

JOELLEN L. RUSSELL**PRESENT POSITION**

Assistant Professor, Department of Geosciences,
University of Arizona, 1040 E Fourth St., Tucson, AZ 85721-0077
Phone: (520) 626-2194 Fax: (520) 621-2672 Email: jrussell@email.arizona.edu

CHRONOLOGY OF EDUCATION

1999 – **Ph.D.** in Oceanography, Scripps Institution of Oceanography, University of California, San Diego. Dissertation title: *The Biogeochemistry of Southern Ocean Intermediate and Mode Waters*; Primary Advisor: Andrew G. Dickson

1993 – **A.B.** in Environmental Geoscience, Department of Earth and Planetary Sciences, Harvard University. Thesis title: *Applying Geology to Atmospheric Research: Modern Analogs to Archean Paleosols*; Primary Advisor: H.D. Holland

CHRONOLOGY OF EMPLOYMENT

2006-present – Assistant Professor, Department of Geosciences, University of Arizona.

2002-2006 – Research Scientist, Program in Atmospheric and Oceanic Sciences, Geosciences Department, Princeton University.

1999-2002 – Postdoctoral Research Associate, Joint Institute for the Study of Atmosphere and Ocean, Department of Atmospheric Sciences, University of Washington.

HONORS AND AWARDS

2011-2012 – American Association of Petroleum Geologists, Distinguished Lecturer

2011 – GSA Today Cover (for Kapp et al., 2011)

2010 – University of Arizona Provost's General Education Teaching Award

2009 – *Invited Plenary*, ASLO Aquatic Sciences Meeting, Nice, France

2008 – Nominated by the University of Arizona for the David and Lucille Packard Foundation Fellowship for Science and Engineering

1989-1993 – Radcliffe National Scholar, Harvard University.

SERVICE/OUTREACH**Local/State:**

2011 – Arizona Project WET Riparian Symposium, *Keynote Speaker*, University of Arizona, Tucson, Arizona

2010 – Earth Sciences Saturday Academy, *Keynote Speaker*, University of Arizona, Sponsored by MESA, SAGUARO, and UA School of Earth and Environmental Sciences, Tucson, Arizona

2010 – League of Women Voters, Tucson Chapter, *Invited Presentation*, A Climate Change Primer, Tucson, AZ

2008 – Border-Area Climate Change Impacts & Water Sector Adaptation Workshop, California Department of Water Resources, Tucson, Arizona

2008 – Superstition Vistas Planning Workshop, *Invited Presentation*, Phoenix, Arizona

2007 – Salt River Project, *Invited Presentation*, Tempe, Arizona

2007 – 11th Annual Great Divide Workshop, *Invited Presentation*, National Weather Service, Great Falls, Montana

2007 – Montana Water Center, *Invited Presentation*, University of Montana, Bozeman, Montana

2006 – Tucson Water, *Invited Presentation*, Department of the City of Tucson, Arizona

National/International:

2011 – EPA STAR Graduate Fellowship Review Panel, Washington D.C.

