AEROCOM

JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES

SUMMER 2022

INSPIRING
THE NEXT GENERATION

UND
UNIVERSITY OF NORTH DAKOTA

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COVER PHOTO UND Alumni Association

PHOTOGRAPHY Arjun Jagada, Wes Van Dell, & UND Today

Dear alumni, family, and friends,

Another semester is behind us and we look forward to welcoming the new freshman class in later this summer. In May, we conferred 119 bachelor's degrees, 15 master's degrees, and 3 Ph.D. degrees during in-person ceremonies at the Alerus Center and heard from General Raymond, Chief of Space Operations for the U.S. Space Force. Here are some highlights:

Following our signing of the University Partnership Program agreement with the U.S. Space Force last fall, we have hired a Space Propulsion faculty member and are still searching to fill two more positions. Missions in the Inflatable Lunar/Mars Analog Habitat continued and our department chair, Pablo de León, established a Human Spaceflight Laboratory at Cape Canaveral. We are renovating a classroom in Robin Hall into a Space Operations Center for students from across campus to learn orbital mechanics and satellite operations.

In Atmospheric Sciences, Matt Gilmore restarted his storm chasing class and took two vans of students around the region searching for convective activity. We continue to transition students to broadcast meteorology and routinely see them forecasting our local weather. Al Borho retired this summer and we are bringing on two new faculty this fall.

Earth Systems Science & Policy continues to address today's environmental and sustainability challenges and is growing enrollment with its Masters of Environmental Management degree. We have nominated this degree to be a Professional Science Masters program which combines advanced STEM training while simultaneously developing highly-valued workplace skills.

Despite remnants of the pandemic, UND flight operations exceeded the 120,000-hour mark for the second year in a row, achieving the highest annual flying hours ever at UND. Enrollment is strong but we instituted a cap on admissions for the coming year so that we can continue to deliver the best aerospace education and training in the nation.

We've added a fifth season to our calendar—construction season. As fundraising continues for a new Flight Operations Building, we are starting early with plans to renovate some office spaces to serve as swing space once the larger project kicks off. This summer we're repaving the north apron, thanks to funding received from the state of North Dakota. Additionally, the Grand Forks airport has started a five-year project to expand and replace runways.

We continue to improve our support to students with respect to mental health. This fall we are starting an UpLift Peer Support program modeled after the best practices at the airlines. We are also seeking a full-time counselor to be located in the college and easily accessible to students.

In the Aviation department, we recently said farewell to Ben Trapnell who was instrumental in building our UAS program into what it is today. We also moved two faculty to the tenure track and hired five more for the fall. We renovated a classroom in Ryan Hall as a new FAA Testing Center, increasing our testing capability to 13 stations from 8. Both ATC tower simulators as well as the enroute facility are upgrading with new hardware and software. A helicopter spatial disorientation simulator is going in and it will be the only one in use outside the U.S. Army. We are also awaiting delivery of an additional jet simulator for the capstone course increasing our capacity to prepare students for airline careers.

It is a privilege and honor to be part of this great team in the John D. Odegard School of Aerospace Sciences to lead the world in aerospace education, training, and research. You can always find us on social media or with frequent articles at UND Today.

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

Faces OF THE Industry:
DISCUSSIONS IN AVIATION DIVERSITY

UND Aerospace student organizations' event featured three panels, keynote speaker and goal of celebrating, discussing diversity in aviation

Student organization leaders at the John D. Odegard School of Aerospace Sciences invited the UND and Grand Forks communities to participate in "Faces of the Industry: Discussions in Aviation Diversity."

On March 10, in the University's Memorial Union ballroom, panel sessions throughout the day acknowledged and celebrated diversity at UND Aerospace, as well as within the broader aviation industry.

The day's activities hosted and moderated by five student organizations found at UND: Women in Aviation, the National Gay Pilots Association, the Organization of Black Aerospace Professionals, the Professional Asian Pilot Association and the Latino Pilots Association.

This student-run event started with a breakfast sponsored by UND Student Diversity & Inclusion at 9:30 a.m. After that, panel discussions took place until a 2 p.m. keynote presentation by Carole Hopson, United Airlines First Officer and author of A Pair of Wings: Based on the Life of Pioneer Aviatrix Bessie Coleman.

Following her speech, Hopson signed copies of her book, and free copies were available to the first 100 keynote attendees, courtesy of United Airlines.

Members of the media and the general public were invited to sit in on panel discussions and speeches throughout the day.

"We put this together to really showcase the diversity we have at UND Aerospace," said Meridath Jackson, a senior commercial aviation major, president for UND's Women in Aviation chapter and co-founder of the event. "Aviation as a whole is one of the most diverse career fields in the world as it connects with people across the globe.

"I think it's our job to celebrate that, especially at UND and within our student body – recognizing each other and coming together to make the industry stronger."

Jordon Gyapong, a fellow co-founder and commercial aviation major, as well as a leader of UND's OBAP chapter, echoed Jackson in describing "Faces of the Industry" as a celebration of diversity.

"We had people from across aviation coming here to speak about their successes and struggles in climbing the ladder to where they are now," Gyapong said. "I think that's going to be very inspiring for our students and faculty."

Associate Dean Elizabeth Bjerke, speaking on behalf of UND Aerospace's administration, said they're proud of their student leaders and the work students have done in preparing for an important inaugural event on campus.

"The outpouring of support from our industry partners, and their desire to take part in this conversation, proves that there is a lot of interest surrounding diversity in aviation," Bjerke said. "Having our students lead this discussion proves that the future looks promising. My hope is that this is the start of a new tradition for the Odegard School that will last for years to come."

Diverse perspectives on aviation careers

Companies and organizations to be represented at the event include United Airlines, Endeavor Air, FedEx, Cirrus Aircraft, General Atomics, Forum Communications, Grand Forks International Airport and the U.S. Air Force. According to organizers, a number of the 19 total panelists are UND alumni.

