

Autumn 2013

# Atmospheric Circulation

Newsletter of the University of Washington Atmospheric Sciences Department

## UW AMS Chapter Forecasts for OAR Northwest

by  
Jennifer DeHart  
Graduate Student

Since being reactivated in 2010, the UW American Meteorological Society Student Chapter has put on several events to benefit club members, such as SkyWarn training sessions, TV station tours and a climate forum with the general public. One of our largest and most interesting projects this year was forecasting for OAR Northwest: a group of four men attempting to row unassisted across the Atlantic from Dakar, Senegal to Miami, Florida. They left Senegal in late January and rowed for 2,700 nautical miles over 73 days until two standing waves capsized the boat and left them stranded 850 miles from their intended destination. Ultimately, the Coast Guard rescued the four men and the boat was retrieved. Despite the unfortunate ending, they still accomplished their primary missions of education and outreach about the ocean, and data collection for fields ranging from oceanography to exercise and sleep science.

Ten students wrote daily forecasts, which included undergraduate students Megan Chaplin and Kelley Bayern along with graduate students Angie Pendergrass (our fearless leader), Liz Maroon, Hannah Barnes, Bonnie Brown, Jennifer DeHart, Ángel Adames-Corraliza, Ken Dixon, and Kristen Rasmussen. These forecasts included a description of current conditions, a detailed forecast for the upcoming day and then a broad long-term forecast, all while trying to remain as concise as possible. The rowers were most concerned with winds, currents, wave heights, and cloud cover. Cloud cover forecasts were particularly vital as they relied heavily on solar power for clean water and communication, and a planned backup wind turbine failed. In addition to being sent to the boat, these forecasts were published on a blog and the rowers' website so the public could keep tabs on their conditions, particularly the school groups following the expedition that were cultivated by OAR Northwest.

This endeavor proved beneficial for both groups. Having access to information about impending weather was helpful for the rowers in deciding future plans, and was a great opportunity to expose everyone following the rowers to the weather. At the same time, it provided a unique opportunity for students of all levels to gain valuable real-life experience forecasting. In a



*The OAR Northwest rowers (Markus Pukonen, Adam Kreek, Pat Fleming and Jordan Hanssen) aboard the James Robert Hanssen. Courtesy of Markus Pukonen.*

region where observations are scarce, proper satellite and model interpretation was critical in ensuring that we could provide them with the most accurate information possible. The group also received a crash course in ocean wave and current forecasting; a bad current often made rowing difficult for them, sometimes causing them to deploy their sea anchor. Feedback from the rowers helped the group evaluate the usefulness of certain products as time went on; differentiating between ocean wave types became important and we stopped emphasizing an ocean current model when it became clear that it wasn't accurate. All in all, we settled into a nice routine until the unfortunate ending.

Upon returning, Jordan Hanssen, the rowers' captain, came to an AMS meeting in the spring to talk with members about his experience

at sea. He discussed everything from the difficulties in spending 2.5 months aboard a small boat to describing the abrupt end to the mission and subsequent rescue. Overall, it was a great experience for all involved: the rowers got personalized weather forecasts, and the forecasters got to develop some new skills while having a vicarious adventure.



## Chair's Column

The biggest surprise as I completed my first year as chair of the department was how much I learned about a department I thought I knew so well. The scope, volume, and impact of the original research that takes place in this department are incredible, as is the student participation in this work. One measure of the impact of that research over the long term is the awards that steadily flow to members of our department. Among the major society awards, Prof. Dennis Hartmann won the highest honor of the American Meteorological Society, the Rossby medal, and Prof. Joel Thornton won the AMS Henry G. Houghton award for early career scientists. Prof. Cecilia Bitz made a triple play, winning an Ascent Award from the American Geophysical Union (award for mid-career scientists), the Rosenstiel Award from the University of Miami (awarded for work on sea ice in the climate system), and a Fulbright Scholar Award.

We had a very successful faculty search this past year, yielding a new Assistant Professor in Daehyun Kim. Prof. Kim is a research scientist at Columbia University and he plans to join us after the New Year. His research involves the influence of tropical convection on larger-scale patterns of variability, including the Madden-Julian oscillation. He will bring strength in numerical modeling and using observations to improve and constrain those models. Since Prof.

