



AOS & CICS Newsletter

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Vecchi Awarded AMS 2013 Clarence Leroy Meisinger Award

Gabriel Vecchi, a lecturer in the Department of Geosciences and the AOS Program, who teaches GEO 425 Introduction to Physical Oceanography in the fall, and a researcher in the Climate Change, Variability and Prediction Group at GFDL, has been awarded the 2013 Clarence Leroy Meisinger Award “for outstanding contributions to the understanding of tropical climate variability and change” by the American Meteorological Society (AMS).



Geosciences & AOS Lecturer Gabe Vecchi

According to the AMS, "The Clarence Leroy Meisinger Award is given to an individual in recognition of research achievement that is, at least in part, aerological in character and concerns the observation, theory, and modeling of

atmospheric motions on all scales. The award is given to promising young or early-career scientists who have demonstrated outstanding ability." The award was presented to Vecchi at the AMS Annual Meeting on January 9, 2012.

Vecchi’s principal research goal has been to develop predictive understanding of the global climate system and its impacts, with particular focus on the role of the tropics. To achieve this goal he has worked with global satellite datasets, *in situ* data, global analysis products, idealized model formulations, as well as single component and coupled general circulation models. His approach has been to combine analysis of observed data, statistical modeling techniques, and a hierarchy of theoretical frameworks and dynamical models - so that the various approaches buttress each other, and build a more solid understanding.

“I have usually taken a collaborative approach, realizing that the expertise needed to unravel the mysteries of our complex climate system rarely resides in a single individual and I have been fortunate to find great people who would work with me,” Vecchi said. The particular topics he has explored include the role of the tropical oceans and atmosphere in the Earth’s response to radiative forcing changes, the connection between climate and hurricanes, the mechanisms of El Niño onset and termination, the role of the ocean in monsoon variations and the Madden-Julian Oscillation, the physical basis for and methodology of interannual to decadal predictions, and the development and assessment of observational networks. “Going forward there are a wide range of problems that I find interesting, in part aimed at pushing the limits of our predictive capability, in which the observed phenomenology of the ocean/atmosphere system will continue to guide the modeling work,” he added. ■

Program in Atmospheric and Oceanic Sciences (AOS) & The Cooperative Institute for Climate Science (CICS)

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TigerTransit/Shuttle Services
Operating on Spring Schedule
<<http://www.princeton.edu/transportation/troutes/ForrestalSpring2013.pdf>>

New Study Examines Routes to Energy Dissipation for Geostrophic Flows in the Southern Ocean

A new study published online December 21 in *Nature Geoscience* presents the first numerical simulation of Southern Ocean dynamics that simultaneously resolves a wide range of scales from oceanic currents and eddies down to gravity waves. According to lead author and former AOS associate research scholar Maxim Nikurashin, this experimental design is a major advance over previous studies that simulated each class of motions in isolation and hence could not properly address their interactions resulting in the downscale energy cascade.

"Using high-resolution simulations with parameters typical for the Southern Ocean, we show that the interaction of geostrophic eddies with rough small-scale topography is the dominant energy pathway to smaller, unbalanced motions in the Southern Ocean, accounting for the dissipation of up to 80% of the wind power input," Nikurashin said.

He explains that the ocean is set in motion primarily by winds. The winds drive large-scale currents such as the Gulf Stream in the North Atlantic and the Antarctic Circumpolar Current around the Antarctic Continent. The large-scale currents are unstable and break up into eddies, the oceanic equivalent of cyclones and anticyclones in the atmosphere, which are ubiquitous features in the global ocean, according to Nikurashin. The wind power input into the oceanic currents and eddies must ultimately be balanced by viscous dissipation in the ocean interior. Oceanic eddies have horizontal scales of tens to hundreds of kilometers and therefore are too big to be directly affected by the viscous friction. "To equilibrate, he says, eddies have to cascade their energy down to centimeter-scale turbulent motions, which are small enough to be influenced by viscosity."

