

# John P. Krasting, Ph.D.

## CLIMATE SCIENTIST, LECTURER, MODELER, AND DATA ANALYST

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Award-winning climate scientist with 15+ years of experience leading complex environmental modeling projects and multidisciplinary research teams. Expert in data science, climate analytics, and numerical modeling with a strong track record of developing innovative solutions. Skilled in translating scientific insights into actionable intelligence.

### EDUCATION

**Ph.D. Atmospheric Science, Rutgers University** 2008  
**B.S. Meteorology, Rutgers University** 2003

### GOVERNMENT, ACADEMIC, AND PRIVATE SECTOR EXPERIENCE

**PHYSICAL SCIENTIST** 2009 — Present  
NOAA / Geophysical Fluid Dynamics Laboratory (GFDL) Princeton, NJ USA

Physical Scientist, ZP-IV 2015 — Present  
Physical Scientist, ZP-III 2011 — 2015  
Scientist, High Performance Technologies Inc. (Contractor) 2009 — 2011

- Engaged with stakeholders and led GFDL's \$5.8M Bipartisan Infrastructure Law research in developing datasets and models for sea level rise and coastal inundation operational products
- Led development of next-generation climate and ocean models, including OM5 and CM5
- Recognized as NOAA/OAR's Research Employee of the Year for designing an open framework for process-oriented diagnostics, streamlining climate model evaluation and improving performance metrics
- Spearheaded implementation of machine learning techniques to identify regional sensitivity patterns of ocean acidification, enhancing predictive capabilities for climate risk assessment
- Pioneered Python-based infrastructure supporting large-scale data analysis and web-based frameworks for model development
- Experienced in supervising and managing teams of federal, cooperative institute, and contractor staff

**LECTURER** 2025 — Present  
Princeton University Princeton, NJ USA

- Lectured in the Atmospheric and Oceanic Sciences Program
- Co-taught and developed materials for a graduate level course in Climate Dynamics (AOS-562)

**ADJUNCT LECTURER** 2011, 2015 — Present  
Rutgers University New Brunswick, NJ USA

- Lectured in the Department of Environmental Sciences
- Taught and developed course materials for Introduction to Meteorology (670:101) and Climate Dynamics (107:545)

**SCIENTIFIC PROGRAMMER** 2008 — 2009  
University of Delaware Newark, DE USA

- Developed scientific software for the College of Earth, Ocean & Environment
- Contributed to climate and ocean modeling research projects

**ON-AIR METEOROLOGIST** 2004 — 2010  
FOX Television Stations New York, NY USA

- Delivered live weather segments and covered breaking weather news in two of the largest media markets in the country (New York and Philadelphia)
- Developed content and communications for station websites
- Engaged in public outreach and speaking events
- Nominated for a Mid-Atlantic Regional Emmy Award

## TEACHING EXPERIENCE

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<b>Climate Dynamics (AOS-562)</b> <i>Princeton University, Atmospheric and Oceanic Sciences Program</i>	2025 — Present
<b>Introduction to Meteorology (11:670:101)</b> <i>Rutgers University, Department of Environmental Sciences</i>	2015 — Present
<b>Climate Dynamics (16:107:545)</b> <i>Rutgers University, Department of Environmental Sciences</i>	2011
<b>Teaching Assistant: Atmospheric Thermodynamics, Synoptic Forecasting, and Meteorological Analysis</b> <i>Rutgers University, Department of Environmental Sciences</i>	2003 — 2007

## POSTDOCTORAL TRAINEES

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<b>Dr. Katherine Turner</b> – GFDL / University of Arizona <i>Project: Storm-Driven Contributions to Southern Ocean Heat and Carbon Fluxes</i> <i>70% advising effort; co-advised with Dr. Joellen Russell (U. Arizona)</i>	2023 — Present
<b>Dr. Jan-Erik Tesdal</b> – Princeton University <i>Project: Water Mass Transformation, Antarctic Ice Sheet Melt Contributions to Ocean Circulation, and Sea Level Rise</i> <i>Co-advised (50%) with Dr. Stephen Griffies from 2020-2022; primary advisor from 2022-2025</i>	2020 — 2025
<b>Dr. Xinru Li</b> – Princeton University <i>Project: Mechanistic Drivers of Subsurface Marine Heatwave Events</i> <i>Primary advisor</i>	2023 — 2025
<b>Dr. Rebecca Beadling</b> – GFDL/UCAR <i>Project: Antarctic Ice Sheet Melt Effects on the Antarctic Slope Current</i> <i>Primary advisor (NOAA Climate and Global Change Fellowship Awardee)</i>	2020 — 2022

## UNDERGRADUATE RESEARCH SUPERVISION

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<b>Theo Avila</b> – University of Illinois <i>NOAA Ernest F. Hollings Program</i> <i>Project: North Atlantic Water Mass Transformation, Impacts on AMOC and Sea Level, and Implications for Future Climate Model Development</i>	2024 — 2025
<b>Matthew Birtman</b> – University of Miami <i>NOAA Ernest F. Hollings Program</i> <i>Project: Observing and Simulating the Amplitude and Phasing of the Annual Cycle of Sea Level</i>	Summer 2023
<b>Rucha Wani</b> – University of Delaware <i>NOAA Ernest F. Hollings Program</i> <i>Project: Simulated Nutrient Distributions Throughout the North Atlantic and Comparison with Ship-Based Observations</i> <i>Honors thesis committee member</i>	Summer 2020
<b>Maurizia de Palma</b> – Kean University <i>Princeton University CIMES Summer Internship</i> <i>Project: Regional Acidification Sensitivity Patterns of Arctic Ocean Acidification Revealed with Machine Learning</i>	Summer 2019
<b>Maria Pulido-Velosa</b> – Florida International University <i>Princeton University CIMES Summer Internship</i> <i>Project: Diagnosing Nutrient-Based Controls on Ocean Biological Productivity</i>	Summer 2016

## BROADCAST METEOROLOGY INTERNSHIPS SUPERVISED

<b>Megan Leigh</b> – Internship (NY1 News)	Spring 2007
<b>Amanda Kamenitz</b> – Internship (News 12 NJ)	Spring 2007
<b>John Cifelli</b> – Internship (WMGM-TV)	Summer 2006
<b>John Carrol</b> – Internship (News 12 NJ)	Summer 2005
<b>Lauren Casey</b> – Internship (WCAU-TV)	Summer 2005
<b>Ariana Shah</b> – Internship (WWOR-TV)	Summer 2005
<b>Greg Whitaker</b> – Internship (News 12 NJ)	Spring 2005
<b>Alan Graziano</b> – Internship (News 12 NJ)	Fall 2004
<b>John Carrol</b> – Internship (Fox)	Summer 2004
<b>James Nichols</b> – Internship (WNYW-TV)	Spring 2004

## PEER-REVIEWED PUBLICATION SUMMARY

Journal	Impact Factor (2024)	Publications
<i>Nature Climate Change</i>	27.1	1
<i>Nature Geoscience</i>	16.1	1
<i>Nature Communications</i>	14.2	1
<i>Annual Review of Earth and Planetary Sciences</i>	13.0	1
<i>Proceedings of the National Academy of Sciences</i>	8.9	1
<i>Communications Earth &amp; Environment</i>	8.9	1
<i>Earth System Dynamics</i>	7.3	1
<i>Geoscientific Model Development</i>	5.0	2
<i>Geophysical Research Letters</i>	4.7	4
<i>Journal of Advances in Modeling Earth Systems</i>	4.6	11
<i>Bulletin of the American Meteorological Society</i>	4.5	2
<i>Journal of Climate</i>	3.9	12
<i>Frontiers in Marine Science</i>	3.7	1
<i>Paleoceanography and Paleoclimatology</i>	3.5	1
<i>Journal of Geophysical Research: Oceans</i>	3.4	4
<b>Total</b>		<b>44</b>

📄 Google Scholar Citation Index: *h-index* = 31; *i10-index* = 47 ([Link](#))  
 📄 Web of Science Author Profile: *h-index* = 24 ([Link](#))

## PEER-REVIEWED PUBLICATION LIST

Customary convention in this discipline is to list primary mentors and PIs immediately following the first author. Contributing authors are usually listed in alphabetical order. Symbols denote supervisory relationships to co-authors: \*Staff Scientist, †Postdoctoral Researcher, ◊Undergraduate Researcher

Percentage contributions to each manuscript are given for conceptualization (C), data production (D), analysis (A), interpretation (I), and writing (W).

