

# DR. CAITLIN MILERA

**DIRECTOR** | [North Dakota Space Grant Consortium](#) & [ND NASA EPSCOR](#)

**RESEARCH ASSISTANT PROFESSOR** | [John D. Odegard School of Aerospace Sciences](#) | [UND](#)

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## EDUCATION

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### Ph.D. in Teaching and Learning

May 2022

*Higher Education Emphasis*

University of North Dakota, Grand Forks, ND

**Dissertation:** [Ms. Pearl Irma Young: "Raising Hell" for Women in STEM Fields and Women at NASA, 1914 - 1968](#)

### M.S. in Space Studies

Dec. 2012

University of North Dakota, Grand Forks, ND

**Thesis:** [Introducing Astronomy into High School Physics Curriculum Through the Use of the University of North Dakota Observatory](#)

### B.S. in Astrophysics

May 2010

University of Minnesota – Twin Cities, Minneapolis, MN

**Research:** Identifying Infrared Excess in Red Supergiants and Luminous Blue Variables of the Triangulum Galaxy and Andromeda Galaxy

## PROFESSIONAL EXPERIENCE

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### Director

Jan. 2020 - Present

*North Dakota Space Grant Consortium (NDSGC)*

*ND NASA EPSCoR (Established Program to Stimulate Competitive Research)*

University of North Dakota, Grand Forks, ND

- Serve as **Principal Investigator** (PI) on ~\$2.6 million in annual funding for NDSGC and ND NASA EPSCoR grants
- Supervise: Associate Director, Assistant Director, Office Manager, and ~20 STEM Ambassadors
- Align North Dakota needs with NASA Office of STEM Engagement Initiatives & NASA Mission Directorates in all programming

- Lead federal grant management through proposal and report writing, budget oversight
- Engage students, faculty, and staff at statewide affiliate institutions in NASA and STEM research and education opportunities
- Collaborate at local, statewide, regional, and national levels with other jurisdictions, consortia, NASA centers, academia, and industry partners
- Lead higher education, research infrastructure, educator professional development, informal education, and K-12 programming across North Dakota (highlighted in the annual [Aurora newsletter](#))
- Center Diversity, Equity, Inclusion, and Accessibility (DEIA) initiatives in all programming

## Research Assistant Professor

Jan. 2020 - Present

*John D. Odegard School of Aerospace Sciences*

University of North Dakota, Grand Forks, ND

- **Courses:** Space Science and Exploration (SpSt 220) & SpSt 300 (Case for Space)
- Engage students with inquiry-, project-, and discussion-based learning with team challenges, debates, and hands-on investigations
- **Established Space Studies Undergraduate Research Symposium** in Fall 2022; students present research posters as final projects at the end of each semester with special guests (e.g. UND Aerospace Dean) and 60+ student presenters to date
- [SpSt 220 | Fall 2023 - Photo Album](#) & [SpSt 300 | Spring 2024 - Photo Album](#)

## Social Media and Website Coordinator

July 2019 - Present

*National Space Grant Foundation*

- Increase NSGF online presence across social media platforms including [Instagram](#), [Facebook](#), [Twitter \(X\)](#), [LinkedIn](#), and [Pinterest](#) as well as the [NSGF website](#) news
- Build a community by engaging audiences in both NASA content and Space Grant content from all consortia (shares, likes, retweets, student highlights, etc.)

## Deputy Director

Aug. 2015 - Jan. 2020

*North Dakota Space Grant Consortium (NDSGC)*

*ND NASA EPSCoR (Established Program to Stimulate Competitive Research)*

University of North Dakota, Grand Forks, ND

- Provided and supported opportunities for students, faculty, and the general public to pursue STEM and NASA-relevant projects in NASA Internships, Fellowships, Scholarships, Higher Education, Research Infrastructure, Pre-college, and Informal Education Initiatives

## Coordinator

Feb. 2013 - Aug. 2015

*North Dakota Space Grant Consortium (NDSGC)*

*ND NASA EPSCoR (Established Program to Stimulate Competitive Research)*

University of North Dakota, Grand Forks, ND

- Provided and supported opportunities for students, faculty, and the general public to pursue STEM and NASA-relevant projects in NASA Internships, Fellowships, Scholarships, Higher Education, Research Infrastructure, Pre-college, and Informal Education Initiatives

## NASA Intern

Sept. 2012 - Dec. 2012

*Meteoroid Environment Office*

NASA Marshall Space Flight Center, Huntsville, AL

- **Research:** [Dust Production of Outbursting Comet 168P/Hergenrother](#)
- Wrote observing plans and operated telescope remotely at New Mexico Skies Observatories in Mayhill, NM
- [Authored research paper](#) and gave oral presentation on final results
- Measured dust production of outbursting comets and active asteroids to aid in improving meteor shower models
- [Developed guiding document](#) for future telescopic research interns at MSFC

## Graduate Research Assistant

Aug. 2011 – Aug. 2012

*Department of Space Studies*

University of North Dakota, Grand Forks, ND

- Designed [lab curriculum for Space Studies undergraduate course](#)
- Organized education and public outreach events
- Operated telescopes at UND Observatory to assist remote observers
- Supported fundraising efforts for UND Observatory

## Teaching Assistant

Aug. 2009 – May 2010

Astronomy Department

University of Minnesota – Twin Cities

- Led weekly laboratories to aid in students' hands-on learning experience
- Held office hours to offer extra assistance to students
- Conducted telescope observing nights open to the public

## LEADERSHIP

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<b>Faculty Advisor</b>   oSTEM Student Organization	2024 – Present
<b>Elected Member</b>   NASA Space Grant Directors' Executive Committee	2021 – Present
<b>Elected Member</b>   NASA EPSCoR Nominating Committee	2021 – Present
<b>Elected Member</b>   NASA Space Grant Nominating Committee	2021 – Present
<b>Faculty Advisor</b>   Dakota Space Society	2020 – Present
<b>Mentor</b>   UND LGBTQ+ Mentorship Program	2018 – Present
<b>Chair</b>   Department of Space Studies Assessment Committee	2017 – 2024
<b>Selected Member</b>   NASA Better Together Meeting Core Planning Team	2023
<b>Recognized Faculty Member in "The GRADitude Project"</b>   UND	2022
<b>"Inspiragage" Committee</b>   GLEE (Great Lunar Expedition for Everyone)	2019 – 2020
<b>Organizing Committee</b>   <a href="#">Aerospace Community Day</a>	2017 – 2020
<b>Deputy Chair</b>   Department of Space Studies Assessment Committee	2017
<b>Host Consortium</b>   <a href="#">National Council of Space Grant Directors' Meeting</a>	2017
<b>Coordination Team Lead</b>   <a href="#">Nationwide Eclipse Ballooning Project</a>	2015 – 2016
<b>Coordination Lead</b>   <a href="#">Academic High Altitude Conference</a>	2014
<b>Coordination Lead</b>   Venus Transit Public Outreach Event	2012
<b>Assistant</b>   NASA National Community College Aerospace Scholars	2012
<b>Student Lead</b>   UND Star Parties	2011 – 2012
<b>Education and Public Outreach Committee Head</b>   Dakota Space Society	2011 – 2012
<b>Coordination Lead</b>   International Observe the Moon Night	2011