- 2011** – NASA Climate & Biological Response: Research and Applications Review Panel, Washington D.C.
- 2010** – NSF Arctic System Science Program Review Panel, Washington D.C.
- 2010** – *Invited Presentation*, Deep Ocean Workshop: Observed and Model-Simulated Property Changes in the Deep Ocean of the Southern Hemisphere, Hobart, Australia
- 2010-2014** – **Member**, U.S. CLIVAR Office, Process Studies and Model Improvements Panel, www.usclivar.org
- 2009** – *Invited Presentation*, Greenaccord, VII International Media Forum on the Protection of Nature, Viterbo, Italy
- 2009** – *Invited Presentation*, Global Sustainability Workshop, Santa Fe Institute, Santa Fe, NM
- 2009** – **Co-Convenor**, New Frontiers in Southern Ocean Biogeochemistry and Ecosystem Research, Ocean Carbon and Biogeochemistry Scoping Workshop, Princeton, New Jersey.
- 2008** – *Invited Presentation*, IDC HPC User Forum, Tucson, Arizona
- 2008** – *Invited Presentation*, ExxonMobil, Houston, Texas
- 2008** – World Wildlife Fund, Antarctic Climate Change Focal Project: Impacts Of 2°C Global Warming On Southern Ocean Cetaceans (With Dr. Cynthia Tynan, WHOI): presented to International Whaling Commission 60th Annual Meeting, Santiago, Chile
- 2008** – Early Career Geoscience Faculty: Teaching, Research, and Managing Your Career Workshop, College of William and Mary, Williamsburg, VA
- 2008** – World Wildlife Fund, Antarctic Climate Change Focal Project: Impacts Of 2°C Global Warming On Antarctic Penguins (With Dr. David Ainley of H.T. Harvey and Assoc.)
- 2007** – **Member**, National Research Council for the **National Academy of Science**, Committee to Review the “U.S. Climate Change Science Program’s Synthesis and Assessment Product 3.2, Climate Projections Based on Emission Scenarios for Long-lived and Short-lived Radiatively Active Gases and Aerosols”.
- 2007** – **Member**, National Research Council for the **National Academy of Science**, Review Committee for “Review of the U.S. Climate Change Science Program’s Draft Synthesis and Assessment Product 1.3, Re-analyses of Historical Climate Data and Implications for Attribution”
- 2007** – *Invited Presentation*, ExxonMobil, Houston, Texas
- 2007** – Ocean Carbon and Biogeochemistry Scoping Workshop on Ocean Acidification Research, Scripps Institution of Oceanography, La Jolla, California
- 2007** – SGI User Group Annual Meeting, SGIUG 2007, *Invited Keynote*, Minneapolis, MN
- 2007** – *Invited Presentation*, Surface Ocean pCO₂ Variability And Vulnerabilities Workshop, IOC/UNESCO, Paris France
- 2006-present** – Biospheric Processes Team, Geophysical Fluid Dynamics Laboratory, National Oceanic and Atmospheric Administration
- 2006** – Amicus brief to the United States Supreme Court (Massachusetts vs. the EPA)

Departmental:

- 2011** – Position Search Committee: Ad-Hoc (J. Smerdon)
- 2010** – Position Search Committee: Climate Dynamics (J. Yin)
- 2009** – Position Search Committee: Ad-Hoc (B. Carrapa)
- 2008-present** – Nominations Committee
- 2007-present** – Graduate Admissions Committee
- 2007** – Position Search Committee: Department chairperson (K. Flessa)
- 2006** – Undergraduate Policy Committee
- 2006** – Position Search Committee: Thermochronology (P. Reiners)

University:

- 2011** – Reviewer, Packard Fellowship Applications, Office of the Vice President for Research

2010-present – Faculty Representative (College of Science), Interdisciplinary Studies Degree Committee
2010-present – Chairperson, High-Performance Computing (HPC) Technical Refresh Committee
2008-present – Executive Committee member, Climate Dynamics and Hydrometeorology Center
2007-present – Member, High-Performance Computing (HPC) Allocation Committee
2007-present – Reviewer, Faculty Small Grants Program, Office of the Vice Provost for Research
2006 – Member, High-Performance Computing (HPC) Taskforce
2006-present – Faculty member, Institute for the Study of Planet Earth
2006-2008 – Marine Awareness and Conservation Society, *Invited Presentations*
2006-2007 – Member, Commission on the Status of Women

Reviewer: *Nature, Nature Geosciences, Nature Climate Change, J. Climate, J. Physical Oceanography, Geophysical Research Letters, Proceedings of the National Academy of Sciences, Paleoceanography, J. Geophysical Research, Global Biogeochemical Cycles, Climate Dynamics, Climate Change Letters.*

PUBLICATIONS/CREATIVE ACTIVITY – (Total: 800 citations over 8 years (as of June 25, 2011))
Peer-reviewed

