

**Message from Department Chair, Mike Poellot**

Greetings from the Department of Atmospheric Sciences!

Another school year has come to a close, bringing a time to reflect on the past year's accomplishment and also look forward to what the coming year will bring. At the spring commencement ceremony, 11 new graduates received their B.S. in Atmospheric Sciences. This was a close-knit group of individuals who were fun to have around and who served the department well. Most of them have decided to continue their education at the graduate level and we wish them all the best. We also had 24 students complete their first year in our new pre-professional program, Pre-Atmospheric Sciences. This looks to be an outstanding cohort of students and we are expecting them to achieve great things.

In this issue of the newsletter you will find more news about our alumni. One additional story is the return to Grand Forks of Ryan Knutsvig, who has taken over the position of Meteorologist in Charge at the National Weather Service Grand Forks Weather Forecast Office. Ryan received his B.S. in Meteorological Studies from our department in 1997, and in 2002 became the first student to complete our new M.S. in Atmospheric Sciences degree program. Ryan worked at several locations around the country within the NWS before coming home to the Grand Forks area; he grew up in nearby Buxton, ND. Welcome back Ryan!

Other news includes the upcoming retirement of Bruce Smith, Dean of the Odegard School of Aerospace Sciences. Bruce has served as our Dean for the past 15 years and has been a tremendous supporter of our department. The search for the next dean has just begun with the formation of a college-wide search committee. I will be representing Atmospheric Sciences, and we are fortunate to have Ryan Knutsvig representing non-Aviation alumni on the committee. We will keep you up to date on the search process and welcome any input you might have, including suggested names of individuals who might be good candidates.

We continue to have exciting research and learning activities being conducted by our faculty, staff and students. A couple of quick highlights include a new grant from NOAA to Xiquan Dong, Aaron Kennedy, and Matt Gilmore under the NOAA Research to Operations (R2O) program. Their work will analyze WRF simulations and NEXRAD/GOES observations to help improve the forecasting of convection and severe weather.

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## American Geophysical Union (AGU) Annual Meeting

The 47<sup>th</sup> Annual Fall Meeting of the American Geophysical Union (AGU) was held December 15 – 19, 2014 in San Francisco, California. Those attending from UND were: Faculty members – David Delene, and Xiquan Dong; Staff member – Ricardo Alfaro-Contreras; Grad Students – Erica Dolinar, Ryan Stanfield, David Goines, Grant Gutierrez, Travis Toth, Ted McHardy and Matt Christensen.

Posters or talks were presented by the following people: M.S. Grad Students **Grant Gutierrez** presented a poster titled “*Severe Convective Environments in Reanalyses*”; **Ted McHardy** presented a poster titled “*Investigating Methods for Nighttime Aerosol Optical Depth Retrievals Using the VIIRS Day/Night Band*”; **David Goines** presented a poster titled “*Climatological Analysis of 4 km NSSL-WRF and NCEP-WRF Precipitation*”; Ph.D. Grad Students **Ryan Stanfield** presented a poster titled “*An Analysis of Precipitation Associated with the ITCZ in the CMIP5 AMIP and Historical-Coupled GCM Simulations: A Quantitative Assessment of Magnitude and Position*”; **Erica Dolinar** presented a poster titled “*Reanalyzed Clouds, Precipitation, TOA and Surface Radiation Budgets: A Global Satellite Comparison and Regional Studies at Two ARM Sites*”; **Travis Toth** presented a poster titled “*A Global and Regional Trend Study of the Vertical Distribution of Aerosols As observed by CALIOP*”; **Matt Christensen** presented a poster titled “*A Theoretical Study of the Effect of Oceanic Bubbles on the Enhanced Aerosol Optical Depth Band over High Latitude Southern Oceans as Detected from MODIS and MISR*”.