## RESEARCH

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*Dr. Milera has served as the Principal Investigator on over **\$12.1 million** in external research funding at the University of North Dakota during her role as faculty. [Linked here is a folder of each of her successful research proposals.](#)*

**Research Title:** [North Dakota Space Grant Consortium Proposal FY 25 - 28: Leveraging Equitable Goals of Engagement in North Dakota and Advocacy for Researchers and Youth \(LEGENDARY\) \(Including augmentation award\)](#)

**Grant Program:** National Space Grant College and Fellowship Program - Opportunities in NASA STEM

**Award Number:** PENDING (Proposal Submitted: 7/9/2024)

**Role:** PI, Director

**Funding:** \$3,200,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 4/23/2025 - 4/22/2029

**Research Title:** [Multiscale Modeling of Fiber-Woven Composite through Fusion of NASMAT and Peridynamics \(RFA-006\)](#)

**Grant Program:** Established Program to Stimulate Competitive Research (EPSCoR) Rapid Response Research (R3) Opportunity

**Award Number:** 80NSSC24M0129

**Role:** PI, Director (Sci-I: Mijia Yang)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 9/1/2024 - 8/31/2025

**Research Title:** [Identification of High Latitude Cloud, Aerosol, and Blowing Snow Layers with Machine Learning of Lidar and Polarimeter Data \(RFA-042\)](#)

**Grant Program:** Established Program to Stimulate Competitive Research (EPSCoR) Rapid Response Research (R3) Opportunity

**Award Number:** 80NSSC24M0136

**Role:** PI, Director (Sci-I: Aaron Kennedy)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 8/15/2024 - 8/14/2025

**Research Title:** [RFA-032: Simulating Accidental Combustion Phenomena at Cryogenic Conditions](#)

**Grant Program:** Established Program to Stimulate Competitive Research (EPSCoR) Rapid Response Research (R3) Opportunity

**Award Number:** 80NSSC24M0130

**Role:** PI, Director (Sci-I: Gautham Krishnamoorthy)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 9/1/2024 - 8/31/2025

**Research Title:** [The Impact of an Undergraduate Research Project on STEM Identity](#)

**Grant Program:** FIDC Summer Scholarship of Teaching and Learning (SoTL) Research Fellowship

**Role:** PI

**Funding:** \$3,000

**Granting Agency:** Faculty Instructional Development Committee (FIDC), University of North Dakota

**Period of Performance:** 5/16/2024 - 5/15/2025

**Research Title:** [Effect of microgravity and higher radiation on healing and metastasis potential of omentum - ISS Flight Opportunity](#)

**Grant Program:** Established Program to Stimulate Competitive Research (EPSCoR) International Space Station (ISS) Flight Opportunity

**Award Number:** 80NSSC23M0209

**Role:** PI, Director (Sci-I Kalpana Katti)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 7/28/2023 - 7/27/2025

**Research Title:** [North Dakota NASA EPSCoR: Promoting Research Infrastructure Development and Engagement in North Dakota](#)

**Grant Program:** Established Program to Stimulate Competitive Research (EPSCoR)

**Award Number:** 80NSSC22M0035

**Role:** PI, Director

**Funding:** \$1,000,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 5/6/2022 - 5/5/2027

**Research Title:** [Human Factor Analysis of Space Crop Cultivation Methods and Interactions](#)

**Grant Program:** Established Program to Stimulate Competitive Research (EPSCoR) 2023

**Award Number:** 80NSSC23M0077

**Role:** PI (Sci-I: Keith Crisman)

**Funding:** \$470,368

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 5/15/2023 - 5/15/2026

**Research Title:** [North Dakota Space Grant Consortium FY 2020 - 2024 Proposal \(including six augmentation awards and 5th year extension\)](#)

**Grant Program:** National Space Grant College and Fellowship Program - Opportunities in NASA STEM FY 2020 - 2024

**Award Number:** 80NSSC20M0102

**Role:** PI, Director

**Funding:** \$4,240,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 4/23/2020 - 4/22/2025

**Research Title:** [Development of an Advanced Planetary Mobility Spacesuit using Advanced Additive Manufacturing Design and Techniques](#)

**Grant Program:** 2020 Established Program to Stimulate Competitive Research (EPSCoR)

**Award Number:** 80NSSC20M0230

**Role:** PI (Sci-I: Pablo de León)

**Funding:** \$750,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 7/24/2020 - 10/14/2024

**Research Title:** [Study of Performance for Commercial Extravehicular Space Suit - Appendix B](#)

**Grant Program:** Established Program to Stimulate Competitive Research (EPSCoR) Rapid Response Research (R3)

**Award Number:** 80NSSC21M0170

**Role:** PI (Sci-I: Pablo de León)

**Funding:** \$99,999

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 7/1/2021 - 8/31/2023

**Research Title:** [\*A Series Hybrid Electric Propulsion for an eVTOL Using a Fault Tolerant 9-phase Generator - \(Appendix D, D.1.1\)\*](#)

**Grant Program:** 2022 Established Program to Stimulate Competitive Research (EPSCoR)  
Rapid Response Research (R3)

**Award Number:** 80NSSC22M0219

**Role:** PI (Sci-I: Omid Beik)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 8/16/2022 - 8/15/2023

**Research Title:** [\*Evolving the North Dakota Dual Aurora Camera Project: Data Analysis and the Creation of an Accessible and Engaging Citizen Science Platform - Appendix F\*](#)

**Grant Program:** 2022 Established Program to Stimulate Competitive Research (EPSCoR)  
Rapid Response Research (R3)

**Award Number:** 80NSSC22M0258

**Role:** PI (Sci-I: Tim Young)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 8/15/2022 - 8/14/2023

**Research Title:** *North Dakota NASA EPSCoR: Proposal to Expand Research Infrastructure and Capabilities in North Dakota*

**Grant Program:** 2019 Established Program to Stimulate Competitive Research (EPSCoR)  
Research Infrastructure Development (RID)