Turbulent motions greatly enhance mixing of tracers, such as heat and carbon dioxide,

and thus affect their transport and storage in the ocean and so climate itself.

However, the mechanisms of the energy transfer from the eddy scales down to the turbulent scales are not well established and consequently the fate of the wind power input and distribution of turbulent mixing in the ocean remain uncertain, according to the study's lead author.

"Evidently, although internal waves can be potentially generated spontaneously by geostrophic turbulence in the upper ocean, their generation is in fact dominated by flows over rough small-scale topography in the deep ocean," Nikurashin added.

The results of this study show that oceanic eddies transfer most of their energy to smaller-scale motions in the abyssal ocean, catalyzed by rough small-scale topography. In the absence of topography, Nikurashin and coauthors AOS Faculty Member Geoffrey Vallis and AOS Research Oceanographer Alistair Adcroft conclude that the turbulent mixing in the ocean interior and therefore the overturning circulation of the ocean will be greatly diminished.

"The wind power input, transferred from geostrophic eddies to unbalanced internal gravity waves and radiated into the stratified ocean interior, can ultimately sustain interior diapycnal mixing, drive meridional overturning circulation and hence affect ocean circulation and climate," said Nikurashin.

The study can be found at: <http://www.nature.com/ngeo/journal/v6/n1/full/ngeo1657.html> . ■

Gold Medal Award Recognizes CM3 Development Efforts

Contributed by Maria Setzer, GFDL Communications Director

Leo Donner, a lecturer in the AOS Program and physical scientist at GFDL, Paul Ginoux (GFDL), Chris Golaz (GFDL), Richard Hemler (GFDL), Larry Horowitz, a lecturer in the AOS Program and physical scientist at GFDL, Yi Ming (GFDL), Dan Schwarzkopf (GFDL), Michael Winton (GFDL), Andrew Wittenberg (GFDL), and

Bruce Wyman (GFDL) were selected by the Secretary of Commerce for a Group Gold Medal for Scientific/Engineering Achievement. This is the highest form of honorary recognition given by the Department of Commerce.

The scientists were honored "for using their expertise and creativity to establish innovative new modeling that will lead to greater understanding of the impacts of atmospheric greenhouse gases and aerosols on global climate change." The award recognizes the scientists' outstanding effort to create GFDL's newest coupled climate model, CM3. CM3 is the first model at GFDL to include interactions between aerosols and clouds, an important but complex and still poorly understood part of the climate system. Human-produced aerosols have an effect on clouds, so aerosol-cloud interactions play a role in climate change.

Leo Donner, science chair for the development of the atmospheric component of CM3, said he "found exceptionally rewarding the challenge of constructing a model that takes the first steps toward dealing with the long-standing, and extraordinarily complex, problems of clouds, aerosols, and their roles in climate change. Not only did the development team bring new aerosol processes into CM3, but we began, systematically, to change long-standing representations of cloud processes to enable their interactions with aerosols."

Clouds in general are a critical element in the climate system and remain a major source of uncertainty in understanding climate change. CM3's clouds have recently been evaluated through the Cloud Feedback Model Intercomparison Project. Not only has the realism of CM3's clouds improved over GFDL's earlier models, its simulation of cloud amount was deemed the best among participating models. Development of CM3 continues, bringing to bear a multitude of scientific perspectives, to confront the most vexing scientific challenges.

As Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator Dr. Jane Lubchenco said of the award recipients, "Your dedication and passion is evident in your achievements." The Acting Secretary of Commerce presented the award to the scientists at an

honor awards ceremony in Washington, D.C. on January 8, 2013. ■

Sarmiento and the Study of the Southern Ocean in the News

According to AOS Director Jorge Sarmiento, understanding the Southern Ocean is critical to understanding the climate change of the entire globe. Ringing the Antarctica at the bottom of the globe, the Southern Ocean is the least observed and least understood region of the world's oceans. But, if Sarmiento and his colleagues have any say, that's about to change.



