

Autumn 2009

Atmospheric Circulation

Newsletter of the University of Washington Atmospheric Sciences Department

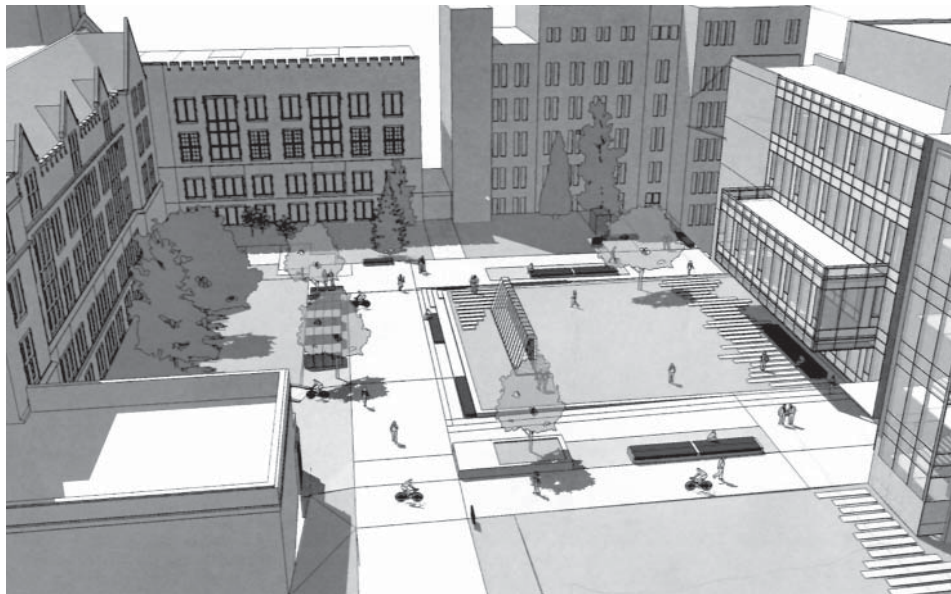
Going, Going, Gone...

by Dale Durran

Most of you remember Johnson Annex, the wooden split-level temporary building just to the west of the walkway leading to our ATG building from the north. Those of you who were in our program before the early 70's did more than just walk by it; you may have taken some classes in the building. Certainly the first step in the demise of Johnson Annex was when the Atmospheric Sciences Department moved out completely. Although it took almost four more decades, the day of final reckoning for Johnson Annex arrived this September.

About 15 years ago there were plans to build a new geosciences building on this site, but alas, this never happened. Instead the site has been dedicated to a new Molecular Engineering (MoE) building that we will *not* occupy. An architect's drawing of the new building appears top right, with our ATG building lurking in the background.

The new MoE building will also cover the area previously occupied by the more historic Cunningham Hall, which was the nicer wooden building just west of the Johnson Annex. Cunningham was moved to a location up by Par-rington Hall, but it managed to get stuck on its way up the hill to its new home. Several photos of the demolition of Johnson Annex and the Cunningham move appear to the right.



Molecular Engineering Building Design



View from the chairman's office showing Cunningham Hall ready to move and an attack in progress on the north end of Johnson Annex.



Cunningham Hall gets stuck west of Meany Hall.



The south end of Johnson Annex gets a reprieve. The top two floors once held Atmospheric Science classrooms and offices.



Down comes the first-floor wall of Johnson Annex.



The shadow of the ATG Building against the empty site where Johnson Annex, Cunningham Hall and our north lawn were located.

Chair's Column



As we are gearing up for the start of fall classes, change is definitely in the air. Our department did join the new UW College of the Environment. At least in the short term, most things will remain the same, although we will have new and more

flexible General Education requirements for our undergraduate majors. More about our new College appears in the article by Dennis Hartmann on page 5. Dennis continues to serve as the interim dean of this new college. We are excited about the potential of the College of the Environment to catalyze interdisciplinary research in the geosciences and beyond, and also believe it will be a very good home for our core atmospheric science studies.

