [10.1175/JCLI-D-21-0766.1](https://doi.org/10.1175/JCLI-D-21-0766.1).
- 15 Liang, Y., L. Polvani, M. Previdi, K. Smith, **M. England** and G. Chiodo (2022), Stronger Arctic Amplification from ozone-depleting substances than from carbon dioxide, *Environmental Research Letters*, **17**, 024010, doi: [10.1088/1748-9326/ac4a31](https://doi.org/10.1088/1748-9326/ac4a31).
- 14 Hay, S., P. Kushner, R. Blackport, K. McCusker, T. Oudar, L. Sun, **M. England**, C. Deser, J. Screen and L. Polvani (2022), Separating the influences of low-latitude warming and sea ice loss on Northern Hemisphere climate change, *Journal of Climate*, **35**, 2327-2349, doi: [10.1175/JCLI-D-21-0180.1](https://doi.org/10.1175/JCLI-D-21-0180.1).
- 13 **England, M.**, I. Eisenman, N. Lutsko and T. Wagner (2021) The recent emergence of Arctic Amplification, *Geophysical Research Letters*, **48**, e2021GL094086, doi: [10.1029/2021GL094086](https://doi.org/10.1029/2021GL094086).
- 12 **England, M.**, (2021) Are multi-decadal fluctuations in Arctic and Antarctic surface temperatures a forced response to anthropogenic emissions or part of internal climate variability?, *Geophysical Research Letters*, **48**, e2020GL090631, doi: [10.1029/2020GL090631](https://doi.org/10.1029/2020GL090631).
- 11 **England, M.**, T. Wagner, and I. Eisenman (2020) Modeling the breakup of tabular icebergs. *Science Advances*, **6**, eabd1273, doi: [10.1126/sciadv.abd1273](https://doi.org/10.1126/sciadv.abd1273)
- 10 Chemke, R., M. Previdi, **M. England**, and L. Polvani (2020), Distinguishing the impacts of ozone and ozone depleting substances on the recent increase in Antarctic surface mass balance. *The Cryosphere*, **14**, 4135-4144, doi: [10.5194/tc-14-4135-2020](https://doi.org/10.5194/tc-14-4135-2020)
- 9 **England, M.**, L. Polvani, and L. Sun (2020) Robust Arctic warming caused by projected Antarctic sea ice loss. *Environmental Research Letters*, **15**, 104005, doi: [10.1088/1748-9326/abaada](https://doi.org/10.1088/1748-9326/abaada)
- 8 **England, M.**, L. Polvani, L. Sun, and C. Deser (2020) Tropical climate responses to projected Arctic and Antarctic sea ice loss. *Nature Geoscience*, **13**, 275-281, doi: [10.1038/s41561-020-0546-9](https://doi.org/10.1038/s41561-020-0546-9)
- 7 Polvani, L., M. Previdi, **M. England**, G. Chiodo, and K. Smith (2020), Substantial twentieth-century Arctic warming caused by ozone depleting substances. *Nature Climate Change*, **10**, 130-133, doi: [10.1038/s41558-019-0677-4](https://doi.org/10.1038/s41558-019-0677-4)
- 6 Bracegirdle, T. et al. including **M. England** (2019), Back to the Future: Using long-term observational and paleo-proxy reconstructions to improve model projections of Antarctic climate. *Geophysics*, **9**, 255, doi: [10.3390/geosciences9060255](https://doi.org/10.3390/geosciences9060255)
- 5 **England, M.**, A. Jahn, and L. Polvani (2019). Non-uniform contribution of internal variability to recent Arctic sea ice loss. *Journal of Climate*, **32**, 4039-4053, doi: [10.1175/JCLI-D-18-0864.1](https://doi.org/10.1175/JCLI-D-18-0864.1)

- 4 Yettella, V. and M. England (2018) The role of internal variability in 21st century projections of the seasonal cycle of Northern Hemisphere surface temperature. *Journal of Geophysical Research*, **123**, 13,149-13,167, doi: [10.1029/2018JD029066](https://doi.org/10.1029/2018JD029066)
- 3 England, M., L. Polvani and L. Sun (2018) Comparing the effects of projected Antarctic and Arctic sea ice loss on the atmospheric circulation. *Journal of Climate*, **31**, 6353-6370, doi: [10.1175/JCLI-D-17-0666.1](https://doi.org/10.1175/JCLI-D-17-0666.1)
 → *Nature Climate Change* News & Views piece, doi:[10.1038/s41558-018-0243-5](https://doi.org/10.1038/s41558-018-0243-5)
- 2 England, M., L. Polvani, K. Smith, L. Landrum and M. Holland (2016) Robust response of the Amundsen Sea Low to stratospheric ozone depletion. *Geophysical Research Letters*, **43**, 8207-8213, doi: [10.1002/2016GL070055](https://doi.org/10.1002/2016GL070055)
- 1 England, M., T. Shaw and L. Polvani (2016) Troposphere-stratosphere dynamical coupling in the southern high latitudes and its linkage to the Amundsen Sea. *Journal of Geophysical Research*, **121**, 3776-3789, doi: [10.1002/2015JD024254](https://doi.org/10.1002/2015JD024254)

Manuscripts in revision

- England, M., and N. Feldl, Robust polar amplification in ice-free climates relies on ocean heat transport and cloud radiative effects, in revision at *Journal of Climate*.

