

Colt Andrew Iseminger

Department of Aviation
John D. Odegard School of Aerospace Sciences
University of North Dakota
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EDUCATION

MS Space Studies (2023), University of North Dakota, Grand Forks, ND.

BS Air Traffic Control (2008), University of North Dakota, Grand Forks, ND.

PROFESSIONAL AND TEACHING EXPERIENCE

University of North Dakota, Grand Forks, ND July 2019 to Present

Instructor, Department of Aviation, JDO School of Aerospace Sciences

- Teaching twelve credit hours a semester, advising on the average of 30 aviation students, and holding office hours.
- Assess students within simulators and classroom environments; and coach, mentor, and motivate the next group of students in Air Traffic Control.
- Developed quizzes, exams, and homework.
- Revised the syllabus to meet accreditation standards.
- Work with other Instructors in curriculum design, development, and improvement.
- Coordinated grading and labs with a team of eight teaching assistants.

University of North Dakota, Grand Forks, ND January 2012 to Present

Air Traffic Simulation Laboratory Manager, Department of Aviation, JDO School of Aerospace Sciences

- Maintain Air Traffic Control Simulation Labs for John D. Odegard School of Aerospace Sciences and the UND Aerospace Foundation.
- Repairing, Troubleshooting, and configuring Linux and Windows-based simulation technology.

University of North Dakota, Grand Forks, ND January 2012 to July 2019

Lecturer, Department of Aviation, JDO School of Aerospace Sciences

- Teaching twelve credit hours a semester, advising on the average of 30 aviation students, and holding office hours.
- Assess students within simulators and classroom environments; and coach, mentor, and motivate the next group of students in Air Traffic Control.
- Developed quizzes, exams, and homework.
- Revised the syllabus to meet accreditation standards.
- Work with other Instructors in curriculum design, development, and improvement.
- Coordinated grading and labs with a team of six teaching assistants.

Federal Aviation Administration, Grand Forks, ND

Air Traffic Control Specialist, Grand Forks International Airport ATC Tower

- Issue landing and takeoff instructions to pilots.
- Monitor and direct the movement of aircraft on the ground and in the air.
- Provide information to pilots, such as weather updates and other critical information.

RESEARCH EXPERIENCE

Contract

Drechsel, Paul (Principal), Jorgenson, Terra (Supporting), Carlson, Craig (Supporting), Schroeder, William (Supporting), Iseminger, Colt (Supporting), "Air Traffic Control Optimum Training Solution - General Dynamics," Sponsored by Federal Aviation Administration, Federal, Not Funded. (January 26, 2014 - April 7, 2015).

Grant

Carlson, Craig (Supporting), Poltavski, Dmitri (Principal), Jorgenson, Terra (Supporting), Drechsel, Paul (Supporting), Petros, Thomas (Supporting), Ferraro, Richard (Supporting), Iseminger, Colt (Supporting), "Evaluation of physiological markers of cognitive load and engagement in simulated air traffic control scenarios as a function of visual information processing and training experience.," Sponsored by DIVISION OF RESEARCH & ECONOMIC DEVELOPMENT RESEARCH DEVELOPMENT & COMPLIANCE, Local, \$9,300.00, Funded. (January 1, 2015 - May 1, 2016).

Sponsored Research

Carlson, Craig D (Principal), Jorgenson, Terra (Co-Principal), Drechsel, Paul (Co-Principal), Petros, Thomas (Co-Principal), Iseminger, Colt (Co-Principal), "A Comparison of Student Air Traffic Controllers Fatigue Levels and Reaction Times While Actively Controlling and Passively Monitoring Air Traffic.," Sponsored by Federal Aviation Administration, Federal, Currently Under Review. (April 23, 2018 - Present).

Jorgenson, Terra (Principal), Waller, Zach (Principal), Drechsel, Paul (Co-Principal), Carlson, Craig (Co-Principal), Iseminger, Colt (Supporting), Nowatski, Neil (Supporting), "UAS Training for ATCS," Sponsored by Federal Aviation Administration, Federal, \$91,773.00, Currently Under Review. (September 1, 2017 - Present).

