

**Education**

**Associate of Arts** – Psychology

Ozarks Technical Community College, Springfield, MO .....GPA:4.0 – May 2012

**Bachelor of Science** – Psychology (M) / Biology (m)

University of North Dakota, Grand Forks, ND .....GPA:3.5 – May 2015

**Master of Science** – Human Factors in Aeronautics

Florida Institute of Technology, Melbourne, FL .....GPA:4.0 – May 2017

**Doctor of Philosophy** – Human Centered Design

Florida Institute of Technology, Melbourne, FL .....GPA:4.0 – May 2020

**Titles Held**

- Assistant Professor of Space Studies, University of North Dakota
- Health and Safety Officer of the Human Space Flight Lab, HCDI, Florida Institute of Technology
- NASA Community College Aerospace Scholar (NCAS)
- NASA NCAS Facilitator
- NASA Student Ambassador
- DAN DFA-Pro Provider\*
- Research Assistant of the Human Space Flight Lab, HCDI, Florida Institute of Technology
- Health and Safety Officer, Crew 219 MDRS
- Commanding Officer, Crew 239 MDRS
- AERO [Adventure, Exploration, Research, and Outreach] Faculty Advisor
- Commanding Officer & Dive Safety Officer, AERO Crew 001 Jules 24-Hour
- Commanding Officer & Dive Safety Officer, AERO Crew 002 Jules 48-Hour
- Faculty Facilitator, SSEP [Student Spaceflight Experiments Program] Mission 18 to the ISS [International Space Station]

**Association Memberships**

- IAASS [International Association for the Advancement of Space Safety] Human Performance and Health Technical Committee
- AIAA [American Institute of Aeronautics and Astronautics] Senior Member Life Sciences Technical Committee
- AIAA Senior Member Space Architecture Technical Committee
- Divers Alert Network – \*DAN DFA [Diver First Aid]-Professional Provider
- ARRL [American Radio Relay League] General Member

**Professional Certifications**

- PADI Scuba Rescue Diver
- AAUS Science Diver [Florida Institute of Technology]
- PADI Aquanaut Diver
- ARRL General Class Licensed Radio Operator [W0DRV]
- OSHA HAZMAT for High-Pressure Cylinders
- DAN DFA-Pro Provider/AED/CPR/Basic Life Support

**Research Areas and Focus**

- Extreme Environment Survivability
- Hemodynamics/Biometrics Vitals Monitoring In-Situ
- Long-Duration Mission Psychological & Physiological Impact
- Study of Performance for Extravehicular Space Suit
- Variable Gravity Emergency and Medical Systems
- Analog Environment/Simulation Fidelity and Safety
- Variable Gravity Rescue Systems Architecture
- AERO 24-hour Dive for Outreach and Novel Communications System for Ocean-Worlds Tools
- AERO 48-hour Dive for Outreach and Novel Communications System for Ocean-Worlds Tools
- Preliminary Study on the Feasibility of Current US Spacecraft Systems to Support Parastronauts Activities
- Research and Development of a Lunar Boot Outsole
- Human Factor Analysis of Space Crop Cultivation Methods and Interactions
- Design and Fabrication of Inflatable Habitat Core Section for Microgravity Medical Systems
- Design and Fabrication of Action, Control, Tactile, and Visual Board for HITL testing of IVA/EVA suits
- High-Fidelity Surface and Environment Simulation Using Immersive Virtual Reality for Lunar Expedition Training
- Design and Development of Autonomous EVA Rescue System
- Design and Fabrication of HF Deployable Antenna for Ocean Environments

## Awards and Honors [Selected]

- UND Founder's Day Award for Interdisciplinary Collaboration in Research and Creative Activity, University of North Dakota, Grand Forks, ND, 2025
- Outstanding Graduate Faculty Mentor Award Nominee, University of North Dakota, Grand Forks, ND, 2025
- Distinguished Alumni Award Nomination, Ozarks Technical Community College, Springfield, MO, 2025
- Florida Institute of Technology Outstanding Student of the Year, Graduate College of Engineering and Sciences 2020
- NASA National Community College Aerospace Scholar winning team 2011
- Phi Theta Kappa Missouri Alumni Association Distinguished Alumni Award
- Missouri Community College Association's Student Leadership Award, 2011
- Missouri All-Academic Scholar, Team 1, 2011
- Florida Tech Graduate Scholarship, 2017-2020
- USA All-Academic Team Nominee, 2012
- NASA Student Ambassador, 2014-2015