— Connor Murphy, UND Today

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AVIATION SAFETY LAB WOULD MAKE ITS NAMESAKE PROUD

Aviation safety lab would make its namesake proud

ANNETTE KLOSTERMAN'S DEDICATION AND SPIRIT ARE THE INSPIRATIONS FOR THE ANNETTE KLOSTERMAN AVIATION SAFETY AND DATA ANALYTICS LAB, WHICH UND RECENTLY NAMED AND DEDICATED IN KLOSTERMAN'S HONOR. PHOTO MONTAGE BY HEATHER SCHULER/UND.

Sitting in the classroom are two rows of computer stations, plus a whiteboard on the front wall. And that's it.

So why did the president of UND, the dean of the University's Aerospace School, executives from General Electric and Delta Air Lines, commercial pilots and fully a hundred other people — many more than even could fit in the room — gather in April to dedicate the space?

The answer is that despite its being one of the most ordinary-looking classrooms on campus, the Annette Klosterman Aviation Safety and Data Analytics Lab tells one of UND's most extraordinary stories. Make that two extraordinary stories; as we said, it's a remarkable room.

The first story relates to the Aviation Safety and Data Analytics portion of the classroom's name. But don't be scared by that jargon-y label, as understanding the lab's function is as easy as settling in for a smooth flight.

The second story is all about the personal part of the lab's handle: Annette Klosterman, in whose honor the lab in Odegard Hall has been named. You see, Annette … well, let's tell the classroom's Data Analytics story first. Then we'll learn more about Annette and her remarkable life and family.

From instant cameras to hi-def

To understand the power of data analytics in aviation safety, think of a snapshot from a vintage Polaroid camera, said Andrew Coleman, a guest at the dedication and the general manager of aviation software for GE Digital.

"When you look at that picture, it tells you a story," Coleman said. "Just not a very good story, because of the limitations of that technology.

“Now think of the first time you saw a movie in high-definition. You could see every dimple on a golf ball, every blade of grass.

“Well, that’s what we’re doing now with flight data,” he said.

And that’s what the new computer lab is all about.

The lab’s computers may look ordinary, but thanks in part to GE Digital technology, they’re portals to industry-leading flight-safety software, said Robert Kraus, dean of the John D. Odegard School of Aerospace Sciences at UND.

The software is so sophisticated that as part of their Aviation Safety & Operations coursework, UND students are using Delta Air Lines data to answer real-world flight safety questions.

“Safety has always been important in aviation,” Kraus said. “But what we’ve added is a whole new level of information. So today, rather than saying, ‘We think this is what happens,’ we can actually measure what happens in the course of a flight and detect trends that can advance flight safety.”

Interpreting the data stream

Moreover, the proliferation of sensors on aircraft has turned the information stream from a trickle into a torrent, Coleman said.

Where were the throttles at every point in time? Were the flaps extended, and to what degree? What was the aircraft’s altitude, pitch and speed?

Those are just a few of the countless data points that get recorded, and that together make up the massive info stream, Coleman said. That’s the stream the UND students in the data analytics lab use to both understand the past and predict the future.

By the way, the data streams that flow onto the lab’s computer screens don’t all stem from industry partners such as Delta. UND’s own aircraft also benefit from the high-definition scrutiny, said Brian Willis, director of safety and flight operations at the University.

“Think about the red ‘check engine’ light in your car,” Willis said. “We have a system now in which when one of our aircraft lands on a ramp, its data gets transmitted wirelessly to our flight data analysts.” That data then gets sifted to identify patterns of engine performance, airframe performance, pilot performance and many other elements of safe flight.

A history of risk reduction

At UND, a milestone in collecting and analyzing this data came in 2007, when the University opened its first Aviation Safety and Data Analytics Lab. Since then, the lab’s sophistication has steadily increased, culminating in April’s dedication of the updated and centralized Annette Klosterman lab.

And as a result, UND now collects and analyzes data on not only manned but also unmanned-aircraft flights, said Ryan Guthridge, assistant professor of aviation and one of the team teachers of Aviation 412: Aviation Safety Analysis.

The University was one of the first in the country to have a formal, FAA-recognized Safety Management System, a risk-reduction program that makes special use of data analysis. And the Odegard School routinely gets calls from global as well as national operators, who’ve heard about the school’s data analysis work and ask, “How can we be a part of this?”

“I was fortunate enough to have a student — a brand-new sophomore — in one of my entry-level classes,” Guthridge said.

“She put in a grant proposal to use flight data to improve our fuel efficiency. We fly 10,000 to 13,000 hours a month. She’s wondering, ‘Can we be better users of fuel?’”

Think about it: Using UND’s flight data, a sophomore in an entry-level class can ask and likely answer that very complicated logistics question. No wonder some of the world’s biggest carriers are recognizing the data’s power to improve safety, Guthridge said.

Likewise, no wonder students in the Annette Klosterman lab often find themselves working past their class-dismissal times, said John Dulski, a junior in the Aviation Safety & Operations program.

“It’s one of the very few classes where I’ll look up at the time and think, ‘Holy cow. We were supposed to be finished 10 minutes ago,’ ” he said.

“But this is one of those classes where we’re not just sitting in a lecture hall. We’re actually working together and solving real-world problems, and that’s just the coolest thing.”

> **"You know, my wife and I have no affinity or relationship with either of our two alma maters out in Washington state, it’s all UND. They’ve blessed us, and we hope that we can return the blessing."**
>
> **JIM KLOSTERMAN**
> Annette Klosterman's Father

Remembering Annette Klosterman

Like Amelia Earhart, Annette Klosterman was an aviation pioneer. She was a UND Aerospace standout who graduated Summa Cum Laude in 2007, intent on joining the still-tiny ranks of female commercial pilots.

Like Amelia Earhart, Annette Klosterman died in an aviation tragedy. In October 2007, on the return leg of a night flight from St. Paul, Minn., Klosterman — then a UND flight instructor — and Adam Ostapenko, a student, were killed when their plane collided with a flock of geese.

And like Amelia Earhart, Klosterman continues to inspire. That’s true because of not only the joy and determination with which she lived, but also the way her family and

UND have cooperated to keep her memory alive.

You see, Annette simply loved flying, and she loved UND, said both Jim and Jan Klosterman, Annette's parents and the guests of honor at the Annette Klosterman Aviation Safety and Data Analytics Lab dedication.