- [44]. Griffies, S. M., Adcroft, A. J., †Beadling, R. L., Bushuk, M., Chang, C., Drake, H. F., Dussin, R., Hallberg, R. W., Hurlin, W. J., Khatri, H., **Krasting**, J. P., Lobo, M., MacGilchrist, G. A., Reichl, B. G., Sane, A., Sergienko, O., Sonnewald, M., \*Steinberg, J. M., †Tesdal, J. E., Thomas, M., †Turner, K. E., Ward, M. L., Winton, M., Zadeh, N., Zanna, L., Zhang, R., Zhang, W., & Zhao M., 2025: The GFDL-CM4X climate model hierarchy, Part I: Model description and thermal properties. *Journal of Advances in Modeling Earth Systems*, **17**, e2024MS004861, 58 pp. (<https://doi.org/10.1029/2024MS004861>) — Involved in the core model development team and played a key role in analysis during development. Led the evaluation of the benchmark metrics compared to previous generation models. (C=5% / D=10% / A=10% / I=10% / W=5%)
- [43]. †Turner, K. E., **Krasting**, J. P., J. Russell, & Stouffer, R. J. 2025: Uncovering the seasonality of storm-driven Southern Ocean heat and carbon uptake. *Journal of Climate* **38**(20), 5615-5632. (<https://doi.org/10.1175/JCLI-D-24-0642.1>) — Conceptualized the study and mentored the lead author. (C=80% / I=30% / W=35%)

- [42]. Jeevanjee, N., Paynter, D. J., Dunne, J. P., Sentman, L. T. & **Krasting**, J. P., 2025: A holistic view of climate sensitivity. *Annual Review of Earth and Planetary Sciences* **53**, 30 pp. (<https://doi.org/10.1146/annurev-earth-040523-014302>) — Contributed to the writing and interpretation of TCRE and oceanic heat uptake, and performed some of the simulations analyzed in the review paper. (C=10% / D=25% / I=25% / W=25%)
- [41]. Long, X., Newman, M., Shin, S., Balmeseda, M., Callahan, J., Dusek, G., Jia, L., Kirtman, B., **Krasting**, J., Lee, C. C., Lee, T., Sweet, W., Wang, O., Wang, Y. & Widlansky, M. J., 2025: Evaluating current statistical and dynamical forecasting techniques for seasonal coastal sea level prediction. *Journal of Climate* **38**(6), 27 pp. (<https://doi.org/10.1175/JCLI-D-24-0214.1>) — Provided access to the GFDL SPEAR model results. Analyzed and discussed the implications of long-term trends of ocean warming in Boussinesq ocean models. (C=5% / D=10% / A=10% / I=5% / W=5%)
- [40]. Drake, H. F., Bailey, S., Dussin, R., Griffies, S. M., **Krasting**, J., MacGilchrist, G., Stanley, G., <sup>†</sup>Tesdal, J. & Zika, J. D., 2025: Water mass transformation budgets in finite-volume generalized vertical coordinate ocean models. *Journal of Advances in Modeling Earth Systems* **17**, e2024MS004383, 36 pp. (<https://doi.org/10.1029/2024MS004383>) — Collaborated on shared software to diagnose and analyze water mass transformation rates. (A=10% / I=10% / W=10%)
- [39]. \*Steinberg, J. M., Griffies, S. M., **Krasting**, J. P., Piecuch, C. G. & Ross, A. C., 2024: A link between US East Coast sea level and North Atlantic subtropical ocean heat content. *Journal of Geophysical Research: Oceans* **129**, e2024JC021425, 19 pp. (<https://doi.org/10.1029/2024JC021425>) — Supervised the lead author, served as PI, collaborated on interpretation and writing. (C=50% / I=20% / W=10%)
- [38]. <sup>†</sup>Beadling, R. L., Lin, P., **Krasting**, J., Ellinger, W., Coomans, A., Milward, J., <sup>†</sup>Turner, K., Xu, X., Martin, T. & Molina, M. J., 2024: From the surface to the stratosphere: Large-scale atmospheric response to Antarctic meltwater. *Geophysical Research Letters* **51**(22), e2024GL110157, 13 pp. (<https://doi.org/10.1029/2024GL110157>) — Former mentor of the lead author, helped formulate the study, and collaborated on interpretation and writing. (C=45% / I=25% / W=15%)
- [37]. **Krasting**, J. P., Griffies, S. M., <sup>†</sup>Tesdal, J., MacGilchrist, G., <sup>†</sup>Beadling, R. L. & Little, C. M., 2024: Steric sea level rise and relationships with model drift and water mass representation in GFDL CM4 and ESM4. *Journal of Climate* **37**(24), 6563–6583. (<https://doi.org/10.1175/JCLI-D-23-0591.1>) — Conceptualized the study, performed model simulations, led the analysis and writing. (C=90% / D=70% / A=90% / I=85% / W=85%)
- [36]. Lee, J., Gleckler, P. J., Ahn, M., Ordóñez, A., Ullrich, P. A., Sperber, K. R., Taylor, K. E., Planton, Y. Y., Guilyardi, E., Durack, P., Bonfils, C., Zelinka, M. D., Chao, L., Dong, B., Doutriaux, C., Zhang, C., Vo, T., Boutte, J., Wehner, M. F., Pendergrass, A. G., Kim, D., Xue, Z., Wittenberg, A. T. & **Krasting**, J., 2024: Systematic and objective evaluation of Earth System Models: PCMDI Metrics Package (PMP) Version 3. *Geoscientific Model Development* **17**(9), 3919–3948. (<https://doi.org/10.5194/gmd-17-3919-2024>) — Collaborated on the development of the software and provided access to GFDL model results. (D=15% / A=5% / I=5% / W=5%)
- [35]. Shevliakova, E., Malyshev, S., Martinez-Cano, I., Milly, P., Pacala, S., Ginoux, P., Dunne, K., Dunne, J., Dupuis, C., Findell, K., Ghanam, K., Horowitz, L., Knutson, T., **Krasting**, J., Naik, V., Philipps, P., Zadeh, N., Yu, Y., Zeng, F. & Zeng, Y., 2024: The land component LM4.1 of the GFDL Earth System Model ESM4.1: Model description and characteristics of land surface climate and carbon cycling in the historical simulation. *Journal of Advances in Modeling Earth Systems* **16**, e2023MS003922, 47 pp. (<https://doi.org/10.1029/2023MS003922>) — Collaborated on model development. Evaluated implications of results for coupled climate and carbon cycle interactions. (D=15% / A=10% / I=5% / W=5%)
- [34]. Neelin, J. D., **Krasting**, J. P., Radhakrishnan, A., Liptak, J., Jackson, T., Ming, Y., Dong, W., Gettelman, A., Coleman, D. R., Maloney, E. D., Wing, A. A., Kuo, Y., Ahmed, F., Ullrich, P., Bitz, C. M., Neale, R. B., Ordóñez, A. & Maroon, E. A., 2023: Process-oriented diagnostics: principles, practice, community development, and common standards. *Bulletin of the American Meteorological Society* **104**(8), E1452–E1468. (<https://doi.org/10.1175/BAMS-D-21-0268.1>) — Served as Co-PI, led the research team at GFDL, and conceptually designed the software framework. (C=35% / I=30% / W=30%)
- [33]. <sup>†</sup>Tesdal, J., MacGilchrist, G. A., <sup>†</sup>Beadling, R. L., Griffies, S. M., **Krasting**, J. P. & Durack, P. J., 2023: Revisiting interior water mass responses to surface forcing changes and the subsequent effects on overturning in the Southern Ocean. *Journal of Geophysical Research: Oceans* **128**(3), e2022JC019105, 36 pp. (<https://doi.org/10.1029/2022JC019105>) — Mentored the lead author, served as contract lead, and collaborated on the interpretation of the results. (C=25% / I=20% / W=15%)
- [32]. Dong, W., Zhao, M., Ming, Y., **Krasting**, J. P. & Ramaswamy, V., 2023: Simulation of United States mesoscale convective systems using GFDL's new high-resolution general circulation model. *Journal of Climate* **36**(19), 6967–6990. (<https://doi.org/10.1175/JCLI-D-22-0529.1>) — Served as Co-PI on project. Contributed to the interpretation and writing. (C=10% / I=15% / W=15%)
- [31]. Takano, Y., Ilyina, T., Tjiputra, J., Eddebbar, Y. A., Berthet, S., Bopp, L., Buitenhuis, E., Butenschön, M., Christian, J. R., Dunne, J. P.,

