

UNIVERSITY OF MIAMI  
CURRICULUM VITAE

1. Date: February 2017

PERSONAL

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6. Current Academic Rank: Professor
7. Primary Department: Atmospheric Sciences
8. Secondary or Joint Appointments: N/A
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10. Visa Type (if non-citizen): N/A

HIGHER EDUCATION

11. Institutional: UC-San Diego (Applied Math), B.A., 1987  
University of Maryland (Meteorology), M.S., 1992  
University of Maryland (Meteorology), Ph.D., 1992
12. Non-Institutional: N/A
13. Certification, licensure: N/A

EXPERIENCE

14. Academic:
- |  |   |              |
|--|---|--------------|
| University of Maryland                   | Graduate Research Assistant                         | 1987-1992    |
| University of Maryland                   | Post-Doctoral Associate                             | 1992-1993    |
| Center for Ocean-Land-Atmosphere Studies | Research Scientist                                  | 1993-2000    |
| Center for Ocean-Land-Atmosphere Studies | Associate Research Scientist                        | 2000-2007    |
| George Mason University                  | Associate Professor (tenured)                       | 2002-2007    |
| University of Miami                      | Professor (tenured)                                 | 2007-present |
| University of Miami                      | Program Director, Climate and Environmental Hazards |              |

University of Miami	Center for Computational Sciences	2009-present
University of Miami	RSMAS Associate Dean for Research	2012-2015
University of Miami	CIMAS Director	11-2015 – pres.
15. Non-Academic:	None	
16. Military:	None	

## PUBLICATIONS

17. Books and monographs published: None

18. Juried or refereed journal articles and exhibitions: (**Google Scholar Citations as of June 1, 2017: 12,897; H-index: 53; i10-index: 135**)

### **2017**

Bell, R. J., and B. P. Kirtman, 2017: Seasonal forecasting of winds, waves and currents in the North Pacific. *J. Operational Ocean.* (submitted).

Putrasahan, D., M. Le Henaff, I. Komenkovich, B. P. Kirtman, 2017: Importance of ocean mesoscale variability for air-sea interactions in the Gulf of Mexico. *Geophys. Res. Lett.*, (submitted).

Larson, S. M., B. P. Kirtman and D. J. Vimont, 2017: A framework to decompose wind-driven biases in climate models applied to CCSM/CESM in the eastern Pacific. *J. Climate* (submitted).

Infanti, J. M., and B. P. Kirtman, 2017: CGCM and AGCM seasonal climate predictions – a study in CCSM4. *J. Geophys. Res. – Atmospheres*, (submitted).

Larson, S. M., and B. P. Kirtman, 2016a: Linking Preconditioning to Extreme El Niño and ENSO Predictability, *Climate Dynamics* (in press).

Burgman, R. J., B. P. Kirtman, A. C. Clement, and H. Vazquez (2017), Model evidence for low-level cloud feedback driving persistent changes in atmospheric circulation and regional hydroclimate, *Geophys. Res. Lett.*, 44, 428–437, doi:[10.1002/2016GL071978](https://doi.org/10.1002/2016GL071978).

### **2016**

Feng, X., B. Huang, B. P. Kirtman, J. L. Kinter and L. S. Chiu, 2016: A multi-model analysis of the resolution influence on precipitation climatology in the Gulf Stream region. *Climate Dynamics*, DOI 10.1007/s00382-016-3167-7.

Perlin, N., J. P. Zysman, B. P. Kirtman, 2016: Practical scalability assessment for parallel scientific numerical applications. arXiv preprint arXiv:1611.01598, 2016.

Siqueira, L. and B. Kirtman, 2016: Atlantic near-term climate variability and the role of a

resolved Gulf Stream. *Geophys. Res. Lett.*, 10.1002/2016GL068694.

Lopez, H., and B. Kirtman, 2016: Investigating the seasonal predictability of significant wave height in the west Pacific and Indian Oceans. *Geophys. Res. Lett.*, 10.1002/2016GL068653.

Cheng, Yu, D. Putrasahan, L. Beal, B. P. Kirtman, 2016: Quantifying Agulhas leakage in a high-resolution climate model, *J. Climate*, **29**, 6881-6892.

Jung, E., and B. P. Kirtman (2016), ENSO modulation of tropical Indian Ocean subseasonal variability, *Geophys. Res. Lett.*, 43, 12,634–12,642, doi:[10.1002/2016GL071899](https://doi.org/10.1002/2016GL071899).

Jung, E., and B. Kirtman, 2016: Can we predict seasonal changes in high impact weather in the United States? *Environ. Res. Lett.*, doi:1-.1088/1748-9326/11/7/074018.

Shukla, Shraddhanand, Jason Roberts, Andrew Hoell, Christopher C Funk, Franklin Robertson, Ben Kirtman, 2016: Assessing North American multimodel ensemble (NMME) seasonal forecast skill to assist in the early warning of anomalous hydrometeorological events over East Africa, *Climate Dynamics*, 1-17.

Zuidema, P. ... B. Kirtman ..., 2016: Challenges and prospects for reducing coupled climate model SST biases in the eastern tropical Atlantic and Pacific Ocean: The US CLIVAR Eastern Tropical Oceans Synthesis Working Group. *Bulletin of the American Meteorological Societ.* DOI: <http://dx.doi.org/10.1175/BAMS-D-15-00274.1>.

Larson, S. M., and B. P. Kirtman, 2016: Drivers of coupled model ENSO error dynamics and the spring predictability barrier. *Climate Dynamics*. doi:10.1007/s00382-016-3290-5.

Infanti, J. M., and B. P. Kirtman (2016), Prediction and predictability of land and atmosphere initialized CCSM4 climate forecasts over North America, *J. Geophys. Res. Atmos.*, 121, 12,690–12,701, doi:[10.1002/2016JD024932](https://doi.org/10.1002/2016JD024932).

Infanti, J. M., and B. P. Kirtman, 2016: North American rainfall and temperature prediction response to the diversity of ENSO, *Climate Dynamics* doi: 10.1007/s00382-015-2749-0.

Boer, G., J., Douglas M Smith, Christophe Cassou, Francisco Doblus-Reyes, Gokhan Danabasoglu, Ben Kirtman, Yochanan Kushnir, Masahide Kimoto, Gerald A Meehl, Rym Msadek, Wolfgang A Mueller, Karl E Taylor, Francis Zwiers, Michel Rixen, Yohan Ruprich-Robert, Rosie Eade, 2016: The Decadal Climate Prediction Project (DCPP) contribution to CMIP6, *Geoscientific Model Development*, 9, 3751. Doi:1-.5194/gmd-9-3751-2016.

Wdowinski, S. R. Bray, B. P. Kirtman, Z. Wu, 2016: Increasing flooding hazard in coastal communities due to raising sea level: Case study of Miami Beach, Florida. *Ocean and Coastal Management*, **126**, 1-8.

## 2015

Theurich, G., C. C DeLuca, T Campbell, F Liu, K Saint, M Vertenstein, J Chen, R Oehmke, J Doyle, T Whitcomb, A Wallcraft, M Iredell, T Black, AM da Silva, T Clune, R Ferraro, P Li, M Kelley, I Aleinov, V Balaji, N Zadeh, R Jacob, B Kirtman, F Giraldo, D McCarren, S Sandgathe, S Peckham, R Dunlap IV, 2015: The earth system prediction suite: Toward a coordinated US

modeling capability, *Bulletin of the American Met. Soc.*, doi: <http://dx.doi.org/10.1175/BAMS-D-14-00164.1>

Chen, G., Kirtman, B. P. and Iskandarani, M. (2015), An efficient perturbed parameter scheme in the Lorenz system for quantifying model uncertainty. *Q.J.R. Meteorol. Soc.*, 141: 2552–2562. doi:10.1002/qj.2541

Capotondi et al., 2015: Understanding ENSO Diversity, *Bulletin of the American Met. Soc.*, *Bull. Amer. Meteor. Soc.*, **96**, 921–938. doi: <http://dx.doi.org/10.1175/BAMS-D-13-00117.1>.

D Putrasahan, BP Kirtman, LM Beal, 2015: Modulation of SST interannual variability in Agulhas leakage region associated with ENSO, *J. Climate* doi: <http://dx.doi.org/10.1175/JCLI-D-15-0172.1>.