Considerable physical disruption is being caused by the construction of the new Molecular Engineering Building. My office has the best, and more or less closest, view of this activity of any office on campus (see the article and pictures on p. 1). Even sadder than the loss of the fine horse-chestnut tree just north of our building, is the fact that we will get no space in the new building. We hope to eventually get a new building, but there are no immediate prospects for such an upgrade.

As you are probably aware, the current economic crisis has not been kind to universities. The UW, whose state funding is largely collected through sales taxes, has done worse than most major public universities. Exclusive of federal stimulus funds, which are temporary and will disappear, the UW's state budget was cut a whopping 26%. Some of this was offset by a 14% increase in tuition. After this increase, the tuition and fees for 2009-2010 are about \$7,700 per year for an in-state undergraduate, which is, while not insignificant, still lower than the cost of all our major peer institutions. The cut to our department's budget was thankfully lower, but at 9% it forced one layoff and a host of other measures including reductions in TA staffing and elimination of phones from the graduate student offices (most of whom now have cell phones).

We always greatly appreciate the donations that have been given to the department by our alumni and friends. Particularly during these difficult budget times, your help makes a tremendous difference.

Having made my annual plea for donations, let me close by making my annual plea for you to send us news about yourselves. We look forward to hearing what you are up to and to sharing it with the rest of our alumni in this newsletter.

Best wishes,
Dale Durran

Featured Professor: Cecilia Bitz



Cecilia Bitz

Cecilia Bitz began her college studies at Oregon State, receiving a B.S. in Engineering Physics. She then headed up to Seattle to study physics at UW. While working on her graduate physics degree, she read *The Changing Atmosphere* by John Firor and it set her on a path to study atmospheric sciences. Cecilia collected an M.S. in physics from UW and switched to Atmospheric Sciences where she received a Ph.D. under the guidance of David Battisti in 1997. Her dissertation was entitled "A Model Study of Natural Variability in the Arctic Climate." She has continued to make important contributions to our understanding of a wide range of climate phenomena with links to the polar regions. Cecilia developed the sea ice model used in the Community Climate System Model (CCSM) for which she received the CCSM Distinguished Service Award in 2002.

After graduating from UW, Cecilia elected to remain in the northwest, spending a year and a half as a postdoc at the University of Victoria and another half year at the UW's Quaternary Research Center. Under support of the NOAA Climate and Global Change Postdoctoral Fellowship Program, she then joined the Polar Science Center in the Applied Physics Laboratory (APL) at UW, and ultimately joined APL's permanent staff. She joined the Atmospheric Sciences Department in 2005 and was recently promoted to the rank of Associate Professor and granted tenure.

Cecilia's closest approach to the North Pole occurred when she presented lectures about Arctic sea ice in an intensive summer school class in Spitsbergen during the International Polar Year

(2007). Cecilia is leading an outreach effort at the Seattle Art Museum's outdoor Sculpture Garden adjacent to Elliot Bay. Among other endeavors, markers will be placed along the shore to illustrate how a one-meter rise in sea level will change the position of the high tide line.

Cecilia commutes to her office by bicycle year round, and in keeping with her high level of environmental conscientiousness, recently installed a "green roof" on her garage.



Lecture by Cliff Mass on Northwest Weather

Cliff Mass, department faculty member, gave a public lecture entitled *Extreme Weather of the Pacific Northwest* at the UW on December 4, 2008, which was sponsored by the department. Following the lecture, he had a signing for his book *The Weather of the Pacific Northwest*.



University of Washington Press released the book by Cliff Mass on Northwest weather in 2008. Written for a lay audience, yet of interest to a professional meteorologist, *The Weather of the Pacific Northwest* is a comprehensive guide to the weather of the region, reviewing snowstorms, windstorms, floods, and other major regional weather events. It also describes the climatology of the Northwest, the potential local effects of global warming, how weather forecasts are made, and local weather features like the convergence zone and diurnal winds. Other sections talk about regional dust storms, avalanches, how to interpret the sky, the meteorological influence of the Mount Saint Helens eruption, and even mountain wave clouds that resemble UFOs. Much of the book is based on research completed within the department. For more information on the book please visit: <http://www.washington.edu/uwpress/search/books/MASWEA.html>. The book can be found at the UW Bookstore and amazon.com, as well as other bookstores.