Kim's research interests cut across both weather and climate, we anticipate broad participation in department research and teaching activities.

One sad note from the past year is the passing of Prof. Bob Fleagle on 20 April 2013. Bob was one of our original faculty members, having been hired a year after the department was founded in 1947. Among the many highlights in his long career, he served in the Kennedy administration, helped to establish NCAR, authored two books, and established the Robert Fleagle Endowed Lectures in Atmospheric Science Policy at UW.

Finally, I would like to say a big, "Thank You!" to those who keep in touch with us and for your generous financial support of the department. From undergraduates that recently finished, to some of the earliest graduates from the 1950s, and from our corporate partners, I learned a great deal about how much positive impact this department has had on atmospheric sciences and society in general. It was great fun to hear from old friends, new friends, and from those whose names are prominent in the history of this department.

Your contributions funded undergraduate and graduate scholarships, expanded our ability to recruit the best and brightest graduate students and faculty, and underwrote our extensive outreach program. We are working toward endowing a new scholarship fund for undergraduates, with a 1:1 matching opportunity for gifts totaling up to \$10,000. You can help make that happen by contacting Caroline Rosevear at (206) 221-0562 or [rosevear@uw.edu](mailto:rosevear@uw.edu). Thank you for supporting our extraordinary undergraduates!

On a more whimsical note, my favorite check memo line of the year was, "For the chair's smooth whiskey fund," although I regret that such a fund has yet to be established (I sense an endowment opportunity!). As always, we look forward to hearing from you with the latest news on your career and family, and wish you all the best in the coming year.

Greg Hakim



Greg Hakim behind the Fleagle desk.

## Department News

**Promotions**—Becky Alexander was promoted to Associate Professor of Atmospheric Sciences with tenure. Cecilia Bitz was promoted to Professor of Atmospheric Sciences. Bonnie Light was promoted to Affiliate Associate Professor of Atmospheric Sciences.

**Faculty Awards and Honors**—Two honors were received by department faculty from the American Meteorological Society for 2013. Professor Dennis Hartmann received the Carl-Gustaf Rossby Research Medal "For significant

contributions to the synthesis of knowledge or radiative and dynamical processes leading to a deeper understanding of the climate system." Associate Professor Joel A. Thornton received the Henry G. Houghton Award "For groundbreaking contributions to understanding chemical processes in the atmosphere, especially those that occur between the condensed phases of wet atmospheric particles and the gas phase."

Professor Robert Houze was elected as a fellow of the American Association for the Advancement of Science. He was inducted in

February 2013 for his contributions to the understanding of cloud dynamics.

Professor David Battisti and colleagues were awarded the 2013 Ecological Society of America's (ESA) Sustainability Science Award for the work entitled Seeds of Sustainability: Lessons from the Birthplace of the Green Revolution. It was recognized by the ESA as a single scholarly contribution published in the last 5 years that represents the greatest contribution to the emerging science of ecosystem and regional sustainability through the integration of ecological and social sciences.

Professor Cecilia Bitz has won a 2013 Ascent Award from the AGU. This new award is described by the AGU as follows: "Established in 2012, the Atmospheric Sciences Ascent Award aims to reward exceptional mid-career (academic, government, and private sector) scientists in the fields of the atmospheric and climate sciences." Bitz received a Fulbright Scholar Award. The 2013 Rosenstiel Award was presented to her in April for her work which focuses on climate and climate change in the high latitudes, especially involving the cryosphere (areas of the Earth covered in the many forms of snow and ice). Additional information can be found at [www.rsmas.miami.edu/news-events/press-releases/2013/2013-rosenstiel-award-winner-announced/](http://www.rsmas.miami.edu/news-events/press-releases/2013/2013-rosenstiel-award-winner-announced/)

Professor Daniel Jaffe received a Fulbright Award as Distinguished Chair in Environmental Sciences.

Professor Dale Durran was the winner of the Department's 2013 Annual Teaching Award.

