AEROCOM

JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES

SUMMER 2024

UNIVERSITY OF NORTH DAKOTA

AERO.UND.EDU

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COVER PHOTO **UND AEROSPACE'S SEAPLANE**


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Welcome to the Summer 2024 edition of the UND Aerospace Aerocom. Six months ago, we celebrated our Aerobatic Team winning their 11th National Championship. We're now able to add that our NIFA Flying Team has carried on the tradition started in 1985 and won their 18th National Championship in May in commanding fashion. Congratulations to both teams!

Atmospheric Sciences bids a grateful farewell to Fred Remer as he moves into retirement after many years of inspiring students with stories of his flying and helping many to start their careers in television meteorology. The department has been very busy launching weather balloons during the eclipse and chasing storms across the central plains at the start of the summer. They also worked through a large candidate pool and will bring in three new faculty this fall. Aaron Kennedy will be heading over to Iceland for a year of developmental leave and research.

Earth Systems Science and Policy celebrated their first graduate in the new Master's of Environmental Management program. This spring, the UND School of Graduate Studies held the second annual competition for students to showcase their research, and one of our ESSP Ph.D. students, Allison Hinton, won first place in the online division. Great job, Allison!

Our Space Studies students participated in a NASA competition this spring, and their projects will be launched to the International Space Station this fall. Then, in the spring, we will launch the first UND satellite for Rendezvous and Operations for Autonomous Docking and Servicing (ROADS). And, Dr. de Léon just received a patent for his 3D printing of space suit components.

We're moving ahead with upgrades to our air traffic control tower simulators with the plan to be one of the first Enhanced Collegiate Training Initiative schools that allows our graduates to proceed straight to an FAA job, bypassing the FAA Training Academy.

This summer, we are remodeling the basement of Robin Hall to accommodate some large UAS simulators and dedicated space for research, as well as secure storage for our sensitive components. Research opportunities continue to pour in as North Dakota continues towards being the first state with a Beyond Visual Line of Sight airspace, integrating UAS and airplanes into the National Airspace System.

At the airport, Jeremy Roesler has stepped up as the new director of flight operations, and Paula Bruse is the new chief flight instructor. We also said farewell to Brian Willis, our director of safety as he made the jump to Delta Air Lines. We thank him for all of his years of service to UND as a CFI, lead, assistant chief, and then leading our safety program to where it is today. Sanford Fogg recently arrived back at UND as the new director of safety.

While we continue to raise funds for the new Flight Operations Center, we completed the renovation of the Crookston Wing, opening up new briefing rooms and a classroom modeled in the style of the new building. Next time you're on campus, let us know, and we can show you the new space.

Thank you for your continued support of UND Aerospace. We hope you enjoy this issue and look forward to hearing from you.

ROBERT KRAUS | DEAN, JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES

UPCOMING EVENTS

JULY

22-28 EAA AirVenture - Oshkosh, WI
24 Alumni & Industry Reception - Oshkosh, WI
27-28 Fargo Airsho - Fargo, ND

AUGUST

2 UND Commencement - Grand Forks, ND
3 Williston AirShow - Williston, ND
21-23 OBAP 48th Annual Conference - Memphis, TN

SEPTEMBER

10-14 Potato Bowl - Grand Forks, ND
12-13 LPA Expo - Orlando, FL
21 Girls in Aviation Day - Fargo, ND & Eden Prairie, MN
23-28 UND Homecoming - Grand Forks, ND
25 UND Career Fair - Grand Forks, ND
27 UND Aerospace Hall of Fame - Grand Forks, ND

OCTOBER

15 Faces of the Industry - Grand Forks, ND
23 Space Operations Summit - Grand Forks, ND
24 Space Ag Conference - Grand Forks, ND
26 View UND Aerospace Saturday - Grand Forks, ND

DECEMBER

20 UND Commencement - Grand Forks, ND

UND FLYI

2024 NATION

18
National Championships

58
Years of Flying

696+
Members Since 1966

NG TEAM
NAL CHAMPS

TEAM MEMBERS

Left to right: Mikayla Weiss, Commercial Aviation; Max Schimelpfenig, Commercial Aviation; Nathaniel Dietz, Commercial Aviation and UAS Operations; Caroline Kelley, Commercial Aviation and Aviation Safety & Operations; Cole Yokoyama, Commercial Aviation; Alexis Wollum, Aviation Safety & Operations; Taylon Haecker, Commercial Aviation and Airport Management; Andreas Testerman, Commercial Aviation and Air Traffic Management; Hailey Olson, Commercial Aviation; Matthew Cleveland, Commercial Aviation; Carson Wells, Commercial Aviation. Not Pictured: Max Langerud, Commercial Aviation.

Read the full story!

A FAREWELL TO FRED REMER

From teaching every aviation student's favorite class, Aviation Meteorology, to flying UND's Citation research jet, there's almost nothing Associate Professor Fred Remer hasn't done during his time at the University of North Dakota. Having taught at UND for over 30 years, he has impacted generations of students and left a lasting mark on the program.

Background

While Remer began flight training at 16, his love for flying started years before that when he saw his older brother flying in the Civil Air Patrol. Remer originally wanted to fly fighters and would go out to his local airport and offer to wash the planes, hoping the owners would offer him a flight. He eventually succeeded and was offered to fly in a Piper Comanche 260C. Now, however, Fred is most known as an atmospheric sciences legend - so what got him into meteorology? As a kid, Remer was an afternoon paper boy. Out delivering papers one day, Remer got stuck in a thunderstorm. He thought it would be an excellent idea to learn how to forecast storms and realized that learning more about meteorology as a pilot would be helpful.

With a desire to fly and get a degree in meteorology, Remer went to the University of Oklahoma in Norman, OK, in 1977 for their Atmospheric Sciences program. There, he was involved as a student researcher, helping to develop Doppler radar at the National Severe Storms Laboratory, and was also part of OU's storm chase team. During his time at OU, Remer earned his instrument rating and commercial certificate, as well as his CFI and CFII. After graduating from OU, he attended the University of Wyoming in Laramie, WY, for his master's program. There, he was involved with microburst and wind shear research for NOAA's Joint Airport Weather Studies project as a technician on the university's King Air. He also ran the university's flying club with a Cessna 172. During his time at Wyoming, Fred took a gap year to travel across the Atlantic to Greece for a weather modification research project. Reflecting on his time there, he said it was "just awful" sitting on the beach on sunny days when not doing research.

Once back in Wyoming, he decided to fly for a freight operator based out of Cheyenne, flying Piper Senecas and Cessna 402s for about a year. While he originally wanted to be a commercial airline pilot, Remer said he's happy that things ended up working out as they did. Once he graduated from Wyoming, Remer came to UND.