**Jingjing Tian**, a current PhD grad student submitted a poster but was unable to attend, her poster was titled “*Retrievals of the Deep Convective System Ice Cloud Microphysical Properties using NEXRAD and Aircraft In-situ Measurements*”;

And by staff and faculty: **Ricardo Alfaro-Contreras** presented a poster titled “*Inter-comparison of Above-Cloud Aerosol Observation from OMI and CALIOP*”; **Dr. David Delene** presented a poster titled “*Near Real Time Review of Instrument Performance using the Airborne Data Processing and Analysis Software Package*” and **Dr. Xiquan Dong** gave a talk titled “*Investigation of Two Extreme Summer Arctic Sea-Ice Extent Anomalies in 2007 and 1996*” and presented results for **Dr. Baike Xi** titled “*Comparison of MBL Cloud Properties from CERES-MODIS (CM) Ed4 and DOE ARM AMF Measurements at AZORES*”.



Xiquan Dong and Erica Dolinar had their picture put on a poster at the AGU Annual Meeting but Ryan Stanfield felt left out as he's not in the picture.

## 26th Annual Awards & Scholarship Banquet

The 26th Annual Awards & Scholarship Banquet was held on April 17, 2015 at the Red Roof Inn. The guest speaker was Carlton Bjerkaas. Special guests were Dean Bruce Smith, Associate Dean Paul Lindseth, MIC at the GF NWS, Ryan Knutsvig and his wife, Stephanie.

The UND AMS Student Chapter presented the following awards to the faculty: *Best Freshman & Sophomore Professor* – Al Borho; *Best Junior & Senior Professor* – Mark Askelson; *Best Academic Advisor* – Mike Poellot; *Golden Reamer Award* – Xiquan Dong; *7-Eleven / Most Available Professor* – Gretchen Mullendore and Jianglong Zhang; *Department Powerhouse Award* – Mary Ann Gregoire and Wanda Seyler.

The following awards were presented to the following undergraduates: *Outstanding Service to the Department* – Ben Lott; *Outstanding Undergraduate Teaching Assistant* – Nathan Smith and Morgan (Mac) Simms; *Outstanding Undergraduate Student Researcher* – Emily Maddox and Logan Lee; *Outstanding Student Broadcaster* – Brianna Kump;

*Outstanding Sophomore* – John D. Odegard *Aerospace Sciences Scholarship* – Janelle Hakala; *Outstanding Junior* – John D. Odegard *Aerospace Sciences Scholarship* – Brendan Farmer; *Outstanding Freshman* – Jonathan Rosencrans, Blake Sorenson and Lance Wilson; *Outstanding Graduating Senior* – Johnathan Metz.

The *Science Engineering Associates Scholarship* was presented to Nicholas Gapp; the *Carlton Bjerkaas Atmospheric Sciences Scholarship* was presented to Brittany Tague and the *Bavendick Scholarship* was presented to MacKenzie Cochran.

The “*Faculty Award*” to the *Outstanding Undergraduate* was presented to B.S. senior **Johnathan Metz** at the AtSc end of semester potluck in December 2014. This included a scholarship to be used for his last semester at UND.



### 2015-16 AMS Officers with Advisor Al Borho

Back row L to R: Blake Sorenson, Janelle Hakala, Tessa Philpott; Front row L to R: Al Borho, Kaela Lucke, Nick Gapp, Jonathan Rosencrans



### UND-AMS Officers 2015—2016

President - Nicholas Gapp  
 Vice President - Blake Sorenson  
 Secretary - Tessa Philpott  
 Treasurer - Jonathan Rosencrans  
 Historian - Kaela Lucke  
 Liaison to Undergraduate  
 Curriculum Committee - Janelle Hakala

## 95<sup>TH</sup> AMERICAN METEOROLOGICAL SOCIETY ANNUAL MEETING, STUDENT CONFERENCE AND CAREER FAIR

The 95<sup>th</sup> Annual Meeting of the American Meteorological Society (AMS) was held January 3 – 8, 2015 in Phoenix, Arizona. The Atmospheric Sciences department had a table at the Career Fair which is intended to facilitate the networking process for both applicants and recruiters. Those attending from UND were: Faculty members – Mark Askelson, David Delene, Gretchen Mullendore and Xiquan Dong; Staff members – Kurtis Pinkney and Wanda Seyler; Grad Students – Kendell LaRoche, Travis Toth, Ron Stenz, Shaoyue Qiu, Karen Larson Keith, and Joel Siegel; Undergrads – Johnathan Metz, Nicholas Gapp, Mac Simms, Nathan Smith, Emily Maddox, Logan Lee, Adam Gill and Stephanie Waldref. Johnathan, Emily, and Nick are current AMS officers for the UND student chapter.

