



Winter 2015

## Aerocom: Winter 2015

John D. Odegard School of Aerospace Sciences

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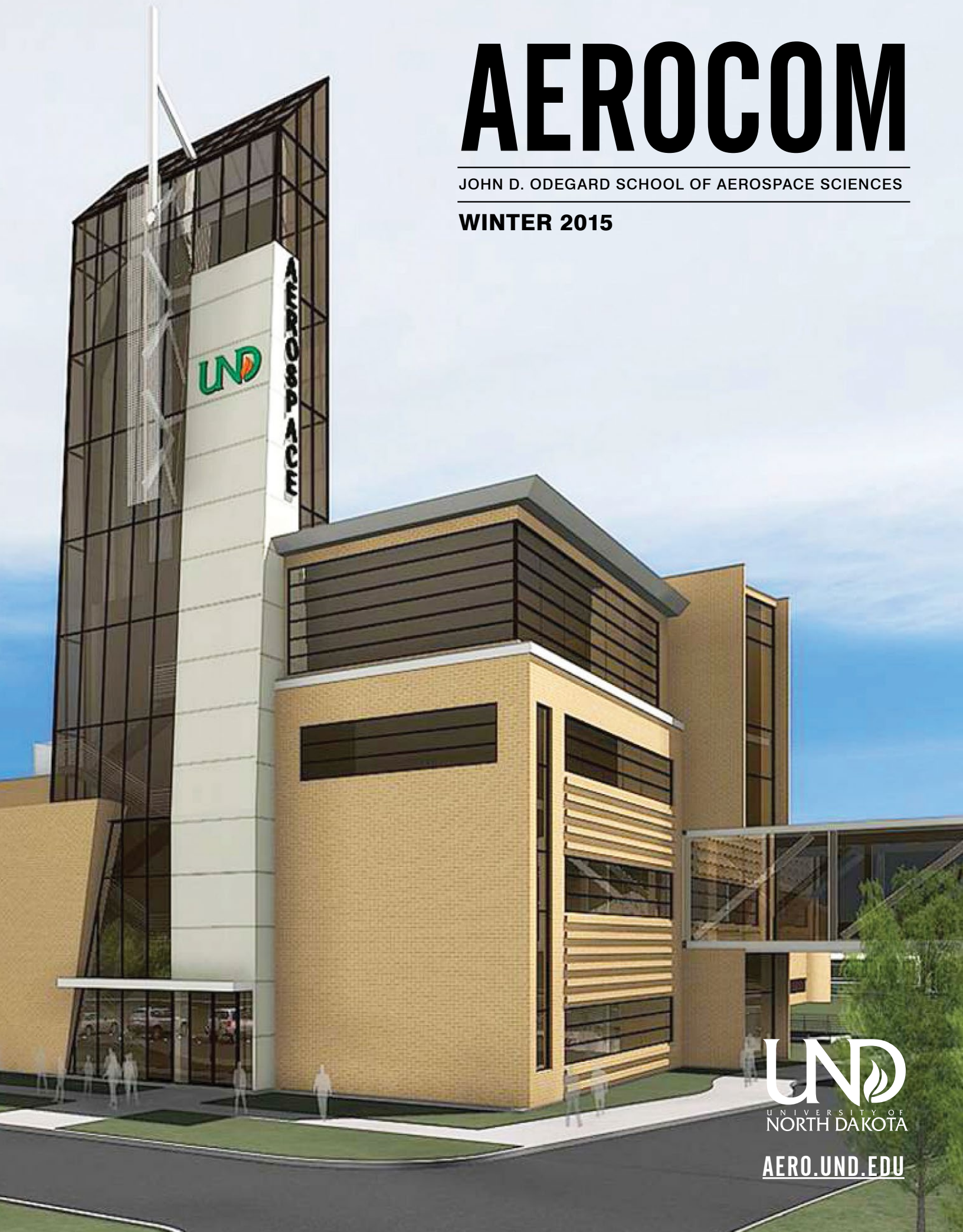
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# AEROCOM

JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES

WINTER 2015



**UND**  
UNIVERSITY OF  
NORTH DAKOTA

[AERO.UND.EDU](http://AERO.UND.EDU)

# A MESSAGE FROM THE DEAN



The University of North Dakota's fund raising efforts are focused in four major areas; student scholarships, endowed chairs and faculty development, new academic programs, and facilities. Over the past 15 years we have done very well in all of these areas. We have a substantial faculty endowment started by the generosity of Mr. James Ray and named for Don Smith who carried the title of Associate Dean of Academics throughout the formative years of the Odegard School. Our programs are very applied. That is, they are based on the needs of the industries we serve. For the most part they support themselves. For example, our new curriculum in Unmanned Aircraft Systems now has 134 majors and has self-generated over \$60 million in grants and contract funds over the past nine years. And, again through the generosity of Mr. and Mrs. Si Robin, Mr. Ray, the UND Aerospace Foundation, and the North Dakota Higher Education Challenge Fund, we have broken ground on Robin Hall, our new aerospace research building.

The last of the four areas is scholarships. Each year we present over 130 scholarships to our students through annual scholarship contributions and the proceeds from \$6.5 million in endowed scholarships, which includes nearly \$560,000 in our OMEGA Endowment Fund (Odegard Mission of Excellence in Global Aviation) created by the UND Aerospace Foundation with a one to one match which doubles the donor's contribution. We have raised all of our existing endowments to a minimum of \$25,000 through the support of the UND Alumni Association and Foundation, and the UND Aerospace Foundation. I want to thank all of our alumni and friends that have helped to make this possible.

Although this seems like a large number of students and scholarships, they don't meet the ever increasing needs caused by rising costs of higher education and the mounting student loans and debt. So, now that we have the building, the faculty development, and program needs covered, we are focusing our effort on what has become our single most important need, scholarships for our students. Your continued support is gratifying and appreciated.

Thank You!

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

A handwritten signature in black ink that reads "Bruce A. Smith". The signature is written in a cursive, flowing style.

