

## Karen M. Shell

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### Associate Professor, Atmospheric Science Climate Science Program Head

#### CONTACT INFORMATION

College of Earth, Ocean, and Atmospheric Sciences  
Oregon State University  
104 CEOAS Admin Bldg  
Corvallis, OR 97331-5503

*Voice:* (541) 737-0980  
*Fax:* (541) 737-2064  
*E-mail:* kshell@coas.oregonstate.edu  
*WWW:* oregonstate.edu/~shellk

#### PREVIOUS POSITIONS

**College of Earth, Ocean, and Atmospheric Sciences**, Oregon State University, Corvallis, OR  
Assistant Professor, 2006-2013

**Advanced Study Program**, National Center for Atmospheric Research, Boulder, CO  
Postdoctoral Fellow, 2004-2006

#### EDUCATION

**Scripps Institution of Oceanography**, University of California, San Diego, La Jolla, CA  
Ph.D., September 2004

- Dissertation Title: A new type of idealized global climate model and its application to dust-climate interactions
- Advisor: Richard Somerville
- Climate Sciences Curricular Group

**Geophysical Fluid Dynamics Summer Program**, Woods Hole Oceanographic Institution, Woods Hole, MA

Fellow, Summer 2000

- Supervisor: Isaac Held
- Topic: Superrotation in an axisymmetric shallow water model of the upper troposphere

**Harvey Mudd College**, Claremont, CA

B.S. Physics, May 1996

- Graduated with Honors in Physics
- Graduated with High Distinction

#### AWARDS

L.L. Steward Faculty Development Fund Award, 2015

NASA Earth System Science Fellowship, 2002-2004

Scripps Institution of Oceanography Graduate Student Fellowship, Spring 2001

University of California Regents Fellowship, 1998-1999

Outstanding Student Presentation Award for 13th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, 2001

#### PUBLICATIONS

Underline indicates student.

Rupp, David E., Sihan Li, Philip W. Mote, **Karen M. Shell**, Neil Massey, Sarah Sparrow, David C. H. Wallom, and Myles R. Allen, 2016: Seasonal spatial patterns of projected anthropogenic warming

in complex terrain: a modeling study of the western US, *Clim. Dyn.*, submitted.

Skyllingstad, Eric D., **Karen M. Shell**, Lee Collins, Chris Polashenski (2015), Simulation of the melt season using a resolved sea ice model with snow cover and melt ponds, *J. Geophys. Res. Oceans*, **120**, 5194-5215, doi:10.1002/2014JC010569.

Gordon, N.D., P.M. Forster, A.K. Jonko, **K.M. Shell**, 2013: An Observationally Based Constraint on the Water-Vapor Feedback, *J. Geophys. Res.*, **118** (22), 12435-12443. doi:10.1002/2013JD020184. [Featured in *EOS*]

Dalton, Meghan M., and **Shell, Karen M.**, 2013: Comparison of short-term and long-term radiative feedbacks and variability in 20th century global climate model simulations, *J. Clim.*, **26**(24) 10051–10070. doi:10.1175/JCLI-D-12-00564.1.

**Shell, Karen M.**, 2013: Consistent differences in climate feedbacks between atmosphere-ocean GCMs and atmospheric GCMs with slab-ocean models, *J. Clim.*, **26**(12) 4264–4281. doi: 10.1175/JCLI-D-12-00519.1.

Jonko, Alexandra, **Karen M. Shell**, Benjamin M. Sanderson, and Gokhan Danabasoglu, 2013: Climate feedbacks in CCSM3 under changing CO<sub>2</sub> forcing. Part II: Variation of climate feedbacks and sensitivity with forcing, *J. Clim.*, **26**, 2784–2795, doi: 10.1175/JCLI-D-12-00479.1.

Sanderson, Benjamin M. and **Karen M. Shell**, 2012: Model-specific radiative kernels for calculating cloud and non-cloud climate feedbacks, *J. Clim.*, **25**(21), 7607–7624. doi:10.1175/JCLI-D-11-00726.1.

Jonko, Alexandra K., **Karen M. Shell**, Benjamin M. Sanderson, and Gokhan Danabasoglu, 2012: Climate feedbacks in CCSM3 under changing CO<sub>2</sub> forcing. Part I: Adapting the linear radiative kernel technique to feedback calculations for a broad range of forcings, *J. Clim.*, **25**, 5260–5272, doi:10.1175/JCLI-D-11-00524.1.