Posters or talks were presented by the following people: **Ron Stenz**, presented a poster titled “*Improving Satellite Quantitative Precipitation Estimates By Using Cloud Optical Depth*”; **Shaoyue Qiu**, presented a poster titled “*Characterizing Arctic Ice and Mixed-phase Clouds Using ARM Ground-based Measurement*”; **Dr. Xiquan Dong**, gave a presentation titled “*Marine and Continental Low-level Cloud Processes and Properties*”; **Travis Toth** presented a poster titled “*A Trend Analysis of Global and Regional CALIOP-Based Aerosol Vertical Distribution*” and gave a presentation for **Dr.**

**Jianglong Zhang** titled “*An Investigation of the Enhanced Southern Oceans Anomaly (ESOA) over high latitude oceans*”; **Emily Maddox** presented a poster titled “*Impact of Tropopause Structure on Supercell Transport*”; **Johnathan J. Metz**, presented a poster titled “*Development of a Season/Flow Dependent Gravity Wave Drag Parameterization for the NOAA FIM Global Atmospheric Model*”; **Kendell LaRoche** presented a poster titled “*Electrification and Lightning within Pyrocumululus Clouds*”; **Dr. Gretchen L. Mullendore** gave a presentation titled “*Observations from MACPEX of enhanced chemical plumes and perturbations in tropo-pause structure in regions with deep convection*”; and **Dr. David Delene** gave a presentation titled “*Suitability of Atmospheric Conditions in North Dakota for Conducting Effective Hygroscopic Cloud Seeding*”.

**Ron Stenz**, Ph.D. graduate student in Atmospheric Sciences, received an award for Outstanding Student Presentation at the Joint Satellite Program held during the 95th Annual Meeting of the American Meteorological Society. The title of his presentation was “*Improving Satellite Quantitative Precipitation Estimates by using GOES Cloud Optical Depth*”, co-authored by Xiquan Dong, Baike Xi, Zhe Feng, and Robert Kuiligowski.

*Congratulations Ron!*

*Message from the Department Chair continued*

Other grant news can be found in this letter. In January, our weather broadcasting program received a big boost through the purchase of a new Baron Omni Weather Graphics System. Our students continue to produce the Daily Weather Update program and also participate in Studio One under the guidance of Fred Remer. Shows can be viewed during the school year through a link on our department web site [atmos.und.edu](http://atmos.und.edu).

And remember, if you happen to be in the area, please stop by for a visit!

*Mike*



## UND Group at the AMS Career Fair



Back row from left: David Delene, Mac Simms, Travis Toth, Nathan Smith, Adam Gill, Logan Lee, Kurtis Pinkney, Mark Askelson; Front row from left: Kendell LaRoche, Gretchen Mullendore, Joel Siegel, Stephanie Waldref, Nick Gapp, Ben Lott, Wanda Seyler, Emily Maddox and Justin Weber (B.S. alumni).

## ALUMNI NEWS

### UND Alumni Review Magazine

The Winter 2014 issue of the UND alumni Review highlighted the weather and the Atmospheric Sciences department. The cover featured a picture by Dr. Aaron Kennedy, AtSc Assistant Professor. Other stories highlighted Wade Stettner, AtSc 1996 graduate who is the on-site meteorologist for the PGA; Jerrid Sebesta, AtSc 2002, Miranda Hilgers, 2011 and Matt Benz, 2007 who have all worked in broadcasting as a meteorologist. It also featured AtSc Associate Professor Dr. Matt Gilmore's storm chasing class from May 2014 and an article about Leon Osborne, AtSc Professor and Graduate Program Director about his decades of teaching weather at UND along with developing agricultural weather software, founding the Regional Weather Information Center (RWIC) and a private company in Grand Forks.