Putrasahan, D. A., L. M. Beal, B. P. Kirtman, and Y. Cheng (2015), A new Eulerian method to estimate “spicy” Agulhas leakage in climate models. *Geophys. Res. Lett.*, 42, 4532–4539. doi: [10.1002/2015GL064482](http://dx.doi.org/10.1002/2015GL064482).

Z Song, SK Lee, C Wang, BP Kirtman, F Qiao, 2015: Contributions of the atmosphere–land and ocean–sea ice model components to the tropical Atlantic SST bias in CESM1, *Ocean Modeling*, doi:10.1016/j.ocemod.2015.09.008

Sarah M. Larson and Ben P. Kirtman, 2015: Revisiting ENSO Coupled Instability Theory and SST Error Growth in a Fully Coupled Model. *J. Climate*, **28**, 4724–4742. doi: <http://dx.doi.org/10.1175/JCLI-D-14-00731.1>

SM Larson, BP Kirtman, 2015: An alternate approach to ensemble ENSO forecast spread: Application to the 2014 forecast, *Geophysical Research Letters* 42 (21), 9411-9415

Angela J. Colbert, Brian J. Soden, and Ben P. Kirtman, 2015: The Impact of Natural and Anthropogenic Climate Change on Western North Pacific Tropical Cyclone Tracks. *J. Climate*, **28**, 1806–1823. doi: <http://dx.doi.org/10.1175/JCLI-D-14-00100.1>

## 2014

Lopez, H. and B. P. Kirtman, 2014: Internal Atmospheric Dynamics and Resolution in a Coupled GCM. *Climate Dynamics* 10.1007/s00382-014-2220-7.

Yeh, S. W., Y. G. Ham and B. P. Kirtman, 2014: A possible explanation on the changes in the spatial structure of ENSO from CMIP3 to CMIP5. *Geophys. Res. Lett.*, **41**, 140-145.

He, J. B. J. Soden and B. P. Kirtman: The robustness of the atmospheric circulation and precipitation response to future anthropogenic warming. *Geophys. Res. Lett.*, **41**, 2614-2622

Lopez, H., and B. P. Kirtman, 2014: WWBs, ENSO Predictability, the Spring Barrier and Extreme Events, *J. Geophys. Res. Atmos.*, DOI: 10.1002/grl.50913

H. –S., Jo, S. W. Yeh, and B. P. Kirtman, 2014: Role of the western tropical Pacific in the North Pacific regime shift in the winter of 1998/99. *J. Geophys. Res. Oceans*. **119**, 616-6170.

Larson, S. M., and B. P. Kirtman, 2014: Assessing Pacific Meridional Mode forecasts and its role as an ENSO precursor and predictor in the North American Multi-Model Ensemble. *J. Climate* **27**, 7018-7032.

Narapusetty, B., and B. Kirtman, 2014: Sensitivity of near-surface atmospheric circulation to tropical instability waves. *Climate Dynamics*, 10.1007/s00382-014-2167-8.

Siqueira, L. and Kirtman, B. 2014: Nonlinear dynamics approach to the predictability of the Cane–Zebiak coupled ocean–atmosphere model, *Nonlin. Processes Geophys.*, **21**, 155-163, doi:10.5194/npg-21-155-2014, 2014.

Yeh, S. –W., Y. –G. Ham, B. P. Kirtman, 2014: A possible explanation on the changes in the spatial structure of ENSO from CMIP3 to CMIP5. *Geophys. Res. Lett.*, doi: 10.1002/2013GL058478.

Maloney, Eric D., and Coauthors, 2014: North American Climate in CMIP5 Experiments: Part III: Assessment of Twenty-First-Century Projections\*. *J. Climate*, **27**, 2230–2270. doi: <http://dx.doi.org/10.1175/JCLI-D-13-00273.1>.

Kirtman, B. P., and co-authors, 2014: The North American Multi-Model Ensemble (NMME): Phase-1 Seasonal-to-Interannual Prediction, Phase-2 Toward Developing Intra-Seasonal prediction. *Bull. Amer. Met. Soc.*, doi: <http://dx.doi.org/10.1175/BAMS-D-12-00050.1>

Infanti, Johnna M., Ben P. Kirtman, 2014: Southeastern U.S. Rainfall Prediction in the North American Multi-Model Ensemble. *J. Hydrometeor*, **15**, 529–550. doi: <http://dx.doi.org/10.1175/JHM-D-13-072.1>.

## 2013

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.

Mantsis, Damianos F., Amy C. Clement, Ben Kirtman, Anthony J. Broccoli, Michael P. Erb, 2013: Precessional Cycles and Their Influence on the North Pacific and North Atlantic Summer Anticyclones. *J. Climate*, **26**, 4596–4611. doi: <http://dx.doi.org/10.1175/JCLI-D-12-00343.1>

Colbert, Angela J., Brian J. Soden, Gabriel A. Vecchi, Ben P. Kirtman, 2013: The Impact of Anthropogenic Climate Change on North Atlantic Tropical Cyclone Tracks\*. *J. Climate*, **26**, 4088–4095. doi: <http://dx.doi.org/10.1175/JCLI-D-12-00342.1>

Lopez, H., and B. P. Kirtman, 2013: Westerly wind bursts and the diversity of ENSO in CCSM3 and CCSM4. *Geophys. Res. Lett* **40**, 4722–4727, doi:10.1002/grl.50913.

Kirtman, B. P., T. Stockdale and R. Burgman, 2013: The Oceans' role in modeling and predicting

seasonal-to-interannual climate variations. *Ocean Circulation and Climate: A 21<sup>st</sup> Century Perspective* (2<sup>nd</sup> Edition). G. Siedler, S. Griffies, J. Gould and J. Church, Eds. Academic Press (Elsevier) DOI 10.1016/B978-0-12-391851-2.00024-6.

Kirtman, B. P., D. Anderson, G. Brunet, I.-S. Kang, A. A. Scaife and D. Smith, 2013: Prediction from weeks to decades, *Climate Science for Serving Society: Research, Modelling and Prediction Priorities*. G. R. Asrar and J. W. Hurrell, Eds. Springer, DOI 10.1007/978-94-007-6692-1\_8.

Goddard, L., A. Kumar, A. Solomon, D. Smith, G. Boer, P. Gonzalez, V. Kharin, W. Merryfield, Clara Deser, Simon J. Mason, Ben P. Kirtman, Rym Msadek, Rowan Sutton, Ed Hawkins, T. Fricker, G. Hegerl, CAT Ferro, DB Stephenson, GA Meehl, T. Stockdale, R. Burgman, AM Greene, Y. Kushnir, M. Newman, J. Carton, Ichiro Fukumori, T. Delworth, 2013: A verification framework for interannual-to-decadal prediction experiments. *Climate Dynamics*, **20**, 245-272.

Larson, S., and B. P. Kirtman, 2013: The Pacific meridional mode as a trigger for ENSO in a high-resolution coupled model. *Geophys. Res. Lett.*, DOI: 10.1002/grl.50571

Chen, Hua, Edwin K. Schneider, Ben P. Kirtman, Ioana Colfescu, 2013: Evaluation of Weather Noise and Its Role in Climate Model Simulations. *J. Climate*, **26**, 3766–3784.  
doi: <http://dx.doi.org/10.1175/JCLI-D-12-00292.1>

## 2012

Lopez, H., B. P. Kirtman, E. Tziperman, G. Gebbe, 2012: Impact of interactive westerly wind bursts on CCSM3. *Dyn. Atmos. Oceans*, doi:10.1016/j.jynamtmoce.2012.11.001.

Smith, D. M., A. A. Scaife and B. Kirtman, 2012: What is the current state of scientific knowledge with regard to seasonal and decadal forecasting. *Environ. Res. Lett.*, **7**, 015602, doi:10.1088/1748-9326/7/1/015602.

Paolino, D. A., J. L. Kinter III, B. P. Kirtman, D. Min, D. M. Straus, 2012: The impact of land surface initialization on seasonal forecasts with CCSM. *J. Climate*, **25**, 1007-1021.

Goddard, L., J. W. Hurrell, B. P. Kirtman, J. Murphy, T. Stockdale and C. Vera, 2012: Two timescales for the price of one (almost). *Bull. Amer. Met. Soc.*,  
doi: <http://dx.doi.org/10.1175/BAMS-D-11-00220.1>

Narapusetty, B., C. Stan, B. P. Kirtman, P. S. Schopf, L. Marx, and J. L. Kinter III (2012), The role of atmospheric internal variability on the tropical instability wave dynamics, *J. Geophys. Res.*, **117**, C00J31, doi:[10.1029/2012JC007906](https://doi.org/10.1029/2012JC007906).