*AOS Director & George J. Magee
Professor of Geoscience and Geological Engineering*

Together, they have been working to obtain funding from the National Science Foundation that would allow them to study the Southern Ocean more closely by dropping dozens of robotic floats throughout the Ocean that are, according to Sarmiento, "capable of observing the Southern Ocean remotely on very rapid timescales that can resolve things in time as well as space."

These floats will join the network of approximately 3,500 autonomous floats deployed around the world currently monitoring the world's oceans. Every 10 days they surface from a depth of one kilometer to measure conductivity and temperature. Going one step further, the floats that Sarmiento and his colleagues are proposing would be outfitted with sensors to measure nitrate, oxygen and pH. This would enable them to study multidimensional profiles of the ocean, once impossible to obtain, according to a featured story posted on PEI's and

Princeton's homepage. "We have a chance to obtain vast amounts of data, more than any other time in history," Sarmiento said. "It's extraordinary. A revolution is taking place."

His excitement about the possibility of conducting these types of studies is palpable; however, he and his colleagues won't hear until March whether the funding is approved.

To read the full story and to watch the video 'Unlocking the Mysteries of the Southern Ocean', produced by Climate Central and featuring Jorge Sarmiento, please access the following link:

<http://www.princeton.edu/main/news/archive/S35/43/03C28/index.xml?section=feature>>. ■

Papers Chosen as 'Top Research Accomplishments of 2012' by OAR

Three studies authored by GFDL and AOS/CICS scientists are among papers chosen by the NOAA Office of Ocean and Atmospheric Research as top research accomplishments of 2012.

The first study, published in the journal *Nature Climate Change* and highlighted in the fall edition of the AOS & CICS Newsletter, studied a population of critically endangered eastern Pacific leatherback turtles nesting on the northwest coast of Costa Rica, to assess its sensitivity to climate variability in the nesting beach and ocean. According to the study, climate change could exacerbate existing threats to this population and nearly wipe it out by the end of the century. If the study projections hold true, the eastern Pacific population of leatherback turtles will decline by 75 percent by the year 2100, primarily due to the negative impacts of increased air temperature on hatchling survival from the nest. The study was published in July

<http://www.nature.com/nclimate/journal/v2/n11/full/nclimate1582.html>>. AOS Visiting Research Collaborator Vincent Saba is the study's lead author. He is a research fishery biologist with NOAA's National Marine Fisheries Service.

Published in July in the *Journal of Climate*, the second study, led by AOS Faculty Member Gabriel Lau, evaluated the fidelity of GFDL climate models in reproducing the characteristics of summertime heat waves in different part of North America, and produced model-projected changes of these characteristics in the 21st century. These model projections indicate considerable lengthening of heat wave duration, as well as notable increases in the frequency of heat wave episodes during the 21st century, compared to the 20th century. Understanding upward trends in heat wave duration and frequency is an integral part of NOAA's mission as heat waves in North America precipitate a substantial number of human casualties and huge economic costs. The study can be accessed at:

<http://journals.ametsoc.org/doi/abs/10.1175/JCLI-D-11-00575.1>>.

Lastly, a study led by CICS Scientist Meiyun Lin, published in the *Journal of Geophysical Research-Atmospheres* in February of 2012, was also chosen by OAR for its noteworthy discoveries. The researchers analyzed balloon soundings, aircraft, surface and satellite measurements from May through June 2010, using GFDL's new global high-resolution chemistry-climate model to determine the extent to which Asian ozone pollution is affecting air quality in the western United State. The study's findings indicate that Asian pollution contributes as much as 20 percent of total ozone during springtime pollution episodes in western U.S. surface air. The researchers further reported that an index based on satellite observations of Asian pollution plumes could serve as an early warning indicator, with lead time of up to three days, of Asian pollution influence on western U.S. air quality. The study can be found here:

<http://www.agu.org/pubs/crossref/2012/2011JD016961.shtml>>. ■



*Annual
Business
Attire
Clothing*

*Drive, January 23 - January 30,
2013*

*AOS will have a collection box
and coat rack in the Sayre Hall
Lobby!*

Vallis Joins Panel of Experts to Discuss the Fundamentals of Climate Science

A one day symposium on the fundamentals of climate science was held in the fall in Dodd's Auditorium Robertson Hall. The event was hosted by the Princeton University Press and the Princeton Environmental Institute (PEI) and was open to scholars, students and the general public with the hope of bridging the gap of between the highly technical literature accessible to scientists and the popular, sometimes sensational, media available to wider audiences.

