University of Wisconsin-Madison • Department of Atmospheric & Oceanic Sciences

Making Waves

Fall 2009

SSEC

Features

THE UNIVERSITY of WISCONSIN MADISON

Greetings from the Chair

Jonathan Martin

Nearly every year there is ONE autumnal storm, usually one with a central sea-level pressure minimum in the 980-990 hPa range, that roars through southern Wisconsin and delivers the death blow to the foliage with its 15-20 knot sustained winds. This year, such an event did not visit us and the leaves took their time falling after a cool summer, a bone dry September and a record chilly October. They may have, in fact, been glad to finally cash it in after a year in which the weather was never really kind to them. But what a year it has been! Our department has undergone many changes since our last greeting to all of you. We have welcomed two exciting new individuals to our faculty, along with a nearly completely new office staff, and we have initiated a new lecture series that we hope will continue to add to the scholarly culture of our department.

At the same time, the State of Wisconsin, like many others across the country, is facing severe financial pressures induced by a $6.6 billion budget deficit in the current biennium. Against this backdrop, we maintain our commitment to meeting the challenge of continuing to fund outstanding graduate students as federal research dollars become increasingly difficult to find. We remain committed to giving our undergraduates the very best, broadest education in this science that is offered anywhere. We remain committed to engaging in campus-wide initiatives to enhance the profile and educational offerings in climate change science and environmental studies while contributing to the multi-agency Wisconsin Initiative on Climate Change Impacts (WICCI). It is in the face of these challenges that we appeal to you, our alumni, for your continued support of our exceptional department and its research, teaching, and outreach missions that have influenced so many lives throughout the more than 70 years of our existence.

In this edition of our annual newsletter we will introduce our many new faces to you and describe the numerous activities and accomplishments of our faculty, staff, and students in the past year. We will also extend an invitation to you to join us at our Annual Alumni Reunion at the AMS Annual Meeting in Atlanta, GA. In spite of the many challenges we face, we find ourselves, as always, looking forward to an exciting future from the perspective of an illustrious past. We are pleased to include you in that future as we stay updated with you; our Past, our Future, our Alumni.

Faculty News

Introducing Larissa Back

Open scientific questions related to deep convection and rainfall patterns exist on a variety of different time and space scales. For example, even in our current climate it is not understood why convective storms are systematically so much more intense over land than over the ocean. In addition, we know little about the ways in which global warming may alter the frequency and distribution of severe convective events. Professor Larissa Back's research focuses on these and other issues regarding deep convection and its interactions with the large-scale circulation, variability and climate.

Professor Back is one of our two new Assistant Professors in AOS, having started her Wisconsin career in August 2009. Larissa grew up in Ithaca, New York. After graduating from Cornell in 2002 with a B.A. in Science of Earth Systems with a concentration in Atmosphere and Ocean Dynamics, she moved to Seattle to attend graduate school at the University of Washington. Working with Professor Chris Bretherton, she studied climatological rainfall patterns over the tropical oceans. In 2007, she obtained her Ph.D. in Atmospheric Science and headed to MIT as a NOAA Climate and Global Change Postdoctoral Fellow working with Professor Kerry Emanuel.

We are thrilled to welcome Professor Larissa Back to our faculty!

Introducing Dave Turner

I am very pleased to join the AOS faculty! I have a long history with the UW-Madison, as I received both my PhD in Atmospheric Science from AOS (2003) and was a research scientist within the Space Science and Engineering Center for nearly 4 years. Thus, I am pretty familiar with the strengths of the department and the various centers associated with AOS, as well as the history and tradition of the department.