Kirtman, B. P., and co-authors, 2012: Impact of ocean model resolution on CCSM climate simulations. *Climate Dynamics*, DOI 10.1007/s00382-012-1500-3.

Achuthavarier, D., V. Krishnamurthy, B. P. Kirtman and B. Huang, 2012: Role of Indian Ocean in the ENSO-Indian summer monsoon teleconnection in the NCEP climate forecast system. *J. Climate*, doi: <http://dx.doi.org/10.1175/JCLI-D-11-00111.1>.

DiNezio, P. N., B. P. Kirtman, A. C. Clement, S.-K. Lee, G. A. Vecchi, A. Wittenberg, 2012: Diverging ENSO projection in response to global warming: The role of the background ocean changes. *J. Climate* doi: <http://dx.doi.org/10.1175/JCLI-D-11-00494.1>.

Siqueira, L. S. P., and B. P. Kirtman, 2012: Predictability and uncertainty in a low order coupled model. *Nonlinear Process in Geophysics* doi:10.5194/npg-19-273-2012

## 2011

Munoz, E., B. Kirtman, and W. Weijer, 2011: Varied representation of the Atlantic Meridional Overturning across multidecadal ocean reanalyses. *Deep Sea Research Part II*, doi:10.1016/j.dsr2.2010.10.064.

Yeh, S.-W., B. P. Kirtman, J.-S. Kug, W. Park, and M. Latif (2011), Natural variability of the central Pacific El Niño event on multi-centennial timescales, *Geophys. Res. Lett.*, 38, L02704, doi:10.1029/2010GL045886.

Solomon, Amy, and Coauthors (... B. P. Kirtman ...), 2011: Distinguishing the Roles of Natural and Anthropogenically Forced Decadal Climate Variability. *Bull. Amer. Meteor. Soc.*, 92, 141–156. doi: 10.1175/2010BAMS2962.1

Kirtman, B. P., E. K. Schneider, D. M. Straus, D. Min, R. Burgman, 2011: How weather impacts the forced climate response. *Climate Dynamics*, DOI: 10.1007/s00382-011-1084-3.

Lee, S. -K., W. Park, E. van Sebille, M. O. Baringer, C. Wang, D. B. Enfield, S. G. Yeager, B. P. Kirtman, 2011: What caused the significant increase in Atlantic Ocean heat content since the mid-20<sup>th</sup> century. *Geophys. Res. Lett.*, doi:10.1029/2011GL048856, 2011

## 2010

Brunet, G., M. Shapiro, B. Hoskins, M. Moncrieff, R. Dole, G. N. Kiladis, B. Kirtman, A. Lorenc, B. Mills, R. Morss, S. Polavarapu and D. Rogers, 2010: Toward a seamless process for the prediction of weather and climate: the advancement of subseasonal to seasonal prediction. *Bull. Amer. Met. Soc.*, DOI:10.1175/2010BAMS3013.1.

Hurrell, James W., Gerald A. Meehl, Dave Bader, Thomas L. Delworth, Ben Kirtman, Bruce Wielick, 2010: Reply. *Bull. Amer. Meteor. Soc.*, 91, 1702–1703. doi: 10.1175/2010BAMS3118.1

Jin, D., and B. P. Kirtman (2010), How the annual cycle affects the extratropical response to ENSO, *J. Geophys. Res.*, 115, D06102, doi:10.1029/2009JD012660.

Wu, R., and B. P. Kirtman, 2010: Caribbean Sea rainfall variability during the rainy season and relationship to the equatorial Pacific and tropical Atlantic SST. *Climate Dynamics*. DOI:10.1007/s00382-010-0927-7.

Yeh, S. W., S. K. Kang, B. P. Kirtman, J. H. Kim, M. H. Kwon, C. H. Kim, 2010: Decadal change in the relationship between western North Pacific tropical cyclone frequency and the tropical Pacific SST. *Meteorology and Atmospheric Physics*, **106**, 179-189.

Kirtman, B.P., and G. Vecchi, 2010: Why Climate Modelers Should Worry About the Weather. *WMO Monograph: The Global Monsoon System: Research and Forecast*, 2nd Ed.

## 2009

Yeh, S.-W., J.-S. Kug, B. Dewitte, M. H. Kwon, B. P. Kirtman, F.-F. Jin, 2009: The flavor of El Niño in a changing climate. *Nature*, **461**, 511-514.

Wu, R., and B. P. Kirtman, 2009: Variability of ENSO-related noise in the equatorial Pacific Ocean. *J. Geophys. Res.* 114, D23106, doi:10.1029/2009JD012456.

DiNezio PN, Clement AC, Vecchi GA, Soden BJ, Kirtman BP, et al. (2009) Climate Response of the Equatorial Pacific to Global Warming. *J. Climate*, **22**, 4873-4892.

Schubert, S., D. Gutzler, H. Wang, A. Dai, T. Delworth, C. Deser, K. Findell, R. Fu, W. Higgins, M. Hoerling, B. Kirtman, R. Koster, A. Kumar, D. Legler, D. Lettenmaier, B. Lyon, V. Magana, K. Mo, S. Nigam, P. Pegion, A. Phillips, R. Pulwarty, D. Rind, A. Ruiz-Barradas, J. Schemm, R. Seager, R. Stewart, M. Suarez, J. Syktus, M. Ting, C. Wang, S. Weaver, N. Zeng, 2009: A USCLIVAR Project to Assess and Compare the Responses of Global Climate Models to Drought-Related SST Forcing Patterns: Overview and Results. *Bull. Amer. Met. Soc.*, DOI: 10.1175/2009JCLI3060.1.

Hurrell, J, G. A. Meehl, D. Bader, T. Delworth, B. Kirtman, and B. Wielicki, 2009: Climate system prediction. *Bull. Amer. Met. Soc.*, DOI: 10.1175/2009BAMS2752.1.

Goddard, L., W. Baethgen, B. Kirtman, and G. Meehl (2009), The Urgent Need for Improved Climate Models and Predictions, *Eos Trans. AGU*, 90(39), doi:10.1029/2009EO390004.

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. Met. Soc.*, DOI: 10.1175/2009BAMS2778.1.

Kishnamurthy, V., and B. P. Kirtman, 2009: Relation between Indian Monsoon variability and SST. *J. Climate*, DOI: 10.1175/2009JCLI2520.1.

Jin, D., and B. Kirtman, 2009: The extratropical sensitivity to the meridional extent of tropical ENSO forcing. *Climate Dyn.* DOI: 10.1007/s00382-009-0600-1.

Jin, D., and B. Kirtman, 2009: Impact of ENSO periodicity on North Pacific SST variability. *Climate Dyn.*, DOI 10.1007/s00382-009-0619-3

Jin, D., and B. Kirtman, 2009: Why the Southern Hemisphere ENSO responses precedes ENSO. *J. Geophys. Res.*, 114, D23101, doi:10.1029/2009JD012657.

Kirtman, B. P., D. M. Straus, D. Min, E. K. Schneider and L. Siqueira, 2009: Understanding the link between weather and climate in CCSM3.0. *Geophys. Res. Lett.*, doi:10.1029/2009GL038389.

Kirtman, B. P., and D. Min, 2009: Multi-model ensemble ENSO prediction with CCSM and CFS. *Mon. Wea. Rev.*, DOI: 10.1175/2009MWR2672.1.

Yeh, S.-W., and B. P. Kirtman, 2009: Interannual atmospheric variability and interannual-to-decadal ENSO variability in a CGCM. *J. Climate*, **22**, 2335-2355.

Wu, R., B. P. Kirtman, H. van den Dool, 2009: An analysis of ENSO prediction skill in the CFS



retrospective forecasts. *J. Climate*, **22**, 1801-1818.

Kirtman, B. P., and A. Pirani, 2009: The state of the art of seasonal prediction: Outcomes and recommendations from the first World Climate Research Program (WCRP) workshop on seasonal prediction. *Bull. Amer. Met. Soc.* **90**, 455-458.