CICS Associate Director Geoffrey Vallis provided the introduction, an overview of research in his field of expertise -- climate and the oceans, as well as summary remarks. In describing the oceans in his opening remarks, Vallis told the audience "Because they move and vary, they are the pacemaker of climate. Climate variability on timescales from years to decades is governed by the ocean." He went on to explain the important ways that the oceans influence climate. Topics covered included the oceans' effects on the seasons, heat transport between equator and pole, climate variability, and global warming.

He was joined by a panel of climate experts including: David Schimel, California Institute of Technology (ecosystems and climate); David Randall, Colorado State University (atmosphere, clouds, and climate); David Archer, University of Chicago (the global carbon cycle); Michael Bender, Princeton University (the paleoclimate); Shawn Marshall, University of Calgary (the cryosphere)); and Andrew Ingersoll, CalTech (planetary climate).

"The symposium provided an enjoyable and educational experience for all who attended. The 'big problems' in climate were discussed in a serious but not technical fashion, and Andrew Revkin of the New York Times rounded off the day with a thought-provoking lecture," Vallis said.

The symposium originated with the production of a book series that explains the state of the art in climate-science research, *Princeton Primers in Climate*. Vallis authored *Climate and the Oceans*, one of the primers in the series. Information about the series can be found at: <http://press.princeton.edu/catalogs/series/pipic.html>.

PEI produced a video series of the symposium presentations that can be found at: http://www.youtube.com/playlist?list=PLxYUpljfsNvgjc5eOF1k-ISuz0pnjRghy&feature=edit_ok. ■

Hot Air Society

For some in the GFDL/AOS community, being 'full of hot air' may not be such a bad thing.

About a year ago, a group interested in improving their public speaking skills contacted Toastmasters International, a world leader in communication and leadership development, and arranged for them to visit GFDL to conduct a demonstration of the Toastmasters concept. This learn-by-doing workshop in which participants hone their speaking and leadership skills in a no-pressure atmosphere was embraced by attendees and the "Hot Air Society" was born.

Meeting twice a month throughout the year, members give prepared speeches, practice speaking "off-the-cuff," and learn to run efficient meetings and give constructive feedback. The group also works with non-members, and recently invited scientists going to AGU or AMS to practice their presentations and receive feedback on timing, diction and vocal clarity, as well as readability of their visual aids.

According to Marian Westley, one of the group's organizers, "We are trying to create a culture that values good public speaking and accepts that speaking better is something we could all learn. Toastmasters is an easy and fun way to do it." Fellow organizer Kyle Olivo adds: "Our ideas and our work are only as valuable as their reach. This is especially important at institutions like GFDL and AOS, which have missions so central to today's biggest

problems. Toastmasters helps us prepare to deliver our ideas to the widest audience possible."

AOS Postdoctoral Associate James Watson also endorses the group saying, "The Hot Air Society has been a great environment in which to improve my public speaking skills. Also, as a junior scientist it has allowed me to practice leadership skills, which have helped immensely with regards to new meetings and projects I've started this past year."

Meetings are open to everyone in the GFDL/AOS community. For more information, please contact Marian at marian.westley@noaa.gov. ■

Remembering Jerry Mahlman, 1940-2012

Jerry Mahlman, former Director of GFDL and Lecturer with Rank of Professor in the AOS Program, died on November 28, 2012 in Chicago. He was 72.



