

Curriculum Vitae: Lisa Goddard

International Research Institute for Climate & Society (IRI)
The Earth Institute of Columbia University
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Education

Princeton University	Atmospheric & Oceanic Sciences	Ph.D., 1995
Princeton University	Atmospheric & Oceanic Sciences	M.A., 1992
University of California, Berkeley	Physics	B.A., 1988

Employment

2003-present	Research Scientist, IRI / Columbia University
2007-present	Adjunct Associate Professor, Department of Earth & Environmental Sciences, Columbia University
2004-2006	Lecturer, Department of Earth & Environmental Sciences, Columbia University
2000-2002	Associate Research Scientist, IRI / Columbia University
1997-1999	Assistant Project Scientist, IRI / Scripps Institution of Oceanography
1998	Lecturer, U.C. San Diego/Scripps Institution of Oceanography
1995-1997	Postdoctoral Fellow, IRI / Scripps Institution of Oceanography
1990-1995	Graduate Student Researcher / Department of Atmospheric and Oceanic Sciences, Princeton University / Geophysical Fluid Dynamics Laboratory (GDFL)
1987-1990	Research Assistant, Physics Division, Lawrence Berkeley National Laboratory

Current Membership on Committees and Panels

- National Academy of Sciences, Board of Atmospheric Science and Climate, Climate Research Committee, 2009-present
- Predictability, Predictions and Applications Interface Panel (U.S. CLIVAR) 2005-present, (co-chair 2005-07)
- Decadal Predictability Working Group of U.S. CLIVAR, co-chair 2009-2011
- Scientific Steering Group (International CLIVAR) 2006-present
- Variability of the American Monsoon Systems (VAMOS) Panel (International CLIVAR) 2005-present
- Climate Observing System Council (OCO/NOAA-CPO/OAR) 2003-present
- NOAA's Climate Test Bed, Climate Science Team 2004-present
- Working Group on Applications and Capacity Building within the Intra Americas Study of Climate Processes (IASCLIP) program of VAMOS, co-chair 2009-
- Oversight Committee for Postdocs Applying Climate Expertise Fellowship Program, chair of committee and originator of program, 2007-present.
- Oversight Committee for Climate and Global Change postdoctoral program, 2009-present.
- National Academy of Sciences, Board of Atmospheric Science and Climate Panel on Assessment of Intraseasonal to Interannual Climate Prediction and Predictability, (2009-2010)

Roles at IRI

- Lead of Climate Diagnostics Group, a main focus of this group is research and development of climate information/predictions on near-term climate change
- Formerly lead of Global Prediction Development (focus on seasonal-to-interannual timescale)
- Develop monthly outlook and discussion on ENSO situation in the tropical Pacific
- Mentor Arthur Greene (Associate Research Scientist), co-supervise Katia Fernandes (Postdoctoral Researcher), co-supervise Shuhua Li (Senior Staff Associate)

Awards and Recognitions

2004-2009 : Marquis Who's Who in America

2003 : Stanley Jackson Award for Best Published Paper Contributing to the Atmospheric & Oceanic Sciences in Southern Africa during 2002, for "Statistical Recalibration of GCM Forecasts over Southern Africa Using Model Output Statistics" by W.A.Landman and L. Goddard, *J. Climate*, **15**, 2038-2055, 2002. Awarded by the South African Society of Atmospheric Science.

1995-1996: NOAA/UCAR Postdoctoral Fellowship

International Research Institute for Climate Prediction Pilot Project

1993-1995: Global Change Fellowship, NASA

Publications in refereed journals

Goddard, L., W.E. Baethgen, B.P. Kirtman, and G.A. Meehl, 2009. The Urgent Need for Improved Climate Models and Predictions, *EOS*, **90**, 343.

Coelho, C.A.S. and L. Goddard, 2009. El Niño-induced tropical droughts in climate change projections. *J. Climate*, **22**, 6456–6476.

Goddard, L., D.G. DeWitt, and R.W. Reynolds, 2009. Practical implications of uncertainties in observed SSTs. *Geophys. Res. Lett.*, **36**, L09710, doi:10.1029/2009GL037703.

Meehl, G.A., L. Goddard, J.Murphy, R.J. Stouffer, G. Boer, G. Danabasoglu, K. Dixon, M.A. Giorgetta, A. Greene, E. Hawkins, G. Hegerl, D. Karoly, N. Keenlyside, M. Kimoto, B. Kirtman, A. Navarra, R. Pulwarty, D. Smith, D. Stammer and T. Stockdale, 2009. Decadal prediction: Can it be skillful?, *Bull. Amer. Meteor. Soc.*, DOI: 10.1175/2009BAMS2778.1 (available through AMS early on-line releases).

Ndiaye, O., L. Goddard and M.N.Ward, 2009. Using regional wind fields to improve general circulation model forecasts of July-September Sahel rainfall, *Int. J. Climatol.*, **29**: 1262-1275, DOI: 10.1002/joc.1767.

Li, S., L. Goddard, and D. G. DeWitt, 2008. Predictive skill of seasonal climate forecasts relative to skill of regional SST anomalies. *J. Climate*, **21**: 2169-2186.

