



Summer 2015

Aerocom: Summer 2015

John D. Odegard School of Aerospace Sciences

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AEROCOM

JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES

SUMMER 2015



UND
UNIVERSITY OF
NORTH DAKOTA
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A MESSAGE FROM THE DEAN



As most of you may know by now, I have officially announced my retirement from the Odegard School on June 30, 2016. It has been an honor and a privilege to serve as the Dean for what will be over the span of more than 16 years. It has been a great run. Looking back on the progress over that time shows new degree programs, a new building, an unparalleled safety record, and many fond memories too numerous to count. But, overall, the one thing that stands out over that period has been the people that made it happen.

It is like being the conductor of the greatest symphony orchestra, with the thrill of standing in front of the world's best musicians, each and every one of them virtuosos in their own right. All I needed to do was to raise the baton and they did all the rest. Our faculty are scholars; they enjoy working together and helping young men and women reach their goals, yet they still find time to assist student organizations, attend conferences, conduct research and provide service to the University and the community in numerous ways. Our staff people are often overloaded, yet they are dedicated and work hard to support our success with a remarkable cheerfulness. Our mechanics are the best and their constant pursuit of continuing education has led to the FAA's Diamond award year after year. Our alumni and donor support are unsurpassed, and the Aerospace Foundation is the resource engine that keeps everything running smoothly. Putting it quite simply, the success we continue to enjoy is due to teamwork, dedication, and the camaraderie of everyone associated with the Odegard School and the Aerospace Foundation.

Over the years we have been compared to many wonderful things; The Harvard of the skies, the crown jewel of the University of North Dakota. The preeminent aerospace college in the world, and, most recently, Tom Dennis of the Grand Forks Herald called us, "the Big Beautiful Machine." We are an incredible enterprise that everyone can be proud of. The only drawback is that over the same time that I served as the Dean I somehow got 16 years older. When I finally get a chance to look back, my memories and gratitude will be for the people who made this the best time of my life.

Thank you!

Bruce A. Smith | Dean, John D. Odegard School of Aerospace Sciences

A handwritten signature in black ink that reads "Bruce A. Smith".

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FLYING AWAY TO FRANCE



Mitchell Rufer

UND aviation students Dana Atkins and Mitchell Rufer had the chance to spread their wings in Tarbes, France as they interned with DAHER, an equipment manufacturer that develops integrated industrial systems for aerospace and other advanced technologies.

Each year DAHER only chooses two interns, one boy and one girl.

"I was at a loss for words, which is unusual for me, I couldn't believe I had been selected." Rufer continued, "Since Dana got the other position, we haven't been able to stop talking about it."

"I was at a loss for words, which is unusual for me, I couldn't believe I had been selected."

As interns, Atkins and Rufer spent five weeks at DAHER's light aircraft manufacturing factory, which was built just after World War I in southern France. Atkins worked in the international sales and marketing department, while Rufer worked with the company's customer support staff.

Now that their internship is complete, Atkins and Rufer will travel to Oshkosh, Wis. for the Experimental Aircraft Association's (EAA) AirVenture and represent DAHER there for a week.

"I am elated to apply what I have learned outside of the classroom, and sharing this adventure with one of my closest friends makes it that much more memorable," said Rufer.

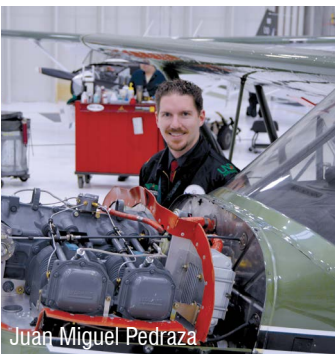
Atkins agreed with Rufer and added, "We're just excited to represent UND."

—Amy Halvorson



Dana Atkins

MIKE LENTS MASTER CFI AEROBATICS



Juan Miguel Pedraza

This man works in a topsy-turvy world - and he's got the credentials to prove it!

Michael Lents is an aerobatic flight and ground instructor as well as an aviation lecturer at the University of North Dakota John D. Odegard School of Aerospace Sciences. Lents

also coaches UND's national championship aerobatic team.

Master Instructors LLC and the International Aerobatic Club recently announced the renewal of Lents' Master Aerobatic CFI accreditation, a major aviation accomplishment. Lents

first earned this national professional accreditation in 2013 and is one of only 151 worldwide to earn the credential twice.

To help put his achievement in perspective, of the 98,000 CFIs in the U.S., fewer than 800 have achieved this professional distinction. Lents is one of only nine North Dakota flight instructors to earn the prestigious "Master" title and one of only 36 worldwide to earn aerobatic accreditation.

In the words of former FAA Administrator Marion Blakey, "The Master Instructor accreditation singles out the best that the right seat has to offer."

—Juan Miguel Pedraza

2ND PLACE FINISH FOR FLYING TEAM



The University of North Dakota Flying Team took second nationally and achieved several individual first-place scores at the National Safety and Flight Evaluation Conference (SAFECON) in Columbus, Ohio. Over the last 31 years, the UND Flying Team has been National Champion 16 times and has taken second place 12 times. The team placed second overall with a score of 395. UND also scored second place with 235 points in the Flight Events Champions competition. Both competitions involved a total of nearly 30 other colleges and universities.

UND's Christian Mohan earned Top Pilot and Top Scoring Male Contestant honors with an individual score of 150 points. Other first place event winners: Jacob Smith – Short Field Approach and Landing; Christian Mohan – Power Off Landing. UND team members also placed second, third, fifth, seventh, and twelfth in the Aircraft Recognition Event.