Brian Rose, former Research Associate, began a tenure-track appointment as assistant professor at the University at Albany (SUNY) in the Department of Atmospheric and Environmental Sciences in September 2013.

**UW Atmos Outreach Videos**—Our outreach group and graduate students have been hard at work this past year and produced three YouTube videos. The videos from this past year are *Ocean Acidification*, *Latent Heat* and *Save the Coal*. To check out the videos go to <http://www.atmos.washington.edu/~outreach/videos.html>

Congratulations to Luke Madaus, winner of the Student Award for Best Poster, and Kristen Rasmussen, runner-up for the Student Award for Best Presentation, at the 15th AMS Conference on Mesoscale Processes in Portland, OR.

Graduate Student Kelly McCusker received an Outstanding Student Paper Award for her presentation at the American Geophysical Union's 2012 fall meeting. The title of the presentation was *Rapid and Extensive Warming Following Cessation of Solar Radiation Management*.

Graduate Student Elizabeth Maroon was the winner of the Department's Spring 2013 Forecasting Competition.

Retired meteorologist Art Rangno has updated his *A Guide to the Sky* poster. Many of you may remember his previous editions as well as the one hanging in the department's main office. One

(Departmental News—Continued on page 3)

## A Field Trip Across the North American Great Plains: Snow Collection

by  
Cheng Dang  
Graduate Student

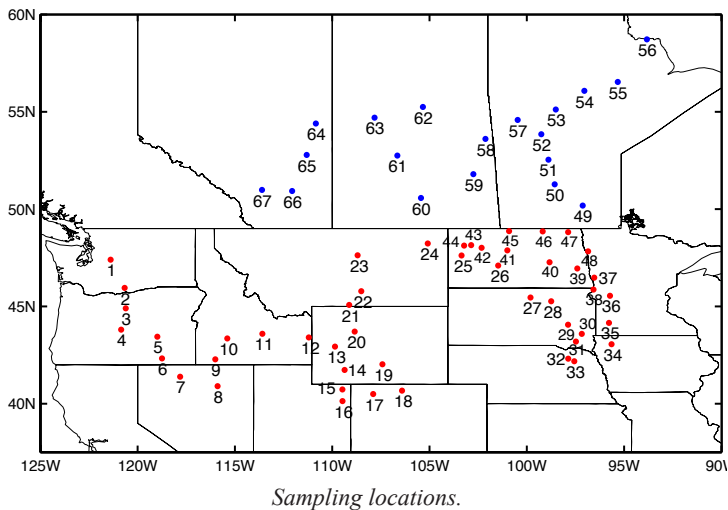
From the end of January 2013 to the end of March 2013, Prof. Stephen Warren's group carried out a field trip for snow collection in the North American Great Plains, funded by the US Environmental Protection Agency. The main purpose of this field trip was to gather samples for analysis of the type and source of light-absorbing impurities (LAI) in snow, such as soil dust and black carbon (BC). People participating in this campaign were UW Prof. Stephen Warren, Dr. Sarah Doherty from the Joint

Institute for the Study of Atmosphere and Ocean (JISAO), exchange graduate student Rudong Zhang from Lanzhou University (China), and UW graduate student Cheng Dang.

This work was motivated by model studies indicating that black carbon may be darkening snow in this region, leading to climate warming and earlier snowmelt. BC is a strong absorber of solar radiation. Because snow has a very high albedo, a small amount of BC could dominate light absorption in snow at visible and near-ultraviolet wavelengths. These studies have focused on BC because it absorbs much more sunlight per mass than other LAI. However, other LAI may be present in sufficient quantities to also affect snow albedo. The LAI distribution and concentration in snow are difficult to predict, which make direct sampling of snow the most reliable way to estimate the influence of LAI on snow in various locations. Previously

the group carried out similar field campaigns in the Arctic and China.