Mason, S. J., J. S. Galpin, L. Goddard, N. E. Graham, and B. Rajartnam. 2007. Conditional exceedence probabilities. *Mon. Wea. Rev.*, **135**: 363-372.

- Goddard, L., A. Kumar, A. G. Barnston and M. P. Hoerling. 2006. Diagnosis of anomalous winter temperatures over the eastern United States during the 2002/03 El Niño. *J. Climate*, 19: 5624-5636.
- Goddard, L. and M. Dilley, 2006. Reply to Comments on “El Niño: Catastrophe or Opportunity”. *J. Climate*, 19: 6443–6445.
- Greene, A.M., L. Goddard, and U. Lall. 2006. Probabilistic multimodel regional temperature change projections. *J. Climate*, 19: 4326-4343.
- Barnston, A.G., A. Kumar, L. Goddard, and M.P. Hoerling. 2005. Improving seasonal prediction practices through attribution of climate variability. *Bull. Amer. Meteor. Soc.*, 86: 59-72.
- Berri, G.J., Antico, P.L., and Goddard, L.. 2005. Evaluation of the Climate Outlook Forum seasonal precipitation forecasts of Southeast South America during 1998-2000. *Int. J. Climatol.*, 25: 365-377.
- Goddard, L. and M. Dilley. 2005. El Niño: Catastrophe or opportunity. *J. Climate*, 18: 651-665.
- Landman, W. A., S. Botes, L. Goddard, and M. Shongwe. Assessing the predictability of extreme rainfall seasons over southern Africa. *Geophys. Res. Lett.*, 32: L23819, doi:10.1029/2005GL023787
- Landman, W. A. and L. Goddard. 2005. Predicting southern African summer rainfall using a combination of MOS and perfect prognosis. *Geophys. Res. Lett.*, 32: L15809, doi:10.1029/2005GL022910.
- Potgieter, A.B., Hammer, G.L., Meinke, H., Stone, R.C., and Goddard, L. 2005. Spatial variability in impact on Australian wheat yield reveals three types of El Niño. *J. Climate*, 18: 1566-1574.
- Tippett, M.K., Goddard, L., and Barnston, A.G. 2005. Statistical-dynamical seasonal forecasts of Central Southwest Asia winter precipitation. *J. Climate*, 18, 1831-1843.
- Kumar, A., F. Yang, L. Goddard, and S. Schubert. (2004) Differing trends in tropical surface temperatures and precipitation over land and oceans. *J. Climate*, 17, 653-664.
- Robertson, A.W., Zebiak, S.E., U. Lall, and L. Goddard. 2004. Optimal combination of multiple atmospheric GCM ensembles for seasonal prediction. *Mon. Wea. Rev.*, 132: 2732-2744, DOI: 10.1175/MWR2818.1.
- Barnston, A. G., S. J. Mason, Goddard, L. D. G. DeWitt, and S. E. Zebiak (2003) Increased automation and use of multi-model ensembling in seasonal climate forecasting at the IRI. *Bull. Amer. Met. Soc.*, 84, 1783-1796.
- Goddard, L., A.G. Barnston, and S.J. Mason (2003) Evaluation of the IRI’s “Net Assessment” seasonal climate forecasts: 1997-2001. *Bull. Amer. Meteor. Soc.*, 84, 1761-1781.
- Goddard, L. and S.J. Mason (2002) Sensitivity of seasonal climate forecasts to persisted SST anomalies. *Climate Dynamics*, DOI 10.1007/s00382-002-0252-x.
- Landman, W.A. and L. Goddard (2002) Statistical recalibration of GCM forecasts over Southern Africa using model output statistics. *J. Climate*, 15, 2038-2055.
- Goddard, L., S.J. Mason, S.E. Zebiak, C.F. Ropelewski, R. Basher, and M.A. Cane (2001) Current approaches to seasonal to interannual climate predictions. *Int. J. Climatology*, 21 (9), 1111-1152.
- Mason, S.J. and L. Goddard (2001) Probabilistic precipitation anomalies associated with ENSO. *Bull. Amer. Meteor. Soc.*, 82, 619-638.
- Gershunov, A., T.P. Barnett, D.Cayan, A. Tubbs, L. Goddard (2000) Predicting ENSO impacts on intraseasonal precipitation in California: The 1997-98 event. *J. Hydrometeorology*, 1, 201-210.
- Goddard, L. and S.G.H. Philander (2000) The energetics of El Niño and La Niña. *J. Climate*, 13, 1496-1516.

Kumar, A, A.G. Barnston, P.Peng, M.P. Hoerling, and L. Goddard (2000) Changes in the spread of the variability of the seasonal mean atmospheric states associated with ENSO. *J.Climate*, 13, 3139-3151.

Peng, P. A. Kumar, A.G. Barnston, and L. Goddard (2000) Simulation skills of the SST-forced global climate variability of the NCEP-MRF9 and the Scripps-MPI ECHAM3 models. *J.Climate*, 13, 3657-3679.

Goddard, L. and N.E. Graham (1999) The importance of the Indian Ocean for simulating precipitation anomalies over Eastern and Southern Africa. *J. Geophys. Res.*, 104, 19099-19116.

