

# NICOLETTA FALA, PH.D.

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RESEARCH GROUP: [AEON.NICOLETTAFALA.COM](http://AEON.NICOLETTAFALA.COM)

ASSISTANT PROFESSOR

MECHANICAL AND AEROSPACE ENGINEERING  
OKLAHOMA STATE UNIVERSITY, STILLWATER OK

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Oklahoma State University  
Mechanical and Aerospace Engineering  
Stillwater, OK 74078

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## EDUCATION

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- 2019      **Doctor of Philosophy (Ph.D.), Purdue University, West Lafayette IN**  
            **Aeronautical and Astronautical Engineering**  
            Concentrations: Aerospace Systems, Astrodynamics and Space Applications  
            Advisor: Dr. Karen Marais  
            *Thesis title: Data-driven safety feedback as part of debrief for General Aviation Pilots*
- 2014      **Master of Science (MSAAE), Purdue University, West Lafayette IN**  
            **Aeronautical and Astronautical Engineering**  
            Concentrations: Aerospace Systems, Astrodynamics and Space Applications
- 2014      **Bachelor of Science (BS), Purdue University, West Lafayette IN**  
            **Aeronautical and Astronautical Engineering**  
            Honors Engineering Program  
            Concentrations: Design, Dynamics and Controls  
            Minors: Manufacturing Graphics, French Language

## PROFESSIONAL EXPERIENCE

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- 01/2020      **Visiting Assistant Professor**  
to present      Mechanical and Aerospace Engineering  
                    Oklahoma State University, Stillwater OK
- 10/2019      **Post-Doctoral Research Associate**  
to 01/2020      Purdue University Libraries and School of Information Studies  
                    Purdue University, West Lafayette IN  
                    Advisor: Prof. Michael Witt
- 08/2018      **Instructor of Record**  
to 08/2019      School of Aeronautics and Astronautics  
                    Purdue University, West Lafayette IN

- 05/2014 **Graduate Research Assistant**  
to 08/2019 Value through Reliability, Safety, and Sustainability Lab  
School of Aeronautics and Astronautics  
Purdue University, West Lafayette IN  
Advisor: Dr. Karen Marais  
Project sponsor: Federal Aviation Administration
- 08/2012 **Resident Assistant**  
to 05/2014 University Residences-Shreve Hall  
Purdue University, West Lafayette IN
- 05/2011 **UAV Systems and Policy Intern**  
to 08/2013 Autonomous Flying Platforms for Atmospheric and Earth Surface  
Observations (APAESO)  
The Cyprus Institute, Nicosia Cyprus

## TEACHING EXPERIENCE

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\* *new course development*

### Courses taught at Oklahoma State University

- MAE 3153\* Introduction to Mechanical and Aerospace Engineering Design (Fall 2020, Spring 2021)
- MAE 5953\* Aerospace Systems Engineering (Fall 2020)
- MAE 4223 Aerospace Laboratory (Spring 2020)

### Courses taught at Purdue University

- AAE 251 Introduction to Aerospace Design (Spring 2019)
- AAE 351 Aerospace Systems Design (Fall 2018)

### Other teaching

- Private Pilot Ground School Weekend Course (Fall 2019)
- Private Pilot Ground School Semester Course (Spring 2017, Fall 2017)

## PUBLICATIONS

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+ *peer reviewed paper*, \* *peer reviewed extended abstract*, *student advised on paper*

### Peer-Reviewed Journal Articles

3. Psyllou, E., **Fala, N.**, Marais, K., and Majumdar, A. (2021). Pilot Use of Aids to Support Weather Decision Making in General Aviation in the United Kingdom and the United States of America. *[submitted]*
2. Ostroumov, I., Marais, K., Kuzmenko, N., and **Fala, N.** (2020). Triple Density Distribution Model in the Task of Aviation Risk Assessment. *Aviation* **24** (2): 57-65. [doi:10.3846/aviation.2020.12544](https://doi.org/10.3846/aviation.2020.12544)
1. **Fala, N.**, Uday, P., Le, T., and Marais, K. (2015). Surface Operations of End-Around Taxiways. *Air Traffic Control Quarterly* **22** (4): 327-351. [doi:10.2514/atcq.22.4.327](https://doi.org/10.2514/atcq.22.4.327)

