

## Jasmin G. John

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### Research Interests

Earth System Modeling. Climate mitigation and associated impacts. Thresholds, transitions, and associated timescales of the Earth System. Coastal interactions and impacts.

### Education

M.A., Astronomy, 1985, Columbia University, New York.

B.A., (double major) Applied Mathematics, Physics, 1983, Barnard College, New York.

- Second alternate for Grace Potter Rice Fellowship.
- Honors in Applied Mathematics.
- Dean's List: 1979-1982.

### Employment/Professional Experience

NOAA/OAR/Atlantic Oceanographic and Meteorological Laboratory, Miami, Florida.

1/22-present: Supervisory Research Oceanographer/Deputy Division Director, Ocean Chemistry and Ecosystems Division.

NOAA/OAR/Geophysical Fluid Dynamics Laboratory, Princeton, New Jersey.

11/06-1/22: Physical Scientist, Biogeochemistry, Atmospheric Chemistry, and Ecosystems Division.

Ocean Discovery Institute, San Diego, California. (Hosted by NOAA/SWFSC, San Diego, California).

1/18-4/18: Scientist-in-Residence. (LCDP detail).

NOAA/NEFSC, James J. Howard Marine Sciences Laboratory, Sandy Hook, New Jersey.

10/17-12/17: Acting Branch Chief, Habitat Ecology Branch. (LCDP detail).

NOAA/Coral Reef Conservation Program (CRCP), Silver Spring, Maryland.

3/17-7/17: Acting Deputy Program Manager. (LCDP detail).

Berkeley Atmospheric Sciences Center, Dept. of Earth and Planetary Science, University of California, Berkeley.

6/98-11/06: Programmer/Analyst III, Carbon-Climate Interactions Group.

Department of Applied Physics & Nuclear Engineering, Columbia University.

7/92-5/98: Senior Staff Associate, Carbon-Climate Interactions Group and Biogeochemical Cycles Group, Resident at NASA/Goddard Institute for Space Studies, New York (6/86-5/95), and University of Victoria, Victoria, B.C., Canada (6/95-5/98).

7/87-6/92: Staff Associate, Biogeochemical Cycles Group, Resident at NASA/GISS, New York.

6/86-6/87: Senior Staff Research Assistant, Biogeochemical Cycles Group, Resident at NASA/GISS, New York.

Barnard College Work Study, Resident at NASA/Goddard Institute for Space Studies, New York.

6/82-5/84: Programmer/Research Assistant, Cloud Climatology Group.

### Awards & Honors

OAR EEO/Diversity Award (2022) – Group award to OAR's Diversity and Inclusion Advisory Committee (ODIAC) "for their diligent efforts to expand DEIA activities and awareness by establishing five working groups, a "What's New" slide deck for members to share in their respective labs, programs and staff offices, and leading the initiative to prevent SASH during field work."

NOAA Administrator's Award (2022) – Group award "for advancing the understanding of the Earth System by developing and applying NOAA's state-of-the-art Coupled Carbon-Chemistry-Climate model."

Global ERG Network Diversity Impact Awards (2021) – Top 25 ERGs – NOAA Diversity and Professional Advancement Working Group.

Dr. Linda Winner Memorial Award (2018) – Peer recognition leadership award from NOAA LCDP Class X.

Inaugural Scientist-in-Residence, Ocean Discovery Institute, 1/2018-4/2018.

OAR Employee of the Year Award (2017) – Personal and Professional Excellence. "For professional excellence across a broad range of technical, scientific, and organizational efforts in a variety of leadership, collaborative and support roles to unselfishly strive to further NOAA's goals for Earth System Science understanding and mandate for environmental stewardship."

NOAA Leadership Competencies Development Program (LCDP), Class X, 10/2016 - 4/2018.

AGU/EOS Research Spotlight: Shultz, D., How oceans could change if we reverse anthropogenic warming, *Eos*, 97, doi:10.1029/2016EO047305, 2016.

Department of Commerce Silver Medal (2013) – Scientific/Engineering Achievement team award “for the development and application of NOAA’s first comprehensive Earth System Models that couple the carbon cycle and climate to project changes.”

### **Professional Society Memberships**

American Geophysical Union (AGU)  
Earth Science Women’s Network (ESWN)  
500 Women Scientists

### **Professional and Community Service** (†invited, &virtual)

#### *Diversity, Equity, and Inclusion:*

Member (January 2023-present): NOAA Fusion Employee Resource Group.

Member (September 2022-present): NOAA Ambassadors.

†&Panel Member (August 2022): Ocean Discovery Institute Panel Discussion: *Young Lives Transformed Through Science*, NOAA Leadership Seminar.

†&Roundtable Participant (April 2022): *Pathways to Advance Diversity, Equity, and Inclusion in California’s Coastal and Ocean Sciences*. Convened by the California Ocean Science Trust.

Member (January 2021-March 2023): NOAA OAR Diversity and Inclusion Advisory Committee (ODIAC).

Chair (September 2020-January 2021), Member (February 2021-September 2021): GFDL Diversity, Equity, and Inclusion Committee (DEIC).

Co-Lead (April 2020-July 2020): GFDL Lab Review Response Diversity, Equity, and Inclusion Writing Team.

Senior Champion (2023-present), Member (2017-present): NOAA Diversity and Professional Advancement Working Group (DPAWG).

Panel co-organizer & panel member (September 2018): "*Diversity & Inclusion in Modeling: A Community Conversation on Leadership, Diversity, Inclusion, and Belonging*", NOAA General Modeling Meeting and Fair.

#### *Science & Technical:*

Affiliate Member (March 2023-present): Perturbed Carbon Cycle Working Group, Safe Landing Climate Lighthouse Activity.

Member (November 2020-December 2021): GFDL Awards Nomination Committee.

Member (May 2020-present): NOAA OAR marine CDR Task Force.