During the two months, starting in Seattle, we collected >600 samples at 67 sites in 13 US states and 3 Canadian provinces. At most sites, we collected snow in three profiles to test for spatial variations. At all sites, we measured total snow depth and snow density, and collected local soil samples. All snow samples were kept frozen until they could be melted and filtered in temporary laboratories set up in motel rooms, about every four days. Filter samples will be measured using the ISSW spectrophotometer (built by Research Professor Thomas Grenfell) in order to estimate the light absorption due to different types of LAI. Water samples will be analyzed to determine the sources of snow LAI. The team will be returning to the field for further measurements in Winter 2014.



Cheng Dang is preparing to collect snow on a frozen lake (Site 50, Lake Manitoba) with sampling snow pit behind her.

## The 2012-2013 UW WxChallenge Recap

by Lynn McMurdie

Over 20 enthusiastic forecasters joined the UW forecasting team for the National WxChallenge. The team did well this past year, placing 14th (out of over 50 schools). Five members placed within the top 200 forecasters, which qualified them for the final tournament round. Highlights for 2012-13: Jack Neukirchen placed 2nd in the nation in the Freshman/Sophomore category for Billings, MT and earned an official WxChallenge trophy. Ken Dixon was top wind forecaster in the country at Burbank, CA and Hannah Barnes was top precipitation forecaster at Duluth, MN. Elizabeth Maroon was our top UW finisher, scoring well above national consensus and was 48th place out of more than 1700 forecasters. Great Job Team!! The 2013-14 contest started September 27, 2013 and will include the cities of: Houston, TX, Cheyenne WY, Norman, OK, Fairbanks, AK, Redding, CA

and more. If you're interested in more information on the 2013-14 WxChallenge, please email us at: [mcmurdie@atmos.washington.edu](mailto:mcmurdie@atmos.washington.edu) or [emaroon@atmos.washington.edu](mailto:emaroon@atmos.washington.edu).

## Public Lectures

The fourth **Robert Fleagle Endowed Lecture in Atmospheric Science Policy** was given on October 8, 2012. The speaker was Prof. Daniel M. Kammen (University of California, Berkeley). The lecture was entitled *What Will It Take to Get Serious About Sustainable Energy?*

Professor Geoffrey K. Vallis (Princeton University) was invited to visit the department as the **Graduate Students' Distinguished Visiting Lecturer**. He gave a public lecture on May 16 entitled *Timescales and Uncertainties in Climate Change*.

Professor Paul Markowski has been invited to be the speaker at the **2014 Peter V. Hobbs Memorial Endowed Lecture in Experimental Meteorology**. The lecture is planned for winter quarter. An announcement will be avail-

able on the Department's News link when the date is confirmed and under our Alumni & Friends Endowed Lectures web site. For more information on our public lectures, see <http://www.atmos.washington.edu/alumni.update/lectures.shtml>.

## Departmental News, cont. from page 2

of his photos from KWAJEX (NASA Kwajalein Experiment-Tropical Rainfall Measuring Mission field study in the Marshall Islands, 1999) is on the cover of a Russian book on aviation and weather entitled *Fundamentals of Aviation Meteorology Lectures*.

**Photographer and glaciologist Austin Post** passed away November 14, 2012, in DuPont, WA. His link with the department was the photographs he made at the Muldrow Glacier in 1960 under Prof. Phil Church's field project. He was also a co-author of the book *Glacier Ice* with Prof. Ed LaChapelle. For more information on Post, see our News link at [www.atmos.washington.edu/outreach/news.shtml#post](http://www.atmos.washington.edu/outreach/news.shtml#post).

## Building Community: The UW AMS Student Chapter

by Kristen Rasmussen  
Graduate Student

A strong sense of community amongst students in an academic setting encourages collaboration and motivates excellence. The American Meteorological Society Student Chapter at the University of Washington was reinstated in the fall of 2010 to help build a vibrant community of both undergraduate and graduate students within the Atmospheric Sciences Department. Prior to the reinstatement, the interaction between undergraduate and graduate students was limited. Valuable mentoring amongst students with similar interests in weather and climate was notably absent. However, with the reinstatement of the student chapter, a strong community of students has coalesced in our department. The student chapter has encouraged dialogue between students of differing stages, provided mentoring opportunities, held social events, forecasted for two human-powered rowing expeditions, helped create a Washington Weather Calendar for fundraising, toured news stations with local broadcast meteorologists, helped fund undergraduate students to attend the AMS Annual Meeting, and much more. We continue to find creative ways to both engage and educate our student members to help them locate their intended career path and provide guidance along the journey.

