AEROCOM

JOHN D. ODEGARD SCHOOL OF AEROSPACE SCIENCES

WINTER 2019

LEADING THE NEXT 50 YEARS.

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AEROCOM | WINTER 2019

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Happy New Year from the John D. Odegard School Aerospace Sciences. All the best to each of you in 2019!

We are very excited as we look to the future success during the next 50 years of the John D. Odegard School of Aerospace Sciences. But first, we concluded our fantastic 50th anniversary year with our Homecoming celebration and it truly was an exceptional event with approximately 500 alumni, faculty, staff and friends in attendance! It was very special to have Senator Hoeven and his wife Mickey attend and hear the Senator's very kind words. In addition, having Diane Odegard share some of our significant historical milestones was very heart warming. Finally, we thank President Kennedy's greetings about our leadership role going forward and Dr. Bruce Smith for his insightful comments.

We also established the Odegard School Hall of Fame and inducted our first members at a luncheon during Homecoming. Congratulations to Professor (Coach) Kent Lovelace and the 1985 Flying Team as well as Karen Ruth ('82) A330 Delta Captain and Roger Martin ('73) retired Cessna aircraft executive.

To top of our anniversary year, we had a great turnout at the NBAA UND Aerospace event as we welcomed our new Odegard School development officer, Jonathan Gehrke ('06). We also appreciated the greetings from Clay Lacy and Si Robin at this year's event.

Also we are deeply indebted to FedEx and Tim Leonard ('87) Vice President for Flight Operations for FedEx and a Dunseith, ND native for presenting the Odegard School with a $500,000 check to establish scholarships for our flight instructors!

We will continue to lead our dynamic aerospace industry with high quality education at a reasonable cost through our unique aerospace college. Whether it be innovative integration of virtual reality technology into all of our academic/flight programs or expansion of our flight training programs to overseas locations—we at the Odegard School are embracing the future with enthusiastic energy. As the expansion of unmanned aviation continues, we will be there to help enable the safe integration of unmanned aircraft into our National Airspace System. UND Aerospace will contribute significantly to the rapid developement off commercial space travel. As sustainability issues on our planet become more urgent, we will have participated broadly in helping planet Earth overcome its environmental concerns. And finally, as weather forecasting becomes more precise, loss of life is reduced. We are ready to lead into the future for the next 50 years!

Thank you to each of you for your great support of the John D. Odegard School of Aerospace Sciences!

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

HALL of FAME

2018

DURING THE UND AEROSPACE 50TH ANNIVERSARY WE WERE EXCITED TO ANNOUNCE THE INAUGURAL CLASS OF THE NEWLY ESTABLISHED UND AEROSPACE HALL OF FAME! WE ARE LOOKING FORWARD TO ADDING MORE UND AEROSPACE ALUMNI TO OUR HALL OF FAME.

To nominate a deserving individual, please email Kenneth.Polovitz@UND.edu

1985 FLYING TEAM

Kent Lovelace
Coach

Robert Beckner
Assistant Coach

Phillip Hein
Assistant Coach

Joe Johnson

John Caturia

Rob Geisler

William Ward

Timothy Kutchera

Charlie Kalvoda

Bill Schuelter

Rod Reynolds

Steve Church

Grant Smith

Timothy Peirce
(posthumous)

ROGER MARTIN '73

Career Accomplishments

Cessna Hangar 10, increase student pilot starts

Member of the initial management team that successfully built and launched Cessna's Conquest Marketing Division

Member of the initial management team that successfully launched the Company Airline Program, an innovative turnkey lease program, new to the aviation industry

Charter member of the John D. Odegard School of Aerospace Sciences Aviation Alumni Advisory Board

Primary liaison between Cessa and author Jeffrey L. Rodengen in writing and publishing the book *The Legend of Cessna*

KAREN RUTH '82

Career Accomplishments

To date, Karen has flown over 23,000 flight hours and has type ratings in the DC-9, A320 and A330

Only pilot to receive both the prestigious Delta's Chairmen's Club award and the Northwest Airlines President's Club honor

Chosen to fly the delivery flight of Delta's first A330 from France to the United States

Mentored hundreds of young people interested in aviation careers

Founding member of UND's MACH group

1968-2018
50TH ANNIVERSARY

UND AEROSPACE FOUNDATION

Piper®

ROBINSON HELICOPTER COMPANY

ENDEAVOR AIR

GAR

"You couldn't take four steps without bumping into somebody you wanted to talk to. I'm glad we had nametags. It was a lot of fun and great to see alums and industry friends visiting, and reminiscing. We could still be visiting, if not for the night ending."

KEN POLOVITZ, ASSISTANT DEAN / ALUMNI RELATIONS

FUTURE LOOKS BRIGHT FOR ASPIRING AIRLINE PILOTS

"The growth is evidence of the needs of the industry and the opportunities that exist for our students seeking professional flying careers. I am convinced that these career pathways will continue to evolve and extend beyond the flight deck to include other career fields that are a part of the world of aviation."

KENT LOVELACE '80, '84, PROFESSOR &
DIRECTOR OF AVIATION INDUSTRY RELATIONS

CAREER PATHWAY PARTNERS

- Air Wisconsin
- Delta
- Endeavor Air Program
- Envoy Pilot Cadet Program
- ExpressJet Pathway Program
- FedEx Purple Runway Program
- JetBlue University Gateway Program
- Piedmont Cadet Program
- PlaneSense Program
- PSA Cadet Program
- Republic Aviation Career Pipeline
- SkyWest Cadet Program
- Sun Country Airlines
- United Career Path Program

UND FLYING TEAM
REGION 5 CHAMPIONS

They recently won the Region V and VI National Intercollegiate Flying Association competition, held at Kansas State University Polytechnic in Salina, KS.

This competition was unique, as it was the first time the two regions have combined to compete at the Regional level. The UND Flying Team competed against 10 other Universities, taking top honors in the individual and combined team results.

Members of the UND Flying Team won first place in 8 of the 9 events, including UND's Garret Turco claiming Top Pilot honors. As a team, the UND Flying Team won first place in Ground Events and Flight Events, along with the Regional Championship honors.

The UND Flying Team consists of 15 student members who compete in regional and national airmeets. The ground and flight events test the pilots' knowledge and skills in events such as precision landings, navigation, preflight, and aircraft recognition.

The National Intercollegiate Flying Association is comprised of 65 member schools that compete at Regional Competitions in order to secure an invitation to the National competition. The 2019 National Competition will be hosted by The University of Wisconsin on May 13-18, 2019. ///

—Lewis Liang, Coach & Ryan Guthridge, Coach

UND FLYING TEAM

Standing L-R: Ryan Guthridge – Coach, Maxwell Guderian, Adam Douville – Captain, Kait McGowan, Steven Roche – Captain, Damien Gehler, Jason Preston, Ryan Fitzgerald, Arthur Bebenek, Joseph Sorrentino, Seth Wiebe, Alexis Hesse, Brendan Korringa – Safety Officer, Sarah Gould, Lewis Liang – Coach

Seated L-R: Brian Shamblen, Ben Eidem, Garret Turco, Kunal Sujanani

Not pictured: Joe Taylor

EVAN PEERS

UND AEROBATIC TEAM

The winning 2018 team consisted of students Jarrett Croy, Elizabeth Birch, Alex Hunt, James Jacobson, Torin Walhood, Mitch Oswald, Ashton Croy, Elise Wheelock and Andrew Hollingsworth. Head Coach, Michael Lents, was assisted by Mitch Oswald and Faculty Advisor Joe Vacek.