Time at UND

Remer first met Mike Poellet, the then-chair of the Atmospheric Sciences Department, in 1986 at a conference Remer was speaking at. He expressed interest in cloud seeding and weather modification research and was hired in 1989 to teach contract students.

He began teaching Aviation Meteorology in 1990 and Intro to Synoptic Meteorology in 1991. With his flight experience, he was also involved as a stage check pilot from 1989 until 1994. That same year, George Hammond, the then-director of Flight Operations and chair of the Department of Aviation, hired Remer as an associate professor of aviation, a position he held until the flood of 1997. Between 1997 and 1998 Remer temporarily moved to Fargo working as the chief meteorologist for Weather Modification, Inc., running their domestic and international projects. However, he returned to UND full time in 2000 in order to spend more time with family. He also worked as a weekend meteorologist for the news channel in Fargo, a position he held until 2007.

On top of teaching, he flew the right seat in UND's Citation for icing and wind shear research. Eventually, he became the undergraduate Atmospheric Sciences program director when Leon Osborne stepped down.

Reflecting on his time at UND, Remer said that he doesn't necessarily have a favorite class that he's taught but that the chemistry of each class is what "makes" the class. He's enjoyed having fun over the years, like teaching his Instrumentation class how to make thermometers or sharing donuts with the juniors in his Thermodynamics class. This year in Instrumentation, for example, a student attached their thermometer to a drone and flew it around. The winning thermometer was attached to the KiwiBot named "Frederick," exemplifying Remer's personality. As for Aviation Meteorology, he wishes that the class could be less "death by PowerPoint," but without lab

33
years of service

300+
classes conducted

2,000+
hours of flight training

6,500+
students taught

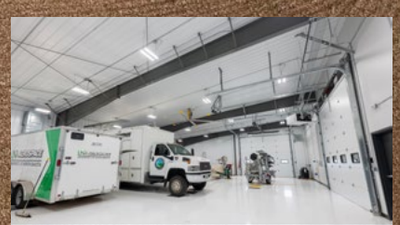
sections, that's the best way to expose students to the material. Over the years, as he gained experience flying and researching, Remer has added lots of material and content to his Aviation Meteorology classes. He says his content is overboard for what pilots need to know, but he believes that UND's role is to produce the best pilots possible and wants to do this part. If he had to change anything about his time at UND, Remer would have liked to keep flying. He fondly recounted that at one point, he had offices in Clifford Hall, Ryan Hall, and behind Dispatch at the airport. He misses teaching and seeing students at the airport and wants to encourage students to keep flying for fun during their time at UND.

Retirement

In the coming years, Remer plans to fly more. His Mooney recently had an engine overhaul, so he plans to stay busy flying cross-country to break it in. He also wants to get more involved with the local branch of the Civil Air Patrol. As for projects, he plans to restore a 1974 VW Convertible and to build a garden railroad with model trains around his backyard for his wife. He also expressed an interest in getting back into flight instruction.

Remer has undoubtedly had a lasting impact on UND Aerospace. The college and its students have been fortunate to learn from his wealth of experience. Each of Remer's classes is a symphony of jokes and fun, and we will miss his laugh echoing through the halls. We wish him the best in his future endeavors.

THE NEW GORMAN FIELD



This spring marked the beginning of UND Aerospace's use of the Gorman Field UAS Test Range to conduct unmanned aircraft systems flight training. This facility allows students and faculty to further their education, research, and training as the UAS program grows.

Gorman Field, made possible by the generosity of the Gorman family, was also partially funded by the UND Aerospace Foundation. The finished field consists of 33 acres just south of the Grand Forks Air Force Base and hosts a 12,000-square-foot facility.

"It's an excellent state-of-the-art facility for education and training," said Paul Snyder, director of UND's UAS Operations program. "It provides a highly professional, safe environment for our UAS Operations students to conduct training in areas such as UAS, counter UAS, commercial operations, and advanced air mobility while enabling students to continue to be engaged in UAS and autonomous systems research."

Gorman's goal is to help advance the growing UAS program at UND while also providing space for local UAS companies to fly. "The field has various features, including an observation deck for visual observers, a Detect radar system to help enable Beyond Visual Line of Sight (BVLOS) operations, a cement 30'x30' launch and recovery pad, and office space for ground control stations or electronic observers using the ground-based detect and avoid system."

"The whole building is centered around UAS operations," said UAS associate and student Stuart Hutt. "We have a dedicated room for the pilot and sensor operator with an instructor station and another room just for electronic observers. The rest of the building is setup nicely, too, with briefing areas and a giant hangar for storage. The whole set up makes operations easier and faster, giving us more time to focus on flying the aircraft."

In addition, the facility provides office and classroom space and hangar space for UND to maintain its UAS fleet. Since its completion earlier this year, students and staff have begun using the field.

"Gorman Field provides an excellent opportunity for many different types of UAS operations," said UAS associate and student Christopher Jungels. "One of the great features of the field is that it allows for multiple operations to take place at the same time because of its multiple ground control stations. This allows for a wide range of operations and research."

Discussion of a dedicated airfield initially began in 2009. UND faculty and staff have been working since that time to plan and implement the completion of Gorman Field.

"The enthusiasm of the faculty towards the completion of this facility must not go unnoticed," said Tracy Mitchell, UAS instructor and student. "Months of work behind the scenes are paying off, with student flights being conducted at a rate higher than ever and research taking place since the day Gorman Field was ready to conduct missions. Undoubtedly, the advancement of unmanned flight at UND would not be possible without the wonderful professors and directors valuing the growth of our program."

AVIATION & ATMOSPHERIC SCIENCES

SCHOLARSHIP CEREMONIES

2
ceremonies

$450,000+
in direct scholarships awarded

135+
students impacted

MAKE AN IMPACT

Wondering how you can make an immediate impact on students, faculty, and programs for the Odegard School?

Consider a gift of any amount to the Annual Excellence Fund! Your gift will support student travel to industry conferences and events like the annual UND Aerospace Alumni & Industry Gathering at Oshkosh and many other priority needs that arise throughout the year. If you've never made a gift before and don't know where to start, these impactful dollars are felt immediately and are always needed.

We do. *Together.*

Scan to Give Now

Your gift can be anything, but it means everything!
UNDfoundation.org/aero

WHAT KIND OF SEAPLANE DO WE OPERATE?

UND has a CubCrafters Top Cub. It features 180 hp Lycoming engine, a McCauley 82" climb prop, and Wipline 2100A amphibious floats!

WHEN DID WE GET THE SEAPLANE?

The Top Cub was donated in 2005 by James Ray. It has been operated on floats and wheels by UND both in Grand Forks and in Crookston, where UND operated an extension site in cooperation with the University of Minnesota Crookston until 2019. During its tenure, it has logged thousands of hours and over 10,700 landings.