The UND Flying Team members who competed were Co-Captain Chris Mohan (West Fargo, N.D.); Co-Captain Jacob Smith (Henning, Minn.); Safety Officer Jacob Alvey (Louisville, Ky.); and Alex Browne (Nazareth, Pa.), Justin Bauer (Sussex, Wis.), Glenn Dodd (Eden Prairie, Minn.), Jack Foley (Libertyville, Ill.), Ross Oleck (Palmer, Alaska), Joe Peterson (Mahtomedi, Minn.), Mitchell Rufer (Deforest, Wis.), Justin Therriault (North Pole, Ala.), and Travis Wellik (Stewartville, Minn.). Lewis Liang, associate professor of aviation, is the team's faculty advisor.

—*Juan Miguel Pedraza*

STUDENT FOCUS—UND AVIATION SAFETY LAB



Brandon Wild, right, is one of several UND Aviation faculty members who, like Jim Higgins, teaches courses in the Aviation Safety Lab.

Basically a room with several computers, the lab facilitates students' work with datasets, including data generated by UND's own flight data monitoring systems.

"It's a key piece to our safety training," said Jim Higgins of UND's Aviation Department. "Industrywide, more safety analysis is required—we teach our students about that and try to mimic the industry environment around safety analysis."

In addition to data acquired from its own training fleet, UND's students also get access to publicly available datasets, such as wildlife mitigation and wildlife strike data.

"The lab is used in conjunction with our safety, safety management, and accident investigation classes," Higgins said. "It's a lot like the lab component of other classes on campus, such as biology and chemistry."

—*Juan Miguel Pedraza*

Aviation safety is serious business at UND Aerospace. In addition to its already rigorous safety standards, training and research, UND Aerospace recently launched its Aviation Safety Lab, where students learn the keys to safety analysis.

A FEMALE FORCE TO BE RECKONED WITH

UND's Frozen Force flies to second place in a race made famous by Amelia Earhart



Left to right: Carely Namihira, Christina Druskins, Jennifer Pinkowski, coach Erin Schoenrock.

A team of University of North Dakota aviators placed second overall among 56 international teams competing this year in the all-women Air Race Classic.

The UND team also won second place in a field of 17 collegiate division teams. This was UND's third year competing in the race, flying a brand new Cessna 172 Skyhawk provided by Cessna.

Three UND aviators were in the cockpit on this year's team: Jennifer Pinkowski, Ashburn, Va., pilot (the navigator on last year's team); Carly Namihira, Honolulu, Hawaii, co-pilot (the pilot last year); and Christina Druskins, Midland, Mich., navigator. The team's ground crew was headed by Lydia Wiff, Cologne, Minn.

Like the other competitors, these women followed Amelia Earhart's lead—she was among the first contenders in this competition when it

was inaugurated in 1929.

"Placing in the top 10 really promotes women in aviation at UND," Namihira said.

This year's competition started in Fredericksburg, Va., and zigzagged over a 2,561 mile course to the finish line in Fairhope, Ala.

"Hitting the first stop was when everything seemed real," Druskins said. "We ran into a lot of UND alumni along the way so that was really cool," Pinkowski added.

The team also received an award for completing the last leg of the race the fastest. "It shows that we're now a team to watch out for," Wiff said.

The competitors had four days to complete the daylight-only race. Frozen

Force completed it in two and a half days.

"It really promotes crew resource management—how you interact with others in the plane and communicate with teammates for three weeks in a row, flying from 6 a.m. to sundown and then in the hotel afterwards," Namihira said. Several UND Aerospace departments collaborated for the race, including Atmospheric Sciences faculty member Fred Remer and his Weather Team, made up of six other Atmospheric Sciences faculty, alumni and graduate students.

"Getting second place was definitely due to our weather team," Pinkowski said. "When they said go, we went, even if it involved missing out on free manicures, pedicures and massages."

The Line and Maintenance departments also assisted by preparing a "race kit" with various items the team might need, such as tie downs, rags, spare oil, etc. The Maintenance Dept. was on call in case the team had questions concerning the aircraft during the race. UND Aerospace Dispatch and the Supervisor of Flight (SOF) oversaw the flight, tracking it daily.

"The UND Aerospace Foundation was a huge supporter again this year, providing 1:1 match for contributions up to \$10,000 designated toward the Air Race Classic Team," said Erin Schoenrock, a UND senior flight instructor and the team's coach.

"I think the experience we've received through this race is very unique to UND and makes UND very special." Wiff said, "You can't put a price on that."

—Amy Halvorson

SENSURION AEROSPACE COLLABORATES ON NEW UAS PIPELINE PROGRAM

Program aims to enhance career opportunities for UAS students



University of North Dakota, Sensurion Aerospace sign UAS Pipeline Program agreement at the 2015 Association for Unmanned Vehicle Systems International (AUVSI) Conference in Atlanta, GA. Left to right: Bob Perrin (Sensurion), Brian Haynes (Sensurion), Dave Strohm (Sensurion), Capt. Joe Burns (Sensurion), Al Palmer (UND), Dan Johnson (Sensurion), and Mark Hastings (UND) [image courtesy of Sensurion Aerospace]

A new jobs pipeline program is the result of an innovative collaboration between UND and Sensurion Aerospace.

The Sensurion UAS (unmanned aircraft systems) Pipeline Program is designed to provide career-building opportunities for UND Aerospace graduates.

“We are thrilled to have access to top graduates from the country’s preeminent aerospace training program,” said Sensurion CEO Joe Burns. “Our goal is to train and develop employees, retain top talent and grow future leaders.”

In addition to providing UND graduates with employment opportunities at Sensurion, the Pipeline Program establishes a framework for broader collaborative efforts in the UAS arena.