Dedicated student leadership from both the undergraduate and graduate level has propelled the student chapter to be an asset to our department. The recruitment of new undergraduate majors has been a priority for members since the chapter was formed. Many students at the UW have simply not heard of Atmospheric Sciences. Our members have talked to many introduction classes in both the Applied Math and Physics departments to recruit potential majors. In addition, we helped send seven undergraduate students to the AMS Annual meeting last year and we hope to continue this in subsequent years. We are very lucky to have enthusiastic and dedicated members who are constantly thinking of new ways to engage and inspire students in our department. For more information about our student chapter, please visit [www.atmos.washington.edu/uw\\_ams/](http://www.atmos.washington.edu/uw_ams/).



Collage of UW AMS Student Chapter events and projects (Tornado Alley IMAX, Washington Weather Calendar, Mariners game, King 5 visit with Jeff Renner, campus group shot, Wild Horses Wind Farm, and OAR NW)

## In Memoriam Robert Fleagle



Robert Guthrie Fleagle, Sr. was Professor Emeritus of Atmospheric Sciences and Senior Fellow in the Joint Institute for Study of the Atmosphere and Ocean at the University of Washington. He earned an A.B. degree in physics from Johns Hopkins University and a Ph.D. in physics-meteorology from New York University before joining the UW faculty in 1948. His initial strong focus on atmospheric research gradually broadened to embrace a growing interest in the application of the science to issues of public policy. He served in the Office of Science and Technology, Executive Office of the President, in 1963 and 1964 to oversee atmospheric research of the government agencies. Here he

witnessed and participated in many of the crucial actions that led to major advances in the science and to increasing recognition of the importance of atmospheric processes to the welfare of the planet. In later years he served as Chair of the UW Department of Atmospheric Sciences, Chair of the Committee on Atmospheric Sciences of the National Academy of Sciences, Chair of the Board of Trustees of the University Corporation for Atmospheric Research, and President of the American Meteorological Society.

Bob Fleagle was one of the founding fathers of our department, and arguably the most influential in hiring and setting the tone for the collegial atmosphere that we now enjoy. He was hired in 1948 (the department was founded in 1947), and served as department chair from 1967-1977. He was instrumental in the early development of Atmospheric Sciences not just at UW, but internationally too. Among many highlights in his long career, he served in the Kennedy administration, helped establish NCAR, co-authored the influential books, *An Introduction to Atmospheric Physics* and *Eyewitness: Evolution of the Atmospheric Sciences*, and established the Robert Fleagle Endowed Lectures in Atmospheric Science Policy at UW.

His influence on this great department cannot be over-emphasized.

For more information on Robert Fleagle, see <http://www.atmos.washington.edu/people/fleagle.shtml>