I have an extensive background in using ground-based remotely sensed observations to investigate various atmospheric processes, with the ultimate goal of improving the representation of these processes in global climate models. My recent research efforts have focused on a variety of topics, including: (a) improving the accuracy of radiative transfer models in spectral regions important for mid-tropospheric radiative heating; (b) investigating the radiative properties of Arctic boundary layer clouds, and particularly the mixed-phase clouds that frequently occur there, and the role of radiation in maintaining these clouds; (c) the turbulent structure of the boundary layer using high-resolution water vapor profiles, and how this structure is impacted by other influences (e.g., surface sensible heating, shear at the top of the boundary layer); and (d) quantifying the entrainment rate in fair weather cumulus using ground-based remote sensing observations. These research projects have resulted in my participation in, and organization of, many different field studies, including a recent campaign which is being conducted at 17,500 ft (530 mb!) in the Atacama Desert in Chile. My funding vehicle for this research is the Department of Energy's Atmospheric Radiation Measurement (ARM) program, which is DOE's largest observationally based climate program. I have been associated with this program for nearly 16 years and am currently serving as the chair of the ARM Climate Research Facility Science Board (an advisory group for DOE management) and as chair of the Radiative Processes Working Group (one of the four working groups within the ARM science team).

For those who are curious, many more details can be found on my website at *www.ssec.wisc.edu/~dturner*.

Liu Takes World Tour on Recent Sabbatical

Professor Zhengyu Liu took a sabbatical year from September 2008 – May 2009 during which he made three main stops on a globe-trotting tour. From September – November 2008 he worked at NCAR (with Betty Otto-Bleisner and others) on the world's first deglacial simulation using state-of-the-art climate models. From Boulder, he was off to Hamburg for three months at the Max-Planck Institute where he collaborated with German scientists on the dynamics of vegetation feedbacks in the climate system as well as the long-term predictability of the climate system using statistical methods.

From March - May 2009, he found himself in Princeton, NJ at the Geophysical Fluid Dynamics Laboratory where he began what he hopes will be a long-term collaboration with GFDL scientists. They began work on the use of Ensemble Kalman Filtering (EnKF) in studying coupled model parameters – basically, devising a strategy for tuning model parameters in a fully coupled model using EnKF. Professor Liu expects that these research experiences will enrich the classroom teaching of his AOS 171, AOS 522 (Paleoclimate) and AOS 761 (Ocean-atmosphere interaction) courses in the future.

Morgan Spends Sabbatical year as Congressional Fellow

During his sabbatical leave from the University of Wisconsin - Madison, Professor Michael Morgan worked on a textbook he is developing (*Analysis, Diagnosis, and Prediction of Weather Systems*) and served as the 2007-2008 American Meteorological Society/University Corporation for Atmospheric Science (AMS/UCAR) Congressional Science Fellow, one of 34 congressional fellows during that year.

The goals of the AAAS Congressional Science and Engineering Fellowship program are to educate scientists and engineers on the details of federal policymaking; promote positive interactions between scientists/engineers and policymakers; provide scientists and engineers with the skills and background to engage in policy-relevant research and other activities that address challenges facing society; and increase the in-

volvement and visibility of scientists and engineers in the federal public policy realm. These goals are accomplished through an orientation at the beginning of the fellowship year, experiences gained following placement as a staffer in the personal office of a Congressman or Senator or as a staffer on a Congressional committee, and in professional development exercises sponsored by AAAS during the course of the fellowship year.

Following the orientation period, and the short placement period, Michael began work in the office of United States Senator Benjamin Cardin as a Senior Legislative Fellow with the responsibilities of a Senate legislative assistant. He served on the Senator's "Projects Team" on a legislative portfolio focused primarily on energy and environment issues and appropriations.

His responsibilities in Senator Cardin's office included preparing briefing memoranda for the Senator on his Environment and Public Works Committee hearings as well as his opening statement, and questions for EPW committee hearing witnesses. He also met with constituent and lobbying groups on a number of issues related to environment, energy, and science and worked on a number of pieces of legislation before the 110th Congress. This work included reviewing the text of bills and briefing the Senator on the content, suggesting and drafting amendments to bills on behalf of the Senator, working with staff member in other Senate offices and EPW staff to have bills placed on the EPW Committee's markup calendar.

The most prominent of these items were S.2191("America's Climate Security Act") which sought to reduce greenhouse gas emissions in the U.S. by establishing a carbon cap-and-trade system; S. 906 ("Mercury Export Ban") which stops Federal government sales of mercury and bans private-sector exports of elemental mercury by 2013.; and S. 3109 (the "Electronic Manifest bill") which establishes an electronic manifest system for waste within the U.S. to replace the current paper manifest system. The last two bills were signed into law after Michael returned to Madison in Fall 2008.