In Memoriam



Franklin Badgley

Franklin Ilsley Badgley, one of this department's first faculty members, died on April 28 of this year at age 94. Frank was born in Mansfield, Ohio and spent his early years on a Wisconsin farm. His family moved to Flossmoor, Illinois, and Frank entered the University of Chicago at age 16. After graduation, he worked for six years as a chemist for Swift & Company. He returned to the University of Chicago in 1942 to receive training in weather forecasting and thereafter served in the Army Air Force for three years as an instructor and during his final year as squadron officer, primarily stationed in the Azores Islands. After his discharge he enrolled in the graduate Program in Meteorology at New York University and received his Doctorate from there in 1950.

While still a graduate student at NYU, Frank received an offer to serve as the director of a funded research project for the fledgling Department of Meteorology at the University of Washington, with the assurance that as soon as University funding became available, he would be appointed a member of the teaching faculty. He joined the department in 1947, was appointed to the teaching faculty in 1950, and achieved tenure in 1959. He was among the department's most devoted and most effective instructors, posing penetrating questions and offering rigorous and detailed explanations laced with unexpected displays of his dry sense of humor. One of the more memorable moments of his teaching career, as recounted by his teaching assistant Lynn McMurdie, was in a lecture in a large Atmospheric Sciences 101 course in which he demonstrated how an object may spin around a preferred axis of rotation by lobbing a football into the back rows of the classroom. Frank's intended receiver, a male student large enough to have been a member of the football team, had the good fortune to wake up in time to catch his pass, but was embarrassed by the fact that he wasn't strong enough to return the pass to the front of the classroom.

Many of the problems that Frank posed in his lectures and in his exams were inspired by his keen observations of and curiosity about everyday experiences. A notable example is his qualifying exam question about the inveterate cyclist plagued by pervasive headwinds, no doubt inspired by decades of commuting to work on his bicycle. Several generations of students were

inspired by Frank's devotion to teaching and his genuine concern for their academic and personal well-being.

Frank was a skilled experimentalist and a builder of meteorological instruments. During the International Geophysical Year in 1957, he served a 3-month term as chief scientist in Project Ice Skate, a camp maintained by department personnel on a drifting Arctic ice island. He played a key role in the Department's Energy Transfer Group, which was among the leading groups in the country studying boundary layer processes. He served as department chair from 1977 until he retired in 1982.

For over 25 years following his retirement Frank continued to pursue his lifelong interests in woodworking, music, history and family genealogy, in particular, his interest in his ancestor Patrick Gass, an officer in the Lewis and Clark expedition. (Frank once suggested that the Atmospheric Sciences - Geophysics Building be named the GASS Building.) Through most of these years, he enjoyed the companionship of his wife, Helen, who died just two years ago. Frank and Helen's daughters, Anne and Jeanne, their husbands, and their grandchildren Catherine and Wilson joined members of the department in a celebration of Frank's university career June 5, 2009.

Seattle Skies

by Nicole Ramirez

From personal photos taken by faculty, to poster publications of past research projects, to comic strips on the office doors of graduate students, the walls in the hallways of ATG are decorated with "art" that documents the history and the people of the Atmospheric Sciences Department. By far, my favorite piece of "art" in the building has to be Art Rangno's "A Guide to

the Sky" hanging in the main office. This poster is a chart showing some of the most frequently seen shapes and forms of clouds. Unique photos of various cloud types, taken from across the country by Rangno himself are accompanied with informative text about the characteristics of the clouds pictured. It is both visually captivating and educational. It is enough for me, an amateur cloud enthusiast, to gaze at for hours at a time.

So when David Ovens, Research Meteorologist, emailed last November about installing a department webcam that took footage of the sky, I was ecstatic. The webcam, located in Oven's office on the sixth floor, points west towards the Olympic Mountains and records from dawn to dusk. The recorded footage, which starts out as loops of still images, is converted to time-lapse movies that are no longer than three minutes. Each movie is available to watch on a department hosted web page that can be found at <http://www.atmos.washington.edu/images/webcam0>.