Wang, B., June-Yi Lee, In-Sik Kang, J. Shukla, C.-K. Park, A. Kumar, J. Schemm, S. Cocke, J.-S. Kug, J.-J. Luo, T. Zhou, B. Wang, X. Fu, W.-T. Yun, O. Alves, E. K. Jin, J. Kinter, B. Kirtman, T. Krishnamurti, N. C. Lau, W. Lau, P. Liu, P. Pegion, T. Rosati, S. Schubert, W. Stern, M. Suarez and T. Yamagata, 2009: Advance and prospectus of seasonal prediction: assessment of the APCC/CliPAS 14-model ensemble retrospective seasonal prediction (1980–2004). *Climate Dynamics*, 10.1007/s00382-008-0460-0

## **2008**

DelSole, T., M. Zhao, P. A. Dirmeyer and B. P. Kirtman, 2008: Empirical correction of a coupled land-atmosphere model. *Mon Wea Rev.*, **11**, 4063-4076.

Pegion, K. and B. P. Kirtman, 2008: The impact of air-sea interactions on the simulation of tropical intraseasonal variability, *J. Climate*, **22**, 6616-6635.

Pegion, K. and B. P. Kirtman, 2008: The impact of air-sea interactions on the predictability of the Tropical Intra-Seasonal Oscillation, *J. Climate*, **22**, 5870-5886.

Burgman, R. J., P. S. Schopf and B. P. Kirtman, 2008: ENSO decadal variability. *J. Climate*, **21**, 5482-550.

Kallummal, R., and B. P. Kirtman, 2008: Validity of the linear stochastic view of ENSO in a CGM. *J. Atmos. Sci.*, **65**, 3860-3879.

Jin, E., J. L. Kinter III, B. Wang, I.-S. Kang, B. P. Kirtman, J.-S. Kug, A. Kumar, J.-J. Luo, C.-K. Park, J. Schemm, J. Shukla, and T. Yamagata, 2008: Current status of ENSO prediction skill in coupled ocean-atmosphere models. *Clim. Dyn.*, doi: 10.1007/S00382-008-0397-3.

Misra, V., L. Marx, M. Fennessy, B. Kirtman, and J. L. Kinter III, 2008: A comparison of climate prediction and simulation over tropical Pacific. *J. Climate*, **21**, 3601-3611.

Stan, C., and B. P. Kirtman, 2008: Internal atmospheric dynamics and tropical Pacific predictability in a coupled GCM. *J. Climate*, **21**, 3487-3503.

Yeh, S.-W., and B. P. Kirtman, 2008: The low-frequency relationship of the tropical-North Pacific sea surface temperature teleconnections. *J. Climate*, **21**, 3416-3432.

Wu, R., B. P. Kirtman, V. Krishnamurthy, 2008: An asymmetric mode of tropical Indian Ocean rainfall variability in boreal spring. *J. Geophys. Res. Atmos.*, **113**, D05104, doi:10.29/2007JD009316.

Wu, Z., E. K. Schneider, B. P. Kirtman, E. S. Sarachik, N. E. Huang, and C. J. Tucker, 2008: The modulated annual cycle - An alternative reference frame for climate anomalies. *Climate Dyn.*, doi: 10.1007/S00382-008-0437-z.

## 2007

Misra, V., L. Marx, J. L. Kinter III, B. P. Kirtman, Z. Guo, D. Min, M. Fennessy, P. D. Dirmeyer, R. Kallummal and D. M. Straus, 2007: Validating and understanding the ENSO simulation in two coupled climate models. *Tellus*, 59A, 292-308.

Vikhliayev, Y., P. Schopf, T. DelSole, and B. Kirtman, 2007: Finding multiple basin modes in a linear ocean model. *J. Ocean Atmos. Tech.* **6**, 1033-1049.

Vikhliayev, Y., B. P. Kirtman, P. Schopf, 2007: North Pacific bred vectors in a coupled GCM. *J. Climate*, **23**, 5744-5764.

Wu, R., and B. P. Kirtman, 2007: Observed relationship of spring and summer East Asian rainfall with winter and spring Eurasian snow. *J. Climate*, **20**, 1285-1303.

Wu, R., and B. P. Kirtman, 2007: Role of Indian Ocean in the biennial transition of the Indian summer monsoon. *J. Climate*, **20**, 2147-2164.

Wu, R., and B. P. Kirtman, 2007: Regimes of local air-sea interactions and implications for performance of forced simulations. *Climate Dynamics*, **29**, 393-410.

Wu, R., and B. P. Kirtman 2007: Roles of the Indian Ocean in the Australian summer monsoon-ENSO relationship. *J. Climate*, **20**, 4768-4787.

Wu, R., B. P. Kirtman, and K. Pegion, 2007: Surface latent heat flux and its relationship with sea surface temperature in the National Centers for Environmental Prediction Climate Forecast System simulations and retrospective forecasts. *Geophys. Res. Lett.*, **34**, L17712, doi:10.1029/2007GL030751.

Yeh, S.-W., R. Wu, and B. P. Kirtman, 2007: Impact of the Indian Ocean on ENSO variability in a hybrid coupled model. *Quart. J. R. Meteor. Soc.*, **133**, 445-457.

Yeh, S.-W., and B. P. Kirtman, 2007: ENSO amplitude changes in climate change projection. *J. Climate*, **20**, 203-217.

Yeh, S.-W., B. P. Kirtman, and S.-I. An, 2007: Local versus non-local atmospheric weather noise and the North Pacific SST variability, *Geophys. Res. Lett.*, **34**, L14706, doi:10.1029/2007GL030206.

## 2006

Klinger, B. A., B. Huang, B. P. Kirtman, P. S. Schopf, and J. Wang, 2006: Monthly Climatologies of Oceanic Friction Velocity Cubed, *J. Climate*, **19**, 5700-5708.

Kug, J.-S., B. P. Kirtman, I.-S. Kang, 2006: Interactive feedback between ENSO and the Indian Ocean in an interactive coupled model. *J. Climate*, **19**, 6371-6381.

Meehl, G. A., J. M. Arblaster, D. M. Lawrence, A. Seth, E. K. Schneider, B. P. Kirtman, and D. Min, 2006: Monsoon regimes in CCSM3. *J. Climate*, **19**, 2482-2495.

Wu, R., and B. P. Kirtman, 2006: Changes in spread and predictability associated with ENSO in an ensemble coupled GCM. *J. Climate*, 19, 4378-4396.

Wu, R., B. P. Kirtman, K. Pegion, 2006: Local air-sea relationship in observations and model simulations. *J. Climate*, 19, 4914-4932.

Yeh S.-W., Y.-G. Park, B. P. Kirtman, 2006: ENSO amplitude changes in climate change commitment to atmospheric CO<sub>2</sub> doubling, *Geophys. Res. Lett.*, 33, L13711, doi:10.1029/2005GL025653.

Yeh S.-W., B. P. Kirtman, 2006: Origin of decadal El Niño–Southern Oscillation–like variability in a coupled general circulation model, *J. Geophys. Res.*, 111, C01009, doi:10.1029/2005JC002985.

## 2005

Kirtman, B. P., K. Pegion, and S. Kinter, 2005: Internal atmospheric dynamics and climate variability. *J. Atmos. Sci.*, 62, 2220-2233.

Schlosser, C. A., and B. P. Kirtman, 2005: Predictable skill and its association to sea surface temperatures in an ensemble climate simulation. *J. Geophys. Res.* 110, D19107, doi:10.1029/2005JD005835.

Wu, R., and B. P. Kirtman, 2005a: Near-annual SST variability in the equatorial Pacific in a coupled general circulation model. *J. Climate*, 18, 4454-4473.

Wu, R., and B. P. Kirtman, 2005: Role of Indian and Pacific Ocean air-sea coupling in tropical atmospheric variability. *Climate Dynamics*, 25, 155-179.

Wu, R., J. L. Kinter III and B. P. Kirtman, 2005: Discrepancy of Interdecadal Changes in the Asian Region between the NCEP-NCAR Reanalysis and Observations. *J. Climate*, 18, 3048-3067.

Yeh, S.-W., and B. P. Kirtman, 2005: Pacific decadal variability and ENSO amplitude modulation. *Geophys. Res. Lett.*, 32, doi:10.1029/2004GL02173, 2005.

## 2004

Hu, Z.-Z., E. K. Schneider, U. Bhatt and B. P. Kirtman, 2004: Potential for influence of land surface processes on ENSO. *J. Geophys. Res.*, doi:10.1029/2004JD004771, 2004.

