

John P. Krasting

CLIMATE SCIENTIST AND MODELER

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Education

Rutgers, The State University of New Jersey

PH.D., ATMOSPHERIC SCIENCE

New Brunswick, NJ

2008

Rutgers, The State University of New Jersey

B.S., METEOROLOGY

New Brunswick, NJ

2003

Experience

NOAA - Geophysical Fluid Dynamics Laboratory

RESEARCH PHYSICAL SCIENTIST

Princeton, NJ

2009 - PRESENT

Rutgers University - Dept. of Environmental Science

ADJUNCT FACULTY

Princeton, NJ

2011 - PRESENT

FOX Television Stations - WWOR-TV, WNYW-TV, and WTXF-TV

ON-CAMERA METEOROLOGIST

New York, NY and Philadelphia, PA

2003-2010

University of Delaware - School of Marine Science and Policy

RESEARCH COMPUTING SCIENTIST

Newark, DE

2008 - 2009

Awards

2014

Silver Medal Award

United States Dept. of Commerce

2009

Mid-Atlantic Emmy Award Nomination

The National Academy of Television Arts and Sciences

2006

Certified Broadcast Meteorologist

American Meteorological Society

Grants

2018–2021

An Open Framework for Process-Oriented Diagnostics of Global Models

Funded Co-investigator – NOAA Climate Program Office (MAPP) – \$1,488,078

Publications

1. Winton, M. *et al.* Climate Sensitivity of GFDL's CM4.0. en. *Journal of Advances in Modeling Earth Systems* **12**. eprint: <https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2019MS001838>, e2019MS001838. ISSN: 1942-2466 (2020).
2. Adcroft, A. *et al.* The GFDL Global Ocean and Sea Ice Model OM4.0: Model Description and Simulation Features. en. *Journal of Advances in Modeling Earth Systems* **11**, 3167–3211. ISSN: 1942-2466 (2019).

3. Arora, V. K. *et al.* Carbon-concentration and carbon-climate feedbacks in CMIP6 models, and their comparison to CMIP5 models. English. *Biogeosciences Discussions*. Publisher: Copernicus GmbH, 1–124. ISSN: 1726-4170 (Dec. 2019).
4. Eyring, V. *et al.* Taking climate model evaluation to the next level. en. *Nature Climate Change* **9**, 102–110. ISSN: 1758-6798 (Feb. 2019).
5. Findell, K. L. *et al.* Rising Temperatures Increase Importance of Oceanic Evaporation as a Source for Continental Precipitation. *J. Climate* **32**, 7713–7726. ISSN: 0894-8755 (Aug. 2019).
6. Held, I. M. *et al.* Structure and Performance of GFDL's CM4.0 Climate Model. en. *Journal of Advances in Modeling Earth Systems* **11**. ISSN: 1942-2466. doi:10.1029/2019MS001829. <<https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2019MS001829>> (visited on 12/04/2019) (Nov. 2019).
7. Krasting, J. P. *et al.* Role of Ocean Model Formulation in Climate Response Uncertainty. *J. Climate* **31**, 9313–9333. ISSN: 0894-8755 (Sept. 2018).
8. Sentman, L. T. *et al.* The Mechanistic Role of the Central American Seaway in a GFDL Earth System Model. Part 1: Impacts on Global Ocean Mean State and Circulation. en. *Paleoceanography and Paleoclimatology* **33**, 840–859. ISSN: 2572-4525 (2018).
9. Zhao, M. *et al.* The GFDL Global Atmosphere and Land Model AM4.0/LM4.0: 1. Simulation Characteristics With Prescribed SSTs. en. *Journal of Advances in Modeling Earth Systems* **10**, 691–734. ISSN: 1942-2466 (2018).
10. Zhao, M. *et al.* The GFDL Global Atmosphere and Land Model AM4.0/LM4.0: 2. Model Description, Sensitivity Studies, and Tuning Strategies. en. *Journal of Advances in Modeling Earth Systems* **10**, 735–769. ISSN: 1942-2466 (2018).
11. Findell, K. L. *et al.* The impact of anthropogenic land use and land cover change on regional climate extremes. en. *Nature Communications* **8**, 1–10. ISSN: 2041-1723 (Oct. 2017).
12. Naiman, Z. *et al.* Impact of Mountains on Tropical Circulation in Two Earth System Models. *J. Climate* **30**, 4149–4163. ISSN: 0894-8755 (Feb. 2017).
13. Eyring, V. *et al.* ESMValTool (v1.0) – a community diagnostic and performance metrics tool for routine evaluation of Earth system models in CMIP. English. *Geoscientific Model Development* **9**, 1747–1802. ISSN: 1991-959X (May 2016).
14. Griffies, S. M. *et al.* OMIP contribution to CMIP6: experimental and diagnostic protocol for the physical component of the Ocean Model Intercomparison Project. English. *Geoscientific Model Development* **9**, 3231–3296. ISSN: 1991-959X (Sept. 2016).
15. Krasting, J. P., Dunne, J. P., Stouffer, R. J. & Hallberg, R. W. Enhanced Atlantic sea-level rise relative to the Pacific under high carbon emission rates. en. *Nature Geoscience* **9**, 210–214. ISSN: 1752-0908 (Mar. 2016).
16. Ding, Y. *et al.* Ocean response to volcanic eruptions in Coupled Model Intercomparison Project 5 simulations. en. *Journal of Geophysical Research: Oceans* **119**, 5622–5637. ISSN: 2169-9291 (2014).
17. Frölicher, T. L. *et al.* Dominance of the Southern Ocean in Anthropogenic Carbon and Heat Uptake in CMIP5 Models. *J. Climate* **28**, 862–886. ISSN: 0894-8755 (Oct. 2014).
18. Krasting, J. P., Dunne, J. P., Shevliakova, E. & Stouffer, R. J. Trajectory sensitivity of the transient climate response to cumulative carbon emissions. en. *Geophysical Research Letters* **41**, 2520–2527. ISSN: 1944-8007 (2014).
19. Krasting, J. P., Broccoli, A. J., Dixon, K. W. & Lanzante, J. R. Future Changes in Northern Hemisphere Snowfall. *J. Climate* **26**, 7813–7828. ISSN: 0894-8755 (May 2013).
20. Shevliakova, E. *et al.* Historical warming reduced due to enhanced land carbon uptake. en. *PNAS* **110**, 16730–16735. ISSN: 0027-8424, 1091-6490 (Oct. 2013).
21. Dunne, J. P. *et al.* GFDL's ESM2 Global Coupled Climate–Carbon Earth System Models. Part I: Physical Formulation and Baseline Simulation Characteristics. en. *J. Climate* **25**, 6646–6665. ISSN: 0894-8755, 1520-0442 (Oct. 2012).
22. Dunne, J. P. *et al.* GFDL's ESM2 Global Coupled Climate–Carbon Earth System Models. Part II: Carbon System Formulation and Baseline Simulation Characteristics. *J. Climate* **26**, 2247–2267. ISSN: 0894-8755 (Oct. 2012).
23. Hallberg, R., Adcroft, A., Dunne, J. P., Krasting, J. P. & Stouffer, R. J. Sensitivity of Twenty-First-Century Global-Mean Steric Sea Level Rise to Ocean Model Formulation. *J. Climate* **26**, 2947–2956. ISSN: 0894-8755 (Dec. 2012).