Photo courtesy of IAC

10

NATIONAL CHAMPIONSHIPS

"These results truly show the depth, determination and discipline pilots educated at the University of North Dakota display day in and day out. The unique training and experiences offered through the aerobatic flight course and our aerobatic team highlight UND's commitment to excellence."

MICHAEL LENTS, COACH '05, '07

UND AEROBATIC COACH MIKE LENTS
NUMBER 5 IN THE WORLD

Mike Lents earns top marks for Team USA in silver-medal finish at World championships.

Mike Lents was featured on the cover and inside spread of Sport Aerobatics, International Aerobatic Club in October for his 5th place win on Team USA in Romania competing at worlds.

Michael Lents, MCFI-A

A master certified flight instructor, assistant professor and collegiate aerobatics coach at UND — recently placed fifth overall among the world's best pilots at the World Advanced Aerobatics Championships in Romania. He helped lead Team USA to a silver medal in the global competition. Image courtesy of Mike Lents.

SUPERSTITIOUS

Romania — picturesque and steeped in history, lore, and superstition — was an amazing home to the 2018 World Advanced Aerobatic Championships. Nothing compares to being part of a three-ship passing over the ruins of a medieval castle on the way to the contest. The Transylvanian Alps, the Romanian portion of the Carpathians, became the backdrop as well as a ward against the majority of the weather events from reaching the field.

As we prepared for competition I had joked, and previously wrote on the pages of *Sport Aerobatics*, that I would draw No. 1. That fate was avoided for the first two flights but wouldn't last indefinitely.

"Remember, for the figure draw pull No. 1," Aaron McCartan, IAC 433420, said in encouragement. This would give the U.S. Advanced Aerobatic Team the ability to submit an Unknown figure without having to worry about elements previously submitted. All the pilots were gathered in the briefing facility that was specially built to host the world championships. The large, modern, air-conditioned room was filled with desks and comfortable chairs occupied by the 56 pilots and their coaches and managers. Two foosball tables in the back were silent (for the time being) as everyone focused on the large projector screen in the front. We were there for two reasons: to draw lots for figure submission and to draw for the order of flight for Program 3, the second Free Unknown.

"We will first draw for order of flight," Contest Director László Ferenc announced.

The order to draw lots changed with each flight. The first flight was alphabetical by first name, the second was reversed, and then we started in the middle of the group and continued alphabetically. I was pretty early in the lineup, near the first handful of competitors to draw. No. 1 was still out there, but statistically, so was the majority of the lineup.

My name was called, and I confidently walked to the table, picked up the Red Bull can I had my eye on, and held the bottom toward the announcer without looking. "Number 1!" László exclaimed followed quickly by cheers and applause. With a wave and a grin, I returned to my seat already strategizing the next flight.

The contest was in the middle of the second flight, and my place in the rotation was toward the end. This caused an initial concern about flying two Unknowns nearly back-to-back. This worry was unfounded as there are procedures for that eventuality. At the time, I felt uncertain. However, after completing my second flight, storms swept through the valley, and weather shut down operations for the day.

I thought, this won't be too bad. The second rotation will finish tomorrow morning, and after lunch, I will start the third. The judges will be warmed up for the day, so it won't be like going in cold — at least I hoped it wouldn't.

TESTING THE WEATHER RULES

Early in the day, I conferred with coach Nikolay Timofeev, IAC 27746. We were briefed early in training that weather was the responsibility of the pilot. Once you dive in the box and signal with wing rocks, you must finish the sequence as unsubstantiated delays incur heavy penalties. There was potential for rain that afternoon, and I wanted to be certain of the procedure if foul weather was encountered.

As warm-up pilots returned, I sat in the Panzl. One last sip of water, one more click on the ratchet, another glance at the sequence card. Stan Moye was holding an umbrella to provide some shade. Aaron took my hat and held a water bottle for me. From across the ramp, we heard the call, "Twenty minutes for judges' conference!"

"Well, I'm hopping out." I kept the chute on as I stretched my legs and walked to the shade of the hangar. Aaron reassured me there was plenty of time. Glancing skyward, I wasn't so sure. We had been watching the clouds gather over the Carpathians to the north during the late morning. Now they wrapped around to the east and slowly marched westward toward the field.

PHOTOGRAPHY COURTESY OF TEAM USA

"Okay — launch!" Strapped in again and ready to fly, adrenaline and anticipation tuned up my nerves. My ears perked to the rumble from behind. "Thunder, right?" The goal is to get a few flights in before things get exciting.

Once airborne, I was cleared into the box. Belt check, warm-up figure complete, I turned toward the north side of the box and began to experience precipitation in the climb. After a quick radio call to the chief judge who requests verification that precipitation is in the box, I was recalled to land. Once the engine shut down, a jury member approached, determined to ascertain the exact location and altitude of precipitation. To corroborate my story, a light shower started, as if on cue, across the ramp. The jury member shrugged, and the inquisition ended.

Looking at radar, I could tell the band of rain would be short-lived. It was early afternoon and the rest of the day remained. With the Panzl in the hangar and wiped down, I retreated to the shade and air-conditioning of the briefing room. The wait began, and the mental tightrope walk to keep at optimal stress level continued. If you get too relaxed, there's going to be some inertia before getting up to speed. Too much stress and fatigue sets in before flying even begins. I read, listened to music, and walked the sequence as an hour and then another slowly passed.

READY PILOT ONE

"Weather has improved. First competitor in the air in 20 minutes." Now it is time to fly.

As I dove into the box for the second time that day, the winds improved compared to right before the storm. Some turbulence persisted, but nothing I hadn't already experienced in the skies over North Dakota. All other parameters fell into the ideal. The tailslide for Figure 3 flew clean. The snap-and-a-half lit off on Figure 9 and stopped precisely. The half-snap on top of the half-loop for Figure 12 worked as it should, to my relief. As I finished the rolling turn, I hoped my performance would hold up for the team. After landing and gliding to the pump, Aaron reviewed the flight and confirmed "everything was there." No zeroes. No lows. I asked Aaron to take my obligatory No. 1 photo. For the next 10 minutes, no one could touch me. I was the top-scoring competitor in the world — at least until the next pilot finished. The team was in good spirits: A solid flight by anyone on the team boosted confidence and helped analyze the strengths and strategy for the sequence we selected together.

For the next day, my score stood in the top three. By the end of the program, the flight placed sixth. Perhaps the "curse of No. 1" had been broken, perhaps only for the time being. Aaron flew to a first place finish in Program 3. Team standings tightened and relied on solid performances in the final program.

THE FIRST SHALL BE LAST

As we drew lots for Program 4, relief fell over the group as a pilot from another country drew No. 1. Similar to my situation, they wouldn't have the first flight of the day, just the first flight of the program. We drew lots before the completion of Program 3. As László called my name toward the end of the group, I spied my Red Bull can. Like last time, I revealed the can to László before glancing myself. "Fifty-six!" a spattering of more claps as my name was entered as the final pilot of the contest. If I so chose, I would know exactly what scores would be required to make or break our position, but ignorance is bliss. Flying to the best of my ability, and for nothing else, became my strategy to help keep my performance consistent for the team.