Grants & Research Fellowships

- Royal Commission for the Exhibition of 1851 Research Fellowship (eight selected nationwide annually), Investigating the near-term climate benefits of reducing methane emissions: MethaneMIP, \$200,000
- Boris A. Bakhmeteff Research Fellowship in Fluid Mechanics, 2017-2018, \$50,000.

Invited talks

- University of Washington Program on Climate Change Summer Institute, September 2023: *Internal climate variability and polar sea ice trends*
- IGS Global Seminar series, online, May 2023: *Spurious climate impacts of sea-ice interventions: what are they and how do we avoid them?*
- Department of Geography Seminar, City University of New York Hunter College, April 2023: *Using Large Ensembles to understand the drivers of Arctic climate change*
- Department of Atmospheric and Oceanic Sciences Seminar, McGill University, April 2023: *Investigating the tropical climate response to projected sea ice loss without the spurious effects from model intervention*
- Department of Earth Science Seminar, Cambridge University, June 2022: *The role of Ozone Depleting Substances in past and future Arctic climate change.*

- Atmosphere and Oceanic Sciences Seminar, UCLA, April 2022: *Investigating the causes and effects of Arctic climate change within a hierarchy of climate models.*
- University of Texas Institute for Geophysics Seminar, UT Austin, March 2022: *Investigating the Causes and Effects of Polar Climate Change Using Targeted Comprehensive Climate Model Simulations.*
- Earth and Environmental Sciences Seminar, Vanderbilt University, March 2022: *Investigating the Causes and Effects of Polar Climate Change Using Targeted Comprehensive Climate Model Simulations.*
- Atmosphere Ocean Science Colloquium, New York University, February 2022: *Investigating the causes and effects of Arctic climate change within a hierarchy of climate models.*
- Whole Earth Seminar, University of California Santa Cruz, November 2021: *The recent emergence of Arctic Amplification.*
- American Geophysical Union Fall Meeting 2021, New Orleans, ‘Causes and Consequences of Polar Amplification’, oral presentation: *The recent emergence of Arctic Amplification.*
- GFDL Climate Sensitivity seminar, Princeton, November 2021: *The recent emergence of Arctic Amplification.*
- Noble Seminar Series, University of Toronto, October 2021: *Spurious climate impacts in sea ice loss simulations.*
- Polar Amplification Model Intercomparison Project seminar, online, September 2021 : *The recent emergence of Arctic Amplification.*
- UC Irvine Department of Earth System Science seminar January 2020, *The global impacts of projected sea ice loss.*
- American Geophysical Union fall meeting 2019, San Francisco, ‘Large Ensemble Climate Models as Tools for Exploring Internal Variability, Climate Change Signals, and Impacts’, *Non-uniform contribution of internal variability to recent Arctic sea ice loss.*

Honours & Awards

- ARCUS Early Career Conference Funding Award 2021, \$500
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- Travel funding from CliVar to attend the Large Ensemble 2019 Meeting, \$500.
- Travel funding from the SCAR physical sciences group to attend AGU 2018, \$500.
- Engineering Graduate Student Council Professional Development Scholarship 2018, \$500.

- APECS Polar 2018 poster competition, second place for North America. *The contribution of internal variability to recent sea ice loss across the Arctic.*
- Travel funding from the SCAR physical sciences group to attend Polar2018, \$500.
- Travel funding from the SCAR physical sciences group to attend AntClim21, \$2,000.
- Lead Teaching Fellow, Columbia Centre for Teaching and Learning, 2017-2018, \$2,000.
- Bruce White prize for exceptional work in fluid mechanics, Imperial College, 2013., \$2,000.
- Dean's List (awarded to top 10% of students), Imperial College, 2013.

Other Research Experience

- Masters research project, Imperial College, Department of Environmental and Civil Engineering, 2012-2013. *Research area:* Direct Numerical Simulation (DNS) of turbulent entrainment. *Advisor:* Maarten van Reeuwijk.

