

WINTER 2018






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AEROCOM | WINTER 2018

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It is with great excitement that the Odegard School marks its 50th anniversary in 2018. The school has grown from a humble beginning to the outstanding operation it is today. Before we celebrate our anniversary year, let's look back at the second half of 2017.

In early October, the UND Aerospace Foundation, the UND Alumni Foundation, and the Center for Innovation Foundation teamed up to host a memorial for our friend and benefactor James C. Ray, who passed away earlier in the year. We are very grateful for the \$25 million in gifts that James bestowed upon the Odegard School and UND.

The James C. Ray Foundation is contributing \$500,000 to establish the James C. Ray Memorial Freshman Scholarship Endowment. This contribution was matched with \$500,000 each from the UND Aerospace Foundation and the UND Alumni Foundation, for a combined endowment of \$1.5 million. Si and Betty Robin have contributed to this endowment as well. What a great tribute to James Ray's legacy.

Please congratulate Professors Gary Ullrich and Paul Snyder for receiving the John K. Lauber Safety Award at the University Aviation Association annual meeting in September. Gary and Paul were instrumental in implementing the first FAA-approved safety management system program for a university aviation school.

Congratulations also to Dr. Xiaodong Zhang, professor of Earth Systems Science and Policy, who presented the University's November Faculty Lecture. Dr. Zhang is a well-funded researcher and recognized expert for his oceanography research.

On a sad note, we lost Chester Fritz Distinguished Professor Leon Osborne to cancer in October. Leon was the consummate professor, and very instrumental in helping Deans John Odegard and Bruce Smith develop the Odegard School. We miss him immensely.

Finally, the U.S. Customs and Border Protection Agency (CBP) announced a new test program exclusively for UND, hiring 15 sophomore and junior Commercial Aviation and UAS majors while they finish their degree. The students will gain experience working for CBP in Grand Forks and upon graduation will be assigned to flight officer or unmanned aviation positions. Thank you to Senator Hoeven and his staff for helping to facilitate this new program.

Please join us as we celebrate 50 years of success and excellence at the Odegard School. More information on these events is available on page 25 in this issue, and at aero.und.edu/50th.

Thank you for your support of UND Aerospace!

PAUL LINDSETH | DEAN, JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES



JAMES C. RAY MEMORIAL FRESHMAN SCHOLARSHIP

“The board of directors of the UND Aerospace Foundation was happy to initiate this scholarship in the name of our good friend James Ray,” said Foundation board chair Larry Martin. “We are very thankful to the James C. Ray Foundation for continuing its longstanding commitment to the John D. Odegard School of Aerospace Sciences and to the UND Alumni Association & Foundation for providing the matching dollars. By working together, we are creating a wonderful legacy for UND students.”

The James C. Ray Memorial Freshman Scholarship Endowment will provide scholarship funds to incoming University of North Dakota students who plan to major in Aviation.



PROFESSOR ALENA KUBATOVA & STUDENT TYSON BERG wrapping up a summer research experience, working with an interdisciplinary team.

Photo by Tyler Ingham

HIGH-FLYING

UND undergrad combines UAS and science expertise in interdisciplinary research project

UND senior Tyson Berg is double majoring in Chemistry and Unmanned Aircraft Systems (UAS) – a recipe for great research opportunities.

“When I tell people that these are the two things I study, they ask, ‘Why in the world would you do that?’ It’s fun to tell them that I’m actually working on something that involves both,” he said.

Berg has been working with UND Chemistry Professor Alena Kubatova and others across campus to research how UAS can be used to collect carbonaceous particulate matter at various atmospheric elevations. Certain carbon materials may affect cloud formations and precipitation patterns, so the team is hoping to gather enough preliminary data to support large funding proposals to the National Science Foundation, Environmental Protection Agency and/or NASA.

Berg’s dual know-how is a key part of the study. His commercial UAS training, paired with the chemistry lab hours he’s already logged during his undergrad, gives him a one-of-a-kind perspective.

“You want to be able to pre-program UAS paths and take the consideration of air flow through the device, and Tyson is really in a unique position to do that,” Kubatova said.

Atmospheric Sciences Research Associate Professor David Delene, who is another partner in the project, said the experience Berg is gaining is integral to student success.

“Involving undergrads in research provides examples of possible careers and illustrates practical applications of things discussed in classes,” he said.

Kubatova is quick to express gratitude to all of the students and campus partners who have come together to make this research work. UAS Lead Flight Instructor James Moe’s abilities have been essential – flying his own equipment and figuring out how to install the sampler on the drone.

This kind of intensive collaboration, Kubatova says, is unique to UND.

“Collaborations are key to today’s research success, since no one can do everything themselves anymore,” Delene said. “Nurturing campus collaborations leads to more successful research at UND.”

–Kaylee Cusack

LOOKING BACK

BILL SHEA REFLECTIONS

Helping to develop the UND Center for Aerospace Sciences



was all it took for them to make Grand Forks and UND Aerospace their new home, back when the school was known as the Center for Aerospace Sciences (CAS).

Shea was hired as chair for the Aviation Department and his focus was working with faculty and staff to further develop the curriculum and grow admissions. During his time as chair, the department received the UND Foundation McDermott Award for Departmental Excellence in Teaching. “John was thrilled with it,” he said.

“Everything we did was for the students,” Shea continued. “We had marvelous students. What I loved about the students at UND was that they loved aviation, they loved flight, and they had a passion. They understood the importance of gaining an education.”

Shea remains proud of the education his students received and how it prepared them for successful and meaningful careers. He vividly remembers John’s vision for the program.

“His vision was to contribute to the worldwide aviation community by training well-qualified young women and men who would go into the industry and make significant impacts. Even then, John could see ahead to the dynamic growth that has taken place today in the U.S. and around the world and he knew there would be a need for all of those different jobs in the aviation industry. He was a visionary and a true leader.”

Shea loved his time at UND and remembers the administration being very supportive of the aviation program – and the feeling was mutual with Odegard. When Odegard would invite guests to campus he would always talk about the university first, then the aviation department.

“It always came back to the students,” Shea said proudly. “The John D. Odegard School of Aerospace Sciences is incredible. To this day, it is an outstanding program and the graduates have made major contributions to aviation both here in the U.S. and overseas, known the world over for quality and excellence. The growth that has taken place over the past 50 years is astounding.”

“Dr. Paul Lindseth, the faculty, staff and students should all be commended because they are keeping the program right on top and providing really important influences for the industry worldwide,” he continued. “I think that is a noble cause. John is up in heaven doing slow rolls, looking down at the impact of 50 years and smiling.”

—Jena Pierce

William (Bill) Shea has been known in the aviation industry for many things. He was the chief of the California Division of Aeronautics, a director of aviation for the Port of Portland, Ore., the founding director for the University of Nebraska at Omaha Institute, and a Federal Aviation Administration (FAA) associate administrator, for which he received the Secretary’s Award for Meritorious Achievement for exemplary performance. He even set a National Aeronautic Association speed record in a Globe Swift aircraft for a flight from Washington D.C. to Lawrence, Mass.