“This is an excellent opportunity for our graduates, UND, and Sensurion – it’s a win/win,” said Al Palmer, director, UND Center of Excellence for UAS

Research, Education, and Training.

A joint working group comprising the Sensurion Aerospace Training Department and UND Aerospace will team up on future curriculum recommendations, stay abreast of regulatory issues, and partner on new education, training and internship programs.

“We are excited to be at the forefront of the burgeoning field of unmanned aircraft systems,” said Mark Hastings, UND’s chief UAS pilot.

Minneapolis-based Sensurion earlier this year awarded a training scholarship to UND UAS student Kristopher Chachula.

The John D. Odegard School of Aerospace Sciences at the University of North Dakota is a world-renowned center for aerospace learning, nationally acclaimed for achievements in collegiate aviation education, atmospheric research, space studies, and computer

science applications. With over 500 faculty and staff members, over 1,500 students from around the world, and myriad programs and projects, the John D. Odegard School of Aerospace Sciences is setting the pace for the future of flight.

Minnesota-based Sensurion Aerospace specializes in UAS technologies and developed and manufactures one of the first FAA-certified small UAS aircraft, the Magpie MP-1. The company employs a team of engineers, certification experts, pilots and business professionals to develop innovative UAS systems and work closely with customers to integrate specialized payloads for a wide variety of unmanned aircraft missions.

—Juan Miguel Pedraza

STUDENT RECEIVES FIRST-EVER UAS TRAINING SCHOLARSHIP

Sensurion's Dan Johnson presented training certificate to UAS student Kristopher Chachula



At a ceremony guaranteed to please the more than 100 scholarship recipients in attendance, John D. Odegard School of Aerospace Sciences student Kristopher Chachula was presented with the first-ever UAS training scholarship awarded at UND. The event took place in the Memorial Union during the spring UND Aviation Parent's Weekend. This new award is given to a senior graduating with a major in UAS, and includes both ground and flight factory-provided training for Sensurion Aerospace's Magpie MP-1 UAS.

Chachula, from Orange County, Calif., will get hands-on training with the MP-1,

one of the world's first FAA-certified small UAS. The recipient, an intern with the Northern Plains UAS Test Site, was previously a console operator for UND and NASA, operating the International Space Station Agricultural Camera.

"We recognize the hard work, the career-minded diligent efforts, and your commitment to making the UAS industry the best it can be," said Sensurion Aerospace VP for Business Development Dan Johnson, a UND Aerospace alumnus. "We are proud to be your sponsor and to have this opportunity to work hand-in-hand with one of UND's finest. We sincerely

value the relationship we have with UND and look forward to supporting their program and students for many years to come."

Chachula's training curriculum in the MP-1 will include classroom instruction focusing on systems, operation and field maintenance; flight training that will put him side by side with a flight instructor at the controls of the MP-1; and operational training involving the aircraft's ground control system, among other programs.

—*Juan Miguel Pedraza*



The University of North Dakota's Student Aviation Management Association (SAMA) hosted its 34th Annual Aerospace Conference and Career Fair, welcoming a record crowd and many new exhibitors. Since beginning in 1981, the SAMA Conference and Career Fair has been structured to acquaint our student population with a wide variety of aviation professionals in the aviation industry. Over the years the SAMA Aerospace Conference and Career Fair has grown to be one of the largest student-organized professional events on the UND campus. Year after year, SAMA invites prominent individuals from across the nation and from a variety of disciplines to join our students on campus and share their invaluable perspectives.

—*Juan Miguel Pedraza*



EMPLOYEE SCOTT BAKER WINS STATE SUGGESTION AWARD



During the Odegard School's annual spring employee picnic, quality assurance inspector Scott Baker was awarded \$414, part of the State Employee Suggestion Incentive Program.

The award was presented to Baker by Randall Bohlman of UND Facilities Management, in recognition of his suggestion to turn off the heat when hangar doors were opened to allow aircraft and other equipment to be moved in or out.

"We were able to implement Scott's suggestion in one of the big hangars, resulting in energy cost savings of more than \$2,000 annually," said Bohlman, who coordinates the University's sustainability and energy savings programs.

Under the state's Suggestion Incentive Program, if an employee's suggestion or proposal is approved, the employee is entitled to receive 20 percent of the first year's savings realized by the agency, up to a maximum of \$4,000.

Baker, a Champaign, Ill., native who has been at UND Aerospace for nearly 20 years, holds an airframe and power plant (A&P) license. He retired from the U.S. Air Force after 20 years as a mechanic, working mostly on fighter aircraft such as the F-4 Phantom and the A-10 Thunderbolt.

—*Juan Miguel Pedraza*



WOMEN IN AEROSPACE

By Juan Miguel Pedraza
Photography By Jackie Lorentz

KAREN RUTH Delta Air Lines Captain

Before she drove a car, Karen Ruth was already flying. She hasn't stopped.

Today, the UND Aerospace alum and Delta Air Lines captain is “on the road,” recently in command of a brand new Airbus A330-300 with the newest higher-thrust GE engines. She flew this A330-300 back to Delta's main hub in Atlanta from the factory in Toulouse, France, with a planeload of VIPs and Delta Chairman's Club Award honorees.

Karen is the only pilot who's been awarded both the President's Club honor by Northwest and the Chairman's Club Award at Delta—both are the highest awards given to any employee.

“That was why I was chosen to fly the new aircraft home,” Karen said.

When not in charge of one of these super airliners, Karen is with her husband—who helped her early in her career by staying home with the kids—and spends time with her daughters, who are taking flying lessons this summer. Karen also is involved with several youth outreach activities, such as Stars of the North (a Minnesota chapter of Women in Aviation) and Pilots for Kids.