- Gröger, M., Hayashida, H., Hieronymus, J., Koenigk, T., **Krasting**, J. P., Long, M. C., Lovato, T., Nakano, H., Palmieri, J., Schwinger, J., Séférian, R., Suntharalingam, P., Tatebe, H., Tsujino, H., Urakawa, S., Watanabe, M. & Yool, A., 2023: Simulations of ocean deoxygenation in the historical era: insights from forced and coupled models. *Frontiers in Marine Science* **10**, 1139917, 21 pp. (<https://doi.org/10.3389/fmars.2023.1139917>) — Conducted simulations and served as institutional point-of-contact. (D=5% / I=5% / W=5%)
- [30]. Ayar, P. V., Tjiputra, J., Bopp, L., Christian, J. R., Ilyina, T., **Krasting**, J. P., Séférian, R., Tsujino, H., Watanabe, M. & Yool, A., 2022: Contrasting projection of the ENSO-driven CO<sub>2</sub> flux variability in the equatorial Pacific under high warming scenario. *Earth System Dynamics* **13**(3), 31 pp. (<https://doi.org/10.5194/esd-13-1097-2022>) — Conducted simulations analyzed in the study. (D=5% / I=5% / W=5%)
- [29]. †Beadling, R., **Krasting**, J., Griffies, S., Hurlin, W., Bronselaer, B., Russell, J., MacGilchrist, G., †Tesdal, J. & Winton, M., 2022: Importance of the Antarctic Slope Current in the Southern Ocean response to ice sheet melt and wind stress change. *Journal of Geophysical Research: Oceans* **127**, e2021JC017608, 33 pp. (<https://doi.org/10.1029/2021JC017608>) — Mentored the lead author and assisted with conducting simulations. Collaborated on the interpretation and writing. (C=30% / D=10% / I=30% / W=25%)
- [28]. Lim, H., Dunne, J. P., Stock, C. A., Ginoux, P., John, J. G. & **Krasting**, J., 2022: Oceanic and atmospheric drivers of post-El-Niño chlorophyll rebound in the equatorial Pacific. *Geophysical Research Letters* **49**, e2021GL096113, 11 pp. (<https://doi.org/10.1029/2021GL096113>) — Conducted simulations analyzed in the study. (D=30% / I=5% / W=5%)
- [27]. **Krasting**, J. P., °Palma, M. D., Sonnewald, M., Dunne, J. P. & John, J. G., 2022: Regional sensitivity patterns of Arctic Ocean acidification revealed with machine learning. *Communications Earth & Environment* **3**(1), 11 pp. (<https://doi.org/10.1038/s43247-022-00419-4>) — Conceptualized and led the study. Mentored summer intern working on the project. (C=70% / D=50% / A=90% / I=80% / W=90%)
- [26]. Stouffer, R., Russell, J., †Beadling, R., Broccoli, A., **Krasting**, J., Malyshev, S. & Naiman, Z., 2022: The role of continental topography in the present-day ocean's mean climate. *Journal of Climate* **35**(4), 1327–1346. (<https://doi.org/10.1175/JCLI-D-20-0690.1>) — Conducted the simulations analyzed in the study. Collaborated on the interpretation of the results and writing. (D=50% / A=10% / I=20% / W=15%)
- [25]. Yu, Y., Dunne, J. P., Shevliakova, E., Ginoux, P., Malyshev, S., John, J. G. & **Krasting**, J. P., 2021: Increased risk of the 2019 Alaskan July fires due to anthropogenic activity. *Bulletin of the American Meteorological Society* **102**(1), S1–S8. (<https://doi.org/10.1175/BAMS-D-20-0154.1>) — Conducted the simulations analyzed in the study and contributed to writing. (D=50% / W=10%)
- [24]. Winton, M., Adcroft, A., Dunne, J., Held, I. M., Shevliakova, E., Zhao, M., Guo, H., Hurlin, W., **Krasting**, J., Knutson, T., Paynter, D., Silvers, L. G. & Zhang, R., 2020: Climate sensitivity of GFDL's CM4.0. *Journal of Advances in Modeling Earth Systems* **12**, e2019MS001838, 17 pp. (<https://doi.org/10.1029/2019MS001838>) — Contributed to model development and analysis. Assisted in interpreting the ocean's role in establishing the model's climate sensitivity. (C=5% / A=10% / I=10% / W=5%)
- [23]. Dunne, J. P., Winton, M., Bacmeister, J., Danabasoglu, G., Gettelman, A., Golaz, J., Hannay, C., Schmidt, G. A., **Krasting**, J. P., Leung, L. R., Nazarenko, L., Sentman, L. T., Stouffer, R. J. & Wolfe, J. D., 2020: Comparison of equilibrium climate sensitivity estimates from slab ocean, 150-year, and longer simulations. *Geophysical Research Letters* **47**, e2020GL088852, 10 pp. (<https://doi.org/10.1029/2020GL088852>) — Collaborated on the development of the documented methodology and conducted simulations analysed in the study. (C=15% / D=20% / I=10% / W=5%)
- [22]. Stock, C. A., Dunne, J. P., Fan, S., Ginoux, P., John, J., **Krasting**, J. P., Laufkötter, C., Paulot, F. & Zadeh, N., 2020: Ocean biogeochemistry in GFDL's Earth System Model 4.1 and its response to increasing atmospheric CO<sub>2</sub>. *Journal of Advances in Modeling Earth Systems* **12**, e2019MS002043, 62 pp. (<https://doi.org/10.1029/2019MS002043>) — Contributed to model development. Led the implementation of carbonate chemistry and CFC tracer routines in the model. Performed benchmark analysis and conducted simulations analyzed in the study. (D=80% / A=10% / I=10% / W=5%)
- [21]. Dunne, J. P., Bociu, I., Bronselaer, B., Guo, H., John, J., **Krasting**, J., Stock, C., Winton, M. & Zadeh, N., 2020: Simple global ocean biogeochemistry with light, iron, nutrients and gas version 2 (BLINGv2): model description and simulation characteristics in GFDL's CM4.0. *Journal of Advances in Modeling Earth Systems* **12**, e2019MS002008, 19 pp. (<https://doi.org/10.1029/2019MS002008>) — Led the implementation of carbonate chemistry and CFC tracer routines in the model. (D=10% / A=5% / I=5% / W=5%)
- [20]. Dunne, J. P., Horowitz, L., Adcroft, A., Ginoux, P., Held, I., John, J., **Krasting**, J. P., Malyshev, S., Naik, V., Paulot, F., Shevliakova, E., Stock, C., Zadeh, N., Balaji, V., Blanton, C., Dunne, K., Dupuis, C., Durachta, J., Dussin, R., Gauthier, P., Griffies, S., Guo, H., Hallberg, R., Harrison, M., He, J., Hurlin, W., McHugh, C., Menzel, R., Milly, P., Nikonov, S., Paynter, D., Ploshay, J., Radhakrishnan, A., Rand, K., Reichl, B., Robinson, T., Schwarzkopf, D., Sentman, L., Underwood, S., Vahlenkamp, H., Winton, M., Wittenberg, A.,