As there was plenty of time between the Program 3 and Program 4 flights, my parents, brother and sister-in-law, and I toured Peleș Castle, Bran Castle, and the Râșnov Citadel. I was anxious to know how the team was doing and show my support, but Nikolay also advised us to take time to maintain a cool head. Matt Dunfee, IAC 435623, had a great run that earned him a third-place medal, his

The U.S. Advanced Aerobatic Team with its medals. Left to right: Coach Nikolay Timofeev, Michael Lents, AJ Wilder, Aaron McCartan, John Wacker, Marty Flournoy, and Stanley Moye. Not pictured: Matt Dunfee. SUA is the Romanian spelling of USA – Statelor Unite ale Americii.

Aaron McCartan (left) and Michael Lents sharing the Panzl.

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

AEROSPACE ALUMNI ADVISORY BOARD

The original charter for the UND Aviation Alumni Association set forth the goals of continuing the camaraderie for all those who attended and experienced UND as aviation students. The link between the Alumni and Faculty was identified as a vital resource to continuing the influence of UND Aviation and building a lasting bond for all those whose lives took root on the campus and above the farm lands of North Dakota. This connection remains strong today.

Today the AAAB builds upon that original vision. Our core values remain unchanged, to promote, strengthen and encourage the continuing development of UND Aerospace. That mission has grown significantly over the last 50 years. Today, we focus on technologies and initiatives which could not have been imagined in 1978 but are a part of everyday life today. The next 50 years will be equally as exciting and UND will continue to lead the development and application of those initiatives.

Our short term goals have been to strengthen the ranks of our membership, widening our perspectives and diversity of expertise. To increase the reach of our administrative capabilities by centralizing our resources within the UND Aerospace Executive Leadership team. To participate in the accreditation process with direct and substantive input. We have successfully achieved those goals and continue to build on that foundation.

CONGRATULATIONS

DR. ELIZABETH BJERKE

Top 25 Women in Business | Prairie Business Magazine

YOUR MERCHANDISE HEADQUARTERS

UNDAEROSPACE.COM

The cadets came from around the country for a unique experience at UND. The large number of high school students involved in AFJROTC inspired the Air Force to address a looming pilot shortage through a scholarship opportunity.

Photo by Connor Murphy/UND Today

FRESH WINGS

Future pilots for the military.

Cadets were enrolled in a five-credit private pilot course typically offered by the University. Due to current student capacities, Bjerke says the school was unable to accommodate more than 10 cadets, despite the Air Force's desire to eventually provide scholarships to 1,200 cadets a year nationwide.

Six-hundred thousand students around the country are involved with AFJROTC. The Air Force says experts project a demand for 117,000 new commercial pilots over the next 20 years; and the military branch is currently short 1,500 pilots.

UND has been a part of a national pilot shortage forum, says Bjerke, that's made up of industry, military and academic actors. Of the 600,000 enrolled AFJROTC cadets, close to 40 percent are female and around the same percentage represent a minority population.

"It's the pool they're trying to attract into aviation," she said. "They've put together a screening process looking at high school performance and a version of an exam they use for pilot selection."///

—Connor Murphy / UND Today

"In my nearly five years of flight instruction, I've given over 450 checkrides. These cadets have proven to be some of the most professional, knowledgeable and skilled students I've had the pleasure to work with. They demonstrated a high level of motivation and passion, which helped them 'soar' through their training and coursework"

SEBASTIEN JOUBERT '14,
ASSISTANT CHIEF FLIGHT INSTRUCTOR

THE 14TH ANNUAL
ARCHIE LEAGUE MEDAL OF SAFETY AWARDS 2018

Congratulations to two UND Air Traffic Alumni, they have been honored with one of NATCA's (National Air Traffic Controllers Association) highest Safety Awards. The award highlights a variety of aviation 'saves' by air traffic controllers.

CHRISTOPHER BANCROFT '08

Northwest Mountain Region

On April 27, 2017, at Rocky Mountain Metropolitan Airport (KBJC), the pilot of a single-engine Mooney was taxiing out to Runway 30 Right for departure. Eight-year veteran BJC air traffic controller Chris Bancroft, working Ground Control, knew something was odd from the moment the pilot called for clearance. During initial and subsequent radio transmissions, Chris noticed that the pilot was slurring his speech. Chris attempted to get a proper readback for runway and call sign several times, with no luck. It was then that he turned to BJC colleague and 10-year veteran air traffic controller Jacques Mailloux for assistance. Jacques alerted Airport Operations of a possible intoxicated pilot or one experiencing a medical issue. Chris persuaded the Mooney to shut down his engine and wait for Airport Operations. The Pilot, after an interview with Airport Operations and short investigation by the Jefferson County Sheriff's Office, was arrested after blowing a .207 BAC.

PATRICK ALLEN JOHNSON '10

Southern Region

On the afternoon of August 11, 2017, a Piper Cheyenne departed Cleveland, Mississippi (KRNV). The aircraft was en-route to Florida, and the pilot requested VFR flight following. Shortly after reporting on frequency, he stated that there was an issue with the aircraft and declared an emergency. The controllers working Memphis Center (ZME) sector 65, Andrew White and Tommy Vaughn, spent the next two hours assisting the pilot as he experienced locked flight controls, autopilot issues, loss of pitch control, and hydraulic failure. A team of other controllers, including Josh Hall, Patrick Johnson, Jeremy Lee, and Darren Tumelson went to work to assist the pilot with various issues.

Patrick, who has multi-engine IFR experience, was on the phone with Piper Aircraft, Inc., relaying information directly to and from the pilot. Piper Chief Pilot provided instructions on how to disengage the autopilot, including pulling all related circuit breakers and momentarily turning off both generators and the battery. But this didn't help in the ability to move the flight controls. Piper Chief Pilot advised to override the autopilot by forcing the flight controls. Reducing power caused the aircraft to descend, indicating that if autopilot engagement was the problem, at least the altitude hold mode was not engaged.

Finally, after more expert guidance on final approach from Piper Aircraft and Patrick, the aircraft landed safely at Greenwood-Leflore Airport (KGWO). It was almost two hours and 300 flying miles, his unintended destination was only 37 miles away from his departure.

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April 24, 2019 | 12 a.m. - 11:59 p.m.

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UNDalumni.org/UNDgives

UND ALUMNI ASSOCIATION FOUNDATION
LEADERS IN ACTION

MEET JONATHAN GEHRKE, ’06, ’11

Senior Director of Development, John D. Odegard School of Aerospace Sciences

Hometown: Herington, KS

DEGREES:

B.B.A. Aviation Management; M.Acc. Accounting

MOST RECENT JOB:

Program Manager, Enterprise Projects & Business Development

Cirrus Aircraft, Duluth, MN

FAMILY:

Wife; Ashley (Haugen), ’07; Children; Josiah (7); Elijah (5); Micah (1)

Q: WHAT APPEALED TO YOU WHEN YOU FIRST HEARD ABOUT THIS CAREER OPPORTUNITY?

A: When I left UND it was in the back of my mind that I would come back someday and work with the Aerospace School again in some capacity. I didn’t know if that would be teaching or administration, but when I found out about this opportunity at the UND Alumni Association & Foundation it really seemed like the perfect fit between where my interests were going at Cirrus and then this desire to come back to work at UND. Couple that with the fact we have three young kids and we’re much closer to family here in Grand Forks than we were in Duluth, and it seemed like a win-win!

Q: SPEAKING OF CIRRUS, CAN YOU TELL ME ABOUT YOUR TIME THERE?