In fact, said Jim Klosterman, Annette's time at UND may have been "the happiest four years of her life."

That's why in 2007, the Klostermans decided to honor Annette's life at the University. The Annette L. Klosterman Memorial Aviation Scholarship has been helping female students pursue aviation careers ever since.

A heartfelt endowment

"Annette's experience with UND was so positive that we felt compelled to do something to honor her," Jim Klosterman said.

"And so, literally within days of her accident, we established the endowment that funds the annual scholarship."

Each year, the Odegard School selects a female student pursuing a UND commercial aviation degree to receive the scholarship. Qualified recipients must be a sophomore, junior or senior and exemplify the passion and determination shown by Annette in her career and aspirations.

The Klostermans have met all 16 of the students who've been named Klosterman Scholars and keep in close touch with most of them. That has resulted in the couple's being invited to the weddings of several scholars, and they've attended whenever possible, Jim said.

"Those relationships are priceless," he said.

"We literally consider those young ladies to be family; we refer to them as our 'adopted flight daughters.' We always encourage them to let us know when they're in Spokane, (Wash.) where we live; we'll often go out to the airport to see them. And a lot of their parents have become friends of ours, too."

Klosterman paused. "From a parent level, what's really been incredible for Jan and me is the fact that this is a productive outlet for our grief," he said.

"If a parent loses a child, they like to keep the child's name going. And our ongoing relationship with UND, through these scholarships, has helped that to happen."

The Klostermans also have made regular contributions to the Women in Aviation chapter at UND. Over the past decade, more than 300 members of the chapter have attended the organization's national conference, thanks to the generosity of Jim and Jan Klosterman.

Moreover, the couple proudly has remembered the University in their wills, Jim said.

"You know, my wife and I have no affinity or relationship with either of our two alma maters out in Washington state," Jim said. "It's all UND. They've blessed us, and we hope that we can return the blessing.

"And by no stretch of the imagination do I think our endowment is the largest at UND," he continued. "But I like to believe that it's as heartfelt as any other endowment or scholarship on campus."

On sacred ground

More than 100 people attended the Aerospace School luncheon that preceded the safety lab's dedication in April. Several in the audience dabbed at their eyes as various speakers, including Jim and Jan Klosterman, rose to honor and remember Annette, as well as to celebrate the safety lab's opening.

President Armacost spoke, as did Dean Kraus and Beth Bjerke, associate dean of the Aerospace School. And from his perspective as general manager of aviation software for GE Digital, Andrew Coleman had this to say:

"I grew up in Dayton, Ohio," Coleman noted. "And if you know anything about Dayton, Ohio, you know there are a couple of brothers from there — the Wright Brothers — who did a lot for our industry.

"And you can't go hardly anywhere in Dayton without hearing a story about, 'This is sacred ground, because Orville did this here, or Wilbur did that here.' It's pretty cool."

Which brings us to the Annette Klosterman Aviation Safety and Data Analytics Lab, with its safety-enhancing technology, as well as its extraordinary namesake whose life and family imbues the lab's work with such poignance and power.

"I like to think I'm standing on sacred ground here today," Coleman said.

"I think there are going to be a lot of stories about what happens to save lives, right here.

"In fact, it's already happening. I think we're just at the beginning."

— Tom Dennis, UND Today

HOMETOWN HERO

MICHAEL LENTS

"We had the pleasure of flying local professor Michael Lents. Along with teaching at the university, Michael is a master certified flight instructor and collegiate aerobatics coach.

In 2018, he led the U.S. team to a second-place finish at the World Advanced Aerobatic Championships. At the time, he was ranked fifth among the world's best pilots. As the head coach of the UND Aerobatics team, his students have earned nine first-places finishes at the International Aerobatics Club Collegiate National championships.

For over a decade he's taught aviation students the basic of flight instruction, human factors, and aerobatics and given thousands of young pilots their first flights.

Michael, thanks for letting us share the Air Force mission with you today and for all your contributions to the world of aviation."

- Air Force Thunderbirds on Instagram | 6.18.22

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SPACE STUDIES
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CONFERENCE OFFERS SPACE FOOD FOR THOUGHT

Space Ag Conference at UND covers challenges, opportunities for farmers, scientisits and CEOs.

When it comes to deep space exploration or living on the surface of Mars, providing enough food for humans to remain healthy for months or years at a time is a critical challenge.

Speakers at the April 14 Space Ag Conference, which was sponsored by the Grand Farm Education and Research Initiative and the University of North Dakota and took place at UND's Memorial Union, tackled the question of how nourishing food can be grown in space to make space travel and exploration a practical reality. The conference also provided an opportunity to connect NASA with what North Dakota researchers and businesses have to offer, as well as explain what NASA can offer businesses and research universities.

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SPACESUIT FABRICS

The Department of Space Studies at UND is working with the University of Florida on an experiment that can bring insights into how the conditions on Mars will affect spacesuit fabrics. Dr. Andrew Schuerger from the University of Florida developed a Mars environmental chamber that simulates the pressure, temperature, atmospheric composition, and radiation on the planet. Dr. Schuerger and Dr. Pablo de León are exposing different spacesuit fabrics to these conditions to study the effects of the harsh environment on the multiple layers of a suit. Included in the samples are not only current spacesuit materials, such as the ones used right now in the ISS, but also the new materials used as part of the 3D printed spacesuit project spearheaded at the Human Spaceflight Laboratory at UND. This research will help to understand more about how the Mars conditions affect these materials.

SENATOR CRAMER VISITS THE UND HUMAN SPACEFLIGHT LAB AT KENNEDY SPACE CENTER

The Department of Space Studies opened an annex of their Human Spaceflight Lab at the Kennedy Space Center, to increase internship opportunities for their graduate students. Senator Cramer was there for the unveiling of this lab, as well as to tour the facilities.

TWO NEW ANALOG MISSIONS

During the Spring 2022 there were two simulation missions at the Inflatable Lunar/Mars Analog Habitat (ILMAH). One of them was sponsored by the American Military University, who sent four crewmembers. They spent two weeks performing experiments and analog procedures. The previous mission was organized by UND and a new Mars-Earth communication delay system was tested successfully.