**Award Number:** 80NSSC19M0047

**Role:** PI, Director

**Funding:** \$450,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 5/6/2019 - 5/5/2023

**The Influence of Gender in the Higher Education Environment**

2018 – 2022

- **Title:** *The Impact of Gender on Faculty Experience in STEM Fields*
- **Role:** PI



**Research Title:** *Derive Phytoplankton Size Classes, Detrital Matter, Particulate Organic Matter and Particulate Inorganic Matter from Ocean Color Observation*

**Grant Program:** Experimental Program to Stimulate Competitive Research (EPSCoR)

**Award Number:** 80NSSC18M0024

**Role:** PI (Sci-I: Xiaodong Zhang)

**Funding:** \$750,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 12/1/2017 - 11/30/2022

**Research Title:** [A flash co-sintering strategy for the fabrication of LiPON-based bulk-type solid-state lithium ion battery - Appendix G](#)

**Grant Program:** Established Program to Stimulate Competitive Research (EPSCoR) Rapid Response Research (R3)

**Award Number:** 80NSSC21M0169

**Role:** PI (Sci-I: Qifeng Zhang)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 8/16/2021 - 8/15/2022

**Research Title:** *Multilayer Thin Film Coating for Sensor Platform in Extreme Environments*

**Grant Program:** 2018 Established Program to Stimulate Competitive Research (EPSCoR) Rapid Response Research

**Award Number:** 80NSSC19M0177

**Role:** PI (Sci-I: Wenjie Xia)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 9/16/2019 - 9/15/2021

**Research Title:** *Evaluation of Candidate Crop Plants in Biologically Enhanced Martian Regolith*

**Grant Program:** 2018 Established Program to Stimulate Competitive Research (EPSCoR) Rapid Response Research

**Award Number:** 80NSSC19M0178

**Role:** PI (Sci-I: Pablo de León)

**Funding:** \$100,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 6/6/2019 - 6/5/2021

**Research Title:** *Multi-Purpose Research Station in North Dakota in Support of NASA's Future Human Missions to Mars*

**Grant Program:** Experimental Program to Stimulate Competitive Research (EPSCoR)

**Award Number:** NNX15AM81A

**Role:** PI (Sci-I: Pablo de León)

**Funding:** \$750,000

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 9/1/2015 - 8/31/2021

**Research Title:** *North Dakota Space Grant Consortium 2015-18 Proposal (and Two Extension Proposals)*

**Grant Program:** National Space Grant College and Fellowship Program (Space Grant) - Training Grant 2015 - 2018

**Award Number:** NNX15AJ15H

**Role:** PI, Director

**Funding:** \$2,721,400

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 4/23/2015 - 4/22/2021

**Research Title:** [A New Vision for the Department of Space Studies Assessment Strategy](#)

**Grant Program:** Odegard Summer Instructional Enhancement Grant

**Role:** Co-PI

**Funding:** \$4,000

**Granting Agency:** John D. Odegard School of Aerospace Sciences, University of North Dakota

**Period of Performance:** 5/16/2019 – 8/15/2019

**Research Title:** [Development of Digital Thermosonde Instrument for Quantification of Relative Cn2 Estimation Error between NWP Analysis and Thermosonde Measurements](#)

**Grant Program:** Student Flight Research Opportunity (SFRO) for Undergraduate Students (USIP) – (CAN) NNH15ZDA010C

**Award Number:** NNX16AL78A

**Role:** Collaborator, Grant Writer, Leadership Trainer

**Funding:** \$184,347

**Granting Agency:** National Aeronautics and Space Administration (NASA)

**Period of Performance:** 6/22/2016 – 6/21/2019

### **LGBTQ+ Research: Student Perceptions**

2018

- **Title:** *Effects of an LGBTQ+ Inclusive Positive Sexuality Course*
- **Role:** Team member in Consensual Qualitative Research (CQR) methodology

### **Educator Professional Development: Teacher Perceptions**

2017

- **Title:** *Impact of Hands-on Professional Development Workshop in North Dakota on Secondary Teacher Confidence in Space Sciences*
- **Role:** Co-PI

### **North Dakota Space Grant Consortium Fellow**

2010, 2011

- **Title:** *STEM Education and Outreach for ND K-12 Students and General Public*
- **Role:** Student Researcher

## **ADDITIONAL GRANT FUNDING**

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**Title:** [OER for SpSt 300 \(Case for Space\)](#)

**Grant Program:** Open Educational Resources (OER) Implementation Grant Initiative

**Role:** PI

**Funding:** \$3,000

**Granting Agency:** University of North Dakota

**Award Date:** April 21, 2023

**Title:** [OER for SpSt 220 \(Space Science and Exploration\)](#)

**Grant Program:** Open Educational Resources (OER) Implementation Grant Initiative

**Role:** PI

**Funding:** \$3,000

**Granting Agency:** University of North Dakota

**Award Date:** Dec. 1, 2020

**Grant Title:** GGFCVB Event Funding – UND Aerospace Community Day

**Funding:** \$500

**Granting Agency:** Greater Grand Forks Convention & Visitors Bureau (GGFCVB)

**Award Date:** 1/30/2018

**Grant Title:** GGFCVB Event Funding – Fall 2017 National Council of NASA Space Grant Directors' Meeting  
**Funding:** \$5,600  
**Granting Agency:** Greater Grand Forks Convention & Visitors Bureau (GGFCVB)  
**Award Date:** 4/25/2017

## PUBLICATIONS

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**Milera, C.** (2024). [Pearl Irma Young: The Lasting Impact of the NACA's First Female Technical Employee](#). *NASA History News & Notes*, 41(1) 26-29.

Runyon, C., Cook, J., Saad, M., Royle, M., McIntosh, T., **Milera, C.**, Cline, T., Vilevic, S., Hurd, D., & Minafra, J. (2022). [Understanding Eclipses Using Innovative Resources](#). AGU

**Nolby, C.**, Saad, M., & Bartholomay, A. (2017). Impact of Hands-on Professional Development Workshop in North Dakota on Secondary Teacher Confidence in Space Sciences. [IAC-17.E1.2.6](#). 68th International Astronautical Congress.

Saad, M., Fevig, R., **Nolby, C.**, & Seelan, S. (2014). Promoting STEM Education with High Altitude Balloons. 65th International Astronautical Congress.

**Nolby, C.**, & Hardersen, P. (2013). [The High School Physics Curriculum and the University of North Dakota Observatory](#). [Communicating Science: A National Conference on Science Education and Public Outreach – Astronomical Society of the Pacific Conference Series](#), 473, 373 – 376.