A: Sure, Cirrus was a great place to be. The pace is fast, the company and the product are constantly evolving, and I got to work with some of the smartest, most capable people in the business. It’s the kind of place that’s not really a respecter of age. And what I mean by that, is that it is quite common for very young team members to be given opportunities that are probably beyond their current capability or comfort level. You can have great impact, if that’s your desire, and you also have the benefit of an experienced team that will help you stay on the right track. That was the case for me. I was lucky enough to have people who believed in my potential, and I was put in the role of Project Manager of the team that certified the SF50 Vision Jet.

Q: WHAT WILL YOU REMEMBER THE MOST FROM CIRRUS?

A: You develop deep relationships when you work so closely, and so hard, with certain people. Those relationships are still important to me. So, it’s the people first.

But for a singular event, it would have to be the Collier Awards. I was fortunate to be able to travel with the leadership team and other members of the Cirrus team to Washington DC and be present as Cirrus was awarded the Collier Trophy for the SF50 Vision Jet. It’s like the Oscars of aviation, and I am honored and thankful for having had the opportunity to be a part of that team and participate in Cirrus receiving that award.

Q: YOU’VE BEEN ON BOARD FOR SEVERAL MONTHS NOW. WHAT’S YOUR FAVORITE PART OF THE JOB SO FAR?

A: As I have been calling people and meeting alumni from the Odegard School I am amazed by the diversity of careers and the unbelievable success of our alumni. I’m fascinated by people in general so hearing people’s stories and seeing how far they have come from where they have started is a lot of fun!

Q: WHAT IS YOUR FONDEST UND MEMORY FROM WHEN YOU ATTENDED SCHOOL HERE?

A: I have a lot of things to be thankful to UND for and meeting my wife is one of those, so I will always remember when we met in McVey Hall.

And, of course, flying at UND was amazing! I will never forget the program and things I was able to do. I remember when I was able to fly home to Kansas and the weather worked out just perfect! To be able to do that as a student pilot, that is a lot of fun! I also took the aerobatics course my last semester, so that was very memorable as well.

Q: YOUR BACKGROUND IS IN ACCOUNTING AND AVIATION MANAGEMENT. HOW DO THOSE TWO AREAS OF EXPERTISE HELP YOU IN YOUR NEW ROLE?

A: With aviation management, and my career background, I have much more of an understanding of the industry, so I am able to relate to a lot of our alums. And as a major gift officer, having that accounting background of knowing what the tax implications are and different types of giving vehicles, it's a really a good blend.

Q: DO YOU RECALL A TIME IN YOUR LIFE WHEN YOUR PASSION FOR AVIATION SPARKED?

A: We never had any pilots in my immediate family, but growing up, my dad worked in Wichita as an electrician at the big aircraft manufacturing plants that were there at the time. Somehow, I've always had tangential exposure to the industry and developed a love of airplanes from an early age. I do have a cousin who is a pilot, owned a few airplanes, and gave me my first airplane ride when I was about 7 years old. So the industry has always been a part of my life.

Q: WHAT THREE WORDS WOULD YOU SAY BEST DESCRIBE YOU?

A: Optimistic, driven, sociable

Q: WHEN YOU'RE NOT WORKING WHAT CAN WE FIND YOU DOING?

A: My wife Ashley and I have three little boys, so my days are filled with superheroes, wrestling and nerf guns. On the off-chance that we actually have a babysitter, I love being able to go out to eat with my wife, hang out at a coffee shop, or go shopping by ourselves!

Q: WHAT ARE YOUR BIGGEST CAREER GOALS FOR THE NEXT FIVE YEARS?

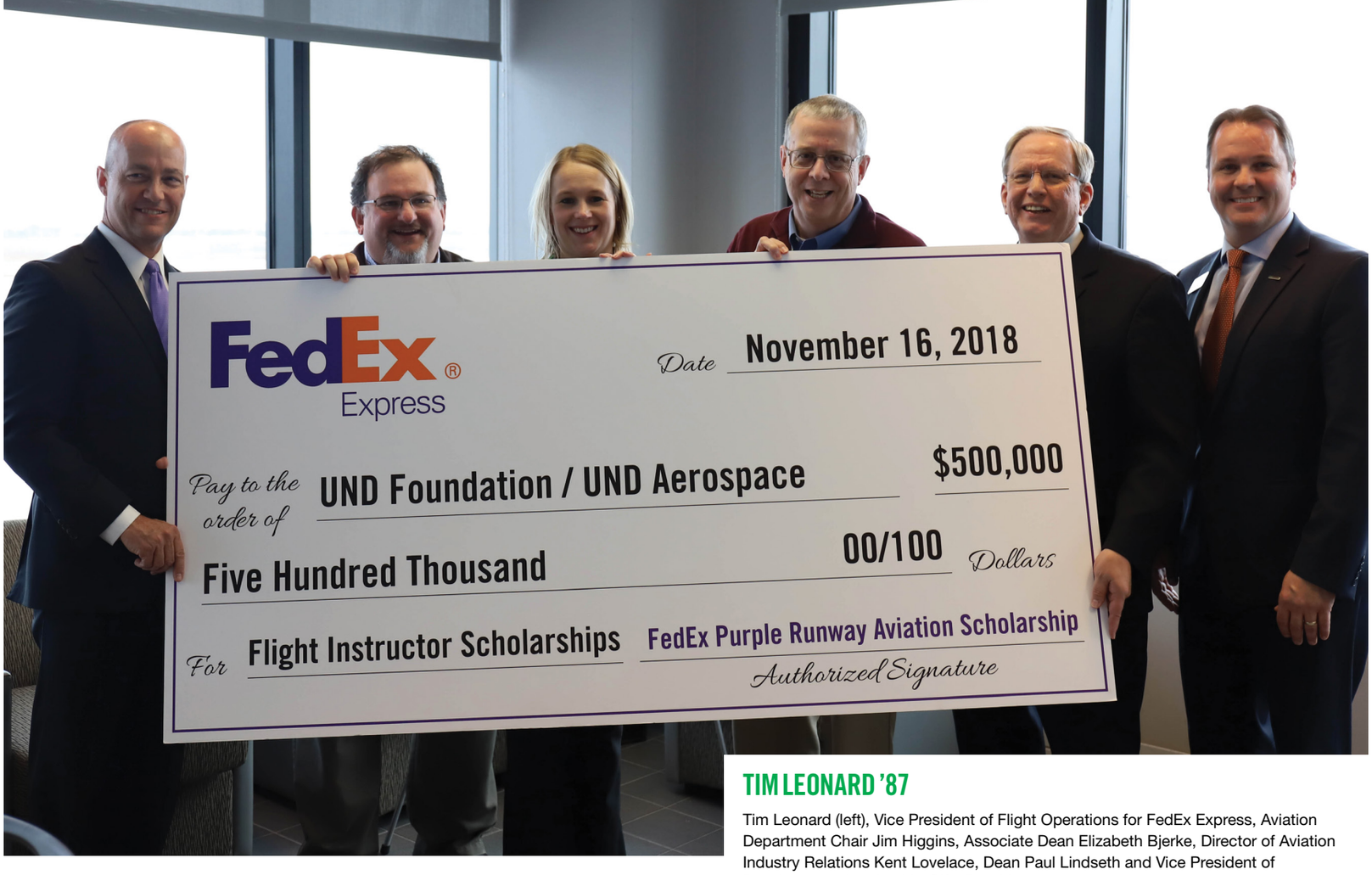
A: The Odegard School has a phenomenal history to build upon from its first 50 years. As the industry evolves, I can see that there are even greater opportunities that will take the school into its next 50 years. I am excited to be a part of that, to share that vision with our alums, and help shape that growth. ///

—Leanna Ihry / UND Alumni Foundation

TO OUR ALUMNI

After 50 years, UND Aerospace celebrates over 8,000 graduates from all around the world!