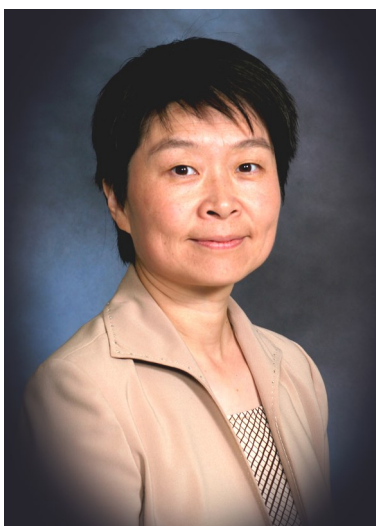


## ~ ~ ~ Faculty Spotlight ~ ~ ~

### Drs. Xiquan Dong and Baike Xi



Xiquan Dong was born in Tianjin, in the People's Republic of China. He received his Bachelor of Science degree in Electrical Engineering from Tianjin University in 1983.



Baike Xi was born in Tianjin, in the People's Republic of China. She received her Bachelor of Science degree in Atmospheric Sciences from Beijing University in 1985.

Xiquan and Baike met during the summer of 1985 at the China Meteorological Administration in Beijing which is the National Weather Service for the P.R. China. They were married in 1987, their son Steven was born in 1989 and their daughter Francine in 1998.

Xiquan received his Ph. D. in Meteorology from Penn State University in 1996, worked at NASA

Langley research center from 1996 to 1999, and then worked at University of Utah as a research assistant professor from 1999-2002.

Baike received her Ph.D. in Meteorology at Penn State University in 1999 under the guidance of Dr. Dennis Lamb. From 1999 to 2002, she worked as a postgraduate research associate at the University of Utah. While there she was involved with the NASA TRMM project and validated the satellite measured precipitation by using aircraft in-situ and ground based measurements during TEFLUN-A, TEFLUN-B/CAMEX3, LBA, KWAJEX, and CEMEX4.

In 2002, Xiquan was hired at the University of North Dakota and has grown his research group from seven students in 2006 to 13 strong in 2014. Most research projects in Dr. Dong's group have been funded by DOE ARM, NASA CERES, MAP, NEWS, and CAN, as well as NOAA GOES-R, MAAP and R2O projects. Dr. Dong has published more than 70 refereed papers in the highly impacted journals with H10 Index 33, Research Gate 37.9 and total impact points of 277. Dr. Dong also received NASA group awards for the CERES algorithm development in 1998, 2003, 2008 and 2014. For the community service, Dr. Dong is a member of the Global Energy Balance Working Group of the International Radiation Commission and co-chaired the NASA Energy and Water Cycle Study Drought and Flood Extreme Working Group. Dr. Dong also serves as an Associate Editor for the Journal of Geophysical Research-Atmospheres and Editor of the journal Advances in Atmospheric Sciences, and chaired

**Faculty Spotlight Continued:**

or co-chaired a lot of conferences and workshops. Xiquan was recently promoted to full Professor status.

For Dr. Dong's research, it can be briefly summarized in the following areas: (1) developing the cutting-edge cloud retrieval techniques in ground-based remote sensing, 2) using innovative methods to validate satellite cloud retrievals using ground-based observations and retrievals, (3) evaluation of GCM/SCM modeled cloud, radiation and precipitation using surface-satellite data, and (4) investigation of regional extreme events and associated feedback processes.

Baike joined the Atmospheric Sciences department at UND in 2003 and was promoted to a Research Professor in 2015. She has taken part in the following research projects: DOE ARM, NASA CERES, NEWS, MAP. She is also developing sophisticated algorithms/methods to analyze the global surface radiation data and validate the satellite retrieved cloud and radiation properties, providing the statistics of relationship between the cloud properties and radiations by using long-term surface and satellite observations. Most of her advised student research revolves around: Investigating Arctic snow cover and radiation budgets; Evaluating NASA GISS SCM;

Developing 3-D cloud structure by using combine satellite and ground-base observational data; Investigating the Asian dust and pollution intercontinental transport and chemical evolution process; Studying the extreme precipitation events during summer 2007 at the SGP by using both WRF model and the observational data. She enjoys working with students and feels very proud of her students whenever they make any progress.

Dr. Xi's research interests are cloud microphysics retrieval from ground base measurements, atmospheric radiative transfer, cloud and radiation parameterizations in climate model, ground and satellite remote sensing of clouds and radiation, heterogeneous reaction in clouds, and Asian dust/pollution transport.