Conference Presentations

- Development of Process-Oriented Diagnostics Through NOAAs Model Development Task Force
CMIP6 Analysis Workshop (Barcelona) March 2019
- Resolution-Dependent Patterns of Heat and Carbon Uptake in GFDLs OMIP simulations
OCB Workshop (Washington, D.C.) December 2018
- The growth of Python-based analyses and infrastructure in support of CM4 development and CMIP6 at NOAA-GFDL
AMS Annual Meeting (Seattle) January 2017
- Enhanced Atlantic sea-level rise relative to the Pacific under high carbon emission rates
AGU Fall Meeting (San Francisco) December 2016
- Advances in GFDLs Analysis and Model Evaluation Capabilities in Support of CM4 and CMIP6
DLR German Aerospace Center (Oberpfaffenhofen, Germany) November 2016, invited
- ESMValTool Activities at NOAA-GFDL
2nd ESMValTool Workshop (Munich, Germany) November 2016, invited
- Progress and Challenges in Integrating ESMValTool and other Outside Analysis Packages into the GFDL Workflow Invited -
ESMValTool Workshop (Munich, Germany) March 2015
- Why Carbon Emission Rates Matter for TCRE and Oceanic Heat and Carbon Uptake
AGU Fall Meeting (San Francisco) December 2014
- Trajectory Sensitivity of the Transient Climate Response to Cumulative Carbon Emissions
AGU Fall Meeting (San Francisco) December 2013
- Scenario Dependence of the Climate Response to Cumulative Carbon Emissions
Univ. of Delaware Geography Dept. (Newark, DE) November 2013, invited
- Ensemble Modeling of Climate-Carbon Cycle Interactions
PPPL Colloquium (Princeton) January 2013, invited
- How Predictable Were the 20th Century Land Carbon Fluxes?
AGU Fall Meeting (San Francisco) December 2012
- ENSO-driven Terrestrial Carbon Flux Variability in a Coupled Climate-Carbon Cycle Model
AGU Fall Meeting (San Francisco) December 2011
- NOAA-GFDL's New Earth System Models: Model Description and Preliminary Results
AGU Fall Meeting (San Francisco) December 2010
- NOAA-GFDLs Workflow for CMIP5/IPCC AR5 Experiments
AGU Fall Meeting (San Francisco) December 2010
- Observed and Simulated North American Snowfall Changes for the Late Twentieth Century.
37th Annual Northeast Storms Conference (Springfield, MA) March 2008
- Influences of Temperature and Precipitation Changes on Model Simulated Monthly Snowfall Trends
American Geophysical Union Fall Meeting (San Francisco) December 2006
- Global warming and Simulated Snowfall Trends in Eastern North America.
85th Annual Meeting of the American Meteorological Society (Seattle) January 2005
- A Statistical Analysis of Thermodynamic and Kinematic Variables Prior to Severe Thunderstorm Events in the North-eastern United States.
11th Symposium for Undergraduate Research (University of Sao Paolo) November 2003