Bitz, C. M., **K. M. Shell**, P. R. Gent, D. Bailey, G. Danabasoglu, K. C. Armour, M. M. Holland, and J. T. Kiehl, 2012: Climate Sensitivity of the Community Climate System Model Version 4, *J. Clim.*, **25**, 3053–070, doi: 10.1175/JCLI-D-11-00290.1.

Held, Isaac M., and **Karen M. Shell**, 2012: Using Relative Humidity as a State Variable in Climate Feedback Analysis, *J. Clim.*, **25**, 2578–2582. doi: 10.1175/JCLI-D-11-00721.1.

Gettelman, A., J. E. Kay, **K. M. Shell**, 2012: The Evolution of Climate Sensitivity and Climate Feedbacks in the Community Atmosphere Model. *J. Climate*, **25**, 1453–1469. doi: 10.1175/JCLI-D-11-00197.1.

Flanner, M. G., **K. M. Shell**, M. Barlage, D. K. Perovich, and M. A. Tschudi, 2011: Radiative forcing and albedo feedback from the Northern Hemisphere cryosphere between 1979 and 2008, *Nature Geosci.*, **4**, 151–155. doi: 10.1038/ngeo1062. [cover story, also see press coverage below]

Sanderson, Benjamin M., **Karen M. Shell**, and William Ingram, 2009: Climate feedbacks determined using radiative kernels in a multi-thousand member ensemble of AOGCMs, *Clim. Dyn.*, doi: 10.1007/s00382-009-0661-1.

Soden, Brian J., Isaac M. Held, Robert Colman, **Karen M. Shell**, Jeffrey T. Kiehl, and Christine A. Shields, 2008: Quantifying climate feedbacks using radiative kernels, *J. Clim.*, **21**, 3504–3520. doi: 10.1175/2007JCLI2110.1.

**Shell, Karen M.**, Jeffrey T. Kiehl, and Christine A. Shields, 2008: Using the radiative kernel technique to calculate climate feedbacks in NCAR's Community Atmospheric Model, *J. Clim.*, **21**, 2269–2282. doi: 10.1175/2007JCLI2044.1.

**Shell, K. M.**, and R. C. J. Somerville (2007), Sensitivity of climate forcing and response to dust optical properties in an idealized model, *J. Geophys. Res.*, **112**, D03206, doi:10.1029/2006JD007198.

**Shell, K. M.**, and R. C. J. Somerville (2007), Direct radiative effect of mineral dust and volcanic aerosols in a simple aerosol climate model, *J. Geophys. Res.*, **112**, D03205, doi:10.1029/2006JD007197.

**Shell, Karen M.**, and Richard C. J. Somerville, 2005: A generalized energy balance climate model with parameterized dynamics and diabatic heating, *J. Clim.*, **18**: 1753–1772.

**Shell, Karen M.**, and Isaac M. Held, 2004: Abrupt transition to strong superrotation in an axisymmetric model of the upper troposphere. *J. Atmos. Sci.*, **61**, 2928–2935.

**Shell, K. M.**, R. Frouin, S. Nakamoto, and R. C. J. Somerville, 2003: Atmospheric response to solar radiation absorbed by phytoplankton, *J. Geophys. Res.*, **108**(D15), 4445, doi: 10.1029/2003JD003440.

Miller, A. J., M. A. Alexander, G. J. Boer, F. Chai, K. Denman, D. J. Erickson, R. Frouin, A. J. Gabric, E. A. Laws, M. R. Lewis, Z. Liu, R. Murtugudde, S. Nakamoto, D. J. Neilson, J. R. Norris, J. C. Ohlmann, R. I. Perry, N. Schneider, **K. M. Shell**, and A. Timmerman, 2003: Potential feedbacks between Pacific Ocean ecosystems and interdecadal climate variations. *Bull. Amer. Meteor. Soc.*, **84**, 617–633. doi: 10.1175/BAMS-84-5-617

#### Non peer-reviewed articles

**Shell, Karen M.**, 2012: Climate Change: Constraining Cloud Feedbacks, *Science*, **338** (6108), 755–756, doi: 10.1126/science.1231083 [Invited “Perspective” for non-specialists, see media coverage below]

#### FUNDING

“Quantifying feedbacks between convection and radiation during the MJO using DYNAMO observations and climate models,” NOAA NA13OAR4310160, 09/01/2013 - 08/31/2016. \$336,889. Simon de Szoeke (PI) and Karen Shell.