## Professional Experience

- *Faculty Facilitator / Laboratory Lead*  
SSEP [Student Spaceflight Experiments Program], Mission 18 to the ISS, John D. Odegard School of Aerospace Sciences, University of North Dakota, Grand Forks, ND / Kennedy Space Center
- *Commanding Officer / Dive Safety Officer*  
AERO Mission 001-24Hour & 002-48Hour Jules Undersea Facility, Key Lago, FL
- *Assistant Professor of Space Studies*  
John D. Odegard School of Aerospace Sciences, University of North Dakota, Grand Forks, ND
- *Human Factors Engineering Internship*  
Marshall Space Flight Center, Huntsville, AL EV74 Vehicles and Systems Engineering Directorate, Human Factors Branch
- *Health and Safety Officer / Research Assistant*  
Human Spaceflight Laboratory, Florida Institute of Technology, Melbourne, FL
- *Health and Safety Officer / Commanding Officer*  
Mars Desert Research Station (MDRS) Crew 219 / Crew 239, Utah High Desert, Hanksville, UT

## Teaching Experience

### **University of North Dakota – Space Studies - Teaching**

- SPST 200 Introduction to Space Studies, undergraduate course [30-90 students/semester]
- SSEP Student Spaceflight Experiment Program [SPST200] Team Mentor; Experiment Launch to ISS 2024 [30+ students group project / 3 students launch]
- SPST 310 Introduction to Dinosaurs, undergraduate course [legacy course under development]
- SPST 501 Survey of Space Studies (co-taught) [20-30 students per semester]
- SPST 530 Human Centered Design, graduate course [15-25 students per semester]
- SPST 531 Applied Human Centered Design, graduate course [15-25 students per semester]
- SPST 532 Disasters in Human Spaceflight, graduate course [15-25 students per semester]
- SPST 533 Space Architecture: SciFi to Reality [15-25 students per semester]
- SPST 590 Space Studies Colloquium [20-30 students per semester]

### **University of North Dakota – Space Studies - Advising**

- 15 Master's Student Advisees, as Advisor and Committee Chair [not including Master's Students as *other than chair*]
- 6 PhD Student Advisees, as Advisor and Committee Chair [not including Master's Students as *other than chair*]
- *All students in my classes and beyond. I am happy to, and often do, offer advice and lessons well beyond the classroom, even assisting in vehicle repair. My students know that my office is always open to them and I am a*

short message away if they need anything. I may not have the answer, but we will find it together

- Training/Briefing UND ILMAH crews on safety procedures related to habitat/simulation [4 crewmembers per mission]
- Training/Briefing AERO Mission Divers on safety procedures related to the dive and underwater habitat [3-4 crewmembers per mission]
- Training/Briefing SSEP students on lab safety and procedures related to their ISS-bound experiment [3 crew members]

### **Century Elementary**

- AERO Outreach in-class pre-mission briefing, *Why do we Dive for Science* [80, 4<sup>th</sup> grade students]
- AERO Outreach in-situ mission tour and lecture, *Living underwater / Amateur Radio Underwater*, [80, 4<sup>th</sup> grade students and open to public via Zoom]
- PTO member, Century Elementary 2020-2025, STE(A)M Ambassador and Derby Facilitator [30-50 participants per year]

### **Previous Institutions and Outside UND**

- Teaching Assistant Ozarks Technical Community College for the Sophomore Seminar *Leadership Development*, a PTK International Honor Society Course [15-20 students]
- Assistant Facilitator NASA's National Community College Aerospace Scholars program. [48 participants]
- Training of MDRS Crew 219 & 239 participants in emergency and off-nominal procedures [6-8 crewmembers per mission]