- Wyman, B., Zeng, Y. & Zhao, M., 2020: The GFDL Earth System Model version 4.1 (GFDL-ESM 4.1): overall coupled model description and simulation characteristics. *Journal of Advances in Modeling Earth Systems* **12**, e2019MS002015, 56 pp. (<https://doi.org/10.1029/2019MS002015>) — Member of the core model development team. Performed simulations and assessed model performance. (C=15% / D=50% / A=15% / I=15% / W=5%)
- [19]. Findell, K. L., Keys, P. W., Ent, R. J. V. D., Lintner, B. R., Berg, A. & **Krasting**, J. P., 2019: Rising temperatures increase importance of oceanic evaporation as a source for continental precipitation. *Journal of Climate* **32**(22), 7713–7726. (<https://doi.org/10.1175/JCLI-D-19-0145.1>) — Performed simulations and interpreted the results. Contributed to discussions of the ocean's role in the freshwater budget. (D=30% / I=15% / W=5%)
- [18]. Held, I., Guo, H., Adcroft, A., Dunne, J., Horowitz, L., **Krasting**, J., Shevliakova, E., Winton, M., Zhao, M., Bushuk, M., Wittenberg, A., Wyman, B., Xiang, B., Zhang, R., Anderson, W., Balaji, V., Donner, L., Dunne, K., Durachta, J., Gauthier, P., Ginoux, P., Golaz, J., Griffies, S., Hallberg, R., Harris, L., Harrison, M., Hurlin, W., John, J., Lin, P., Lin, S., Malyshev, S., Menzel, R., Milly, P., Ming, Y., Naik, V., Paynter, D., Paulot, F., Ramaswamy, V., Reichl, B., Robinson, T., Rosati, A., Seman, C., Silvers, L., Underwood, S. & Zadeh, N., 2019: Structure and performance of GFDL's CM4.0 climate model. *Journal of Advances in Modeling Earth Systems* **11**(11), 3691–3727. (<https://doi.org/10.1029/2019MS001829>) — Member of the core model development team. Performed simulations and assessed model performance. (C=5% / D=30% / A=10% / I=10% / W=5%)
- [17]. Eyring, V., Cox, P. M., Flato, G. M., Gleckler, P. J., Abramowitz, G., Caldwell, P., Collins, W. D., Gier, B. K., Hall, A. D., Hoffman, F. M., Hurtt, G. C., Jahn, A., Jones, C. D., Klein, S. A., **Krasting**, J. P., Kwiatkowski, L., Lorenz, R., Maloney, E., Meehl, G. A., Pendergrass, A. G., Pincus, R., Ruane, A. C., Russell, J. L., Sanderson, B. M., Santer, B. D., Sherwood, S. C., Simpson, I. R., Stouffer, R. J. & Williamson, M. S., 2019: Taking climate model evaluation to the next level. *Nature Climate Change* **9**(2), 9 pp. (<https://doi.org/10.1038/s41558-018-0355-y>) — Participated in workshop the preceded the manuscript. Proposed recommendations for the community and provided modeling center perspectives. (C=5% / I=10% / W=5%)
- [16]. Adcroft, A., Anderson, W., Balaji, V., Blanton, C., Bushuk, M., Dufour, C. O., Dunne, J. P., Griffies, S. M., Hallberg, R., Harrison, M. J., Held, I. M., Jansen, M. F., John, J. G., **Krasting**, J. P., Langenhorst, A. R., Legg, S., Liang, Z., McHugh, C., Radhakrishnan, A., Reichl, B. G., Rosati, T., Samuels, B. L., Shao, A., Stouffer, R., Winton, M., Wittenberg, A. T., Xiang, B., Zadeh, N. & Zhang, R., 2019: The GFDL global ocean and sea ice model OM4.0: model description and simulation features. *Journal of Advances in Modeling Earth Systems* **11**(10), 3167–3211. (<https://doi.org/10.1029/2019MS001726>) — Member of the core model development team. Performed simulations and assessed model performance. Provided analysis of oceanic heat content changes. (C=5% / D=30% / A=15% / I=15% / W=5%)
- [15]. **Krasting**, J. P., Stouffer, R. J., Griffies, S. M., Hallberg, R. W., Malyshev, S. L., Samuels, B. L. & Sentman, L. T., 2018: Role of ocean model formulation in climate response uncertainty. *Journal of Climate* **31**(22), 9313–9333. (<https://doi.org/10.1175/JCLI-D-18-0035.1>) — Conceptualized and led the study. (C=80% / D=50% / A=90% / I=80% / W=90%)
- [14]. Zhao, M., Golaz, J., Held, I., Guo, H., Balaji, V., Benson, R., Chen, J., Chen, X., Donner, L., Dunne, J., Dunne, K., Durachta, J., Fan, S., Freidenreich, S., Garner, S., Ginoux, P., Harris, L., Horowitz, L., **Krasting**, J., Langenhorst, A., Liang, Z., Lin, P., Lin, S., Malyshev, S., Mason, E., Milly, P. C., Ming, Y., Naik, V., Paulot, F., Paynter, D., Philipps, P., Radhakrishnan, A., Ramaswamy, V., Robinson, T., Schwarzkopf, D., Seman, C., Shevliakova, E., Shen, Z., Shin, H., Silvers, L., Wilson, J., Winton, M., Wittenberg, A., Wyman, B. & Xiang, B., 2018: The GFDL global atmosphere and land model AM4.0/LM4.0: 1. Simulation characteristics with prescribed SSTs. *Journal of Advances in Modeling Earth Systems* **10**(3), 691–734. (<https://doi.org/10.1002/2017MS001208>) — Member of the core model development team. Provided analysis tools for model evaluation. (A=15% / I=5% / W=5%)
- [13]. Zhao, M., Golaz, J., Held, I., Guo, H., Balaji, V., Benson, R., Chen, J., Chen, X., Donner, L., Dunne, J., Dunne, K., Durachta, J., Fan, S., Freidenreich, S., Garner, S., Ginoux, P., Harris, L., Horowitz, L., **Krasting**, J., Langenhorst, A., Liang, Z., Lin, P., Lin, S., Malyshev, S., Mason, E., Milly, P. C., Ming, Y., Naik, V., Paulot, F., Paynter, D., Philipps, P., Radhakrishnan, A., Ramaswamy, V., Robinson, T., Schwarzkopf, D., Seman, C., Shevliakova, E., Shen, Z., Shin, H., Silvers, L., Wilson, J., Winton, M., Wittenberg, A., Wyman, B. & Xiang, B., 2018: The GFDL global atmosphere and land model AM4.0/LM4.0: 2. Model description, sensitivity studies, and tuning strategies. *Journal of Advances in Modeling Earth Systems* **10**(3), 735–769. (<https://doi.org/10.1002/2017MS001209>) — Member of the core model development team. Provided analysis tools for evaluation. (A=15% / I=5% / W=5%)
- [12]. Sentman, L. T., Dunne, J. P., Stouffer, R. J., **Krasting**, J. P., Toggweiler, J. & Broccoli, A. J., 2018: The mechanistic role of the Central American seaway in a GFDL Earth System Model. Part 1: impacts on global ocean mean state and circulation. *Paleoceanography and Paleoclimatology* **33**(7), 840–859. (<https://doi.org/10.1029/2018PA003364>) — Provided access to the model used in this study. Guided the interpretation of the simulated AMOC response and participated in writing. (D=20% / I=20% / W=10%)
- [11]. Naiman, Z., Goodman, P. J., **Krasting**, J. P., Malyshev, S. L., Russell, J. L., Stouffer, R. J. & Wittenberg, A. T., 2017: Impact of mountains on tropical circulation in two Earth System Models. *Journal of Climate* **30**(11), 4149–4163. (<https://doi.org/10.1175/JCLI-D-16-0512.1>) — Performed the model simulations analyzed in this study. Informally mentored the

lead author on analysis and interpretation. (D=50% / A=10% / I=10% / W=5%)

