Jasmin G. John

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Research Interests

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

Geophysical Fluid Dynamics Laboratory/NOAA, Princeton, New Jersey.
11/06-present: Physical Scientist, Biogeochemistry, Atmospheric Chemistry, and Ecosystems Division.

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

Dr. Linda Winner Memorial Award – peer recognition leadership award from NOAA LCDP Class X, 4/2018.

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

OAR Employee of the Year Award – Personal and Professional Excellence, 2017.

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)
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)
American Meteorological Society (AMS)
Earth Science Women's Network (ESWN)
Federally Employed Women (FEW)

Professional and Community Service

Member (May 2018 – present): GFDL Impacts Initiative Working Group.

Lead convenor (June 2018): "Advances in Earth System Models (ESMs) for marine applications", 4th International Symposium on The Effects of Climate Change on the World's Oceans.

Member (February 2018 – present): GFDL Research Council.

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

Facilitator: OAR Forum (6/2017)

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 (2014-2015): GFDL HPC Futures Group.

Lead (2014-present): GFDL/AOS/CICS Poster Expo Organizing Committee.
Initiated inaugural GFDL/AOS/CICS Poster Expo, Summer 2014.
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.

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

Publications
Taboada, F. et al. (in review): Seasonal to interannual predictability of oceanic net primary production inferred from satellite observations. *Progress in Oceanography*.

Taboada, F. et al. (in revision): Surface winds from atmospheric reanalysis lead to contrasting ocean forcing and coastal upwelling patterns. *Ocean Modelling*.

Manizza, M. et al. (in revision): Testing ocean physical-biogeochemical models at extra-tropical latitudes using measurements of atmospheric potential oxygen (APO) and Ar/N_2 ratios, *Journal of Geophysical Research, Oceans*.

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.

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_2 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.

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.

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.

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 CO2 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.

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_2 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_2 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.

Maksyutov, S., and Transcom-3 Modelers: Effect of recent observations on Asian CO_2 flux estimates by transport model inversions, *Tellus*, 55B, 522-529, 2003.

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.

Law, R. M., Y.-H. Chen, K. R. Gurney and Transcom 3 Modellers: TransCom3 CO_2 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_2 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_2 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_2 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_2O 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_2 variations. In: *Proceedings of Third International Conference on Analysis and Evaluation of Atmospheric CO_2 Data Present and Past, Environmental Pollution Monitoring and Research Programme No. 59,* World Meteorological Organization, 1989.

Acknowledgments*

Acknowledged in these publications for execution of model experiments, programming, providing data, or writing code for analysis, visualization or creating graphics.

*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_2 uptake enhancement induced by warmer springs, *Proc. Nat. Acad. Sci.,* 102, 10823-10827, 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.

*Still, C. J., J. T. Randerson and I. Y. Fung: Large-scale plant light-use efficiency inferred from the seasonal cycle of atmospheric CO_2, *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_2, *Global Change Biology* 11(10), 1866-1866, 2005.

*Randerson, J. T., I. G. Enting, E. A. G. Schuur, K. Caldeira and I. Y. Fung: Seasonal and latitudinal variability of troposphere $\Delta 14CO_2$: 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 SF6: 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_2, *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_2 sink?, *Global Biogeochem. Cycles*, 7, 599-609, 1993.

*Chappellaz, J. A., I. Y. Fung and A. M. Thompson: Atmospheric CH_4 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_2 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 († indicates invited presentation,* indicates poster presentation)

**Assessing the legacy effects of climate change on the world's oceans utilizing reversibility scenarios.* 4th 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. O*cean 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 "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.