Jerry Mahlman (1940 – 2012)

Mahlman was a pioneer in stratospheric dynamics and chemistry as well as numerical modeling. He added significantly to the understanding of how climate works and spent much of his career modeling how Earth's atmosphere responds to the steady buildup of greenhouse gases. He formed the Middle Atmosphere group at GFDL in the early seventies, which he led for a decade before becoming GFDL's second Director. Under Mahlman's tenure as Director, GFDL continued to recruit highly talented scientists and provide an intellectually stimulating environment for them, a tradition begun by Joseph

Smagorinsky, the lab's first Director. "I am proud that we are able to attract, nurture and retain these young scientists," Mahlman said just prior to his retirement from GFDL in 2000. Today, some 12 years later, this legacy of support for younger scientists at GFDL remains one of the key elements to the lab's continued success. In May of 2010, the renovated GFDL Lobby was named in Mahlman's honor. From 2000-2009, Mahlman was a senior research associate at the National Center for Atmospheric Research in Boulder, Colorado. In recent years, he had been centrally involved in the communication of climate change science to a wide variety of audiences, and assisted in guiding the international policy deliberation process through the interpretation of climate science. He was nationally and internationally acclaimed for his lucid seminars and crisp explanations of the fundamental science of global warming due to anthropogenic emissions. A world-renowned scientist, Mahlman blazed new pathways in stratospheric modeling and was a leader in middle atmospheric science and stratospheric ozone.

During the span of his illustrious career, Mahlman published over 100 scientific papers. Among his many awards, he received the U.S. Department of Commerce Gold Medal, 1986; the American Geophysical Union First Annual Jule G. Charney Lecturer Award, 1993; the Presidential Distinguished Rank Award, 1994; the Carl-Gustaf Rossby Research Medal, the highest honor bestowed by the American Meteorological Society, 1994; AMS' Sigma Xi Distinguished Lecturer, 1999-2000; NCAR's Philip Thomas Distinguished Lecturer, 1999; and the Environmental Protection Agency's Climate Protection Award, 2000.

Following his retirement from GFDL in 2000, Mahlman moved to Longmont, Colorado with his wife Janet, who succumbed to cancer in January. He is survived by his son Gary and his daughter Julie. Recently, suffering from complications related to Alzheimer's, Jerry relocated to Chicago to be near his daughter. A memorial service was held on December 8, 2012. ■

Alumni News

AOS Alumna Tracey Holloway *01 is an Associate Professor at the University of Wisconsin-Madison in the Nelson Institute for Environmental Studies.

This year, Holloway was recognized with two national awards. She won a national award from the Massachusetts Institute of Technology (MIT) for Education and Mentorship in clean energy, as part of their Clean Energy Education and Empowerment Initiative (C3E).



Alumna Tracey Holloway *01

Sponsored by the MIT Energy Initiative, the award is a key component of the U.S. Department of Energy's implementation of the Clean Energy Education and Empowerment Initiative or C3E, a unique program designed to help increase the number of women engaged in clean energy disciplines, from science and academia, to industry, to policy, to advocacy.

Holloway was recognized for her contributions to clean energy and for serving as an inspiration to young women and men considering a career in the field.

The \$10,000 award was presented at the Women in Clean Energy Symposium at MIT in September. This invitation-only symposium, jointly hosted by the MIT Energy Initiative and the Department of Energy, is the culmination of a set of measures that, together, are part of the U.S. plan to implement C3E, a program of the 23-country Clean Energy Ministerial, an international forum that provides opportunities for energy ministers and other high level government officials to share and advance ideas on clean energy technologies, policies, and goals.

Holloway was also recognized as the 2012 Geosciences Undergraduate Research Mentor by the Geosciences division of the Council on Undergraduate Research (CUR). The awardee is an individual who serves as a role model for productive and transformative student-faculty mentoring relationships and for maintaining a sustained and innovative approach to the enterprise of undergraduate research.