According to her peers, Karen—who launched her aviation career in 1985 at Republic Airlines—is one of the most accomplished female commercial aviators. Part of that reputation was developed outside of the cockpit—as a recruiter, interviewer, and career mentor.

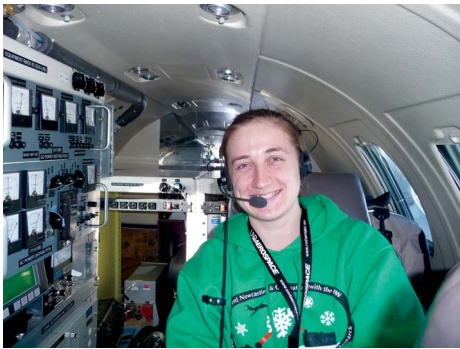
“I enjoy the outreach with kids and working with young pilots—it's fun to see their determination and excitement,” Karen said. “Why not have a career you love rather than look back 30 years and wish you would have chosen a different path.”



SOIZIK LAGUETTE, PH.D.

Department Chair of ESSP

Soizik Laguette, chair since 2008 of the Department of Earth System Science and Policy, received her Ph.D. in Environmental Science as well as her bachelor's and master's degrees in France. She worked for two years as a research fellow with the Numerical Terradynamic Simulation Group at the University of Montana's School of Forestry. She's been at UND since 1999 and is a founding member of the ESSP Department. She also directs the Northern Great Plains Center for People and the Environment and manages the Upper Midwest Aerospace Consortium. Laguette's research interests focus on remote sensing of crop physiology and crop cultivation to improve cropping systems while attaining environmental benefits, on harnessing remote sensing to improve bioenergy efficiency, and on developing and consolidating the bridge between researchers and the end-user community by teaching in an adult outreach setting. She is also co-chair of the University's Sustainability Council.



AMANDA LEE

Meteorologist

This definitely isn't your run-of-the-mill nine-to-five career: 24/7, every day of the year, including holidays, someone has to crew the weather forecast office.

"That's a big challenge of this work," says forecaster Amanda Lee, a 2007 UND Bachelor of Science alum (Atmospheric Sciences with minors in Music—flute and saxophone—and Mathematics) and a 2009 Master of Science alum in Atmospheric Sciences. For the past five years Lee has worked in the National Weather Service (NWS) forecast office in Indianapolis, Ind. She looks forward to the day when the NWS will send her north toward her home country—she hails from Devils Lake, N.D.

"I got interested in meteorology listening to stories my uncle Alan Borho would tell—he teaches a weather forecasting class at UND," said Lee, who spends a lot of her spare time coaching school-age girls in science. "We have a yearly STEM conference here for girls and we do a summer program that I'm involved with. I've become really involved with that and I keep in contact with a lot of those students."

Lee says she first wanted to be a math teacher, but all it took was one class in meteorology to point her in the direction of professional weather forecasting.

"That's where I needed to go," she said.

Besides rotating shift work, Lee says, a major career challenge for weather forecasters is translating the meteorologist's professional lingo into language everyone can clearly understand.

"People need to know when they should take shelter," Lee said.

ANDREA NEWMANN

Student

Andrea Newmann, a three-time UND alum—bachelor's and master's degrees and, soon, a Ph.D., all in Atmospheric Sciences—loves flying around in the clouds. A research crew member in UND's Cessna Citation II research jet, she collects scientific samples and runs computer equipment. Newmann, from Annandale, Minn., is spending her summer at the National Center for Atmospheric Research in Boulder, Colo. Among her key missions there: help weather professionals be more precise. "People get really upset when you forecast snow and you get rain."



ELIZABETH BJERKE, PH.D.

Chair & Professor, Department of Aviation

Elizabeth Bjerke took the reins of the Aviation department a year ago. Bjerke, who came to UND as a student in 1996, runs a department with about 1,500 majors and about 40 faculty. She was associate chair of the department for two years, following nine years as the assistant chair of assessment and faculty. Widely published in the area of aviation education, Bjerke began her career in collegiate aviation education following an opportunity to teach while she worked as a UND flight instructor.

“I discovered that I really loved being in the classroom, working with students,” said Bjerke in an interview after she was promoted to chair.

Bjerke, a native of Whitehall, Wis., is actively involved with the Aviation Accreditation Board International (AABI), where she has served on the Board of Trustees since 2007. She is also a member of the University Aviation Association (UAA) and a FAAS Team Lead Representative for the North Dakota region.

