

Elizabeth A. Barnes

CONTACT INFORMATION

Division of Ocean & Climate Physics,
Lamont-Doherty Earth Observatory,
61 Route 9W, Box 1000,
Palisades, NY 10964-8000
email: eabarnes@ldeo.columbia.edu
web: www.atmos.washington.edu/~eabarnes

EDUCATION

Ph.D. Atmospheric Sciences **2007-2012**
University of Washington, Seattle, WA USA

- Degree granted March 2012
- Department of Atmospheric Sciences, University of Washington
- Advisor: Dr. Dennis Hartmann
- Dissertation title: “Influence of meridional constraints and eddy feedbacks on low-frequency variability and its response to climate change”

B.S. Physics **2003-2007**
University of Minnesota, Minneapolis, MN USA

- *Summa Cum Laude*, Upper and Lower Division Honors
- Honors thesis: “Packing dynamics of a horizontally vibrated monolayer”

B.S. Mathematics **2003-2007**
University of Minnesota, Minneapolis, MN USA

- *Summa Cum Laude*, Lower Division Honors

ACADEMIC EXPERIENCE

Lamont-Doherty Earth Observatory, Palisades, NY USA **Apr. 2012-**
– NOAA Climate & Global Change Fellow, UCAR
– Host: Dr. Lorenzo Polvani

University of Washington, Seattle, WA USA **Sept. 2007-Mar. 2012**
– Department of Atmospheric Sciences graduate student
– Advisor: Dr. Dennis Hartmann
– “Influence of meridional constraints and eddy feedbacks on low-frequency variability and its response to climate change”

University of Reading, Reading, England, UK **June-Sept. 2007**
– Department of Meteorology
– Advisors: Professor Julia Slingo, Sir Professor Brian Hoskins, Dr. Kevin Hodges
– International Research Experience Program
– Funded by the National Science Foundation through the National Center for Earth-surface Dynamics
– Focus: low-frequency trends of blocking anticyclones due to climate change

Civil Engineering & Ecology

NCED, Minneapolis, MN USA **June 2006-Sept. 2007**
– National Center for Earth-surface Dynamics (NCED)
– Advisors: Dr. Efi Foufoula-Georgiou and Dr. Miki Hondzo (University of Minnesota) and Dr. Mary Power (University of California - Berkeley).
– Focus: upscaling algae dynamics from the rock to watershed scales in the Eel River using 13 years of data

AWARDS

NOAA Climate and Global Change Fellow

- Awarded NOAA Climate and Global Change Postdoctoral Fellowship, Mar. 2012-

Offered LDEO Postdoctoral Fellowship

- Offered Lamont-Doherty Earth Observatory Postdoctoral Fellowship, Mar. 2012

University of Washington

- Top Scholar Award, The Graduate School, 2007

Barry M. Goldwater Scholarship and Excellence in Education Foundation

- Goldwater Scholarship, 2006

University of Minnesota

- Hagstrum Award in Physics, Physics & Astronomy, 2007
- Tate Scholarship, Institute of Technology, 2006
- A.O.C. Nier Undergraduate Scholarship in Physics, Physics & Astronomy, 2005
- Tate Scholarship, Institute of Technology, 2005
- Harry & Viola St. Cyr Scholarship, Physics & Astronomy, 2004
- Liljenstople-Wejnarth Scholarship, Institute of Technology, 2004
- Iron Range Scholarship, I.T. Honors, 2003
- Undergraduate Research Assistant Scholarship, 2003

SERVICE & TEACHING

Reviewer for Peer-Reviewed Journals **2010-**

- Journal of the Atmospheric Sciences, Journal of Climate, Geophysical Research Letters

Faculty Hiring Committee, College of the Environment, University of Washington **2010-2011**

- Graduate representative on committee for joint-faculty hire in the College of the Environment, tasks included reading applications, interviewing candidates, organizing graduate students and presenting results to the voting faculty

Department Lead Teaching Assistant **2010-2011**

- Organized teaching assistants in the Department of Atmospheric Science, UW. Tasks included leading TA training and filling-in for TAs when needed.