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SAMA Conference

SAMA Career Fair

Women in Aviation Pancake Breakfast

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April 20-23, 2023

Family Weekend BBQ

2022 SAMA & FAMILY WEEKEND

Aviation Scholarships

Alpha Eta Rho Lunch

Atmospheric Sciences Banquet

7
SAMA Conference Speakers

35
Vendors | SAMA Career Fair

170+
students awarded

$558,750
in scholarships

Aviation Family Weekend Banquet

COMMERCIAL AVIATION SENIOR AIDAN LALLY (RIGHT) STANDS WITH UNITED AIRLINES CAPTAIN JILL KOST, A 1990 UND GRADUATE. THIS SPRING, TEN YEARS AFTER THE TWO MET, THEY WERE ABLE TO REUNITE ON CAMPUS.

FLIGHT FRIEND COMES

UND aviation senio captain — who insp

11 years old, Aidan Lally was more excited about e plane rides than he was about the scenery when and his family visited Cozumel, Mexico, in 2012.

e recorded the takeoffs and landings from his ndow seat. Time spent waiting in the terminal was ually a chance to watch the airport work its magic, iding pilots and passengers wherever they needed go.

nen on the return flight, young Aidan met a kindred irit: a United Airlines captain, who welcomed Aidan d his parents into the cockpit of the Boeing airliner.

that moment, the captain, too, spotted in Aidan the ul of a fellow aviator. Who else would ask, as young dan did, a question as sophisticated as, "Where did u go to earn your airline transport pilot certificate?"

at's when Capt. Jill Kost gave the young man the nswer that would change his life.

he University of North Dakota," Kost replied.

ash forward to April of this year, which is when the xt chapter of this unique story of inspiration and entorship begins. That's when Kost returned to her alma mater, UND.

There she met young Aidan Lally again – except that Lally is not quite as young anymore, given that he's now a senior in UND's Commercial Aviation program, having chosen UND expressly because of that chance encounter with Capt. Kost 10 years ago.

"Seeing her again made me realize how a journey can be influenced by incredible people like Capt. Kost," Lally said. "This has all been about inspiration, because people like her are the reason I fly.

"What inspires me is the thought and potential to give back to others, to be that person who's able to say 'congratulations' to someone when they've earned something, or similarly inspire."

Capt. Kost was equally moved. Earlier, Lally had emailed her about his choice to undergo pilot training at UND, and how their short interaction in Cozumel had changed his trajectory in the years since. And despite her hundreds of flights and thousands of chance meetings with others since that day in 2012, Kost knew exactly who had reached out when Lally's email appeared in her inbox.

"I remember opening the email, and it literally made me cry," she said.

Today, Kost vividly remembers her encounter with the Lally family in Cozumel.

"I saw them coming up the stairs and I knew exactly what I needed to do," she recalled.

'You took me in'

Somewhere, on a hard drive, Lally – now 21 – still has the window-seat footage from those flights to and from Cozumel.

"I can send you that footage if you need it," Lally laughed. "I always enjoyed flying. A lot of times, it was just as fun as the vacation."

With his face pressed up against the window of the terminal, Lally watched his family's flight roll up to the gate at Cozumel International Airport. To no one in his family's surprise, Lally knew exactly what he was looking at: a Boeing 737-800.

"Cozumel was an interesting airport, because it was just air stairs there," Lally recalled. "There weren't any jet bridges, at least during the time we were there."

So, Lally and his parents got to watch the flight's crew do a walk-around of the 737. Seeing Kost as one of the two pilots, Lally's mother remarked how wonderful it was to have a female captain on their flight.

Then when they were boarding, Lally's mother waved to Kost and said that her son wanted to be a pilot. From there, they received an invitation to the flight deck.

"You came out and took me in, and I remember sitting in your seat," Lally said to Kost. "And we had a talk."

> **"I realized that Capt. Kost was the reason why I was going to UND and already earned my private pilot's license."**
>
> **AIDAN LALLY**
> Commercial Aviation Major

While her first officer went about the checklist, Kost gave Lally a brief but realistic look at what it's like to be a pilot. They talked about the pre-flight communications coming over the radio, how she personally prepared for takeoff in the 737 and how Lally could take steps to make his aviation dreams come true.

So when Kost told him she'd trained at the University of North Dakota's John D. Odegard School of Aerospace Sciences, it resonated with the 11-year-old.

"As a kid, it really had an impact on me because I knew there were so many decisions that had to be made in training to be a pilot," Lally said. "We talked for a little longer, took a picture, and she told me to stop by at the end of the flight to pick up her business card."

Souvenirs of adventures past

Years later, as Lally packed his bags to move across the country from Olympia, Wash., to Grand Forks to pursue his passion, he cleaned out the drawers of his desk.

Among the strewn-about trinkets and papers – souvenirs of adventures past – Lally found Kost's business card. And his mother, it turned out, remembered the meeting with Kost just as well as he did.

"I said to her, 'I wonder if she's still at United,' because when I looked at the card, I realized that Capt. Kost was the reason why I was going to UND and already earned my private pilot's license," Lally said.

Reconnecting with an old friend

Beyond the information and guidance that Kost offered Lally in his youth, the experience was so powerful because of the altruism and kindness that Kost showed, Lally said.

It was a special moment: having someone in uniform, in the cockpit, tell him that he could be an airline pilot, too.

"That's what made it all super memorable to me, and even more powerful when I rediscovered that business card," Lally said. "I'm thankful for sending that email, and especially thankful that she responded, because otherwise this never would have come full-circle."

And by that, Lally is referring to the fact that Kost made a special trip to UND this spring with staff from United Airlines' Aviate Program – the airline's pilot career pathway program. Members of United Airlines regularly make visits to college campuses to recruit, and Kost has taken part in other aspects of it in the past, such as volunteering as a mentor for pilots enrolled in the program.

Though a 1990 graduate of UND, Kost has rarely had chances to return to her old flying grounds. Today, she lives in the Florida Keys with her husband, who's also a pilot and UND graduate.