## Congratulations to Graduates

### Doctor of Philosophy

- Blanchard-Wrigglesworth, Edward**, *On the Predictability of Sea Ice* (Bitz)
- Di Pierro, Maurizio**, *Spatial and Temporal Distribution of Arctic Aerosols: New Insights from the CALIPSO Satellite* (Jaeglé)
- Didlake, Anthony C., Jr.**, *An Analysis of the Structure and Dynamics of Inner Core Precipitation Features in a Tropical Cyclone* (Houze)
- Feldl, Nicole A.**, *The Local, Remote, and Global Consequences of Climate Feedbacks* (Roe)
- Fletcher, Jennifer Kathleen**, *Improving Boundary-Layer Cloudiness in the NCEP-GFS* (Bretherton)
- George, Rhea C.**, *Aerosol Cloud Interactions in the Southeast Pacific Stratocumulus: Satellite Observations, In Situ Data and Regional Modeling* (Wood)
- Hezel, Paul J.**, *The Influence of Sea Ice on Antarctic Ice Core Sulfur Chemistry and on the Future Evolution of Arctic Snow Depth: Investigations Using Global Models* (Bitz, Alexander)
- Hwang, Yen-Ting**, *The Energetic Constraints on the Zonal Mean Atmospheric Circulations in the Tropics, Midlatitudes, and High Latitudes* (Frierson)
- Lin, Pu**, *Understanding Changes in the Stratospheric Circulation from Observations and Simulations* (Fu)
- Liu, Zheng**, *Evaluation of High-Level Clouds in Cloud Resolving Model Simulations with ARM and KWAJEX Observations* (Ackerman)
- McCusker, Kelly E.**, *Investigations of the Climate System Response to Climate Engineering in a Hierarchy of Models* (Battisti, Bitz)
- Penny, Sandra M.**, *Storm Track Variability from the Perspective of Individual Storms* (Battisti, Roe)
- Smoliak, Brian V.**, *Detection and Attribution of Global Surface Air Temperature Change in the Instrumental Record* (Wallace)
- Sofen, Eric D.**, *Isotopic Investigation of Anthropogenic- and Climate-Driven Changes in Sulfate and Nitrate Aerosol Production* (Alexander)
- Virts, Katrina S.**, *Analysis of New Observational Datasets Relating to the Organization and Dynamical Impacts of Tropical Convection* (Wallace)
- Zhang, Yanxu**, *Biogeochemical Cycling of Mercury in the Atmosphere-Ocean-Land System: Global and Regional Modeling* (Jaeglé)

### Master of Science

- Barnes, Hannah C.**, *The Precipitating Cloud Population of the Madden-Julian*

*Oscillation over the Indian and West Pacific Oceans* (Houze)

- Brewer, Matthew C.**, *The West Coast Thermal Trough: Climatology, Evolution and Sensitivity to Terrain and Surface Fluxes* (Mass)
- Gingrich, Mark A.**, *Predictability and Error Growth in Short Range Ensemble Forecasts of the February 5–7 and December 26–27, 2010 East Coast Snowstorms* (Durran)
- Madaus, Luke E.**, *Contributions of Dense Pressure Observations to Mesoscale Analyses and Forecasts* (Mass, Hakim)
- Navarro, Erika L.**, *Storm-Centered Ensemble Data Assimilation for Tropical Cyclones* (Hakim)
- Painter, Gallia M.**, *A Lagrangian Study of Southeast Pacific Boundary Layer Clouds* (Bretherton)
- Shi, Xiaoming**, *Estimating the Response of Mid-latitude Orographic Precipitation to Global Warming* (Durran)
- Steiger, Nathan J.**, *Assimilation of Time-averaged Pseudoproxies for Climate Reconstruction* (Battisti, Roe, Hakim)

### Bachelor of Science

- Russell Barton**  
**Steven Brey**  
**Stella Choi**  
**Alec Digard**  
**Julia Doerner**  
**Gregory Herman**  
**Sebastian Morgan**  
**Jason Phelps**  
**Jacob M. Rissberger**  
**Adam Wisch**

## Welcome to New Graduate Students for 2013–2014

- Qianjie Chen**, Utrecht University
- Andrew V. Geiss**, University of Washington
- Jiayue Huang**, Sun Yat-sen University
- Tsubasa Kohyama**, The University of Tokyo
- Marysa M. Laguë**, University of British Columbia
- Johannes K. C. Mohrmann**, University of Auckland
- Ana C. Ordonez**, Arizona State University
- Andre Perkins**, University of Wisconsin–Madison
- Brandon M. Ray**, Northwestern University (IL)
- Maxwell A. Smith**, University of Illinois–Urbana
- Judy R. Twedt**, University of Washington
- Casey J. Wall**, University of Puget Sound (WA)
- Joseph P. Zagrodnik**, Florida International University

## Scholarships and Awards

2013 ARCS Diversity Fellowship:

**Ana Ordonez**  
**Andre Perkins**

2013 National Science Foundation (NSF) Graduate Research Fellowship:

**Ana Ordonez**  
**Judy Twedt**

2013 Program on Climate Change (PCC) Fellowship:

**Maxwell Smith**

2013 Top Scholar Award:

**Marysa Laguë**  
**Maxwell Smith**

Graduate Opportunities and Minority Achievement Program (GO-MAP):