HOW CAN STUDENTS TAKE THIS COURSE? WHAT RATINGS CAN THEY GET?

Students should enroll in our one-credit course. For more information, visit seaplane.aero.und.edu and fill out the student interest form. The course is in very high demand, and we only have ten seats available each year. There is no ground school, so to complete the course, they just have to do their flying. The course is taught under part 61, so students take their checkride with an FAA Designated Pilot Examiner. They can obtain their Airplane - Single Engine Sea (ASES) rating to their existing Private or Commercial Pilot Certificate, though we recommend waiting until after they've completed their Commercial Pilot training before taking the seaplane course.

WHERE DOES THE SEAPLANE FLY?

We have our own practice area to the southeast, which contains four lakes we use for training: Maple Lake, Lake Sarah, Oak Lake, and Union Lake.

HOW MANY STUDENTS HAVE GOTTEN THEIR SEAPLANE RATING THROUGH UND?

We've given seaplane training to 200+ students over the years.

WHERE IS THE AIRCRAFT STORED?

The airplane is hangared and operated out of Crookston Municipal Airport due to its close proximity to the lakes.

DO YOU HAVE ANY FUN FACTS ABOUT THIS COURSE?

Our longest-standing seaplane CFI currently instructing was given his seaplane instruction by John Odegard!

DO YOU HAVE ANY FUN STORIES FROM FLYING THE SEAPLANE?

I've never had a bird strike in the seaplane, but I have had a fish strike. We were starting the takeoff, and while at a relatively low speed, the fish jumped out of the water and hit the wing strut. Both the plane and the fish (as far as I know) were unharmed.

SUMMER FLYING

GET YOUR WHEELS WET!

Jason Bensley, Assistant Chief Flight Instructor, Answers Questions on UND's Seaplane Course

THE FUTURE OF FLIGHT OPERATIONS

Jeremy Roesler

In 1996, Jeremy Roesler graduated from the University of North Dakota with a bachelor's degree in Aviation Administration. In 2006, he earned his MBA from UND's College of Business. Today, Roesler is UND's director of Flight Operations.

How it Began

Roesler is originally from Bloomington, Minnesota. He grew up surrounded by airplanes and always knew he wanted to do something related to aviation.

“I grew up on a two-and-a-half mile final to Flying Cloud,” said Roesler. “There were always airplanes going overhead. My dad was an aeronautical engineer, so that had a lot to do with giving me the aviation bug.”

When he graduated in 1996, Roesler began working at UND Aerospace's satellite campus in Crookston, MN. Roesler first worked the desk, answering phones and supervising flights. Eventually, Roesler was hired as a flight instructor and began to teach his first students. Roesler transitioned to the main campus in Grand Forks as a lead flight instructor. He quickly moved up the ranks, becoming an assistant chief flight instructor and, in 2006, chief flight instructor. For 17 years, Roesler oversaw UND's flight training and instructors before moving into his new role at the end of 2023.

"I've been an employee at UND for 28 years now," said Roesler. "I've seen a few things in my time. I'm not a fan of the winters, I'll be honest, but what we do is pretty amazing. When you look at the number of aircraft, students, and quality we perform at, I am happy to be a part of that tradition."

Why UND?

Roesler was drawn to UND because of the school's reputation in aviation. When he graduated and as his career progressed, he realized that staying at UND would be the most rewarding career for him.

Looking at Flight Operations today, Roesler says our strengths lie in what we do and the people involved.

Paula Bruse

"In the flight training we conduct, we are always looking to provide the highest level of flight training available," said Roesler. "Our maintenance department is phenomenal. How we maintain our fleet is something to be proud of."

New Leadership

"We have a lot of new faces starting," said Roesler. "We are getting new sets of eyes on what we do here and making appropriate changes that will help us operate better. We always need to continue to improve on what we do now – we can't just sit stagnant; we have to move forward in order to keep being the best."

Among those starting new positions is Paula Bruse, who started as chief flight instructor in April. Bruse graduated from UND with her bachelor's in 2003. Like Roesler, she moved up the ranks at Flight Operations, starting as a line flight instructor, then lead flight instructor, then assistant chief flight instructor, before taking the helm this year. In the process, Bruse earned her master's degree from UND in 2011.

Bruse sees Flight Operations' current strengths in the quality of the flight training and the program's overall safety record.

"I was drawn to UND for the school's reputation as one of the best flight schools," said Bruse. "In this new position, I'm looking forward to continuing the legacy of our program for years to come."

Student Input

Roesler expressed his desire for student participation and understanding in future changes. He is excited to hear student feedback and ideas for improvement and encourages students to keep communication links open.

"The hard part is that suggestions take time," said Roesler. "I want to hear what can be improved and be different. Those ideas are extremely important. The frustrating part is that students recommend great changes, but sometimes, the changes take a few years. We encourage suggestions, but we also need to understand that they can take time to enact."

The Future of Flight Ops

In the coming years, Roesler plans to modernize Flight Operations. From technology to procedures and training, Roesler and Bruse want to be on the cutting edge and provide the best possible experience for students.

Roesler hopes to update UND Flight Operations' software, AIMS, and improve learning and instructional techniques for students and flight instructors. Bruse hopes to see advancements in the dispatch process and transitions to electronic logbooks.

When asked about the eventual new dispatch building, Roesler joked, "The buckets catching water when it rains need to go."

Roesler believes the new building would significantly influence student and instructor experiences. "Part of our planned procedure is to base our operations off the airlines," he says. "We want to modernize what we do at dispatch."

"I'm so proud of this organization," said Roesler. "This goes back to my high school years when UND was viewed as the top-notch place to be. I am here to simply continue that path. Then, I'll pass the torch to whoever comes next. I am looking forward to moving with this organization. I use a slogan: We are in the business of building people up and then moving them on. There is always a level of education going on at all levels, and I look forward to doing that in the coming years."

Interior rendering of the proposed Flight Operations Center

FOREVER UND:

THE CAMPAIGN FOR THE UNIVERSITY OF NORTH DAKOTA

Together, we are undertaking a $500 million comprehensive fundraising campaign to build a UND for the future. Thank you to the alumni and friends who give. Your generosity allows the torch of knowledge to be passed on to those who will lead the way.

Si & Betty Robin

'THANK YOU FOR MAKING THIS SCHOOL'

Aviator and inventor Seymour "Si" Robin first visited the John D. Odegard School of Aerospace Sciences in 2005. He and his wife, Betty, were impressed.

The Robins, who owned and oversaw the California-based aerospace antenna manufacturing company Sensor Systems, Inc., were the pivotal benefactors behind the design and construction of Robin Hall. Si and Betty were there to help cut the ribbon on the soaring $22 million building that now serves as home base to UND Aerospace's pioneering work in uncrewed and autonomous systems. They were granted honorary degrees from UND in 2018.