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### AEROCOM

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Cover Image **Rendering of Robin Hall**  
Full article on page 10 | Cover Photo Credit **ICON Architectural Group**

# FLEET HISTORY

UND Aerospace fleet history from 1968- 2015



UND starts flight training with two Cessna 150s, including this one, N50405

UNDs DC-3 flies officials to Bismarck and the hockey and basketball teams to out-of-state games



UND buys its first of many Cessna Citation jets, N77ND, used for weather research. Citation N83ND was purchased in 1983

After a short time using Robinson helicopters, UND starts training in Schweizer 300s



Bell 206 JetRangers, used for helicopter training at UND since 1985, now fly with Garmin G500H glass cockpits

1968

1978

1985

1970

1973

1984

1988

John Odegard and students with a Schweizer SGU2-22, one of many gliders flown by UND over the years

UND flies its first multiengine trainer, a Cessna 310, pictured here with Don Dubuque on the day he passed his multiengine checkride

UND starts flying two Hughes 500 helicopters that were used in the 1984 Summer Olympics in Los Angeles, CA

UND begins to replace its Cessna fleet with Piper Cadets (later, Warriors), Arrows, and Seminole





Three Socata Tampico TB-9 aircraft are used for primary flight training through 1997

From 1996 to 1998, UND operates a fleet of 22 Diamond Katanas, both A1 and C1 models

The UND Aerobatics Team is formed, flying two Super Decathlon aerobatic aircraft

Four Cirrus SR-20 aircraft are utilized for the first glass-cockpit instrument training conducted at UND

UND acquires a Cessna Mustang, as well as N50405, one of the first Cessna 150s flown by UND in 1968

UND has operated the Beechcraft King Air since 1991, most recently the C90GTi

**1991**

**1996**

**2002**

**2008**

**2013**

**1995**

China Airlines students in the new Jet SPECTRUM program start training in two Beechjet 400 aircraft

For ten years, UND conducts multiengine flight training and air service flights in two Beechcraft Barons

**2005**

UND has flown several float planes over the years, the latest a Top Cub donated by James Ray

UND takes delivery of four glass-cockpit Cessna 172 Skyhawks, flying a fleet of 75 by 2015

**2010**

UND first flies the Insitu Scan Eagle unmanned aircraft system (UAS) in support of flood relief operations near Oslo, MN



## FLIGHT DATA MONITORING SYSTEM



Dana Siewert (left), Director of Aviation Safety, and John Walberg, FDM Analyst, standing next to a Cessna 172 equipped with an Appareo Systems flight data monitoring system.

UND Aerospace is pro-actively building an even safer training fleet with Flight Data Monitoring (FDM) technology now installed in most of its airplanes and helicopters.

UND's Event Review Team watches, among other things, computer-generated animations of what happens during training flights, based on data downloaded from the aircraft's Appareo Systems flight data recorder.

“That technology used to be out of reach for small airplanes. Now it is available for aircraft like ours. It’s about enhancing safety by validating UND’s own flight standardization manual,” said Dana Siewert, a pilot and director of aviation safety at UND Aerospace.

John Walberg, a UND alum and pilot, analyzes the data from UND’s 5000 to 7000 monthly flights—about 100,000 hours total annually—for the team, which recommends safety-related changes based on what the data tells them.

“Before, our industry waited for an accident, figured out what happened, and applied the lessons—that was a terrible price to pay for critical flight safety information,” said James Higgins, a UND alum, former airline pilot, and associate professor of aviation who researches aviation safety.

With the newly installed black box technology in its training fleet, “the goal, as always at UND Aerospace, is safety,” said Siewert. “The flight data monitoring system allows us to be pro-active rather than reactive. We’re encouraging a much more analytical culture. We’re interested in reducing the risk.”

—*Juan Miguel Pedraza*

## THUNDERBIRDS



U.S. Air Force Capt. Nicholas Eberling conducts a pre-flight check of an F-15E Strike Eagle's engines before a training mission. (U.S. Air Force photo by Airman 1st Class Daniel Hughes)

Capt. Nicholas Eberling, a 2006 magna cum laude graduate of UND’s aviation program, was recently selected to the U.S. Air Force’s high-performance team, the Thunderbirds.

Eberling, an F-15E pilot currently stationed at Seymour-Johnson AFB, N.C., will become Thunderbird No. 6, the squadron’s opposing solo pilot. The solo pilots perform maneuvers that showcase some of the capabilities of the F-16 aircraft.

A Thunderbirds officer serves a two-year tour of duty. To ensure continuity and a smooth transition, three of the six demonstration pilots typically change each year. Each officer must submit comprehensive career records and letters of recommendation in their applications, which are screened by the Thunderbirds commander/leader and Air Force senior leaders. Prospective pilots are also screened for flying experience and ability.



## STUDENTS RECEIVE PRESTIGIOUS NBAA SCHOLARSHIPS

Three University of North Dakota students received prestigious scholarships from the National Business Aviation Association (NBAA) at the 2014 NBAA National Convention in Orlando, Fla.

The recipients of the Lawrence Ginocchio Aviation Scholarship are:

- Dana Atkins is a junior at UND, majoring in aviation management. Atkins' career goal is to work abroad for the International Civil Aviation Organization (ICAO) as a liaison between local governments and ICAO. She is part of the Student Aviation Management Association, in which she will be the conference co-director for the 2014-2015 academic year. Atkins has also been on the UND Flying Team since spring 2014, and is a private pilot with 120 total hours.
- William Dirks is a junior at UND majoring in aviation management. He is a member of the Reserve Officers' Training Corps (ROTC) at UND and was awarded Outstanding Cadet MSI/MSII for 2013-2014. Dirks has served as the ROTC Raider's Club president since 2013, and he has been an Experimental Aircraft Association (EAA) Chapter 1342 member since 2013. He holds a private pilot license.
- Nicholas Meyer is a junior at UND majoring in aviation management and air traffic control. He holds his private pilot license and is a member of the EAA. As a member, he assisted with the annual B-17 Flying Fortress Tour in Van Nuys, Calif. Meyer was awarded a Congressional Award Gold Medal, which is presented by the United States Congress to young adults who have achieved goals in public service, personal development, fitness and exploration. Meyer also volunteered for two terms as president of Aviation Explorer Post 747, where he raised more than \$2,000.

The awards were accepted on behalf of the three students by Kenneth Polovitz, Assistant Dean of the UND Aviation Department.

### About NBAA:

NBAA was founded in 1947, based in Washington, D.C., and is the leading organization for companies that rely on general aviation aircraft to help make their businesses more efficient, productive and successful. The Association represents more than 10,000 companies and provides more than 100 products and services to the business aviation community, including the NBAA Business Aviation Convention & Exhibition, the world's largest civil aviation trade show. Learn more about NBAA at [www.nbaa.org](http://www.nbaa.org).