“Collaborative research: Development of a thermodynamic sea ice model with resolved melt ponds for use in linking climate model parameterizations with field data,” NSF ARC-1022991, 8/15/2010 - 7/31/2013. \$409,182. Eric D. Skillingstad (PI) and Karen M. Shell.

“Comparison of Climate Feedbacks in Atmospheric versus Coupled General Circulation Models,” NSF ATM-0904092, 6/09-5/12, \$428000. Karen M. Shell (PI).

“Climate-Relative Interactions of Clouds, Water Vapor, and Atmospheric Circulation in the Tropics,” Northwest Research Associates subaward from NASA, 1/10-3/10, \$12079. Phillip Mote (PI) and Karen M. Shell.

“NASA Earth and Space Science Fellowship - 2009,” NASA 9/09-8/11, \$60000. Fellowship awarded to graduate student Alexandra Jonko. Karen M. Shell (advisor).

#### ORAL PRESENTATIONS

American Geophysical Union Fall 2011 meeting: “Relative humidity feedbacks in CMIP3 models,” Karen M. Shell and Isaac Held. [invited]

American Meteorological Society 2011 annual meeting: Comparison of radiative feedbacks and climate sensitivities between CCSM3 and CCSM4  
 American Geophysical Union Fall 2010 meeting: Using the Radiative Kernel Technique to Evaluate Physical Climate Feedbacks in CMIP5 Models  
 American Geophysical Union Fall 2009 meeting: Consistent Differences in Climate Feedbacks between Coupled and Atmospheric GCMs  
 American Meteorological Society 2008 annual meeting: Using the “radiative kernel” technique to calculate climate feedbacks in NCAR’s Community Atmospheric Model  
 IUGG, 2007: Clear-Sky Radiative Feedbacks in NCAR’s Community Atmospheric Model  
 Invited speaker, International Postdoctoral Scientist Network for Earth System Science Workshop, 2005: A simple climate model for exploring the dust-climate system  
 American Meteorological Society 2005 annual meeting: Direct radiative effect of dust in a simple climate model: Climate response and sensitivity to dust optical properties  
 American Meteorological Society 2004 annual meeting: A new Type of Idealized Global Climate Model and its Application to Dust-Climate Interactions  
 American Geophysical Union Fall 2003 meeting: A new Type of Idealized Global Climate Model and its Application to Dust-Climate Interactions  
 13th AMS Conference on Atmospheric and Oceanic Fluid Dynamics, 2001: Superrotation in an Axisymmetric Shallow Water Model of the Upper Troposphere  
 Invited speaker, Bio-Climate Feedbacks Workshop, 2001: Atmospheric Response to SST Anomalies Induced by Phytoplankton  
 American Meteorological Society 2001 annual meeting: Influence of Phytoplankton on Climate

POSTER  
PRESENTATIONS

American Geophysical Union Fall 2011 meeting: Karen M. Shell and Meghan M. Dalton  
 WCRP Open Science Meeting., 2011.  
 Gordon Research Conference on Radiation and Climate 2009: Comparison of Climate Feedbacks in Atmospheric Versus Coupled GCMs  
 Community Climate System Model 2009 Workshop: Comparison of Climate Feedbacks in Atmospheric Versus Coupled GCMs  
 American Geophysical Union Fall 2008 meeting: Comparison of feedbacks in atmospheric versus coupled GCMs  
 American Geophysical Union Fall 2007 meeting: Using the radiative kernel technique to calculate climate feedbacks in NCAR’s Community Atmospheric Model  
 Community Climate System Model 2007 workshop: A new technique for calculating climate feedbacks in CAM  
 American Geophysical Union Fall 2006 meeting: Diagnosing Climate Feedbacks in NCAR’s Atmospheric General Circulation Model  
 NCAR’s 2006 Junior Faculty Forum: Diagnosing Climate Feedbacks in CAM  
 Community Climate System Model 2006 workshop: Diagnosing Climate Feedbacks in CAM  
 American Meteorological Society 2005 annual meeting: A generalized energy balance climate model with parameterized dynamics and diabatic heating  
 American Geophysical Union Fall 2004 meeting: A new idealized global climate model and its application to dust-climate interactions  
 American Meteorological Society 2003 annual meeting: Dust-Climate Interactions: A Conceptual Model  
 American Geophysical Union Fall 2002 meeting: Dust-Climate Interactions: A Conceptual Model  
 American Geophysical Union Fall 2001 meeting: Conceptual Modeling of the Climatic Role of Airborne Mineral Dust

SEMINARS

Oregon State University, Applied Mathematics and Computation Seminar, Oct. 30., 2015: A brief history of numerical climate modeling  
 Lawrence Livermore National Lab, Nov., 2014  
 Oregon State University, Geology Seminar, April 5, 2012.