"This is the first time I've gone to a campus for this sort of visit, and it was really exciting and fun to visit with students and answer their questions," Kost said. "I know exactly where they are in their education, so it was a great opportunity to talk to them and connect."

But, ultimately, Kost's return to campus represented a chance to reunite with Lally – to smile at how far he's come in his journey, as he's already a senior in UND's commercial aviation program. Lally said he worked with UND's connections within the Aviate Program to bring Kost to campus.

Lally wasn't sure what to expect when he was walking into Robin Hall to meet her. They had kept in touch over the past few years, but only by email. Soon enough, though, it all felt like reconnecting with an old friend, he said.

His mother encouraged him to send an email, even if it meant potentially getting an automatic "undelivered" message if the address no longer existed.

To both Lally and Kost's delight, the message went through.

— Connor Murphy, UND Today

FLYING TEAM TAKES HONORS AT NATIONAL COMPETITION

UND student pilots win second place, earn multiple trophies at 2022 National SAFECON

The University of North Dakota Flying Team took second place overall at the 2022 National Safety and Flight Evaluation Conference (SAFECON) contest – the first in-person event since UND's championship run in 2019.

This year's meet was hosted by The Ohio State University in Columbus, Ohio. At SAFECON, UND has placed first or second 32 times in the past 38 years and took home a number of top marks in 2022.

The team took first place in the ground-based events at Columbus, based on total points, and had first-place finishes in four separate events.

"The team did amazingly well," said Lewis Liang, longtime head coach.

Liang added that of UND's 14 students that competed at 2022 SAFECON, only two had previously been to a national-level event. The exceptional performance from all members of the team was a testament to the character of the team, its leadership and captains, as well as the coaching staff's dedication, Liang said.

"They did a great job handling a competition of that caliber," he remarked.

Top marks for UND pilots

Joe Taylor, co-captain of UND's Flying Team, earned the distinction of Top Pilot as the top scorer among hundreds of competitors.

The team also earned the Judges Trophy for the 2022 competition.

Both the winner of the competition, Embry-Riddle Aeronautical University – Prescott, and UND scored more than 500 total points this year, which was thought to be an unobtainable goal only a short time ago, according to Liang.

"The Odegard School is extremely proud of how well our UND Flying Team performed at SAFECON, and how hard they worked during the entire school year to compete at the highest level," said Elizabeth Bjerke, associate dean of the John D. Odegard School of Aerospace Sciences.

'Battle of two heavyweights'

SAFECON regional and national competitions test pilots in comprehensive fashion. From pen-and-paper navigation to power off landing accuracy, the event's 12 contests bring all flight skills to bear.

"This was a young team that acted and performed like a veteran group of competitors," said Ryan Guthridge, assistant coach. "They represented the University of North Dakota with an extremely high level of pride and honor. This year's competition was a battle of two heavyweights, both scoring a record total of team points."

Last year, the national competition was held virtually – featuring only ground-based events that could be judged from a distance. Liang credited event organizers for doing everything possible to bring the event "back to normal" as much as possible in 2022.

And the benefits of returning to the national stage go farther than bragging rights, Liang added. The camaraderie and potential for networking is something invaluable for UND's pilots, as they're meeting and competing against people with whom they'll work side-by-side once they're in the aviation industry.

Also, for the students, taking home titles such as "Top Pilot" and "#1 in Navigation," are big points on resumes. People in the industry know what it takes to achieve those accolades, Liang said, and it serves pilots well to be recognized at the NIFA level.

Members of the 2022 SAFECON UND Flying Team are Matthew Cleveland (Sycamore, Ill.), Nathaniel Dietz (Chatfield, Minn.), Ryan Fitzgerald (Albuquerque, N.M.), Bailey Harris (Bemidji, Minn.), Caroline Kelley (Lakeville, Minn.), Max Langerud (Worthington, Minn.), Blake Nahin (Los Angeles, Calif.), Cobi Pimental (Kailua, Hawaii), Aaron Schwartz (Buffalo Grove, Minn.), Jebadiah Sussenbach (Edina, Minn.), Joe Taylor (New Prague, Minn.), Mikayla Weiss (Grand Forks, N.D.), Carson Wells (Bristol, Ind.). and Cole Yokoyama (Kaneohe, Hawaii).

— Connor Murphy, UND Today

KAREN RUTH, A UND GRADUATE, DELTA AIR LINES A330 CAPTAIN AND A 2018 INDUCTEE INTO THE UND AEROSPACE HALL OF FAME, POSED WITH EIKOH HAYASHI FOR THIS PICTURE.

Q&A

WITH EIKOH HAYASHI

UND student interns at Delta Air Lines HQ

Editor's note: Eikoh Hayashi is a UND senior pursuing Commercial Aviation. He is a transfer student from a public university in New York, where he had been studying neuroscience before coming to UND.

And today, he is a Flight Operations intern at the Atlanta headquarters of Delta Air Lines, having secured one of commercial aviation's most sought-after internships. Out of 441 applicants for the spring 2022 semester-long internship, only four were selected.

In this Q&A, Hayashi answers questions from UND Today about his internship and time at UND.

More about Hayashi: He transferred to UND in the fall of 2019 after realizing his passion for aviation, an event that took place when a pilot friend took him up on a fun flight.

He is originally from Japan and moved to New York about six years ago.

On campus, he is a member of the UND Honors Program, a resident assistant, the president/founder of the Japanese Cultural Association at UND, a Student Aerospace Advisory Council member, a UND Alumni Mentor Program member and a member of the Professional Asian Pilots Association.

Scan with your camera to read the full Q&A on UND Today!

UND TODAY: How did you settle on UND, and on the Aerospace School?

HAYASHI: I decided upon UND because UND is certified by the FAA to award the 1,000-hour Restricted Airline Transport Pilot (P-ATP) certificate. That certificate lets students start flying as a first officer for a commercial air carrier with just 1,000 hours, as opposed to 1,500 via another flight school, all while earning a B.S. degree.

UND has a reputable collegiate aviation program with great affordability and amazing training standards.