Moon, B.-K., S.-W. Yeh, B. Dewitte, J.-G. Jhun, I.-S. Kang and B. P. Kirtman, 2004: Vertical structure and variability in the equatorial Pacific before and after the Pacific climate shift of the 1970s. *Geophys. Res. Lett.*, 31, doi:10.1029/2003GRL018829, 2004.

Wu, R., and B. P. Kirtman, 2004: The tropospheric biennial oscillation of the monsoon-ENSO system in an interactive ensemble coupled GCM. *J. Climate*, 17, 1623-1640.

Wu, R., and B. P. Kirtman, 2004: Understanding the impacts of the Indian Ocean on ENSO variability in a coupled GCM. *J. Climate*, 17, 4019-4031.

Wu, R., and B. P. Kirtman, 2004: Impacts of the Indian Ocean on the Indian summer monsoon-ENSO relationship. *J. Climate*, 17, 3037-3054.

Wu, Z., E. K. Schneider and B. P. Kirtman, 2004: Causes of low frequency North Atlantic SST variability in a coupled GCM. *Geophys. Res. Lett.*, 31, L09210, doi:10.1029/2004GL019548.

Yeh, S.-W., and B. P. Kirtman, 2004: The impact of internal atmospheric dynamics for the North Pacific SST variability, *Climate. Dyn.* doi:10.1007/s00382-004-0399-8.

Yeh, S.-W., and B. P. Kirtman, 2004: The North Pacific oscillation-ENSO and internal atmospheric variability. *Geophys. Res. Lett.*, 31, doi:10.1029/2004GL019983, 2004.

Yeh, S.-W., and B. P. Kirtman, 2004: Tropical Pacific decadal variability and ENSO amplitude modulation in a CGCM. *J. Geophys. Res. – Oceans*, 109, C11009, doi:10.1029/2004JC002442.

Yeh, S.-W., and B. P. Kirtman, 2004: Decadal North Pacific SST variability and the associated global climate anomalies in a coupled GCM. *J. Geophys. Res.*, doi:10.1029/2004JD004785.

Yeh., S.-W., J.-G. Jhun, I.-S. Kang and B. P. Kirtman, 2004: The ENSO decadal variability in a hybrid coupled model. *J. Climate*, 17, 1225-1238.

### **2003**

Kirtman, B. P., 2003: The COLA anomaly coupled model: Ensemble ENSO prediction. *Mon. Wea. Rev.*, 131, 2324-2341.

Krishnamurthy, V., and B. P. Kirtman, 2003: Variability of the Indian Ocean: Relation to Monsoon and ENSO. *Quart. J. Roy. Met. Soc.*, 129, 1623-1646.

Misra, V., P. Dirmeyer, and B. Kirtman, 2003: Dynamic downscaling of seasonal simulation over South America. *J. Climate.*, 16,103-117.

Schneider, E. K., D. G. DeWitt, A. Rosati, B. P. Kirtman, L. Ji, J. J. Tribbia, 2003: Retrospective ENSO forecasts: Sensitivity to Atmospheric model and ocean resolution. *Mon. Wea. Rev.*, 131, 3038-3060.

Vernekar, A. D., B. P. Kirtman, and M. J. Fennessy, 2003: A simulation of tropical South American summer climate variability with the NCEP Eta model. *J. Climate*, 16, 297-311.

Wu, R., and B. P. Kirtman, 2003: On the impacts of the Indian summer monsoon on ENSO in a coupled GCM. *Quart. J. Roy. Meteor. Soc.*, 129B, 3439-3468.

Wu, R., Z.-Z. Hu and B. P. Kirtman, 2003: Evolution of ENSO-related rainfall anomalies in east asia. *J. Climate*. 16, 3741-3757.

Yeh, S.-W., and B. P. Kirtman, 2003: On the relationship between the interannual and decadal SST variability in the North Pacific and the tropical Pacific Ocean. *J. Geophys. Res.*, 108 (D11), 4344, doi:10.1029/2002JD002817.

Nobre P., S. E. Zebiak, and B. P. Kirtman, 2003: Local and remote sources of tropical atlantic variability as inferred from the results of a hybrid ocean-atmosphere coupled model, *Geophys.*

*Res. Lett.*, 30 (5), 8008, doi:10.1029/2002GL015785, 2003.

## **2002**

Kirtman, B. P., Y. Fan and E. K. Schneider, 2002: The COLA global coupled and anomaly coupled ocean-atmosphere GCM. *J. Climate*, 15, 2301-2320.

Kirtman, B. P., and J. Shukla, 2002: Interactive coupled ensemble: A new coupling strategy for GCMs. *Geophys. Res. Lett.*, 29, 1029-1032.

Misra, V., P. A. Dirmeyer, B. P. Kirtman, H.-M. H. Juang and M. Kanamitsu, 2002: Regional simulation of interannual variability over South America. *J. Geophys. Res.*, 107(D20) doi:10.1029/2001JD900216, 2002.

Misra, V., P. Dirmeyer, and B. Kirtman, 2002: A comparative study of two land surface schemes in regional climate integrations over South America. *J. Geophys. Res.*, 107(D20), 8080, doi:10.1029/2001JD001284, 2002.

## **2001**

Kirtman, B. P., D. A. Paolino, J. L. Kinter III and D. M. Straus, 2001: Impact of tropical subseasonal SST variability on seasonal mean climate. *Mon. Wea. Rev.*, 129, 853-868.

## **2000**

Kirtman, B. P., and E. K. Schneider, 2000: A spontaneously generated atmospheric general circulation. *J. Atmos. Sci.*, 57, 2080-2093.

Kirtman, B. P., and J. Shukla, 2000: On the influence of the Indian summer Monsoon on ENSO. *Quart. J. Roy. Meteor. Soc.*, 126, 213-239.

## **1999**

Schneider, E. K., B. P. Kirtman, and R. S. Lindzen, 1999: Upper tropospheric water vapor and climate sensitivity. *J. Atmos. Sci.*, 56, 1649-1658.

Schneider, E. K., B. Huang, Z. Zhu, D. G. DeWitt, J. L. Kinter, B. P. Kirtman, J. Shukla, 1999: Ocean data assimilation, initialization and prediction with a coupled GCM. *Mon. Wea. Rev.*, 127, 1187-1207.

## **1998**

Kirtman, B. P., and P. S. Schopf, 1998: Decadal variability in ENSO predictability and prediction. *J. Climate*, 11, 2804-2822.

## **1997**

Kirtman, B. P., 1997: Oceanic Rossby wave dynamics and the ENSO period in a coupled model. *J. Climate*, 10, 1690-1705.

Kirtman, B. P., and S. E. Zebiak, 1997: ENSO simulation and prediction with a hybrid coupled model. *Mon. Wea. Rev.*, 125, 2620-2641.

Kirtman, B. P., and D. G. DeWitt, 1997: Comparison of atmospheric model wind stress with three different convective parameterizations: Sensitivity of tropical Pacific ocean simulations. *Mon. Wea. Rev.*, 125, 1231-1250.

Kirtman, B. P., J. Shukla, B. Huang, Z. Zhu and E. K. Schneider, 1997: Multiseasonal predictions with a coupled tropical ocean global atmosphere system. *Mon. Wea. Rev.*, 125, 789-808.

Schneider, E. K., R. S. Lindzen, B. P. Kirtman, 1997: Tropical influence on global climate. *J. Atmos. Sci.*, 54, 1349-1358.

Schneider, E. K., Z. Zhu, B. Huang, B. Giese, B. P. Kirtman, J. Shukla, and J. Carton, 1997: ENSO variability in a coupled general circulation model. *Mon. Wea. Rev.*, 125, 680-702.

## **1996**

Kirtman, B. P., and E. K. Schneider 1996: Model based estimates of equatorial Pacific wind stress. *J. Climate*, 9, 1077-1091.

## **1995**

Mechoso, C. R., A. W. Robertson, N. Barth, M. K. Davey, P. Delecluses, B. Kirtman, M. Latif, T. Nagai, S. Philander, P. Schopf, T. Stockdale, M. Suarez, O. Thual, J. Tribbia, 1995: The seasonal cycle over the tropical Pacific in general circulation models. *Mon. Wea. Rev.*, 123, 2825-2838.

## **1994**

Fennessy, M. J., J. L. Kinter III, B. P. Kirtman, L. Marx, S. Nigam, E. Schneider, J. Shukla, D. Straus, A. Vernekar, Y. Xue and J. Zhou, 1994: The simulated Indian monsoon: A GCM sensitivity study. *J. Climate*, 7, 33-43.