It took the collaboration of various people in the department to realize this project. "I had been thinking about setting up the web camera that Don Atkinson had left to me on his retirement but was not sure how to do it. Last October, Joe Tenerelli, a former grad student from our department, came back to visit, and he showed me the webcam that he had set up at his home in France," Ovens explains. "Knowing how skilled Joe is with computers, I asked him if he could install that software (called Motion) on my Debian Linux computer in my office and get it running with the Logitech camera that Don had given me." Within a few days, the camera and software were working. Ovens spent the next couple of weeks experimenting with the software and adjusting the exposure settings of the camera in order to capture the best images.

Ovens then enlisted the help of Software



University of Washington, Department of Atmospheric Sciences Webcam, Time-lapse Movies
Current Weather from ATG rooftop as of Wed Oct 07 09:15:49 PDT 2009:

Temperature	55	Dewpoint Temperature	48	RH	76%
Wind Direction	360	Speed (knots)	0	Gust	0
Pressure (mb)	1020.46	Precip (inches)	0	Solar Radiation (W/m ²)	247.1

This images refreshes automatically every 30 seconds.

The camera is pointing West and is located on the 6th floor of the ATG building at the University of Washington Seattle Campus, [here](http://www.atmos.washington.edu/images/webcam0)
Questions and comments should be directed to: [David Ovens](mailto:David.Ovens@u.washington.edu).

Snapshot from webcam site at <http://www.atmos.washington.edu/images/webcam0>.

(Continued on page 4)

Seattle Skies, cont. from page 4

Engineer, David Warren, to figure out a way to convert the still images captured by the webcam into QuickTime and Flash movies that could be looped on the web. A very enthusiastic Steve Domonkos, Research Engineer and machine shop magician, helped mount the camera more securely to the office window and more importantly provided constructive feedback and promoted the web page. “[He] was very helpful, telling me what he liked and disliked,” says Ovens. “Steve was so excited about this page, that he told lots of people about it.”

Since November, these time-lapse movies have been used for research and have documented important weather related events. “I’ve used the movies to view the PSCZ, standing wave clouds, gravity waves, the snowstorms, and most recently the noctilucent clouds [in July]. I have also used the movies and my notes to help locate days for good case studies for running the WRF model,” Ovens notes.

The time-lapse movies have even garnered the attention of the university. During the snowstorms last December, UW Alert, the university’s emergency response system, linked the time-lapse movies on their web site and the link has been there since.

Although Atmospheric Science is not my major, my personal interest and appreciation of the field has definitely grown since working in the main office. I like to think that my very informal education in atmospheric science has been supported by the department website, the thesis library, the webcam, and more importantly through conversations with the professors, staff, and students of the department. The time-lapse movies are only one of the multitudes of resources available through the Atmospheric Sciences Department that could inspire a budding scientist to become an atmospheric scientist.

Ronald Smith 2009 Graduate Students Distinguished Visiting Lecturer

Ronald J. Smith was invited to visit the department as the Graduate Students Distinguished Visiting Lecturer. He gave the Dynamics Seminar on March 12, 2009 entitled “Orographic Precipitation and Isotope Fractionation Along the American Cordillera” and the Colloquium on March 13 entitled “Orographic Precipitation in the Tropics: Observations and Theory.”

Smith is a professor in the Department of Geology and Geophysics at Yale University. He leads the program in mesoscale meteorology and regional climate. The program includes 1) atmospheric fluid dynamics emphasizing density-stratified rotating fluid dynamics and applied mathematics, 2) observations of the atmosphere using special research aircraft, balloons and satellite, 3) hydrometeorology using stable isotopes of water and theories of evaporation and rain, 4) satellite remote sensing of landscape changes and climate sensitivity.

Inaugural Peter V. Hobbs Endowed Lecture Presented October 24, 2008

The first Peter V. Hobbs Memorial Endowed Lecture was presented October 24, 2008 by Emeritus Professor Keith Browning, FRS. The talk was entitled “Origins of the Most Damaging Winds in Extra-Tropical Cyclones.”