Grant Petty Publishes Second Book, Spends Sabbatical Working on Another

In Summer 2008, Professor Grant Petty published his second textbook entitled *A First Course in Atmospheric Thermodynamics*. This book has already been adopted by instructors at quite a few meteorology programs around the country, including the University of Oklahoma. Reviews of the book can be found at *www.sundogpublishing.com/Reviews/index.html*.

In Fall 2008, Grant took a one-semester sabbatical in Fall 2008 during which he devoted his time to 1) developing a new 700-level graduate course on Atmospheric Remote Sensing, and 2) writing a supporting textbook with the preliminary title *Atmospheric Remote Sensing – Inverse Methods and Applications*. For a variety of reasons, Grant took the risky option of remaining in Madison for much of the sabbatical yet still accomplished a great deal. In fact, for Grant, the primary benefit of the sabbatical was to have a concentrated period of time to focus on acquiring knowledge, tools, data sets, and other materials relevant to both the course and the book. Both the course development (essentially completed) and the book project are well on the way to the finish line. In fact, work on the book prompted Grant to broaden its scope to include not only remotely-sensed (indirect) measurements but also conventional measurement theory as well.

Another ancillary benefit of the sabbatical was that in the course of researching inverse methods for the course and the book, he uncovered a technique called constrained optimal estimation (as opposed to "ordinary" optimal estimation). While well-known in the signal-processing community, COE is virtually unheard of in the atmospheric remote sensing community, yet it has some very important and useful properties for some applications. As a result, Grant's current research direction has been directly and significantly affected by this new insight, recently culminating in a new proposal to NASA and an invited seminar at Goddard Space Flight Center on September 14 to describe the application of COE to the estimation of rainfall over land from satellite microwave imagery.

Martin Named Hamel Family Letters & Science Faculty Fellows

In April 2009, Professor Jonathan Martin, Chair of AOS, was named a Hamel Family Letters and Science Faculty Fellow. The Letters & Science Faculty Fellows award was initially created with a generous gift from George and Pamela Hamel. George Hamel (BA'80, Communication Arts) is a member of the College of Letters and Science Board of Visitors. This prestigious honor reflects Professor Martin's outstanding research and teaching as well as his exceptional service to the university community and will provide flexible research funds for the next five years for his scholarly activities.

Turner Leads Field Programs in Different Hemispheres

Professor Dave Turner is a co-principal investigator of a recently completed field experiment that took place at 5380 m above sea level (530 mb!) in the Atacama desert in Chile. The objective of this experiment was to improve the accuracy of radiative transfer models in the mid-troposphere in water vapor absorption bands that are typically opaque at most surface locations. The project was funded by the DOE Atmospheric Radiation Measurement (ARM) program. A recent news story was published at *www.arm.gov/news/cms/stories/3556*.

Dave is also a co-principal investigator on a recently funded NSF Arctic Observing Network project that will deploy advanced ground-based remote sensors to Summit, Greenland for 4 years to collect a comprehensive dataset on cloud properties, radiation, thermodynamic state, and precipitation over the ice sheet. This dataset will be the first such dataset collected, and together with similar datasets collected at other Arctic sites, will provide a more complete picture of how clouds impact the energy budget of the Arctic atmosphere.

Lake Superior Revealing Intriguing Secrets

In a paper published in Nature-Geoscience on November 15, AOS Professors Ankur Desai and Galen McKinley, along with Ph.D. student, Val Bennington, have reported on a connection between wintertime ice cover and summertime wind speeds over Lake Superior. Their NSF supported study reveals that an observed 5% increase (per decade) in summer wind speeds over Lake Superior is related to destabilization of the summertime marine boundary layer which, in turn, is physically related to the decreasing ice cover the lake experiences in winter. The wind changes have implications for lake currents and ecosystem biogeochemical cycling.