## Conference Proceedings

11. Wallace, J.W., and **Fala, N.** (2021). A Systematic Review of Weather Observation and Forecast Resources Available to General Aviation Pilots. *21st International Symposium on Aviation Psychology*. [accepted]
10. **Fala, N.**, and Whitford, D. (2021). Surveying Collegiate Pilots for Their Perspectives on their Collegiate Flight Training Experience. *21st International Symposium on Aviation Psychology*. [accepted]
9. \*Wallace, J.W., **Fala, N.** (2021). Identification of Potential Gaps in Pilot Knowledge and Use of Weather Sources in General Aviation and UAS Operations. *AIAA Aviation 2021 Forum* [submitted].
8. <sup>+</sup>**Fala, N.** (2020). A Review of Stall-Type Accident Statistics Over the Past Fifty Years. *Human Factors and Ergonomics Society 2020 Meeting*. [doi:10.1177/1071181320641033](https://doi.org/10.1177/1071181320641033)
7. \*Jdiobe, M., Hickman, K., Kidd, J. A., and **Fala, N.** (2020). Improving Undergraduate Aerospace Engineer Professional Readiness through Boeing 737-Max 8 Crash Case Study. *AIAA Aviation 2020 Forum*. [doi:10.2514/6.2020-2937](https://doi.org/10.2514/6.2020-2937)
6. \*Chakraborty, A., **Fala, N.**, and Marais, K. (2019). Investigation of Feasibility of Using Low-Cost AHRS Devices to Detect General Aviation Hazardous States. *AIAA Aviation 2019 Forum*. [doi:10.2514/6.2019-3444](https://doi.org/10.2514/6.2019-3444)
5. \***Fala, N.**, and Marais, K. (2019). Assessing Potential Biases in Risk Perception for General Aviation Pilots. *AIAA Aviation 2019 Forum*. [doi:10.2514/6.2019-3443](https://doi.org/10.2514/6.2019-3443)
4. **Fala, N.**, and Marais, K. (2019). Communicating Data-Driven Risk Information to Pilots. *20<sup>th</sup> International Symposium on Aviation Psychology*. [uuiid:dea325d6-1bc7-4e9f-89f6-31503d07ec86](https://doi.org/10.1177/1071181320641033)
3. \***Fala, N.**, and Marais, K. (2016). Detecting Safety Events During Approach in General Aviation Operations. *16<sup>th</sup> AIAA Aviation Technology, Integration, and Operations Conference*. [doi:10.2514/6.2016-3914](https://doi.org/10.2514/6.2016-3914)
2. \*Rao, A.H., **Fala, N.**, and Marais, K. (2016). Analysis of Helicopter Maintenance Risk from Accident Data. *AIAA Infotech @ Aerospace*. [doi:10.2514/6.2016-2135](https://doi.org/10.2514/6.2016-2135)
1. \*Goblet, V., **Fala, N.**, and Marais, K. (2015). Identifying Phases of Flight in General Aviation Operations. *15<sup>th</sup> AIAA Aviation Technology, Integration, and Operations Conference*. [doi:10.2514/6.2015-2851](https://doi.org/10.2514/6.2015-2851)

## TALKS

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### Invited Talks

4. **Fala, N.** (2021, April). *Ladies in Flight Training Conference in Cincinnati, OH*.
3. **Fala, N.** (2020, June). Putting the Human in Human Systems Integration. FAA Human Systems Integration Summit. *Online due to COVID-19*. [presentation](#)
2. **Fala, N.**, and Marais, K. (2019, May). Communicating Data-Driven Risk Information to Pilots. *Stanley Roscoe Student Paper Competition Final, 20<sup>th</sup> International Symposium on Aviation Psychology in Dayton, OH*. [presentation](#)
1. **Fala, N.** (2017, May). Evaluation of Safety-Driven Feedback for General Aviation Pilots. *Women in Aviation Symposium in Boulder, CO*. [poster presentation](#)