About the Speaker

Browning did his Ph.D. at Imperial College at about the same time as Peter Hobbs and, amongst other things, they pursued parallel research into the mesoscale structure of extra-tropical cyclones. Browning spent five years in the United States but most of his work was done in the UK within the Met Office, where he later became Director of Research before becoming a professor at the University of Reading. He is now semi-retired and conducts research into convective storms at the University of Leeds. He is a Fellow of the American Meteorological Society, receiving the Rossby Medal in 2003, and is an Honorary Member and Past President of the Royal Meteorological Society, receiving their Symons Gold Medal in 2001. He was elected Fellow of the Royal Society in 1978 and is a Member of the Academiae Europaeae and Foreign Associate of the (U.S.) National Academy of Engineering. His work with Frank Ludlam on the supercell thunderstorm at Wokingham, UK in 1962 was the first detailed study of such a storm. His research covered many areas of mesoscale meteorology including developing the theory of the Sting jet.

Hobbs Career Information

Professor Peter V. Hobbs was a faculty member of Atmospheric Sciences at the University of Washington from 1963 to 2005. He received his B.Sc. and Ph.D. degrees in Phys-

ics from the Imperial College of Science and Technology, University of London, in 1960 and 1963, respectively. Director of the Cloud and Aerosol Research Group at the University of Washington from 1963 to 2005. Principal research interests were cloud and precipitation physics, mesoscale meteorology, atmospheric chemistry and air pollution. In addition to his steady stream of discoveries about all aspects of clouds—published in 340 papers—Hobbs advised more than 50 graduate students after arriving at the University of Washington, repopulating the field of atmospheric physics. None of this would have been possible had Hobbs not had a talent for stringing together the funds for aircraft for 40 years, starting with a WWII vintage bomber previously owned by eccentric billionaire aviator Howard Hughes.

Lectureship Description

The purpose of the Peter V. Hobbs Memorial Endowed Lectureship in Experimental Meteorology shall be to sponsor open lectures in the field of experimental meteorology. Peter Hobbs felt strongly that the furthering of science must be nurtured through the open exchange of ideas amongst scientists. To that end, he planned to fund an Endowed Lectureship in Experimental Meteorology for the Atmospheric Sciences Department at the University of Washington where he had worked for 42 years.

Peter Hobbs was deeply involved all his working life in the field of experimental meteorology, which ranges from the microscale, through the mesoscale, up to the global scale, and includes both the physics and chemistry of the atmosphere. The common threads in this field are the ubiquitous roles played by aerosols, clouds and precipitation in the atmosphere.

The gift to establish this endowed lectureship was made in loving memory of Peter by his wife and three sons.



Inaugural Hobbs lecture reception at Kane Hall. Stephen Hobbs (left), Ann and Keith Browning, Sylvia Hobbs (Right). Photo: D. Hartmann

Alumni News

The UW Atmospheric Sciences Alumni Reunion Reception will be held in Atlanta in conjunction with the AMS Annual Meeting (Jan. 17–21). Watch our home page for updates on date and time. As soon as our plans are confirmed with the AMS in December, further information will be posted at <http://www.atmos.washington.edu/events/AMS2010/>. To ensure you receive your email invitation, please send your current email address to debbie@atmos.washington.edu or call the main office at 206-543-4250. The reception is usually held on Tuesday evening during the week of the AMS Annual Meeting.

Ed Boselly ('64, B.S.) was elected a Fellow of the AMS in 2008. In January he became Chair of the AMS Surface Transportation/Intelligent Transportation System Committee. He was appointed this month to the new AMS Annual Program Topic (Mobile Observations) Committee, and through the end of last year for two years he was the surface transportation representative on the National Research Council mesoscale observations committee, and was a contributing author to the final report, which was published as "Observing Weather and Climate from the Ground Up—A Nationwide Network of Networks."