Teaching Experience

Postgraduate Courses

- Fall 2011 - Climate Dynamics (Rutgers University, 16:107:545)

Undergraduate Courses

- Fall 2015 - PRESENT - Introduction to Meteorology (Rutgers University, 16:670:101)
- 2003 - 2007 - Departmental Teaching Assistant for Atmospheric Thermodynamics, Synoptic Forecasting, and Meteorological Analysis

Peer Review Experience

2017 **Department of Energy - RUBISCO Program**
Program Review Panelist

2010 –
PRESENT **Peer-review Journals**

Nature Geosci., Geophys. Res. Lett., J. Climate, JGR-Atmospheres, Env. Res. Lett., Clim. Dynamics, Curr. Clim. Change Reports, PLOS ONE

Academic Supervision and Mentoring

- 2019 – **Maurizia De Palma** *Internship -Anthropogenic carbon uptake and ocean acidification*
- 2016 – **Maria Pulido-Velosa** *Internship - Benchmarking biogeochemical nutrients in ocean models*
- 2007 – **Megan Leigh** *Internship - NY1 News*
- 2007 – **Amanda Kamenitz** *Internship - News 12 NJ*
- 2006 – **John Cifelli** *Internship - WMGM-TV*
- 2005 – **John Carrol** *Internship - News 12 NJ*
- 2005 – **Lauren Casey** *Internship - WCAU-TV*
- 2005 – **Ariana Shah** *Internship - WWOR-TV*
- 2005 – **Greg Whitaker** *Internship - News 12 NJ*
- 2004 – **Alan Graziano** *Internship - News 12 NJ*
- 2004 – **John Carrol** *Internship - Fox News*
- 2004 – **James Nichols** *Internship - WNYW-TV*

Public Speaking and Outreach

- April 2019 – **Pascack Valley Regional High School Hillsdale, NJ**
- April 2019 – **N.J. Audubon Society visit to NOAA-GFDL Princeton, NJ**
- December 2017 – **Public Outreach Event at AGU Fall Meeting Washington, DC**
- May 2017 – **Expert consultation for PBS NOVA documentary series Boston, MA**
- January 2016 – **Live Interview for The Weather Channel Atlanta, GA**
- April 2015 – **Rider University Visit to NOAA-GFDL Princeton, NJ**
- December 2014 – **Princeton Univ. Engineering Department Princeton, NJ**
- June 2014 2014 – **World Science Festival New York, NY**
- December 2013 – **Princeton Univ. Engineering Department Princeton, NJ**
- April 2013 – **Princeton Univ. Engineering Department Princeton, NJ**
- April 2013 – **Rutgers Meteorology Club Career Fair New Brunswick, NJ**
- February 2013 – **Princeton Environmental Film Festival Princeton, NJ**
- December 2012 – **Princeton Univ. Engineering Department Princeton, NJ**
- July 2012 – **Princeton MIRTHE Studies Program Princeton, NJ**
- June 2012 – **UCAR Undergrad. Leadership Workshop Boulder CO, via Telecon.**
- December 2011 – **Gateway H.S. Career Fair Woodbury Heights, NJ**
- December 2011 – **Princeton Univ. Engineering Department Princeton, NJ**

- February 2011 – **Princeton Univ. Engineering Department** *Princeton, NJ*
- January 2011 – **Rider Univ. visit to NOAA/GFDL** *Princeton, NJ*
- October 2010 – **American Chemical Society** *Princeton, NJ*
- July 2009 – **Princeton QUEST Program** *Princeton, NJ*
- October 2008 – **Delaware Lego Builders League** *Wilmington, DE*
- October 2007 – **Ecological Change Coalition** *New Brunswick, NJ*
- October 2007 – **Millburn Township Public Schools** *Millburn, NJ*
- April 2007 – **League of Women Voters** *Millburn, NJ*
- March 2006 – **Gateway Academic Decathlon Club** *Woodbury Heights, NJ*
- October 2005 – **United States Postal Service** *Piscataway, NJ*
- October 2002 – **Mantua Lions Club** *Mantua, NJ*