UND TODAY: Has your training lived up to your expectations? Any surprises (or exciting and relevant experiences) that you've encountered?

HAYASHI: As all out-of-state students realize upon arrival, Grand Forks is a small city. The cold weather during the winter season is not something one can truly understand unless one experiences it. We get to fly in some of the harshest conditions that the United States has to offer, and I can say that my skills improved and that I have become comfortable flying at the edges of aircraft performance limits.

An exciting surprise I experienced was getting to view the Northern Lights while flying during the night. Not a lot of college students in the U.S. get to view these lights, much less in the air while flying a plane!

UND TODAY: What is the nature of the internship you're currently involved in?

HAYASHI: Delta Air Lines hires interns each semester in the Flight Operations department at the World Headquarters in Atlanta. This is a paid internship with added privileges such as standby travel anywhere in the Delta system.

Each intern gets assigned individual duties within the Flight Operations department. I am currently in charge of auditing charter flight operations. The charter department at Delta operates charter flights for different professional and college sports teams, VIPS/corporations and the military. I mainly work with teams from the NFL, NBA, NHL, Major League Baseball and the NCAA, and I deal with the details of the charter flights from the minute they touch down until the passengers depart down the air stairs.

Something I am proud of accomplishing here at my time at Delta is successfully verifying and working on specific taxi and parking instructions given to the pilots and bringing the Team USA Olympic teams safely to and back from the Olympic Winter Games of Beijing 2022.

UND TODAY: How did you learn about the internship?

HAYASHI: I first became interested in Delta Air Lines after several UND alumni who fly for Delta visited our university and hosted a presentation about a pathway program that Delta offers to the students of UND. The level of professionalism that the presenters embodied immediately became my drive to work hard and research the company.

I learned about this particular internship program through the John D. Odegard School of Aerospace Sciences' Jobs, Internships & Scholarships webpage. I did my research online and found out just how competitive this application is and asked my professor, student organization leaders and academic advisor for guidance on applying.

> **"I'd say that an aviation internship is a life-changing experience."**
>
> **EIKOH HAYASHI**
> Delta Air Lines HQ intern

UND TODAY: Was the application a challenge?

HAYASHI: Yes! The initial process called for submitting an application via Delta's website and also turning in a current resume. I spent a long time working on my resume, and I did my best to make it perfect.

After an initial review of the application by Delta, I was selected to move forward to a quick interview and then onward to a final virtual interview session. I spent a long time preparing for the interview and even asked for my friend's help to conduct mock interviews at Roadhouse Cafe, a 24-hour diner loved by generations of UND students as well as the community.

When I was accepted into the program in November 2021, I found out that I was one of four interns selected out of the 441 applicants for the spring 2022 term.

UND TODAY: What are some of the amazing things you experienced during your internship program?

HAYASHI: I have been blessed with the chance to be surrounded by successful pilots who are currently flying in the aviation industry. I get to see how pilots conduct their everyday duties, while I'm also learning how the airline industry operates from the inside.

Here are some of the things I got to experience at this internship that I wouldn't have been able to otherwise:

- Jump-seat on an aircraft and observe Delta Air Lines flight deck procedures (thank you, Delta!).
- Operate current Boeing and Airbus full-motion simulators.
- Learn about other departments, including Flight Safety, Operations and Customer Center, Technical Operations, In-Flight Service and Airport Customer Service.
- Make meaningful and valuable connections with people.
- Standby travel worldwide within Delta's route network while off duty (Travel to Hawaii, Greece, England, France, Italy, Netherlands, etc.)

UND TODAY: Suppose you were talking to a roomful of UND Aerospace freshmen. What should they do to maximize their odds of winning a great internship?

HAYASHI: To the current Aerospace students at UND, I'd say that an aviation internship is a life-changing experience. I highly recommend they do their own research, reach out to their academic advisors and professors for guidance and keep an open mind to taking a semester out of their college years to gain real-world experience.

ATMOSPHERIC SCIENCES STUDENTS

PROFILING THE ATMOSPHERE

WINTER WEATHER BLIZZARD LAUNCHES

Supported by the North Dakota Space Grant, participants braved the elements to launch weather balloons into winter storms, blizzards, and during NASA satellite overpasses to better understand the structure of the atmosphere.

UND CHASE EXPERIENCE

The 2022 Storm Chase Experience group launched sondes to understand the near-storm environment before and during severe storms. Pictured is a launch from May 25th 2022 near Keokuk, IA. Data from the flight shed light on hazards that could be expected later in the day.

UAS WEATHER FORECAST CAMPAIGN

Simultaneous UAS and miniature weather balloon launches are being conducted at the UND Oakville Prairie Field Station to better understand winds at the heights small UAS fly. This project, supported by the Universities Space Research Association (USRA) under the Alliance for System Safety of UAS through Research Excellence (ASSURE) program will yield data to improve mobile weather forecasts for UAS pilots.

UAS FOG PROJECT

Atmospheric Sciences Department graduate student Michael Willette, working with Thesis Advisor David Delene, assembled and deployed this instrumented tripod to provide surface observations with instruments that correspond to Unmanned Aircraft System (UAS) based instruments. These research observations support a National Science Foundation (NSF) sponsored fog project. The project has approval to obtain UAS based measurement within fog to improve forecasting.

**One of the few if any projects to receive approval to fly in cloud(fog) in the US.*

DCOTSS OZONE SONDE LAUNCHES

The University of North Dakota is supporting the NASA Dynamics and Chemistry of the Summer Stratosphere (DCOTSS) project with approximately 30 ozone sonde launches during the summers of 2021 and 2022. Suspended under large weather balloons, the instrument measures ozone concentrations well into the stratosphere. Many of the launches were tracked and instruments were recovered from farm fields, creeks, etc. so they could be reused for later launches.

UND RETURNS TO

WORLD'S LARGEST CONFERENCE FOR AUTONOMOUS TECHNOLOGY

North Dakota, UND showcase state's UAS ecosystem while also sponsoring drone racing event in Florida

The University of North Dakota was once again front and center at Association for Uncrewed Vehicle Systems International (AUVSI) Xponential conference at the Orange County Convention Center April 25-28 in Orlando, Florida.