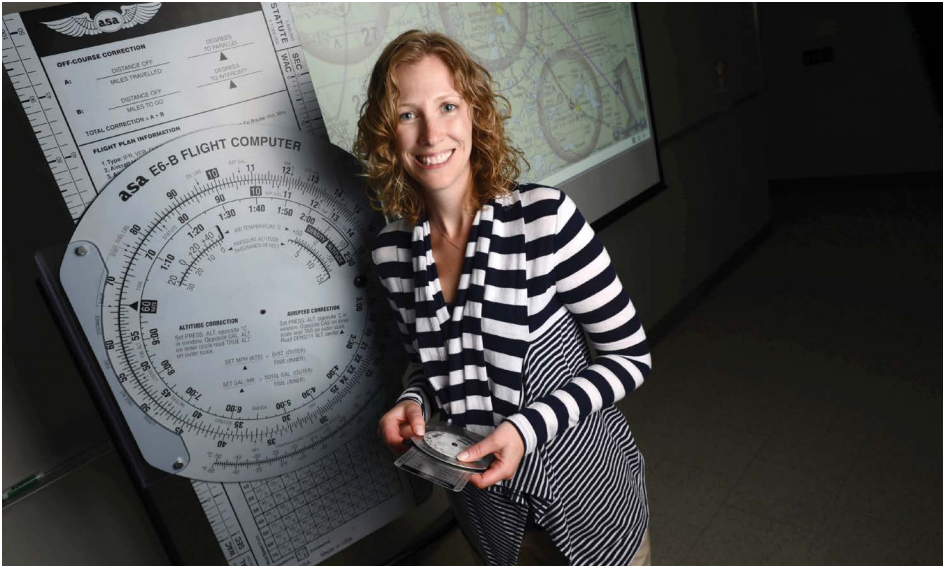
DEBBIE JACKLITCH-KUIKEN

Compliance Engineer

When UND alum Debbie Jacklitch-Kuiken received the New Face of Engineering nomination from the National Engineers Week Foundation, she’d already been recognized as an up-and-comer. But not only is she an engineer, with a degree from UND to prove it, she also received at the same time a degree in Atmospheric Sciences from UND Aerospace. She worked for a time with a company that sited wind farms—until a change in federal policy drove her company out of business. Now a Compliance Engineer at Arctic Cat in Thief River Falls, Minn., Jacklitch-Kuiken puts all of her know-how—including the quantitative and computer skills she learned at

UND Aerospace—into helping her company build trouble-free and safer products. She’s also active in encouraging the next generation of girls into STEM professions and she advocates for women’s advancement in the sciences, including aerospace.





LESLIE MARTIN

Associate Professor

Leslie Martin, an aviation faculty member at UND, graduated from UND in 2001 with a degree in Commercial Aviation and got her Master's of Science in Education here in 2005. Martin's passion for teaching has extended into the local high schools, where she regularly teaches kids about aviation. She is also actively involved in Women in Aviation, an international organization dedicated to providing education and mentoring opportunities for women in the aviation industry.

ERIN RICARD-PHELPS

Air Traffic Controller

Erin Ricard-Phelps is a fast talker.

Good thing, too, as she's an air traffic controller at the Minneapolis Air Route Traffic Control Center (ARTCC). The Bemidji, Minn. native—who loved solving problems and was good at math—came to UND to study computer science, then shifted to air traffic control.

"There was a lot more adrenalin in air traffic control than computer science," said Erin, whose husband is likewise a UND alum and an air traffic controller. They manage the occupation's shift work around life with a pre-school daughter. While waiting nearly four years to get hired by the Federal Aviation Administration, which runs most of the country's control towers, Ricard-Phelps turned her hand to data analysis. Now she's where she wants to be.

"After Labor Day, I'm transferring to the Minneapolis Terminal Radar Approach Control facility, controlling incoming and outbound flights," Ricard-Phelps said.



KIMBERLY KENVILLE, PH.D

Professor, Graduate Program Director

Kim Kenville is a professor and the graduate program director for the John D. Odegard School of Aerospace Sciences, as well as a member of the North Dakota Aeronautics Commission. Kenville began teaching at UND in the fall of 1999. She develops, implements, and directs the Airport Management degree program, and works hard to place her students in internship and employment opportunities.

Kenville teaches two undergraduate airport management courses, as well as courses in the master's degree program.

She is the faculty advisor for the student chapter of the American Association of Airport Executives (AAAE), and sits on several committees in the organization at the national and regional levels. Kenville is also UND's representative on the Transportation Research Board (TRB), a part of the National Academies.

She recently opened her own aviation consulting business, Kim Kenville Consulting, and is registered in the states of North Dakota, South Dakota, and Minnesota as a disadvantaged business enterprise (DBE). She spent part of her aviation career in airport administration.



GRETCHEN MULLENDORE

Associate Professor

"It's super fun," says Gretchen Mullendore, associate professor, Atmospheric Sciences, of her intense work with computer models, convective air currents, and the severe thunderstorms they can produce. Mullendore has racked up an enviable track record of grants and growing recognition of her expertise.

A couple of years ago, when the Northrop Grumman Corp. wanted to figure out how tropical thunderstorms would impact unmanned aircraft systems (UAS) flights, they turned to Mullendore.

"We started talking with Northrop Grumman awhile back about defining the hazards of tropical thunderstorms to UAS," said Mullendore. "We received a \$75,000 grant—now in its second year with an additional \$100,000—from the company to pursue research into that."

While the aviation industry knows that aircraft should not fly directly through thunderstorms, hazards also extend beyond the visible boundary of the storms. The question Mullendore is studying with this project is: what is an appropriate avoidance distance that will ensure aircraft safety while optimizing mission performance?

Earlier this year, Mullendore received a \$290,966 National Science Foundation grant titled "Mid-Latitude Deep Convective Transport to the Upper-Troposphere and Lower-Stratosphere," involving more research in her field of expertise.

Mullendore involves both undergraduate and graduate students in her research projects.

"Our students think it's really great to be involved in hands-on research," said Mullendore, who helped to launch and is the advisor for the UND Women in Science chapter.

HEATHER RIDER

Regional Sales Director

Heather Rider, a native of Boise, Idaho, got a degree in Commercial Aviation in 2001 from UND, aiming to become an airline pilot. Today, Rider remembers her UND education and a couple of key lessons she learned about career ambitions: "The most important thing I learned was to keep an open mind and look at what else is out there." Keeping an open mind landed Rider, who spent two years after graduating as a UND certified flight instructor, with one of the best known airplane companies, Cessna (part of the Textron family of companies), selling the firm's jet airplanes. At air shows such as Oshkosh, Rider is part of an adventure she wouldn't trade. Rider — now based in Minneapolis — woke up to other possibilities in aviation after getting a job in sales for an aircraft parts company, then a couple of years traveling the country selling Mooney aircraft. Now, Rider connects with potential customers for her company's \$3 million-plus jets.