UND is a member of the NBAA.

—*Juan Miguel Pedraza*

## FARGO JET CENTER



Brothers James Sweeney, left, and Patrick Sweeney at the Fargo Jet Center.

Patrick and James Sweeney are among North Dakota's top entrepreneurs. They've made big strides in the state's aerospace industry with major innovations that include running two companies in several locations and operating a fleet of about 50 aircraft.

"I started flying at UND 40 years ago this year," said Pat, who's the CEO of both companies, Weather Modification Inc. and the Fargo Jet Center, an FBO located at Fargo's Hector International Airport. "John Odegard himself gave me my instrument check ride right before I graduated in 1978."

"We still work with UND on many projects," said Pat, who started working while in college for the weather modification company he eventually acquired and brought to Fargo.

"We couldn't have done all this without the more than 400 students who've interned here (most of them students from UND) who've brought good ideas and worked hard with us," said Jim, a UND Business alum and officer of both companies. "The students have been—and continue to be—a big part of our operations, our growth."



## UND FLYING TEAM WINS AGAIN

The UND Flying Team won top honors in this year's Region V National Intercollegiate Flying Association's (NIFA's) Safety and Flight Evaluation Conference (SAFECON). The events were hosted by UND at Grand Forks, N.D. and Thief River Falls, Minn., with the following teams competing: the University of Dubuque, Minnesota State University – Mankato, University of Wisconsin-Madison, and UND.

“The team worked hard and was ready for this air-meet,” said Lewis Liang, associate professor of aviation and the team's faculty advisor. “Taking first place in eight of nine events and having the three ‘top pilot’ spots obtained by UND Flying Team members gives us a solid foundation to build on for Nationals.”

The following are the events and the first place finishes won by UND Flying Team members:

Ground Trainer – Chris Mohan

Preflight Inspection – Jack Foley  
 Simulated Comprehensive Aircraft Navigation – Travis Wellik  
 Manual Computer Accuracy – Chris Mohan  
 Aircraft Recognition – Chris Mohan  
 Navigation – Chris Mohan and Alex Browne  
 Power off Landings – Jacob Alvey  
 Short Field Landings – Joe Peterson

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.), Alex Browne (Nazareth, Pa.), Justin Bauer (Sussex, Wis.), Glenn Dodd (Eden Prairie, Minn.), Jack Foley (Libertyville, Ill.), Ross Oleck (Palmer, Ark.), Joe Peterson (Mahtomedi, Minn.), Mitchell Rufer (Deforest, Wis.), Justin Therriault (North Pole, Ala.), and Travis Wellik (Stewartville, Minn.).

The UND Flying Team is an all-volunteer

organization of aviation students who have made a commitment of time and effort to be a part of the team. The team participates in two competitions annually: a regional qualifying competition and the national competition to determine the national championship. The team is part of NIFA, the sanctioning body for the regional and national SAFECON competitions. SAFECON places a special emphasis on safety of flight operations.

“The UND Flying Team has won 16 national titles and is gunning for number 17,” Liang said.

—*Juan Miguel Pedraza*

## SKYWEST PILOT CADET PROGRAM

The University of North Dakota John D. Odegard School of Aerospace Sciences and SkyWest Airlines announced the SkyWest Pilot Cadet Program. This new partnership, announced earlier this year, provides UND students with unmatched opportunities toward becoming a first officer at SkyWest Airlines.

UND students from certain aviation majors who meet the requirements and have obtained a Commercial Pilot Certificate and a Certified Flight Instructor Certificate may apply to the SkyWest Pilot Cadet Program. Once accepted, both the school and airline

will mentor the students, providing them with specific, current information about all aspects of becoming a SkyWest pilot. Cadets will also receive a retained hire date and may have opportunities to participate in SkyWest recruiting events and outreach programs.

Once the cadets have completed a Bachelor of Science degree and the required flight training, they will work as flight instructors to build up their flight experience, as required by the Federal Aviation Administration (FAA).

Successfully completing the program does not automatically move the

graduate into a first officer position; however, cadets are provided with a conditional offer of employment and are guaranteed a final interview for a first officer position at SkyWest Airlines.

UND students who are interested in the SkyWest Pilot Cadet Program should contact Students Services at UND Aerospace at 701.777.4017.

UND also has defined career agreements with Cape Air/JetBlue, ExpressJet Airlines and Envoy/American Airlines.

—*Juan Miguel Pedraza*

# AVIATION IN HIGH SCHOOLS



“Get ‘em young” is an educational mantra that goes back a few generations. It applies to reading, writing, and arithmetic – and to aerospace, as well.

“We’re not trying to recruit young people, we’re more broadly interested in getting them interested in aviation and aerospace,” said Ken Polovitz, a pilot and long-time assistant dean of aviation at UND. “We also like to encourage students in high school to explore aerospace careers, no matter where they end up going to college.”

Polovitz and other UND Aerospace faculty and staff do informal outreach with young students at many of the aerospace events they attend annually, such as AirVenture at Oshkosh. They also work with aviation programs at high schools around the country—including Bismarck High School right here in North Dakota.

“This benefits everyone in aviation,” said Paul Snyder, a UND alum and UND assistant professor of aviation, who works with several high school programs around the country. “We desire to engage the next generation and introduce them to the tremendous opportunities in aviation, regardless of whether or not they chose to become a pilot. We facilitate that interest by speaking with high school students and providing needed resources for teachers.”

Sometimes that outreach goes right to the classroom.

For Leslie Martin, a UND alum and Associate Professor of Aviation, that means teaching weekly aviation courses at Red River High School, Grand Forks.

“I’m right in the school system,” said Martin, who had to get a teaching certificate to get into the classroom environment.

Martin also emphasizes that the purpose of her work in the classroom isn’t to recruit or “sell” them on UND Aerospace.

“If anything it’s a ‘soft sell’ because what we’re trying to do is encourage and maintain the student’s interest in aviation and aerospace,” Martin said.