Member (Jan 2020-December 2021): GFDL Diagnostics and Evaluation Team.

Lead convenor (June 2018): “Advances in Earth System Models (ESMs) for marine applications”, 4<sup>th</sup> International Symposium on The Effects of Climate Change on the World’s Oceans.

Member (May 2018-January 2021): GFDL Impacts Initiative Working Group.

Lead (February 2018-January 2021): GFDL Model/Code/Data Initiative.

Member (February 2018-January 2021): GFDL Research Council.

Overall Coordinator (2016-2021): GFDL CMIP6 Project.

Chair (2016): CICS Research Internship Committee.

Co-chair (July 2016): “Marine Ecosystem Thresholds and Regime Shifts”, Ocean Carbon and Biogeochemistry Workshop.

Reviewer (2016): NOAA Hollings Undergraduate Scholarship Program.

Member (2016-present): C4MIP Scientific Steering Committee.

External partner (2015): Coordinated Research in Earth Systems and Climate: Experiments, kNowledge, Dissemination and Outreach (CRESCENDO).

Member (2014-2015): GFDL HPC Futures Group.

Member (2014-2017): PMAC-IV Committee, GFDL.

Contributing Author (Chapter 11 and Annex II): IPCC Fifth Assessment Report: Climate Change 2013: The Physical Science Basis.

External partner and collaborator (2012-2015): Earth system Model Bias Reduction and assessing Abrupt Climate Change Project (EMBRACE).

Member (2004-2006): Carbon-Land Model Intercomparison Project (C-LAMP).

Member (2001-2006): Coupled Climate Carbon Cycle Model Intercomparison Project (C4MIP).

Member (2001-2006): NCAR CCSM Biogeochemistry Working Group.

Member (1996-2004): Atmospheric Tracer Transport Model Intercomparison Project (TransCom).

Member (1992-2002): NASA EOS-IDS Biosphere-Atmosphere Interactions.

Ad-hoc reviewer.

#### *Miscellaneous Community Service:*

Organizing Committee (December 2022-present): Women in Sciences Leadership Workshop.

Member (November 2022-present): NOAA President's Management Council Interagency Rotation Program (PMC-IRP) Committee.

Member (January 2022-present): AOML Safety Committee.

Member (January 2022-present): AOML Reintegration Committee.

Member (2017-2022): NOAA Facilitation Network

LCDP Peer Advisor (2019-2021): Class 11.

LCDP Manager for Public/Private Partnerships Strategic Challenge (October 2018): NOAA SES Summit X 2018.

Reviewer (October 2018): LCDP 11 Applications.

Facilitator (June 2017): OAR Forum.

Lead (2014-2021): GFDL Community Poster Expo Organizing Committee.

Founder (2014): GFDL Community Poster Expo.

Board Member (2007-2009): GFDL Employee Association (GFDLEA).

### **Mentorship** (†invited, &virtual)

Elise Olson, Associate Research Scholar, AOS Program, Princeton University, October 2021-present.

†Science Mentor, *Intro to Research Program*, Bahia de los Angeles, Mx, Ocean Discovery Institute, July 2022.

Scientist-in-Residence, Ocean Discovery Institute, January-April 2018.

Alice Nadeau - University of Minnesota. CICS research intern, Summer 2016.

Aaron Match - Cornell University. NOAA Hollings Scholar resident at GFDL, Summer 2014.

### **Teaching Experience** (†invited, &virtual)

†&Guest lecture, Geography/Soils 526, University of Wisconsin-Madison, Feb 16 2021.

†&Guest lecture, Ocean Global Change Biology, East Carolina University, Sep 3 2019.

†Invited Lecturer, Summer School on Fundamentals of Ocean Climate Modelling at Global and Regional Scales, INCOIS, Hyderabad, India, Aug 5-14 2013.

Teaching Assistant, Astronomy, Columbia University, 1983-1985.

Teaching Assistant, Mathematics, Columbia University, 1980-1983.

### **Outreach** (&virtual)

[OAR Women's History Month 2023 post](#), March 29 2023.

[AOML Women's Equality Day post](#), August 26 2022.

&NOAA DPAWG/Latinos@NOAA EPP/MSI Coffee Hour, June 22 2022.

&Ask a GFDL Scientist Social Event, July 7 2021.

&NOAA DPAWG EPP/Hollings Scholar Coffee Hour, June 23 2021.

New Jersey Ocean Fun Days, May 18 2019.

World Oceans Day interview, "These NOAA ocean heroes show that you can help the ocean at any age" by Lauren Gibson, June 6 2018.

New Jersey Ocean Fun Days, May 20 2018.

KPBS interview, "Why This NOAA Scientist is Temporarily Calling City Heights Home" by Tarryn Mento, 3/2018.

New Jersey Ocean Fun Days, May 22 2016.

New Jersey Ocean Fun Days, May 17 2015.

2011 Young Women's Conference in Science, Engineering, Technology and Mathematics, Princeton Plasma Physics Laboratory – Poster Presentation: "Projecting the Future with Earth System Modeling"

2010 Young Women's Conference in Science, Engineering, Technology and Mathematics, Princeton Plasma Physics Laboratory – Poster Presentation: "Projecting the Future with Climate and Earth System Modeling"

### **Professional Development/Training** (&virtual)

&NOAA 2022 Virtual Leadership Seminar, 8/2022.

&Management Concepts: Emotionally Intelligent Leadership Course, 6/2022.

&Management Concepts: Management Skills for NOAA Supervisors, 5/2022.

&NOAA 2021 Virtual Leadership Seminar, 8/2021.

&NOAA 2021 Diversity, Equity & Inclusion (DEI) and Sexual Assault and Sexual Harassment (SASH) Summit: *Turning the Tide Towards Diversity, Equity, and Inclusion*, 7/2021.

&University of South Florida: Diversity, Equity, and Inclusion in the Workplace Certificate Program, 3/2021-5/2021.