19. Yin, J., J.T. Overpeck, S.M. Griffies, A. Hu, **J.L. Russell** and R.J. Stouffer, Opposite Ocean Warming Extremes Projected Around the Greenland and Antarctic Ice Sheets, *Nature Geosciences*, (in press, doi:10.1038/NCEO1189).
18. †McAfee, S.A., P.J. Goodman and **J.L. Russell**, Evaluating IPCC AR4 Cool-Season Precipitation Simulations And Projections For Impacts Assessment Over North America, *Climate Dynamics*, (in press).
17. Kapp, P., J.D. Pelletier, A. Rohrmann, R. Heermance, **J.L. Russell** and L. Ding, 2011: Wind erosion in the Qaidam Basin, Central Asia: Implications for tectonics, paleoclimate and the source of the Loess Plateau, *GSA Today*, **21(4/5)**, 4-10. [doi: 10.1130/GSATG99A.1] [**0 Citations**]
16. Ainley, D., **J.L. Russell**, S. Jenouvrier, E. Woehler, P. O'B. Lyver, W.R. Fraser, and G.L. Kooyman, 2010: Antarctic Penguin Response to Habitat Changes as Earth's Troposphere Reaches 2°C Above Pre-Industrial Levels. *Ecological Monographs*, **80(1)**, pp. 49–66. [**5 Citations**]
15. Woodhouse, C.A., **J.L. Russell** and E.R. Cook, 2009: Two Modes of North American Drought from Instrumental and Paleoclimatic Data. *Journal of Climate*, **22(16)**, 4336-4347. [**1 Citations**]
14. †McAfee, S.A. and **J.L. Russell**, 2008: Northern Annular Mode impact on spring climate in the western United States. *Geophys. Res. Lett.*, **35**, L17701, doi:10.1029/2008GL034828. [**7 Citations**]
13. Toggweiler, J.R. and **J.L. Russell**, 2008: Ocean circulation in a warming climate. *Nature*, **451**, 286-288. [**42 Citations**]
12. deBoer, A.M., D.M. Sigman, J.R. Toggweiler, and **J.L. Russell**, 2007: The effect of global ocean temperature change on deep ocean ventilation. *Paleoceanography*, **22**, PA2210, doi:10.1029/2005PA001242. [**17 Citations**]
11. Gnanadesikan, A., **J.L. Russell**, and F. Zeng, 2007: How does ocean ventilation change under global warming? *Ocean Science*, **3**, 43-53. [**14 Citations**]
10. **Russell, J.L.**, K.W. Dixon, A. Gnanadesikan, R.J. Stouffer, and J.R. Toggweiler, 2006: The Southern Hemisphere Westerlies in a Warming World: Propping Open the Door to the Deep Ocean. *Journal of Climate*, **19(24)**, 6382-6390. [**49 Citations**]
9. **Russell, J.L.**, R.J. Stouffer, and K.W. Dixon, 2006: Intercomparison of the Southern Ocean Circulations in the IPCC Coupled Model Control Simulations. *Journal of Climate*, **19(18)**, 4560-4575. [**39 Citations**]
8. Stouffer, R.J., **J.L. Russell**, and M.J. Spelman, 2006: Importance of Oceanic Heat Uptake in Transient Climate Change. *Geophysical Research Letters*, **33**, L17704, doi:10.1029/2006GL027242. [**3 Citations**]