—*Juan Miguel Pedraza*

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## FOR MORE INFORMATION

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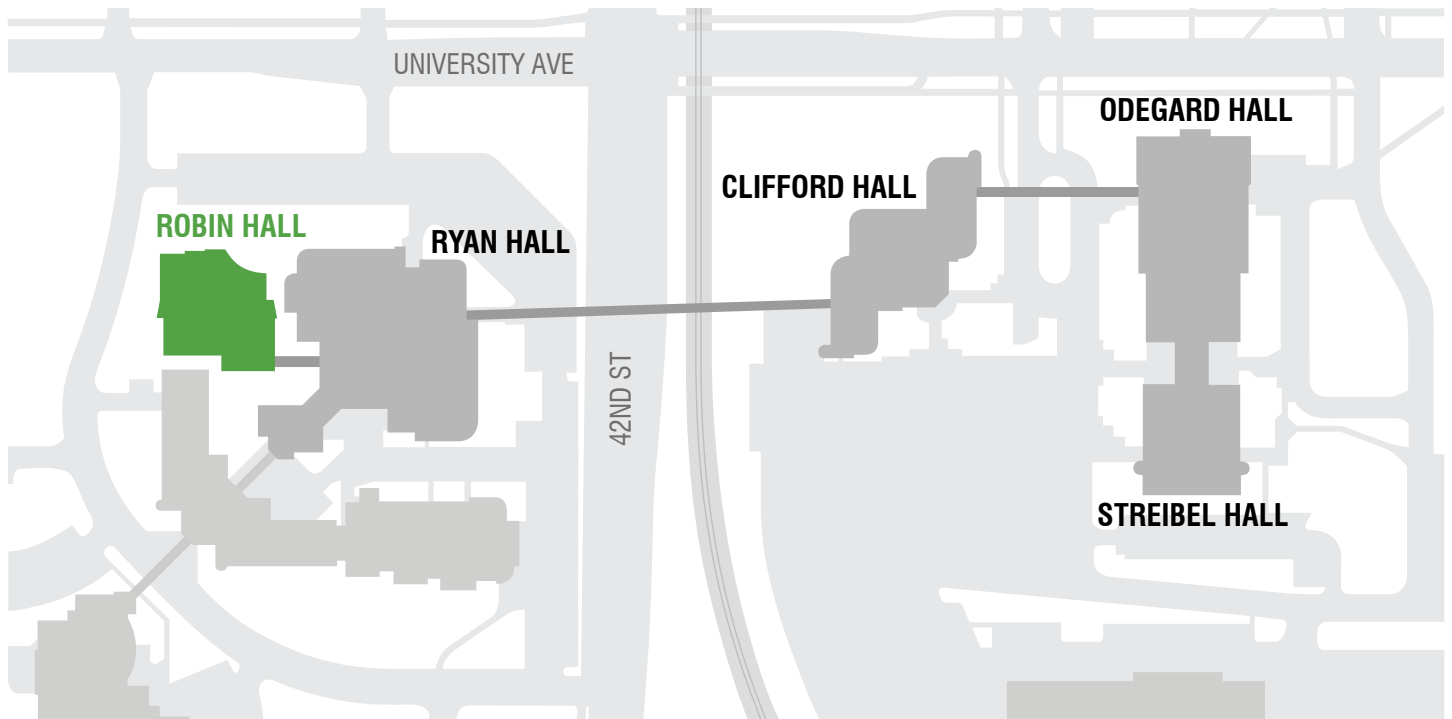


Shawna Noel Schiff

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## GROUNDBREAKING FOR ROBIN HALL

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Brenda Riskey



Brenda Riskey

The Odegard School and the UND Aerospace Foundation hosted a ground-breaking ceremony for Robin Hall, a new 66,000-square-foot aerospace research facility being built on the west side of campus. Robin Hall will house secure areas and other spaces for the school's Unmanned Aircraft Systems (UAS) Research, Training and Education Center, along with additional classrooms, offices, aerospace simulation equipment, and student gathering spaces.

In March 2013, the North Dakota State Board of Higher Education (SBHE) ratified the North Dakota University System Chancellor's interim approval, authorizing a ground lease between UND and the UND Aerospace Foundation for site approval and construction of a new aerospace building. The authorization would allow the new building to be constructed, owned and managed by the Aerospace Foundation.

At the groundbreaking, UND recognized the generosity of major donors to this project, Si Robin and his wife, Mary E. Bazar, by naming the new building Robin Hall. Mary is president of Sensor Systems, a manufacturer of aerospace antennae based in Chatsworth, Calif.; and Si serves as the company's vice president.

On Aug. 20, 2014, the SBHE Challenge Fund Committee approved a state grant of \$1 million for the proposed aerospace/UAS research building. The state had previously authorized UND to use up to \$24.9 million from private donations or grants for the facility.

UND Aerospace's Center of Excellence for Unmanned Aircraft Systems, which will be a major tenant of the new research building, was the first collegiate degree program of its kind in the nation and is rapidly growing into the largest and most widely recognized program in the world. Remotely piloted aircraft are expected to become the dominate choice for all airborne missions except passenger travel, and the rapidly growing UAS industry will serve to diversify the economy of North Dakota.

## DID YOU KNOW?

- Odegard Hall opened in 1984 (CAS I)
- Striebel Hall opened in 1986 (CAS II)
- Ryan Hall opened in 1988 (ATRC)
- Clifford Hall opened in 1992

## 2014 UND AEROBATIC TEAM, SEVEN-TIME NATIONAL CHAMPIONS

The University of North Dakota Aerobatic Team earned top spot in the International Aerobatic Club competition this past fall.

The 2014 UND Aerobatic Team was comprised students Wolfgang Brink, Rosemary Coe, Amelia Gagnon, Cameron Jaxheimer, Patrick Mills, Alexander Sachs, Jen Slack, William Sullivan and Alexander Volberding.

They were led by head coach Michael Lents, coaches Greg Gilmer and Jonathan Sepulveda, and faculty advisor Joe Vacek.

The 2014 competition season opened with the Midwest Aerobatic Championship in Seward, NE. That contest was hosted by IAC Chapter 80, Harry Barr, and Whistler Aviation. In Sportsman, coach Sepulveda—who also flies UND’s Citation II research jet—placed 3rd with students Amelia Gagnon, William Sullivan, Alexander Volberding and Jen Slack taking 5th, 6th, 8th and 10th place, respectively. Coaches Lents and Gilmer placed 3rd and 5th, respectively, in Intermediate.