&NOAA's 4th Annual NOAA Diversity and Inclusion Summit, 9/2020.

&Conspiring Women Co-Op: Slow Networking, 2020.

&NOAA 2020 Virtual Leadership Seminar, 8/2020.

&Conspiring Women Co-Op: Peer Coaching for Mission-Driven Women, 2020.

NOAA's 3rd Annual NOAA Diversity and Inclusion Summit, Silver Spring, MD, 4/2019.

Crucial Conversations Workshop, New York, NY, 12/2017.

NOAA Facilitation Basics Workshop, Silver Spring, MD, 4/2017.

NOAA Leadership Competencies Development Program (LCDP), Class X, 2016-2018.

&SciFund Challenge: Mastering the art of poster design, Summer 2015.  
&DOC Mentoring Program, 2013-2014.  
Building Leadership and Management Skills for Success. ESWN, Providence, RI, 6/2013.  
Skills for Networking and Communication. ESWN, Madison, WI, 6/2012.

### Technical Experience

Hardware: CRAY XT6, SGI Altix, IBM RS/6000, SUN, SGI Origin, IBM-SP, CRAY J-90/PVP.  
Operating Systems: UNIX, Linux, Windows, Mac OS-X, MS-DOS, VM/CMS.  
Software: FERRET, NCO, Python, IDL, MATLAB, NCL, CDAT, NCARGraphics, MS Office, Adobe Illustrator.  
Models:  
**GFDL** ESM4, CM4, OM4-SIS2, ESM2.6, ESM2.5, ESM2M, ESM2G, ESM2Mc, ESM2.1, CM2M, CM2G, AM3, AM2, MOM4p1, MOM4p0, GOLD, LM3, LM3v, SIS.  
**NCAR** CCSM, CAM, CCM3, NCOM, POP, LSM, CLM, MATCH.  
**GISS** CGCM, GISS-UCB TTM, AGCM, Bryan-Cox OGCM.  
**Other** CASA, SLAVE, CENTURY, SiB.  
Languages: Fortran 77, Fortran 90, C, HTML.

### Proposals

Global and regional perspectives on ocean acidification and multi-stressor extremes under climate change and mitigation. NOAA OAP, \$449,894. FY21-23. PIs: J. John, J. Dunne, E. Drenkard, C. Stock.

### Publications

Olson, E., J. G. John, J. P. Dunne, E. Drenkard, and C. A. Stock (in prep): Site-specific multiple stressor assessments based on high frequency observations and an Earth system model. *Journal of Geophysical Research: Oceans*.

Barkan, J., J. G. John, E. Drenkard, and D. Talley (submitted): Ocean Discovery Institute: Young lives transformed through science. *Oceanography (Special Issue on Building Diversity, Equity, and Inclusion in the Ocean Sciences)*.

Garcia-Suarez, L., K. Fennel, and J. G. John (in prep): Physical drivers and biogeochemical effects of the projected decline of the shelfbreak jet in the Northwest North Atlantic. *Journal of Advances in Modeling Earth Systems*.

Santana-Falcon, Y. et al. (submitted): Irreversible loss in marine ecosystem habitability after a temperature overshoot. *Nature Climate Change*.

Drenkard, E. et al. (submitted): Impact of dynamic dust deposition on Pacific ocean biogeochemistry. *Geophys. Res. Lett.*

Ross, A. C., et al. (submitted): A high-resolution physical-biogeochemical model for marine resource applications in the Northwest Atlantic (MOM6-COBALT-NWA12). *GMD Special issue: Development and deployment of regional ocean configurations for Modular Ocean Model 6 (MOM6)*.

Rutherford, K. et al. (submitted): Uncertainty in the evolution of northwest North Atlantic circulation leads to diverging biogeochemical projections. *Biogeosciences*.

Pendergrass, D. et al. (in prep): Modeling the impact of strong regulation of near-term climate forcings in China on mid-21st century air quality and climate using a coupled Earth system model.

Keller, D. P. et al. (in prep): Is Anthropogenic Climate Change Reversible? The Earth system response to a massive CO<sub>2</sub> increase then decrease (emissions followed by negative emissions). *Earth Syst. Dynam.*

Shevliakova, E., et al. (in review): The land component LM4.1 of the GFDL Earth System Model ESM4.1: biophysical and biogeochemical processes and interactions with climate. *Journal of Advances in Modeling Earth Systems*.

Martinez Cano, I. et al. (2022): Abrupt loss and uncertain recovery from fires of Amazon forests under low climate mitigation scenarios. *PNAS*, 119(52):e2203200119, <https://doi.org/10.1073/pnas.2203200119>.

Busecke, J. J. M., L. Resplandy, S. J. Ditlevsky, and J. G. John (2022): Diverging fates of the Pacific Ocean oxygen minimum zone and its core in a warming world. *AGU Advances*, 3, e2021AV000470. <https://doi.org/10.1029/2021AV000470>.

Xue, T. et al. (2022): Mixed layer depth promotes trophic amplification on a seasonal scale. *Geophys. Res. Lett.*, 49, e2022GL098720. <https://doi.org/10.1029/2022GL098720>.

Krasting, J. P., et al.: Regional sensitivity patterns of Arctic Ocean acidification revealed with machine learning. *Commun Earth Environ* 3, 91 (2022). <https://doi.org/10.1038/s43247-022-00419-4>.

Cael, B. B., et al.: Marine ecosystem changepoints spread under ocean warming in an Earth System Model. *Journal of Geophysical Research: Biogeosciences*, 127, e2021JG006571. <https://doi.org/10.1029/2021JG006571>.

Lim, H-G., et al.: Oceanic and atmospheric drivers of post-El-Niño chlorophyll rebound in the equatorial Pacific. *Geophys. Res. Lett.* <https://doi.org/10.1029/2021GL096113>.