## WORKSHOPS CONDUCTED

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Dr. Milera has conducted workshops and led professional development sessions for college students, K-12 educators, and higher education faculty. She has conducted workshops at state and national levels. ND workshops have been conducted at: Turtle Mountain Community College, United Tribes Technical College, North Dakota State University, Dickinson State University, Minot State University, Mayville State University, Valley City State University, the University of North Dakota, and Dakota College at Bottineau. Each of these workshops include hands-on, inquiry-based STEM lesson plans and NASA investigations, with a focus on Diversity, Equity, Inclusion, and Accessibility (DEIA). In addition to the workshops listed here, Dr. Milera has also conducted 65+ pre-service workshops with affiliate institutions over her tenure with the NDSGC.

[NASA-in-the-Classroom Educator PD Workshop: DEIA-focused Space Science Activities](#) | *Third Cohort* | Innovative Differentiated Exploration Activities in Space Science (IDEAS) Team | 2024 July 15-18 | Houston, TX

[NDSGC STEM Ambassador Training](#) | 2023 Sept. 16 | Grand Forks, ND.

[NASA-in-the-Classroom Educator PD Workshop: DEIA-focused Space Science Activities](#) | *Second Cohort* | Innovative Differentiated Exploration Activities in Space Science (IDEAS) Team | 2023 July 10-13 | Laurel, MD | [UND Today Article on 2023 IDEAS Workshop](#)

**NDSGC STEM Ambassador Training** | 2022 Aug. 27 | Grand Forks, ND.

[NASA-in-the-Classroom Educator PD Workshop: DEIA-focused Space Science Activities](#) | *First Cohort* | Innovative Differentiated Exploration Activities in Space Science (IDEAS) Team | 2022 July 25-28 | Grand Forks, ND | [UND Today Article on 2022 IDEAS Workshop](#)

[Space Grant DEIA Flipped Meeting Session](#) | National Council of Space Grant Directors' Spring Meeting | 2022 March 2-4 | Washington, D.C.

**NDSGC STEM Ambassador Training** | 2021 Sept. 16 | Grand Forks, ND.

[NASA in the Classroom - Populating ND with Purple Air Sensors](#) | NDSGC In-service Educator Workshop | 2021 Aug. 10, 12, 17, 19 | Virtual.

[NASA in the Classroom - Spheros in Science](#) | NDSGC In-service Educator Workshop | 2020 Aug. 4, 6, 11, 13 | Virtual.

**IDEAS Education Workshop - Innovative Differentiated Exploration Activities in Space Science** | In-service Educator Workshop | 2019 Oct. 14-15 | Raleigh, NC.

[NDSGC STEM Ambassador Training](#) | 2019 Aug. 17 | Grand Forks, ND.

[Department of Space Studies Assessment Retreat](#) | 2019 Aug. 12 | Grand Forks, ND.

**NASA in the Classroom – Moon to Mars** | NDSGC In-service Educator Workshop | 2019 June 20 - 22 | Grand Forks, ND.

**NDSGC STEM Ambassador Training** | 2018 Aug. 1 | Grand Forks, ND.

**NASA in the Classroom – Mars Mission Edition** | NDSGC In-service Educator Workshop | 2018 July 20 - 21 | Bismarck, ND.

**NDSGC STEM Ambassador Training** | 2017 Aug. 26 | Grand Forks, ND.

**NASA in the Classroom – Mars Mission Edition** | NDSGC In-service Educator Workshop | 2017 June 8 - 9 | Grand Forks, ND.

**Undergraduate Student Instrument Project (USIP) Leadership Training** | 2017 Mar. 9 | Grand Forks, ND.

**Undergraduate Student Instrument Project (USIP) Leadership Training** | 2016 Nov. 11 | Grand Forks, ND.

**NDSGC STEM Ambassador Training** | 2016 Sept. 17 | Grand Forks, ND.

**NASA in the Classroom – SciGirls® Edition** | NDSGC In-service Educator Workshop | 2015 Oct. 8, 15, 22 | Mayville, ND.

**Educator Resources in Space Sciences; NCEC and NDSGC In-service Educator Workshop** | 2015 Sept. 22 | Bottineau, ND.

**NASA in the Classroom: Galileo Educator Network Teacher Workshop** | NDSGC In-service Educator Workshop | 2014 March 28-29 | Grand Forks, ND.

## EDUCATOR WORKSHOP PRESENTATIONS

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**Mini Martian Rovers** | North Dakota Council of Teachers of Mathematics [Summer 2024 Conference: Infinite Possibilities: Rediscovering the Fun in Mathematics Education](#) | 2024 June 11-12 | Mayville, ND.

**Mini Martian Rovers** | [Invited Presenter](#) | [Nurturing STEM in the K-12 Classroom](#) | 2023 Aug. 10 | Grand Forks, ND.

**Get Ready to Launch!** | [Invited Presenter](#) | NASA Mississippi Space Grant Consortium Annual Teachers Conference | 2023 Jan. 6-7 | Oxford, MS.

**Getting a Feel for Space: Resources for the Blind / Visually Impaired** | 25th Annual Space Exploration Educators Conference (SEEC) | 2019 Feb. 9 | Houston, TX.

**Martian Water** | 25th Annual Space Exploration Educators Conference (SEEC) | 2019 Feb. 8 | Houston, TX.

**Space4Everyone: Skills everyone should know for working with learners with disabilities** | 25th Annual Space Exploration Educators Conference (SEEC) | 2019 Feb. 7 | Houston, TX.

**Blast Off to Space with NASA Opportunities for North Dakota Students** | STEAM Conference: A Collaboration of the North Dakota Council of Teachers of Mathematics (NDCTM) and North Dakota Science Teachers Association (NDSTA)| 2018 Mar. 16-17 | Valley City, ND.

**NASA in the Classroom: Deep Sea Diver** | Regional In-Service: North Central Education Cooperative (NCEC) | 2018 Jan. 15 | Rugby, ND.

**Washing Water** | North Dakota STEAM Conference (State Math and Science Conference) | 2017 Mar. 23 – 25 | Minot, ND.

**NASA Balloon Competition for North Dakota Students** | North Dakota Spring Collaborative Science, Technology, Engineering, and Mathematics (STEM) Conference | 2016 April 21-23 | Grand Forks, ND.

**Jupiter's Moons and NASA Resources** | STEM Strategies Conference | 2015 April 16-18 | West Fargo, ND.

**Strange New Planet: Explore New Worlds as a NASA Scientist** | National Science Teachers Association (NSTA) STEM Forum & Expo | 2015 May 20-23 | Minneapolis, MN.

**Planet Exploration and NASA Resources** | North Dakota Science, Technology, Engineering, Arts, and Mathematics (STEAM) Conference | 2015 March 20-21 | Bismarck, ND.