Oregon State University , POA Seminar, March 13, 2012: Using relative humidity as a state variable in climate feedback

Oregon State University, ATS-meets, May 12, 2011

University of Wisconsin, Madison, Atmospheric and Oceanic Sciences Colloquium, April 19, 2010

University of Washington Atmospheric Science Colloquium, May 15, 2009

University of Washington Atmospheric Dynamics Seminar, May 14, 2009

Geophysical Fluid Dynamics Lab, Feb. 5, 2009

Lawrence Livermore National Lab, Dec. 11, 2008

Oregon State University, ATS-meets, Dec. 4, 2008

Oregon State University, ATS-meets, Jun. 5, 2008

Oregon State University, ATS-meets, Oct. 25, 2007

Harvey Mudd College, Physics Department Colloquium, 10/24/2006

Oregon State University, Atmospheric Science Seminar, 10/19/2006

NCAR, CGD research report, March 9, 2006

NCAR ASP Research review, 2006

Colorado State University - Seminar, Nov 10, 2005: Climate sensitivity to airborne mineral dust in a simple model

U. Northern Colorado - Seminar, Oct. 28, 2005: Climate sensitivity to airborne mineral dust in a simple model

NCAR ASP research review, 2005

University of Washington, Atmospheric Science Seminar - Feb. 17, 2005

Oregon State University, COAS Seminar - Dec. 2, 2004

TEACHING  
EXPERIENCE  
AND TRAINING

**Oregon State University**, Corvallis, OR

ATS 420/520: Principles of Climate, Fall 2014

ATS 421/521: Climate Modeling, Spring 2014

ATS e320: The Changing Climate (online course), Winter 2014

ATS420/520: Principles of Climate, Winter 2013

ATS420/520: Principles of Climate, Winter 2012

ATS420/520: Principles of Climate, Winter 2011

ATS420/520: Principles of Climate, Fall 2009

e-ATS320: Man's Impact on Climate (online course), Spring 2009

ATS407/507/607: Atmospheric Science Seminar (AtS-Meets), Spring 2009 and Spring 2010

ATS399H: Introduction to Climate Science (new Honors College colloquium course), Fall 2007

Invited speaker, GEO 464/564, Geoscience Interpretation, April 27, 2011

**Center for Teaching and Learning Fall Symposium**, Oregon State University, Oct. 21, 2015.

**Earth Educators' Rendezvous**, Boulder, CO, July 13-17, 2015.

**Engaged Research**, Oregon State University ADVANCE Workshop, May 13, 2015.

**Broader Impacts: Building successful partnerships**, Oregon State University ADVANCE Workshop, Feb. 18, 2015.

**ASCENT (Atmospheric Science Collaborations and Enriching NeTworks) Workshop**, Steamboat Springs, CO, July 14-16, 2010.

**Discover Your Teaching Philosophy Workshop**, Oregon State University, Feb. 3, 2010.

**Cutting Edge Workshop: Early Career Geoscience Faculty Workshop: Teaching, Research, and Managing Your Career**, College of William and Mary, Williamsburg, VA, June 13-17, 2007.

**University of California, San Diego**, La Jolla, CA

Teaching Assistant, Earth Sciences 20: The Atmosphere, Winter 2000

**Claremont High School**, Claremont, CA

Intern, high school teaching, Fall 1995-Spring 1996

ADVISING AND  
COMMITTEES

**Advisor**

Meghan (Flink) Dalton, M.S., Atmospheric Science (2011)

Alexandra Jonko, PhD, Atmospheric Science (2012)

Lee Collins, M.S., Atmospheric Science [co-advised with Eric Skyllingstad] (2013)

Michael Makiyama, M.S., Atmospheric Science [co-advised with Simon de Szoeke] (2015)

**Committee member**

Robyn Boeke, M.S., Atmospheric Science (2009)

Dan Brown, M.S., Atmospheric Science (2010)

Bret Sechrist, M.S., Atmospheric Science (2010)

Kelli Walters, M.S., Civil Engineering — Water Resources (2014)

Sihan Li, PhD., Atmospheric Science (2011-present)

Linnia Hawkins, PhD, Atmospheric Science (2014-present)

**Graduate Council Representative**

Diana Delgado, M.S., EECS (2010)

Yegorova, Svetlana, MS, Forest Science (Defense 3/14/2012)