They both enjoying traveling to historical places, biking, walking after lunch and chatting with friends. Other hobbies for Xiquan is playing tennis and badminton. Baike enjoys cooking, reading and playing math games.

**ALUMNI NEWS WANTED**

*We are looking for news about you to share with other alumni in our upcoming newsletters (information about your current position, significant achievements, family activities, etc.). Also if you could please send us your current e-mail address and address changes it would be appreciated. If you have any ideas or comments about the newsletter, please send them to Wanda at: [seyler@atmos.und.edu](mailto:seyler@atmos.und.edu).*

# Department News

**Dr. Xiquan Dong** and **Dr. Baike Xi** from the Department of Atmospheric Sciences have received a Group Achievement Award from NASA. The award was to the CERES Clouds Team "For sustained excellence and innovation in developing and validating the Cloud Retrieval Systems for CERES Editions 2 and 4 Climate Data Records." CERES (Clouds and the Earth's Radiant Energy System) is a radiometer based on the successful Earth Radiation Budget Experiment (ERBE) design from the mid-1980s. Its role is to contribute to a long-term climate data record of the Earth's energy budget by measuring the amount of reflected sunlight and emitted heat that determine Earth's climate.

*Congratulations Baike and Xiquan!*

**Dr. Gretchen Mullendore**, Associate Professor of Atmospheric Sciences, has received a grant award in the amount of \$290,966 from the National Science Foundation entitled "*Midlatitude Deep Convective Transport to the Upper-Troposphere and Lower-Stratosphere.*"

Deep convection, such as the severe thunderstorms observed throughout the central United States in the summer months, is an efficient vertical transporter of air pollution from the surface to over seven miles in altitude. To fully understand the impacts of severe storms on the chemical and radiative budget of the Earth, we need better ways of quantifying the exact altitudes over which pollutants are transported. The 3-year study will focus on two primary objectives: 1) improving the algorithms already developed at UND to estimate deep convective transport using radar reflectivity; and 2) investigating the impact of variable tropopause structures on deep convective transport. *Congratulations Gretchen!*

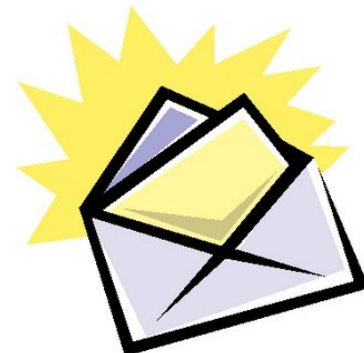
If you received a copy of this newsletter in the mail and would prefer to receive it via email, please drop Wanda an email at [seyler@atmos.und.edu](mailto:seyler@atmos.und.edu) and I will get you added to the email list.

The Department of Atmospheric Sciences recently took delivery of a Baron Omni weather graphics system along with the VIPIR analysis and display program for Doppler weather radar. UND students will use this state of the art system to produce the morning weather show *UND Weather Update* and also the weekly news program *Studio One*. This weather data system is used to generate high definition graphics for weather segments of broadcast news programs at television stations nationwide

*UND Weather Update* is a student run weather program that is produced by the Department of Atmospheric Sciences and is broadcast Monday through Friday on Grand Forks Cable Channel 3, UND Cable Channel 98.1 and the Internet. The show is produced and broadcasted from the Aerospace Network studio located in Ryan Hall. You can watch the show at

<http://webadmin.aero.und.edu/Uploads/AtmosVideo/latest.wmv>

*Studio One* is a live television show produced by the University of North Dakota's Television Center. The program, which debuted in the spring of 1987, is a 30-minute broadcast similar to NBC's *Today Show* or ABC's *Good Morning America*. Students produce news, weather, sports and entertainment segments and interview guests ranging from local people to national and international celebrities. *Studio One* provides opportunities for students from the University of North Dakota to gain practical experience in the communication industry.





M.S. Graduate Student, **Aaron Scott**, has been selected to attend the Intensive Summer School in Computing from Environmental Sciences program sponsored by NASA and the University of Virginia this summer. After the summer school, Aaron will intern at the NASA Langley Research Center's Atmospheric Science Data Center where he will help develop and implement software that is used for the Satellite Spatial-Temporal Metadata Validation and Optimization Service. This service helps to make satellite data more accessible to scientists and researchers across the country. Aaron's internship is funded by the NASA-North Dakota Space Grant Consortium. Aaron's advisor is Dr. Matthew Gilmore.