Gagnon earned the coveted Highest First-time Sportsman Competitor Award at the contest.

The team next attended the Doug Yost Challenge in Spencer, IA, hosted by Chapter 78, Spencer Avionics, and Leading Edge Aviation.

Patrick Mills placed first in the Primary.

Cameron Jaxheimer competed in the IAC Open West Championship, hosted by IAC Chapter 26 at the 40th Annual Happiness is Delano contest in California.

Jaxheimer took 1st place and the Championship Title in the Intermediate Category. She won Flight Medals for earning 3rd, 3rd and 2nd place during her three flights.

Patrick Mills followed in 2nd overall and earned a 3rd place Flight Medal for his final sequence.

“Our team thanks all of the support we have had from the University of North Dakota, especially the line and maintenance crews who work hard to keep our aircraft flying,” Lents said. “Special thanks to the Klostermans, who donated funds for the new competition harnesses in the Super Decathlons and Charlie Atterbury who helped sponsor the team.”

“It was a great season,” Lents said.  
—*Michael Lents*

## Thank You, Donors

Here are some examples of events funded by your generous support

- **Upper left:** Dinner social between aviation alumni and students in the Aviation Living Learning Community during Homecoming.
- **Upper right:** Travel for the General Aviation Operations class to visit Fargo Jet Center.
- **Bottom:** Travel for the Global Perspectives in Aviation History class to visit the Fargo Air Museum.



DONATE HERE

To help support programs aimed at enhancing the student experience, please consider donating to the Aviation Department.

[UNDalumni.org/aviation](http://UNDalumni.org/aviation)

## PIPER SEMINOLE G1000



UND's latest fleet addition: one of three Piper Seminoles equipped with Garmin 1000 all-glass cockpits and the Appareo Systems flight data recorder.

The University of North Dakota Aerospace Foundation has acquired three brand new Piper Seminoles.

The Foundation provides training and aircraft for the University of North Dakota's John D. Odegard School of Aerospace Sciences. These airplanes now are part of the Aviation Department's training fleet of more than 120 aircraft.

"Piper Seminoles are the training aircraft of choice for UND's multi-engine and MEI flight courses," said UND fleet manager Don Dubuque.

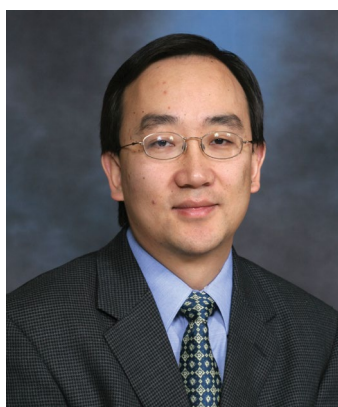
The new Seminoles are fully IFR equipped with Garmin G1000 avionics and GFC 700 autopilots. Delivery of these three new trainers adds to the University's fleet of 17 Avidyne-equipped Seminole airplanes that UND plans to replace with Garmin G1000-equipped Seminoles over coming years, according to Dubuque.

"These Piper multi-engine trainers with modern glass cockpits and autopilots provide our students the greatest knowledge and give them the technical abilities and most modern proficiencies available today," said Bruce Smith, UND Aerospace dean.

"The Piper Seminole is clearly the best multi-engine piston-powered trainer available," said Piper President and CEO Simon Caldecott in a press release about the delivery. "Its ability to perform advanced maneuvers and procedures skillfully and safely continues to earn the appreciation of students and instructors. We are flattered that UND Aerospace exclusively flies our twin-engine piston-powered trainers to prepare students for their next level of flight training."

—*Juan Miguel Pedraza*

## ZHANG RECEIVES GRANT

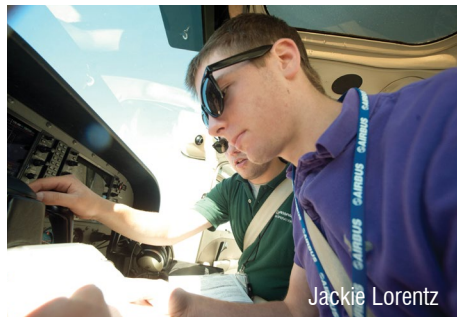


Dr. Jianglong Zhang, Associate Professor of Atmospheric Sciences at UND, has received a grant through the National Science Foundation (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR) Program. This multimillion dollar project, named the Center for Regional Climate Studies, is part of a \$20,000,000 NSF EPSCoR research grant to NDSU, titled Innovative and Strategic Program Initiatives for Research and Education-North Dakota (INSPIRE-ND). Under this award, Jianglong will lead a team of researchers from UND and NDSU in studies of climate variations in the Northern Great Plains with a focus on the impacts of climate variations on regional hydrology, agricultural production and agriculture-related economy.

—*Juan Miguel Pedraza*



Aerospace Camp students pre-flighting aircraft prior to take off.



The "cScibot Lego Robotic Camp" gives students the opportunity to learn about robotics, develop computer problem solving skills, and of course, have a little fun along the way.

## AEROSPACE CAMPS

Youngsters from all over will convene again this summer for week-long UND Aerospace summer camps to learn about aviation, air traffic control, and related aerospace careers.

In UND's Computer Science camps, they'll learn about robotics, how to program Android devices, and how to create their own animated movies, among other computing-related skills.

"We're going into our 32nd year of our International Aerospace Camp," said camp program director Josh Christianson, who also is UND Aerospace director of Alumni Relations and development. "This program is about giving the kids a slice of a collegiate aerospace program."

The two camps, one in June and the second in July, give students hands-on exposure to flying and related careers including air traffic control, airport management, and corporate aviation.

"We touch on all the major fields within aviation," Christianson said. "This is a way to see if aviation is for them, before they start their first year of college and realize it's not what they wanted to do."

It's a lot of fun, but not slacking: there's a solid week of classroom lectures, discussions, and six flights plus sessions in flight simulators (including cross-country flights, instrument flying, and night flying).

On the last day of camp, a UND Admissions counselor tells students about the college application process, regardless of institution, and answers questions.

"It's about getting young people exposed to aviation and to college-level aviation education. In fact, this experience is a lot like attending a week of actual college," said Ken Polovitz, UND Aerospace associate dean and director of the camp program for 25 years. "We like to say it's a summer camp like no other."

For more information about the UND International Aerospace Camp, visit <http://www.aviation.und.edu/currentstudents/aerocamp/default.aspx>.