- Tittensor, D.P. et al.: Next-generation ensemble projections reveal higher climate risks for marine ecosystems. *Nat. Clim. Chang.* 11, 973–981 (2021). <https://doi.org/10.1038/s41558-021-01173-9>.
- Morgan, E. J., et al.: An atmospheric constraint on the seasonal air–sea exchange of oxygen and heat in the extratropics, *JGR Oceans*, <https://doi.org/10.1029/2021JC017510>, 2021.
- Allen, R. et al: Significant climate benefits from near-term climate forcer mitigation in spite of aerosol reductions. *Environ. Res. Lett.*, 16, no. 3, 034010, doi:10.1088/1748-9326/abe06b, 2021.
- Tebaldi. C. et al.: Climate model projections from the Scenario Model Intercomparison Project (ScenarioMIP) of CMIP6. *Earth Syst. Dynam.*, 12, 253–293, <https://doi.org/10.5194/esd-12-253-2021>, 2021.
- Yu, Y., et al.: Increased risk of the 2019 Alaskan July fires due to anthropogenic activity. *BAMS Special Issue on Explaining Extreme Events of 2019 from a Climate Perspective*, <https://doi.org/10.1175/BAMS-D-20-0154.1>, 2021.
- Gillett, N. P., et al.: Constraining human contributions to observed warming since the pre-industrial period. *Nat. Clim. Chang.* (2021). <https://doi.org/10.1038/s41558-020-00965-9>.
- Turnock, S. T., et al.: Historical and future changes in air pollutants from CMIP6 models. *Atmos. Chem. Phys.*, 20, 14547–14579, 2020. <https://doi.org/10.5194/acp-20-14547-2020>.
- Burger, F. A., J. G. John, and T. F. Frölicher: Increase in ocean acidity variability and extremes under increasing atmospheric CO<sub>2</sub>. *Biogeosciences*, 17, 4633–4662, <https://doi.org/10.5194/bg-17-4633-2020>, 2020.
- Stock, C., et al.: 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*, <https://doi.org/10.1029/2019MS002043>, 2020.
- Horowitz, L., et al.: The GFDL Global Atmospheric Chemistry-Climate Model AM4.1: Model Description and Simulation Characteristics. *Journal of Advances in Modeling Earth Systems*, <https://doi.org/10.1029/2019MS002032>, 2020.
- Paulot, F., et al.: Ocean ammonia outgassing: modulation by CO<sub>2</sub> and anthropogenic nitrogen deposition. *Journal of Advances in Modeling Earth Systems*, <https://doi.org/10.1029/2019MS002026>, 2020.
- Dunne, J. P., et al.: The GFDL Earth System Model version 4.1 (GFDL-ESM4.1): Overall coupled model description and simulation characteristics. *Journal of Advances in Modeling Earth Systems*, <https://doi.org/10.1029/2019MS002015>, 2020.
- Dunne, J. P., et al.: The GFDL Simplified 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*, <https://doi.org/10.1029/2019MS002008>, 2020.
- Allen, R., et al.: Climate and air quality impacts due to mitigation of non-methane near-term climate forcers. *Atmos. Chem. Phys.*, 20, 9641–9663, <https://doi.org/10.5194/acp-20-9641-2020>, 2020.
- Séférian, R., et al.: Tracking improvement in simulated marine biogeochemistry between CMIP5 and CMIP6. *Current Climate Change Reports*, <https://doi.org/10.1007/s40641-020-00160-0>, 2020.
- Kwiatkowski, L., et al.: Twenty-first century ocean warming, acidification, deoxygenation, and upper ocean nutrient decline from CMIP6 model projections. *Biogeosciences*, 17, 3439–3470, <https://doi.org/10.5194/bg-17-3439-2020>, 2020.
- Adcroft, A., et al.: The GFDL Global Ocean and Sea Ice Model OM4.0: Model Description and Simulation Features. *Journal of Advances in Modeling Earth Systems*, DOI:10.1029/2019MS001726, 2019.
- Held, I., et al.: Structure and Performance of GFDL's CM4.0 Climate Model, *Journal of Advances in Modeling Earth Systems*, DOI:10.1029/2019MS001829, 2019.
- Laufkötter, C., et al.: Glacial iron stimulates the Southern Ocean carbon cycle, *Geophys. Res. Lett.*, 45(24), DOI:10.1029/2018GL079797, 2018.
- Taboada, F., et al.: Surface winds from atmospheric reanalysis lead to contrasting ocean forcing and coastal upwelling patterns, *Ocean Modelling*, 133, DOI:10.1016/j.ocemod.2018.11.003, 2018.
- Taboada, F., et al.: Seasonal to interannual predictability of oceanic net primary production inferred from satellite observations, *Progress in Oceanography*, 170, DOI:10.1016/j.pocean.2018.10.010, 2018.
- Palter, J., et al.: Climate, ocean circulation, and sea level changes under stabilization and overshoot pathways to 1.5K warming, *Earth Syst. Dynam.*, 9, 817-828, 2018, <https://doi.org/10.5194/esd-9-817-2018>, 2018.
- Park, J-Y., et al.: Modeling Global Ocean Biogeochemistry With Physical Data Assimilation: A Pragmatic Solution to the Equatorial Instability, *Journal of Advances in Modeling Earth Systems*, 10(3), doi:10.1002/2017MS001223, 2018.
- Turi, G., et al.: Response of O<sub>2</sub> and pH to ENSO in the California Current System in a high resolution global climate model, *Ocean Science*, 14(1), doi:10.5194/os-14-69-2018, 2018.
- Laufkötter, C., et al.: Temperature and oxygen dependence of the remineralization of organic matter, *Global Biogeochemical Cycles*, 31(7), doi:10.1002/2017GB005643, 2017.
- Stock, C. A., et al.: Reconciling fisheries catch and ocean productivity, *Proc. Nat. Acad. Sci.*, E1441–E1449, doi: 10.1073/pnas.1610238114, 2017.
- Henson, S., et al.: Rapid emergence of climate change in environmental drivers of marine ecosystem stress. *Nature Communications*, 8, 14682 doi:10.1038/ncomms14682, 2017.