Shea enjoyed all of the jobs he has held throughout his career, but the one he likes to talk about the most is his time as chair of the Department of Aviation at UND. When he speaks of UND, John Odegard, and former UND President Tom Clifford, his voice rises a bit, words are filled with excitement, and his East coast accent comes out a little stronger, despite having lived in California for over 20 years.

“When I first met John,” remembers Shea, “I was working in Washington D.C. as an FAA associate administrator. Senator Mark Andrews, from the great state of North Dakota, said that John Odegard was coming to town and that he may want to say hello to me, because I was also wearing the hat of the FAA Aviation Education Program, promoting aviation education to universities and colleges.”

When Shea was giving a speech in Rapid City, S.D., Odegard called him and said, “Billy, you have to come to Grand Forks.” Shea’s wife, Carol, flew in from D.C. and together they met with Odegard and Clifford at UND. That

2017 AVIATION WELCOME NEW FACULTY



KWASI ADJEKUM

ASSISTANT PROFESSOR

B.S. PHYSICS

KWAME NKUMAH UNIVERSITY OF
SCIENCE AND TECHNOLOGY

M.S. AVIATION

UNIVERSITY OF NORTH DAKOTA

PH.D. AEROSPACE SCIENCES

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M.ED. CURRICULUM AND
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UNIVERSITY OF PHOENIX



LEWIS ARCHER

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UNIVERSITY OF PHOENIX



ANDY LEONARD

LECTURER

B.A. POLITICAL SCIENCE

ST. JOHN'S UNIVERSITY

M.S. AVIATION

UNIVERSITY OF NORTH DAKOTA



CONTINUE THE LEGACY

Show your appreciation for the John D. Odegard School of Aerospace Sciences by making a gift to impact the next 50 years of aerospace education. This year, become one of 50 benefactors committing \$50,000 each in recognition of our 50th anniversary.

To be one of the 50 contact,

Josh Christianson

Director of Development and Alumni Relations

701.777.4637 | joschc@aero.UND.edu

BECOME A GOLDEN AERO

If you're a Graduate Of the Last Decade, then you're considered a G.O.L.D. alumni. Here at the John D. Odegard School of Aerospace Sciences, we're the Golden Aeros. Whether you're starting your first job or graduate school, or settling into your first home with your new family, you are an important part of our global alumni network.

We're asking you to pledge just \$100 per year over the next five years. It's a vote of confidence in the Odegard School and will help provide today's students with the same opportunities you had.

UNDalumni.org/goldenaeros



SIoux AWARD JACK MUHS

DEANNA CARLSON ZINK, JACK MUHS & PRES. MARK KENNEDY
at the 2017 Sioux Awards Banquet.

Photo by Shawna Noel Schill

A college internship set up James “Jack” Muhs for a career with one of the biggest companies in the world.

While an aviation major at UND in the mid-‘80s, Muhs interned with Federal Express. Now, 35 years later, he is president of the FedEx Express Middle East, Indian Subcontinent and Africa division.

Following his college internship, Jack worked part time loading planes on the FedEx ramp at Grand Forks. After graduation in ‘87, he worked for the company in global management control, then came back to manage the ramp he once worked on as a college student.

After two years in Grand Forks, Jack returned to global management control and worked his way up the corporate ladder. In 2014 he was named president of FedEx Trade Networks, and in 2017 he accepted his latest role with FedEx Express and relocated to Dubai in the United Arab Emirates.

“For my 31-year career, 23 or 24 years were heavily involved in the aviation side,” said Muhs. “What I learned from UND has served me extremely well.”

Growing up in Towner, N.D., Jack knew from an early age that he wanted to study aviation. His older brother Bob was one of the first students in UND’s new aviation program.

“My brother took me flying when I was 12. With a strong family history at UND [his parents and all but one sibling attended] it was really easy for me to decide to go there. John Odegard did such a wonderful job setting up the program.”

Jack says he received a lot of encouragement from the faculty and others he crossed paths with at UND. “They all knew what you could do. They opened up your eyes to the possibilities.”

“The opportunities to take leadership roles at UND were invaluable to me later on when it came to managing people and finding ways to create win-win solutions for everyone involved.”

Jack carried that “team” attitude into his career, saying he measures success by the fortunes of those he works with. “I hope I never define my success by my title or by the money I make, but by the success of the people and families that I’ve supported.”

Jack’s two sons followed in his footsteps, both earning aviation degrees from UND. Oldest son James is a second lieutenant in the Air Force and works with the 177th Intelligence Squadron of the North Dakota Air National Guard in Fargo. Son Thomas is a ramp manager for FedEx in Fargo.

Jack says he is honored to receive the Sioux Award from his alma mater. “You do a lot of things in your career, not so much for the notoriety of it, but for the love that you have for doing your job and taking care of your family. To be recognized with such a prestigious award is not expected, but it’s very humbling.”

– UND Alumni Review



POSITIVE RETURN ON INVESTMENT

Last August, UND's newest aerospace facility, Robin Hall, was filled with the cacophony of collaboration and the buzz of small rotors as 60 young women from the greater Grand Forks area participated in UAS Camp 2017. Two sessions of the week-long camp ran between July 31 and August 11, 2017, using the flexible learning spaces of the Robin Hall classrooms and the unmanned aircraft systems (UAS) flight lab.

The camp was the vision of Amanda Brandt, UND assistant professor, UAS chief pilot, and recent USAF retiree. "While I was a squadron commander, I saw the positive effects that can come from a single act of personal interaction and connection."