**Educators Workshop** | Academic High Altitude Conference (AHAC) | 2014 June 24 | Grand Forks, ND.

**NASA Resources and Mars Board Game** | Next Generation Science: Standards, STEM, Sustainability - North Dakota Science Teachers Association (NDSTA) Spring Conference; 2014 Feb. 21 – 22 | Valley City, ND.

## PRESENTATIONS

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[Legacy of Pearl Young](#) | [Invited Keynote Speaker](#) | NASA Langley Research Center's Diversity, Equity, Inclusion, and Accessibility Day | [Presentation Recording](#) | 2024 April 17 | Hampton, VA.

**Hands-on Eclipse Activities Workshop** | [Invited Presenter](#) | National Council of Space Grant Directors' Meeting | 2024 Feb. 29 - March 1 | Washington, D.C.

[U41B-0854: Innovative Accessible Activities and Resources to Engage Multiple Audiences during the eclipses](#) | *U41B: 2023 and 2024 Solar Eclipses: Engaging Your Communities with Science Experiments and Education Activities II Poster* | Wide. Open. Science. American Geophysical Union (AGU) Fall Meeting | 2023 Dec. 11-15 | San Francisco, CA.

**NASA Space Grant Evaluation** | [Invited Speaker](#) | NASA Office of STEM Engagement Better Together Meeting | 2023 Nov. 15-16 | San Jose, CA

[UND National Scholarships and Fellowships Information Forum](#) | [Invited Panelist](#) | University of North Dakota | 2023 Aug. 29 | Grand Forks, ND.



**Panel Discussion: Out on Campus** | [Invited Panelist](#) | [University of North Dakota Pride Center's United in Pride Week](#) | 2023 June 14 | Grand Forks, ND.

**[Ms. Pearl Irma Young: "Raising Hell" for Women in STEM Fields and Women at NASA, 1914 – 1968](#)** | [Invited Speaker](#) | Deluxe Women's Employee Resource Group (WERG) | 2023 March 23 | Virtual.

**Space Grant Communications Workshop** | [Invited Presenter](#) | National Council of Space Grant Directors' Spring Meeting | 2023 March 1-3. | Washington, D.C.

**Equity at UND** | [Invited Presenter](#) | [UND LEADS: Strategic Plan Launch](#) | 2023 Jan. 20 | Grand Forks, ND.

**[Understanding Eclipses Using Innovative Resources](#)** | Science Leads the Future: American Geophysical Union (AGU) Fall Meeting | 2022 Dec. 12-16 | Chicago, IL.

**[IDEAS Team: Working to Make STEAM Accessible to All](#)** | National Council of Space Grant Directors' Southeast Regional Meeting | 2022 Oct. 26-28 | San Juan, PR.

**[Ms. Pearl Irma Young: "Raising Hell" for Women in STEM Fields and Women at NASA, 1914 – 1968](#)** | [Diversity, Equity, and Inclusion in Higher Education and Beyond Conference](#) | 2022 Oct. 5-6 | Grand Forks, ND.

**[Diversity, Equity, Inclusion, and Accessibility \(DEIA\): Next Steps](#)** | [Promising Programs & Practices \(P3\)](#) | [Invited Presenter](#) | National Space Grant College and Fellowship Program | 2022 June 13 | Virtual

**[Exploring the 2023 and 2024 Eclipses through Accessible Resources - The IDEAS Team](#)** | | American Geophysical Union (AGU) Fall Meeting | 2021 Dec. 13-17 | New Orleans, LA.

**[Innovative Differentiated Exploration Activities in Space Science - IDEAS](#)** | SciAccess: The Science Accessibility Conference | 2021 Nov. 12-13 | Virtual.

**DEIA Series: Prompts to Encourage Reflection and Critical Thinking** | [Invited Speaker](#) | University of North Dakota | 2021 Oct. 13 | Virtual.

**Space Grant Diversity, Equity, and Inclusion: Panel Discussion** | [Invited Panelist](#) | National Council of Space Grant Directors' Fall Meeting | 2021 Sept. 29 - Oct. 1 | Jackson, WY.

**Women in Space: Accessing Space** | [Invited Panelist](#) | [Space Store Live! Webinar Series](#) | 2021 March 25 | Virtual.

**Addressing DEAI in Higher Education** | [Invited Speaker](#) | NASA STEM Better Together for Stakeholder Success | 2021 March 18-19 | Virtual.

**National Space Grant Foundation (Social Media Engagement)** | National Council of Space Grant Directors' Spring Workshop | 2021 March 4-5 | Virtual.

[The North Dakota Sphero Educator Workshop](#) | ASP2020: Virtual Conference, Embracing the Future: Astronomy Teaching and Public Engagement | Astronomical Society of the Pacific | 2020 Dec. 3-5 | Virtual.

**Panel on NASA EPSCoR Best Practices** | [Invited Panelist](#) | NASA EPSCoR CAucus 2020 Virtual Update Discussion | 2020 Oct. 30 | Virtual.

**Creating Engaging Websites, Social Media, and Print Materials** | [Invited Speaker](#) | Best Practice Discussions: National Council of Space Grant Directors' Spring Meeting | 2020 Feb. 26 | Washington, D.C.

**Working with Students with Disabilities** | [Invited Presenter](#) | Western Regional Space Grant Meeting | 2019 Sept. 12 | Big Sky, MT.

**Making STEM Accessible** | [Invited Presenter](#) | National Council of Space Grant Directors' Spring Meeting | 2019 Feb. 28 - March 2 | Arlington, VA.

**Impact of Hands-on Professional Development Workshop in North Dakota on Secondary Teacher Confidence in Space Sciences** | Space Education and Outreach Symposium | 68th International Astronautical Congress (IAC) | Oral Presentation; 2017 Sept. 25 – 29 | Adelaide, Australia.

**NASA in North Dakota** | [Invited Keynote Speaker](#) | STEMtastic Outreach Event; 2017 Mar. 7 | Jamestown, ND.

**NASA Careers** | [\*Invited Keynote Speaker\*](#) | Grafton Elementary | 2016 Apr. 26 | Grafton, ND.

**NASA in North Dakota: K-12 Opportunities** | [\*Invited Keynote Speaker\*](#) | North Dakota Council of Teachers of Mathematics Meeting | 2014 March 21 | Fargo, ND.

**Space Grant Usage of Social Media** | [\*Invited Panel Member\*](#) | National Council of Space Grant Directors' Spring Meeting | 2014 Feb. 27 – March 4 | Arlington, VA.

**High Altitude Ballooning Summer Day Camp for Students Grades 5-8** | Academic High Altitude Conference (AHAC) | 2013 June 26 | Upland, Indiana.