Teaching Experience

- Guest lecturer for Modeling Earth's Climate, UC Santa Cruz, 2022.
- Guest lecturer for Ice and Climate Dynamics, University of Wisconsin Madison, 2021.
- Instructor for Introduction to Climate Dynamics course for the Columbia University *Science Honours Programme*, 2017-2018.
- Statistics Instructor for *Columbia Academic Success Programs* 2017 and 2018, involved being sole instructor, making course materials, exams and homework, and participated in staff meetings.
- Teaching assistant for APMA E3101 *Linear Algebra* and APMA 3102 *Partial Differential Equations*, Columbia University.
- Teaching assistant for CI3-321 *Computational Engineering Analysis*, Imperial College London.

Community Teaching Experience

- Volunteer teacher at Rikers Island women's prison in science and mathematics, *People's Education Initiative*, 2017-2018.
- Mentor to help student's reading skills, *Read Ahead*, Margaret Douglas School, 2016-2017.
- Volunteer teaching assistant in GCSE Mathematics, *Bishop Challoner School*, 2012-2013.

Professional Activities

- Session Chair for Ocean Modelling session in Model Hierarchies Workshop, 2022, Stanford University.
- PhD committee member for Christopher Wyburn-Powell, Colorado University, Boulder.

- Reviewer for NSF Climate and Large Scale Dynamics.
- Reviewer for: Nature Climate Change, Science Advances, Journal of Climate, Geophysical Research Letters, Environmental Research Letters, Journal of Applied Meteorology and Climatology, Quarterly Journal of the Royal Meteorological Society, Frontiers in Climate, Journal of Advances in Modelling Earth Systems, Remote Sensing, Npj, Nature Comms Atmosphere and Environment, Environmental Research Climate, Earth and Space Sciences, Earths Future, Communications Earth and Environment.
- Member of the American Geophysical Union, 2015-present.
- Associate of the City and Guilds of London Institute, 2013-present.
- Judge for the New York City Science and Engineering Fair preliminaries and final round, 2018.

Presentations, Conferences and Meetings

- IUGG 2023, Berlin, ‘Variability and Near-Term Predictability of the Antarctic Climate System’, oral presentation: *Assessing the causes of dramatic interannual variability in Antarctic sea ice extent*
- IUGG 2023, Berlin, ‘Atmosphere-Ocean-Sea Ice Interactions’, oral presentation: *Sea ice perturbations in aquaplanet simulations: Isolating the physical climate responses from model interventions*
- IUGG 2023, Berlin, ‘Cloud-Radiative Interactions’, oral presentation: *Robust polar amplification in ice-free climates relies on ocean heat transport and cloud radiative effects*
- XCS seminar May 2023, University of Exeter, oral presentation: *Spurious climate impacts of sea-ice interventions: what are they and how do we avoid them?*
- CESM Polar Climate working group meeting 2023, National Centre for Atmospheric Research (virtual), oral presentation: *Sea ice perturbations in aquaplanet simulations: Isolating the physical climate responses from model interventions.*
- American Geophysical Union Fall Meeting 2022, Chicago, ‘Polar Amplification and Its Connection to Lower-Latitude Weather and Climate’, oral and poster presentation: *Sea ice perturbations in aquaplanet simulations: Isolating the physical climate responses from model interventions*
- Model Hierarchies Workshop 2022, Stanford University, poster: *Robust polar amplification in ice-free climates relies on ocean heat transport*
- American Geophysical Union Fall Meeting 2021, New Orleans, ‘Large Ensemble Climate Model Simulations as Tools for Exploring Natural Variability, Change Signals, and Impacts’, oral presentation: *Are multi-decadal fluctuations in Arctic and Antarctic surface temperatures a forced response to anthropogenic emissions or part of internal climate variability?*
- CalGFD meeting 2021, oral presentation: *Spurious climate impacts of sea ice loss simulations.*