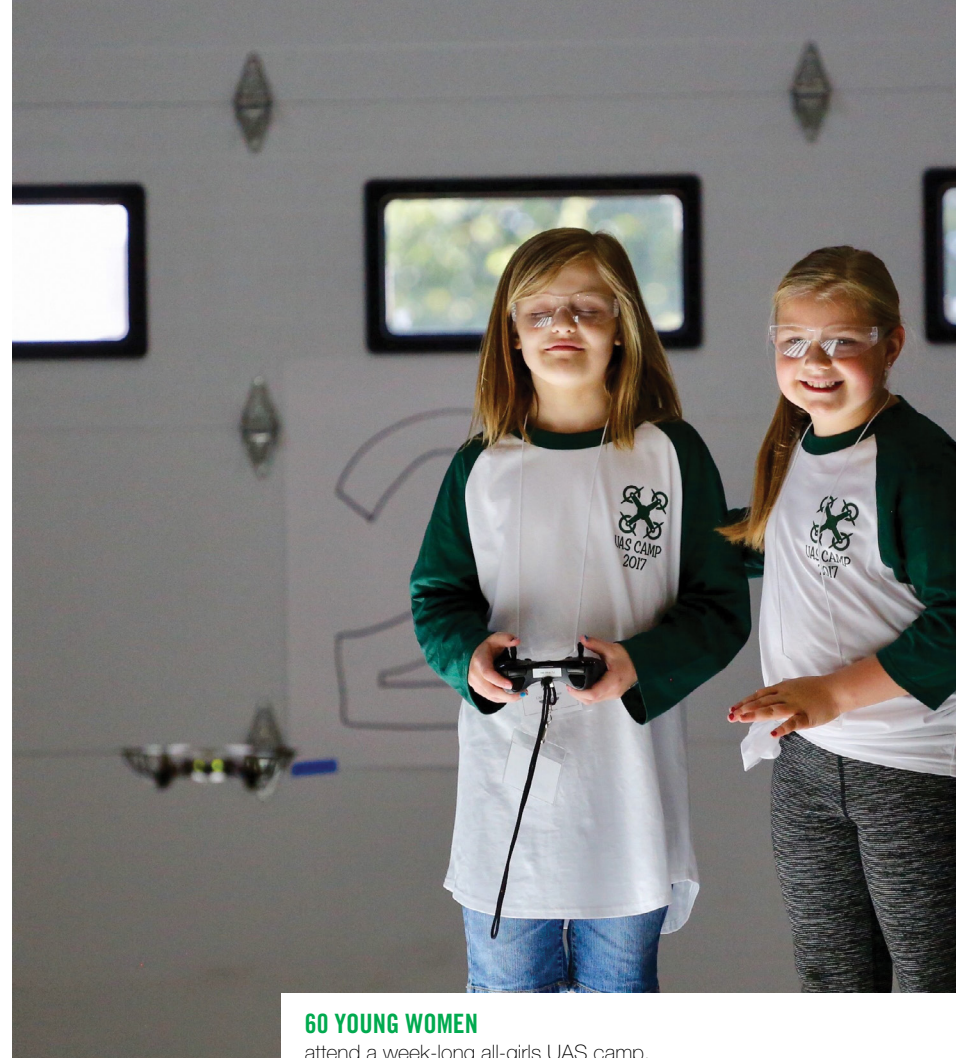
"Whether it was setting a young airman back on the right track after a bad decision or mentoring a peer through a challenging dilemma, taking the time to invest in the person was often all that was needed to give him or her the confidence to keep moving forward," said Brandt. "This camp, and our other outreach efforts, are simply extensions of this leadership philosophy."

An introduction to the science, technology, engineering, and mathematics

(STEM) fields was also one of the camp objectives. Using a guided experiential learning process, the campers spent five half-days in an aviation training environment, learning basic and advanced small-UAS flight skills, as well as leadership, teamwork, and collaboration life skills. The campers graduated with the resources to solve complex problems and the confidence to approach subsequent life challenges with a "Fight for the Yes!" mental model.

The capstone of each camp session was an airshow, choreographed and set to music, performed in front of parents and family members. The campers flew and moved with their small UAS in unison, with 30 aircraft airborne in the flight lab at a time. The young women even put their maintenance and troubleshooting skills to the test during the capstone performance, as a few aircraft malfunctions required the pilots to safely recover the UAS, correct the problem, and then rejoin the performance, all in sync with the moving pilots and aircraft around them.

UAS Camp 2017 wasn't a one-off event. Amanda and her spouse (fellow UND assistant professor and USAF retiree) Phil Brandt, partnering with



60 YOUNG WOMEN

attend a week-long all-girls UAS camp.

Photos by Philip Brandt

various staff members, students, and volunteers, have provided similar hands-on UAS education and training to over 900 children and young adults in the past year.

Their latest effort found them embedded at Discovery Elementary School in Grand Forks for three full days. During this time, they provided every student, from kindergarten through fifth grade, the chance to interact with a small UAS. The student's reactions were overwhelmingly positive.

"Those were physically and mentally intense days," said Amanda, "but the smiles on the kids' faces for the chance to get hands-on with technology that is rapidly integrating into and changing our society was well worth the effort."

To better serve the outreach efforts, Amanda recently established the UAS KIDS INC non-profit organization. "We don't even have a web presence yet, we've been so busy, but we're getting there. We've just been more focused on getting the technology in the hands of the kids."

"It's more than flight skills," Amanda continued, "It's coding, developing a fluency in autonomous systems, and knowing how to interact with the

systems to achieve the maximum effectiveness of human and machine teaming. Phil and I have almost two decades of combined experience with large autonomous systems, through our time flying the RQ-4 Global Hawk. We just want to continue the investment our country made in us by passing on these lessons to the next generation."

The next UAS Camp for young women is scheduled for the summer of 2018, made possible by a grant from the Grand Forks Community Foundation Women's Fund and support from UND Aerospace. UAS KIDS INC is now partnering with Grand Forks Public Schools to map an autonomous system education integration path for all the students in the district.

—Philip Brandt

FROM THE ARCHIVES

FRIDAY, MARCH 5, 1965

Says Odegard

Club Offers Inexpensive Flying

By LLOYD EVERSON

General aviation is no longer a luxury or dangerous hobby which few can enjoy, but rapidly is becoming a highly desirable vocation of a college graduate. With transportation the largest industry today and aviation its

biggest contributor, this fact readily can be explained. The UND Flying Club is set up to encourage and develop interest in flying among UND students and faculty at nominal rates. The club offers an average savings of about \$5 per hour

of flight time, when compared to regular commercial training rates. "It also offers a unique, qualified and inexpensive approach to flying, unparalleled in the area," according to John Odegard, club member and flight instructor.

The three planes pictured belong to the club and are used exclusively by its members. Qualified flight instruction and ground school training can be acquired through membership in the organization. Any interested UND student or faculty member interested in aviation may join. No previous flight experience or ground school is required and the student pilot often may "solo out" after an average of only nine hours of instruction.



HAVING COMPLETED their first solo flight, Lloyd Everson and Dave James experience the "tail-cutting" ritual, performed after the first solo flight. John Odegard, flight instructor, is completing the ritual on James' shirt, while Everson waves his in the air.

SANDRA PRESTON and instructor James Montgomery go over a check list in the cockpit of a Cessna 150 belonging to the UND Flying Club. She recently became the first Flying Club coed to fly solo.