"I look at the talent and the great people at UND," Si said. "I never met John (Odegard) but I look up and I say 'thank you.' Thank you for making this school."

In 2022, Si pledged $5 million to the Flight Operations Center capital project as a two-for-one match. To unlock that $5 million, we need $10 million from alumni and friends like you. When you give, you join Si and Betty in creating the next-generation student experience at UND Aerospace.

Help our students soar to new heights at the Flight Operations Center. All gifts, no matter the size, will count toward Forever UND: The Campaign for the University of North Dakota.

aero.UND.edu/flight-ops-center

Jonathan Gehrke, '06, '11
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UND ALUMNI ASSOCIATION FOUNDATION
LEADERS IN ACTION

PROPELLING CHANGE

The Introduction of Unleaded Fuel at the University of North Dakota

In June 2023, the University of North Dakota Aviation program transitioned its fleet to use Swift Fuels UL94, a 94-octane unleaded fuel. In October, an organizational decision was made to switch back to 100LL AVGAS after logging 46,000 hours and burning 386,000 gallons of UL94.

In the summer of 2022, UND signed an agreement with SwiftFuels to switch the fleet to UL94. At the time, all UND aircraft and engines were approved to utilize UL94 fuel. The first flight with UL94 occurred on June 23, 2023.

In late August, a Seminole experienced aircraft vibration and showed that one of the EGTs on the left engine was registering 500 degrees low. An inspection revealed that an exhaust valve seat in one cylinder was severely recessed, which is rarely experienced across the fleet. The cylinder was replaced, and the aircraft returned to service.

Over the next two months, 11 additional exhaust valve seat recessions were discovered, leading to further investigation of the entire fleet. Following a recommendation from both Lycoming and SwiftFuels, the decision was made to stop using UL94 and switch back to 100LL AVGAS as a precaution until a cause could be determined.

By the inspection's end, the total number of recessed valve seats has grown to over 120. None of the replaced cylinders have shown exhaust valve seat recession while operating on 100LL AVGAS.

A more detailed study is continuing to include reviewing multiple engine parameters recorded during flight, time spent flying cross country (with leaned mixture), refueling at other stations leading to mixed fuel, and the number of takeoffs/landings/touch and go's which correlates to the low-to-high power cycles on each engine.

There has been speculation that UND's operating procedures contributed to the exhaust valve recession while using UL94. Part of our review, along with Lycoming Engines and Swift Fuels, is to look at those POH operating procedures. In the absence of specific guidance, we continue to use the operating procedures listed in the aircraft POH when using unleaded fuel.

We are continuing to work with Lycoming and SwiftFuels to identify the specific causes of damage experienced here. Unleaded fuel is the future of general aviation, and UND fully supports the industry in moving towards further adoption in a safe and cost-effective manner.

Initially published in AVweb.com by Robert Kraus, Dean, John D. Odegard School of Aerospace Sciences, and Dan Kasowski, Director of Maintenance.

“MR. MAINTENANCE”

The Story Behind UND’s Director of Aircraft Maintenance, Dan Kasowski

In the fall of 1979, Dan Kasowski began his career in the Aircraft Maintenance Department at the University of North Dakota. In his over 40-year career at the school, Kasowski has left an impact felt throughout flight operations at UND Aerospace, contributing to its success as a flight program.

Where It All Began

Originally from Buffalo, North Dakota, Kasowski grew up surrounded by family. His interest in aviation began as a high school senior when he visited Dakota Aero Tech in Fargo, which was co-owned by his uncle.

“They toured me through the place and showed me around. Once I had looked around the shop, the idea of it really intrigued me,” said Kasowski. “I received my A&P shortly after. I had a job lined up before I was even done with school in Rugby, ND.”

Starting at UND

After spending a year working in Rugby, Kasowski applied to the growing program at the University of North Dakota. When Kasowski began as a mechanic, UND only had two, soon to be three, full-time mechanics. “We only had about 30 aircraft at the time,” explained Kasowski.

“We kind of grew from there. Since I’ve held almost every position within the maintenance department, I’ve worked at UND for 45 years this year. I’ve worked under every dean that there has been in Aerospace, which has been really cool.”

Looking Back at the Years

In his time at UND, Kasowski held positions as a mechanic, shift supervisor, maintenance manager, quality control manager, repair station plan writer, and shop maintenance manager before being promoted to his current position as the director of aviation maintenance.

Over the last forty-five years, Kasowski has seen the program grow and develop into what it is today. Changing technology and the school's growth have contributed to the changes he has seen over his career.

“One of our biggest challenges has been keeping up with growth,” said Kasowski. “When you go from only flying 30,000 to 120,000 hours a year, you must find some way to stay proactive. I think we are in a really good position today.”

The People Behind the Aircraft Maintenance Department

Now, the Maintenance Department hosts about 30 aircraft technicians and a total of 45 employees who work to keep UND's fleet operational.

“If I could change one thing about my time here, it would be to write a book about all the people who have worked here,” said Kasowski. “It’s the people here who make it special. The number of people who have come through this department and seeing where their career takes them is rewarding. I like to think that the University contributed to their success.”

Work Outside of UND Aerospace

In addition to the work Kasowski contributes to UND, he also works closely with partners outside the University. Whether it be the FAA, Lycoming, Garmin, Piper, Textron Aviation, and more, Kasowski’s work in maintenance has extended well beyond the University and into aviation as a whole.

“Dan set the standard for the industry.” said Hans Stancil, General Manager of American Sales at Piper Aircraft Inc. “Flight schools around the country follow what Dan does.”

What's Next?

Kasowski's next major step is to find a date to retire. He has some goals he wants to accomplish before he leaves. After that, he hopes to spend time by the lake and go somewhere warm during the winter months.

"I get asked when I'm going to retire," said Kasowski. "But I'm still having fun. I love my job and like coming to work. That's the fun part of being here. We have great facilities and great airplanes, and our staff recognizes that. We can get a little competitive; being the number one flight school is hard work, but we continually strive to be on the leading edge of technology and maintain our aircraft to the highest of standards."

Mr. Maintenance

Kasowski has been praised for not just his skills as a mechanic but also his organization, patience, and sense of humor. His work and contributions not just to UND but to aviation maintenance as a whole have led to the coining of his nickname "Mr. Maintenance."

He expects the Maintenance Department to continue to hold high standards in the years ahead.

"I think they will probably continue at the pace we are at," says Kasowski. "Now it's mainly maintaining a status quo and making sure we have qualified people. I've been very lucky in my time here – I have been able to hire some really great employees, so now it's just staying proactive."

These contributions and more have put Kasowski at the forefront of aviation maintenance. This year, Kasowski was recognized for his work in aviation when he was inducted into North Dakota's Aviation Hall of Fame.