"I get to be around aviation, my passion, and I also really like sales because it fits my personality," Rider said. "Plus I get to talk about aviation all day. My goal is to sell a whole lot of jets. I could do this for the next 30 years and retire happy."

ALTITUDE CHAMBER GETS \$150,000 OVERHAUL

Built for the Air Force in 1952, UND Aerospace's altitude chamber recently got a \$150,000 overhaul, courtesy of the UND Aerospace Foundation.

Bought from the Air Force in 1989 for \$1 after it was decommissioned, the chamber—a steel box with very thick windows—sits in a dedicated room in Odegard Hall. Its mission: teach students what their own unique symptoms of hypoxia are.

“This chamber is required training for our commercial aviation students,” said Warren Jensen MD, professor, flight surgeon and Director of Aeromedical Research. Thousands of students and corporate flight department teams have learned about the dangers of sudden



Jackie Lorentz

decompression and resulting hypoxia in UND's altitude chamber.

The overhaul included new 3.5 inch thick, round-cornered windows (an

inch thicker than the square-corner windows they replaced), several new valves, and new seals all around.



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ACCIDENT INVESTIGATION COURSE



This is the retired Boeing 727 used in the UND Aerospace Accident Investigation Course. The aircraft was donated to the Grand Forks Airport Authority by FedEx. It also is used in fire/rescue training.

UND Aerospace, in cooperation with the Air Line Pilots Association (ALPA), conducted their 13th accident investigation course in June. This year, 15 ALPA members and five UND participants spent two and one-half days investigating an “accident” that occurred with a Boeing 727. A second class will be held in October. The following airlines participated in this summer’s course:

- Delta Air Lines
- United Airlines
- Sun Country Airlines
- Federal Express
- Envoy (Formerly American Eagle)
- CommutAir (United Express)
- Professional Helicopter Pilots Association (PHPA)

AEROSPACE HOSTS UNITED STATES MARINE CORPS MV-22 OSPREY AIRCRAFT



The Odegard School recently hosted the visit of a United States Marine Corps team with its MV-22 Osprey tilt-rotor aircraft. The crew offered tours of the aircraft for an afternoon at UND Flight Operations. The visit was in support of the Marine Corps Officer Selection Team. The MV-22 Osprey, the Marine Corps’ primary assault support aircraft, replaced the CH-46 Sea Knight helicopter in 2007. The Osprey, with wing-tip mounted rotatable engines, is capable of both vertical and horizontal flight.

UND Space Studies faculty member James Casler, a graduate of the U. S. Naval Test Pilot School, spent over 10 years directly involved in flight testing new aircraft for the Marine Corps, including the Osprey.

—*Juan Miguel Pedraza*

WORKING IN THE CLOUDS

UND research jet gathers data where the storm action is



Mike Poellot with the research jet

The University of North Dakota's Cessna Citation II research jet is set for another busy season of atmospheric investigations across the continent.

"In the July/August time frame we will be conducting instrument test flights from Grand Forks for a company called UTC," said Mike Poellot, chair of the Department of Atmospheric Sciences. "There will also be a two-week deployment to Titusville, FL, to measure cloud particles for the Office of Naval Research. One of our faculty members, David Delene, is the principal investigator on these two projects."

In November and December the Citation will fly in the OLYMPLEX (Olympic Mountains Experiment) field project in Washington state. This NASA validation project will involve collecting in-cloud measurements while NASA

aircraft fly satellite sensors overhead for comparison. The project will operate out of Everett, Wash. and fly through clouds over the Olympic Peninsula and offshore. The University of North Dakota owns and operates a Cessna Citation II aircraft for the purpose of atmospheric research. It has several design and performance characteristics that make it an ideal platform for atmospheric studies.

The Citation II is a twin-engine fanjet with an operating ceiling of 43,000 feet. The turbofan engines provide sufficient power to cruise at speeds of up to 340 knots and climb at 3,300 feet per minute. The Citation is certified for flight into known icing conditions. The UND Citation includes several structural modifications: underwing pylons for probes in the undisturbed air flow away from the fuselage; a gust probe for wind measurement; and air inlet ports for air sampling inside the pressurized cabin.

—Juan Miguel Pedraza

SMALL PACKAGE, BIG JOB: UND CUBESAT OK'D FOR LAUNCH BY NASA

North Dakota's first spacecraft will image the state



Jackie Lorentz

CubeSat project coordinator, Jeremy Straub

It could be a kid's LEGO® creation, about the size of a detergent box.

Don't be fooled.

The University of North Dakota's CubeSat—recently given a “go for launch” by NASA—is a space-based research device capable of much more than its diminutive size lets on.

“We got awarded a launch, very exciting, indeed,” said Computer Science Ph.D. candidate Jeremy Straub, who is coordinating the CubeSat project. “We expect that it'll be integrated into a U.S. launch vehicle, maybe on an International Space Station (ISS) resupply mission. It'll go out from the ISS NanoRacks CubeSat launch facility.”

The UND CubeSat led the list of projects of its kind selected by NASA.

“Our proposal was chosen as the top selection nationwide for 2014-2015,” Straub said. (See the NASA list ranking this

year's CubeSat project selections: www.nasa.gov/directorates/beo/home/CSLI_selections.html#2015)

Straub says part of the CubeSat mission is to fly over Grand Forks, at which point it will offload its data to a receiving and control station located at Streibel Hall.