Coed's Solo First for Club

University of North Dakota junior Sandra Preston became the first girl in the UND Flying Club to fly solo recently when she went up in a Cessna 150, one of four Flying Club planes. "Solo is a completely different feeling than being with somebody," said dark-haired Miss Preston, "you're all alone." She joined the flying club only last August, but practiced frequently with her instructor

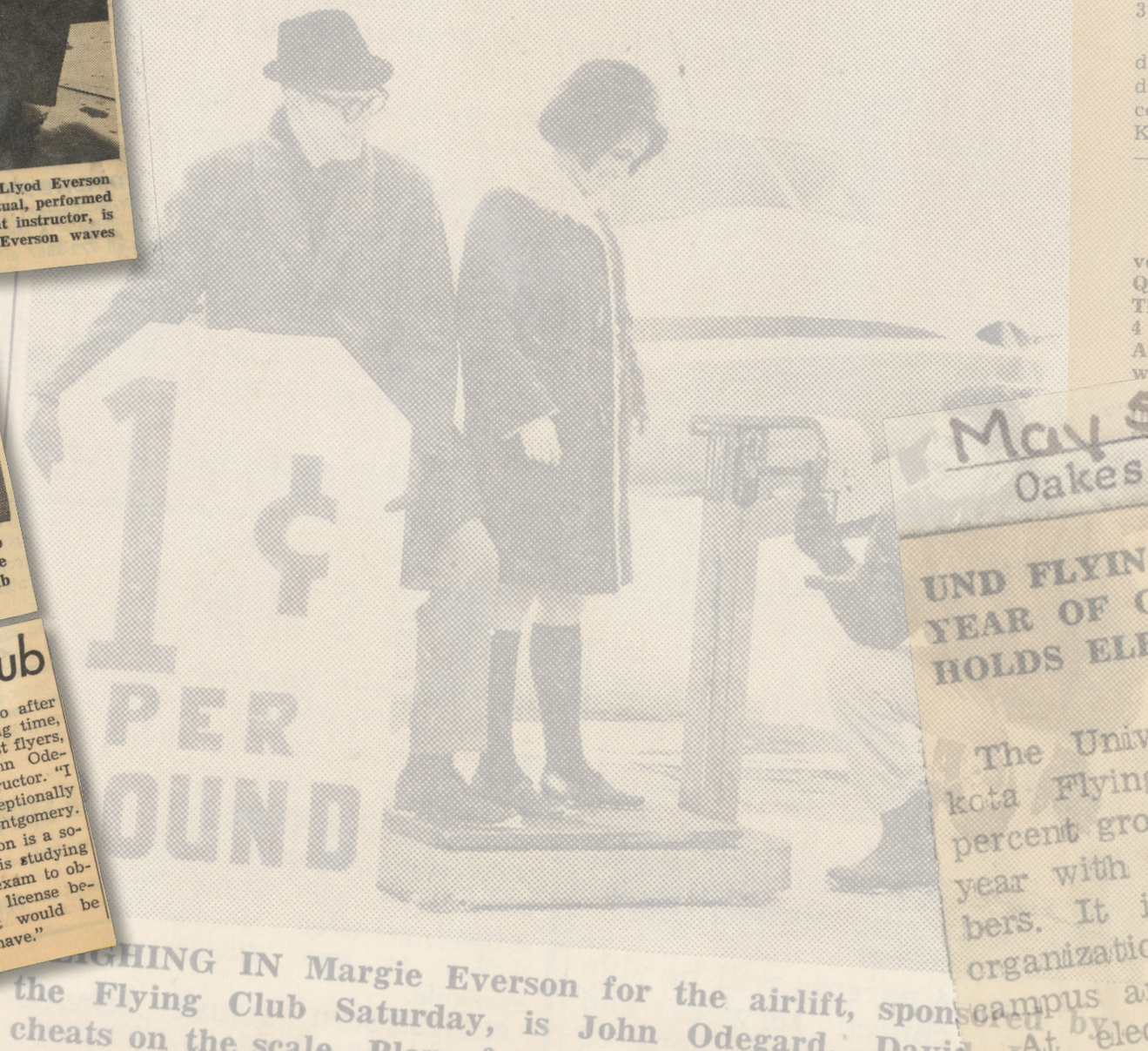
James Montgomery to solo after nine hours of dual flying time, less than average for most flyers, said club president John Odegard, also a flight instructor. "I thought she was exceptionally sharp," commented Montgomery. Although Miss Preston is a social work major, she is studying to write her federal exam to obtain a private flying license because she thinks it would be "fun and useful to have."

THE DAKOTA STUDENT

'Penny - A - Pound'



This airplane will carry students aloft for a penny a pound Thursday and Friday. The penny-a-pound lift is sponsored by the UND Flying Club. Anyone interested can meet at the University Center's main desk from 1-6 p.m. for rides to the airport.



May 5
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the Flying Club Saturday, is John Odegard. David
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Meet chairman Donald Johnston, Crystal, reported 400 college and university students representing up to 40 clubs across the nation participated in the competition at Boulder, Colo.

Meet chairman Donald Johnston, Crystal, reported 400 college and university students representing up to 40 clubs across the nation participated in the competition at Boulder, Colo.

Many times that number
have used club planes for in-
struction to the point of solo
flight, said Odegard.
About 40 hours of flying time

Teacher 'Flies Off' But Not
At Pupils, She's Licensed Pilot

MRS. LINDA WALKER, first woman in the University of North Dakota Flying Club to get her private pilot's certificate, is shown with her instructor, Don Johnston, club president. Her husband, Warren, has soloed and completed 20 of the 40 hours necessary for a license.

1968

Aviation Program

John D. Odegard starts up an aviation program with 12 students, two faculty, and two aircraft.



1970

First Graduates

The Aviation Department graduates its first students, all five earning B.S. degrees in Aviation Administration.

Control Tower

Grand Forks gets its first control tower and the FAA allows UND student controllers to assist in the tower.

1974

Weather Modification

Weather modification becomes part of the Aviation curriculum.

Weather Radar

The Aviation department purchases a WR100-5 weather radar.

1975

Frasca Simulators

UND adds Frasca Simulators to its training fleet.

1976

Scholarships

The first Aviation Scholarships Banquet is held, with Bryce and June Streibel endowing the department's first scholarship fund.

1981

Helicopter Training

Helicopter training begins with five students and two helicopters.

Meteorology

The meteorology academic program is implemented.

1982



1986

UNDAF

The UND Aerospace Foundation is established as a non-profit entity to commercialize the research and training activities of the college.

Atmospheric Sciences

The Department of Atmospheric Sciences is formed.

1987

Growth

The Aviation Department grows to 1,200 students and 70 aircraft.

1988

SPECTRUM

UND develops SPECTRUM, an ab-initio training curriculum, using it to train 24 China Airlines students.

ATRC

The Aviation Training Research Center (later renamed Ryan Hall) is dedicated.

1989

Physiology

The Aerospace Physiology program is created with the installation of an Air Force-donated altitude chamber.

1991

Advanced SPECTRUM

The Advanced SPECTRUM curriculum provides turboprop training for China Airlines.

Air Traffic Control

A Bachelor of Science degree in Air Traffic Control is first offered.



2002

Accident Investigation

The UND Aerospace Foundation and the Airline Pilots Association team up to offer UND's first accident investigation course.

Flight Hours

The Odegard School sets records, conducting over 100,000 flight hours in a fiscal year for the first time, and flying 12,775 hours in a single month.

Hall of Fame

Tom Clifford is inducted into the North Dakota Aviation Hall of Fame.

2003

360°

UND begins using a 360° MaxSim tower simulator for air traffic control training.

2004

Line Support

The James Ray Line Support Facility is dedicated at the GFK International Airport.

2006

Atmospheric Sciences Ph.D.

The Atmospheric Sciences department offers a Ph.D. degree.

ESSP

The Earth Systems Science & Policy department offers M.S. and Ph.D. degrees.