## **1993**

Kirtman B. P., and A. D. Vernekar, 1993: A note on wave-CISK and the evaporation-wind feedback for the Madden-Julian oscillation. *J. Atmos. Sci.*, 50, 2812-2814.

Kirtman, B. P., A. D. Vernekar, D. G. DeWitt and J. Zhou, 1993: Impact of orographic gravity wave drag on extended-range forecasts with the COLA-GCM. *Atmosfera*, 6, 3-24.

Vernekar, A. D., V. Thapliyal, R. H. Kripalani, S. V. Singh and B. P. Kirtman, 1993: Global structure of the Madden-Julian oscillation during two recent contrasting summer monsoon seasons over India. *Meteorology and Atmospheric Physics*, 52, 37-47.

## **1992**

Vernekar, A. D., J. Zhou, and B. P. Kirtman, 1992: Comparison of systematic errors in two forecasts models with similar dynamical frameworks. *Atmosfera*, 5, 207-231.

19. Other works, publications and abstracts (Invited Talks):

## **2009**

Kirtman, B. P., Decadal Predictability and Prediction in the Indo-Pacific. IAMAS IAPSO IACS 2009 Joint Assembly. June 2009 (Invited Talk).

Kirtman, B. P., Overview of perturbation techniques. Initialization of Earth System Models for Decadal Prediction. November 2009 (Invited Talk).

## **2008**

Kirtman, B. P., 2008: Recent progress in Seasonal Prediction. WMO Seasonal Prediction Workshop. Silver Spring. September 2008. (Invited Talk).

Kirtman, B. P., 2008: Multit-Model ENSO prediction with CCSM and CFS. Annual CCSM Workshop. June 2008. (Invited Talk).

Kirtman, B. P., 2008: Prospects for decadal prediction. Apen Climate Change Institute Workshop. June 2008 (Invited talk).

Kirtman, B. P. 2008: Prospects for decadal prediction. 10th International Workshop on Next Generation Climate, Models for Advanced High Performance Computing Facilities. March 2008 (Invited Talk).

Kirtman, B. P., 2008: Simulating/Predicting observed climate variability. Atlantic Ocean Marine Laboratory. April 2008. (Invited Talk).

## **2007**

Kirtman, B. P., 2007: The interactive ensemble strategy for quantifying ENSO predictability. ECMWF Annual Workshop on Predictability. November 2007. (Invited Talk).

Misra, V., L. Marx, M. Fennessy, B. Kirtman, J. L. Kinter III, 2007: A comparison of climate prediction and simulation over the tropical Pacific. COLA Technical Report Series Number 231.

## **2006**

Kirtman, B. P., 2006: Why Do CGCM have too much variability in the western Pacific. International Research Institute (IRI) for Climate Prediction. November 2006 (Invited Talk),

Schneider, E. K., M. Fan, B. P. Kirtman, P. A. Dirmeyer, 2006: Potential effects of Amazon deforestation on tropical climate. COLA Technical Report Series Number 226.

Misra, V., L. Marx, J. L. Kinter III, B. P. Kirtman, Z. Guo, D. Min, M. Fennessy, P. A. Dirmeyer, R. Kallummal, D. M. Straus, 2006: Validating ENSO simulation in coupled climate models. COLA Technical Report Series, Number 210.

Kirtman, B. P., 2006: Decadal Predictability. American Geophysical Union Fall Meeting. December 2006. (Invited Talk).

Kirtman, B. P., 2006: ENSO Predictability. Climate Diagnostics and Prediction Workshop. October 2006. (Invited Talk).

Kirtman, B.P., 2006: Seamless Prediction: The Weather and Climate Connection. The Canadian CLIVAR Research Network Workshop. March 2006. (Invited Talk).

## **2005**

Kirtman, B. P., 2005: Coupled Model Climate Predictability and Prediction, WMO Bulletin, Vol. 54, No. 3.

Kirtman, B. P., 2005: Initialization strategies for the CFS. Climate Diagnostics and Prediction Workshop. October 2005. (Invited Talk).

Kirtman, B. P., 2005: Tropical coupled feedbacks and climate variability National Centers for Environmental Prediction (NCEP), Environmental Modeling Center (EMC) Seminar Series. October 2005. (Invited Talk).

Kirtman, B. P., 2005: VAMOS Modeling Strategy. WCRP Pan-Monsoon Workshop. June 2005. (Invited Talk).

Kirtman, B. P., 2005: CLIVAR Modeling. 8<sup>th</sup> VAMOS Panel Meeting Workshop, Mexico City Mexico, March 2005. (Invited Talk).

Kirtman, B. P., 2005: Modeling Challenges: ENSO, East Pacific and VOCALS. 8<sup>th</sup> VAMOS Panel Meeting Workshop, Mexico City Mexico, March 2005. (Invited Talk).

## **2004**

Kirtman, B. P., 2004: Internal Atmospheric and Oceanic Dynamics and Climate Variability. International Research Institute for Climate Prediction, Lamont-Doherty Earth Observatory. November 2004. (Invited Talk).

Kirtman, B. P., 2004: Importance of Air-Sea Coupling for Ocean-Atmosphere Co-Variability. Asia-Pacific Climate Network Workshop. November 2004. (Invited Talk).

Kirtman, B. P., 2004: Internal Atmospheric Dynamics and Climate Variability. Laboratoria Nacional de Computacao Cientifica (LNCC), Petropolis Brazil. May 2004. (Invited Talk).

Kirtman, B. P., 2004: Internal Atmospheric Dynamics and Climate Variability. National Centers for Environmental Prediction (NCEP), Environmental Modeling Center (EMC) Seminar Series. February 2004. (Invited Talk).

Kirtman, B. P., 2004: Summer Monsoon – Global Ocean Interactions. International Asian Monsoon Symposium. East-West Center, University of Hawaii, Honolulu, HI. February 2004. (Invited Talk).

Kirtman, B. P., 2004: Internal Atmospheric Dynamics and Climate Variability. Earth System Science Interdisciplinary Center (ESSIC) Seminar Series. University of Maryland – College Park, MD. February 2004. (Invited Talk).



## **2003**

Kirtman, B. P., D. Min, P. S. Schopf, E. K. Schneider, 2003: A new approach for coupled GCM sensitivity studies. COLA Technical Report Series, Number 154.

Kirtman, B. P., 2003: The Interactive Ensemble: Internal Atmospheric Dynamics and ENSO. Current Perspectives on Predictability for the Atmosphere and Ocean. Courant Institute for Mathematical Sciences. December 2003. (Invited Talk).

Kirtman, B. P., 2003: The COLA Anomaly Coupled Prediction System: Ensemble Forecasts. International Research Institute. October 2003. (Invited Talk).

Kirtman, B. P., 2003: The interactive ensemble coupling strategy. State University of New York-Stony Brook. September 2003. (Invited Talk).

Kirtman, B. P., 2003: The interactive ensemble coupling strategy. Canadian Centre for Climate Modeling and Analysis. May 2003. (Invited Talk).

Kirtman, B. P., 2003: Initializing coupled forecasts. Coupled Initialization and Data Assimilation Workshop. Portland Oregon, April 2003. (Invited Talk).

Kirtman, B. P., 2003: The interactive ensemble coupled modeling strategy. National Center for Atmospheric Research, Scientific Computing Division User Forum, May 2003. (Invited Talk).

## **2002**

Kirtman, B. P., J. Shukla, M. Balmaseda, N. Graham, C. Penland, Y. Xue, S. Zebiak, 2002: Current status of ENSO forecast skill. A report to the Climate Variability and Predictability (CLIVAR) Numerical Experimentation Group (NEG), CLIVAR Working Group on Seasonal to Interannual Prediction. [Available online at [http://www.clivar.org/publications/wg\\_reports/wgsip/nino3/report.htm](http://www.clivar.org/publications/wg_reports/wgsip/nino3/report.htm).]

Kirtman, B. P., 2002: ENSO-Monsoon Interactions in the COLA and CCCM2 Coupled GCMs. NCAR CCSM Climate Variability Working Group Meeting. Breckenridge Colorado. (Invited Talk).

## **2001**

Kirtman, B. P., 2001: ENSO-Monsoon Interactions: Coupled Modeling. International Conference on Forecasting Monsoons From Days to Years. New Delhi, India. (Invited Talk).