"That was pretty cool," said Kasowski. "Through life, you get awards, but I never even dreamed of being in the Hall of Fame. When it was announced, it took a few hours for it to sink in. Years ago, I was on the aviation council that selected these people, so I know the process and the kind of applicants they receive. It was an honor to be selected. It meant the world that people thought I was worthy of that. It has been one of the highlights of my career, and it was a total surprise."

UND Aerospace would not be where it is today without the skills and expertise of Dan Kasowski. His contributions to aircraft maintenance and the school can be seen throughout its history and will be felt for years to come.

SAAC STUDENT AEROSPACE ADVISORY COUNCIL

Friends,

In 1974, founder and Dean John D. Odegard created the Student Aviation Advisory Council to better hear the voices of students in the then-fledgling program. Odegard knew the key to the college's success was the students' voice, so he entrusted a group of student leaders to find it, sculpt it, and work to answer it. In the years that followed, and through a name change or two, SAAC has continually improved the lives of UND Aerospace students. We're proud to represent an increasingly diverse group of students, both by background and field of study, and we're excited to support our students as they pursue their careers.

This year, SAAC made quality-of-life-focused improvements for our peers. In addition to expanding our student-to-student mentorship program, we launched the Industry Mentorship Program (IMP) in collaboration with the Aerospace Alumni Advisory Board. The IMP allows our upperclassmen students to be paired with alumni within the industry to support their transitions to the workforce. With such an extensive and varied alumni network, we're excited to create mentor/mentee pairings based on our students' desired company, position, or location. We continue to recruit alumni to help our students—please visit undmentorship.com for more information and to sign up as either a mentor or a mentee.

I'm excited to see what our peers will do in the future. It's safe to say what starts at UND Aerospace goes on to change the aerospace industry, and I'm proud to be a part of that legacy.

Arjun Jagada
President, Student Aerospace Advisory Council

Day 1: North Dakota

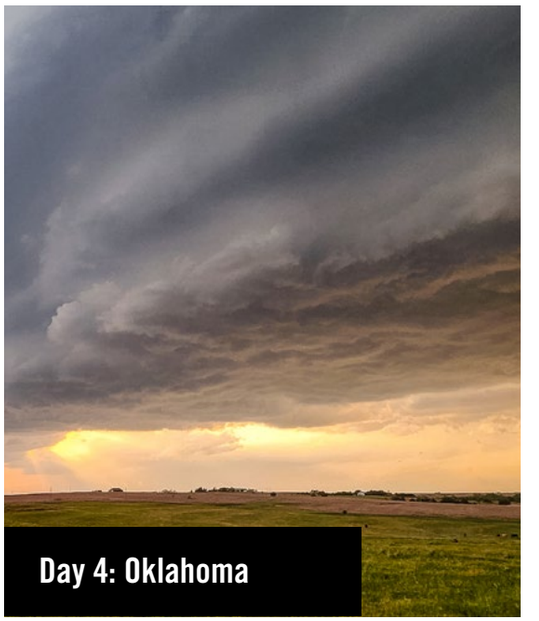
Day 10: NOAA

A CHASE TO REMEMBER

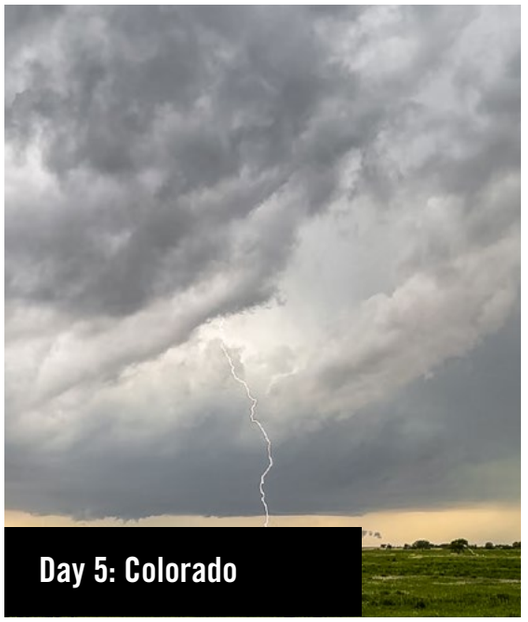
This summer, the UND Storm Experience class embarked on another memorable adventure. Fourteen students traveled approximately 5,500 miles across seven states, including North Dakota, South Dakota, Nebraska, Kansas, Colorado, Oklahoma, and Texas. On May 23rd, the class chased a supercell thunderstorm across southwest Oklahoma, which eventually produced a tornado with wind speeds in excess of 111 mph, therefore being classified as EF-2. This marked the first encounter with a tornado for many on the trip, creating an exciting and rewarding experience. The tornado lasted around 53 minutes, tracked approximately 15 miles, and had a maximum width of around 2,000 yards.