Space Suit

The North Dakota eXperimental 1 (NDX-1) Mars space suit prototype is completed and tested in the ND Badlands.



2009

UAS

UND offers an Unmanned Aircraft Systems degree, the first in the nation.

2013

ILMAH

Space Studies graduate students complete the first mission in the

1967

Center for Aerospace Sciences

The Aviation, Computer Science, and Atmospheric Research programs are reorganized into the “Center for Aerospace Sciences.”

1984

CASI

The first on-campus aerospace building, CAS 1 (later renamed Odegard Hall) is dedicated.

Buzz Aldrin

Buzz Aldrin is named professor and director of the Space Studies department.

Space Studies

The Space Studies Masters degree program is approved.

Aerospace Camp

The first annual International Aerospace Camp is held.



1985



John D. Odegard named Dean

Previously acting as Aviation Department Chair and Professor, John D. Odegard is named Dean of the Center for Aerospace Sciences.

CAS II

CAS II (later renamed Streibel Hall) is dedicated.

Flying Team

The UND Flying Team wins its first NIFA Championship, a feat they would accomplish again 15 times over the next 25 years.



1992

Clifford Hall

Clifford Hall is dedicated.

RWIC

The Regional Weather Information Center begins operations.

UND Aerospace

The college and aerospace foundation together adopt the name “UND Aerospace.”

1994

PHX Flight Training Center

Aviation classes begin at Williams Gateway Airport in Mesa, AZ, the school's first Flight Training Center.

1998

JDOSAS

The Center for Aerospace Sciences is renamed the “John D. Odegard School of Aerospace Sciences” soon after Dean and founder John D. Odegard passes.

Ryan Skywalker

The skywalk over 42nd Avenue connecting Clifford Hall to Ryan Hall is dedicated.

MS in Atmospheric Sciences

A Master of Science degree in Atmospheric Sciences is first offered.

1999

Hall of Fame

John D. Odegard is inducted into the North Dakota Aviation Hall of Fame.



Bruce Smith

Bruce Smith is named as the second dean of the Odegard School.

2001

MS in Aviation

The school offers a Master's of Science degree in Aviation.

ATC Simulators

UND begins using the first ever simulator that combines tower, terminal radar, and en route radar into a single integrated system.

Enrollment

Aviation enrollment grows to 1,580 students.

Inflatable Lunar/Mars Analog Habitat.

Aerospace Sciences Ph.D.

The Aviation and Space Studies departments create the Aerospace Sciences Ph.D. degree.

Air Race Classic

A UND team enters the all-women Air Race Classic for the first time.



2015

Flight Data Monitoring

Flight Operations begins using FDM technology.

Altitude Chamber

The Altitude Chamber gets a \$150,000 overhaul.

2016



Paul Lindseth

Paul Lindseth is named as the third dean of the Odegard School.

SMS

UND Aerospace achieves active conformance status for its Safety Management System.

Robin Hall

Robin Hall is dedicated.

Aerobatics

The UND Aerobatics team wins the Collegiate National Championship for the 9th consecutive year.



2018

50 Years

UND Aerospace celebrates its 50th anniversary.

JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES FROM THE FIRST CLASS

Bob Leppke remembers being in John Odegard's first aviation class in 1968, and the passion that inspired 50 years of aviation at UND.

*For Intro to Aviation - Spring 1968
First Aviation Course taught at UND.*

Robert Leppke:

The results of the FAA exam were received too late to be considered as part of your final grade.

Unfortunately, about 25% failed the FAA exam which is partly due to my lack of emphasis on areas pertinent to the exam.

Happily, the remainder passed with some people receiving grades in the high 90's. The two people with the highest grades were non-pilots with no flight experience and must have exerted much effort.

I hope you have enjoyed the Intro to Aviation course and receive some future benefits.

Sincerely,

John D. Odegard

Your final grade is A.

Bob Leppke remembers when he was first introduced to John Odegard. Leppke was a senior at UND, majoring in business, with one semester of studies left to complete. He was looking for something different than the usual business courses and noticed an Introduction to Aviation course.

"Growing up on a farm southwest of Carrington," Leppke explained, "I was always interested in airplanes. I built many model airplanes and enjoyed watching a neighbor fly his Piper Cub over our farm. However, I never had the opportunity to experience flight."

Not knowing what to expect, Leppke and 11 other students went to the first UND aviation class, located in a small classroom in the UND law building.

"On the first day of class, John gave us a detailed plan for the course and listed all the materials that would be needed. I was so excited about the class that I immediately headed over to the bookstore to get what was needed. He told us that the course would prepare us for the FAA private pilot written exam, which would be part of our class grade."

The class was made up of students with a mix of experience, some having no aviation background and some who had already started flight instruction. Leppke remarked that growing up on a farm gave him an appreciation for the technical aspects of the course, so he felt it was a good fit.

"John brought a level of enthusiasm to each class that made learning each topic exciting. I knew it had real application potential so I wanted to do my best," Leppke remembered. "As I look back now, there is no doubt that his passion for aviation was rubbing off on me. I think that's why the class had such an impact on me."

"I wondered during the semester if I should take flying lessons," said Leppke. "But I was so overloaded with everything else that I decided to just focus on the class." Leppke received an A as his final grade in the course.

"John stood out from all other instructors that I had during college," Leppke explained. "He wanted each student to excel and was always there to answer questions." The only college books and class notes that Leppke has kept from his time at UND were from John's class. "Every time I review them, they remind me of John and my aviation days at UND."



May of 1968 found Leppke with some free time on his hands before graduation in August and reporting for Army service in November – the perfect opportunity to get his private pilot's license.

Assured by Odegard that it was possible to complete all of the license requirements before November, Leppke began taking flying lessons through the UND Flying Club. One of the invoices Leppke kept shows that he flew 10 hours in September, for which he paid \$85.80. He completed flight training in November of 1968 and was issued his private pilot's license, five days before leaving for the Army.

During his time in the Army, Leppke continued to correspond with Odegard and learned that he was putting together a curriculum for an aviation administration degree. Leppke's interest in aviation was sparked again, and Odegard encouraged him to return to UND for a second degree.

In August of 1970, Leppke and his wife returned to UND where he spent the academic year studying air transportation, airline operations, advanced instrument technology, airport management and other aviation-related subjects. Unfortunately, as the school year ended, Leppke was two credits short of earning the degree, and he and his wife decided it was time to look for employment.

After being turned down for airport and airline administration jobs due to a deep recession in the airline industry, Leppke landed a job in information technology. He spent the rest of his career in information technology and software engineering, working and living in Chicago, Boston and Seattle, eventually retiring in 2010. Where ever he went, he often shared the wonderful opportunities that the UND Aerospace program offered.

"Earning my pilot's license and completing the aviation course had a profound effect on me," Leppke remembers fondly. "It allowed me to leave UND with a level of confidence that I would not have had without those experiences. Having an instructor like John to encourage me, promote excellence, and instill confidence – those are the things he left with me. I will forever be grateful to John."