McKinley develops website for Carbon Cycle Education

Professor Galen McKinley is developing a website for education on the global carbon cycle and its connections to anthropogenic climate warming. The centerpiece is an interactive online model (developed in collaboration with Tommy Jasmin and Tom Whittaker of SSEC) with which users can define the future trajectories of CO_2 emissions from human activities and CO_2 removal by the oceans and terrestrial biosphere. The website is under construction at the time of this writing, but is expected to be fully functional in late January 2010. Please take some time to explore this new resource at *www.aos.wisc.edu/~CarbonCycleEd*.

New Staff Bios

Ms. Debbie Weber joined our Department in February 2009 as our Department Administrator. She has over 20 years experience on campus, 11 as an administrator. Various positions on campus have enriched her knowledge of who to contact and how to get tasks accomplished. Her degrees in Business Education and Supervisory Management add to her skill set in the personnel, financial and management areas. She also serves on the Council of Non-represented Classified Staff and on the Climate and Professional Development Committee, both campus-wide committees. We are happy (and lucky) to have Debbie aboard.

Ms. Rhonda Armstrong began working as a Financial Specialist 3 on November 2, 2009. Rhonda came from The Department of Unemployment as an Employment Security Specialist 3 and has worked in a variety of industries in the Madison area through which she has acquired her formidable business administration skills. She has served in many roles from administrative to management and recently completed her Associates Degree in Business and is pursuing her Bachelors in Business.

Rhonda has four daughters who keep her on toes and provide her with many multitasking opportunities. If she is not spending time with her children or completing coursework you can find her skiing in the winter or on her wake-surf board on a lake here in Wisconsin. She looks forward to getting to know everyone here and growing into her role here at AOS.

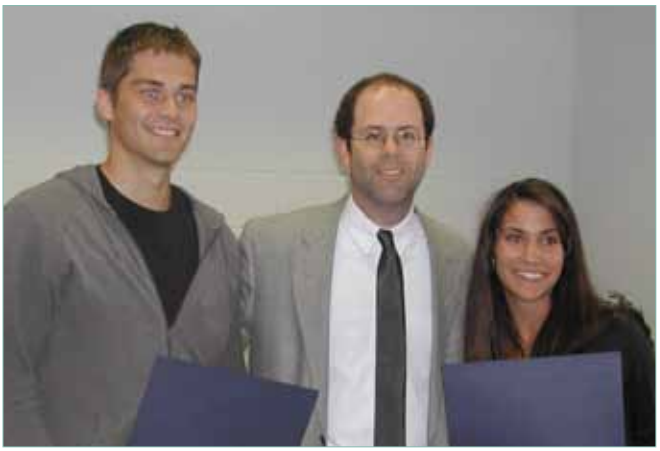
Ms. Angel Skram began her position as Student Status Examiner in our department in April 2009. Her first job with the State of Wisconsin was with the Department of Administration, Printing Services division. In 1989, Angel was hired by the School of Human Ecology where she worked as an Academic Department Specialist until 2008. Angel is enjoying her new job here as Student Status Examiner as she finds it an exciting new challenge. Angel reports that, "Everyone in the department has been very welcoming and helpful" – not surprising, especially given her bright and friendly personality. Angel is a wonderful new addition to our office staff.

Department Events

Student Awards Day – April, 2009

Our annual Department Student Awards Day was held on Wednesday April 29, 2009. We gathered to honor excellence in both our undergraduate and graduate student's performances.

Aronne Merrelli (above) received the Schwerdtfeger Award for best performance as a first year graduate student.



***Dan Henz** and **Andrea Lang** (above) were honored with the Wahl Award for outstanding performance as teaching assistants in our program.*

***Hannah Barnes** (above) received the Horn Award for comprehensive excellence as a junior undergraduate.*

***Brett Hoover** (above) received the Lettau Award for the best M. S. thesis for his thesis "Tropical Cyclone Steering as a Potential Vorticity Advection Process: The Role of Cumulus Parameterization in the Definition of an Optimal Steering Column" under the guidance of Professor Michael Morgan.*

*Finally, **Val Bennington** and **Amato Evan** (with his little helper) received the Colloquium Student Service Award for their outstanding contributions to the organization and execution of our weekly department Colloquium.*

Unable to attend was Mr. Michael Hiley who accepted the Lettau-Wahl Award, for excellence as a junior undergraduate as chosen by the Chair of AOS.