If you'd like to display your UND Aerospace pride email Ken Polovitz at **kenneth.polovitz@und.edu**, and a pin will be mailed to you.



TIM LEONARD '87

Tim Leonard (left), Vice President of Flight Operations for FedEx Express, Aviation Department Chair Jim Higgins, Associate Dean Elizabeth Bjerke, Director of Aviation Industry Relations Kent Lovelace, Dean Paul Lindseth and Vice President of Development, Leadership Gifts Dan Muus.

Photo by Connor Murphy/UND Today

HIGH STANDARDS HALLMARK PACT WITH FEDEX EXPRESS

Student-pilot scholarship program supports future flight instructors at nation's top aviation schools

For Dean Paul Lindseth, on November 16th of 2018, marked another exciting announcement for the prestigious flight school — a new scholarship partnership with FedEx Express.

"It is a special and historic day for the University of North Dakota and UND Aerospace," he said.

The FedEx Purple Runway Aviation Scholarship Program will provide funding to students completing training as certified flight instructors. It's also designed to support those earning their instrument and multi-engine instruction ratings.

Highlighting the occasion was a larger-than-life check written out to the school for $500,000. That amount will fund five years of scholarships targeted specifically to those becoming flight instructors.

Kent Lovelace, professor and director of aviation industry relations, was on the forefront of bringing this partnership to UND. He says its unique quality could be a trend-setter for an industry in need of fresh faces.

"I've been at the University for 40 years and this is the first gift from an airline given as scholarships to students," Lovelace said. "The impact of this will be huge for our aviation program and our students. There is a nationwide shortage of flight instructors; this generous gift will help create new instructors who will in turn train future aviators."///

—Conor Murphy / UND Today

ANTARCTIC DEDICATION

JANELLE HAKALA '17

JANELLE HAKALA

is a little frosty after being outside for just a short period of time.

Photo by Rob Streeter

When UND last heard from atmospheric sciences graduate Janelle Hakala in November 2017, she was in the first weeks of a year-long stay at the geographic South Pole.

She anticipated the challenges ahead: being away from friends, family and society; working in one of the coldest places on Earth.

UND helped prepare her for the journey, which was on the top of her mind as she dedicated one of the hundreds of weather probes she launched throughout the year to the faculty and mentors who helped her get there.

Their names now permanently occupy the frozen continent, around 21 miles from the Amundsen-Scott South Pole Station, after ascending 17 miles collecting atmospheric data.

“At UND, we were a pretty small department and a tight-knit group,” she said of the atmospheric sciences crew. “Being part of that unit had me prepared for the small environment of Antarctica. A little bit of everything helped me during my time down there and I owe it all to those who helped me along the way.”

She included the faculty she had as professors, as well as a tribute to the late Leon Osborne, a UND Chester Fritz Distinguished Professor in atmospheric sciences. Chair Mike Poellet said everyone felt honored by the “amazing and creative” gesture.

“It takes a special kind of person to spend a year in that part of the world,” he said.

“I have to admit that I count it among my ‘science nerd brags’ that my name is laying out there, somewhere on the frozen tundra,” Associate Professor and Graduate Program Director Gretchen Mullendore said, who served as Hakala’s advisor. “Janelle has embraced the adventure of exploring the world and I’m incredibly proud to have been one of her mentors as she started out on that journey.”

Crucial support

Hakala’s data collection over the past year played an essential role for the research station, as the “summer” months between November and February signify aircraft arriving with food, supplies, scientists and other support staff. The readouts from twice-daily balloon launches were utilized in an atmospheric model, which served as an aid in forecasts. These observations kept pilots and officials abreast of the latest conditions at 90 degrees south latitude.

During the winter, when there’s zero sunlight and no air travel, Hakala and her team’s launches shifted to directly serve the station. Instruments crucial to the station’s research are vulnerable to wind and extreme temperatures; same goes for the maintenance equipment keeping blowing snow at bay.

“The station also used the data to forecast for food,” she explained from the comforts of her Ely, Minn., home. “We had an elevator to bring food out of storage that didn’t work if temperatures got down to minus 70 degrees Fahrenheit, so we would pull food a couple days early if needed.”

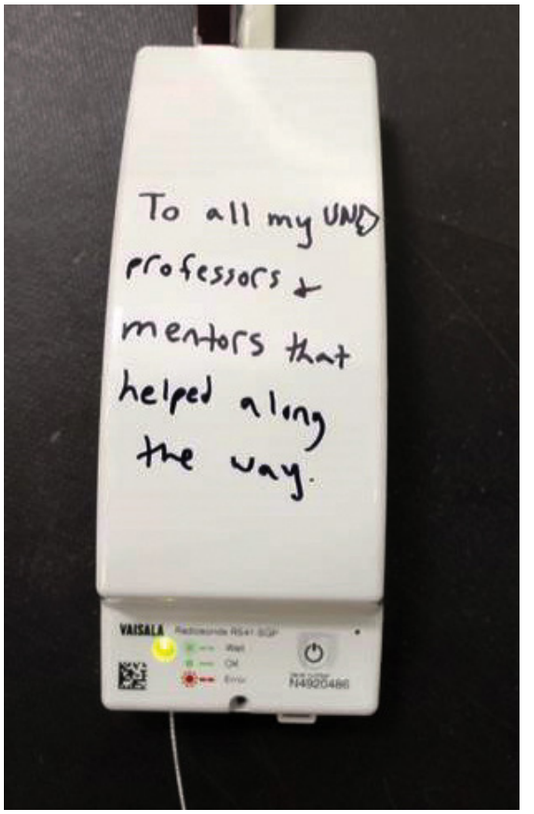
Without intending the pun, Hakala describes the station as one of the coolest places to live. Despite the extreme conditions, she was outside every day for her job. During those dark, isolated winter months, the southern lights danced and dazzled almost daily. She thoroughly enjoyed her adventure in the “white desert.”

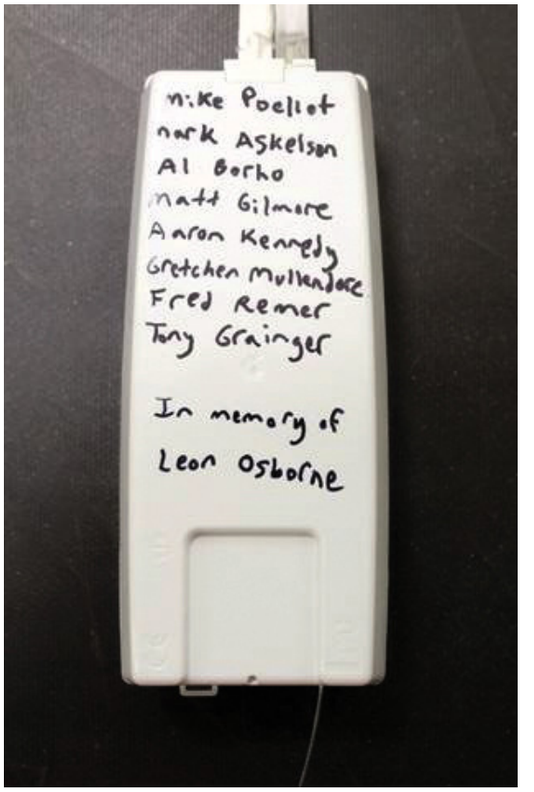
“A lot of people joke that you don’t spend one year there,” she said. “You spend one long day and one long night. I can tell people stories about it, but unless you’re there to experience it, it’s hard to explain.”