7. Toggweiler, J.R., **J.L. Russell**, and S.R. Carson, 2006: Midlatitude westerlies, atmospheric CO₂, and climate change during the ice ages. *Paleoceanography*, **21**, PA2005, doi:10.1029/2005PA001154. **[112 Citations]**
6. Gnanadesikan, A., K.W. Dixon, S.M. Griffies, V. Balaji, M. Barreiro, J.A. Beesley, W.F. Cooke, T.L. Delworth, R. Gerdes, M.J. Harrison, I.M. Held, W.J. Hurlin, H-C. Lee, Z. Liang, G. Nong, R.C. Pacanowski, A. Rosati, **J.L. Russell**, B.L. Samuels, Q. Song, M.J. Spelman, R.J. Stouffer, C.O. Sweeney, G. Vecchi, M. Winton, A.T. Wittenberg, F. Zeng, R. Zhang, and J.P. Dunne, 2006: GFDL's CM2 Global Coupled Climate Models. Part 2: The baseline ocean simulation. *Journal of Climate*, **19(5)**, 675-697. **[83 Citations]**
5. Delworth, T.L., A.J. Broccoli, A. Rosati, R.J. Stouffer, V. Balaji, J.A. Beesley, W.F. Cooke, K.W. Dixon, J. Dunne, K.A. Dunne, J.W. Durachta, K.L. Findell, P. Ginoux, A. Gnanadesikan, C.T. Gordon, S.M. Griffies, R. Gudgel, M.J. Harrison, I.M. Held, R.S. Hemler, L.W. Horowitz, S.A. Klein, T.R. Knutson, P.J. Kushner, A.R. Langenhorst, H-C. Lee, S-J. Lin, J. Lu, S.L. Malyshev, P.C.D. Milly, V. Ramaswamy, **J.L. Russell**, E. Shevliakova, M.D. Schwarzkopf, J.J. Sirutis, M.J. Spelman, W.F. Stern, M. Winton, A.T. Wittenberg, B. Wyman, F. Zeng, and R. Zhang, 2006: GFDL's CM2 Global Coupled Climate Models. Part I: Formulation and simulation characteristics. *Journal of Climate*, **19(5)**, 643-674. **[323 Citations]**
4. Griffies, S.M., A. Gnanadesikan, K.W. Dixon, J.P. Dunne, R. Gerdes, M.J. Harrison, A. Rosati, **J.L. Russell**, B.L. Samuels, M.J. Spelman, M. Winton, and R. Zhang, 2005: Formulation of an Ocean Model for Global Climate Simulations. *Ocean Science*, **1**, 45-79. **[90 Citations]**
3. **Russell, J.L.**, and J.M. Wallace, 2004: Annual carbon dioxide drawdown and the Northern Annular Mode, *Global Biogeochem. Cycles*, **18**, GB1012, doi:10.1029/2003GB002044. **[11 Citations]**
2. ***Russell, J.L.**, and A.G. Dickson, 2003: Variability in oxygen and nutrients in South Pacific Antarctic Intermediate Water, *Global Biogeochemical Cycles*, **17(2)**,1033, doi:10.1029/2000GB001317. **[4 Citations]**
1. *Hine, A.C., D.A. Feary, M.J. Malone, and the Leg 182 Shipboard Party (M. Andres, C. Betzler, G.R. Brooks, C.A. Brunner, M.D. Fuller, A.E. Holbourn, M. Huuse, A.R. Isern, N.P. James, B.C. Ladner, Q. Li, H. Machiyama, D.J. Mallinson, H. Matsuda, R.M. Mitterer, R.S. Molina, C. Robin, **J.L. Russell**, S. Shafik, J.A. Simo, P.L. Smart, G.H. Spence, F.C. Surlyk, P.K. Swart, and U.G. Wortmann), 1999: Research in the Great Australian Bight Yields Exciting Early Results. *EOS Transactions*, AGU, 80, #44, Nov. 2, 1999, pp. 521, 525-526. **[8 Citations]**