- Orr, J.C., et al.: Biogeochemical protocols and diagnostics for the CMIP6 Ocean Model Intercomparison Project (OMIP), *Geosci. Model Dev.*, <https://doi.org/10.5194/gmd-10-2169-2017>, 2017.
- Lee, Y., et al.: Net primary productivity estimates and environmental variables in the Arctic Ocean: An assessment of coupled physical-biogeochemical models, *Journal of Geophysical Research, Oceans*, doi:10.1002/2016JCO11993, 2016.
- Jones, C. D., et al.: C4MIP – The Coupled Climate-Carbon Cycle Model Intercomparison Project: experimental protocol for CMIP6, *Geosci. Model Dev.*, doi:10.5194/gmd-9-2853-2016, 2016.
- Laufkötter, C., et al.: Projected decreases in future marine export production: the role of the carbon flux through the upper ocean ecosystem, *Biogeosciences*, 13(13), doi:10.5194/bg-13-4023-2016, 2016.
- John, J. G., C. A. Stock and J. P. Dunne: A more productive, but different, ocean after mitigation, *Geophys. Res. Lett.*, 42, doi: 10.1002/2015GL066160, 2015.
- Hauck, J., et al.: On the Southern Ocean CO<sub>2</sub> uptake and the role of the biological carbon pump in the 21st century, *Global Biogeochemical Cycles*, doi: 10.1002/2015GB005140, 2015.
- Dunne, J. P., C. A. Stock, and J. G. John.: Representation of the eastern boundary currents in GFDL's Earth System Models, *CalCOFI Rep.*, Vol. 56, 72-72, 2015.
- Laufkötter, C., et al.: Drivers and uncertainties of future global marine primary production in marine ecosystem models, *Biogeosciences*, 12(23), doi:10.5194/bg-12-6955-2015, 2015.
- Stock, C. A., J. P. Dunne and J. G. John: Drivers of trophic amplification of ocean productivity trends in a changing climate, *Biogeosciences*, 11(24), 7125-7135, doi:10.5194/bg-11-7125-2014, 2014.
- Stock, C. A., J. P. Dunne and J. G. John: Global scale carbon and energy flows through the planktonic food web: an analysis with a coupled physical-biological model, *Progress in Oceanography*. doi:10.1016/j.pocean.2013.07.001. 2014.
- IPCC, 2013: Annex II: Climate System Scenario Tables [Prather, M., G. Flato, P. Friedlingstein, C. Jones, J.-F. Lamarque, H. Liao and P. Rasch (eds.)]. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. (Contributing Author).
- Kirtman, B., S.B. Power, J.A. Adedoyin, G.J. Boer, R. Bojariu, I. Camilloni, F.J. Doblas-Reyes, A.M. Fiore, M. Kimoto, G.A. Meehl, M. Prather, A. Sarr, C. Schär, R. Sutton, G.J. van Oldenborgh, G. Vecchi and H.J. Wang, 2013: Near-term Climate Change: Projections and Predictability. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. (Contributing Author).
- Dunne, J. P., R. J. Stouffer and J. G. John: Reductions in labour capacity from heat stress under climate warming, *Nature Climate Change*, 3(6), doi:10.1038/nclimate1827, 2013.
- John, J. G., A. M. Fiore, V. Naik, L. W. Horowitz, and J. P. Dunne: Climate versus emission drivers of methane lifetime from 1860-2100, *Atmos. Chem. Phys.*, 12, 12021-12036, doi:10.5194/acp-12-12021-2012, 2012.
- Dunne, J. P., J. G. John, E. N. Shevliakova, R. J. Stouffer, et al.: GFDL's ESM2 global coupled climate-carbon Earth System Models Part II: Carbon System formulation and baseline simulation characteristics, *J. Climate*, 26(7), doi:10.1175/JCLI-D-12-00150.1, 2012.
- Dunne, J. P., J. G. John, A. J. Adcroft, S. M. Griffies, R. W. Hallberg, E. N. Shevliakova, R. J. Stouffer, et al.: GFDL's ESM2 global coupled climate-carbon Earth System Models Part I: Physical formulation and baseline simulation characteristics, *J. Climate*, 25(19), doi:10.1175/JCLI-D-11-00560.1, 2012.
- Gnanadesikan, A., J. P. Dunne and J. John: Understanding why the volume of suboxic waters does not increase over centuries of global warming in an Earth System Model, *Biogeosciences*, 9, 1159-1172, doi:10.5194/bg-9-1159-2012, 2012.
- Gnanadesikan, A., J. P. Dunne, and J. John: What ocean biogeochemical models can tell us about bottom-up control of ecosystem variability, *ICES Journal of Marine Science*, 68, 1030-1044, 2011.
- Henson, S. A., J. L. Sarmiento, J. P. Dunne, L. Bopp, I. Lima, S. C. Doney, J. John, and C. Beaulieu: Detection of anthropogenic climate change in satellite records of ocean chlorophyll and productivity, *Biogeosciences*, 7, 621-640, doi:10.5194/bg-7-621-2010, 2010.
- Hoffman, F., I. Fung, J. Randerson, P. Thornton, J. Foley, C. Covey, J. John, et al.: Terrestrial biogeochemistry in the community climate system model (CCSM), *Journal of Physics: Conference Series*, 46, 363-369, 2006.
- Patra, P. K., et al.: Sensitivity of inverse estimation of annual mean CO<sub>2</sub> sources and sinks to ocean-only sites versus all-sites observational networks, *Geophys. Res. Lett.*, 31, L05814, 2006.
- Friedlingstein, P., et al.: Climate–Carbon Cycle Feedback Analysis: Results from the C4MIP Model Intercomparison, *J. Climate*, 19, 3337–3353, doi: 10.1175/JCLI3800.1, 2006.
- Doney, S. C., K. Lindsay, I. Fung and J. John: Natural Variability in a Stable, 1000-Year Global Coupled Climate-Carbon Cycle Simulation, *J. Climate*, 19, 3033-3054, 2006.