Living and working with the same 40 people for months on end; having big celebrations for the annual sunrise in September and the sunset in March; having little resembling a circadian rhythm; remaining physically detached from the outside world; Hakala makes it clear just how different it really was.

Warm ambition

Despite the lower amounts of activity during winter—balloon launches happened once a day instead of twice—there were plenty of ways to stay busy. Evening events were reminiscent of how colleges keep freshmen engaged on campus, Hakala said. Activities ranged from basketball to screen printing, and the diverse background of





JANELLE HAKALA

about to launch the balloon dedicated to her UND Atmospheric Science mentors and professors.

Photo by Rob Streeter

community members left nary a dull moment. The limited population during winter also meant increased responsibility for maintaining the station; Hakala found herself training to be a firefighter weekly and assisting with waste management.

One popular use of free time was planning vacations, Hakala said. Thursday nights were "travel nights," where people could present the places they've been, which proved an excellent source of inspiration.

"I saw what people did in Nepal and the Himalayas," she recalled. "It looked gorgeous. I had friends who would talk about it; I thought it would be amazing to see the tallest mountains in the world."

With the station positioned at 9,300 feet above sea level, hiking in Nepal sounded like a great post-Antarctic vacation. Hakala, along with friends she made over the past year, left the southern-most continent in November 2018 for their destination.

The mountain vistas and hospitality of the local guides made her journey in the Himalayas better than hoped, but it was their stop before Nepal that brought back everything she had missed while living in Antarctica.

"The big highlight was getting to New Zealand and having fresh fruits and vegetables," she said, having spent two weeks on the island nation connecting Antarctica and the rest of the world. "All the smells – you lose those while you're down there. Seeing flowers and green was great to have again. We also got to have some time at the beach."

UND experience

Of the work experiences she's had around weather sciences and meteorology, her stint in Antarctica affirmed what she'll be looking for moving forward: something new, exploratory and scientific.

"This was my second job coming out of school and I'm still figuring things out with my career," she said. "UND gave me an opportunity to do that too. Not only did I feel prepared academically, but I got a chance at UND to be involved and get experience."

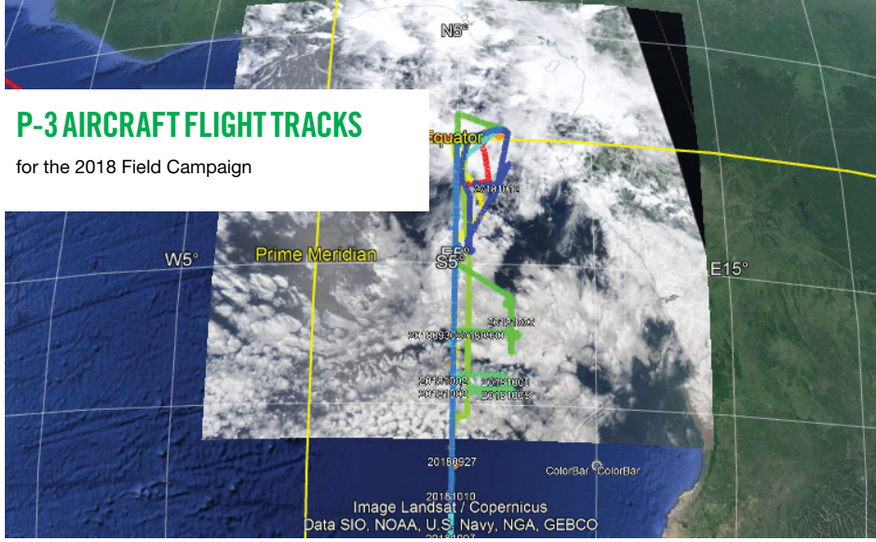
She was part of the UND Weather Update team, an intern at the National Weather Service office in Grand Forks and tried a variety of things within the atmospheric science and meteorology departments that offered her a look into different opportunities with different work.

"Ultimately, they all revolve around science or weather because that's what I love," Hakala said. ///

—Connor Murphy / UND Today

RESEARCH

NASA FIELD PROJECT



P-3 AIRCRAFT FLIGHT TRACKS

for the 2018 Field Campaign

What is ORACLES?

It is centered on a series of 4-week observational field campaigns off the west coast of Africa. The primary platform for observing the smoke plume and clouds is the NASA P-3 aircraft. The P-3 was based in Walvis Bay, Namibia for the 2016 campaign and Sao Tome for 2017 and 2018.

Department of Atmospheric Sciences

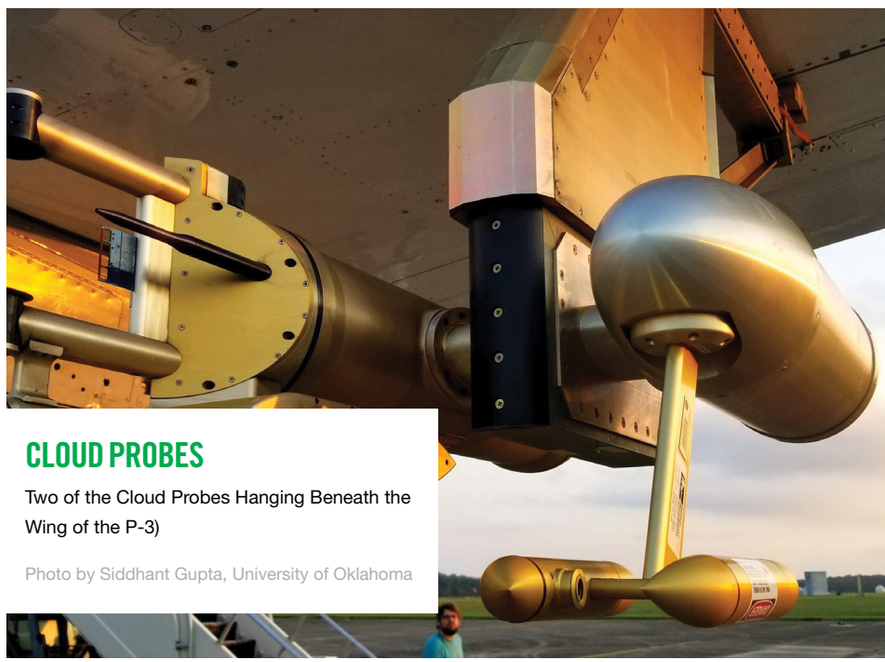
The department has been a key participant in the NASA ORACLES (ObseRvations of Aerosols above CLouds and their intEractionS) project. Agricultural burning practices in southern Africa produce a plume of smoke that contains a third of the world's biomass burning aerosol particles. ORACLES is a 5-year, $30 million project to determine the impact of these aerosols on cloud properties and the radiation balance over the South Atlantic, and to acquire a better understanding of aerosol-cloud-radiation interactions that can be applied in global climate models.

UND's role

This project has been to provide instrumentation and support for measurements of the sampled cloud properties. Seven instruments were mounted on pylons below the wings of the P-3 to measure the sizes and numbers of cloud particles and the amount of water in the clouds.

Senior scientists

On the project from UND are Mike Poellot (Principal Investigator) and David Delene. Joe O'Brien, Ph.D. student in Atmospheric Sciences, participated in all three field campaigns and has been doing the bulk of the work associated with instrument maintenance and data processing.