Ph.D. Graduate Student **Travis Toth** will be interning at the NASA Langley Research Center in Hampton, Virginia again this summer for two months. He will be working with the CALIPSO satellite group. Travis's advisor is Dr. Jianglong Zhang.

M.S. Graduate Students **Ted McHardy** and **Jared Marquis** will be interning this summer at the Naval Research Laboratory in Monterey, California for about two months. They will be working with the NREIP Program. Ted and Jared's advisor is Dr. Jianglong Zhang.

**Nicholas Gapp**, a junior pursuing a Bachelor of Science degree in Atmospheric Sciences at UND, received one of two scholarships from the North American Weather Modification Council for the 2015-16 academic year. It was presented to Nicholas at the Annual Meeting of the Weather Modification Association held on April 22-24, 2015 in Fargo, ND. Gapp has received several honors, has analyzed cloud condensation nuclei from aircraft measurements, and is the incoming president of the University of North Dakota student chapter of the American Meteorological Society.

Ph.D. Graduate Student **Ron Stenz** has been awarded an Alternate Sponsored Fellowship (ASF) at the Pacific Northwest National Laboratory (PNNL), operated by Battelle for the U.S. Department of Energy (DOE). Throughout his fellowship you will be hosted by Dr. Zhe Feng in the Fundamental and Computational Sciences Directorate. This award recognizes his academic and professional achievements and enables him to pursue research, training, and professional development opportunities that will enhance his personal research. Dr. Feng is a 2011 Ph.D. graduate of UND's Atmospheric Sciences department.



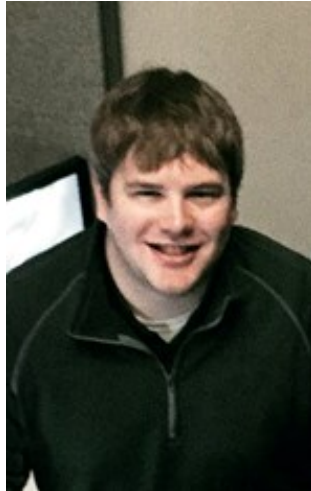
**Mike Poellot** was honored to receive the Weather Modification Association's Thunderbird Award at their Annual Meeting held in Fargo, ND April 22 - 24, 2015. The Thunderbird Award "recognizes fundamental and continuing contributions to the art and science of weather modification" according to the WMA. In nominating Mike for the award, Darin Langerud noted his "dedication as a professor" as "the instructor of UND's Weather Modification Pilot Intern Program" over the last 40 years. Darin commented that "Mike's efforts continue to leave an indelible mark on the weather modification industry."

***Congratulations Mike!***

# Alumni News

**Matt Saari**, B.S., 2011, received his Master's Degree in Atmospheric Science from the University of Alabama in Huntsville summer of 2014. Shortly after earning his degree, he began working at Baron as a Customer Service Meteorologist. Baron is a private weather company founded and based in Huntsville, AL that specializes in television broadcast weather graphics systems, radar systems, marine, aviation, and ground transportation weather solutions, as well as value-added data products. Matt is part of a team which provides support to all of Baron's customers whether it involves hardware, software, or data. He also travels around the country installing broadcast systems for television stations and provides training on the use of these systems, including traveling up to UND this past January. Besides providing support and training, Matt's duties also include local and national forecasting for clients, product and software testing, as well as research and development for current and future radar products.

Matt lives in Madison, AL with his wife Jennifer, who is also a Meteorologist working with the NWS in Huntsville. He still enjoys playing music whenever he can, playing golf ALL YEAR ROUND, and representing UND at a lot of the UAH hockey games.



**Miranda Hilgers**, B.S., 2012, has been working at Wenck Associates, Inc. since November 2014, where she is an Air Quality Scientist. She transitioned out of broadcast meteorology and into an environmental engineering firm and



has enjoyed the change in career focus. As an Air Quality Scientist Miranda works primarily with air dispersion modeling, specifically using the AERMOD dispersion model. She tracks emissions coming out of various industrial facilities and look at the overall pollution level in the surrounding area, and also assist facilities with emissions calculations and compliance paperwork. She frequently works with local and federal agencies (such as the Minnesota Pollution Control Agency and the EPA) to make sure her clients' facilities are in compliance with various laws and regulations (such as the Clean Air Act), and ensure that the facility has the proper air permits as they expand and/or change their processes.