**Ana Ordonez**

Graduate Research Innovation (GRIN) Award from the Joint Fire Science Program administered by the Bureau of Land Management:

**Matt Brewer**

IGERT Program on Climate Change:

**Elizabeth Maroon**

NASA Earth System Science Fellowship:

**Joseph Zagrodnik**

National Defense Science and Engineering Graduate (NDSEG) Fellowship:

**Rick Russotto**  
**Matt Woelfle**

Natural Sciences and Engineering Research Council of Canada Fellowship:

**Marysa Laguë**

Peter B. Wagner Memorial Award for Women in Atmospheric Science:

**Kelly McCusker**

Takenaka Scholarship:

**Tsubasa Kohyama**

Iizuka Takeshi Scholarship Foundation:

**Tsubasa Kohyama**



## Donor Recognition

The Department of Atmospheric Sciences gratefully acknowledges the donors who have generously supported us during the past fiscal year July 1, 2012 through June 30, 2013.

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## Alumni News

**Bob Berkovitz** ('69, B.S.) retired from the National Weather Service in 2005 and still volunteers at the Arizona Science Center. He is also the program chair at the Tempe Arizona chapter of the National Active and Retired Federal Employee Association. This summer he went on a week's trip to Paris and had a wonderful time seeing the sites. In 2012, he visited Israel for the first time.

**H. W. "Buzz" Bernard** ('75, B.S.) is a retired meteorologist and writer. His second novel, *Plague*, came out in September 2012. He has another novel, *Supercell*, coming out in November 2013. His books are available on Amazon and Barnes & Noble.

**Jimmy Booth** ('10, Ph.D.) began a faculty position as Assistant Professor at City College of New York in the Department of Earth and Atmospheric Science in September 2013.

**Brad Carl** ('11, B.S.) began his broadcast career as a Weekend Weather Anchor and Week-day Reporter with the KULR-9 (Billings MT) news team in September 2011. While attending the UW, Brad held weather internships at news stations KOMO 4 and Q13. He is enjoying covering all of Montana's big storms.

**John "Jack" Herring** ('94, Ph.D.) was named dean of Fairhaven College at Western Washington University. He began his appointment on August 1, 2013. During his time here as a graduate student, he was a flight crew member for airborne experiments measuring pollution from forest fires, ships

and burning oil slicks with the Cloud and Aerosol Research Group.

**David Houghton** ('63, Ph.D.) began his career as a research scientist at NCAR (1963-1968). He joined the faculty of the Department of Meteorology at University of Wisconsin-Madison in 1968, became a Full Professor in 1972 (Atmospheric and Oceanic Sciences) and Emeritus Professor in 2001. His primary research areas have been in atmospheric dynamics; numerical modeling of general circulation, synoptic-scale and mesoscale; initialization; gravity waves; satellite mesoscale cloud, wind and temperature data; seasonal cycle dynamics, climate change. He was elected a Fellow of the AMS (1980) and AAAS (1995). He received the AMS Charles Franklin Brooks Award (2000) and AMS Charles E. Anderson (2003). He wrote numerous papers, and was Editor-in-Chief of *Handbook of Applied Meteorology*. He held numerous positions in national committees and groups including AAAS, AGU, AMS, NAS/NRC, NASA, NCAR, NSF, and UCAR. He continues to do public outreach on "climate change" issues. He lives in a retirement community in Woodbury MN.

**M.J. McDermott** ('01, B.S.), Q13 FOX News meteorologist (Seattle), had her new book released in December 2012 entitled *The Improv*. It's not about weather, but is based on a true story. Her book is available through Amazon. The book trailer can be found at <http://www.youtube.com/watch?v=rIUhReKYt9U>

**David Mechem** ('03, Ph.D.) was awarded tenure and promotion to Associate Professor at the University of Kansas.

**Nate Mantua** ('94, Ph.D.) started a new position as leader of the landscape ecology team at NOAA's Southwest Fisheries Science Center in Santa Cruz CA in February 2013. His work is focused on climate impacts on marine and anadromous fish in the California Current System and salmon habitat in freshwater and estuaries along the Pacific coast.