CLOUD PROBES

Two of the Cloud Probes Hanging Beneath the Wing of the P-3)

Photo by Siddhant Gupta, University of Oklahoma

SELFIE TIME

Cloud Probe Group Selfie. Left to right: Rose Miller (U. Illinois), Mike Poellot (UND), Joe O'Brien (UND), Siddhant Gupta (U. Oklahoma)

Photo by Mike Poellot

Funded by a number of generous donors during an UND Alumni Assocation Crowdfunding campaign in 2018, the high-definition camera was installed on top of Clifford Hall in September. Facing west, it looks across Ryan and Robin Halls. The astute observer can even see the hustle and bustle of air traffic in and out of the Grand Forks Airport! In the short time it has been operational, the camera has witnessed a number of interesting weather phenomena including gravity waves, light pillars, blowing snow, and sun dogs.

Follow along in real time at:
youtube.com/UNDAtmosphericSciences

UPCOMING EVENTS

MARCH

International Women in Aviation Conference
14-16 | Long Beach, Calif.

UND Aviation Alumni & Industry Reception
14 | 5:30PM – 8PM | Long Beach, Calif.

APRIL

SAMA Career Fair
11-12 | Grand Forks, N.D.

UND Aviation Family Weekend
13-14 | Grand Forks, N.D.

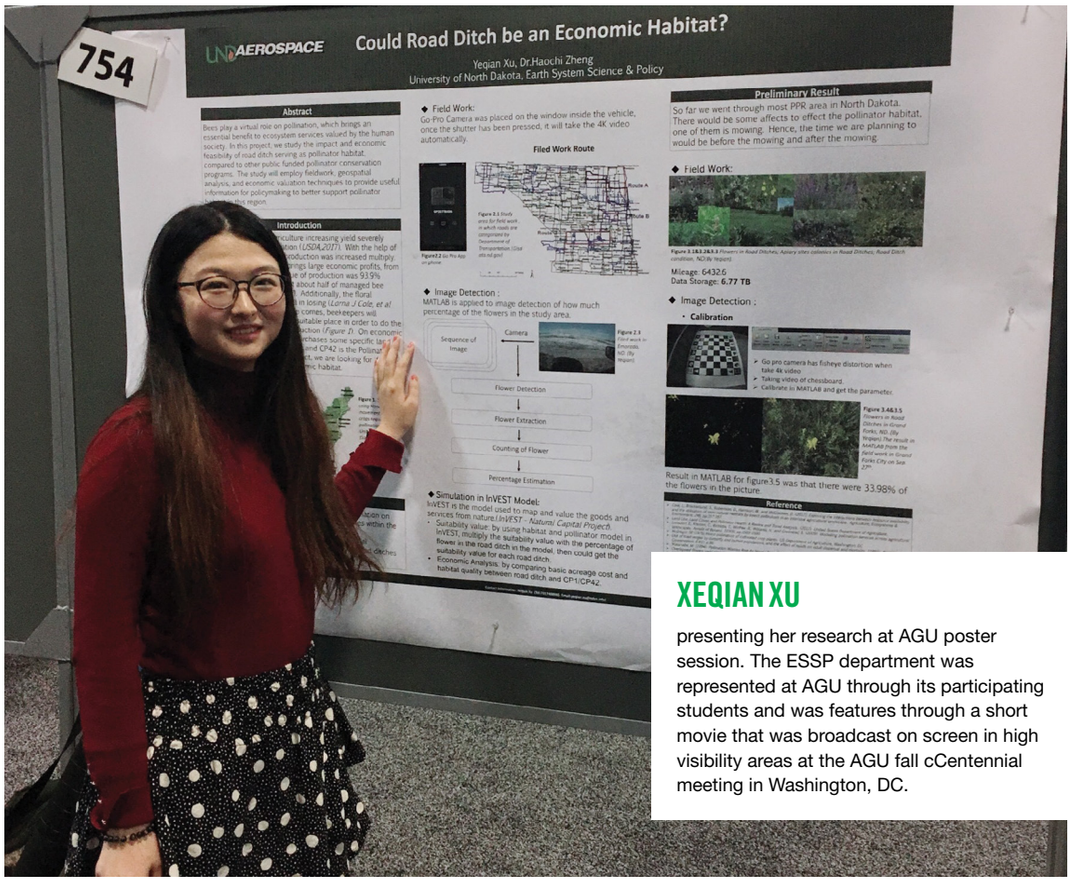
JULY

EAA Airventure
22-28 | Oshkosh, Wis.

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

AMERICAN GEOPHYSICAL UNION

EARTH SYSTEM SCIENCE & POLICY



XEQIAN XU

presenting her research at AGU poster session. The ESSP department was represented at AGU through its participating students and was features through a short movie that was broadcast on screen in high visibility areas at the AGU fall cCentennial meeting in Washington, DC.

AGU is the American Geophysical Union, an international association of about 60,000 member in more than 130 countries. AGU mission is “to promote discovery in Earth and space sciences for the benefit of humanity”. AGU vision is to “galvanizes a community of Earth and space scientists that collaboratively advances and communicates science and its power to ensure a sustainable future” sites.agu.org

“We were happy and proud to be profiled then selected to be broadcasted at AGU because it is a recognition that the ESSP department mission and structure, its vision and research and teaching philosophy are well suited to address the challenges and needs of a future sustainable earth. It was also an opportunity to give exposure to the college of Aerospace and, as mentioned by President Kennedy, for “rising high the UND Flag”.” Said, Soizik Laguette, Chair of Earth System Science & Policy Department. ///

AGU TV WebsEdgeEducation
Department of Earth System Science and Policy, University of North Dakota