- Training of Florida Tech Human Spaceflight Lab researchers and participants in safe operation of Intravehicular (IVA) Spacesuit [50-75 participants]
- Facilitator of several leadership activities and breakout sessions during Phi Theta Kappa local and regional events. [200-300 participants]

### Subject Matter Expert Requests [Selected]

- September 2018, Safety Observation in Human Factors, *Embry-Riddle Aeronautical University, Volusia County aim to land piece of growing space industry*, USA Today
- May 2022, Redundancy in Launch Systems, *Boeing's Starliner is years late, but NASA says it's also necessary*, Florida Today
- August 2022, Artemis 1 System Design, *UND plays a small part in Artemis I rocket*, KVR
- November 2022, History of Human Spaceflight, *Bizarre History of Cats in Space*, Newsweek
- April 2023, Plants beyond Food (Earth Anchoring), *To Boldly Grow Where No Food Has Been Grown Before*, Future Farmer Magazine
- January 2024, Scuba Diving for Space Studies, *Space Studies, Under the Sea*, UND Today

### Professional Presentations

- 2025 Oral Presentation for AAC&U CLASS Conference on Learning and Success, San Juan, Puerto Rico, *"Inclusion of ISS Research Experience for Undergraduates to Facilitate Exposure of the Research Process"*
- 2024 Oral Presentation for IAASS International Association for the Advancement of Space Safety as part of the 13<sup>th</sup> Annual Conference, Prague, Czech Republic *"Crisman Modified Hierarchy of Needs Methodology for Space Systems Architecture within Human-Centered Design"*
- 2024 Invited Panel Session for IAASS International Association for the Advancement of Space Safety as part of the 13<sup>th</sup> Annual Conference, Prague, Czech Republic *"Assisting Decision Making on Long Duration Missions"*
- 2024 Invited Speaker Grand Farms Space Ag Conference Grand Forks, North Dakota *"Space Research Under Water"*
- 2023 Invited Speaker Grand Farms Space Ag Conference Grand Forks, North Dakota *"More than Food"*
- 2019 Oral Presentation for IAF/IAA Space Life Sciences Symposium (A1) as part of the 70<sup>th</sup> International Astronautical Congress, Washington D.C. *"Cis-Lunar Orbital Medical Facility and Roadmap"*
- 2019 Presentation for Experience 2 Lead, Cape Canaveral, FL *"Human Centered Design / Design Thinking aspects with an Intravehicular Activity Space Suit"*
- 2013 Graduate Students Scholarly Forum Poster Presentation *"Development of a Contained Environment Airlock System and Geologic Sample Return Container"*
- Fall 2012 NASA Internship Final Presentation *"Design and Development of a Contained Environment Airlock and Sample Materials Return System (CEB-SMR)"*
- SpaceVision 2013 Students for the Exploration and Development of Space, Poster Presentation *"Design and Development of a Contained Environment Airlock and Sample Materials Return System (CEB-SMR) Emphasis on Additive Manufacturing"*

### Published Works [Selected]

- Cauthorn, G., & Crisman, K., et. al., (2025). Japanese Oblate Film as a Novel Method for Seed Handling and Activation in Microgravity. *Gravitational and Space Research V13 Issue 1*
- Crisman, K. (2025). Inclusion of ISS Research Experience for Undergraduates to Facilitate Exposure of the Research Process. *American Academy of Colleges and Universities 1<sup>st</sup> CLASS Conference Proceedings*
- F. Del Canto Viterale, K. Crisman, P. DeLeon, M. Dodge, M. Fernandez-Tous, R. Fevig, S. Fieber-Beyer, D. Kugler, (2024), *Pioneering Space Education at the Post Graduate Level – The Case of the University of North Dakota*, IAC/IAF (E1). 75th International Astronautical Congress, Milan, Italy. Published at IAC 2024
- Crisman, K. & Nelson, T (2024). *Crisman Modified Hierarchy of Needs Methodology for Space Systems Architecture within Human-Centered Design IAASS 13<sup>th</sup> Conference Proceedings*
- Rhoades, J., Mangle, K., DeLeon, P., Crisman, K., & Manyapu, K. (2024). Study of Parastronaut Ingress and Egress of the Orion and Boeing CST-100 Starliner Space Vehicles. 2024, International Astronautical Congress.
- Rhoades, J., DeLeon, P., Crisman, K., Mangle, K., Southern, T., & Moiseev, N. (2024). Assessment of Commercial Extravehicular Space Suit Kinematic Performance. 2024 International Conference on Environmental Systems.
- Doule, O., Kobrick, R.L., Crisman, K., Skuhersky, M., Lopac, N., Fornito II, M.J., Covello, C., Banner, B.C. (2021), *IVA spacesuit for commercial spaceflight - Upper body motion envelope analysis*. *Acta Astronautica*, Vol 186
- K. Crisman, O. Doule, K. Momose, (2019), *Cis-Lunar Orbital Medical Facility and Roadmap*, IAF/IAA Space Life Sciences Symposium (A1). 70th International Astronautical Congress, Washington D.C. Published at IAC 2019