- Baker, D. F., et al.: TransCom3 inversion intercomparison: Impact of transport model errors on the interannual variability of regional CO<sub>2</sub> fluxes, 1988-2003, *Global Biogeochem. Cycles*, 20, GB1002, doi: 10.1029/2004GB002439, 2006.
- Fung, I., S. Doney, K. Lindsay and J. John: Evolution of carbon sinks in a changing climate, *Proc. Nat. Acad. Sci.*, 102, 32, 11201-11206, 2005.
- Bonfils, C., I. Fung, S. Doney and J. John: On the detection of summertime terrestrial photosynthetic variability from its atmospheric signature, *Geophys. Res. Lett.*, 31, L09207, doi:10.1029/2004GL019453, 2004.
- Gurney, K. R., R. M. Law and TransCom3 modellers: Transcom3 inversion intercomparison: Model mean results for the estimation of seasonal carbon sources and sinks, *Global Biogeochem. Cycles*, 18, GB1010, doi:10.1029/2003GB002111, 2004.
- Maksyutov, S., and Transcom-3 Modelers: Effect of recent observations on Asian CO<sub>2</sub> flux estimates by transport model inversions, *Tellus*, 55B, 522-529, 2003.
- Law, R. M., Y.-H. Chen, K. R. Gurney and Transcom 3 Modellers: TransCom3 CO<sub>2</sub> inversion intercomparison: 2. Sensitivity of annual mean results to data choices, *Tellus B*, 55: 580-595. doi: 10.1034/j.1600-0889.2003.00053.x, 2003.
- Gurney, K. R., et al.: TransCom3 CO<sub>2</sub> inversion intercomparison: 1. Annual mean control results and sensitivity to transport and prior flux information, *Tellus Series B*, 55(2), 555-579, 2003.
- Gurney, K. R., R. M. Law and TransCom3 modellers: Towards robust regional estimates of CO<sub>2</sub> sources and sinks using atmospheric transport models, *Nature*, 415, 626-630, 2002.
- Fung, I., S. K. Meyn, I. Tegen, S. C. Doney, J. G. John, and J. K. B. Bishop: Iron supply and demand in the upper ocean, *Global Biogeochem. Cycles*, 14, 281-295, 2000. Correction in *GBC*, 14, 697-700.
- Gajewski, K. R., et al.: The climate of North America and adjacent ocean waters ca 6 ka, *Canadian J. Earth Sci.*, 37, 661-681, 2000.
- Fung, I., C. B. Field, J. A. Berry, M. V. Thompson, J. T. Randerson, C. M. Malmstrom, P. M. Vitousek, G. J. Collatz, P. J. Sellers, D. A. Randall, A. S. Denning, F. Badeck and J. John: Carbon 13 exchanges between the atmosphere and biosphere, *Global Biogeochem. Cycles*, 11, 507-533, 1997.
- Friedlingstein, P., I. Fung, E. Holland, J. John, G. Brasseur, D. Erickson and D. Schimel: On the contribution of CO<sub>2</sub> fertilization to the missing biospheric sink, *Global Biogeochem. Cycles*, 9, 541-556, 1995.
- Friedlingstein, P., K. C. Prentice, I. Y. Fung, J. G. John and G. P. Brasseur: Carbon biosphere-climate interactions in the last glacial maximum climate, *J. Geophys. Res.*, 100, 7203-7221, 1993.
- Bouwman, A. F., I. Fung, E. Matthews and J. John: Global analysis of the potential for N<sub>2</sub>O production in natural soils, *Global Biogeochem. Cycles*, 7, 557-597, 1993.
- Matthews, E., J. John and I. Fung: Rice Cultivation and Methane Emission, Documentation of Distributed Geographic Data Sets, *NASA Technical Memorandum* 104595, 1993.
- Fung, I., J. John, J. Lerner, E. Matthews, M. Prather, L. P. Steele and P. J. Fraser: Three-dimensional model synthesis of the global methane cycle, *J. Geophys. Res.*, 96, 13033-13065, 1991.
- Fung, I. and J. John: Interannual and longer-term changes of the terrestrial biosphere and their relationships to atmospheric CO<sub>2</sub> variations. In: *Proceedings of Third International Conference on Analysis and Evaluation of Atmospheric CO<sub>2</sub> Data Present and Past, Environmental Pollution Monitoring and Research Programme No. 59*, World Meteorological Organization, 1989.

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- \*Kristiansen, T., C. A. Stock, K. F. Drinkwater and E. N. Curchitser: Mechanistic insights into the effects of climate change on larval cod, *Global Change Biology*, 20(5), doi:10.1111/gcb.12489, 2014.
- \*Saba, V. S., C. A. Stock et al.: Projected response of an endangered marine turtle population to climate change, *Nature Climate Change*, 2, doi:10.1038/nclimate1582, 2012.
- \*Rykaczewski, R. R., and J. P. Dunne: Enhanced nutrient supply to the California Current Ecosystem with global warming and increased stratification in an earth system model, *Geophys. Res. Lett.*, 37, L21606, doi:10.1029/2010GL045019, 2010.
- \*Lee, J.-E., I. Fung, D. DePaolo and C. C. Henning: Analysis of the global distribution of water isotopes using the NCAR atmospheric general circulation model, *J. Geophys. Res.*, 112, doi:10.1029/2006JD007657, 2007.
- \*Angert, A., S. Biraud, C. Bonfils, C. Henning, W. Buermann, J. Pinzon, C. Tucker, and I. Fung: Drier summers cancel out the CO<sub>2</sub> uptake enhancement induced by warmer springs, *Proc. Nat. Acad. Sci.*, 102, 10823-10827, 2005.
- \*Still, C. J., J. T. Randerson and I. Y. Fung: Large-scale plant light-use efficiency inferred from the seasonal cycle of atmospheric CO<sub>2</sub>, *Global Change Biology*, 10, 1240-1252, 2004. Erratum: Still, C. J., Randerson, J. T., and I. Y. Fung: Erratum: Large-scale plant light-use efficiency inferred from the seasonal cycle of atmospheric CO<sub>2</sub>, *Global Change Biology* 11(10), 1866-1866, 2005.
- \*Lintner, B., A. Gilliland, I. Fung: Mechanisms of convection-induced modulation of passive tracer interhemispheric transport interannual variability, *J. Geophys. Res.*, 109, doi:10.1029/2003JD004306, 2004.