As the world's largest nonprofit organization dedicated to the advancement of uncrewed systems, robotics and autonomy, AUVSI says Xponential is "the place to share ideas, navigate changing policies, experience new innovations, and strike up new partnerships." The conference featured UAS technologies from energy to transportation, construction to defense, and medicine to agriculture.

According to Naomi Hansen, director of corporate partnerships fo UND's Division of Research & Economic Development, "Representatives attended from many areas across campus – including the Division of Research & Economic Development, the Research Institute for Autonomous Systems (RIAS), the John D. Odegard School of Aerospace Sciences, the College of Engineering & Mines, the College of Arts & Sciences and the Center for Innovation.

"We also had representation from North Dakota Commerce, Indian Health Service, City of Grand Forks, and the Northern Plains UAS Test Site," she said.

In addition to being an AUVSI exhibitor, UND was the platinum sponsor for the 2022 Drones in School National Championship, a MultiGP STEM Alliance event. The championship was held in conjunction with Xponential and consisted of middle school and high school teams from around the nation competing in both drone racing and a capture-the-flag event

"We also hosted a successful industry and alumni networking reception in partnership with the UND Alumni Association & Foundation, the North Dakota Department of Commerce, and the Northern Plains UAS Test Site," Hansen said.

"It was a wonderful opportunity to showcase the great research taking place within the University and the state of North Dakota," she added. "We were able to form new relationships, learn about emerging technologies, and connect with industry and university partners."

UND attendees to the 2022 AUVSI Xponential conference offered their thoughts on the event.

John Mihelich, Vice President for Research & Economic Development

"It was great to see the team from UND and North Dakota in action at AVUSI. Our sustained participation at AVUSI is one avenue for building relationships and showcasing UND's expertise in uncrewed vehicles, augmented and autonomous systems, and a range of national security R&D and modernization interests... Our collaborations reveal how we are positioning the university as the strongest partner we can be, building our capacity and pursuing cooperative possibilities."

Mark Askelson, RIAS Executive Director, Associate Dean for Research, John D. Odegard School of Aerospace Sciences

"AUVSI is always tremendous for us, as it is a great event for developing new opportunities and expanding existing ones. We are incredibly fortunate to have such excellent partnerships not only within our ND ecosystem, but across the country with government, academia, and industry partners… We are extremely fortunate to have such a devoted team that helps ensure our success."

Jordan Krueger, RIAS Research Manager

AUVSI 2022 made history by incorporating a STEM Championship for the very first time. Eleven schools and over 160 participants showed to make the 2022 Drone in School – MultiGP STEM Alliance Championship an amazing event and drawing lots of spectator excitement… The opportunity we had to present to the schools allowed us to reinforce that the determination and skill they bring to these events is exactly what we are looking for in education and industry and to continue on that path. We're looking forward to Denver in 2023 and making this event bigger and better!

— Naomi Hansen, UND RIAS

FRONTIER AGREES TO NEW CAREER PATHWAY PARTNERSHIP

New program from Denver-based Frontier Airlines will help UND with advanced instruction in addition to streamlining pilots' career paths

Frontier Airlines joins a robust list of U.S. airlines that have established similar programs with UND Aerospace – providing commercial aviation students with an opportunity to interview at a major airline prior to graduation.

Upon a successful interview process with Frontier, students will then have a predetermined, accelerated route to meet training requirements and join the airline's pilot workforce.

Through the program's requirements, this new agreement with Frontier will also help UND in its need for advanced flight instruction, according to UND Aerospace.

"We are very excited for this new and unique partnership with Frontier Airlines," said Elizabeth Bjerke, associate dean of UND Aerospace. "Not only are they providing an amazing opportunity for our graduates, they are also partnering with the University to provide training and educational experiences for our faculty and staff in order to keep them proficient and current in advanced aircraft operations.

"Providing this valuable experience aligns with our core value of lifelong learning for our faculty and staff."

"We are thrilled to partner with the University of North Dakota to support this exciting career pathway program for future pilots," said Brad Lambert, vice president of flight operations for Frontier Airlines. "This novel agreement will enhance our future pilot pipeline and bring valuable training expertise to the University. It's a true win for both organizations."

'Unique compared to most'

Kent Lovelace, UND's director of aviation industry relations, highlighted what makes this latest agreement unique among other pathway programs from major airlines.

"Instead of going to a regional carrier after graduation, students with 1,000 hours of flight time who are selected by Frontier Airlines will go directly to Frontier for training and operating experience, flying their aircraft" Lovelace said. "Following around 100 hours of operating experience training at Frontier, a select number of those in the program will come back to UND and serve as flight instructors in advanced aircraft operations courses."

Due to the industry-wide demand for pilots, UND Aerospace has been challenged to keep instructors with appropriate experience to teach higher-level "jet transition" courses such as multi-engine systems and advanced aircraft operations – courses that are crucial for students who want to work for major airlines, Lovelace said.

Pilots coming back to UND will instruct for 250 hours before resuming their careers at Frontier Airlines. During their time at UND, pilots will retain their benefits and earn a salary equal to what they would earn at Frontier, Lovelace said.

"Frontier came to us and said, 'How can we set this up to where we both win,'" Lovelace remarked. "The resulting program is a concept that's unique compared to most, and it will help us have a cadre of qualified instructors for advanced instruction purposes."

Brett Venhuizen, UND professor of aviation and department chair, also characterized Frontier Airlines' program as a unique opportunity for students to go "directly from UND to the cockpit of an Airbus." But Frontier's commitment to faculty and staff training at UND will also help bolster the School's ability to train future airline pilots, he said

"Frontier is agreeing to provide type ratings – advanced training – for a number of our faculty and staff," Venhuizen said. "This will allow our faculty to provide instruction that is closely tailored to the instruction that graduates will receive in their new-hire training at the airlines."

— Connor Murphy, UND Today

MISSION IMPROBABLE: WINGIN' IT ALL THE WAY TO AUSTRIA

How UND student Connor Felchle turned a Sunday afternoon quest for free Red Bull stuff into a four-day, all-expense-paid trip to Salzburg, Austria, might seem like a bad plot from a sitcom.