Robert Berkovitz ('69, B.S.) recently received the "Double Ace" award from the National Weather Service for being only 1 of 3 fire weather forecasters (now called Incident Meteorologists) in the country to go on 50 fires or more since 1988, when records of such deployments were kept. (He has actually gone on over 100 fires since 1977.) Bob was the first Incident Meteorologist in the country to achieve 50 or more deployments since 1988.

Bob retired from the National Weather Service in 2005, after 37 ½ years of government service (including 2 years in the military service). He was the fire weather forecaster from the Phoenix office from 1977 until he retired. Now he volunteers at the Arizona Science Center and is also the program chair of NARFE (National Active and Retired Federal Employee Organization), Tempe Arizona chapter. He continues to work out regularly; usually 5 days per week, taking step aerobics, spin classes, kick boxing, using the cardiovascular and weight machines.

Peggy LeMone ('72, Ph.D.) has been elected president of the AMS. She will begin her term as president in January.

Jennifer Francis ('94, Ph.D.) and family should be on their yearlong ocean voyage in the northeast Atlantic aboard the *Saphira*, their "Atlantic 55" catamaran, and returning to Massachusetts in spring/summer of 2010.

Jack Herring ('94, Ph.D.) has taught in the Environmental Studies Program at Prescott College in Arizona since 1998. In 2008, he became the Dean of the on-campus undergraduate program.

Roxane Ronca ('95, M.S.) and Jack Herring are married with two kids (ages 6 and 10).

Roxane teaches in the Environmental Studies Program at Prescott College.

Joel Norris ('97, Ph.D.) is an associate professor at the Scripps Institute of Oceanography. This past year he and his wife, Brittany, welcomed the newest member of their family, Margaret, who joins big sisters Lydia and Adelaide as their third girl.

J.D. McAlpine ('01, B.S.) earned his M.S. in Atmospheric Science from the University of Nevada / Desert Research Institute in May 2009 and is continuing on in the Ph.D. program in atmospheric science at UNR/DRI.

Amy Haase ('02, B.S.) attended PSU and received her first Master's Degree in Meteorology. She is just about to complete a second Master's Degree in Physical Oceanography from North Carolina State University. She very recently accepted an offer from the National Oceanographic Data Center, a division of NOAA in Silver Spring, MD. She is currently transitioning into her new position and anticipates defending her thesis in October 2009.

David Mechem ('03, Ph.D.) is in his second year as an Assistant Professor at the University of Kansas.

Ioana Dima-West ('05, Ph.D.) and husband Jason are the new and happy parents of Paul Stefan, 7 months old as of August. Ioana is presently working at a company called AIR Worldwide in Boston, as a Senior Research Scientist, doing work on hurricanes and other extreme weather events.

ATMS has Found a New Home

by Dennis Hartmann

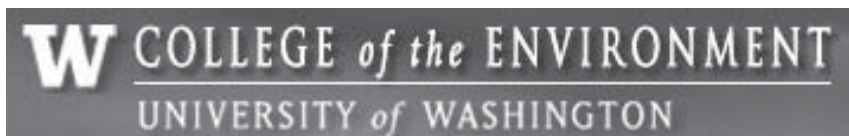
As of July 1, 2009, in its 62nd year, the Department of Atmospheric Sciences has moved from the College of Arts and Sciences to become an inaugural department in the bold new College of the Environment. Joining ATMS in the new college are the Department of Earth and Space Sciences, the School of Forest Resources, the School of Marine Affairs, and the Program on the Environment. In addition, several research centers and interdisciplinary programs are also now part of the college. These include the Joint Institute for the Study of the Atmosphere and Ocean, the Program on Climate Change and the Quaternary Research Center. During this coming academic year we expect to be joined by the School of Oceanography, the School of Aquatic and Fishery Sci-

ences, and the Washington Sea Grant Program. All told, the College will then be the home to over 1,200 students, almost 200 faculty, and approximately \$80 million in annual research grants and contracts.