**Conference Talks (presenter in bold)**

4. **Fala, N.** (2020, October). A Review of Stall-Type Accident Statistics Over the Past Fifty Years. *Online due to COVID-19.*
3. Chakraborty, A., **Fala, N.**, and Marais, K. (2019, June). Investigation of Feasibility of Using Low-Cost AHRS Devices to Detect General Aviation Hazardous States. *AIAA Aviation 2019 Forum in Dallas, TX.*
2. **Fala, N.**, and Marais, K. (2019, June). Assessing Potential Biases in Risk Perception for General Aviation Pilots. *AIAA Aviation 2019 Forum in Dallas, TX.*
1. **Fala, N.**, and Marais, K. (2016, June). Detecting Safety Events During Approach in General Aviation Operations. *16<sup>th</sup> AIAA Aviation Technology, Integration, and Operations Conference in Washington, D.C.*

**RESEARCH GRANTS (Awarded and Pending)**

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**Title** *Real-time Weather Awareness for Enhanced Safety Assurance in UTM*  
**Agency** NASA  
**Duration** 2020-2024 (4 years)  
**Award** \$5.2 million (awarded)  
**Role** Co-PI (PI: J. Jacob; Co-PIs: B. Elbing, I. Faruque)

**Title** *Perspectives and Obstacles in Collegiate Flight Training*  
**Agency** Amelia Earhart Memorial Scholarship Foundation (AEMSF)  
**Duration** 2021-2022 (1 year)  
**Award** \$50,000 (pending)  
**Role** PI

**Title** *Safety Impacts of SARS-CoV-2 Dispersion in an Airliner on Pilots, Crew Members, and Passengers*  
**Agency** FAA Technical Training and Human Performance (TTHP) Center of Excellence  
**Duration** 2021 (6 months)  
**Award** \$147,594 (pending)  
**Role** Co-PI (PI: J. Jacob; Co-PI: A. Santhanakrishnan)

**Title** *Planning Grant: Engineering Research Center for Aviation/Engineering Operations aNalysis (ÆON)*  
**Agency** NSF  
**Duration** 2021-2022 (1 year)  
**Award** \$99,732 (pending)  
**Role** PI (Co-PIs: K. Gardner-Vandy, S. M. Vance)

## SELECT HONORS AND AWARDS

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2019	Estus H. and Vashti L. Magoon Award ( <b>teaching</b> ) Purdue University College of Engineering
2018	William T. Piper, Sr. General Aviation Systems Graduate Award ( <b>research</b> ) American Institute of Aeronautics and Astronautics (AIAA)
2018	Student of the Year 2017 for Outstanding Achievement in Aviation Research ( <b>research</b> ) FAA Center of Excellence for General Aviation: Partnership to Enhance General Aviation Safety, Accessibility, and Sustainability (PEGASAS)
2018	Outstanding Service Award ( <b>service</b> ) Purdue University College of Engineering
2014	Rogers Award ( <b>service</b> ) Purdue University School of Aeronautics and Astronautics <i>Named for alumnus Herbert F. Rogers, this is one of AAE's most important awards and it is awarded to Purdue AAE senior students who are "deemed most worthy and deserving by his/her contributions to the growth of the School of Aeronautics and Astronautics in fostering engineering as an academic discipline."</i>

## SERVICE

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### Reviewer Service

Journals	IEEE Systems Journal (ISJ) Safety Science Journal of Advanced Transportation (JAT) Journal of Aviation Technology and Engineering (JATE) Journal of Aerospace Technology and Management (JATM) Journal of Aerospace Information Systems (JAIS) Aerospace International Journal of Environmental Research and Public Health (IJERPH) Mathematics Energies Risks Aviation Aircraft Engineering and Aerospace Technology (AEAT)
Conferences	AIAA Aviation Extended Abstract (yearly 2017-2021) HFES Annual Meeting – Safety Technical Group Technical Papers (2020)
Awards	AIAA 2020 William T. Piper, Sr. General Aviation Systems Graduate Award HFES Health Care Technical Group Sue Bogner Student Paper Award (2019)