Drechsel, Paul V (Principal), Van Eck, Richard (Co-Principal), Ferraro, Richard (Co-Principal), Carlson, Craig (Co-Principal), Iseminger, Colt (Co-Principal), "Explore Use of Gamification for Training," Sponsored by FAA AJI-COE TTHP, Federal, \$121,964.00, Not Funded. (October 1, 2016 - September 30, 2017).

Drechsel, Paul (Principal), Carlson, Craig (Supporting), Jorgenson, Terra (Supporting), Waller, Zach (Supporting), Iseminger, Colt (Supporting), "Integrating Unmanned Aircraft in the National Airspace System," Sponsored by Northrop Grumman Information Systems, Private, \$40,000.00, Funded. (December 11, 2015 - January 15, 2017).

PUBLICATIONS

Journal Publications

Bernhardt, K. A., Poltavski, D., Petros, T., Ferraro, R., Jorgenson, T., Carlson, C., Drechsel, P., Iseminger, C. (in press). The Effects of Dynamic Workload and Experience on Commercially Available EEG Cognitive State Metrics in a High-Fidelity Air Traffic Control Environment. *Applied Ergonomics*.

Newsletters - College

Iseminger, C., Drechsel, P. (2013). *ATC Hiring for (near) UND Grads* (1st ed., vol. 2, pp. 3). Grand Forks, ND: SAAC Skyward.

Instructional Material/Case - Department

Drechsel, P., Bartelson, G., Carlson, C., Jorgenson, T., Schroeder, W., Iseminger, C., Andriello, V. *Air Traffic Control Training Guide* (5th ed., vol. 1, pp. 135 pages). Grand Forks, North Dakota: The UND Aerospace Foundation.

PRESENTATIONS AND INVITED LECTURES

Lecture, Iseminger, C. (Presenter & Author), "Air Traffic Controller Training, Work life, and Lifestyle," Fargo Public Schools, Fargo, ND. (November 8, 2018).

Paper Presentation, Carlson, C. (Presenter & Author), Iseminger, C. (Author Only), "Integrating UAS into the National Airspace System," Northrop Grumman, Washington D.C. (November 15, 2016).

Workshop, Schroeder, W. (Presenter & Author), Iseminger, C. (Presenter & Author), ND Spring Collaborative Conference, "Mathematics, Technology and Air Traffic Control," ND Council of Mathematics, NSTA, ND Dept of Public Instruction, ND STEM, UND STEM, ND Council of Arts, Red River High School, Grand Forks, ND. (April 22, 2016).

Workshop, Iseminger, C. (Presenter & Author), "Air Traffic Control and Aviation Procedures and Best Practices," Civil Air Patrol - ND Wing, Grand Forks, ND. (May 31-June 1, 2014).

Workshop, Schroeder, W. (Presenter & Author), Iseminger, C. (Presenter & Author),
“Knowledge of general aviation and ATC procedures in the US National Airspace
System,” UND Aerospace Foundation, Grand Forks, ND. (July 17-19, 2012).

HONORS AND AWARDS

BSA Eagle Scout 2003

PROFESSIONAL TRAINING

Small UAS Certificate, Federal Aviation Administration, 2015

Control Tower Operator (CTO) Certificate, Federal Aviation Administration, 2010

Private Pilot – Single Engine Land License, Federal Aviation Administration, 2008

Amateur Radio Service – Technician License, Federal Communication Commission, 2006

NWS SKYWARN Storm Spotter, NOAA-National Weather Service, 2006

PROFESSIONAL AFFILIATIONS

Air Traffic Control Association (ATCA), 2018-Present

National Air Traffic Controller Association (NATCA), 2012-Present

PROFESSIONAL DEVELOPMENT AND SERVICE

FAA/NATCA Communicating for Safety (CFS)

Conference Attendance, 2013, 2016, 2017, 2018, 2019

*Hosted annually by the National Air Traffic Controllers Association (NATCA),
Communicating For Safety (CFS) is the aviation industry’s leading conference
focusing on safety, technology and building relationships.*

HiPoCON Technology Show and Conference

Conference Attendance, 2013, 2014, 2015, 2016, 2017, 2018, 2021

North Dakota’s primer technology conference, hosted annually.