Our colleagues in the new college are some of the most well respected and productive within their respective fields and their work ranges from fundamental process studies to the implementation and evaluation of technical and policy solutions to environmental challenges. They represent a rich array of disciplines and expertise that ranges from the center of the Earth though the depth of the oceans, the biosphere, and the atmosphere to the edge of the Solar System – we cover the core to the cosmos. There is no other university in the world that boasts such a robust and rich constellation of environmental research expertise and educational opportunities, and we are proud to be a key member of this new college.

To be sure, many things have not changed. We are still committed to providing the best possible education in atmospheric sciences at both the undergraduate and graduate levels. We are one of the premier atmospheric sciences departments and our reputation will continue to be built on our contributions to the understanding of the atmosphere and improving the prediction of its future state, on the space and time scales of both weather and climate. We will continue to study phenomena ranging in size from a molecule of air to the global-scale circulation. We know that you will continue to see evidence of the academic rigor and research excellence you have come to expect from our department. We also expect that you will see an increase in the breadth of opportunities available to our students, and even more interdisciplinarity extending across the natural sciences and partnering with social science and policy dimensions of our core problem areas.

We also expect other collaborative opportunities to emerge. Now that all of the UW's geosciences programs will be housed together in one college, innovative and efficient collaborations will lead to new curricula and research initiatives. Partnership with the School of Forest Resources offers opportunities for new initiatives in land-atmosphere interaction. Imagine a forecasting system that combines weather variations with marine ecological models for use in fisheries management. These are just examples of the many possibilities. Of course, the weather will always be interesting and important, climate change is here to stay, and the chemistry of the atmosphere is complex, interesting and changing.



More CoENV information can be found at <http://coenv.washington.edu/>

Congratulations to Graduates

Doctor of Philosophy

Steven Cavallo, *The Structure and Maintenance of Tropopause Polar Vortices over the Arctic* (Hakim)

Terence Kubar, *Cloud Structure, Microphysics, and Precipitation in Tropical Clouds Inferred from Satellite Data* (Hartmann)

Philip Swartzendruber, *The Distribution and Speciation of Mercury in the Free Troposphere of the Pacific Northwest* (Jaffe)

Master of Science

Daniel Allman, *Quantifying Sulfate Formation Pathways Downwind of the Sahara Desert: Influence of Dust Aerosols on the Marine Boundary Layer Sulfur Budget* (Alexander)

Gerald Casson, *Evaluating the Importance of Crystal Type on New Snow Instability* (Stoelinga)

Anthony Didlake Jr., *Convective-scale Downdrafts in the Principal Rainband of Hurricane Katrina* (2005) (Houze)

Phuong-Tra Dinh, *The Maintenance of Tropical Tropopause Layer Cirrus* (Durrant/Ackerman)

Robert Hahn, *Quantitative Precipitation Forecasting in Pacific Northwest Orography: Numerical Challenges and Upstream Moisture Biases* (Mass)

Zheng Liu, *Millimeter Wavelength Cloud Radar Observations in the Tropical Western Pacific* (Ackerman)

Brian Smoliak, *A Eurasian Pattern of Northern Hemisphere Wintertime Sea Level Pressure Variability* (Wallace)

Garrett Wedam, *Measuring Skill of Numerical Weather Prediction* (Mass/McMurdie)

Reddy Yatavelli, *Particulate Organic Matter: Molecular Composition and Processing Studies with a Novel Impaction-Chemical Ionization Mass Spectrometry Method* (Thornton)

Bachelor of Science

Helen Amos
Kimberly Anderson
Alexander Burgess (AFROTC)
Anthony Cavazzini
Hugo Froyland
Michael Goss
Steven Newton
Rex Thompson
Darrin Trageser
Scott Winges



Welcome to New Graduate Students for 2009–2010

Matthew Brewer, University of Utah
Naomi Goldenson, Arizona State University

Yue Li, Lanzhou University, P. R. China

Erika Navarro, Wellesley College

Gallia Painter, Case Western Reserve University

Stephen Po-Chedley, Union College

Scott Powell, University of Miami

Hansi Singh, Rice University

Nicole Wigder, University of Washington

Maria Zatzko, Pennsylvania State University

Yanxu Zhang, Peking University, P. R. China



Scholarships and Awards

2008 AGU Fall Meeting Outstanding Student Paper Award:

Emily Fischer

2008 Mary Gates Research Scholarship:

Helen Amos

2008–09 NASA Earth and Space Science Fellowship:

Qiong Yang

2008–09 Phi Beta Kappa:

Michael Goss

2009 American Meteorological Society Fellowship:

Scott Powell

2009 Program on Climate Change Fellowship:

Stephen Po-Chedley

2009 ARCS Fellowship:

Gallia Painter

2009 Businger Scholarship:

Erika Navarro

2009 Warren Scholarship:

Naomi Goldenson

2009 Top Scholar Award:

Stephen Po-Chedley, Scott Powell

2009 CMMAP Diversity Scholarship:

Erika Navarro

2009 International Conference on Alpine Meteorology Young Scientist Presentation Award:

Justin Minder

2009 Department of Energy GCEP Marvin L. Wesely Award:

Emily Fischer

2009 Caldwell Scholarships:

Jonathan Brandel, Felipe Lopez-Hilfiker, Robert Marshall, Jayson Stemmler

2009 Reed Scholarships:

Tyler Burns, Farranne Guiler

Phil Church Award:

Michael Goss

The Phil Church Award is given to the graduating senior in the Department of Atmospheric Sciences with the most outstanding record of scholarship, leadership and service. Professor Phil Church was the founder and first Chair of the Department of Atmospheric Sciences.

Atmospheric Sciences Achievement Awards:

Helen Amos

Michael Goss

The Atmospheric Sciences Achievement Award is given to graduating seniors in the Department of Atmospheric Sciences who have achieved a GPA of 3.5 or higher in Atmospheric Sciences degree courses.



Undergraduate and Faculty Research

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

Helen Amos / Becky Alexander: Atmospheric Processing of Dust Aerosol.*

Hugo Froyland/Stephen Warren: Evaporation from Arctic Sea Ice.*

Felipe Lopez-Hilfiker / Joel Thornton: Reactivity of Nitrogen Oxides on Sea Ice Surfaces.

Robert Marshall / Dargan Frierson: The Effect of Latent Heating on Extratropical Temperature Structure.

Naoko Sakaeda / Robert Wood: Climate Model Simulations of South African Biomass Burning Aerosols.*

Jayson Stemmler / Tad Anderson: Comparison of Independent Satellite Retrievals of Cloud Properties.*

* Presented at 2009 UW Undergraduate Research Symposium.



Donor Recognition

The Department of Atmospheric Sciences gratefully acknowledges the donors who have generously supported us during the past fiscal year July 1, 2008 through June 30, 2009.

Individual Donors

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Andrew S. Ackerman	Donna & Mark Chang	Lorraine Grider	Karen J. Kowalewsky	Leonhard Pfister
Allegra & Roger Andersen	Dean & Shervin Churchill	Gregory & Lynne Hakim	Dennis Lamb & Patricia Skrentny-Lamb	W. Randall Potteet & Sally Schoenberg
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(Continued on page 8)

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Department News

Professor Dennis Hartmann has been reappointed as the interim dean for the new UW College of the Environment.

Philip Rasch and **Bonnie Light** became affiliate faculty with the department in July 2009.

Cecilia Bitz and **Joel Thornton** were promoted with tenure to the rank of Associate Professor in September 2009.

Baby News—Joel and Regina Thornton welcomed their second son, Simon, on March 9. Matt Wyant and Bonnie Light were pleased to announce the birth of their son Henry Light Wyant on May 27.

Alumni Reunion

The UW Atmospheric Sciences Alumni Reunion Reception will be held in Atlanta in conjunction with the AMS Annual Meeting (Jan. 17–21). Watch our home page for updates on date and time. As soon as our plans are confirmed with the AMS in November or December, further information will be posted at <http://www.atmos.washington.edu/events/AMS2010/>. To ensure you receive your email invitation, please send your current email address to debbie@atmos.washington.edu or call the main office at 206-543-4250. The reception is usually held on Tuesday evening during the week of the AMS Annual Meeting.



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