**Introducing Astronomy into High School Physics Curriculum Through the Use of the University of North Dakota Observatory** | Astronomical Society of the Pacific Annual Meeting - Communicating Science: A National Conference on Education and Public Outreach | 2012 August 4-8 | Tucson, AZ.

**Introducing Astronomy into High School Physics Curriculum Through the Use of the University of North Dakota Observatory** | The Graduate School Scholarly Forum | 2012 February 27-28 | Grand Forks, ND.

## **PROFESSIONAL DEVELOPMENT** - *Competitively Selected to Attend*

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**Quality Course Design & Best Practices in Blackboard Ultra** | Teaching Transformation and Development Academy (TTaDA) | University of North Dakota | 2024 May 16 – 20 | Grand Forks, ND.

**Inclusive Excellence and Diversity Summer Workshop** | Teaching Transformation and Development Academy (TTaDA) | University of North Dakota | 2022 May 23 – 26 | Grand Forks, ND.

[Summer 2021 Workshop: Creating an Equitable Inclusive Classroom](#) | Teaching Transformation and Development Academy (TTaDA) | University of North Dakota | 2021 May 24 – 27 | Grand Forks, ND.

**Amateur Radio Relay League's (ARRL) Teachers Institute on Wireless Technology** | 2017 July 24 – 28 | Newington, CT.

**SciGirls® CONNECT Train the Trainer Workshop** | 2015 May 13-15 | St. Paul, MN.

**NASA Galileo Educator Network – Professional Development Institute** | 2013 Sept. 28-29 | Orlando, FL.

## **SELECTED PROFESSIONAL DEVELOPMENT - *Open Participation***

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**Faculty Learning Community (FLC): Faculty Mental Health** | University of North Dakota | Fall 2023, Spring 2024, Fall 2024 | Grand Forks, ND.

**Introduction to Effective Leadership** | Teaching Transformation and Development Academy (TTaDA) | University of North Dakota | 2024 Feb. 7 | Grand Forks, ND.

**[Designing Artificial Intelligence \(AI\) Policy for Your Courses](#)** | Teaching Transformation and Development Academy (TTaDA) | University of North Dakota | 2024 Feb. 6 | Grand Forks, ND.

**Teaching Transformation and Development Academy (TTaDA) - Various Workshops** | University of North Dakota | [Fall 2022 - Fall 2023 Registrations PDF](#) | Grand Forks, ND.

**Alice T. Clark Mentoring Program** | Mentee | Teaching Transformation and Development Academy (TTaDA) | University of North Dakota | Fall 2020 - Spring 2022 | Grand Forks, ND.

**How We Fight for Our Lives Book Study** | Teaching Transformation and Development Academy (TTaDA) | University of North Dakota | Spring 2021 | Grand Forks, ND.

**How to Be an Antiracist Book Study** | Teaching Transformation and Development Academy (TTaDA) | University of North Dakota | Fall 2020 | Grand Forks, ND.

**Next Gen STEM Commercial Crew Program Pilot (CCP) Virtual Reality Space Grant Training** | NASA CCP | 2019 May 18-19 | Omaha, NE.

**10th Annual First Nations Launch (FNL) Competition** | Wisconsin Space Grant Consortium | 2019 Apr. 25-27 | Kenosha, WI.

**First Nations Launch (FNL) Introductory Rocket Workshop** | Wisconsin Space Grant Consortium | 2019 Jan. 5-6 | Bismarck, ND.

**Living OUT Loud: Expression, Creativity, & Being Bold** | Greater Plains Affirming Campus Conference (GPACC) | 2018 Nov. 3 | Grand Forks, ND.

**North Dakota Women in Higher Education Network (NDWHEN) 2018 Leadership Conference – Transition and Transformation** | NDWHEN | 2018 Nov. 2 | Minot, ND.

**NASA's Historically Black Colleges & Universities/ Minority Institutions Technology Infusion Road Tour at University of Hawaii-Manoa** | Federal Small Business Summit | 2018 Aug. 14 – 15 | Honolulu, HI.

**American Indian Higher Education Consortium (AIHEC) Conference** | AIHEC; 2018 Mar. 11-14 | Bismarck, ND.

**Partnership Development – STEM Accessibility and National Council of Space Grant Directors' Meeting** | South Carolina Space Grant Consortium (SCSGC) and NDSGC Collaboration Meetings | 2017 Aug. 1 - 4 | Grand Forks, ND.

**UND Department of Aviation Spring Assessment Workshop** | 2017 Jan. 9 | Grand Forks, ND.

**Space Grant Solar Eclipse Workshop** | Eclipse Ballooning Project | 2016 July 16 – 20 | Bozeman, MT.

**Partnership Development – Space Grant Research Initiatives** | Montana Space Grant Consortium (MSGC) and NDSGC Collaboration Meetings | 2016 Mar. 26 – April 1 | Grand Forks, ND.

**Partnership Development – NASA EPSCoR and Space Grant Best Practices** | Montana Space Grant Consortium (MSGC) Collaboration Meetings | 2015 July 17 – 23 | Bozeman & Missoula, MT.

**Arduino 101 Workshop** | Western Regional Space Grant Meeting | 2014 Oct. 9 | Boulder, CO.

**NASA STEM Workshop for Elementary Teachers: 3-2-1 Lift Off** | Grades 3 – 6 | Fargo Air Museum and NASA Glenn Research Center | 2013 March 6 | Fargo, ND.

**Knowing What Your Audience Really Thinks: Common Misconceptions in Students' and the Public's Understanding of Planetary Science** | 43rd Annual Lunar and Planetary Science Conference | 2012 March 18 | The Woodlands, TX.

## STUDENT MENTORSHIP

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4 Students   UND LGBTQ+ Mentorship Program	2018 – Present
80+ Students   <a href="#">NDSGC STEM Ambassador Program</a>	2015 – Present
35+ Students   Student Volunteers for STEM Engagement Events	2013 – Present
Space Studies Graduate Student Independent Study Research, Ashley Balzer	2021
<a href="#">Independent Study Report: Hubble Focus, The Lives of Stars</a>	
Space Studies Graduate Student High Altitude Ballooning Researchers	2013 – 2020
<a href="#">2017 Total Solar Eclipse - NASA High-Altitude Project</a>	