Kirtman, B. P., 2001: ENSO-Monsoon Interactions. National Center for Atmospheric Research (NCAR) Summer Colloquium. Boulder, Colorado. (Invited Talk).

Kirtman, B. P., 2001: Tropical predictability: National Center for Atmospheric Research (NCAR) Summer Colloquium. Boulder, Colorado. (Invited Talk).

## **2000**

Kirtman, B. P., 2000: Non-linear Theories of ENSO. El Niño: Past, Present and Future Workshop. Seabrook Island, South Carolina. (Invited Talk).

Kirtman, B. P., 2000: Current Status of ENSO Prediction. MJO-ENSO Workshop. Princeton, New Jersey. (Invited Talk).

### **1999**

Kirtman, B. P., 1999: Empirically Reducing the Systematic Error of an OGCM. COLA Technical Report 77

Kirtman, B. P., 1999: ENSO prediction. Invited talk at the Korean Meteorology Administration. (Invited Talk).

Kirtman, B. P., 1999: ENSO predictability. Invited talk at the Seoul National University. (Invited Talk).

Kirtman, B. P., 1999: The predictability of ENSO. Sixth Regional Workshop on Asian/African Monsoon Emphasizing Training Aspects. Nairobi, Kenya, January 1999. (Invited Talk).

Kirtman, B. P., 1999: The state-of-the-art in ENSO forecasting: A comparison of various prediction systems. Sixth Regional Workshop on Asian/African Monsoon Emphasizing Training Aspects. Nairobi, Kenya, January 1999. (Invited Talk).

Kirtman, B. P., 1999: Influence of Indian Monsoon on ENSO. Sixth Regional Workshop on Asian/African Monsoon Emphasizing Training Aspects. Nairobi, Kenya, January 1999. (Invited Talk).

### **1998**

Kirtman, B. P., 1998: Decadal Variability in ENSO Prediction and Predictability. Goddard Laboratory for Atmospheres- Climate and Radiation Branch, June 9, 1998. (Invited Talk).

Kirtman, B. P., 1998: ENSO Prediction and Predictability. Lamont-Doherty Earth Observatory Seminar Series. May 15, 1998. (Invited Talk).

### **1997**

Kirtman, B. P., 1997: Decadal Variability in ENSO Prediction and Predictability. Computational Sciences and Informatics Seminar Series, George Mason University, Fairfax Virginia. October, 1997. (Invited Talk).

### **1996**

Kirtman, B. P., 1996: ENSO Prediction. Invited talk presented at the Workshop on El Niño, Southern Oscillation and Monsoon. International Center for Theoretical Physics (ICTP) Trieste, Italy. (Invited Talk).

Kirtman, B. P., 1996: ENSO Predictability. Invited talk presented at the Workshop on El Niño, Southern Oscillation and Monsoon. International Center for Theoretical Physics (ICTP) Trieste, Italy. (Invited Talk).

### **1995**

Kirtman, B. P., 1995: Model Based Estimates of Equatorial Pacific Wind Stress. Invited presentation at NMC seminar series. (Camp Springs, MD). (Invited Talk).

## 1994

Kirtman, B. P., 1994: Assessment of the COLA coupled model predictions and predictability. The Oceanography Society Pacific Basin Meeting, Honolulu, Hawaii July 19-22. (Invited Talk).

20. Other works accepted for publication:

## 2007

Contributing Author Intergovernmental Panel on Climate Change (IPCC) 4<sup>th</sup> Assessment Report

## PROFESSIONAL

21. Funded Research Performed (partial list):

Cooperative Institute for Marine and atmospheric Studies	NOAA PI: B. Kirtman	10/1/2015-9/30/2020 \$125,000,000
Role of Mesoscale Ocean Dynamics in Air-Sea Coupling over to the Southern Ocean	NSF co-PI: Kirtman	6/1/2016-5/31/2019 \$830,000
Role of ocean eddies in decadal prediction	NSF PI: B. Kirtman	7/1/2014-6/30/2019 \$2,600,000
Towards Resolving the Role of Aghulas Leakage in 20 <sup>th</sup> Century Global Climate Change	NSF Co-PI: Kirtman	3/1/2012-2/28/2017 \$740,000
Revisiting Coupled Instability Theory and the Initiation of ENSO	NSF PI: B. Kirtman	3/1/2015-2/28/2017 \$130,000
A U. S. National Multi-Model Ensemble ISI Prediction System - extension	NOAA PI: B. Kirtman	8/1/2014-7/31/2015 \$120,000
A U. S. National Multi-Model Ensemble ISI Prediction System – operations	NOAA PI: B. Kirtman	8/1/2015-7/31/2018 \$360,000
Super modeling by combining imperfect Models	European Com. PI: B. Kirtman	6/6/2013-6/5/2014 \$188,649
Leveraging ISI multi-model prediction for Navy operations	ONR PI: B. Kirtman	2/1/2013-1/31/2017 \$300,000
An integration and evaluation framework for ESPC coupled models	ONR PI: B. Kirtman	7/1/2013-12/31/2016 \$358,747

Accelerated Prediction of Polar Ice and Global Ocean (APPIGO)	ONR PI: B. Kirtman	1/1/2014-12/31/2016 \$224,731
A U. S. National Multi-Model Ensemble ISI Prediction System	NOAA PI: B. Kirtman	8/1/2012-7/31/2014 \$259,626
Collaborative Research: Understanding Atlantic Decadal-to-Multidecadal Variability and Predictability	NSF PI: B. Kirtman	9/1/2011-8/30/2014 \$354,389
NOAA Climate Test Bed (CTB) National Multi-Model Ensemble (NMME) Prediction System Phase-1 Implementation Plan	NOAA PI: B. Kirtman	7/1/2011-6/30/2012 \$141,733
Role of Atmospheric Internal Variability in the Atlantic Meridional Overturning Circulation	NOAA PI: B. Kirtman	7/1/2011-6/30/2014 \$89,978
Decadal Prediction over North America: Atlantic vs. Pacific Processes	NOAA PI: B. Kirtman	8/1/2010-7/31/2013 \$427,050
Type 1: CR: Integration of Decadal Climate Prediction, Ecological Models and Human Decision Making Models to Support Climate Resilient Agriculture in the Argentine Pampas	NSF PI: G. Podesta	5/1/2011-4/30/2014 \$532,155
Atmosphere-Land Coupling and the Predictability of North American Drought	NOAA PI: B. Kirtman	8/1/2010-7/31/2013 \$438,000
What Causes the Tropical Atlantic SST Bias In CCSM3	NSF PI: S.-K. Lee	8/15/2009-7/31/2012 \$366,322
Atmosphere-Ocean Interaction and Summer Rainfall variability and predictability in the Intra-American Region	NOAA PI: B. Kirtman	8/1/2008-6/30/2013 \$74,996
Collaborative Research: PetaApps: New Coupling Strategies and Capabilities for Petascale Climate Modeling	NSF PI: Kirtman	3/1/2008-2/28/2012 \$225,352
Collaborative Research: Westerly Wind Burst Modulation by the Sea Surface Temperature for ENSO Prediction	NSF PI: Kirtman	4/1/2008-3/31/2011 \$226,520
Multi-Model Ensemble Climate Prediction With CCSM and CFS	NOAA PI: Kirtman	5/1/2008-4/30/2011 \$383,848
Why do CGCMs Have too Much ENSO Variability in the Western Pacific	NOAA PI: Kirtman	7/1/2008-6/30/2011 \$363,483
Climate Noise and Climate Predictability	NOAA	2/1/2006-1/31/2009