To listen to an Interview with 2012 GeoCUR Undergraduate Research Mentor Award Winner Tracey Holloway, please access:

<<http://www.personal.psu.edu/uxg3/blogs/geocur/geocurresaward.html>>. ■

AOS & CICS Research in Action

[This column is intended to focus on AOS & CICS research accomplishments and milestones, past, present, and future. In this issue, we highlight the accomplishments of AOS Associate Research Scholar Caroline Muller who spent two years in the AOS Program.]

AOS Associate Research Scholar Caroline Muller left the AOS program in November to join the hydrodynamics lab of Ecole Polytechnique, France, as a faculty member. Caroline's research focuses on geophysical fluid dynamics and climate science. She is particularly interested in the study of processes which are too small in space and time to be explicitly resolved in coarse-resolution General Circulation Models used for climate prediction. Important examples that she has worked on are internal waves in the ocean and cloud processes in the atmosphere.



AOS Associate Research Scholar Caroline Muller and her daughter, Margot, who was born in Princeton

In collaboration with Isaac Held, Caroline studied the organization of convection and clouds in high-resolution atmospheric models. It is well known that convection can organize on a wide range of scales. Convective organization has been shown to strongly impact large-scale properties in models with intermediate resolution and in models using superparametrizations (two-dimensional cloud-resolving models embedded in coarse global climate model). High-resolution simulations can be used to better understand convective organization, its impact on large-scale properties, and its dependence on the subgrid-scale closure, boundary layer, ocean surface, and radiative scheme used. The ultimate goal is to help guide and improve current convective parametrizations. One type of convective organization that she studied in detail is the spontaneous aggregation of convection in high-resolution cloud-resolving models that are forced homogeneously.

Caroline also investigated the impact of convective organization on the amplification of precipitation extremes with warming. Simulations of tropical precipitation extremes with current coarse-resolution global climate models are unreliable. Therefore progress on the problem of changing tropical precipitation extremes must rely on either theory, observations, or simulations that resolve the convective-scale processes. She used simulations that resolve the convective-scale processes, and imposed a background shear in order to organize the convection along lines or curves, depending on the strength of the shear imposed. A scaling introduced in earlier work can explain the behavior of precipitation extremes, and how it relates to the behavior of thermodynamic and dynamic variables.

“While at Princeton, Caroline continued her theoretical work with idealized models of the vertical structure of the tropical atmosphere (high resolution models of radiative-convective equilibrium with explicit turbulent moist convection) resulting in papers on the distribution of precipitation intensity in such models and the manner in which the convection organizes itself spatially. She has also begun some intriguing studies in which she uses these cloud resolving models to understand some of the limitations of how we incorporate moist convection in global climate models,” said Held. “I am sure that

we will continue to collaborate on these important issues.”

Caroline will continue working with AOS and GFDL scientists in her new post, including Isaac Held, Ming Zhao and Angeliq Melet, and thoroughly enjoyed her time at Princeton. ■

AOS & CICS News

AOS Faculty Member and NOAA/GFDL Senior Research Scientist Isaac Held was named Chair of the re-initialized **GFDL Model Development Team (MDT)**, an effort aimed at producing the CM4 Earth System Model. Steering Committee members include: V. Balaji, Steve Griffies, S.J. Lin, Yi Ming, Ron Stouffer, and Rong Zhang. The MDT Steering Committee will be assisted by a Diagnostics and Evaluation Team. The Co-chairs of DET are: Larry Horowitz and John Krasting.

A recent study by a team of researchers led by CICS Scientist and AOS Associate Research Scholar **Meiyun Lin** is being actively discussed by the EPA with implications for the 2013 review of National Ambient Air Quality Standards for ground-level ozone. The paper <<http://www.agu.org/pubs/crossref/2012/2012JD018151.shtml>> was published in the Journal of Research – Atmospheres in mid-October.

A new study led by Assistant Professor **David Medvigy** finds that gypsy moth larvae jeopardizes carbon dioxide absorption. The study was published in *Environmental Research Letters (ERL)* as part of the *ERL* Focus on Extreme Events and the Carbon Cycle. Read more: <<http://environmentalresearchweb.org/cws/article/news/51927>>.