- [10]. Findell, K. L., Berg, A., Gentine, P., **Krasting**, J. P., Lintner, B. R., Malyshev, S., Jr, J. A. S. & Shevliakova, E., 2017: The impact of anthropogenic land use and land cover change on regional climate extremes. *Nature Communications* **8**, 989. (<https://doi.org/10.1038/s41467-017-01038-w>) — Performed the model simulations used in this study. (D=30% / W=5%)
- [9]. **Krasting**, J. P., Dunne, J. P., Stouffer, R. J. & Hallberg, R. W., 2016: Enhanced Atlantic sea-level rise relative to the Pacific under high carbon emission rates. *Nature Geoscience* **9**(3), 210–214. (<https://doi.org/10.1038/ngeo2641>) — Conceptualized and led the study. (C=100% / D=100% / A=100% / I=80% / W=95%)
- [8]. Eyring, V., Righi, M., Lauer, A., Evaldsson, M., Wenzel, S., Jones, C., Anav, A., Andrews, O., Cionni, I., Davin, E. L., Deser, C., Ehbrecht, C., Friedlingstein, P., Gleckler, P., Gottschaldt, K., Hagemann, S., Juckes, M., Kindermann, S., **Krasting**, J., Kunert, D., Levine, R., Loew, A., Mäkelä, J., Martin, G., Mason, E., Phillips, A. S., Read, S., Rio, C., Roehrig, R., Senftleben, D., Sterl, A., Ulft, L. H. V., Walton, J., Wang, S. & Williams, K. D., 2016: ESMValTool (v1.0) – a community diagnostic and performance metrics tool for routine evaluation of Earth System Models in CMIP. *Geoscientific Model Development* **9**(5), 1747–1802. (<https://doi.org/10.5194/gmd-9-1747-2016>) — Collaborated on the development of the software. Provided modeling center perspectives and testing. (C=5% / D=5% / I=5% / W=5%)
- [7]. Ding, Y., Carton, J. A., Chepurin, G. A., Stenchikov, G., Robock, A., Sentman, L. T. & **Krasting**, J. P., 2014: Ocean response to volcanic eruptions in Coupled Model Intercomparison Project 5 simulations. *Journal of Geophysical Research: Oceans* **119**(8), 5622–5637. (<https://doi.org/10.1002/2013JC009780>) — Conducted the simulations analyzed in the study and provided guidance on the interpretation of the results. (D=40% / I=5% / W=5%)
- [6]. **Krasting**, J., Dunne, J., Shevliakova, E. & Stouffer, R., 2014: Trajectory sensitivity of the transient climate response to cumulative carbon emissions. *Geophysical Research Letters* **41**(7), 2520–2527. (<https://doi.org/10.1002/2013GL059141>) — Conceptualized and led the study. (C=100% / D=100% / A=100% / I=90% / W=95%)
- [5]. **Krasting**, J. P., Broccoli, A. J., Dixon, K. W. & Lanzante, J. R., 2013: Future changes in Northern Hemisphere snowfall. *Journal of Climate* **26**(20), 7813–7828. (<https://doi.org/10.1175/JCLI-D-12-00832.1>) — Published version of dissertation research. (C=60% / D=100% / A=100% / I=70% / W=80%)
- [4]. Dunne, J. P., John, J. G., Shevliakova, E., Stouffer, R. J., **Krasting**, J. P., Malyshev, S. L., Milly, P., Sentman, L. T., Adcroft, A. J., Cooke, W., Dunne, K. A., Griffies, S. M., Hallberg, R. W., Harrison, M. J., Levy, H., Wittenberg, A. T., Phillips, P. J. & Zadeh, N., 2013: GFDL's ESM2 global coupled climate–carbon Earth System Models. Part II: carbon system formulation and baseline simulation characteristics. *Journal of Climate* **26**(7), 2247–2267. (<https://doi.org/10.1175/JCLI-D-12-00150.1>) — Member of the core model development team. Conducted model simulations and interpreted the results. (C=10% / D=50% / A=15% / I=10% / W=10%)
- [3]. Shevliakova, E., Stouffer, R. J., Malyshev, S., **Krasting**, J. P., Hurrell, G. C. & Pacala, S. W., 2013: Historical warming reduced due to enhanced land carbon uptake. *Proceedings of the National Academy of Sciences* **110**(42), 16730–16735. (<https://doi.org/10.1073/pnas.1314047110>) — Conducted the model simulations used in this study. Collaborated on the interpretation of the coupled climate–carbon cycle response. (D=80% / I=20% / W=15%)
- [2]. Hallberg, R., Adcroft, A., Dunne, J. P., **Krasting**, J. P. & Stouffer, R. J., 2013: Sensitivity of twenty-first-century global-mean steric sea level rise to ocean model formulation. *Journal of Climate* **26**(9), 2947–2956. (<https://doi.org/10.1175/JCLI-D-12-00506.1>) — Conducted the model simulations used in the study. Collaborated on the analysis and interpretation of the results. (D=50% / A=10% / I=10% / W=5%)
- [1]. Dunne, J. P., John, J. G., Adcroft, A. J., Griffies, S. M., Hallberg, R. W., Shevliakova, E., Stouffer, R. J., Cooke, W., Dunne, K. A., Harrison, M. J., **Krasting**, J. P., Malyshev, S. L., Milly, P., Phillips, P. J., Sentman, L. T., Samuels, B. L., Spelman, M. J., Winton, M., Wittenberg, A. T. & Zadeh, N., 2012: GFDL's ESM2 global coupled climate–carbon Earth System Models. Part I: physical formulation and baseline simulation characteristics. *Journal of Climate* **25**(19), 6646–6665. (<https://doi.org/10.1175/JCLI-D-11-00560.1>) — Member of the core model development team. Performed model simulations and interpreted the results. (C=10% / D=50% / A=15% / I=10% / W=10%)

## WORKS IN PROGRESS

- [5]. †Tesdal, J. E., **Krasting**, J. P., Kopp, R. E., Hermans, T. H. J., Kumar, P., Sweet, W. V., & Griffies, S. M.: The contribution of stericodynamic changes to the uncertainty of regional sea-level projections over the 21st Century. *AGU Advances*, first round of revision, 35 pp. (<https://essopenarchive.org/doi/full/10.22541/essoar.174729528.84639181/v1>) — Conceptualized the study, mentored lead author, and served as PI. (C=80% / I=25% / W=25%)

- [4]. Nadir, J., Paynter, D., Dunne, J. P., Sentman, L. T., & **Krasting**, J. P.: On the utility of the transient climate response. *Geophysical Research Letters*, submitted, 14 pp. — *Provided interpretation of the ocean's role in transient climate sensitivity and the dependence of the results on timescales and internal climate variability. (C=10% / I=20% / W=10%)*
- [3]. Chen, Y. T., Merlis, T. M., Dinh, T., Griffies, S. M., **Krasting**, J. P., Dussin, R., Zadeh, N., & Fueglistaler, S. A.: Assessing Earth's energy imbalance trend in the early 21st century in two high-resolution coupled models. *Geophysical Research Letters*, submitted, 16 pp. — *Helped conceptualize the study, provided interpretation on the role of internal variability, assisted in editing the manuscript. (C=20% / I=20% / W=10%)*
- [2]. <sup>†</sup>Turner, K. E., **Krasting**, J. P., Stouffer, R. J., & Russell, J. L.: Impacts of interannual storm activity on the Southern Ocean. *Journal of Geophysical Research: Oceans*, in NOAA agency internal review, 48 pp. — *Collaborated on conceptualizing the study, mentored lead author, and provided meteorological interpretation. (C=30% / I=20% / W=20%)*
- [1]. Milward, J., <sup>†</sup>Beadling, R. L., **Krasting**, J. P., \*Steinberg, J. M., Griffies, S. M., Tesdal, J. E., MacGilchrist, G. M., Martin, T., & MacIsaac, J.: Steric sea level response to Antarctic freshwater forcing. *Journal of Geophysical Research: Oceans*, in NOAA agency internal review, 48 pp. — *Provided guidance on global steric sea level and circulation responses, wrote code used to conduct the calculations, assisted in editing the manuscript. (A=20% / I=10% / W=10%)*

## REFEREED CONFERENCE PROCEEDINGS

- [1]. Eyring, V., Cox, P. M., Flato, G. M., Gleckler, P. J., Abramowitz, G., Caldwell, P., Collins, W. D., Gier, B. K., Hall, A. D., Hoffman, F. M., Hurtt, G. C., Jahn, A., Jones, C. D., Klein, S. A., **Krasting**, J. P., Kwiatkowski, L., Lorenz, R., Maloney, E., Meehl, G. A., Pendergrass, A. G., Pincus, R., Ruane, A. C., Russell, J. L., Sanderson, B. M., Santer, B. D., Sherwood, S. C., Simpson, I. R., Stouffer, R. J. & Williamson, M. S., 2019: Taking climate model evaluation to the next level. *Nature Climate Change*. ([Link](#)) — *Participated in workshop the preceded the manuscript. Proposed recommendations for the community and provided modeling center perspectives. (C=5% / I=10% / W=5%)*

## INNOVATIONS AND DATA PRODUCTS

### NOAA-GFDL GFDL-ESM4 model output prepared for CMIP6 CMIP

2018

*Created and published approximately 80% of the total data for NOAA GFDL's Earth System Model contribution to the Sixth Coupled Model Intercomparison Project (CMIP6). CMIP data form the backbone of data for the Intergovernmental Panel on Climate Change (IPCC) and National Climate Assessment (NCA) reports. CMIP data is also utilized by researchers studying future climate impacts.*

**Krasting, J. P.**, John, J. G., Blanton, C., McHugh, C., Nikonov, S., Radhakrishnan, A., Rand, K., Zadeh, N. T., Balaji, V., Durachta, J., Dupuis, C., Menzel, R., Robinson, T., Underwood, S., Vahlenkamp, H., Dunne, K. A., Gauthier, P. P. G., Ginoux, P., Griffies, S. M., Hallberg, R., Harrison, M., Hurlin, W., Malyshev, S., Naik, V., Paulot, F., Paynter, D. J., Ploshay, J., Reichl, B. G., Schwarzkopf, D. M., Seman, C. J., Silvers, L., Wyman, B., Zeng, Y., Adcroft, A., Dunne, J. P., Dussin, R., Guo, H., He, J., Held, I. M., Horowitz, L. W., Lin, P., Milly, P. C. D., Shevliakova, E., Stock, C., Winton, M., Wittenberg, A. T., Xie, Y., Zhao, M., 2018. *IPCC DDC: NOAA-GFDL GFDL-ESM4 model output prepared for CMIP6 CMIP*. World Data Center for Climate (WDCC) at DKRZ. <https://doi.org/10.26050/WDCC/AR6.C6MNGGFE>