Congratulations to all of our award winners!

Robock Lecture Series Inaugurated by Professor Alan Robock '70

On Friday September 25, 2009 Professor Alan Robock (B. A. 1970) of Rutgers University inaugurated what will be an annual "Leonard Robock Public Lecture" series at UW-Madison. This series will be supported by a generous gift made from the estate of Leonard Robock with the mandate that the Department bring in an expert to give a public lecture on an issue related to the public interest (e.g. climate change, tornadoes, hurricanes, hydrothermal vents, etc.). The lecture is to be advertised broadly and to be presented at a level accessible to the public as well as students and educators. It is to be aimed at educating attendees on the state of our knowledge on the issue at hand.

Professor Robock (the benefactor's nephew) delivered a stimulating lecture entitled "Smoke and Mirrors: Is Geoengineering a Solution to Global Warming?" The lecture was attended by ~70 people from a broad cross-section of our campus and at-large community. We look forward to a robust and exciting future for the Robock Lecture Series.

AOS Students Tour C-130 Research Aircraft

On Tuesday November 9, 2009, Professor Greg McFarquhar from the University Of Illinois hosted a tour for over 25 AOS graduate and undergraduate students, faculty and staff of NSF's C-130 research aircraft. The aircraft is currently deployed in the PLOWS field program (described in our Undergraduate Program News) and, as part of the outreach portion of the NSF proposal funding that program, the plane is "on tour" to a number of meteorology/climate programs around the Midwest. Visitors were given tours of the inside and outside of the aircraft along with a description of the numerous instruments on board (and outboard) and how they work. It was a fascinating tour, well worth the two hours.

Graduate Program Report

GSA Hits the Ground Running

The Graduate Student Association (GSA) has been hard at work this semester. The academic year began with the first ever Faculty/Graduate Student Summit held at the Memorial Union. Twenty-six faculty and graduate students were in attendance for the four hour long event in which several major issues and their resolutions were discussed.

Graduate students Steve Plachinski and Katie Holman use the rotating tank in a demonstration.

The weekly Department Seminar is now headed by a committee within the GSA. This committee is responsible for filling the time slots with academic and educational presentations. They have also added refreshments at this event. Another new committee this year is the Welcome Committee who has been disseminating and reformulating the literature for prospective graduate students. The group will also add to the guide they created for new graduate students last summer. The Social, Curriculum, and Aesthetics Committees round out the rest of the GSA. Tasks include developing ways for faculty and students to interact more, determining what courses are needed in order to discuss with the faculty, and deciding how to make our current work/lecture space more appealing.

Graduate student Lee Welhouse discusses research field trips to the Antarctic at a local grade school.

Three members of the GSA have volunteered their time once a week in order to teach a "crash course" in the basics of programming for FORTRAN, IDL, and Matlab. Aronne Merrelli, Brett Hoover, and John Rausch have developed and implemented short lectures and examples for graduate students who need an introduction or a refresher in programming.

Finally, a mission of the GSA is to pursue opportunities of service. We have done this outside of the building by visiting several local schools to give presentations about the weather and what we research. Our most recent visit included four members who attended the Whys and Wows program at Wilson Middle School in Appleton, WI sponsored by the Wisconsin Alumni Association. Beginning last spring, some members became involved with the rotating tank and saw it as a great way to bring the weather to the classroom while showcasing a unique educational tool (a convection experiment using the non-rotating tank is pictured).

The GSA is off to a fast start with many more ideas to implement in the coming semester!