## COMPUTER SCIENCE CAMPS

"This is where kids come who want something in addition to sports camps," said Tom Stokke, a faculty member in the UND Aerospace Department of Computer Science and director of the UND Aerospace Computer Science Department's summer camp program.

"It still has to be fun, but we also teach them something useful," said Stokke.

The UND Computer Science summer camp program, now involving more than 200 young people ages 9-18, started out as a single robotics camp 10 years ago.

"Now, in addition to introductory and advanced robotics programs, we run Alice animation camps, Processing camps (Java code), and an App Inventor camp (programming Android devices)," Stokke said. Stokke runs the camps with teams of graduate students who enjoy working with children.

The Computer Science camps run in five-day three-hour morning and afternoon sessions, June to early August.

—Juan Miguel Pedraza

## ESSP NOW OFFERS MINOR IN SUSTAINABILITY STUDIES



It's official: the UND Aerospace Department of Earth System Science and Policy now offers a 21 credit minor in Sustainability Studies, in addition to the master's and doctoral programs it has been running for several years.

"We wanted to do something to reach out to undergraduates and to give them an opportunity to 'green up' their curriculum," said ESSP chair Soizik Laguette.

The multidisciplinary minor offers a variety of courses introducing the concept of sustainability in areas such as land and water, food systems, energy, climate change, oceanography, natural resources economics, and environmental policy, in addition to the core ESSP courses. "There's a growing demand for sustainability information, and we wanted to give our undergraduates, no matter what their major is, the opportunity to get into this field."

—Juan Miguel Pedraza



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06

Juan Pedraza



07

Juan Pedraza

1. Lt. Col. Clarence L. Carroll III, professor of military science at UND ROTC, visits with GAMA rally attendee.
2. UND Aviation alum Heather Rider, a Minneapolis-based Cessna sales rep and pilot, at the GAMA rally.
3. "Jelly Belly", an Interstate Cadet, owned and flown in by Kent Pietsch of Kent Pietsch Airshows, Burlington N.D.
4. Des Moines Flying Service arrived at the rally with this pristine Piper PA46-500TP Meridian.
5. "Duggy" the DC-3, owned by the Duggy Foundation in Page, ND and normally based at the Fargo Air Museum, flew in with Casey Odegard at the controls and a full load of West Fargo High School students.
6. Blake Larson and his pre-school daughter examine Duggy's undercarriage.
7. A Cirrus Vision SF50 visiting from Duluth MN, moving ever closer to achieving type certification.

## GAMA JOBS RALLY HELD AT UND

UND Aerospace played host this past summer to the General Aviation Manufacturers Association (GAMA) jobs rally. The rally featured aerospace employers from around the country.

The rally, attended by hundreds of people including groups of high school students, featured U.S. Senators John Hoeven and Heidi Heitkamp, U.S. Representative Kevin Cramer, and Lt. Governor Drew Wrigley. Appareo Systems, Cirrus Aircraft, and Piper Aircraft executives also spoke. The main event was a Career Fair for students interested in pursuing aviation careers and those who want to learn more about positions in the Science, Technology, Engineering, and Math (STEM) fields.

More than a dozen companies and organizations put up exhibits at the fair, including Appareo Systems, Cirrus Aircraft, Dakota Air Parts, Fargo Jet Center, GAMA, Honeywell, ND STEM Network, Piper Aircraft, Textron Aviation, UND Aerospace, UND Army ROTC, UTC Aerospace Systems, and Valley Med Flight.

GAMA officials at the event noted that the general aviation industry contributes more than \$150 billion to the U.S. economy annually and supports 1.2 million jobs nationwide. GA is one of the few remaining domestic manufacturing industries that provides a positive trade surplus for the United States. North Dakota is home to 3,500 FAA-certificated pilots and almost 300 civil use landing facilities.

## SPACE STUDIES COMPLETES 30 DAY SIMULATED SPACE MISSION

*Three grad students live, work, play, and conduct tests in confined quarters*



Space Studies graduate students Jonathan Schiralli, Tim Buli, and Tyler Hill completed a 30-day mission in the UND Inflatable Lunar Mars Habitat (ILMH) in November, simulating a long-duration mission in space, funded by the National Aeronautics and Space Administration (NASA).

Buli had completed a 10-day mission in the ILMH in 2013. For the latest

mission, the ILMH was located on property owned by the UND Aerospace Foundation in an industrial park west of the university campus. The team, selected from a pool of 15 candidates, performed several experiments and kept logs of activities and conditions inside the habitat.

Several experiments were provided by NASA units such as the Jet Propulsion

Laboratory and the Kennedy Space Center. The crew tested plant-growing conditions and collected samples of microbial life from the habitat's floor, which were then sealed and delivered to NASA for analysis. They also tested extra-vehicular activities, donning space suits and using a rover, all built at UND.

The aim of the mission, according to principal investigator Pablo de León, a Space Studies faculty member and director of the Human Spaceflight Lab at UND, is to test a crew's ability to work for long periods of time in the confined space of a planetary base and with limited communications with the outside world. The crew was closely monitored throughout the 30 day test, including psychological states. Each crew member took personal vital signs daily.

—*Juan Miguel Pedraza*

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## TIFFANY SWARMER, MASTER OF SCIENCE IN SPACE STUDIES, 12/2014



Tiffany Swarmer received her Master of Science in Space Studies from the UND John D. Odegard School of Aerospace Sciences in December. Swarmer developed expertise in space mission planning and the dynamics of long-duration missions.

Swarmer, who spent time in a long-duration, simulated space habitat mission in Hawaii, also helped plan and manage two missions in the UND Inflatable Lunar Mars Habitat (ILMH) – a 10 day mission last year and a 30 day mission this year. She assured the safety and well-being of the team inside.

“I learned a lot about team cohesion, psychological factors, and how to function well in an isolated, extreme environment” in the Hawaii-based mission, said Swarmer. Those experiences shaped her career ambition to be part of the international effort that eventually will fly a human crew to Mars.

The UND crew Swarmer worked with recently spent 30 days in the ILMH, an inflatable habitat designed, built, and deployed by students. The ILMH is funded by the National Aeronautics and Space Administration (NASA).