CONGRATULATIONS
DENISE BUCKNER

NAME:
Denise Buckner

ACADEMIC STATUS:
3rd year Space Studies M.S. candidate,
Minor: Biology

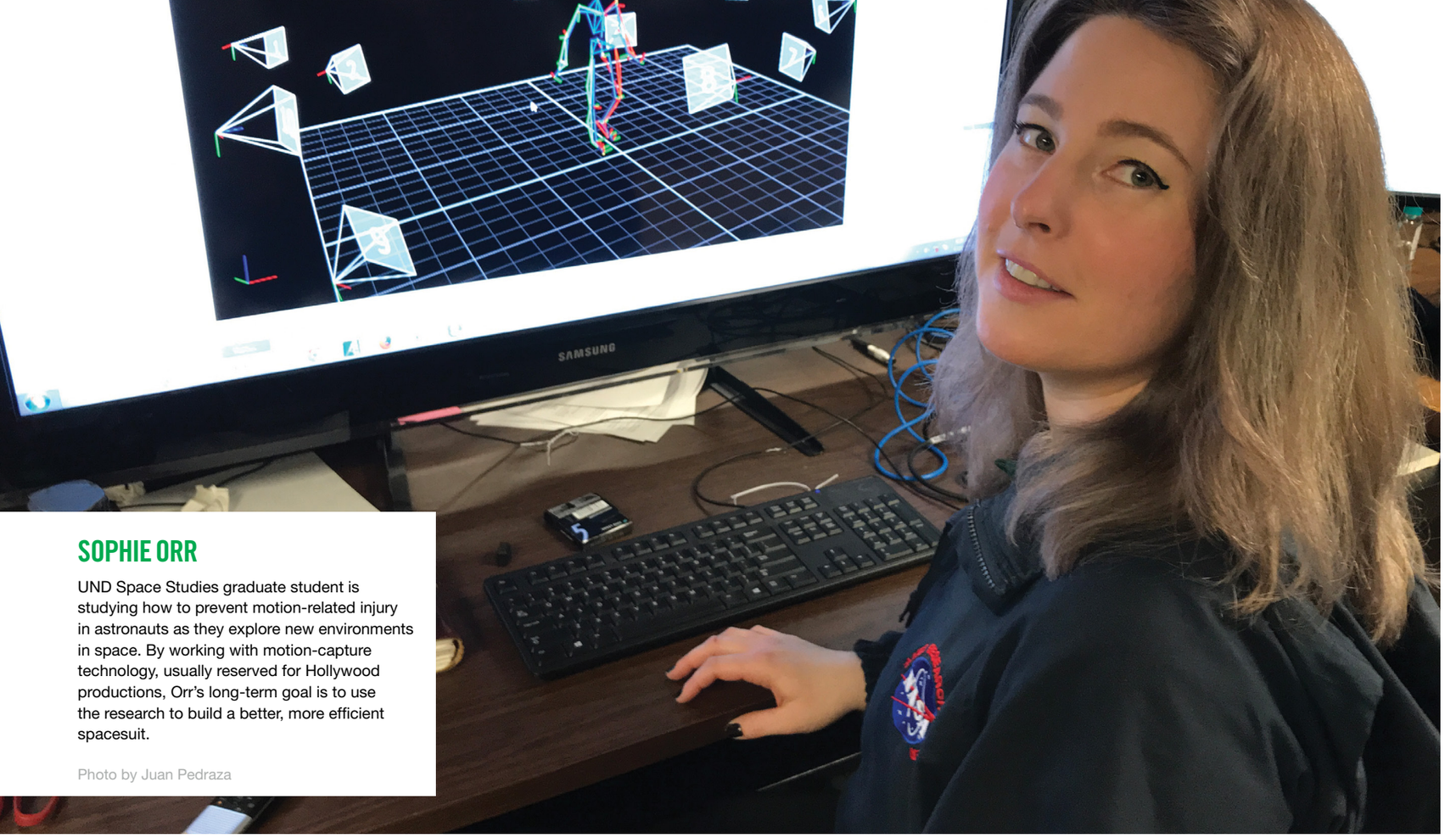
RESEARCH FOCUS:
The search for extraterrestrial life

AWARD:
NASA Ames Center Innovation Funds (CIF) Grant

PROJECT TITLE:
Organic Contamination Destruction Procedures for Non-aqueous Life Detection Microfluidic Systems

AMOUNT:
$25,000

WHAT IT IS:
Buckner spent summer 2018 interning at NASA Ames Research Center studying contamination control on missions searching for extraterrestrial life. This grant allows her to continue her research with a team at Ames that is working to design and build a microfluidic lipid extractor- an instrument that will fly to other planets and search for lipid molecules as evidence of past or current life. Decontamination procedures are key for life detection missions so teams can verify their results. CIF grants are awarded to innovative ideas with potential to advance the Astrobiology field. With the funds, Buckner will spend spring 2019 at UND testing new decontamination procedures, and in June she will return to Ames to continue her research. team at Ames.



SOPHIE ORR

UND Space Studies graduate student is studying how to prevent motion-related injury in astronauts as they explore new environments in space. By working with motion-capture technology, usually reserved for Hollywood productions, Orr's long-term goal is to use the research to build a better, more efficient spacesuit.

Photo by Juan Pedraza

CAPTURING THE MOMENT

UND grad student, Kinesiology Department use Hollywood-esque technology to design better spacesuit

Using technology worthy of a high-tech Hollywood movie, Space Studies graduate student Sophie Orr is studying how to prevent motion-related injury in astronauts working in space.

Orr partnered in her research with Jesse Rhoades, a UND faculty member in Kinesiology and expert in the use of motion-capture technology—the very kind that Hollywood directors use to craft movies such as James Cameron's Avatar and Marvel's critically acclaimed The Avengers, among many others.

Motion capture — also known as performance capture or motion tracking — is a visually arresting technology in the movies. But for scientists like Rhoades and students like Orr, it's a powerful research tool.

Rhoades — with a master's degree in biomechanics from Indiana State and a Ph.D. from the University of Illinois in pedagogical kinesiology — teaches undergraduate physical education at UND.

He jumped at the chance to help Orr, who wanted to tap into his motion capture expertise to understand how astronauts maneuver around in their heavy suits.

"I'm looking at the human gait in the lunar and Martian environment, especially how that gait changes," said Orr. "When humans were just visiting the Moon for short periods, mission scientists weren't that worried back then about locomotion-related repetitive stress injury."

Now with longterm space travel a fast approaching, there's a real concern about astronaut safety resulting from long periods of movement on planetary surfaces.

"We're looking at gait transitions in bipedal locomotion and the damage done to muscles when going from walking to running," Orr said. "This involves kinesiology, biomechanics, and space studies." ///

—Juan Miguel Pedraza

MISSION TO MARS TEAM

includes (left to right) Anamika, Laura Banken and MIchael Castro, MD.

Photo by Dima Williams

MISSION TO 'MARS'

UND Space Studies team launches sixth mission in Inflatable Lunar/Mars Habitat

Laura Banken reached for the bar above her head and tried to pull herself up. Lodged in a round gap on the wall, half her body was in the small room. Her legs rested in an adjacent chamber, inside the lower part of the spacesuit she was clambering out of.

It took her several jumps to emerge from the Michelin Man-like ensemble. Inside, her back was cold but her face perspired. Outside, she grinned as she adjusted her tight sports shirt and leggings. That was her first time donning – and exiting – a spacesuit.

"I have always wanted to be an astronaut since I could figure out what an astronaut was," Banken said. "This might be the closest I get to get."

Conducted and funded in collaboration with NASA, the project confines a crew of three – Banken and Anamika (who goes by her last name only), both UND Space Studies graduate students, and physician, Michael Castro – to an earthly replica of a Mars station; where they conduct experiments and collect data.

Pablo de León, an Argentine aerospace engineer and UND Space Studies professor, leads the planetary undertaking through his UND Human Spaceflight Laboratory.

"This habitat is the only system of its kind in the nation on a university campus," de León said, cuing to UND's lead in space education and research.

'Mars' on Earth

On Oct. 10, a mere 24 hours prior to the launch of Mission VI, de León toured the facility, whose white exterior, only steps away from Interstate 29, could easily vanish from sight in the gusts of snow that day. A mass of several modules, it resembled a coterie of pale caterpillars, huddling against the chill.

The structure, topped by ribbed plastic roof, might stick out on Earth. It is meant for the landscape of Mars, after all. As a physical testament to that, de León pointed toward a Ziploc bag full of Martian simulated soil, resting on a shelf inside of the "Space Garden."

In the upcoming days the crew will tinker with methods to enrich the tawny dirt so that it could nurture vegetables. The lettuces and spinach the Mission VI team will consume, however, sprout from Earthly turf in pots inside the Habitat. The crew will also hydroponically grow young shoots.

"These are plants that are just starting," de León said, looking at a tube, dotted with bundles of fragile leaves.

"Once they are bigger they will be transferred here," to another rack, he said as he turned in the narrow isle, "so they will be doing some of those tasks during their two-week mission."///

—Dima Williams / UND Today

UND AEROSPACE
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John D. Odegard School of Aerospace Sciences
3980 Campus Road, Stop 9007
Grand Forks, ND 58202-9007

CHEERS TO THE PAST 50 YEARS!

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