- European Geophysical Union Spring Meeting 2021 (virtual), ‘Arctic changes - processes and feedbacks in climate, ocean and cryosphere’, oral presentation: *Montreal Protocol to delay ice-free Arctic by a decade*.
- Polar Amplification Model Inter-comparison Project (PAMIP) workshop 2021, NCAR (virtual), oral presentation: *Artificial heating of the Arctic in sea ice loss simulations*.
- UK Antarctic Science Conference 2021, Edinburgh University (virtual), oral presentation: *Modelling the breakup of tabular icebergs*.
- CESM Polar Climate working group meeting 2021, National Centre for Atmospheric Research (virtual), oral presentation: *The recent emergence of Arctic Amplification*.
- Polar Center Town Hall 2021 (virtual), Scripps Institution of Oceanography, La Jolla, oral presentation: *Modelling the breakup of tabular icebergs*.
- American Geophysical Union Fall Meeting 2020 (virtual), ‘High-Latitude Earth Systems: Their Local Responses to and Impacts on Global Climate Change’, oral presentation: *Montreal Protocol to delay ice-free Arctic by a decade*.
- CalGFD meeting 2020, Caltech (virtual), oral presentation: *Modelling the breakup of tabular icebergs*.
- CESM Land Ice, Paleoclimate, and Polar Climate 2020 working group meeting, National Centre for Atmospheric Research (virtual), oral presentation: *Substantial twentieth-century Arctic warming caused by ozone depleting substance*.
- Polar seminar 2020, Scripps Institution of Oceanography, La Jolla, oral presentation: *The role of ozone-depleting substances in Arctic warming*.
- Ocean Sciences Meeting 2020, San Diego, ‘Moving Beyond Melt: The Impact of Melting Glaciers, Icebergs, and Sea Ice on Ocean Environments’, poster: *Modelling the breakup of tabular icebergs*.
- American Geophysical Union Fall Meeting 2019, San Francisco, ‘Changing Climate Components in the Arctic and Antarctic Coupled Systems’, oral presentation: *Robust Arctic warming caused by Antarctic sea ice loss*.
- Climate, Atmosphere and Physical Oceanography Seminar 2019, Scripps Institution of Oceanography, La Jolla, oral presentation: *Global impacts of projected sea ice loss*.
- CalGFD meeting 2019, Caltech, Pasadena, oral presentation: *Tropical climate responses to projected Arctic and Antarctic sea-ice loss*.
- CliVar Large Ensemble workshop 2019, National Centre for Atmospheric Research, Boulder.
- Polar Amplification Model Inter-comparison Project (PAMIP) workshop 2019, Exeter, oral presentation: *Tropical climate responses to projected Arctic and Antarctic sea-ice loss*.

- Climate Variability and Change Working Group winter meeting 2019, National Centre for Atmospheric Research, oral presentation.
- American Geophysical Union Fall Meeting 2018, Washington DC, ‘Arctic and Midlatitude Linkage: Causes and Effects’, oral presentation: *Tropical climate responses to projected Arctic and Antarctic sea-ice loss.*
- University of Washington Programme for Climate Change summer institute 2018, Friday Harbour.
- Polar2018, Davos, Atmosphere-Ice-Ocean interactions in the Polar Regions, oral presentation: *Contrasting the Antarctic and Arctic atmospheric response to projected sea ice loss in the late 21st Century.*
- Polar2018, Davos, Predicting Variability and Change of the Polar Climate and Environment, poster: *Non-uniform contribution of internal variability to recent Arctic sea ice loss.*
- SCAR AntClim21 past2projections workshop 2018, Davos, oral presentation: *Robust response of the Amundsen Sea Low to stratospheric ozone depletion.*
- Climate Variability and Change Working Group winter meeting 2018, National Centre for Atmospheric Research, oral presentation: *Contrasting the Antarctic and Arctic atmospheric response to projected sea ice loss in the late 21st Century.*
- Frontier of Earth Systems Dynamics annual meeting 2018, Columbia University, oral presentation: *Contrasting the Antarctic and Arctic atmospheric response to projected sea ice loss in the late 21st Century.*
- American Geophysical Union Fall Meeting 2017, New Orleans, ‘Sea Ice-Ocean-Atmosphere Interactions in the New Arctic and Southern Oceans’, oral presentation: *Contrasting the Antarctic and Arctic atmospheric response to projected sea ice loss in the late 21st Century.*
- Great Antarctic Climate Hack 2017, Scientific Committee on Antarctic Research, Scripps Institution of Oceanography.
- Advanced Climate Dynamics Courses summer school 2017, ‘The Dynamics of the Seasonal Cycle’, Rondane National Park, Norway.
- ‘Understanding the Causes and Consequences of Polar Amplification’ meeting 2017, Aspen Global Change Institute, poster session: *Contrasting the Antarctic and Arctic atmospheric response to projected sea ice loss in the late 21st Century.*
- American Geophysical Union Fall Meeting 2016, San Francisco, ‘Antarctic Meteorology and Climatology’, poster: *Robust response of the Amundsen Sea Low to stratospheric ozone depletion.*
- CMIP-6 tutorial August 2016, National Centre for Atmospheric Research.

- Frontier of Earth Systems Dynamics annual meeting 2016, MIT, oral presentation: *Robust response of the Amundsen Sea Low to stratospheric ozone depletion.*
- Community Earth System Model workshop August 2015, NCAR.
- American Geophysical Union Fall Meeting 2015, ‘Polar Climate and Predictability’, poster: *Troposphere-stratosphere dynamical coupling in the Southern high latitudes and its linkage to the Amundsen Sea.*
- Frontier of Earth Systems Dynamics annual meeting 2015, Johns Hopkins, oral presentation: *Troposphere-stratosphere dynamical coupling in the Southern high latitudes and its linkage to the Amundsen Sea.*