Not Peer-Reviewed

26. Blight, L.K., D.G. Ainley, S.F. Ackley, G. Ballard, T. Ballerini, R.L. Brownell Jr., C.-H. C. Cheng, M. Chiantore, D. Costa, M.C. Coulter, P. Dayton, A.L. Devries, R. Dunbar, S. Earle, J.T. Eastman, S.D. Emslie, C.W. Evans, R.A. Garrott, S. Kim, G. Kooyman, A. Lescroël, M. Lizotte, M. Massaro, S. Olmastroni, P.J. Ponganis, **J.L. Russell**, D.B. Siniff, W.O. Smith Jr., B.S. Stewart, I. Stirling, J. Willis, P. Wilson and E.J. Woehler, 2010: Fishing for Data in the Ross Sea. *Science*, **330 (6009)**, 1316. [DOI:10.1126/science.330.6009.1316] **[1 Citation]**
25. Deutsch C., E. Hofmann, T. Ito, N. Lovenduski, **J. Russell**, J. Sarmiento, W. Smith and P. Strutton, 2010: A U.S. Southern Ocean Carbon, Ecosystems and Biogeochemistry Science Plan: A report of the Southern Ocean Scoping Workshop sponsored by the Ocean Carbon and Biogeochemistry Program and the NSF Office of Polar Programs (available online at: http://www.us-ocb.org/publications/SOWorkshop_Report_FINAL.pdf)
24. Tynan, C.T. and **J.L. Russell**, 2008: Assessing the impacts of future 2°C global warming on Southern Ocean cetaceans. International Whaling Commission, Scientific Committee document SC/60/E3 (available online at: assets.panda.org/downloads/wwf_russell30may08_tynan.doc)
23. Tynan, C.T. and **J.L. Russell**, 2008: Icebreaker: Pushing the Boundaries for Whales: Impacts of a 2°C global warming on Southern Ocean whales, World Wildlife Fund, 10pp. (available online at: <http://www.wwf.org.au/publications/icebreaker/>)
22. Ainley, D., **J. Russell** and S. Jenouvrier, 2008: The Fate Of Antarctic Penguins When Earth's

- Tropospheric Temperature Reaches 2°C Above Pre-Industrial Levels, World Wildlife Fund, 35pp. (available online at: http://assets.panda.org/downloads/wwf_climate_penguins_final_1.pdf)
21. Ainley, D., **J. Russell** and S. Jenouvrier, 2008: 2° is Too Much! Impacts of 2 degrees Celsius global warming on Antarctic Penguins, World Wildlife Fund, 8pp. (available online at: <http://www.wwf.org.au/publications/2degreesistoomuchwwf.pdf>)
20. **Russell, J.L.**, R.J. Stouffer, and K.W. Dixon, 2007: Corrigendum. *Journal of Climate*, **20(16)**, 4287.

WORK IN PROGRESS

35. **Russell, J.L.**, R.J. Stouffer and J.P. Dunne, The Evolution of Heat and Carbon Uptake by the Southern Ocean in the IPCC-AR5 Earth System Model Simulations (in preparation for *Journal of Climate*).
34. **Russell, J.L.**, T.L. Delworth, K.W. Dixon and A. Rosati, Heat and Carbon Uptake by the Southern Ocean in an Eddy-Resolving, Coupled Climate Model (in preparation for *Journal of Climate*).
33. **Russell, J.L.**, R.J. Stouffer and J.P. Dunne, Intercomparison of the Southern Ocean Circulations in the IPCC-AR5 Earth System Model Simulations (in preparation for *Journal of Climate*).
32. **Russell, J.L.**, A.R. Drain, P.J. Goodman, R. Slater and J. Sarmiento, Implied Carbon Uptake by the Southern Ocean in IPCC-AR4 Coupled Climate Models, *Geophysical Research Letters*, (submitted).
31. **Russell, J.L.**, P.J. Goodman, J.A. Thornton and J.M. Wallace, Modulation of atmospheric composition by ENSO, *Global Biogeochemical Cycles*, (submitted).
30. Blome, M.W., A.S. Cohen, C.A. Tryon, **J.L. Russell** and A. Brooks, The environmental context for the origins of modern human diversity: A synthesis of regional variability in African climate 150,000-30,000 years ago, *Journal of Human Evolution*, (in revision).
29. †Ivory, S.J., **J.L. Russell** and A. Cohen, Global atmospheric controls on vegetation variability in the African tropics, *Nature Geosciences*, (in revision).
28. †Lora, J., P. Goodman, **J.L. Russell** and J. Lunine, Insolation in Titan's Troposphere, *Icarus*, (in revision).
27. †McAfee, S.A., **J.L. Russell**, R.S. Webb, Potential for Error Propagation Within Earth System Models, *Geophysical Research Letters*, (in revision).