James Davidson, M.S., EECS (Defense 6/15/2012)

Sean Brosig, M.S., Electrical and Computer Engineering (Defense 6/13/2013)

Mike Tavakoli, M.S., EECS (Defense 6/20/2013)

Allen Waters, PhD., ECE (Defense 3/5/2015)

Robert Jacobs, PhD., Physics (in progress)

Travis Roth, PhD., Water Resources (in progress)

Kris Richardson, M.S. (in progress)

SERVICE

**University Corporation for Atmospheric Research**

Oregon State University Member Representative 2007-present

Science Advocacy Award 2009

Membership Committee, 2014-present

**Oregon State University**

Faculty Advisory Council for the Division of Undergraduate Studies, 2015-present

Energy Budget Faculty Search Committee, 2015-present

Undergraduate Programs Committee, 2014-present

Climate Science Undergraduate Option development committee 2014-present

Climate Science Undergraduate Option development committee 2013

Peer review of teaching committee 2011-2012, 2013-2014

Graduate Programs Committee 2013-2014

Graduate student admissions/advisory committee 2007-2013

GEO-COAS Integration Academic programs development group 2010-2011

COAS Atmospheric Science Web Site committee 2010-present

Earth System Science undergraduate curriculum committee 2010-2011

COAS Promotion and Tenure Committee 2009

Oregon Climate Change Research Institute Science Advisory Board 2009-present

OCCRI employee hiring committees (2)

Oregon Global Warming Commission Science/Technology Committee 2008-2009

Knowledge to Action Network white paper sub-committee

Oregon Climate Change Research Institute Director screening committee 2008  
ATS faculty search committee 2007–2008  
Earth System Science curriculum committee 2007–2008

#### **Co-convenor and oral/poster session co-chair**

“Recent Advances in Climate Modeling” at 2006 AGU Fall meeting

#### **Manuscript Reviewer**

Expert Review of the Second Order Draft of the Working Group I contribution to the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report: Climate Change 2013: The Physical Science Basis.  
2013 Editors’ Citation for Excellence in Refereeing for *Geophysical Research Letters*  
*Climate Dynamics*  
*Geophysical Research Letters*  
*JAMES (Journal of Advances in Modeling Earth Systems)*  
*Journal of Climate*  
*Journal of Geophysical Research - Atmospheres*  
*Journal of Physical Oceanography*  
*Journal of the Atmospheric Sciences*  
*Science*

#### **Proposal Reviewer**

NSF (Climate/Large-scale Dynamics, Paleoclimate, and Collaboration in Mathematical Geosciences)  
NASA

#### **External Peer Review**

NASA Langley Research Center’s Science Directorate External Peer Review, Nov. 1-3, 2011

#### **NCAR ASP Program**

Thompson Lecture Series committee

#### **Students@SIO**

Student organization at Scripps Institution of Oceanography, UCSD

- One of the founders of the organization
- Vice Chair 1999-2000
- Chair 2000-2001
- Served on web site, newsletter, faculty evaluation, faculty hiring, and Open House committees

#### **MEMBERSHIPS**

American Geophysical Union, 1999-present  
American Meteorological Society, student member 1999-2004, member 2004-present  
Earth Science Women’s Network  
National Association of Geoscience Educators, 2015–present

#### **PRESS COVERAGE**

Coverage including quotes from **Shell, K. M.**, 2012 *Science* Perspective:  
• Climate Central: New Report Says Fewer Clouds and Higher Temps by 2100:  
<http://www.climatecentral.org/news/new-report-says-fewer-clouds-and-higher-temps-by-2100-15219>  
• National Geographic News: Climate predictions: Worst-case might be most accurate:  
<http://news.nationalgeographic.com/news/2012/11/121108-climate-change-clouds-science-model-relative-humidity/>  
• E&E News: Climate change may come faster than predictions made by most computer models:

<http://www.eenews.net/public/climatewire/2012/11/09/2>

- Skeptical Science: Fasullo and Trenberth Find Evidence in Clouds for High Climate Sensitivity: <http://www.skepticalscience.com/fasullo-trenberth-2012.html>

Coverage for Flanner, M. G., **K. M. Shell**, M. Barlage, D. K. Perovich, and M. A. Tschudi, 2011:

- Oregon State University press release: <http://oregonstate.edu/ua/ncs/archives/2011/jan/new-study-loss-reflectivity-arctic-double-estimate-climate-models>
- University of Michigan press release: <http://ns.umich.edu/new/releases/8199>
- NASA's Earth Observatory Image of the Day: <http://earthobservatory.nasa.gov/IOTD/view.php?id=50653>
- NASA's Earth Observatory Image of the Day: <http://earthobservatory.nasa.gov/IOTD/view.php?id=49440>
- Oregon Public Broadcasting Story: "OSU Researcher Finds Melting Arctic Ice Contributing More To Global Warming" <http://news.opb.org/article/osu-researcher-finds-melting-arctic-ice-contributing-more-global-warming/>
- Oregon Public Broadcasting Story: "Study: Melting ice isnt as cool as we thought" <http://ecotrope.opb.org/2011/01/study-melting-ice-isnt-as-cool-as-we-thought/>
- Reuters: <http://uk.reuters.com/article/2011/01/16/us-climate-ice-idUKTRE70F2F020110116>
- Corvallis Gazette-Times "Looking back: Selected OSU research projects 2011", selected research for January, 2011: <http://www.gazettetimes.com/news/local/looking-back-selected-osu-research-projects/article.229a91d0-30eb-11e1-beea-0019bb2963f4.html>

## OUTREACH

"At the Boundaries", CEOAS Feature Story about my career, research, and the climate undergrad program: <http://www.ceoas.oregonstate.edu/features/shell/>, Fall 2015 CEOAS Alumni newsletter

Interviewed for *Winds of Change*, a magazine put out by the American Indian Science and Engineering Society (AISES) regarding climate science as a career, 2015

Guest blog "On Sensitivity Part II: Constraining Cloud Feedback without Cloud Observations" for RealClimate

<http://www.realclimate.org/index.php/archives/2013/01/on-sensitivity-part-ii-constraining-cloud-feedback-without-cloud-observations/> (4 January 2013 )

COMPASS Communication Training Workshop, October, 2011

Open Forum Portland: Is facing Climate Change as urgent as some suggest - And what if anything needs to be done about it? Session 1 Introduction, Friday June 1st, 2012, Portland State University

Featured in College of Oceanic and Atmospheric Sciences 2010 Research Highlights: "Albedo Effect: Melt Ponds"

Presentation for GEO 464/564 "Geoscience Interpretation" class, Spring 2011.

OSU Extension Service Washington County Climate Change Seminar Series: "Climate Models and Predicting the Future", Nov. 10, 2009.

GECO Climate Change/Earth Day Talk: "Climate Feedbacks in Computer Models", April 22, 2009.

Research covered in "Climate by the Numbers" by Nick Houtman in *Terra*, Spring 2009.

<http://oregonstate.edu/terra/2009/04/climate-numbers>

Speaker for OSU Climate Masters class, Jan. 6, 2009.

Research included in COAS viewbook (*Our Earth Today*) for potential donors, 2008.

Technical advisor to The Oregon Ocean Science and Math Collaborative program. Instructor Institute, Oct. 16, 2008.

Speaker at Focus the Nation, Oregon State University, "Facts and Uncertainties of Climate Change", Jan. 30, 2008.

OSU Media Training, Nov. 7, 2007.

Speaker at Marylhurst University's Climate Change Forum, October 20, 2007, "Climate Models and Predicting the Future".

Earth Day seminar, "Uncertainty and Climate Change" at Hatfield Marine Science Center, Saturday, April 21, 2007.



Informal global warming presentation and Q&A session, approx. 20 people, Shell residence, Houston, TX, December, 2006.

Summary of research on ASP spotlight, June-August 2006,  
[http://www.asp.ucar.edu/spotlight/karen\\_shell.jsp](http://www.asp.ucar.edu/spotlight/karen_shell.jsp)

Research covered in COAS Ocean&Air online magazine:  
<http://oceanandair.coas.oregonstate.edu/index.cfm?fuseaction=content.display&pageID=137>, 2006

Featured in “Experts Tell Us” featurette in *The Atmosphere*, by Andrew Bridges, a children’s (9+) book in the “Our Changing Climate” series by Sally Ride Science, 2007.

COMPUTER SKILLS Climate Models: NCAR Community Atmospheric Model, CCSM, CESM, RRTMG

Languages: Fortran, C++, Perl, shell scripting

Mathematical programs: ncl, Matlab, IDL

Environments: Unix, Linux, Windows, OS X

OTHER POSITIONS **Cisco Systems**, San Jose, CA

Technical Writer, Fall 1996-Spring 1998

**C\*ODE\*E/Interface**, Harvey Mudd College, Claremont, CA

Publications Editor, Fall 1994-Spring 1996