–Jena Pierce

“As I look back now, there is no doubt that his passion for aviation was rubbing off on me. I think that’s why the class had such an impact on me.”
BOB LEPPKE '68

MO	DA	YR	AIRCRAFT NUMBER	RECEIPT NUMBER	HOURS	AMOUNT
9	7	68	N6232S		01.0	8.00
9	8	68	N6232S		01.4	11.20
9	15	68	N23377		03.6	28.80
9	23	68	N6232S		02.5	20.00
10	9	68	N6232S		01.6	12.80
						73.80 CR
						5.00
CREDIT 9495						
TOTAL DUE						85.80



UND'S SCANEAGLE INSTRUCTOR CREW

gathers for a photo during a May 2017 flight. Left to right: Erin Roesler, Trey Langaas, Paul Snyder, James Moe and Alex Volberding.

Photo courtesy of Paul Snyder

ANOTHER FIRST IN FLIGHT ODEGARD SCHOOL

UND UAS degree first to be accredited under new criteria

On July 21, 2017, the Aviation Accreditation Board International (AABI) voted to grant accreditation to UND's Unmanned Aircraft Systems (UAS) degree, making it the first UAS degree program accredited by AABI under newly established UAS criteria.

"It's the tradition of the Odegard School to push the envelope in making sure we are keeping up with societal needs as far as what's going on in the UAS industry," said the school's dean, Paul Lindseth. "It speaks to our history – a tradition of excellence, the entrepreneurial spirit and leading the collegiate environment in degree programs. It's pretty exciting."

"We have had many firsts in our department," said Aviation Department Chair Jim Higgins. "We were the first in the country to start an undergraduate UAS program. Now we are the first UAS program to become accredited under the new criteria. We see tremendous growth ahead in the department, and with that growth will come continued opportunities for our students."

UND Assistant Chair of UAS Paul Snyder says the accreditation process is a chance to look at the program and make sure it is aligned with the current needs of the industry. He said a portion of the AABI's site visit this year was a conversation with industry leaders about future challenges.

"When you're up front, you have an opportunity to impact what the rules and policies are, and be a part of those solutions," he said. "This accreditation relates back to the quality that we want our students to know they'll be getting when they come here, and that's not something that everybody's going to have."

AABI's accreditation criteria also includes standards regarding a strong liberal arts foundation for graduates. Higgins says his department works hard to provide an outstanding learning experience, and flight skills are only the beginning.

"We know the aviation leaders of tomorrow will

"It speaks to our history – a tradition of excellence, the entrepreneurial spirit and leading the collegiate environment in degree programs. It's pretty exciting."
DEAN PAUL LINDSETH

have to interact with and understand the world in ways that far exceed a simple technical outlook," Higgins said. "Our students will need critical thinking skills, the ability to work effectively within teams, the ability to work with people from different backgrounds and cultures, and the wisdom to continually improve themselves through lifelong learning."

The interdisciplinary potential of UAS is one thing Snyder says he loves most about his field, and UND creates a perfect environment for students to utilize UAS in solving problems in engineering, space studies, biology and beyond.

"Now that we've been accredited, industry and students know that we have the breadth of knowledge to provide the quality of education needed, which plays well into our future success," he said.

Accreditations for the Odegard School's Commercial Aviation and Air Traffic Management degrees were also reaffirmed, as they have been since AABI was established in 1992. In addition, the College of Business and Public Administration was recently reaccredited by the Association to Advance Collegiate Schools of Business, ranking it in the top five percent of the world's business schools. UND's Aviation Management and Airport Management degrees fall under that accreditation.

"When it comes to accredited programs in the professions, it really demonstrates the willingness of a program to expose themselves to external opinions to determine whether or not they are meeting the standards set by their colleagues at other universities," Lindseth said.

And in the case of standards set for the future of aviation, namely those of the unmanned industry, UND is not only meeting them, but setting them.

–Kaylee Cusack



EN ROUTE TO A COMPETITION

Front left; Tim Nicosia, Front right; Steven Roche and Back; Justin Theriault.

Photo courtesy of UND Flying Team

SAFECON REGIONAL

The UND Flying Team dominated the 2017 Region V SAFECON in Dubuque, Iowa, last October. Top Pilot and Top Scoring Contestant honors went to Steven Kinney, Cooper Pallasch, William Caturia, Timothy Nicosia, and Cannon Lin. Many team members won their respective contests:

UND FLYING TEAM

Adam Douville | Minnetonka, Minn.
Ben Eidem | Ossining, Minn.
Benjamin Dallow | Tiverton, R.I.
Brandon Peterson | Robbinsdale, Minn.
Brendan Korringa | Monee, Ill.
Brian Shamblen | North Kingston, R.I.
Cannon Lin | Taichung City, Taiwan
Cooper Pallasch (Captain) | Tiverton, R.I.
Damien Gehler | Fargo, N.D.
Garrett Turco | Richboro, Pa.
Jason Preston | New London, P.E.I.
Joseph Sorrentino | Lee, Minn.
Kunal Aujanani | Eagan, Minn.
Paul Kraemer | St. Cloud, Minn.
Ryan Fitzgerald | Albuquerque, N.M.
Sarah Gould | Forest Lake, Minn.
Steven Kinney (Captain) | Minneapolis, Minn.
Steven Roche | Rancho Santa Margarita, Calif.
Tim Nicosia (Safety Officer) | Federal Way, Wash.
Tyler Pursley | Grand Forks, N.D.
William Caturia | Hastings, Minn.
Alex Browne (Coach) | Nazareth, Pa.
Lewis Liang (Advisor/Coach) | Grand Forks, N.D.

AIRCRAFT PREFLIGHT INSPECTION

1st Timothy Nicosia
2nd Cooper Pallasch

GROUND TRAINER

1st William Caturia
2nd Steven Kinney

AIRCRAFT RECOGNITION

1st Steven Roche
2nd Timothy Nicosia
3rd Damien Gehler
4th William Caturia
5th Brendan Korringa

POWER-OFF LANDING

1st William Caturia
2nd Timothy Nicosia
3rd Steven Kinney
4th Cooper Pallasch
7th Benjamin Eidem

COMPUTER ACCURACY

1st Steven Kinney
2nd Brian Shamblen
3rd Cannon Lin
4th Cooper Pallasch
5th Brandon Peterson

SHORT FIELD LANDING

2nd Cannon Lin



AEROBATIC TEAM

captured at Pioneer Field in Oshkosh, Wisconsin.

Photo courtesy of Mike Lents

NATIONALS AEROBATIC TEAM

The UND Aerobatic Team concluded their season last September over the skies of Oshkosh, Wis., at the International Aerobatic Club (IAC) U.S. National Aerobatic Championships. The students represented the professionalism, inspiration, determination, and excellence that UND Aerospace is known for.

The competition draws a diverse group of aerobatic pilots from around the nation, including professional airline, corporate, airshow and military pilots, business owners, engineers, programmers, and many others that make perfecting precision aerobatics their goal.