At any one time, seven to eight students are involved in the CubeSat project. Over the course of the program's life, about 80 students have been involved directly and up to 100 more peripherally, Straub explains.

“We've gotten people from all over the place, every college and a smattering of departments, including the College of Business and Public Administration, the School of Medicine and Health Sciences, and the School of Law, involved,” said Computer Science Department chair Ron Marsh. “It's a great experience.”

CubeSat, which originated in the late 1990s at Stanford University and California Polytechnic, is about learning by doing.

“This is North Dakota's first spacecraft,” Straub said. “We're also collaborating on the payload with a faculty member and a few students from Northland Community and Technical College in Minnesota.”

CubeSats, to date, have largely been targeted at low-Earth orbit.

“The altitude that the spacecraft is launched into and the current level of solar pressure determine the orbit, given the small satellite's characteristics,” Straub said. “Operational life may range from a few months to a few years; however, longer missions are possible.”

CubeSats typically receive an orbit that is pretty close to the orbit of the primary spacecraft that they are “catching a ride” with.

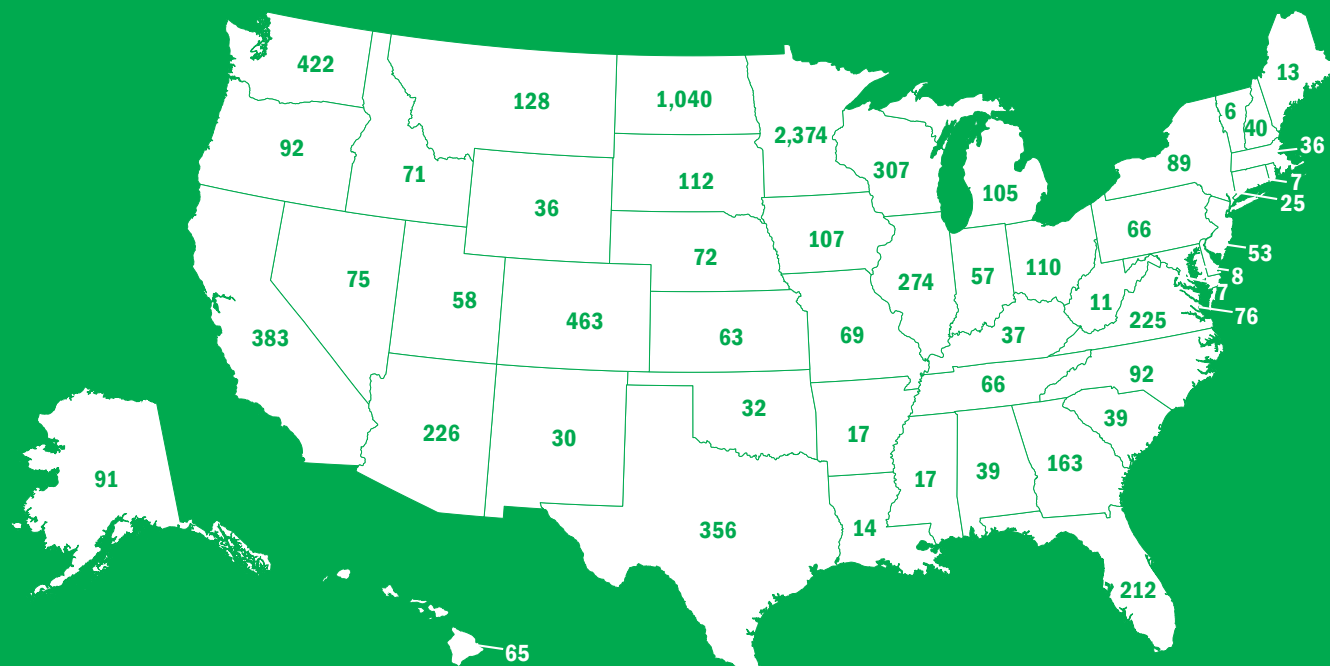
UND's CubeSat has been scheduled for a March 2016 launch, with a December spacecraft hand-over date.

—*Juan Miguel Pedraza*

Alumni Profile

Find Odegard School alumni across the globe

NUMBERS REPRESENT ALUMNI LIVING IN EACH STATE



8,614 Graduates in the United States

International Alumni

Argentina	1	Hong Kong	6	Russian Federation	2
Australia	2	Iceland	1	Saudi Arabia	3
Belgium	1	India	3	Singapore	1
Bolivia	1	Italy	1	St Lucia	1
Canada	97	Japan	6	Sweden	1
China	2	Mexico	1	Switzerland	2
Croatia	2	Nigeria	1	Taiwan	4
Estonia	1	Norway	4	Thailand	1
Germany	3	Pakistan	1	Turkey	2
Greece	2	Papua New Guinea	1	United Kingdom	1
Guam	4	Puerto Rico	2	Virgin Islands	2

For more information check out: aero.UND.edu

ESSP CLIMATE ACTION PLAN



Climate Action Plan 2015



Facilities Management
3791 Campus Road
Stop 9032
Grand Forks, ND
58202



The UND Earth System Science & Policy (ESSP) Department is pressing forward with an ambitious plan that's already produced big reductions in its carbon footprint.

It's all mapped out in UND's Climate Action Plan, a living document now in the final stages of its second edition, on tap for later this year. UND has done much to diminish its carbon footprint and to become environmentally friendlier after it signed the American College and University Presidents' Climate Commitment in 2008 (a commitment renewed by UND President Robert O. Kelley the following year). In addition to signing the ACUPCC, UND put in place several strategies in place to make a difference. The University's Climate Action Plan proposes several specific sustainability and greener strategies.