- \*Randerson, J. T., I. G. Enting, E. A. G. Schuur, K. Caldeira and I. Y. Fung: Seasonal and latitudinal variability of troposphere  $\Delta^{14}\text{CO}_2$ : Post bomb contributions from fossil fuels, oceans, the stratosphere, and the terrestrial biosphere, *Global Biogeochem. Cycles*, 16, 4, 1112, doi:10.1029/2002GB001876, 2002.
- \*Denning, A. S., M. Holzer, K. Gurney, M. Heimann, R. Law, P. Rayner, I. Fung, S.-M. Fan, S. Taguchi, P. Friedlingstein, Y. Balkanski, M. Maiss and I. Levin: Three-dimensional transport and concentration of SF<sub>6</sub>: A model intercomparison study (TransCom2), *Tellus*, 51B, 266-297, 1999.
- \*Dai, A., I. Y. Fung, and A. D. Del Genio: Surface observed global land precipitation variations during 1900–88: *J. Climate*, 10, 2943–2962, 1997.
- \*Matthews, E.: Global litter production, pools, and turnover times: Estimates from measurement data and regression models, *J. Geophys. Res.*, 102, 18,771-18,800, 1997.
- \*Randerson, J. T., M. V. Thompson, T. J. Conway, I. Y. Fung and C. B. Field: The contribution of terrestrial sources and sinks to trends in the seasonal cycle of atmospheric carbon dioxide, *Global Biogeochem. Cycles*, 11(4), 535–560, doi:10.1029/97GB02268, 1997.
- \*Malmstrom, C. M., M. V. Thompson, G. P. Juday, S. O. Los, J. T. Randerson and C. B. Field: Interannual variation in global-scale net primary production: Testing model estimates, *Global Biogeochem. Cycles* 11(3):367–392, 1997.
- \*Randerson, J. T., M. V. Thompson, C. M. Malmstrom, C. B. Field and I. Fung: Substrate limitations for heterotrophs: Implications for models that estimate the seasonal cycle of atmospheric CO<sub>2</sub>, *Global Biogeochem. Cycles*, 10, 585-602, 1996.
- \*DeFries, R. S., et al.: Mapping the land surface for global atmosphere-biosphere models: Toward continuous distributions of vegetation's functional properties, *J. Geophys. Res.* 100(D10), 20,867-20,882, doi:10.1029/95JD01536, 1995.
- \*Gornitz, V. and I. Fung: Potential distribution of methane hydrates in the world's oceans, *Global Biogeochem. Cycles*, 8, 335-347, 1994.
- \*Zaucker, F., Stocker, T. F., and Broecker, W. S.: Atmospheric freshwater fluxes and their effect on the global thermohaline circulation, *J. Geophys. Res.*, 99(C6), 12,443-12,457, 1994.
- \*Matthews, E.: Nitrogenous fertilizers: Global distribution of consumption and associated emissions of nitrous oxide and ammonia, *Global Biogeochem. Cycles*, 8, 4, 411-439, 1994.
- \*Dai, A. G. and I. Fung: Can climate variability contribute to the "missing" CO<sub>2</sub> sink?, *Global Biogeochem. Cycles*, 7, 599-609, 1993.
- \*Chappellaz, J. A., I. Y. Fung and A. M. Thompson: Atmospheric CH<sub>4</sub> increase since the Last Glacial Maximum: 1. Source estimates, *Tellus*, 45B, 228-241, 1993.
- \*Matthews, E., I. Fung and J. Lerner: Methane emission from rice cultivation: Geographic and seasonal distribution of cultivated areas and emissions, *Global Biogeochem. Cycles*, 5, 3-24, 1991.
- \*Prentice K. and I. Fung: The sensitivity of terrestrial carbon storage to climate change, *Nature*, 346, 48-51, 1990.
- \*Prentice, K.C.: Bioclimatic Distribution of Vegetation for General Circulation Model Studies, *J. Geophys. Res.*, 95(D8), 11,811-11,830, doi:10.1029/JD095iD08p11811, 1990.
- \*Tans, P., I. Fung and T. Takahashi: Observational constraints on the global atmospheric CO<sub>2</sub> budget, *Science*, 247, 1431-1438, 1990.
- \*Fung, I.: An Earth Atlas. An unpublished atlas compiled and produced to celebrate the 65th birthday of Professor Bert Bolin, 1990.