Pablo De León, lead investigator on the ND Planetary Exploration Initiative and a Space Studies faculty member, says UND will partner with NASA and others on future lunar and Mars missions—with the help, he points out, of capable students including Swarmer, a key aide in the ILMH experiments.

—*Juan Miguel Pedraza*

# BALLOON LAUNCH

*Student-designed and built experiments carried aloft to 100,000 feet*



UND Space Studies students and faculty worked alongside students from several area schools at the fourth annual high-altitude balloon launch and science competition on Nov. 22nd, 2014. The High-Altitude Balloon Launch is sponsored by the North Dakota Space Grant Consortium, funded by the National Aeronautics and Space Administration. This year's launch enjoyed near perfect weather conditions.

“High-altitude balloons are fun, inexpensive and increasingly popular tools to put experiments in a near-space

environment,” said Caitlin Nolby, Space Grant coordinator, housed at the UND Department of Space Studies.

Students, guided by faculty advisors, designed and built from scratch payloads with scientific experiments. The payloads, meeting strict weight and size parameters, were attached to one of two latex weather balloons that were launched from a field on the UND campus on a crisp Saturday morning. The balloons were also equipped with radios, GPS tracking systems, radar reflectors, cameras, and parachutes designed to slow their fall back to Earth.

This year, the following schools participated in the balloon launch: Kindred High School, Kindred (“Team Royal Diamond” and “Team Spatato”); May-Port Clifford-Galesburg Middle and High School, Mayville (“Team MPCG Science Geeks”); Northwood Middle School (“Team Thunderstruck”); Red River High School, Grand Forks (“Team Polaris”); Shiloh Christian School, Bismarck (“Team Absolute Zero: Because there’s nothing cooler”).

As the balloons rise, the atmospheric pressure drops and they expand. At a certain point in the stratosphere—normally at 90,000 to 100,000 feet—the balloons burst because they reach their maximum expansion.

One of the cameras aboard caught that action. As they fell back to Earth, their drogue parachutes deployed. After continuously following the balloon’s trajectory with tracking equipment from launch to landing, the chase teams pinpointed the final touchdown location—this year, as predicted by the advance team based on wind patterns, the balloons landed near Fosston, Minn.

“Both balloons and their payloads were successfully recovered,” Nolby said.

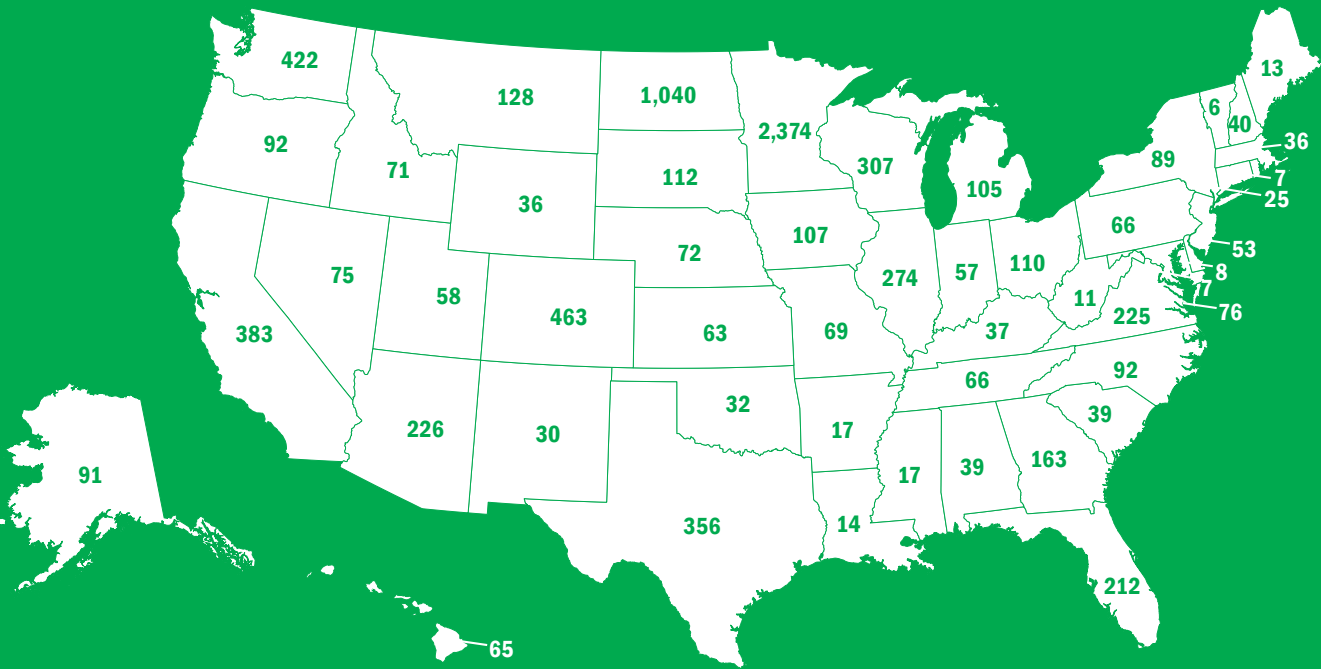
The North Dakota Space Grant Consortium funded this project as a fun way for students to experience some space science and engineering. For this year’s launch, Kymont 1500 gram latex high-altitude balloons were used, the same brand of balloon used by the U.S. National Weather Service and NASA.

—*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

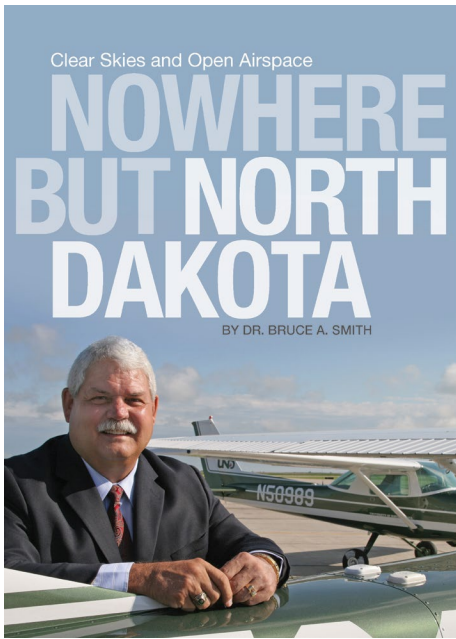
## International Alumni

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](http://aero.UND.edu)

# DEAN BRUCE SMITH PENS "NOWHERE BUT NORTH DAKOTA"

*Book showcases remarkable history of the University of North Dakota  
John D. Odegard School of Aerospace Sciences*



Bruce Smith, professor and dean of the UND John D. Odegard School of Aerospace Sciences (UND Aerospace) authored a new book—published this year—titled "Nowhere But North Dakota," a history of UND Aerospace that picks up where "Flight of the Odegard" left off.