Day 2: South Dakota

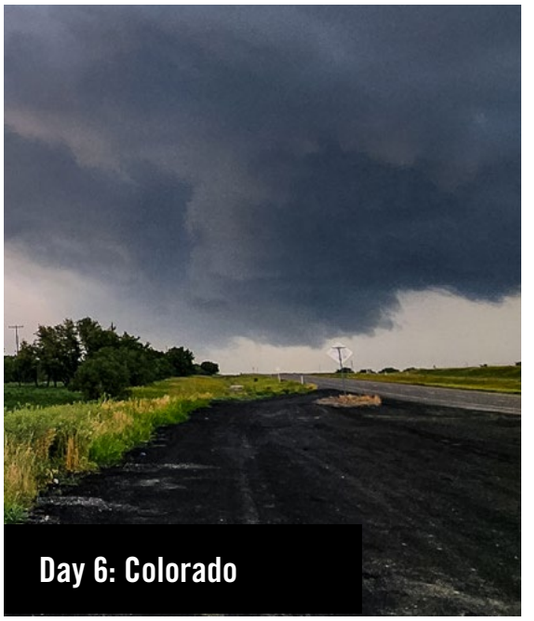
Day 3: Nebraska



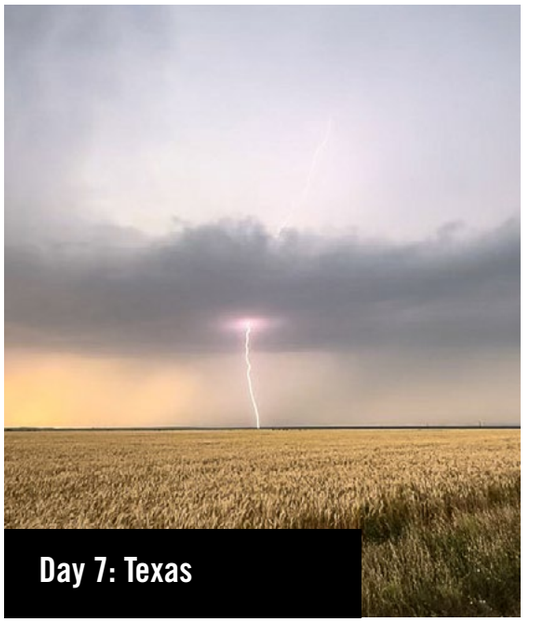
Day 4: Oklahoma



Day 5: Colorado

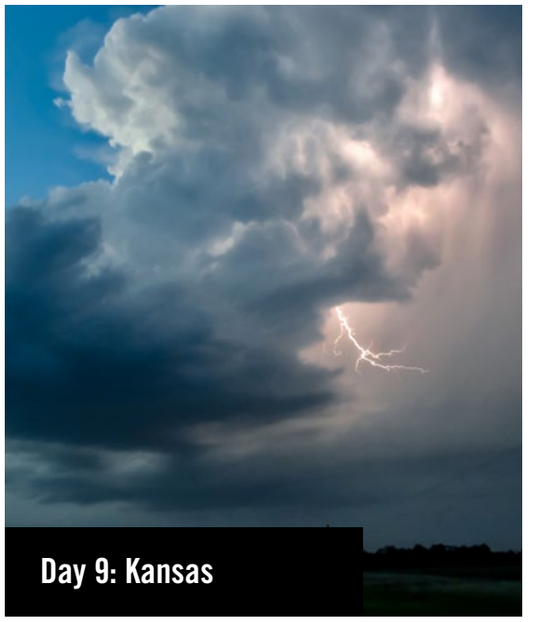


Day 6: Colorado

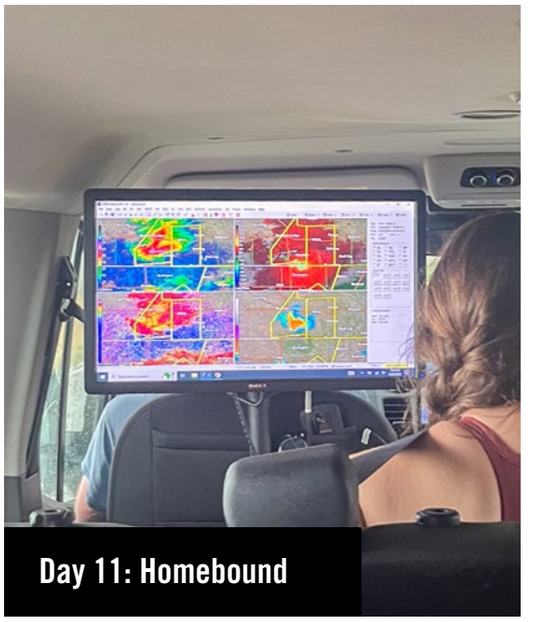


Day 7: Texas

Day 8: Tornado Chase



Day 9: Kansas



Day 11: Homebound

Bellflower Sweat Bee

Dufourea maura

This native bee species can only use the pollen from one plant species called harebell (Campanula rotundifolia).

Rival Longhorn Bee

Melissodes rivalis

Though not all, many bees in this genus specialize on plants in the sunflower family (Asteraceae). This particular bee species specializes on pollen from native thistles.

Bumble Bee

Bombus ternarius

We have over 16 bumble bee species in North Dakota, with Bombus ternarius being fairly widespread across the state. Bumble bees are typically generalists and can collect the pollen from many plants.

POLLINATORS AND PEOPLE: UND RESEARCH TEAM EXPLORES HOW TO BEST HELP NORTH DAKOTA'S BEE POPULATION

With the state producing over 30 million pounds of honey in 2022, North Dakota's honey bees and other pollinators put the state in 1st place in the nation for honey production. One research team from the University of North Dakota has made it their mission to study these bees and other important pollinators and figure out what environments will help them thrive.

The People Behind the Research

Overseen by Associate Professor Haochi Zheng, a group of five researchers have focused their studies on the pollinators of North Dakota. The group consists of master's students Susan Ajonye and Brandon Narum, Ph.D. students Yeqian Xu and Ossai Alu, and Dr. C.K. Pei, a previous post-doctoral research associate.

The research project looks at three different elements – the bees, the land they pollinate and forage on, and the people who make decisions about them. Each team member focused their research on a particular aspect of the pollinator's roles.

The Pollinators and the Land

Alu spends his time researching statewide pollinator forage resources, using remote sensing techniques and machine learning techniques to find and detect floral resources that pollinators can use. His focus is to develop new skills to enhance data sources for studying changes in the landscape's floral resources and how this affects pollinators.

"I am interested in how changes in land affect changes in biodiversity," said Alu. "My goal has always been to be able to use remote sensing to reduce workload. North Dakota has a unique workspace – I find this work extremely intriguing and interesting!"

Narum's research involves how different kinds of pollinators relate to land covers such as clover, alfalfa, field crops, and grasslands. He separates bees into different categories and looks for positive and negative relationships to land cover.

"There are so many differences in the types of bees," said Narum. "How they nest, how far they fly, how they go about their lives. I find it really interesting, and I want to use this to help protect pollinators. I want to be able to understand why biodiversity is important and how we can slow down its loss."

Xu has spent her research looking at roadside habitats. Her focus is on flower percentages on roadsides, and she uses a GoPro camera to conduct road surveys."I've always liked honey

production as far as food goes," said Xu. "As I read, I found that pollinator populations were decreasing. Nobody has used this technology in this way yet, and I really enjoy the fieldwork involved. It is relaxing, and the landscape is beautiful."

Ajonye's research has focused on canola crops. As a major crop produced in North Dakota, Ajoyne has been researching the relationship between canola production, pollinators, and their forage resources.

People and Pollinators

Funded by a UND seed grant, Zheng and Pei's work focused on a more social aspect. They conducted surveys to better understand people's perceptions of pollinators and collaborated with beekeepers and ranchers to explore the potential opportunities for the region's producers to work together to support pollinators.

Through the seed grant, Pei led the effort to survey private rangelands to understand how their livestock movements interact with the bee, floral, and plant communities. This information can help us understand how rangeland management interacts with important grassland pollinators.

Outreach

Another portion of the work that the team does is outreach. The team attends 4H events, visits elementary schools, and participates in community events. Through these activities, the team hopes to spread knowledge about bees, starting at a young age.

"With how diverse bees are, you discover new things every day," says Pei. "When doing outreach, the easiest thing to communicate with them is that there are many different types of bees and that they live in so many kinds of ways. I call myself a traveling bee circus because I just lug these bees around everywhere."

Why Bees?

The research team is very enthusiastic about their work. Whether it be discovering new things about pollinators, learning about the state, or just working in nature, their passion for their work shows.

"Why bees?" asks Professor Zheng, "Because they are important, but many people don't have a lot of knowledge about them. Every time I learn something new, it makes me realize how much we don't know. It drives me to discover more."