*Publication is based largely on work done as a graduate student

†Publication's first author is a current or former graduate student advisee.

SCHOLARLY PRESENTATIONS

Colloquia:

27. Russell, J. (2011) *Invited*, The Southern Ocean: Progress and Challenges, Atmospheric and Oceanic Sciences/Cooperative Institute for Climate Science, Princeton University, Princeton, NJ
26. Russell, J. (2009) *Invited*, The Once and Future Battles of Thor and the Midgard Serpent: The Southern Hemisphere Westerlies and the Antarctic Circumpolar Current, Department of Geological Sciences, Brigham Young University, Provo, UT
25. Russell, J. (2009) *Invited*, Poleward-Intensification of the Southern Hemisphere Westerlies: Antarctic Carbon Cycle and Ecosystem Impacts, SOLS Seminar Series, School of Life Sciences, Arizona State University, Tempe, AZ
24. Russell, J. (2008) Climate Model Projections for the Southwest: The Role of the Westerly Jet, Department of Geosciences Colloquium, Tucson, AZ
23. Russell, J. (2007) *Invited*, Modeling Climate-Tectonics interactions in the Andes. Rice University, Houston, TX
22. Russell, J. (2006) *Invited*, The Southern Hemisphere Westerlies in a warming world: Propping open the door to the deep ocean. Geophysical Fluid Dynamics Laboratory, Princeton, NJ
21. Russell, J. (2006) *Invited*, The Southern Hemisphere Westerlies in a warming world: Propping open the door to the deep ocean. Atmospheric Science Seminar, University of Arizona, Tucson, AZ

Conference Presentations:

20. Russell, J. (2010) *Invited*, Deep Water Production in IPCC AR4 Models, Deep Ocean Workshop: Observed and Model-Simulated Property Changes in the Deep Ocean of the Southern Hemisphere, Hobart, Australia
19. Russell, J. (2010) *Invited*, Implied Carbon Uptake by the Southern Ocean in IPCC-AR4 Coupled Climate Models, Ocean Sciences Meeting, Portland, OR
18. Russell, J. (2009) *Invited*, The Future of the Ross Sea in IPCC class models, International Marine Conservation Congress, Washington, D.C.
17. Russell, J. (2009) *Invited*, The Southern Ocean in IPCC class models, CLIVAR/CliC/SCAR Southern Ocean Region Implementation Panel 5th Meeting, Sydney Australia
16. Russell, J. (2009) *Invited Keynote*, Intercomparison of IPCC coupled climate models' simulation of the Southern Ocean: climate, circulation and sea ice, 9th International Conference on Southern Hemisphere Meteorology and Oceanography, Melbourne, Australia
15. Russell, J. (2009) *Invited Plenary*, The ocean in a warming world: circulation, carbon and calcification, ASLO Aquatic Sciences Meeting, Nice, France
14. Russell, J. (2008) An Intercomparison of IPCC Coupled Climate Models' Simulation Of The Southern Ocean: Climate, Circulation And "Carbon", AGU Fall Meeting, San Francisco, California
13. Russell, J. (2008) Projected Changes In Antarctic Sea Ice In The AR4 Climate Models: Implications For Adélie And Emperor Penguin Habitats, Ocean Sciences Meeting, Orlando, Florida
12. Russell, J. (2007) *Invited*, The Southern Ocean in the AR4 simulations, Southern Ocean Physical Oceanography and Cryosphere Linkages (SOPHOCLES) Meeting, Bergen, Norway
11. Russell, J. (2007) *Invited*, Climate Model Projections for the Northern Rockies and the Western High Plains, National Weather Service, Great Falls, Montana
10. Russell, J. (2007) *Invited*, Modeling Southern Ocean Anthropogenic Carbon Uptake: The AR4 Climate Models, NOAA Global Carbon Cycle Principal Investigators Meeting, Silver Spring, Maryland
9. Russell, J. (2007) *Invited*, Modeling Southern Ocean Anthropogenic Carbon Uptake: The AR4 Climate Models, NOAA Southern Ocean Climate Process Team Workshop, Princeton, New Jersey
8. Russell, J. (2007) *Invited*, Climate Model Projections for the Southwest, Arizona Hydrological Society, Tucson, Arizona
7. Russell, J. (2007) *Invited*, The Effect of Changing Westerly Winds on Climate, NSF Advance Data Blitz, Tucson, Arizona
6. Russell, J. and C. Sweeney (2007) *Invited*, Using surface pCO₂ decorrelation length scales to determine sampling resolution, Surface pCO₂ and Ocean Vulnerabilities Workshop, IOC/UNESCO, Paris, France
5. Russell, J., (2007) *Invited Keynote*, Big Changes in the High-Latitude Oceans: The impact of the Westerlies on ocean heat content, stratification and ice, Gordon Research Conference, Ventura, California
4. Russell, J. (2006) *Invited*, The Once and Future Battles between Thor and the Midgard Serpent: The Southern Hemisphere Westerlies and the Antarctic Circumpolar Current. 16th Annual V.M. Goldschmidt Conference, Melbourne, Australia
3. Russell, J. (2006) *Invited*, The Southern Hemisphere Westerlies in a warming world: Propping open the door to the deep ocean. Ocean Carbon Biogeochemistry Workgroup, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts
2. Russell, J. (2006) *Invited*, Optimal network design to detect spatial patterns and variability of ocean carbon sources and sinks from underway surface pCO₂ measurements, NOAA Office of Climate Observation - Annual System Review, Silver Springs, Maryland
1. Russell, J. (2006) The Southern Hemisphere Westerlies in a warming world: Propping open the door to the deep ocean, Ocean Sciences Meeting, Honolulu, Hawaii.

GRANTS AND CONTRACTS (Current, Pending & Completed)

9. **04/01/2012-03/31/17** Principal Investigator, NSF CAREER (To be submitted by July 27, 2011) “Southern Ocean Heat and Carbon: Budgets, Uptake Processes and Projected Changes”, \$1,000,000 (Russell, 100% effort).
8. **10/01/2011-09/30/2016** Co-Principal Investigator, NSF (Pending) “Earth System Dynamics and its Role in Human Evolution in Africa”, \$4,996,082 (Russell, 20% effort).
7. **09/01/2010-08/31/2013** Convergent Orogenic Systems Analysis 2, (COSA2, DeCelles PI, many other co-PIs in Department of Geosciences), ExxonMobil, \$1,890,000 (Russell, 7% effort).
6. **01/25/2010-01/30/2010** Junior Faculty Conference Grant, Travel Expenses to the 2009 ASLO (Advancing the Science of Limnology and Oceanography) Aquatic Sciences Meeting in Nice, France. \$900 .
5. **09/01/2008-08/31/2011** Consultant, NSF Coupled Natural-Human Systems Initiative (NSF 07-598), “Collaborative Research: Urban Vulnerability to Climate Change: A System Dynamics Analysis.” \$15,000 (Russell, 100% effort).
4. **09/01/2007-08/31/2012** Collaborator, NSF Amazon PIRE, “Partnership for International Research and Education in Amazon-Climate Interactions.” (amazonpire.org)
3. **06/01/2007-05/31/2010** Convergent Orogenic Systems Analysis, (COSA, DeCelles PI, many other co-PIs in Department of Geosciences), ExxonMobil, \$1,500,000 (Russell, 7% effort).
2. **05/01/2007-04/30/2012** Principal Investigator, NOAA Office of Global Programs, “A climate process team on Southern Ocean water mass transformation and the carbon cycle.” \$309,762 (Russell, 100% effort).
1. **07/01/2005-06/30/2008** Principal Investigator, NOAA Office of Global Programs (GC05-146), “Optimal network design to detect spatial patterns and variability of ocean carbon sources and sinks from underway surface CO₂ measurements.” \$163,674 (Russell, 100% effort).