Congratulations to **Kelly Kearney** who successfully defended her thesis titled, “An Analysis of Marine Ecosystem Dynamics through Development of a Coupled Physical-Biogeochemical-Fisheries Food Web Model” on October 18, 2012. Kelly has accepted a postdoctoral position at the Rosenstiel School of Marine and

Atmospheric Science – University of Miami.

Congratulations to **Lauren Padilla** (MAE) who successfully defended her thesis titled, “Application of Empirical and Dynamical Closure Methods to Simple Climate Models” on December 10, 2012. Lauren has accepted a position as an environmental modeler at Stone Environmental, Inc. in Montpelier, VT.



Climate Sensitivity Club

A recently announced climate sensitivity journal club at GFDL is planning to meet on alternate weeks and have a discussion of two or three recent noteworthy papers on climate sensitivity. The aim of this journal club is to keep up-to-date on new developments on the subject that are going on outside of GFDL (Please Note: The club will not be a forum for presenting the latest GFDL research.)

Because this is an area of widespread interest in the GFDL/AOS community and all are invited to join, the club will meet in the Smagorinsky room on Friday mornings. The first discussion scheduled will be on Friday, Jan. 25th at 10am. Mike Winton and Tim Merlis will present:

Gregory & Forster 2008 <<http://onlinelibrary.wiley.com/doi/10.1029/2008JD010405/abstract>> and Geoffroy et al. 2013 <<http://journals.ametsoc.org/doi/abs/10.1175/JCLI-D-12-00195.1>>.

According to the group’s organizers, Tim Merlis, Isaac Held, Mike Winton, and Yi Ming, the overall intent of the club is to provide an overview that is useful even for those who have not read the papers in detail.

Redesigned Website



Check out NOAA Cooperative Institutes redesigned website at:

<<http://www.ci.noaa.gov/>>.



Let It Snow

The 37th annual GFDL snow pool is underway! Through October 31, 2012, members of the GFDL/AOS community had the opportunity to make their predictions of the total snowfall for the 2012-13 winter season. Pool participants and anyone with interest can find snow measurement details at:

<<http://www.gfdl.noaa.gov/gfdl-snowfall-page>>.

Interested in future 2012-13 GFDL area snowfall events?
Join the special email listserve,
oar.gfdl.snowfall_2012-2013.

If you are at GFDL or have direct access to GFDL servers, you may subscribe via the following link:

<https://listserv.gfdl.noaa.gov/sympa/subscribe/oar.gfdl.snowfall_2012-2013>

Or

subscribe by sending an email to:

<oar.gfdl.sympa@noaa.gov>

with 'subscribe oar.gfdl.snowfall_2012-2013' in the title and body of the message.

Arrivals

Joellen Russell will be returning to Princeton from January 14th through July, 26th while on sabbatical from the University of Arizona.

Xi Chen, a postdoc from the University of Michigan, will arrive in February to work with SJ Lin and Isaac Held.

Yuxing Yun, a postdoc from the University of Michigan, will arrive in March to work with Yi Ming and V. Ramaswamy.

Malte Jansen, a postdoc from MIT, will arrive in April to work with Bob Hallberg and Isaac Held.

Pu Lin will arrive in April, from the University of Washington, to work with Yi Ming and V. Ramaswamy.

Departures

Fanghua Xu – October 2012
Assistant Professor
Tsinghua University, Beijing, China

Caroline Muller – November 2012
CNRS Faculty Position
Hydrodynamics Lab of Ecole
Polytechnique, France (LadHyX)

Birth Announcements

Congratulations to EEB Postdoctoral Research Associate **Malin Pinsky** (who collaborates with the Sarmiento group) and his wife, Kristin, on the birth of their son, Linden Hunter, on November 3, 2012, weighing 9lbs. 2oz.

Congratulations to AOS Postdoctoral Research Associate **James Watson** and his wife, Jodi, on the birth of their son, August Elliott Macrae, on November 28, 2012, weighing 8lbs. 1oz.

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