## SERVICE

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Faculty Mental Health   Faculty Learning Community   UND	2023 – Present
<a href="#">Invited External Reviewer</a>   South Carolina NASA EPSCoR	2022 – Present
LGBTQ+ Faculty & Staff Association   University of North Dakota	2022 – Present
<a href="#">Invited External Reviewer</a>   Nevada NASA EPSCoR	2021 – Present
Space Grant Communications Subcommittee	2019 – Present
<a href="#">Invited External Reviewer</a>   Montana NASA EPSCoR	2019 – Present
<a href="#">Invited External Reviewer</a>   Louisiana NASA EPSCoR	2016 – Present
<a href="#">Invited Research Interview Participant</a>   <i>Building a Space Hub in Grand Forks:</i>	
<i>GFK SpaceHub</i>	2024
Department of Space Studies Assessment Committee	2016 - 2024
<a href="#">Invited Highlight</a>   <a href="#">Dr. Milera Pride Month Video</a>   Virginia Space Grant	June 2024
<a href="#">Invited Spotlight</a>   <a href="#">Pride Center LGBTQ+ Visibility Campaign Poster</a>   UND	Spring 2024
<a href="#">Invited Spotlight</a>   <a href="#">Pride Center Newsletter</a>   <a href="#">Instagram Post</a>   UND	Dec. 2023
<a href="#">Invited Member</a>   <a href="#">Fostering Equity and Inclusive Excellence:</a>	
<a href="#">UND Strategic Plan Working Group</a>	2022
Judge   Student Symposium   Colorado Space Grant Consortium	2020
UND Atmospherium Committee	2018 – 2020
Space Grant 30th Anniversary Committee	2018 – 2020
ND State Science & Engineering Fair (NDSSEF) Program & Activities Committee	2016 – 2017
<a href="#">Invited Member</a>   UND STEM Initiative Work Group	2015 – 2017

## NOTABLE PROJECTS

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### IDEAS Educator Professional Development

2019 – Present

#### *Collaborator and Workshop Lead*

The NDSGC continues to partner with NASA, South Carolina, and North Carolina Space Grant Consortia to host a series of educator professional development workshops focused on accessibility, starting in 2019. This national workshop is held at a rotating location each year, engaging a new cohort of educators from across the country in hands-on NASA and STEM investigations, to determine appropriate adaptations by applying the Universal Design for Learning (UDL). The final goal for IDEAS (Innovative Differentiated Exploration Activities in Space Science) is to develop a series of UDL activities available to educators everywhere through NASA resources online.

[2023 News Article: "Accessibility in Orbit"](#)

[2022 NASA Article: "Adapting STEM Lessons for Students with Disabilities Using My NASA Data"](#)

[2022 News Article: "Space Grant Educators Fuel Love for Science"](#)

[2021 Instructional Videos recorded at NASA Langley Research Center](#)

### Biographical Research on Ms. Pearl Irma Young

2017 – Present

#### *Lead Researcher*

Dr. Milera began historical research on Ms. Pearl Irma Young in 2017, and this research is now nationally recognized and is ongoing. This research has included class projects in her PhD program which evolved into her dissertation, and has resulted in NASA social media posts, and several invitations to write articles as well as invitations to present virtually and in-person as a keynote speaker. Dr. Milera also developed a timeline of Ms. Young's life accomplishments, which is now displayed outside the Pearl Young Theater at NASA Langley Research Center. Ms. Pearl Irma Young is a 1919 UND alumna, and became the first female technical employee of the NACA (National Advisory Committee for Aeronautics) in 1922. Her scientific and technical writing contributions still hold impacts agency-wide, today.

June 2024 | UND Today Article | [Remembering NASA's Pearl Young, UND '19 — 1919, that is](#)

April 2024 | [Ms. Young's Timeline displayed at NASA Langley Research Center](#)

April 2024 | [Invited Keynote Video Recording](#) | [Legacy of Pearl Irma Young Presentation](#)

March 2024 | NASA History Twitter (X) Account | [Tweet](#)

March 2024 | NASA History Article: News & Notes | [Pearl Irma Young: The Lasting Impact of the NACA's First Female Technical Employee](#)

3 Jan. 2024 | Grand Forks Herald Article | ["Fierce" UND alum was first female professional at NASA's predecessor](#) [Original Link](#) | [Article PDF Upload](#) (Author: Sav Kelly)

Nov. 2023 | NASA Langley Research Center Presentation: “[Where are the Women in STEM?](#)”

March 2023 | [Women's Employee Resource Group \(WERG\) Presentation](#) for *Deluxe*

May 2022 | [Timeline of Ms. Young's Milestones](#)

May 2022 | [Dr. Milera Dissertation - UND Scholarly Commons](#)

## **University of North Dakota (UND) Aerospace Community Day**

2017 – Present

### [Organizing Committee Team Member](#)

To celebrate the 50th anniversary of the John D. Odegard School of Aerospace Sciences at UND, an “open house” was organized where the public could fly spacecraft and aircraft simulators, experience virtual reality, tour research laboratories including the Human Space Flight Laboratory, participate in hands-on challenges and activities, pilot Unmanned Aircraft Systems (UAS), view planetarium shows in the 360° Atmospherium, and explore Aerospace careers. The first event was held in 2018, and has since been held in 2019, 2020, 2022, and 2024. For these events, Dr. Milera has managed Space Studies student volunteers and STEM Ambassador activities, organized faculty, student, and alumni presenters for both research and career presentations, secured grant funding for the inaugural year, and promoted the event via social media and other marketing strategies, leading to over 2,500 participants in 2018 over 3,000 participants in 2019, and more than 3,000 participants in subsequent years. The 2024 Community Day saw more than 4,500 participants.

YouTube: <https://tinyurl.com/AeroCommDay>

[2024 UND Today Article](#)

## **NDSGC STEM Ambassador Program**

2015 – Present

### [Director, Founder](#)

Dr. Milera established the [STEM Ambassador Program](#) in 2015. This robust higher education program employs 15 - 20 college students annually (80+ students to date), representing statewide NDSGC affiliates. These ambassadors conduct STEM engagement events across the state with K-12, college, and community audiences. STEM Ambassadors have been invited to lead hands-on activities with all ages and share STEM and NASA opportunities for funding and involvement. This program has been recognized on a national level with invitations to present posters and give oral presentations to share program best practices. Several STEM Ambassador alumni have gone on to win national and international awards as well (e.g. Brooke Owens Fellowship, Marshall Scholarship, NSF GRFP, and Student Employee of the Year Designations). Several other Space Grant Consortia have modeled similar programs after the highly successful NDSGC initiative.

[NDSGC Aurora](#) | *Latest Annual Newsletter with STEM Ambassador Program on p. 20*



## **North Dakota Vision Services / School for the Blind Partnership**

2015 – Present

### [\*NDSGC Educational Partner & Affiliate\*](#)

Dr. Milera established an official partnership with NDVS/SB for K-12 programming, educator professional development, and funding opportunities. The NDSGC continues to host multiple tours of UND Aerospace with students from NDVS/SB, develop hands-on learning activities focused on accessibility, and works with students on space-relevant tactile books with braille language to promote equitable learning in STEM.