- Doule, O., Crisman, K., Kobrick, R.L., Lopac, N., Fornito II, M.J., Covello, C., and Banner, B. (2019), *Adjustable IVA Analog Spacesuit Ergonomics – Upper Body Motion Envelope Reference Model*. 10th International Conference on Applied Human Factors and Ergonomics, 7th International Conference on Human Factors in Transportation: Space. Washington D.C., USA
- O. Doule, D. Kiss, Y. Mehta, K. Crisman, E. Beltran, and M. Miller, (2019), *Design and Operational*

*Considerations for Human Spaceflight Occupant Safety*, New Space, Vol 7, No 2

- PhD Dissertation: Crisman, K. (2020), *Microgravity Emergency Medical Containment System – A Concept of Architecture, Prototyping, and Usability Research*
- Multiple interviews as subject matter expert in local, state, and federal news sources (*KVRR, Florida Today, Newsweek, etc.*)

### **In-Process Works [Selected]**

- *Modified (Crisman) Hierarchy of Needs Methodology for Space Systems Architecture within Human-Centered Design*
- *Design and Development of the Action Control Tactile Visual (ACTV) Board for HCD and HITL in Motion Capture Environment*

- *Inclusion of ISS Research Experience for Undergraduates to Facilitate Exposure of the Research Process: Challenging the Group Project*

### **Grants and Current Research [Selected]**

- Crisman, K. E. (Sci-I), "Human Factor Analysis of Space Crop Cultivation Methods and Interactions," Sponsored by NASA, Federal, \$470,368.00. (May 15, 2023 - May 15, 2026).
- De Leon, P. G., Crisman, K. E. (Co-PI), Rhoades, J., "Study of Performance for Commercial Extravehicular Space Suit," Sponsored by NASA, Federal, \$100,000.00. (August 1, 2021 - August 1, 2022).
- Rhoades, J. L., De Leon, P. G., Crisman, K. E., "The Research and Development of Extravehicular Activity Gait Assist Device" Co-Op with Candeeka Cikana Community College, \$133, 274.81 (August 14, 2023 – August 13, 2026)
- Crisman, K. (PI), De Leon, P., Cauthorn, G., et. al., Revised Human Factor Analysis of Space Crop Cultivation Methods and Interactions (Current 2025)
- Crisman, K., (PI, HSO), Rhoades, J., Pedaparthi, S., High-Fidelity Surface and Environment Simulation Using

Immersive Virtual Reality for Lunar Expedition Training (Current 2025)

- Crisman, K. & (PI), Cauthorn, G., et. al., Survey Study for ILMAH Crop Production Operations (Current 2025)
- Rhoades, J., De Leon, P., Crisman, K. (HSO), Examination of Foot Actuation during Lunar Walking, Running, and Skipping (Current 2025)
- Rhoades, J., De Leon, P., Crisman, K. (Co-PI, HSO), et. al., Research and Development of a Lunar Boot Outsole (Current 2025)
- De Leon, P., Rhoades, J., Crisman, K. (Co-PI, HSO), Preliminary Study on the Feasibility of current US Spacecraft Systems to Support Parastronauts Activities (Review 2025)
- De Leon, P., Rhoades, J., Crisman, K. (Co-PI, HSO), Study of Performance for Extravehicular Space Suit (Review 2025)