SPACE STUDIES

UNDER THE SEA

"Being neutrally buoyant, like we are in the water, helps us understand what microgravity will be like."

KEITH CRISMAN, ASSISTANT PROFESSOR

// KEY LARGO, FLORIDA

Radio Call

During the testing, Aerospace Sciences Ph.D. student Rachel Jones sent messages from a ham radio onboard Jules' Undersea Lodge. With the help of a 100-foot connection to shore, she was able to successfully send and receive messages from places as far away as South Africa.

Outreach

One of the trip's main goals was to include outreach with the community. Crisman and Mateus chatted with fourth-grade students at Century Elementary School in Grand Forks via Zoom while Jones joined from the designated radio room. "Outreach lets people know what science is being done and makes them a part of the process," Crisman said. "The audience asks really good questions that sometimes we haven't thought of or may even propose a method or idea that can facilitate further research."

Dive Computer

A device used to track time underwater and nitrogen buildup in tissues - displays the message "OVR" after exceeding record dive times. This never-before-seen code earned Crisman a congratulatory swag bag from the dive computer company for being the first to ever get the message. A shark tooth "protection" charm and porthole drawing done by Crisman can be seen in the background.

PRINTING THE FUTURE OF HUMAN SPACE FLIGHT

Since the beginning of human space flight, space suits have been manufactured on Earth. But what if this equipment could be made in the depths of space? A project developed by the University of North Dakota's Department of Space Studies aims to do just that by creating 3D printed space suits.

About 3 years ago, the Department of Space Studies received a grant from NASA to develop a non-traditional space suit that was almost entirely 3D printed.

"Space suits are very labor intensive," said Department Chair Pablo de León. "They require a lot of hours for manufacturing. As we move farther into exploration of the moon and Mars, it gets harder to transport materials. For that, you need to be able to manufacture and repair the suits at your destination."

3D printing makes space exploration more sustainable, independent, and safer. The goal is to help future astronauts repair, maintain, and print their space suits wherever they go.

"It started with an idea we pitched to NASA," said de León. "We had a track record of performance, but this project was pretty far out there. It was interesting but risky because we weren't sure if it would work, but NASA took the bet. Now, we are seeing results, and they seem happy with the progress we have made."

The first prototype, NDX3, included joints that were 3D printed using flexible plastic. When these joints were tested, they worked so the project continued.

"Someone told me years ago that science is what you do when you don't know what you are doing," said de León. "When we went into this project three years ago, we didn't have a clear idea of how to go about it and what process to use. So, we started with a first prototype to see if our idea would even work."

Now, the team is working on the second prototype, NDX4. This suit is almost entirely 3D printed, with minimal metal parts. Recently, the team received a patent for their 3D-printed space suits.

Testing the space suit includes pressurizing joints, comparing movement abilities to that of traditional suits, and then moving outside and completing tasks in the space suit. The team hopes to travel to the Badlands to test the suit later this summer as its environment mimics Mars.

"When we design the space suits," said de León. "We have to think about walking in different gravities. We work in a BiPed lab with a gravity offload device that allows us to simulate how gravity would respond on the moon or Mars. In these environments, you walk differently and use different groups of muscles than you do on Earth."

The team hopes to complete their testing and present the suit to NASA by October 2025. They hope that future suits can be customized to individual astronauts, making them more size-inclusive and personal.

"It's magic really that something you design can be entered into a machine and be printed out the next day," said de León. "It's amazing that we can be doing this here at UND and be considered one of the few universities that can design these complex space systems. That's no small accomplishment, and we are really putting UND at the forefront of this research. This will allow astronauts of tomorrow to have abilities that years ago were only in science fiction movies."

UND™ AAAB

AEROSPACE ALUMNI ADVISORY BOARD

JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES

This past April, the UND Aerospace Alumni Advisory Board held its Spring Meeting at Robin Hall on the busy campus of UND Aerospace. Our gathering started with a wonderful social at the Olive Ann Hotel in downtown Grand Forks. From all of us at the AAAB, thank you to all of the team at UND for making that event possible. During the meeting, we received a comprehensive review of the current status of UND Aerospace. We discussed old and new business and received several important committee reports. The first topic of discussion was our scholarship program.

Our members raised an impressive $10,400, which provided three $3,300 scholarships. A big THANK YOU to all those who contributed!! This program has a direct student impact, and we thank you for your generosity and hope you will continue that moving forward. Congratulations to our scholarship recipients: Dillon Johnson, Amarie Rivera, and Alexis Moat. We wish you all the best with your career and time at UND!

The board also received an update regarding our Industry Mentorship Program and the exciting new technology that will help bridge the gap between UND students and our alumni mentors. Our committee is working hard with UND Aerospace to create a new space where the students can interact with multiple mentors and gain more perspectives in an open, safe environment. While the board conducted its business, the Student Aviation Management Association (SAMA) Conference & Career Fair was underway. Our own Matt Mamura was given the opportunity to speak during the conference. Thank you to all those who participated and supported SAMA and its presenters.

The board was proud to welcome four new members: Patrick Halligan (Aerospace Hall of Fame), Michael Larson, Thomas Nelson, and Joel Siegel. If you are interested in joining the board, please email me at brad_secrist@yahoo.com or Matt at matt.mamura@gmail.com.

The entire AAAB would like to thank you for the opportunity to serve the students, faculty, and alumni of UND Aerospace. Here's to a safe and exciting summer! We look forward to seeing you at alumni events throughout the country.

Sincerely,
Brad Secrist '99
President, AAAB
Captain, Delta Air Lines

HIGHLIGHTS

REMEMBERING NASA'S PEARL YOUNG, UND '19 — 1919, THAT IS | JUNE, 21, 2024

Physics, Math, and Chemistry major was first female technical employee at NASA's precursor agency

Today, UND Aerospace is known for its aerospace educational programs. But UND started playing a role in the aerospace industry many decades before that, as shown by UND alumna Pearl Young beginning her career more than a century ago with NACA: the National Advisory Committee for Aeronautics, the precursor to NASA.

FAA REAUTHORIZATION ADDS POWER TO UND'S UAS PROGRAMS | JUNE 4, 2024

Coming soon: More research/workforce opportunities for students, free UAS courses for first responders.

The recent reauthorization of the Federal Aviation Administration means full speed ahead for uncrewed aircraft systems (UAS) and advanced and urban air-mobility research (AAM/UAM) at UND. It also means more opportunities for UAS graduates and free training for first responders on UAS operations.

UND VETS2WINGS STUDENTS HONORED AS PROGRAM SET TO EXPAND NATIONWIDE | MAY 9, 2024

Designed to ease America's pilot shortage, the Vets2Wings program helps UND veteran aviation students take flight.