The document was produced by the UND Council on Environmental Stewardship & Sustainability (Sustainability Council). The Council is co-chaired by Larry Zitzow, director of the Facilities Management Department, and Soizik Laguette, a faculty member and chair of the ESSP Department. ESSP graduate students are tasked with producing the University's carbon assessment, vital to understanding both its current footprint and where to make the most effective adjustments.

"This plan is another component of UND's plan under the ACUPCC," Zitzow said. "The Climate Action Plan is a living document to provide strategic planning towards UND's commitment towards sustainability. The public's review and ideas will help to guide the Council for Sustainability in this venture."

The Climate Action Plan establishes a forward-looking direction for the University. It pulls together the entire campus to be responsible stewards of the environment that we impact on a daily basis. It provides opportunities for faculty, staff, and students to participate, and it establishes UND as a leader and resource for other communities.

The UND Climate Action Plan is part of the University's long-term commitment to reduce its dependence on fossil fuels, develop more sustainable sources of energy, and encourage the UND community to research and deploy green improvements affecting all areas of campus life. The CAP is a "living document" which will continually reflect changes as UND advances in its goal of carbon neutrality. The document reflects ideas that come in as a result of ongoing reviews and comments from the University and broader community. Both the current and the next edition of the CAP showcase new developments at UND in the areas of sustainable and alternative energy technologies; and it will track return on investment for dollars and effort spent on the greening of the campus.

—Juan Miguel Pedraza

AEROSPACE ALUMNI ADVISORY BOARD UPDATE



As the temperatures rise across the country, students enrolled in the summer session in Grand Forks are battling the heat, humidity, and mosquitoes to get closer to graduation. In fact, the Odegard School is in the midst of one of its busiest summer sessions ever!

“Busy” seems to be a continuing theme on campus as enrollments, flight hours (students flew over 107,000 flight hours last year), graduations, hiring of alumni, and even buildings are on the rise at UND. All of these items were discussed at the spring meeting of the UND Aerospace Alumni Advisory Board in Denver.

This year’s spring meeting spanned over four days and allowed the faculty a wide array of educational and networking experiences including:

- Touring the facilities at the Denver International Airport
- Meeting with education and research professionals at Jeppesen
- A lunch with UND Alumni working at Jeppesen
- Receiving a briefing on RNP Airspace Redesign from project leaders at the Denver TRACON
- A tour of the Denver TRACON led by UND Alumni
- Leadership and professional development training at the United Airlines Training Center
- CRM and safety briefings conducted by subject matter experts at United Airlines
- 747 Simulator time (courtesy of United Airlines)
- Briefings with hiring managers at both Jeppesen and United Airlines

In addition, UND Aerospace held an alumni event at the United Airlines Training Center which allowed over 50 alumni and their families to reconnect. Our four days in Denver culminated with the spring meeting of the Alumni Advisory Board which helped to insure UND Aerospace maintains the most advanced and relevant curriculum for all of its degree programs.

One man who has done an outstanding job of leading the charge over the past 15 years is Dean Bruce Smith. On behalf of the UND Aerospace Alumni Advisory Board, please join me in thanking him for his leadership, guidance, and the tireless promotion of the Odegard School and its graduates. We look forward to working with him over the upcoming school year and we wish him all of the best in his well-deserved retirement.



Matt Kalouner '01
President, AAAB
mkalouner@hotmail.com

First Officer, Alaska Airlines

Matt Kalouner '01
PRESIDENT

Corey Stephens '99
VICE PRESIDENT

Justin Stimpson '01
SECRETARY/TREASURER

Rich Baker '00
PAST PRESIDENT

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Annis, Jay '98
Baas, Bradley '86
Bailey, Drew '04
Baker, Rich '00
Barnes, David '01
Blumhorst, Jonathan '11
Boxrucker, Craig '00
Castor, Jimmy '03
Coleman, Doug '84
Cooper, Chris '05
Dricoll, Bill '90
Duverney, Jason '06
Ems, Michelle '05
Gillen, Michael '92, '08
Gora, Brian '83
Hansmann, Glen '89
Hauge, Tom '92
Hedrick, Robert '82
Heining, Joel '92
Hopper, Josh '03
Jensen, Kurt '79
Kalouner, Matthew '01
Kappenman, Jeff '83
Klinger, John '90
Kluenker, John '01
LaVenture, Andrew '07, '10
Lounsberry, Tom '82
Lukasezek, Bryan '92
Manki, Derek '03
Miller, Andrew D '93
Nelson, John '90
Nemec, Joe '01
Odegard, John '89
Olson, Erin '05
Schofield, Jodi '91
Schroeder, Brian '98
Secrist, Brad '99
Shields, Josh '00
Slivkoff, Jeff '00
Stephens, Corey '99
Stimpson, Justin '01
Stork, Richard '04
Storm, Jennifer '02, '04
Strack, Brian '01, '12
Stubbe, Joe '02
Toivola, Kevin '01
Troxel, Brad '06
Webster, Doug '83
Wright, Corey '05

EVENTS

JULY – DECEMBER 2015

OCTOBER

5-10

GRAND FORKS, ND

UND HOMECOMING

6-8

GRAND FORKS, ND

**AIRCRAFT ACCIDENT INVESTIGATION
COURSE**

9

GRAND FORKS, ND

**AEROSPACE ALUMNI ADVISORY BOARD
MEETING**

NOVEMBER

17-19

LAS VEGAS, NV

NBAA 2015 CONVENTION



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1980

Dana Siewart working with an aviation student in the early 1980's.

ARCHIVES