**Jack Paris** ('63, B.S.) news. In the words of Dr. Paris:

First, a bit of background:

In 1962, I had just graduated from Texas A&M with a B.S. degree in physics, had just gotten married, and had just entered the USAF (I was in the Corps of Cadets at Texas A&M). However, the USAF did not know what to do with a physicist like me; so, they assigned me to the University of Washington where I earned a second B.S. in Atmospheric Sciences in 1963.

I went on to serve as a USAF Weather Officer for three years and then went back to Texas A&M in 1966 (no longer in the USAF) for graduate work that led to a Ph.D. in Meteorology in 1971.

At UW I was first introduced to the science of remote sensing...weather satellites had just come on line in 1960.

I now have 47 years of experience as a remote-sensing scientist and have my own company  
(*Alumni News—Continued on page 8*)

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Please send alumni news, comments, questions, corrections and address updates to [alumni@atmos.washington.edu](mailto:alumni@atmos.washington.edu) or call (206) 543-4250.

### *Alumni News, cont. from page 7*

here in Clovis, CA. The excellent preparation that I received via the UW Atmospheric Sciences program of 1962-63 led to a successful and ongoing life as a remote-sensing scientist. From 1975-2002, I taught remote sensing and meteorology for the University of Houston and later for California State University (CSU) Fresno and then at CSU Monterey Bay. I also worked for NASA (1980-83) and then for JPL (1983-1987). After retirement from CSU in 2002, I have continued to work full time in the private domain... first for DigitalGlobe, Inc. (2002-2004), and then for myself (2005-present).

My recent news is that I am helping two new companies in California get established for the purpose of mapping and monitoring of vegetation and soil conditions vineyards, in orchards, and for other crops in fields in California, in Oregon, in the State of Washington, and in other agricultural areas around the world. I am also still consulting for a major seed company (corn in the Midwest) and am doing expert-witness work relative to citrus groves in Costa Rica.

All of this started at UW when I learned about remote sensing and its applications to the atmosphere, later to the oceans, and later still to land areas from boreal forests to tropical forests and for agricultural crops worldwide.

**James Renwick** ('95, Ph.D.). In June 2012, he took up a faculty position in the School of Geography, Environmental and Earth Sciences at Victoria University of Wellington (VUW). His role is to develop teaching in climate dynamics and large-scale circulation variability, an area that has historically been very poorly represented in New Zealand universities. His focus is on Southern Hemisphere circulation and links between climate variability and the cryosphere, both in New Zealand and the Antarctic. He has been at VUW for a year now and is really enjoying the teaching and interactions with students. Prior to his move, he worked for many years at the National Institute of Water and Atmospheric Research (NIWA), which is a government-funded research lab which can be thought of as a New Zealand equivalent of the Pacific Marine Environmental Laboratory (PMEL). He maintains strong links to NIWA researchers and is working on developing a pool of co-supervised graduate students with expertise in Southern Hemisphere climate dynamics.



## Undergraduate and Faculty Research

The following undergraduate students and faculty members worked together during the past year:

**Alexandria Gingrey (Atmospheric Sciences), David Yun (Math, Astronomy, Physics), Steven Brey (Atmospheric Sciences), Adam Wisch (Atmospheric Sciences), Andrew Ho (Biochemistry, Chemistry)**

/ Cecilia Bitz: Arctic Sea Ice Thickness Influence on Extreme Blocking Events over Europe.

**Sofya Malashanka (Biology)** / Daniel Jaffe: Using Fournier Transform Infrared Technology to Help Students Learn about the Green House Effect.

**Judy Twedt (Physics)** / Dargan Frierson: Coupled Climate Model Variability in Predictions of Southern Ocean Heat Uptake.

**Elynn Wu (Atmospheric Sciences)** / Dargan Frierson and Alyssa Atwood: Last Millennium Climate Change.

**David Yun (Math, Astronomy, Physics)** / Cecilia Bitz: The Snowball Earth Hypothesis and Its Implications on the Habitable Zone.