### NOAA's Model Diagnostics Task Force Framework

2018 — ongoing

*Co-led a multi-institutional effort to develop and maintain software to support the activities of the NOAA Model Diagnostics Task Force coordinated and funded by NOAA's Climate Program Office. The diagnostics task force includes members from senior government contractors to graduate students conducting individual analyses, necessitating a dedicated framework to interface with modeling efforts at both NOAA and NCAR.*

Source code: <https://github.com/NOAA-GFDL/MDTF-diagnostics> Documentation: <https://mdtf-diagnostics.readthedocs.io/>

## INVITED TALKS

<sup>†</sup> Denotes a keynote or plenary address



<b>Department of Environmental Sciences, Rutgers University – New Brunswick, NJ</b> <i>Title: Connecting Global Climate Processes to the Local Impacts of Sea Level Rise</i>	September 2025
<b>National Academies of Science Gulf Research Program – Washington, DC</b> <i>Title: Perspectives on Modeling Future Sea Level: NOAA's Progress and Future Pathways</i>	August 2024
<b>UCAR Climate and Global Change Program Summer Retreat – Steamboat Springs, CO</b> <i>Title: Perspectives on Future Sea Level</i>	July 2024
<b>Department of Marine and Coastal Sciences, Rutgers University – New Brunswick, NJ</b> <i>Title: Simulating Global and Regional Steric Sea Level Changes across Space and Time</i>	March 2024
<b>Department of Oceanography, University of Hawaii – Virtual</b> <i>Title: Modeling Sea Level from Weather to Climate Scales</i>	October 2022
<b>† Rutgers Climate Symposium 2023 – New Brunswick, NJ</b> <i>Title: Simulating Steric Sea Level Across Space and Time</i>	November 2023
<b>Japan Geoscience Union Meeting – Virtual</b> <i>Title: Exploring physical and biological environmental responses to differing rates of carbon emissions</i>	July 2020
<b>DLR German Aerospace Center – Oberpfaffenhofen, Germany</b> <i>Title: Advances in GFDL's Analysis and Model Evaluation Capabilities in Support of CM4 and CMIP6</i>	November 2016
<b>Univ. of Delaware Geography Dept. – Newark, DE</b> <i>Title: Scenario Dependence of the Climate Response to Cumulative Carbon Emissions</i>	November 2013
<b>Princeton Plasma Physics Laboratory Colloquium – Princeton, NJ</b> <i>Title: Ensemble Modeling of Climate-Carbon Cycle Interactions</i>	January 2013

## CONFERENCE PRESENTATIONS

*Symbols denote supervisory relationships: \*Staff Scientist, †Postdoctoral Researcher, ◊Undergraduate Researcher*

- [61]. \*Steinberg, J., **Krasting**, J. P., Piecuch, C. G., & Griffies, S. M., December 2025: Coastal sea level connectivity to continental shelf, slope, and open-ocean variability: using high resolution ocean simulations and ocean bottom density to improve predictions across timescales. [Poster presentation]. *AGU Fall Meeting, Washington, DC, United States.*  
(<https://agu.confex.com/agu/agu25/meetingapp.cgi/Paper/1966391>)
- [60]. ◊Avila, T., \*Steinberg, J., **Krasting**, J. P., †Tesdal, J., & Griffies, S. M., December 2025: Changes in dense water formation and Arctic circulation using surface water mass transformation analysis. [Poster presentation]. *AGU Fall Meeting, Washington, DC, United States.* (<https://agu.confex.com/agu/agu25/meetingapp.cgi/Paper/1979081>)
- [59]. Chen, Y., Merlis, T., Dinh, T., Griffies, S. M., **Krasting**, J. P., Dussin, R., & Fueglistaler, S., December 2025: Assessing the variability of Earth's energy imbalance in the early 21st century with two high-resolution coupled models. [Oral presentation]. *AGU Fall Meeting, Washington, DC, United States.* (<https://agu.confex.com/agu/agu25/meetingapp.cgi/Paper/1930502>)
- [58]. Blanton, C., Brown, C., **Krasting**, J. P., Rand, K., Radhakrishnan, A., & Zhou, E., December 2025: Coalescing data catalog ecosystem at NOAA-GFDL. [Poster presentation]. *AGU Fall Meeting, Washington, DC, United States.*  
(<https://agu.confex.com/agu/agu25/meetingapp.cgi/Paper/1899529>)
- [57]. †Li, X., **Krasting**, J., & Marques, G., April 2025: Exploring global upper ocean marine heatwaves in coupled GFDL and NCAR models. [Conference presentation]. *EGU General Assembly, Vienna, Austria.*  
(<https://meetingorganizer.copernicus.org/EGU25/EGU25-7612.html>)
- [56]. Jeevanjee, N., Paynter, D., Dunne, J., **Krasting**, J., & Sentman, L., April 2025: Perspectives on climate sensitivity and ocean heat uptake. [Conference presentation]. *EGU General Assembly, Vienna, Austria.*  
(<https://meetingorganizer.copernicus.org/EGU25/EGU25-7361.html>)
- [55]. ◊Avila, T., \*Steinberg, J. M., †Tesdal, J. E., & **Krasting**, J. P., January 2025: Clustering as a tool for understanding ocean regions of sea level covariability and volume redistribution. [Poster presentation]. *AMS Annual Meeting, New Orleans, LA, United States.*  
(<https://ams.confex.com/ams/105ANNUAL/Paper/455758>)
- [54]. **Krasting**, J. P., \*Steinberg, J. M., †Turner, K., Dussin, R., & Griffies, S. M., January 2025: Changing atmospheric drivers of future sea level variability. [Oral presentation]. *AMS Annual Meeting, New Orleans, LA, United States.*  
(<https://ams.confex.com/ams/105ANNUAL/Paper/451270>)