COLLABORATORS (last 60 months)

Stephen Ackley (U. Texas, San Antonio), David Ainley (H.T. Harvey & Associates), V. Balaji (NOAA/GFDL), Grant Ballard (PRBO Conservation Science), Tosca Ballerini (Old Dominion), M. Barreiro (Universidad de la República), J. Beesley (NOAA/GFDL), Louise Blight (U. British Columbia), Anthony Broccoli (NOAA/GFDL), Alison Brooks (George Washington), Robert Brownell (NOAA), Steve Carson (NOAA/GFDL), Christina Cheng (U. Illinois), Mariachiara Chiantore (Universita di Genova), Ed Cook (LDEO), W. Cooke (NOAA/GFDL), Malcolm Coulter (Wetlands International), Douglas Crebs (Stone Child College, MT), Paul Dayton (SIO), Agatha deBoer (U. East Anglia), Thomas Delworth (NOAA/GFDL), Curtis Deutsch (UCLA), Lin Ding (ITPR/CAS), Keith Dixon (NOAA/GFDL), Scott Doney (WHOI), Robert Dunbar (Stanford), John Dunne (NOAA/GFDL), Krista Dunne (NOAA/GFDL), J.W. Durachta (NOAA/GFDL), Sylvia Earle (National Geographic Society), Joseph Eastman (Ohio), Steven Emslie (U. North Carolina), Clive Evans (U. Auckland), Richard Feely (NOAA/PMEL), Kirsten Findell (NOAA/GFDL), Mick Follows (MIT), William Fraser (Polar Oceans Research Group), Carmen Fraticelli (ExxonMobil), Robert Garrott (Montana State), R. Gerdes (AWI), Paul Ginoux (NOAA/GFDL), Anand Gnanadesikan (Johns Hopkins University), Tony Gordon (NOAA/GFDL), Stephen Griffies (NOAA/GFDL), Susanne Grossman-Clarke (ASU), Rich Gudgel (NOAA/GFDL), Sharon Harlan (ASU), Matthew Harrison (NOAA/GFDL), Richard Heermance (California State, Northridge), Isaac Held (NOAA/GFDL), Richard Hemler (NOAA/GFDL), Eileen Hoffman (Old Dominion), Larry Horowitz (NOAA/GFDL), Aixue Hu (NCAR), William Hurlin (NOAA/GFDL), Taka Ito (Colorado State), Stephanie Jenouvrier (WHOI/CNRS), Jerry Kendall (ExxonMobil), Stacy Kim (MLML), Stephen Klein (LLNL), Tom Knutson (NOAA/GFDL), Gerald Kooyman (SIO), Paul Kushner (U. Toronto), Amy Langenhorst (NOAA/GFDL), H-C. Lee (NOAA/GFDL), Amélie Lescroël (Université de Rennes), Z. Liang (NOAA/GFDL), S-J. Lin (NOAA/GFDL), Michael Lizotte (U. Wisconsin, Oshkosh), Nicole Lovenduski (U. Colorado), J. Lu (UCAR), Philip Lyver (Landcare Research), Sergey Malyshev (Princeton), Irina Marinov (U. Pennsylvania), Melanie Massaro (U. Canterbury), Stephanie McAfee (Wilderness Society), P.C.D. Milly (NOAA/GFDL), G. Nong (NOAA/GFDL),

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