In IAC competition, there are five categories of increasing difficulty. UND's Super Decathlon aerobatic aircraft is capable of competing in the first two categories, Primary and Sportsman. It was the only Super Decathlon present at Nationals and was showcased by the prowess and professionalism of the UND Aerobatic Team.

Competition in each category consists of three flights. Primary category competitors fly the same predetermined aerobatic sequence three times. The Sportsman category allows competitors to develop their own sequence for the second and third flights.

Overall, Elise Wheelock finished first in Primary with Jarrett Croy placing a close second. Alex Tally ranked second in Sportsman among the top U.S. pilots. During the awards banquet, Wheelock, Croy and Tally received their trophies from aerobatic performers and champions Patty Wagstaff and Matt Chapman.

Team Coach Michael Lents competed in the Advanced Category, medaling third during the Free Program and earning a spot on the U.S. Advanced Aerobatic Team representing the U.S. at the World Advanced Aerobatic Championships in Romania in August, 2018.

The UND Aerobatic Team participates as part of IAC Chapter 78 out of Minneapolis. Due to the performance of the UND team and other top competitors from that chapter, Chapter 78 has earned the top scoring Chapter Award at Nationals the second year running.

Throughout the week, team members received congratulations and commendations on their poise, professionalism, and airmanship, with many remarking that any time they see a young person interested in aviation, they steer them towards UND.

—Mike Lents

UND AEROBATIC TEAM (LEFT TO RIGHT)

Michael Lents | Coach

Elise Wheelock | Boston, Va.

Jarrett Croy | Webster, Minn.

Liz Birch | Decatur, Ill.

Alex Tally | Ojai, Calif.

Dustin Lenz | Madison, Wis.

Alex Hunt | Hallock, Minn.

James Jacobson | Grass Valley, Calif.

Jacob Githens | St. Cloud, Fla.

Mitch Oswald | Winnipeg, Manitoba, Canada

AEROSPACE ALUMNI ADVISORY BOARD



JOEL AIKEN '92
President, UND AAAB
joelmaiken@gmail.com

As I think back to winters in Grand Forks, I recall seeing “-49, Go Fly!” written on the SOF status board in large print. In fact, I’m not sure I knew how to fly if it wasn’t windy with blowing snow. We all share a common bond and a special relationship as former, present and future UND alumni. For many of us, our time at UND was the start of the rest of our lives, and the people who launched us on that journey are forever in our memory.

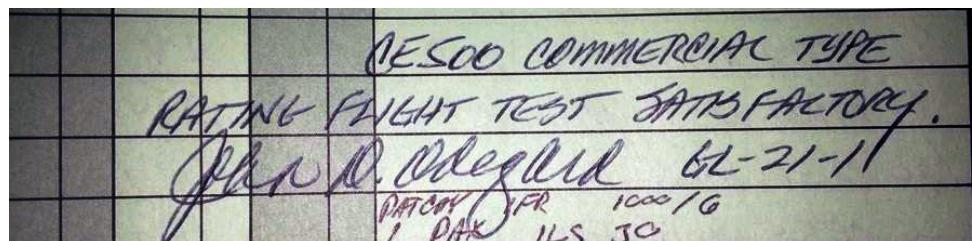
This is a special year as we celebrate the 50th Anniversary of the Odegard School. For those of us who had the great honor of knowing John, I think we can all agree that he was a very remarkable person. His vision, hard work and commitment helped forge a world class program, and his foundational and uncompromising perspective is still the driving principle behind what happens daily at the Odegard School.

Last year we were privileged to hold our fall meeting at Sun Country Airlines Corporate Headquarters in Minneapolis, Minn. We owe a huge thank you to our incredible host Stephanie Raley who coordinated the event. The facility is newly completed, very comfortable and beautifully finished. It was a great opportunity to connect with some UND alumni at Sun Country and with the UND leadership. Our spring meeting is scheduled for April 12th to coincide with SAMA Weekend at UND.

At the fall meeting, new officers were elected: Joel Aiken ‘92, President; David Barnes ‘01, Vice President; Cameron Beitler ‘10, Secretary; and John Klinger ‘90, Treasurer.

In addition, we have three chair positions to assist with Membership (Brad Secrist), Scholarship (Tina Anderson) and Online Course Development (Jason DuVernay). New executive members are elected every two years, with the outgoing president serving as an advisor to the new board leadership.

Corey Stephens ‘99 has filled the president’s position since 2015 and I would like to take this opportunity to thank him for his leadership and dedication to the board and UND. I also want to thank Jennifer Storm ‘02 ‘04 for her work as vice president. Jennifer has accepted a leadership position outside of aviation, but we are fortunate to have her experience and insight as a continuing board member. My sincere thanks to both Corey and Jennifer.



As we celebrate 50 years of history at the Odegard School, I encourage each of you to share your memories of UND with the next generation of professionals who will carry on the legacy as UND alumni. Above is an entry from my logbook that I would like to share. It’s from a day I will always remember, from a man I will never forget.

Respectfully,
Joel Aiken ‘92



LEON'S LEGACY

UND Chester Fritz Distinguished Professor Leon Osborne remembered as passionate weather pioneer

PRESIDENT KENNEDY AND LEON OSBORNE
at commencement in 2017.

Photo courtesy of Pres. Kennedy

**“Leon always
will be one
of the **star**
professors on
this campus,”
PRESIDENT KENNEDY**

Leon Osborne Jr. died Tuesday, Oct. 24, 2017, after a yearlong battle with pancreatic cancer. He was 63.

“Leon was a visionary and a man of the highest integrity,” said Mike Poellot, chair of the Department of Atmospheric Sciences and longtime friend of Osborne’s. “He was a man of family and strong faith. He was down-to-earth, but dreamed big and worked hard to see his dreams come true.”

The University celebrated Osborne’s life in October of 2016, soon after he received his cancer diagnosis. More than 100 people gathered to honor Osborne and his achievements.

UND President Mark Kennedy told the crowd, “Leon will always be one of the star professors on this campus.”

Osborne worked with Poellot to envision and build what is now the Department of Atmospheric Sciences. He led significant research efforts with the Federal Aviation Administration, the Bureau of Reclamation and the Federal Highway Administration.

“His early research efforts really helped sustain and grow the Odegard School in its early days,”

Poellot said.

Osborne directed the Regional Weather Information Center (RWIC) and led the development of a system eventually known as “511” – a number that drivers can call for on-demand weather and road condition information.

At his core, Osborne was a teacher. He was the director of both the undergraduate and graduate Atmospheric Sciences programs, and his experience with TV weather jump-started a student broadcast meteorology program, which Associate Professor Fred Remer now leads.

“It is amazing the number of alumni and former students that have reached out to the department and to his family over the past year to offer thanks for the motivation, inspiration and education that Leon provided them,” Remer said.