Teaching Assistant **2009-2010**

- ATMS S 552 Objective Analysis: graded homeworks, held office hours and assisted students with the material outside of lecture, guest lectured
- ATM S 101 Weather: taught 3 1-hour sections per week, designed homeworks and exams, held office hours

Mathematics Tutor **2002-2012**

- tutored more than 100 students in all areas of mathematics

PUBLICATIONS

- **Barnes, E.A.** and D.L. Hartmann, 2012: Detection of Rossby wave breaking and its response to shifts of the midlatitude jet with climate change. *Journal of Geophysical Research*, in press.
- **Barnes, E.A.** and C.I. Garfinkel, 2012: Barotropic impacts of surface friction on eddy kinetic energy and momentum fluxes: an alternative to the barotropic governor. *Journal of Atmospheric Sciences*, under review.

- **Barnes, E.A.** and D.L. Hartmann, 2012: The global distribution of eddy-length scales. *Journal of Climate*, **25**, 3409-3416.
- **Barnes, E.A.**, J. Slingo and T. Woollings, 2011: A methodology for the comparison of blocking climatologies across indices, models and climate scenarios. *Climate Dynamics*, doi:10.1007/s00382-010-0767-5.
- **Barnes, E.A.** and D.L. Hartmann, 2011: Rossby-wave scales, propagation and the variability of eddy-driven jets. *Journal of the Atmospheric Sciences*, **68**, 2893-2908.
- **Barnes, E.A.** and D.L. Hartmann, 2010: Influence of eddy-driven jet latitude on North Atlantic jet persistence and blocking frequency in CMIP3 integrations. *Geophysical Research Letters*, **37**, L23802, doi:10.1029/2010GL045700.
- **Barnes, E.A.** and D.L. Hartmann, 2010: Testing a theory for the effect of latitude on the persistence of eddy-driven jets using CMIP3 simulations. *Geophysical Research Letters*, **37**, L15801, doi:10.1029/2010GL044144.
- **Barnes, E.A.**, D.L. Hartmann, D.M.W. Frierson and J. Kidston, 2010: The effect of latitude on the persistence of eddy-driven jets. *Geophysical Research Letters*, **37**, L11804, doi:10.1029/2010GL043199.
- **Barnes, E.A.** and D.L. Hartmann, 2010: Dynamical feedbacks of the Southern Annular Mode in winter and summer. *Journal of the Atmospheric Sciences*, **67**, 2320-2330.
- **Barnes, E.A.** and D.L. Hartmann, 2010: Dynamical feedbacks and the persistence of the NAO. *Journal of the Atmospheric Sciences*, **67**, 851-865.
- **Barnes, E.A.**, M.E. Power, E. Foufoula-Georgiou, M. Hondzo and W.E. Dietrich, 2007: Upscaling river biomass using dimensional analysis and hydrogeomorphic scaling. *Geophysical Research Letters*, **34**, doi:10.1029/2007GL031931.
- Gangodagamage, C., **E.A. Barnes** and E. Foufoula-Georgiou, 2007: Scaling in River Corridor Widths Depicts Organization in Valley Morphology. *Geomorphology*, **91**, doi: 10.1016/j.geomorph.2007.04.014.
- **Barnes, E.A.** and D.L. Hartmann, Oct. 2011: The effect of latitude on jet variability. [Invited Talk] MIT Atmospheric Science Seminar, MIT, Cambridge, MA.
- **Barnes, E.A.** and D.L. Hartmann, Oct. 2011: The effect of latitude on jet variability. [Invited Talk] Division of Ocean and Climate Physics (DOCP) Seminar Series, Lamont-Doherty Earth Observatory, Palisades, NY.
- **Barnes, E.A.**, D.L. Hartmann, T. Woollings and J. Slingo, July 2011: Constraints on midlatitude jet variability with applications to blocking in a changing climate. [Invited Talk] Dept. of Meteorology, University of Reading, Reading UK.
- **Barnes, E.A.**, D.L. Hartmann, T. Woollings and J. Slingo, July 2011: Jet persistence and blocking frequency in ERA-40 Reanalysis and the CMIP3 integrations. [Invited Talk] Climate Science Seminar, U.K. Met Office, Exeter, UK.

SELECTED
PRESENTATIONS

- **Barnes, E.A.**, D.L. Hartmann, T. Woollings and J. Slingo, June 2011: Jet persistence and blocking frequency in ERA-40 Reanalysis and the CMIP3 integrations. [Conference talk] U.K Royal Meteorological Society (RMets) Conference, 2011
- **Barnes, E.A.**, D.L. Hartmann, T. Woollings and J. Slingo, June 2011: Effect of latitude on the variability of eddy-driven jets. [Conference talk] Atmosphere/Ocean Fluid Dynamics (AOFD) Conference 2011.