- [53]. <sup>†</sup>Tesdal, J., **Krasting**, J. P., Griffies, S., Kopp, R. E., Kumar, P., & Sweet, W., December 2024: Sterodynamic sea level uncertainty in 21st century climate projections. [Oral presentation]. *AGU Fall Meeting, Washington, DC, United States*. (<https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1736258>)
- [52]. Griffies, S. M., Adcroft, A., Beadling, R. L., Bushuk, M., Chang, C., Drake, H. F., Dussin, R., Hallberg, R., Hurlin, W. J., Khatri, H., **Krasting**, J. P., Lobo, M., MacGilchrist, G., Morrison, T., Reichl, B. G., Sane, A., Sergienko, O. V., Sonnewald, M., \* Steinberg, J., <sup>†</sup>Tesdal, J., Thomas, M., <sup>†</sup>Turner, K. E., Ward, M., Winton, M., Zadeh, N., Zanna, L., Zhang, R., Zhang, W., & Zika, J. D., December 2024: The GFDL-CM4X climate model hierarchy and the mesoscale dominance hypothesis. [Oral presentation]. *AGU Fall Meeting, Washington, DC, United States*. (<https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1548123>)
- [51]. \* Steinberg, J., Griffies, S., & **Krasting**, J. P., December 2024: Towards an improved understanding of the physical processes connecting coastal and offshore sea level. [Oral presentation]. *AGU Fall Meeting, Washington, DC, United States*. (<https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1624194>)
- [50]. Milward, J., Beadling, R., **Krasting**, J. P., MacGilchrist, G., <sup>†</sup>Tesdal, J., \* Steinberg, J., Griffies, S., & MacIsaac, J., December 2024: Steric sea level response to Antarctic meltwater addition. [Poster presentation]. *AGU Fall Meeting, Washington, DC, United States*. (<https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1632200>)
- [49]. Ahmed, F., Maroon, E., Radhakrishnan, A., Liptak, J., Coleman, D., Dong, W., Kuo, Y., Ordonez, A. C., Zhao, M., Ullrich, P., Neale, R. B., **Krasting**, J. P., & Neelin, J. D., December 2024: The model diagnostics task force: a community framework for process-oriented diagnostics of Earth system models. [Poster presentation]. *AGU Fall Meeting, Washington, DC, United States*. (<https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1758645>)
- [48]. Beadling, R. L., Lin, Pu., **Krasting**, J. P., Ellinger, W., Milward, J., Coomans, A., <sup>†</sup>Turner, K. E., Xu, X., Martin, T., & Molina, M. J., December 2024: From the surface to the stratosphere: large-scale atmospheric response to Antarctic meltwater. [Poster presentation]. *AGU Fall Meeting, Washington, DC, United States*. (<https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1674021>)
- [47]. Dussin, R., Griffies, S., Adcroft, A., Bushuk, M., Drake, H. F., Hallberg, R., Harrison, M., Hurlin, W. J., **Krasting**, J. P., Legg, S., Morrison, T., Reichl, B. G., Sergienko, O. V., \* Steinberg, J., Ward, M., Winton, M., Zadeh, N., & Zhang, R., December 2024: Progress in representation of coastal upwelling in the CM4X high resolution climate model hierarchy. [Poster presentation]. *AGU Fall Meeting, Washington, DC, United States*. (<https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1619391>)
- [46]. <sup>†</sup>Tesdal, J., **Krasting**, J., Kopp, R., Kumar, P., Griffies, S., & Sweet, W., April 2024: The defining roles of sterodynamic sea level in future climate projections. [Conference presentation]. *EGU General Assembly, Vienna, Austria*. (<https://meetingorganizer.copernicus.org/EGU24/EGU24-21107.html>)
- [45]. Lim, H., Dunne, J., Stock, C., Ginoux, P., John, J., & **Krasting**, J., April 2024: Oceanic and atmospheric drivers of post-El-Niño chlorophyll rebound in the Equatorial Pacific. [Conference presentation]. *EGU General Assembly, Vienna, Austria*. (<https://meetingorganizer.copernicus.org/EGU24/EGU24-2739.html>)
- [44]. **Krasting**, J. P., Griffies, S., <sup>†</sup>Tesdal, J., MacGilchrist, G., Beadling, R. L., & Little, C. M., February 2024: Steric sea level rise in GFDL CM4 and ESM4: insights into model drift and water mass representation. [Oral presentation]. *Ocean Sciences Meeting, New Orleans, LA, United States*. (<https://agu.confex.com/agu/OSM24/meetingapp.cgi/Paper/Paper/1482542>)
- [43]. Beadling, R. L., MacGilchrist, G., Griffies, S., **Krasting**, J. P., & <sup>†</sup>Tesdal, J., February 2024: Process oriented diagnostics to understand Antarctic Circumpolar Current transport in climate models: beyond the total. [Poster presentation]. *Ocean Sciences Meeting, New Orleans, LA, United States*. (<https://agu.confex.com/agu/OSM24/meetingapp.cgi/Paper/Paper/1486408>)
- [42]. Milward, J., Beadling, R. L., **Krasting**, J. P., MacGilchrist, G., & MacIsaac, J., February 2024: Steric sea level response to Antarctic ice sheet mass loss. [Poster presentation]. *Ocean Sciences Meeting, New Orleans, LA, United States*. (<https://agu.confex.com/agu/OSM24/meetingapp.cgi/Paper/Paper/1486190>)
- [41]. <sup>°</sup>Birtman, M., **Krasting**, J. P., \* Steinberg, J., & Little, C. M., February 2024: How well do ocean models capture the changing seasonality of coastal sea level?. [Poster presentation]. *Ocean Sciences Meeting, New Orleans, LA, United States*. (<https://agu.confex.com/agu/OSM24/meetingapp.cgi/Paper/Paper/1476025>)
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- [5]. **Krasting**, J. P., V. Balaji, A. R. Langenhorst, S. Nikonov, A. Radhakrishnan, & R. J. Stouffer, December 2010: NOAA-GFDL's workflow for CMIP5/IPCC AR5 experiments. [Oral presentation]. *AGU Fall Meeting, San Francisco, United States*.
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- [3]. **Krasting**, J. P., & A. J. Broccoli, December 2006: Influences of temperature and precipitation changes on model simulated monthly snowfall trends. [Oral presentation]. *American Geophysical Union Fall Meeting, San Francisco, United States*.
- [2]. **Krasting**, J. P., & A. J. Broccoli, January 2005: Global warming and simulated snowfall trends in Eastern North America. [Poster presentation]. *85th Annual Meeting of the American Meteorological Society, Seattle, United States*.
- [1]. **Krasting**, J. P., & R. P. Harnack, November 2003: A statistical analysis of thermodynamic and kinematic variables prior to severe thunderstorm events in the northeastern United States. [Poster presentation]. *11th Symposium for Undergraduate Research, University of São Paulo, São Paulo, Brazil*.

## TECHNICAL REPORTS

- [1]. Sweet, W.V., Hamlington, B.D., Kopp, R.E., Weaver, C.P., Barnard, P.L., Bekaert, D., Brooks, W., Craghan, M., Dusek, G., Frederikse, T., Garner, G., Genz, A.S., **Krasting**, J.P., Larour, E., Marcy, D., Marra, J.J., Obeysekera, J., Osler, M., Pendleton, M., Roman, D., Schmied, L., Veatch, W., White, K.D. & Zuzak, C., 2022: Global and regional sea level rise scenarios for the United States: updated mean projections and extreme water level probabilities along U.S. coastlines. NOAA Technical Report NOS 01. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD, 111 pp. (<https://oceanservice.noaa.gov/hazards/sealevelrise/noaa-nos-techrpt01-global-regional-SLR-scenarios-US.pdf>)



## MEDIA APPEARANCES

<b>Bloomberg</b> – Interviewed for background on coastal flooding event in Maine	January 2024
<b>Meteorological Technology International</b> – Interviewed and quoted: “NOAA-funded researchers have developed software to help scientists identify errors in weather and climate model forecasts” ( <a href="#">Link to Article</a> )	June 2021
<b>NOAA Press Release</b> – Interviewed and quoted: “Powerful new software helps expedite weather and climate forecasting improvements” ( <a href="#">Link to Article</a> )	March 2021
<b>BBC Earth</b> – Interviewed and quoted: “This is how far seas could rise thanks to climate change”	April 2016
<b>The Weather Channel</b> – Live television interview regarding sea level rise	February 2016
<b>The Washington Post</b> – Interviewed and quoted: “Why the U.S. East Coast could be a major ‘hotspot’ for rising seas” ( <a href="#">Link to Article</a> )	February 2016
<b>Quartz</b> – Interviewed for background on climate change effects on snowstorms	January 2015
<b>The Daily Princetonian</b> – Interviewed and quoted: “Researchers find climate response is sensitive to emissions rate”	April 2014

## FELLOWSHIPS

<b>Graduate Assistance in Areas of National Need (GAANN) Fellow</b> <i>US Department of Education, Rutgers University, Award: \$30,000 / year</i>	2003 – 2006
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## GRANTS AND EXTERNAL FUNDING

<b>Patterns, Drivers, and Biases in Sea Level Prediction at Sub-Annual Timescales</b> NOAA Climate Program Office – PI: Dr. Alistair Adcroft, Princeton University <i>Agency Technical Lead – Total Project Award: \$163,387</i>	2026 – 2027
<b>A Community Framework for Process-Oriented Diagnostics of Earth System Models Across Scales</b> NOAA Climate Program Office (MAPP) – PI: Drs. Fiaz Ahmed and David J. Neelin, UCLA <i>Co-Principal Investigator – Total Project Award: \$2,212,018; Institutional Amount: \$1,016,878</i>	2025 – 2027
<b>Improving Coastal Sea Level Predictions with Ocean Process Insight Guided by Machine Learning</b> NOAA Climate Program Office – PI: Dr. Maike Sonnewald, UC Davis <i>Co-Principal Investigator – Total Project Award: \$587,187; Institutional Amount: \$159,000</i>	2024 – 2026
<b>An Open Framework for Process-Oriented Diagnostics of Earth System Models</b> NOAA Climate Program Office (MAPP) – PI: Dr. David J. Neelin, UCLA <i>Co-Principal Investigator – Total Project Award: \$2,237,244; Institutional Amount: \$1,050,000</i>	2021 – 2024
<b>An Open Framework for Process-Oriented Diagnostics of Global Models</b> NOAA Climate Program Office (MAPP) – PI: Dr. David J. Neelin, UCLA <i>Funded Collaborator – Total Project Award: \$1,488,078; Institutional Amount: \$633,716</i>	2018 – 2021

## INTERNAL COMPETITIVE FUNDING

<b>Assess and Improve Sea Level Prediction on Seasonal to Annual Timescales with Advanced Models</b> Congressional Appropriation (Bipartisan Infrastructure Law Prov. SA-2.2.1) <i>Agency Project Lead at OAR/GFDL – Institutional Appropriation: \$5,839,000</i>	2022 – 2027
<b>Contextualizing Existing Sea Level Rise Scenarios in Light of a New Generation of Climate Models</b> NOAA Climate Program Office – PI: Dr. John P. Krasting and Dr. Stephen M. Griffies	2022 – 2025