**Presentations** (†invited, \*poster, #demonstration, &virtual)

- \**Response of the California Current Ecosystem to Mitigation of Carbon Dioxide*. OAR AA visit to AOML, 3/2023.
- †&*Leaping into the unknown*. NOAA/OAR/GFDL Symposium: A tapestry of 'Flying Leaps': Celebrating Jasmin John's collaborative contributions advancing Earth system modelling, 2/2022.
- &*Towards understanding the legacy effects of climate change*. NOAA/OAR/AOML, 10/2021.
- &*Overview of GFDL's participation in Phase 6 of the Coupled Model Intercomparison Project (CMIP6)*. NOAA General Modeling Meeting and Fair 2021, 4/2021.
- †&*Overview of Earth System Modeling and Future Projection Application*, Geography/Soils 526 guest lecture, University of Wisconsin-Madison, 2/2021.
- †&*CMIP6 Overview*, NOAA Eastern Region Climate Service Webinar, 1/2021.
- †&*Overview of the GFDL global ocean biogeochemistry modelling suite*, AOML/GFDL Science Connections Workshop, 8/2020.
- \**Response of the California Current Ecosystem to Mitigation of Carbon Dioxide*. Ocean Sciences, San Diego, CA, 2020.
- #*Overview of GFDL's participation in Phase 6 of the Coupled Model Intercomparison Project (CMIP6)*. NOAA Climate Connections Workshop, Silver Spring, MD, 11/2019.
- Overview of CMIP6 at GFDL*. GFDL Lab Review, Princeton, NJ, 10/2019.
- †&*CMIP6 activities at GFDL*, Ocean Global Change Biology guest lecture, East Carolina University, 9/2019.
- \**Building bridges to a more diverse and inclusive culture in Ocean Sciences through an immersion experience*. GFDL Poster Expo, 5/2019.



- \**GFDL's contributions to CMIP6 – highlights from GFDL CM4 and ESM4*. CMIP6 Model Analysis Workshop, Barcelona, Spain, 3/2019.
- Scientist-in-Residence Experience at Ocean Discovery Institute*. NOAA Booth, AGU, Washington, DC, Fall 2018.
- \**Building bridges to a more diverse and inclusive culture in Ocean Sciences through an immersion experience*. AGU, Washington, DC, Fall 2018.
- \**Assessing the legacy effects of climate change on the world's oceans utilizing reversibility scenarios*. AGU, Washington, DC, Fall 2018.
- †&*Overview of CMIP6, Future Climate Projections, and Impacts Products*. NOAA Climate Variability and Change Workshop, Honolulu, HI, 9/2018.
- \**Overview of GFDL's participation in Phase 6 of the Coupled Model Intercomparison Project (CMIP6)*. NOAA General Modeling Meeting and Fair 2018, College Park, MD, 9/2018.
- \**Assessing the legacy effects of climate change on the world's oceans utilizing reversibility scenarios*. 4<sup>th</sup> International Symposium on The Effects of Climate Change on the World's Oceans, Washington, DC, 6/2018.
- Assessing the legacy effects of climate change with reversibility scenarios*. Ocean Sciences, Portland, OR, 2/2018.
- †*GFDL's CMIP6 activities and participation*. GFDL Fall Science Symposium, Princeton, NJ, 11/2017.
- †*Using high-resolution Earth System Models and observations to reconcile ocean productivity and fisheries catch in a changing climate*. PICSciE Symposium: Gearing up for Exascale – Challenges & Opportunities, Princeton University, NJ, 5/2017.
- \**Assessing the legacy effects of climate change with reversibility scenarios*. GFDL Poster Expo, 2/2017.
- \**Assessing the legacy effects of climate change with reversibility scenarios*. WCRP Model Hierarchies Workshop, Princeton, NJ, 11/2016.
- †*A more productive, but different, ocean after mitigation*. Metcalf Institute 2016 Annual Public Lecture Series, University of Rhode Island, RI, 6/2016.
- A more productive, but different, ocean after mitigation*. Ocean Sciences, New Orleans, LA, 2/2016.
- \**A more productive, but different, ocean after mitigation*. WCRP/FP7 EMBRACE Workshop on CMIP5 Model Analysis and Scientific Plans for CMIP6, Dubrovnik, Croatia, 11/2015.
- \**A more productive, but different, ocean after mitigation*. IMBER IMBIZO IV, Trieste, Italy, 11/2015.
- \**A more productive, but different, ocean after mitigation*. Ocean Carbon and Biogeochemistry Summer Workshop, Woods Hole, MA, 7/2015.
- \**Fingerprints of centennial climate change on ocean biogeochemistry*. Application of Seasonal to Decadal Climate Predictions for Marine Resource Management Workshop, Princeton, NJ, 6/2015.
- \**Fingerprints of centennial climate change on ocean biogeochemistry*. Third International Symposium on The Effects of Climate Change on the World's Oceans, Santos City, Brazil, 3/2015.
- \**Fingerprints of centennial climate change on ocean biogeochemistry*. GFDL Poster Expo, 1/2015.
- \**Key Drivers of Methane Lifetime from 1860-2100*. GFDL Poster Expo, 7/2014.
- \**Fingerprints of centennial climate change on ocean biogeochemistry*. Gordon Research Conference on Ocean Global Change Biology, Waterville Valley, NH, 7/2014.
- \**Key Drivers of Methane Lifetime from 1860-2100*. GFDL Lab Review, Princeton, NJ, 5/2014.
- †*GFDL's next generation Climate and Earth System Models*. EMBRACE 3rd General Assembly, KNMI, 5/2014.
- †*Climate, Carbon and Ecosystem Interactions*. Indian Institute of Tropical Meteorology, Pune, India, 8/2013.
- †*Beyond CMIP5: Ongoing Earth System Efforts at GFDL*. EMBRACE 2nd General Assembly, UKMO, 6/2013.
- †*GFDL's Earth System Models: Results and Future Developments*. Climate2013 workshop, LBNL, 3/2013.
- Land carbon-climate interactions: GFDL Earth System Model (ESM) analysis*. GFDL, 5/2012.
- \**Key Drivers of Methane Lifetime from 1860-2100*. AGU, Fall 2011.
- \**How Coupled are Ocean Heat and Carbon Uptake?* AGU, Fall 2010.
- NCAR CCSM Coupled Carbon-Climate Model: Development, Implementation, and Assessment*. GFDL, 9/2006.