Miranda has also been working occasionally at the Minneapolis-St. Paul International Airport as a Certified Weather Observer. She observes the weather from the flight control tower and provides quality control for the ASOS, as well as take rain and snow measurements and make the manual remarks for the METARs. She loves hanging out at the airport and watching the planes go by!

Miranda and her fiancée Andy Mair will be married in September 2015. He is an AtSc graduate from Iowa State -- but she doesn't hold that against him.

**Stephanie (Rollefson) Hedstrom**

is a Captain in the US Air Force, currently serving at Cannon Air Force Base, New Mexico. She is the Base Weather Flight Commander, leading 12 forecasters providing aviation weather support for 110 Special Operations aircraft. They routinely produce flight weather briefings and a local mission execution forecast, as well as issue weather watches, warnings, and advisories for the base and training range, protecting 12,000 personnel. Previous assignments include Officer-in-Charge, Tactical Weather Operations, supporting the Army (101st Combat Aviation Brigade) at Fort Campbell, KY. In 2010-2011, she deployed to Kandahar, Afghanistan, as the Brigade's Staff Weather Officer, where she led a team of 14 forecasters supporting 170 rotary wing aircraft.



During her off-duty time, Stephanie enjoys traveling, backpacking, bicycling, and photography. On rainy days, she fills the days indoors by reading, quilting/machine embroidering and cooking. She is married to Ryan Hedstrom of Detroit Lakes, MN, who is a 2003 UND graduate.

On June 1, she was promoted to the rank of Major. She received her bachelor's degree from UND in 2004, and her master's degree from the Naval Postgraduate School in 2013.

**William (Bill) Rasch**, B.S., 1991, is currently working for NOAA's National Weather Service at the Sacramento Weather Forecast Office. His position is the Science and Operations Officer (SOO). Bill and his wife have two daughters, a 10 year old and a 14 year old. They moved to Sacramento from Billings, Montana in 2010. Before moving to Sacramento, he was in Billings for 13 years at the NWS office there. Bill's main job is to keep the forecasters trained and up to date with the latest tools and technology for weather forecasting.



They still miss North Dakota and Montana and try to visit as often as they can. He still has family in both states and his girls love to return. They surely have the northern Plains in their blood as they really miss the snow. Northern California is great for outdoor activities and they try to get out as much as they can heading up into the Sierra's or over to San Francisco to enjoy what the city has to offer. Bill also likes to jog and spend as much time with his family as he can from watching movies to fishing once in a while. He hasn't been back to UND for sometime, and really misses it. He hopes to return for a hockey game soon, as he of course keeps track of the sports team.

The picture was taken just after he completed a half marathon sporting a UND shirt!

## DEPARTMENT OF ATMOSPHERIC SCIENCES

As you can see in this newsletter there is a lot going on in the Department of Atmospheric Sciences and we have been able to celebrate many successes. We would not have been able to accomplish much of what we do without the support we have enjoyed from the University and from the Dean's Office in the Odegard School. Still, we have ongoing needs to further help our students and programs thrive. To improve the educational opportunities for our students, we have determined two specific priorities that would greatly benefit from additional funding support: student scholarships and academic equipment.

We all know that most students struggle to meet the financial obligations associated with obtaining a college degree. Our goal is to establish an Alumni Scholarship fund that would provide assistance to qualifying students. The hope is to build up an endowment of \$25,000 that would generate an annual scholarship award.

The other goal I would like to highlight is to upgrade several hardware and software components of our Doppler weather radar. This system, dubbed the "NorthPol" radar, was last upgraded in 2004 so some parts are at the end of their useful life. Students use NorthPol in their weather radar coursework and for collecting data for Senior Project research. We want our students to have the opportunity to work with state-of-the-art tools to adequately prepare them for entry into the work force.

If you are able to help with these priorities, please contact myself or Josh Christianson. Our contact information is listed below. Your support is greatly appreciated.

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