Founded in 1968 by John D. Odegard, the school grew into one of the world's leading aerospace training, education, and research centers, now also at the forefront of unmanned aircraft systems. Smith, who took over as dean in 2000, describes in "Nowhere But North Dakota" his efforts to expand academic programs, secure significantly enhanced technology for training, education, and research, and attract students from around the globe, including government contracts with China, Japan, Norway, and Saudi Arabia, among others.

As Smith notes in the book, UND Aerospace is a lot more than airplanes. Smith chronicles the school's efforts to expand its high tech programming and research in atmospheric sciences, space studies, computer science, and earth system science—all aimed at meeting the country's needs for a greener environment, more effective climate policy, and superior training for future pilots, air traffic controllers and more.

Smith also details more offbeat challenges in his years as dean: he explains in the book how fingernail polish got him to a championship football game; how a forced landing earned a farmer tickets to a hockey game; and how a changed aircraft tail number led to an anxious moment with a major benefactor.

Smith, a 1970 UND graduate, earned a Ph.D. in Instructional Design and Development from Florida State University in 1984 and a Master of Arts in Educational Technology from Arizona State University in 1975. While at UND, he was named an NCAA football All American. As director of training at Delta Air Lines in Atlanta, he was responsible for ground training of Delta's pilots, initial recruitment and training of flight attendants, and a major portion of maintenance training for technical operations and management of day-to-day operations of Delta's training center.

Smith is nationally known and recognized as a leading authority in the aviation training field. He is the author of more than 40 technical reports and refereed journal articles in the areas of human performance, aviation training, and aircrew training systems. He spent eight years as a flight instructor with the United States Air Force Academy in Colorado Springs, Colp. and USAF Undergraduate Pilot Training at Williams Air Force Base, Ariz.

—*Juan Miguel Pedraza*



Brenda Risky

# AEROSPACE ALUMNI ADVISORY BOARD UPDATE



When we show up at the airplane to meet our flying partner, or introduce ourselves at a business function, I am sure many of you have the “two minute” conversation down to a cool minute thirty...the who, what, when, and where of your life. Most of us have it down to just the nuts and bolts, but I challenge you to give that quick introduction without including UND. The University is such a huge part of who we are and where we are, that we can’t leave it out.

This past fall, a number of Alumni Advisory Board members were back on campus talking to students and that was a central theme in our conversations. None of us would be where we are without UND. Whether it was the education, friendships, or connections that we formed, we all gained a great deal from the time we spent in Grand Forks.

If you haven’t been back on campus in a while, UND is exactly the same and completely different at the same time. It has grown in size, aircraft, tower simulators, and buildings (Robin Hall just broke ground), but the spirit of UND is still the same as it was in the 70’s, 80’s, 90’s, and 00’s. The students are enthusiastic and their passion for aviation is inspiring. The faculty continues to improve themselves and the curriculum, the UND Aerospace Foundation continues to garner new opportunities, and the AAAB continues to do our part to help UND Aerospace become the start of every future graduate’s “two minute” conversation.

So I challenge each one of you to take a few minutes to remember why you decided to go to UND in the first place and think about how UND helped you get to your current position in life. Then share that with your colleagues, neighbors, captains, and first officers. UND is a special place and our alumni are a big reason why.

Thank you for your support!



**Matt Kalouner '01**  
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[mkalouner@hotmail.com](mailto:mkalouner@hotmail.com)  
First Officer, Alaska Airlines

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- Annis, Jay **98**
- Baas, Bradley **86**
- Baker, Rich **00**
- Barnes, David **01**
- Blumhorst, Jonathan **11**
- Boxrucker, Craig **00**
- Castor, Jimmy **03**
- Coleman, Doug **84**
- Cooper, Chris **05**
- DuVernay, Jason **06**
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- Gora, Brian **83**
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- Hauge, Tom **92**
- Hedrick, Robert **82**
- Heining, Joel **92**
- Hess, Erich **00**
- Hopper, Josh **03**
- Huff, Matt **03**
- Jensen, Kurt **79**
- Kalouner, Matt **01**
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- Kluenker, John **01**
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- Lasky, Todd **02**
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- Olson, Erin **05**
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- Schofield, Jodi **91**
- Schroeder, Brian **98**
- Secrist, Brad **99**
- Shields, Josh **00**
- Stephens, Corey **99**
- Stimpson, Justin **01**
- Stork, Richard **04**
- Storm, Jennifer **02, 04**
- Strack, Brian **01**
- Stubbe, Joseph **02**
- Swing, Jeff **96**
- Tomlin, Nicholas **94**
- Toivola, Kevin **01**
- Troxel, Brad **06**
- Webster, Doug **83**
- Wright, Corey **05**

MARCH

06-08

Women in Aviation  
Annual Conference  
Hilton Anatole  
Dallas, TX

MARCH

06

UND Aerospace Alumni  
& Industry Reception  
Hilton Anatole  
Dallas, TX

APRIL

16-17

Career Fair and  
Aviation Family  
Weekend  
Grand Forks, ND

APRIL

18

Aviation Family  
Weekend Banquet &  
Scholarship Ceremony  
Grand Forks, ND

# EVENTS

MARCH - JULY 2015

MAY

15

UND Aerospace  
Alumni Advisory Board  
Meeting  
Denver, CO

JUNE

21-28

UND Aerospace  
Camp I  
Grand Forks, ND

JULY

5-12

UND Aerospace  
Camp II  
Grand Forks, ND

JULY - JULY

20-26

EAA Airventure 2015  
Oshkosh, WI

JULY

22

UND Aerospace Alumni  
& Industry Reception  
Hilton Garden Inn  
Oshkosh, WI



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Mike Poellot, left, chair, Atmospheric Sciences, and John D. Odegard, founder and first dean, UND Aerospace, in the Bureau of Reclamation HIPLEX office, Miles City, MT, as part of Project Skywater.

# ARCHIVES