Kathryn Mozer, GSA Facilitator. *www.aos.wisc.edu/~gsa*

Master of Science Degrees

December 2008 Master of Science Degrees

Bickford, Erica E., "Land-Atmosphere Coupling and Drought Persistence in Observations and Model Simulations of 20th Century and 21st Century Climate Change." December 2008. (DeWeaver)

Franklin, Morgan M., "Parameterizing the Marine Silicon Cycle: Effects on Modern Ocean Biogeochemistry." December 2008. (Hitchman)

Klusinske, Elizabeth A., "A Meteorological Study of Mercury Transport and Wet Deposition to Wisconsin." December 2008. (Hitchman)

Zachar, Nicholas A., "Ozone Transport Pathways in the Southern Hemisphere during the Winter-Spring Transition." January 2009. (Hitchman)

May 2009 Master of Science Degrees

Rausch, John, "Global Assessment of the Microphysical Properties of Marine Boundary Layer Clouds Using a Long-Term Satellite Climatology." (Bennartz)

August 2009 Master of Science Degrees

Miretzky, Brian J., "A Model Based Analysis of the Synoptic and Mesoscale Processes Associated with Subsidence Into Western Great Lakes Wildfire Environments." (Martin)

Smirnov, Dimitry, "The Atlantic Meridional Mode: Observations, Modeling and Predictability." (Vimont)

Sulman, Benjamin, "A Comparison of Carbon Dioxide, Water, and Energy Fluxes at a Drying Shrub Wetland in Northern Wisconsin, U.S.A. with Nearby Wetland and Forest Sites." (Desai)

December 2009 Master of Science Degrees

Hartung, Daniel C., "The Influence of an Evolving Wave Guide on the Life Cycle of an Undular Bore and its Interaction with a Shallow, Intense Cold Front." (Martin)

Moberg, Claus, "The impact of regional processes on large-scale air pollution transport over the western United States." (Holloway)

Niebuhr, Emily, "A Coastally Trapped Wind Reversal Along the Gulf of Alaska." (Hitchman)

PhD Degrees

PhD Theses Since December 2008

de Boer, Gijs, "An Improved Understanding of the Lifecycle of Mixed-Phase Stratiform Clouds Through Observations and Simulation." May 2009. (Tripoli)

Evan, Amato, "The Role of Aerosols in Northern Tropical Atlantic Sea Surface Temperature Anomalies." May 2009. (Bennartz; with co-advisor Vimont)

Harkey, Monica, "Idealized Ice Nuclei Effects on the Distribution of Water Vapor Over the Amazon Basin." September 2009. (Hitchman)

Li, Zhenglong, "Improvements and Application of Atmospheric Sounders from Geostationary Platforms." May 2009. (Ackerman)

Rogal, Marek, "Dynamical Redistribution of Column Ozone in the Southern Hemisphere." September 2009. (Hitchman)

Undergraduate Program Report

AOS Undergrads to Participate in PLOWS Field Experiment

Heavy snow in the northwest quadrant of continental storms is a recurring, high impact winter weather event in the upper Midwest. Despite this obvious fact, very little detailed observational work concerning the mesoscale dynamics and microphysics of these storms has been undertaken. This winter the ProfiLing Of Winter Storms (PLOWS) project will endeavor to increase our knowledge of these aspects of such storms. The project is being run jointly by the University of Illinois and the University of Alabama-Huntsville. Three of our senior undergraduates, Croix Christenson, Lance Vanden Boogart, and Zachary Handlos will be flying on the C-130 research aircraft during the project's field phase which runs, with a break for the holidays, from 1 November -28 February 2010. We are eager to hear of their experiences on board the C-130.

Undergraduate Degrees

December 2008 Bachelor of Science Degrees

Patrick Brown, April Caves, Andrew Field, Christopher Little, Stuart Olson, Eric Schreiber

May 2009 Bachelor of Science Degrees

Neil Berg, Madeline Dierking, Jordan Gerth, Joseph Hoechst, Alexander Keppel, Christopher Manzeck, Sarah Monette, Melissa Peterson, Michael Phillips, Matthew Serwe, Hunter Straus, Danielle Trolo, Zachary Uttech, Rebecca Westby, Dana Willamson

December 2009 Bachelor of Science Degrees (expected)

Bryan Heth, David Rasmussen, John Schwarzmeier, Joseph Zagrodnik

Alumni News

AOS Alumni Reunion Reception

The third annual UW-Madison Alumni Reception was attended by over 100 people at the Annual Meeting in Phoenix in January 2009. The next installment of this fabulous event will take place at the AMS Annual Meeting in Atlanta, Georgia on Tuesday January 19 from 6:30 – 9 PM. As you may know, Tuesday night is reception night at the AMS Meeting where a number of schools host reunions for their alums. Ours has been, by far, the most heartily attended affair of all for three years running. We hope to see you on January 19 and don't forget to pick up your Bucky Badger pin when you stop by for food, drinks, and reminiscing with old friends and current colleagues.