Mason, S.J., L. Goddard, N.E. Graham, E. Yulaeva, L. Sun, and P.A. Arkin (1999) The IRI seasonal climate prediction system and the 1997/98 El Niño. *Bull. Amer. Meteor. Soc.* 80, 1853-1873.

Goddard, L. and N.E. Graham (1997) El Niño in the 1990s. *J. Geophys. Res.*, 102, 10423-10436.

Non-peer-reviewed Publications

Goddard, L. and co-authors, 2009. Providing Seasonal-to-Interannual Climate Information for Risk Management and Decision Making, *invited by and submitted to* World Climate Conference-3, session on Seasonal-to-Interannual Variability.

Vera, C. and co-authors (including L. Goddard), 2009. Needs assessment for climate information on decadal time scales and longer” *invited by and submitted to* World Climate Conference-3, session on Decadal Variability.

Goddard, L. and J.-P. Boulanger, 2009. VAMOS and Extremes, VAMOS Newsletter No. 5, March 2009.

Goddard, L., K. Redmond and M. Austin, 2007. “Climate Prediction Applications Postdoctoral Program (CPAPP) – An Experiment in Interfacing Climate and Society”, U.S. CLIVAR Variations, Vol 5, No. 2, September 2007.

Goddard, L., A. Wood, N. Mantua and K. Jacobs, 2007. “Decadal Climate Prediction: Learning from the Oceans”, *Solicited contribution* for California Department of Water Resources publication on drought.

Goddard, L. and Martin P. Hoerling 2006. Practices for Seasonal-to-Interannual Climate Prediction, U.S. CLIVAR Variations, Fall 2006, Vol. 4. (Invited).

Goddard, L. and D.G. DeWitt, 2005. Seeking progress in El Niño Prediction, U.S. CLIVAR Variations, Winter 2005, Vol. 3. (Invited).

Goddard, L., S.J. Mason, and A.W. Robertson, 2005. Multi-model ensembling: Combining and refining, CLIVAR Exchanges, Jan 2005, No 32 (Vol. 10, No.1).

Publications in press, in review or in preparation

Goddard, L. and S. J. Mason, 2009. Estimating the “true” signal and noise in seasonal-to-interannual climate variability using AGCMs. *Clim. Dyn.*, *in preparation*.

Goddard, L., and co-authors, 2009. Prediction-ability of seasonal climate over North America. *J. Climate*, *in preparation*.

Tippett, M.K. and L. Goddard, 2009. Providing a full probability distribution from dynamical seasonal prediction models. *Clim. Dyn.*, *in preparation*

Solomon, A., L. Goddard, A. Kumar, and DPWG members, 2009. What additional skill we can expect from the initialized decadal predictions, and why? *Bull. Amer. Meteor. Soc.*, *submitted*.

Mehta, V., G. Meehl, L. Goddard, J. Knight, A. Kumar, M. Latif, T. Lee, A. Rosati, D. Stammer, 2010. The Eighth Workshop on Decadal Climate Variability – Decadal Climate Predictability and Prediction: Where Are We? *Bull. Amer. Meteor. Soc.*, submitted.

Reviewer

Review Panel for National Research Council review of Climate Change Science Program (CCSP) Synthesis and Assessment Product 5.3: “Decision-Support Experiments and Evaluations Using Seasonal to Interannual Forecasts and Observational Data”, Irvine, California, July 2007.

NOAA Site Review Panel for the Applied Research Center component of the Earth System Research Laboratory, Boulder, Colorado, February 2007.

Proposal reviews: NOAA, NSF, DOE

Manuscript reviews: AGU Book Series, Australian Journal of Agricultural Research, Bulletin of the American Meteorological Society, Climatic Change, Climate Dynamics, Climate Research, Geophysical Research Letters, International Journal of Climatology, Journal of Climate, Journal of Geophysical Research, Journal of Hydrometeorology, Journal of Marine Research, Meteorological Applications, Monthly Weather Review, Quarterly Journal of the Royal Meteorological Society, Theoretical and Applied Climatology.

Teaching

I was part of the team that developed the curriculum and course material for Columbia University’s Master of Arts Program in Climate & Society that was inaugurated in 2004.

(<http://www.columbia.edu/cu/climatesociety/aboutclimate.html>).

This is an intensive 1-year MA program that draws students from a diverse set of backgrounds, both in terms of their education and their nationalities. There is a set of core classes and then a wide array of elective classes available for them to design the climate and society degree that fits their interests and talents. I developed and lead the core class on Dynamics of Climate Variability and Climate Change.

Other Contributions to Climate Services

Developed national post-doctoral program, “Postdocs Applying Climate Expertise Fellowship Program (PACE)”, and currently chair the Oversight Committee. This program was created within the US CLIVAR Predictability, Predictions and Applications Interface Panel, and is administered by UCAR. It is currently funded by NOAA’s Climate Program Office, although additional funding will be sought from NSF, NASA and DOE. (see links at <http://www.vsp.ucar.edu/> for more details).

Professional Societies

American Meteorological Society (AMS)

American Geophysical Union (AGU)