Air Traffic Collegiate Training Initiative 2013 Best Practices

Conference Attendance, 2013

*Annual Conference for AT-CTI Schools to come together with the FAA and discuss
Hiring, new procedures, and best practices of the CTI schools in training.*

BSA WoodBadge for the 21st Century

Leadership Training, 2013

Wood Badge courses aim to make Scouters better leaders by teaching advanced leadership skills, and by creating a bond and commitment to the Scout movement.

INSTRUCTIONAL SERVICE

Undergraduate Courses Taught:

Aviation (AVIT) 103 (2 cr) Introduction to Air Traffic Management (Control)
Aviation (AVIT) 208 (3 cr) Aviation Safety
Aviation (AVIT) 260 (4 cr) ATC: Tower Operations 1
Aviation (AVIT) 261 (4 cr) ATC: RADAR Operations 1
Aviation (AVIT) 362 (4 cr) ATC: Advanced Tower Operations 2
Aviation (AVIT) 363 (4 cr) ATC: Advanced RADAR Operations 2
Aviation (AVIT) 465 (4 cr) ATC: Tower and RADAR Operations 4

Prime Instructor:

Aviation (AVIT) 103 2012-Present
Aviation (AVIT) 260 2019-Present
Aviation (AVIT) 362 2021-Present

Academic Advisement:

Advising on the average of 30 undergraduate aviation students per semester.

Curriculum Development Activities:

Curriculum rewrite of Aviation (AVIT) 103: Introduction to Air Traffic Management, standardize course content across all sections and to allow an easier transition to the online teaching environment.

INSTITUTIONAL SERVICE

University of North Dakota

University Senate, Elected At-Large Senator, 2017-2023

Student Academic Services,

JDO College Liaison for UND Starfish Retention Software, 2019-Present

UND Starfish Retention Software College Tenant Administrator, 2016-2019

Parking and Transportation Advisory Committee, 2018-2020

University Senate Library Committee, 2018-2021

Chair, 2019-2021

Summer Orientation Program, Faculty Student Advisor, 2013-2019

John D. Odegard School of Aerospace Sciences, Department of Aviation

Student Organization Faculty Advisor

Student Air Traffic Controller Association (SATCA), 2012-Present

Scholarship Committee, 2013-2014 and 2015-Present

Chair, 2018-Present

Scientific Computing Center / Aerospace Network Aviation Faculty Liaison, 2014-Present

Serve as liaison between Aviation Department Faculty and SCC/Aerospace Network of JDO School of Aerospace Sciences on issues and problems.
Ryan Hall Building Safety and Security Representative (BSSR) (2019 - Present)
Technology Committee, 2020-Present
Assessment Committee, 2014-2018
Aerospace College Computer Lab Relocation AD-HOC, 2017-2018
Curriculum Committee, 2013-2014 and 2015-2016
Technology on Teaching Committee, 2012-2014
Chair, 2013-2014

COMMUNITY SERVICE

BSA Scouts of America

Den Leader, Grand Forks, ND, 2021 – Present

Assistant Scoutmaster, Grand Forks, ND, 2003 – 2017

Assist the Cubmaster/Scoutmaster as directed and works with other responsible adults to bring Scouting to children. Uses the methods of Scouting to achieve the aims of Scouting by teaching honesty, leadership and outdoor skills.

COMPUTER SKILLS

Proprietary Systems:

- Adacel Inc. – Air Traffic Control MaxSim Tower and RADAR Simulation Subject Matter Expert Certification
- UFA Inc. – Air Traffic Control ATCoach Global RADAR Simulation Proficiency Certification

Platforms and Operating Systems:

- Microsoft Windows
- Linux (Red Hat, Fedora, and Ubuntu Distros)