Alumni Contributors

Received October 2008 through October 2009

Barton J. Adrian, Richard K. Albrecht, James F. Andrus, Thomas J. Balousek, Gary T. Bates, John J. Bates, Dan A. and Stacey E. Baumgardt, Daniel M. and Karen L. Baumgartner, Craig L. Berget, Jerome B. and Amy G. Blechman, Alan P. Bliesner, Bette L. Otto-Bliesner, David H. Bromwich, Larry H. Bruss, Marcus L. and Renee J. Buker, Melissa K. Carr, David B. Clarke, Todd M. Crawford, Stephen G. and Lisa Dehner, Thomas E. Dillon, Gerald J. Dittberner, John E Dietrich, Claude E. Duchon, John A. Dutton, Max E. Ellis, Jr., Patrick N. Graham and Dr. Susan Elston, Geoffrey M. Flint, Monique M. Gamache-Venne, Thomas J. Greenwald, Mary Beth Hagedorn, Brian V. Hahn, Douglas G. Hahn, Donald A. Haines, Russell A. Hankins, Stefan Hastenrath, Floyd F. Hauth, Leon E. Heller, Lydia C. Heston, Janet M. Hilts, Edward J. and Bernadette Hopkins, David and Barbara Houghton, Russell D. Hovanec, Dale N. Hovland, Ted C. Jafferis, Nancy A. Jesse, Patrick F. Johnson, Anton F. Kapela, Marc B. and Jodi L. Kavinsky, Peter R. Keehn, David L. Keller, Linda M. Keller, James F. Kimpel, David L. Kleckner, Richard W. and Beverly A. Knight, William R. Knuth, Charles D. Koch, Jeffrey F. Kronschnabel, John E. and Gisela Kutzbach, Thomas H. Kyle, Peter J. Lamb, Kyle A. and Kristie L. Larson, Dennis A. and Marilyn B. Lawler, Matthew A. Lazzara, Thomas J. and Anne M. LeBlanc, Samuel Levis, Cecil S. Lo, Craig S. Long, David J. Lundin, David W. and Linda L. Martin, Dennis H. and Margaret McCarthy, Mark G. Moede, Paul E. Moertl, Joseph M. Moran, Michael P. Nelson, Peter N. and Kristin A. Nines, Raymond G. O'Keefe, Chad D. Omitt, John J. Orlovsky, Byron A. Paulson, Jeffrey S. Penner, Brian A. and Heide M. Petermann, James T. Peterson, Thomas J. Phillips, Robert A. Ragotzkie, James E. Ramer, Dale G. Raymakers, Clayton H. Reitan, Kenneth R. Rizzo, Richard S. Ryrholm, Perry J. Samson, David A. Santek, Douglas H. and Karen I. Sargeant, Robert E. Schlesinger, Siegfried D. Schubert, Ricky L. Shanklin, Edward J. Shimon, Eric Dale Skyllingstad, Shawn R. Smith, William L. and Marcia J. Smith, Alfred J. and Mary V. Stamm, Allen E. Staver, William J. Steffen, John E. Stout, Norton D. Strommen, Ronald J. Sznaider, Dennis W. Thomson, William E. and Ruth M. Togstad, Louis W. and Susan Uccellini, Bette M. Wade, Lore Wahl, Russel E. Walesh, Thompson III and Joan M. Webb, George A. Weidner, Traci R. Westfall, Donald E. Wuerch, John A. Young

Thank You!

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Framed by orange leaves, the Carillon Tower at the University of Wisconsin- Madison is pictured during autumn on Oct. 27, 2009.
Photo by Bryce Richter/UW-Madison Communications.