### Professional Membership

AIAA	American Institute of Aeronautics and Astronautics
HFES	Human Factors and Ergonomics Society

### **Technical Committees**

AIAA General Aviation Technical Committee (Deputy Chair and Chair-Elect)

### **Session Chair**

AIAA Aviation ATIO.ATM-17 Environmental Impact Mitigation (2018)  
Aviation ATIO.ATM-21 Operations Management IV (2018)

### **Purdue University Service**

Purdue Pilots, Inc. – President  
Graduate Women Gatherings – President

### **WORKSHOPS & CERTIFICATIONS**

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2019 Effective College Teaching with Richard Felder & Rebecca Brent  
2018 9<sup>th</sup> Annual Conference for Pre-Tenure Women  
2017 Workshop on Convergent Data Science Solutions to Safer Systems  
Women in Aerospace Symposium (at CU Boulder, CO)  
2016 Effective College Teaching with Richard Felder & Rebecca Brent  
Preparing Future Faculty  
2015 College Teaching Workshop Series  
6<sup>th</sup> Annual Conference for Pre-Tenure Women  
Academic Coaching Tools  
2014 Safe Zone Training  
QPR Suicide Prevention Gatekeeper Training  
2013 Conference for Indiana Student Staff (at Indiana University, IN)  
2012 Conflict Resolution Workshop (at School for International Training, VT)

### **TECHNICAL SKILLS**

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Programming Matlab, Python, C, LabView, RobotC, NXT-G, KML, HTML, CSS, PHP  
Databases SQL, Access  
CAD Catia V5R20, NX 7.5  
Languages English, French, Greek

## FLYING CREDENTIALS

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### Certificates

**Flight Instructor** (Cert # 3702512, Exp. 07/21)

Airplane Single Engine

**Ground Instructor** (Cert # 3702512)

Advanced

Instrument

**Remote Pilot** (Cert # 4298650)

sUAS

**Commercial Pilot** (Cert # 3702512)

Airplane Single Engine Land

Instrument

High Performance Endorsement

Complex Endorsement

Spin Training Endorsement

### Flight Time

<i>Total</i>	<i>480</i>	<i>Night</i>	<i>54</i>
<i>PIC</i>	<i>403</i>	<i>Hood/IMC</i>	<i>80/10</i>
<i>Cross Country</i>	<i>213</i>	<i>Dual Given</i>	<i>3</i>

### Membership

WAI	Women in Aviation, International
99s	The Ninety-Nines: International Organization of Women Pilots
EAA	Experimental Aircraft Association
NAFI	National Association of Flight Instructors

### Service

LIFT	Ladies in Flight Training Scholarship Committee
	Ladies in Flight Training Library Curator
99s	Okie Derby Planning Committee

### Awards

2020	Ladies in Flight Training (LIFT) Scholarship for <b>Certified Flight Instructor – Instrument</b> training (\$1,500)
2020	Oklahoma 99s Wings of the Future Scholarship for <b>Multi-Engine Commercial Pilot</b> training (\$5,000)
2018	Female Aviators Sticking Together (FAST) Scholarship for <b>Certified Flight Instructor</b> training (\$1,000)
2018	International Council for Air Shows (ICAS) Lovelace-Drake Scholarship for basic <b>Aerobatics Flying</b> course with Billy Werth at Grayout Aerosports (\$5,000 value)
2018	Women in Engineering Program Travel Grant for attendance at the <b>Women in Aviation International</b> Conference in Reno, NV (\$1,500)
2017	Esther Lowry Safford Rookie Racer Award awarded at <b>Air Race Classic</b>

## **Other Experience**

Purdue Pilots, Inc.—President

- *Flying club with 100 members and a fleet of three aircraft. Managed day to day operations, educational programming, administration, and outreach.*
- <https://engineering.purdue.edu/PPI/>

Air Race Classic—2017 & 2018 Captain

- *Founded a flying club race team, fundraised \$15,500 for a race team, and raced twice as captain.*