	PI: Kirtman	\$363,979
Interactive Ensembles: A New Strategy for Coupled Ocean-Atmosphere Predictability Research	NSF, NOAA PI: Kirtman	9/1/2001-8/31/2004 \$600,000
Predictability of Earth's Climate	NOAA, NSF NASA PI: Shukla CoPIs: DelSole, Dirmeyer, Huang, Kinter, Kirtman, Klinger, Krishnamurthy, Misa, Schneider, Schopf, Straus	1/1/2003-12/31/2008 \$15,000,000
Dynamical Predictability and Present-Day Forecast Skill of Subseasonal Variability	NOAA PI: Waliser CoPIs: Kirtman, Pan, Schubert	1/2/2005-1/31/2008 \$574,300
Variability of the Climate System: Understanding Observed Low Frequency Variability of SST in the North Atlantic	NSF PI: Schneider CoPI: Kirtman	10/1/2003-9/30/2005 \$479,494
COLA Contributions to NOAA ARCs Collaborative Research on Intra-seasonal to Interannual Climate Prediction	NOAA PI: Kinter CoPI: Kirtman	7/1/2005-6/30/2008 \$1,080,000
Predictability and Variability of the Present Climate	NOAA, NSF NASA PI: Shukla CoPI: Kinter, Schneider, Schopf, Straus, Dirmeyer, Huang, Kirtman	1/1/1993-12/21/2002 \$13,750,000
Variability of the Climate System	NSF PI: Schnieder	10/1/1999-9/30/2003 \$374,717
Demonstrating the Value of NASA Research Satellite Data, Data Assimilation Products and Models for Improving Seasonal Prediction of Tropical Climate	NASA PI: Kinter CoPI: Kirtman, Huang, Zhao	4/1/2005-3/31/2008 \$1,500,000
A High Resolution Regional Coupled Ocean-Atmosphere Model to Simulate and Predict Pan American Climate	NOAA PI: Kirtman CoPI: Vernekar	5/1/1998-4/30/2001 \$285,559

## 22. Editorial responsibilities:

Reviewer for Journal of Atmospheric Sciences, Monthly Weather Review, Journal of Climate, Journal of Physical Oceanography, JGR Oceans, JGR Atmospheres, Geophysical Research Letters, Climate Dynamics, Tellus A, Tellus B, Quarterly Journal of the Royal Meteorological Society,

Mausum, Atmosphere, Pure and Applied Geophysics, Ocean Modeling.

Associate Editor: American Geophysical Union J. of Geophys. Res. (Atmos), 2013-present  
Associate Editor: Climate Dynamics, 2005-2006  
Executive Editor: Climate Dynamics, 2007-present.  
Editor: Experimental Long-Lead Forecast Bulletin, 1998-2008

23. Professional and Honorary Organizations:  
American Geophysical Union  
American Meteorological Society

24. Honors and Awards:  
Editors' Citation for Excellence in Refereeing for *Geophysical Research Letters*  
  
2008 Outstanding Alumni Award University of Maryland – College Park  
Department of Atmospheric and Oceanic Sciences

25. Post-Doctoral Fellowships: None

26. Other Professional Activities:

Scientific Organizing Committee (Member), 2004: Sloan Foundation Workshop on The Known, Unknown and Unknowable in Weather Predictability

Scientific Organizing Committee (Member), 2004: Ensemble Methods Workshop

Scientific Organizing Committee (Chair), 2005: Sloan Foundation Workshop on the Known, Unknown and Unknowable in Climate Predictability

Scientific Organizing Committee (Chair), 2007: First World Climate Research Program Seasonal Prediction Workshop.

Scientific Organizing Committee (Member), 2009: Initialization of Earth System Models for Decadal Prediction.

## TEACHING

27. Teaching Awards Received: Bruce Albrecht Award for Excellence in Atmospheric Science Teaching - 2016

28. Teaching Specialization: Climate dynamics, climate modeling, large-scale ocean-atmosphere interactions, ENSO theory, atmospheric and oceanic circulation, numerical methods

Courses Taught:

MPO 672 Climate Dynamics  
MPO 668 ENSO Dynamics, Predictability and Prediction  
MPO 665 Atmospheric General Circulation  
RSM 454 Scientific Communication  
MSC 406 Atmospheric Dynamics II  
MSC 307 Introduction to the Physics of Climate

MSC 305 Atmospheric Thermodynamics  
MSC 102 Introduction to Weather and Climate

29. Thesis and Dissertation Advising/Post-doctoral student supervision:

Mary Ellen Verona, Ph.D., 2003 (Advisor)  
Robert Burgman, Ph. D., 2005 (Co-advisor)  
Yury Vikliaev, Ph.D., 2005 (Co-advisor)  
Susan Bates, Ph. D., 2006 (Committee Member)  
Kathleen Pegion, Ph.D., 2007 (Committee Member)  
Meizhu Fan, Ph. D., 2007 (Committee Member)  
Carlos Cruz, Ph. D., 2007 (Committee Member)  
Xiahua Pan, Ph. D., 2007 (Committee Member)  
Daeho Jin, Ph. D., 2007 (Advisor)  
Bala Narapusetty, Ph. D., 2008 (Advisor)  
Leo Siqueira, Ph. D. 2010 (Advisor)  
Hosmay Lopez, Ph. D., 2013 (Advisor)  
Sarah Larson, Ph. D., 2016 (Advisor)  
Johnna Infanti, Ph. D., 2016 (Advisor)

Post-Doctoral Supervision:

Dr. Yun Fan (2000-2002)  
Dr. Renguang Wu (2002-2003)  
Dr. Sang-Wook Yeh (2002-2003)  
Dr. Dughong Min (2002-2004)  
Dr. Yury Vikliaev (2006)  
Dr. Christian Stan (2005-2007)  
Dr. Eunsil Jang (2013-present)  
Dr. Dian Putrasahan (2012-2015)  
Dr. Leo Siqueira (2015-present)  
Dr. Ray Bell (2016-present)

SERVICE

30. University Committee and Administrative Responsibilities:

Graduate Curriculum Committee (member), School of Computational Sciences, George Mason University 2003-2006

Promotions and Tenure Committee (at large member elected by college faculty), College of Science, George Mason University, 2006-2007

Graduate Admissions and Recruitment Committee (chair), Department of Climate Dynamics, George Mason University, 2002-present.

Associate Dean for Research, Rosenstiel School for Marine and Atmospheric Research, 2011-present

31. Community Activities:

- 2003-2007: Chair: Task Force on Seasonal Prediction (TFSP). The TFSP is a World Climate Research Program (WCRP) committee. The WCRP is sponsored by International Council for Science (ICSU), World Meteorological Society (WMO) and the Intergovernmental Oceanographic Commission. The WMO is a United Nations Specialized Agency.
- 2003-present: Co-Chair: WCRP International Climate Variability (CLIVAR) Working Group for Seasonal-to-Interannual Prediction (WGSIP)
- 1998-present: Member: WCRP-CLIVAR Working Group for Seasonal-to-Interannual Prediction (WGSIP).
- 2000-2002: Member: WCRP-CLIVAR Ad-Hoc Working Group for Regional Climate Modeling.
- 2001-2003: Member: US CLIVAR Austral-Asian Monsoon Working Group
- 2001-2002: Member: WMO Inter-commission Task Team for Regional Climate Centers
- 2001-2003: Member: WMO Inter-commission Expert Team for Long Range Forecast Verification
- 2004-2005: Member: WCRP Coordinated Observations Prediction of the Earth System (COPEs) Task Force
- 2004-2010: Member: WCRP Modeling Panel
- 2004-2010: Member: NOAA Climate Test Bed Climate Science Team
- 2007-2010: Co-Chair: NOAA Climate Test Bed Science Team
- 2006-2008: Member: Canadian CLIVAR Network Board of Directors
- 2005-2009: Member: US CLIVAR Prediction, Predictability and Applications Interface Panel
- 2008-2009: Co-Chair: US CLIVAR Prediction, Predictability and Application Interface Panel
- 2009-2010: Member: National Research Council Committee on Intraseasonal-to-Interannual Predictability
- 2010-present: Member: NOAA PACE post-doctoral fellowship panel
- 2009-2011: Member: International Clivar VAMOS panel
- 2010-2013: Co-Chair IPCC AR5 Working Group 1 – Chapter 11.
- 2013-2015: Chair: NOAA CPO Seasonal Prediction Task Force
- 2013-2015: Member: NSF Science and Technology Center Site Visit Panel for CMMAP
- 2012-2014: Member: NOAA CPO CMIP5 Task Force
- 2012-present: Member: Executive Board Florida Climate Institute
- 2012-2016: Member: NOAA Climate and Global Change Post-Doc Fellowship Committee
- 2015-2016: Chair: NOAA Climate and Global Change Post-Doc Fellowship Committee
- 2015-present: Member: UCACN (UCAR-NCEP) Modeling Advisory Committee
- 2015-present: Member: NCAR Climate and Global Change Division Advisory Panel
- 2015-present: Member: NCAR CISL Advisory Panel
- 2015-present: Member: AMS Committee on Climate Variability and Change