The Vets2Wings (V2W) program, first piloted by UND Aerospace, is poised to become a national program meant to address the shortage of commercial airline pilots.

Read full stories at UND Today
blog.UND.edu

LEADER IN AEROSPACE

IRON RING TECHNOLOGIES

JASON BARTON, CHIEF ENGINEER, '03

Mechanical Systems, Iron Ring Technologies

When UND alumnus Jason Barton first began his studies at UND, he did not know where this path would lead him. Now, he is engineering vehicular landings on the moon through his company, Iron Ring Technologies.

Growing up in Bemidji, Minnesota, Barton earned his bachelor's degree in mechanical engineering from North Dakota State University. After working for some time in Fargo, an interest in aerospace brought him to UND, where he began his master's in the Space Studies program in 2003.

"I had a great time," said Barton. "I really loved it. Some of my favorite times actually were during the summer semesters. I felt like I had the campus to myself and got a lot of time with the instructors, which was really nice."

After graduating from UND in 2005, Barton moved to Houston to begin work on extravehicular activity (EVA) operations for the ISS, helping spacewalks to become safer. This led him to an interest in space suit development.

After working with smaller companies on space suits, Barton and co-worker Michael Oelke decided to form their own company to work on space suits.

"As it turns out, that wasn't what fate held for us," said Barton. "We are eight years into the company and are just now getting involved in some space suit work. Over the years, we have been involved in commercial space station work, we've done design and development with EVA, and throughout those years worked on manned and unmanned lunar landing development."

Creating a startup comes with its obstacles. However, Barton and Oelke had learned through their work experience what it takes to work as a small company in the aerospace industry.

"We approached it how any engineer would," said Barton. "We broke it down and counted on each other. We've got that 'Midwest work ethic,' and we just worked hard. Now, years down the road, I feel really successful."

With their partnership with companies such as Intuitive Machines and Oceaneering Space Systems, Iron Ring Technologies have worked as engineering contractors on lunar lander missions. In February of this year, their efforts culminated when an unmanned lunar lander they helped develop touched down on the moon.

"I have to pinch myself from time to time," said Barton. "Being able to actually see tangible things such as a vehicle that you helped build land on the moon is really exciting. It's been a lot of fun. We helped propose the mission. We've been there since day one, working on the initial designs all the way through to the final as flown flight units."

In the future, Barton and Iron Ring Technologies will continue to work with Intuitive Machines and other companies in the Houston Spaceport area on future lunar missions. Barton also sees potential for a variety of work in commercial space in the future.

"We are really privileged," said Barton. "We're proud to be involved in projects with partners who have enabled us to be involved in all sorts of neat stuff."

AEROSPACE CONNECTIONS

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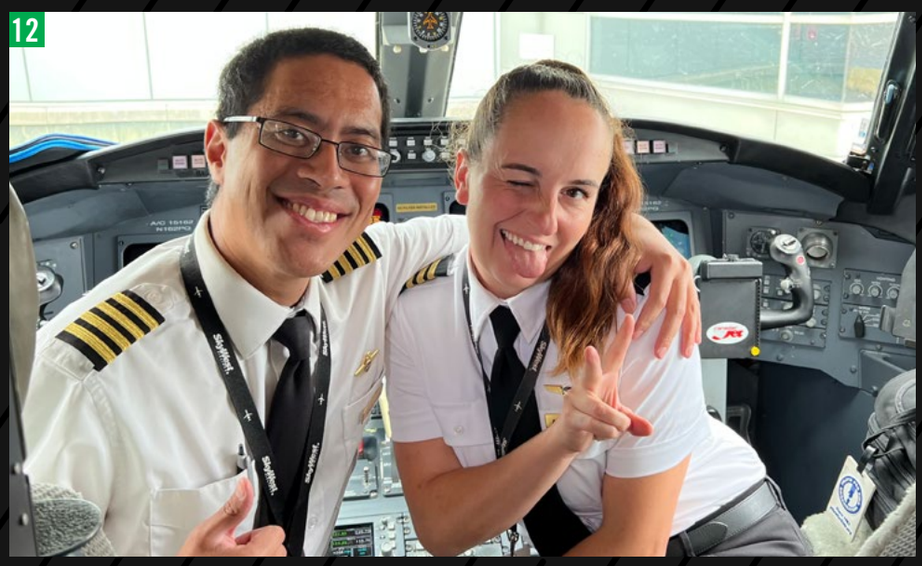

1. Two United Captains, **Michael Rabe '96** and his nephew **Casey Coutts '07,** flew a Boeing 737 on a flight to Denver together.

2. UND flight instructors **Brendan Kelly '24**, **Steven Smith '23**, and **Jack Klein '23** gathered at St. Paul Downtown Airport (KSTP).

3. **Deanna Kimball '03** and **Karen Ruth '82** represent MACH on a flight together at Delta Air Lines on the A330 from Minneapolis to London.

4. Delta Air Lines Captain **David Barnes '01** and First Officer **Lance Flaig '05** flew from KATL to KJFK on a B767-300ER with Endeavor Air First Officer **Pleurat Rama '22** in the jumpseat. Fun fact: Captain Barnes was Lance Flaig's flight instructor at UND.

5. A320 First Officer at Delta Airlines, **Jordan De Klyen '19**, and his father, Captain **John De Klyen '90**, fly a trip from KLGA to KDTW together!

6. On April 28, 2024, American Airlines pilots Captain **Eddie Tomsio '09** and First Officer **Dominic Ponce '14** flew from KCLT to KONT.

7. Alaska Airlines pilots **Graham Peterson '04**, **Captain Matthew Winit '04**, and **Andrea Parker '03** gather before a flight from KPHX to KPDX.

8. At the UND SAMA Conference in April 2024, alumni **Jake Spellacy, MJ Okada, Ryan Philips, Sean O'Connor, and Hannah O'Connor** represent a non-profit giving scholarships for flight training and industry mentorship.

9. UND alumni reunite at Endeavor Air's pilot recruitment training on May 22, 2024.

10. **Micheal Koziarz '17**, a regional chief pilot working at KJFK, got to say hello to **Harley Jiang '22**, First Officer at Endeavor Air, before Jiang's flight from KJFK to KCLT.

11. **Travis Collins '23** exchanged an aircraft with **Ryan Fesenmeyer '22** after flying it from Montreal to Detroit. Fesenmeyer then took it to Milwaukee, and the two said hi in between!

12. **Aulia Harun '14** and **Alicia Lynch '14** were photographed together on July 7, 2023. This photo was taken at KMSP in a CRJ-900 aircraft after their flight from KOMA. This was special for them because Alicia and Aulia were best friends and roommates at UND, and Alicia was one of Aulia's flight instructors!

SEND US YOUR ALUMNI PHOTOS!

STAY CONNECTED!

Join our **UND Aerospace Alumni** Facebook group!

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