In 2018 and 2019, the NDSGC co-facilitated and supported travel for NDVS/SB staff, students, and family members to attend Space Center Houston's *VisU, Space Center University – Visual Impairment Program*. Students worked in teams on hands-on challenges (e.g. rocket launches, heat shield design and testing, Mars rover programming, etc.) to complete a mission to Mars. In 2020, the NDSGC established the NDVS/SB scholarship for students who are eligible for these vision services and pursuing a STEM degree. In 2021, the NDSGC hosted both a virtual space-themed “escape room” with a hands-on component, and a STEM career discussion specifically for learners from NDVS/SB, to continue to engage these students during COVID restrictions for in-person events. In 2022, NDVS/SB staff participated in the “IDEAS” Workshop at UND, and hosted tours of their facilities for educators from across the country at this NASA Space Grant Workshop. In the FY 2025 - 2028 NASA Space Grant proposal, NDVS/SB is included as an official affiliate of the NDSGC.

### [NDVS/SB Scholarship](#)

[May 2023 | UND Today Article: Space Grant Consortium makes space for everyone](#)

[March 2021 | NDVS/SB Escape Room Photo Album](#)

[Space Center Houston VisU | VisU 2018 Photo Album](#)

## **SciGirls® Partnership**

2015 – Present

### [\*Program Partner and Host\*](#)

The NDSGC was competitively selected as an official partner of SciGirls® for educator professional development and in the *SciGirls® in Space!* Program. As a partner, we conducted a series of hands-on educator workshops at Mayville State University in Fall 2015. We also incorporate SciGirls® best teaching practices in all STEM Ambassador training. We later conducted two iterations of a space and STEM camp for middle school girls, in 2019, and in 2022. These hands-on sessions included tours of the Human Spaceflight Laboratory, interactions with female role models in STEM fields and at NASA, and team-based challenges in space sciences including: rover design and testing, rocket launches, atmospheric sciences, robotics, engineering design of neutrally buoyant objects, planetary science, and human

physiology testing related to long-duration space exploration. The 2019 program culminated with a downlink to astronaut Christina Hammock Koch aboard the International Space Station on 8/19/2019. The 2022 program culminated with a robotics competition where campers' families were invited to participate.

YouTube: <https://tinyurl.com/SciGirlsISS>

[2022 SciGirls at UND Program](#)

[2019 Downlink Press Release - PBS SciGirls](#)

[UND Today Article - 2019 "Space Talk"](#)

### **National Council of Space Grant Directors' Meeting**

2015 – 2017

#### *Host Consortium*

As the national meeting host with 200+ attendees, Dr. Milera and the NDSGC team secured facility reservations, maintained a detailed budget, organized a city-wide scavenger hunt, developed a networking mobile application, planned meals, managed tours, scheduled student employee assistance, arranged VIP attendance, designed promotional materials, secured local sponsorship, and was awarded a \$5,600 grant from the Greater Grand Forks Convention & Visitors Bureau for the meeting which took place 9/14/17 - 9/16/17.

YouTube: <https://tinyurl.com/SGMtng2017>

### **Amateur Radio on the International Space Station (ARISS) Call**

2015 – 2016

#### *Proposal & Project Management Lead*

Dr. Milera and the NDSGC team led the participation of ~400 ND K-12 students, teachers, faculty, and college students in the ARISS program in spring 2016. This initiative included visits to all participating K-12 classrooms and keynote presentations at schools in the region. For rural schools, these visits engaged the entire student population, resulting in a "Space Day" at the school. The final event for students was "STEM Day" on UND campus with hands-on stations, NASA competition team engagement, a planetarium show, and demonstration of space suits and the electric rover from the UND Human Spaceflight Laboratory. The event culminated in an amateur radio call to the ISS, where K-12 students asked questions of Commander Tim Kopra as he orbited overhead on 3/10/16.

YouTube: <https://tinyurl.com/ARISScall>

YouTube: [UND Video Clip of ARISS Call](#)

## Total Solar Eclipse High Altitude Balloon Launches

2014 - 2017 & 2023 - 2024

[Member - Leadership Team / Co-Lead - NDSGC Ballooning Team](#)

Dr. Milera participated in the Eclipse Ballooning Project which included the participation of 55 teams across the nation who built and launched common payloads to livestream the eclipse from the path of totality. On the Leadership Team, she assisted with social media strategies, white papers, and overall project management. She attended the hands-on workshop at Montana State University in 2016 to build the common payload. She then managed logistics of the NDSGC team's launch on 8/21/2017 in Rexburg, ID which included university-level research, a high school team's experiment testing color filters and solar radiation, and a 3rd grade classroom's culturally relevant payload from a Tribal community.

Dr. Milera was the co-writer on the proposal for the [NEBP \(Nationwide Eclipse Ballooning Project\)](#) submitted in Oct. 2022, which resulted in NASA funding support for a UND Atmospheric Sciences Team to participate in high-altitude balloon launches for the 2023 annular and 2024 total solar eclipses, and data collection on gravity waves.

April 2024 WDAY News Article | [UND Students Eclipse Launch](#)

April 2024 | [NEBP NPR Article](#)

Oct. 2022 | [NEBP NDSGC Proposal](#)

YouTube 2017 | <https://tinyurl.com/EclipseBallooning>

[August 2017 UND Today Article | Total Eclipse of the Sun](#)

## QUALIFICATIONS

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[Lunar & Meteorite Sample Disk Certification](#)

2018 – Present

[Civil Air Patrol Aerospace Educator](#)

2016 – Present

Amateur Radio Callsign: KE0LEC

2016 - Present

[SciGirls® Trainer](#) | National Girls Collaborative Project (NGCP)

2015 – Present

[Astronomy Society of the Pacific - Galileo Educator Fellow](#)

2013 – Present

Institutional Review Board (IRB) Certified | CITI

2011 – Present

- [Recertified 8.5.2024 \(Record ID: 51874848\)](#) Exp: 8.5.2027

Upper-Intermediate in Spanish Language | *Reading, Writing, & Speaking*

2007 – Present

## PROFESSIONAL AFFILIATIONS

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<a href="#"><u>SciGirls® in Space! Official Partner</u></a>	2018 – Present
Greater Grand Forks Young Professionals (GGFYP)	2018 – Present
American Association of University Women (AAUW)	2015 – Present
<a href="#"><u>NASA's Museum Alliance</u></a>	2015 – Present
American Institute of Aeronautics and Astronautics (AIAA)	2014 – Present

## REFERENCES

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