Total Project Award: \$320,000

## CONTRACTS

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**Evaluating Ventilation Pathways and Interior Water Mass Properties** 2020 — 2022  
Department of Energy RGMA Subcontract Award – PI: Dr. John P. Krasting and Dr. Stephen M. Griffies  
Institutional Amount: \$361,600

## SCHOLARLY AWARDS

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**US Department of Commerce Bronze Medal Award** 2024  
*Quantifying US Wildfire Trends and Impacts*

**US Department of Commerce Bronze Medal Award** 2023  
*Earth System Model Development*

**NOAA - Oceanic and Atmospheric Research (OAR) Employee of the Year** 2021  
*Model Diagnostics and Fostering New Research Collaborations on Sea Level*

**US Department of Commerce Silver Medal Award** 2014  
*Earth System Model Development*

**Rutgers University, George H. Cook Scholar** 2003  
*Meteorological Conditions Favorable for Severe Thunderstorms*

## PEER AND PROPOSAL REVIEW SERVICE

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**Ad-hoc Journal Reviewer**

<i>Journal of Climate</i>	22 reviews
<i>Journal of Geophysical Research – Oceans</i>	5 reviews
<i>Climate Dynamics</i>	5 reviews
<i>Journal of Geophysical Research – Atmospheres</i>	4 reviews
<i>Nature Geoscience</i>	2 reviews
<i>Journal of Advances in Modeling Earth Systems</i>	2 reviews
<i>Ocean Science</i>	1 review
<i>Reviews of Geophysics</i>	1 review
<i>Proceedings of the National Academy of Sciences</i>	1 review
<i>Earth System Dynamics</i>	1 review
<i>Current Climate Change Reports</i>	1 review
<i>Tellus B</i>	1 review
<i>PLOS ONE</i>	1 review

**Ad-hoc Proposal Reviewer for Funding Agencies**

National Science Foundation	3 proposals
NOAA	2 proposals
Natural Sciences and Engineering Research Council of Canada	2 proposals

**Service on Comprehensive Laboratory and Program Review Panels**

**Department of Energy – Biological and Environmental Research, RUBISCO Program** 2017

## MEETING AND SYMPOSIA ORGANIZATION

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**Session Convener at Professional Meetings**

Advances in Understanding, Monitoring, and Simulating Sea Level AGU/ASLO Ocean Sciences Meeting	February 2024
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Identifying and Reducing Biogeochemical and Physical Uncertainty in Ocean Models <i>AGU Fall Meeting</i>	December 2018
Toward a 1.5°C World: Mechanisms of Ocean Sensitivity and Reversibility <i>AGU/ASLO Ocean Sciences Meeting</i>	February 2018
Representation of Physical Processes in Global Climate Models <i>AGU/ASLO Ocean Sciences Meeting</i>	February 2016
<b>Symposia and Workshop Organization Service</b>	
CLIVAR Polar Heat Workshop Organizing Committee	2026
GFDL Sea Level Colloquium Organizer	2023
GFDL Science Symposium Organizing Committee	2017
Ronald Stouffer Symposium Organizing Committee	2016

## ADMINISTRATIVE POSITIONS

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**Agency Project Lead at GFDL – Bipartisan Infrastructure Law** 2023 – Present

*Administered nearly \$6M in congressionally appropriated funds across 4 separate projects led by Federal, Princeton University, and contract staff to conduct model development and basic research to improve sea level prediction. Oversaw budgets, staffing, contracts, computer resources, and reporting duties.*

**NOAA Model Diagnostics Task Force Co-Lead** 2018 – Present

*Coordinated academic and private sector PIs in the scientific and technical development and delivery of process-oriented diagnostics to evaluate weather and climate models. Guided the scope of funding opportunities, evaluated the scientific merit of submitted diagnostics, and oversaw the technical development and implementation of diagnostics in modeling workflows. The project has yielded nearly 50 novel diagnostics to evaluate climate model performance.*

**GFDL Diagnostics and Evaluation Team Co-Lead** 2013 – 2020

*Oversaw and implemented a strategy to modernize the laboratory's model analysis capabilities. Coordinated developers across GFDL's scientific divisions to update and create diagnostics to support model development, adopt common standards, and avoid duplication. The effort yielded a model development database that is still used today that contains core results, parameters, and metadata for over 3,000 scientific simulations.*

## PROFESSIONAL SERVICE

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### Membership in Professional Societies

<b>Member</b> American Geophysical Union	2003 – Present
<b>Member</b> American Meteorological Society	2001 – Present

### Model Development Teams

<b>Co-Lead</b> GFDL Coupled Model (CM5) Development Team	2024 – Present
<b>Co-Lead</b> GFDL Ocean Model (OM5) Development Team	2023 – Present
<b>Member</b> GFDL Earth System Model (ESM4) Development Team	2017 – 2019
<b>Member</b> GFDL Coupled Model (CM4) Development Team	2013 – 2019
<b>Member</b> GFDL Earth System Model Development Team	2009 – 2012

### NOAA Committees and Working Groups

<b>Intern Host</b> NOAA Lapenta Internship Program	2024
<b>Member</b> NOAA Coastal Inundation Task Force	2023 – Present
<b>Intern Host</b> EPP / Ernest F. Hollings Internship Program	2022 – Present
<b>Selection Committee Member</b> Princeton CIMES Diversity Internship Program	2021
<b>Member</b> "RISE: Joint NOAA-NASA Working Group" to Advance Coastal Prediction	2020 – 2022
<b>Member &amp; Former Chair</b> NOAA High Performance User Group	2014 – 2016
<b>Member &amp; Former Chair</b> GFDL Computer User Advisory Board	2010 – 2014

## PUBLIC SPEAKING AND OUTREACH

NOAA Trade Booth – AMS Annual Meeting <i>New Orleans, LA</i>	January 2025
City College of New York, NOAA CREST Institute <i>New York, NY</i>	March 2023
NOAA-GFDL Sea Level Colloquium (Organizer) <i>webinar</i>	March 2023
New Jersey League of Conservation Voters <i>webinar</i>	April 2021
Pascack Valley Regional High School <i>Hillsdale, NJ</i>	April 2019
N.J. Audubon Society visit to NOAA-GFDL <i>Princeton, NJ</i>	April 2019
Public Outreach Event at AGU Fall Meeting <i>Washington, DC</i>	December 2017
Rider University Visit to NOAA-GFDL <i>Princeton, NJ</i>	April 2015
Princeton Univ. Engineering Department <i>Princeton, NJ</i>	December 2014
World Science Festival <i>New York, NY</i>	June 2014
Princeton Univ. Engineering Department <i>Princeton, NJ</i>	December 2013
Rutgers Meteorology Club Career Fair <i>New Brunswick, NJ</i>	April 2013
Princeton Environmental Film Festival <i>Princeton, NJ</i>	February 2013
Princeton Univ. Engineering Department <i>Princeton, NJ</i>	December 2012
Princeton MIRTHE Studies Program <i>Princeton, NJ</i>	July 2012
UCAR Undergrad. Leadership Workshop <i>Boulder, CO, via Telecon</i>	June 2012
Gateway H.S. Career Fair <i>Woodbury Heights, NJ</i>	December 2011
Princeton Univ. Engineering Department <i>Princeton, NJ</i>	December 2011
Princeton Univ. Engineering Department <i>Princeton, NJ</i>	February 2011
Rider Univ. visit to NOAA/GFDL <i>Princeton, NJ</i>	January 2011
American Chemical Society <i>Princeton, NJ</i>	October 2010
Princeton QUEST Program <i>Princeton, NJ</i>	July 2009
Delaware Lego Builders League <i>Wilmington, DE</i>	October 2008
Ecological Change Coalition <i>New Brunswick, NJ</i>	October 2007
Millburn Township Public Schools <i>Millburn, NJ</i>	October 2007
League of Women Voters <i>Millburn, NJ</i>	April 2007
Gateway Academic Decathlon Club <i>Woodbury Heights, NJ</i>	March 2006
United States Postal Service <i>Piscataway, NJ</i>	October 2005
Mantua Lions Club <i>Mantua, NJ</i>	October 2002

## COMMUNITY VOLUNTEER WORK

Assistant Softball Coach – <i>West Windsor Little League</i>	2023 – 2024
Member – <i>Cranbury Township (NJ) Environmental Commission</i>	2020 – 2023

## COMMUNICATION AWARDS

Mid-Atlantic Emmy Award Nomination – <i>National Academy of Television Arts and Sciences</i> Excellence as a broadcast meteorologist at WTXF-TV, Philadelphia, PA	2009
Certified Broadcast Meteorologist Distinction – <i>American Meteorological Society</i>	2006