Osborne’s friends and colleagues have established a scholarship endowment in his honor, the Leon F. Osborne Science and Society Award. Memorials can be submitted online (<http://bit.ly/leon-memorial>), or by check to: “UND Foundation” (memo: Leon Osborne Memorial) 3501 University Avenue Stop 8157, Grand Forks, ND 58202-8157.

–Kaylee Cusack

COLOR OF THE OCEAN

Professor Xiaodong Zhang spoke recently at the UND Faculty Lecture Series. The Earth System Science & Policy researcher discussed his work in examining the color of the ocean – why it appears blue, why the color shifts in different environments, and how that knowledge can be practically applied to larger scientific efforts.

Zhang's research began with an ancient question, "Why is the ocean blue?" This question has puzzled artists, philosophers and physicists for centuries. It was the mid-19th century before true studies of how light interacts with matter really started to evolve.

"Water molecules tend to scatter more blue light than red light," Zhang explained. "The absorption of water simply makes this blue more pure, so the blue color is caused by water molecules that scatter light back to the eye."

Zhang found that different particles in the water – including bacteria, viruses, zooplankton, minerals, and even bubbles – interact with light in different ways, creating different colors. For example, in coastal areas with high concentrations of phytoplankton, the water appears greener because of the spectral absorption rates caused by photosynthesis.

"Phytoplankton is a major player in the global carbon cycle, and this is why we're so interested to know how much phytoplankton exists in the ocean," he said.

The scientific field of ocean optics is a fairly new discipline, but Zhang says it's becoming more heavily pursued because of its growing applications.

International scientists are now using enhanced instruments both in the water and in space to observe the water's particles from more angles, determining their size, composition, shape and structure. This constructs a more complete picture and reduces uncertainty in what is truly contained in the oceans' depths.

In terms of varying particulates and the ways light is scattered by them, Zhang said, "We need to measure it, and we need to retrieve the information from the measurement." That's the ultimate goal of his research team, supported by funds from NASA, the National Science Foundation, and the U.S. Department of Agriculture.

"This is what a university is supposed to do – share its research results with the public and with friends and faculty from other discipline areas," Zhang said. "It doesn't matter where you are – it's people that make a change and do the research. The location doesn't matter."

—Kaylee Cusack



XIAODONG ZHANG

on Devils Lake, North Dakota.

Photo by Jackie Lorentz

UPCOMING EVENTS

Check for updates on all our 50th Anniversary events at aero.UND.edu/50th

MARCH

International Women in Aviation Conference
22-24 | Reno, Nev.

UND Aviation Alumni & Industry Reception
23 | 6:30PM – 8PM | Peppermill Resort, Reno, Nev.

APRIL

SAMA Career Fair
12-13 | Grand Forks, N.D.

UND Aviation Family Weekend
14-15 | Grand Forks, N.D.

JULY

EAA Airventure
23-29 | Oshkosh, Wis.

UND Aerospace Alumni & Industry Reception
25 | Hilton Garden Inn, Oshkosh, Wis.

SEPTEMBER

UND Potato Bowl & Homecoming
17-22 | Grand Forks, N.D.

50th Anniversary Banquet & Celebration
21 | Alerus Center, Grand Forks, N.D.



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UND HOSTS NATIONAL SPACE SHOWCASE

Delegates converge on UND for
NASA Space Grant Consortium
conference



**MARISSA SAAD, CHAIR JAMES CASTLER, ASSOCIATE DEAN BETH
BJERKE, CAITLIN NOLBY & DEAN PAUL LINDSETH**

UND Aerospace leadership joined the NDSGC team in welcoming college students, faculty, and NASA personnel from across the nation.

Photo courtesy of UND Space Studies

UND recently hosted the national NASA Space Grant Consortium conference. Lt. Gov. Brent Sanford addressed the group of about 200 on Thursday, as did Grand Forks Mayor Mike Brown and a number of other NASA officials.

“This is a great opportunity for delegates to experience North Dakota,” said Marissa Saad, coordinator of the North Dakota Space Grant Consortium, who spent nearly a year planning the conference with Deputy Director Caitlin Nolby and others.

“It’s a rare opportunity to get representatives from every Space Grant Consortium in the nation,” said Nolby.

It was the first time UND has hosted the conference, which offered some other firsts: interactive sessions and discussions with NASA officials, including Mike Kincaid, NASA’s Associate Administrator for Education.

“In the past, we’ve had a series of presentations from NASA headquarters,” said Barrett Caldwell, director of the Indiana Space Grant Consortium. “This year, we were able to hold discussions with Mr. Kincaid. He was accessible and the discussions were very good. That’s exciting.”

“It’s really fantastic to talk with a leader who has oversight of all areas of NASA education,” said Angela Des Jardins, director of the Montana Space Grant Consortium and vice-chair of the Space Grant Executive Committee. “To have him come and engage in small group discussions is an amazing opportunity for everyone.”

The NASA Space Grant Consortium, formed in 1989, is a national network of colleges and universities that offer opportunities to take part in NASA aeronautics and space projects.

“This event was a great opportunity to showcase both the hospitality of North Dakota and the capabilities of UND, the Odegard School, and Space Studies,” said James Casler, professor and chair of Space Studies. “We received a lot of great comments about the meeting, which we really appreciate. Caitlin and Marissa did an extraordinary job putting this all together.”

—Jan Orvik

STEFAN TOMOVIC

an electrical engineering major with a minor in computer science from Cold Spring, Minn. is a crew member on UND Space Studies' latest mission.

Photo courtesy of UND Space Studies

ONE SMALL STEP

UND Space Studies students confined to Lunar-Mars Habitat for 14 days in one-of-a-kind NASA-funded research mission

They call it "The Hab." And it just might be the first step for a mission to Mars.

The Inflatable Lunar/Mars Analog Habitat (ILMAH) was home to three graduate students and several NASA experiments for two weeks last fall.

It was UND's fourth ILMAH mission, funded by a three-year \$750,000 NASA EPSCoR grant. The goal is to further develop space technology.

"We are the only university in the United States to do this kind of research," said Pablo de León, professor of Space Studies, who is spearheading the project. "Our work is important to understand the complexities of deep space exploration. We're looking at the kinds of problems astronauts may encounter on a mission to Mars."

This latest mission features two new research modules for plant production and extravehicular activities.

Inhabiting the ILMAH during the mission were Joseph Clift, a Space Studies graduate student from San Dimas, Calif., Stefan Tomovic, an Electrical Engineering student from Cold Spring, Minn., and Prabhu Victor, a Space Studies master's student from Eden Prairie, Minn.

"I want to evaluate my reaction to a confined environment, as well as how team dynamics change throughout the mission," Victor said. "I believe this could help us learn about variables that increase or decrease stress and help improve team morale for future missions."

Other students serve in mission control and scientific/technical support areas.

This project continues UND's groundbreaking work in space studies. The department has incorporated human spaceflight into the curriculum since 2004, making UND one of the few universities in the world to offer human spaceflight-related courses.

"I do this because I love space," said de León. "For us, it's the first step to Mars."

—Jan Orvik



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