UND TODAY
Scan with your phone's camera app to read the full story.
blogs.UND.edu/und-today

RESEARCH TEAM'S WISH: LET IT SNOW...AND SNOW... AND SNOW

Many residents of the Red River Valley in eastern North Dakota probably agree that experiencing blizzard after blizzard during the winter of 2021-22 has pegged their BS meters — Blowing Snow, that is — completely off the dial.

However, if your job is to study Blowing Snow, then these past winter months begin to look more like a winter wonderland and less like prolonged torture.

UND TODAY
Scan with your phone's camera app to read the full story.
blogs.UND.edu/und-today

ADVENTURE AWAITS!

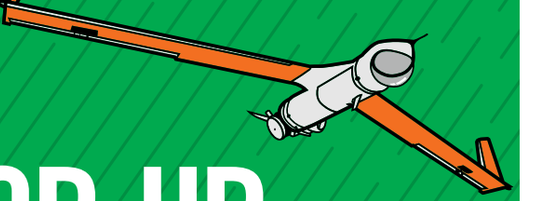
"While I was there, I met Karen Ruth, '82, a pilot for Delta. I remember looking at my mom and saying "Wait, I can do that too?!" She told me about an aviation camp held at Minneapolis-St. Paul Airport and encouraged me to apply that following summer. I walked away that day knowing that's what I wanted to do." - Sophia Jensen, '22

UND ALUMNI MAGAZINE
Scan with your phone's camera app to read the full story. **UNDalumni.org/alumnimag**

HAVE YOU EVER BEEN KNOCKED DOWN?

Airline Pilot John Ferreira shares his story of dealing with mental health — balancing the struggles of life while navigating the FAA's special issuance process.

Check out his interview on **YouTube @UNDaerospace**



RECORD NUMBERS

‘REGION’S BIGGEST POP-UP SCIENCE MUSEUM’

Thousands from around the state toured UND’s Odegard School during Aerospace Community Day

When you wake up not knowing how many people are going to attend your big public event that day, the early indicators count. So when Beth Bjerke glanced outside soon after the start of Aerospace Community Day on Saturday, she breathed a sigh of relief:

“The parking lot was full within the first hour,” said Bjerke, associate dean and professor at the John D. Odegard School of Aerospace Sciences.

Courtney Olson, marketing, events, & project coordinator at the Aerospace School, agreed. The first Aerospace Community Day in 2018 drew perhaps 2,000 people, and the 2019 and 2020 events saw the numbers grow.

But something kicked in the public’s afterburners, because during this year’s event, attendance roared. “After talking with our team, we think we had more than 3,500 people this year,” Olson said.

Visitors to UND’s Aerospace Community Day lined up for the chance to fly mini-drone quadcopters through an obstacle course.

To volunteers, sponsors and others: Many thanks

“It’s a lot of work to make this day happen, and it requires more than 250 volunteers to do it,” she continued.

“From our Dean’s Office staff to our faculty, students, flight instructors, flight operations support staff, student organizations, and flight teams, the day would not be possible without them. And at the end of the day, when we see how many people have toured our buildings and left many kudos and thank you’s, we know it’s all worth it.”

As a 2018 story in UND Today described, “the concept of Community Day is simple: throw open the doors and immerse attendees in the full UND Aerospace experience, from aviation, flight operations and UAS to space studies, atmospheric sciences and sustainability.”

That means visitors can fly simulators, pilot drones, try on space suits, launch weather balloons, talk virtual aircraft down in the school’s Air Traffic Controller trainer, and climb into the cockpits and sit at the controls of UND’s real-life aircraft at the Grand Forks airport, among many other activities.

In other words, Aerospace Community Day is UND’s chance to thank the community by inviting people to learn more about and experience the Aerospace School’s amazing technology, Bjerke said.

“That’s why we call it the region’s biggest pop-up science museum,” she said. “We have hands-on exhibits in almost every room, and it’s so much fun to see how excited the children and their parents are.”

Welcome, Class of 2035

Plus, there’s a good chance that some of those starry-eyed young people will wind up enrolling at the Aerospace School in a few years, Bjerke noted.

“I always say, it’s also our recruiting for the class of 2035,” she said. “It’s my hope that in five or 10 years, we’ll be seeing some of these students again.”

Besides the UND student and other volunteers, the event’s primary sponsors – which include Cirrus Aircraft, Rydell Cars, and SkyWest and Delta Air Lines – also deserve the University and region’s thanks, Bjerke said.

“We have such great industry support, and that means it really doesn’t cost us anything to put this on,” she said. “The sponsorships pay for a lot of our printed and other materials, and we’re thrilled that Delta pilots and others from the sponsors come here to take part.”

All things considered, it was a banner and wonderful event, Bjerke concluded. “What a fun day,” she said. “Busy but fun. I think I got 10,000 steps in by 11 a.m.!”

— Connor Murphy, UND Today

Next UND Aerospace Community Day

2024!

UPCOMING EVENTS

JULY

16 | Professional Asian Pilots Assocation Expo - Las Vegas, NV

25 | EAA Airventure - Oshkosh, WI

27 | Alumni & Industry Reception - Oshkosh, WI

AUGUST

05 | UND Summer Commencement - Grand Forks, ND

10 | OBAP Annual Conference - Phoenix, AZ

SEPTEMBER

26 | UND Homecoming Week - Grand Forks, ND

30 | UND Aerospace Hall of Fame Luncheon - Grand Forks, ND

OCTOBER

08 | View UND Aerospace - Grand Forks, ND

11 | Faces of the Industry - Grand Forks, ND

18 | NBAA-BACE - Orlando, FL

2022 UNIVERSITY OF NORTH DAKOTA HOMECOMING EST. 1883

SEPT. 26 - OCT. 1

27 | Blood Drive

28 | Downtown Pep Rally

29 | Sioux Awards for Distinguished Service & Leadership

30 | UND Athletics Hall of Fame Banquet

1 | Parade
Golden Grad Coffee
Tailgating
Football vs. Missouri State
Hockey exhibition

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