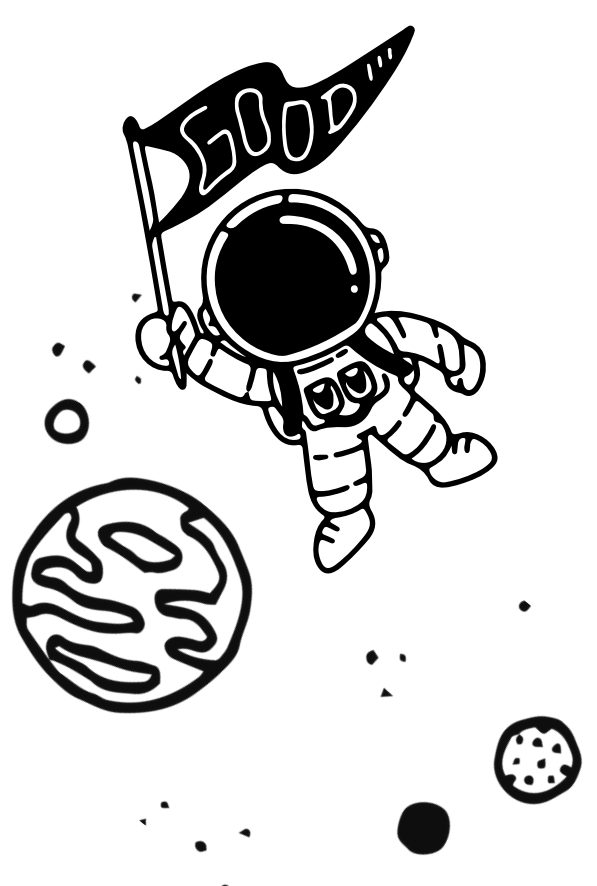




**WELCOME!**

**-2025-**

**North Dakota  
Space Grant Consortium  
Affiliates Meeting**



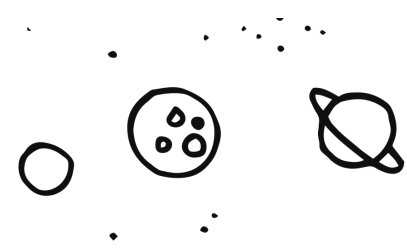


North Dakota  
Space Grant Consortium  
Crew

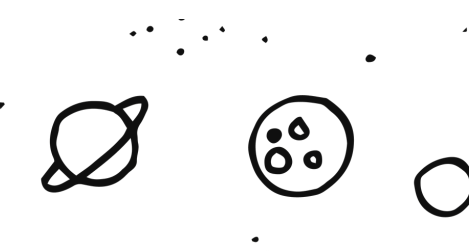


QR code to the 2025  
Affiliate Meeting slide  
deck





# Event Logistics and Housekeeping



## Agenda:

- If Zoom is disrupted, we will send another link via email.

## OWL Camera:

- It will record anyone who is speaking; be mindful of this.

## Recording:

- This meeting will be recorded for longevity purposes and so others may observe later.

## Food:

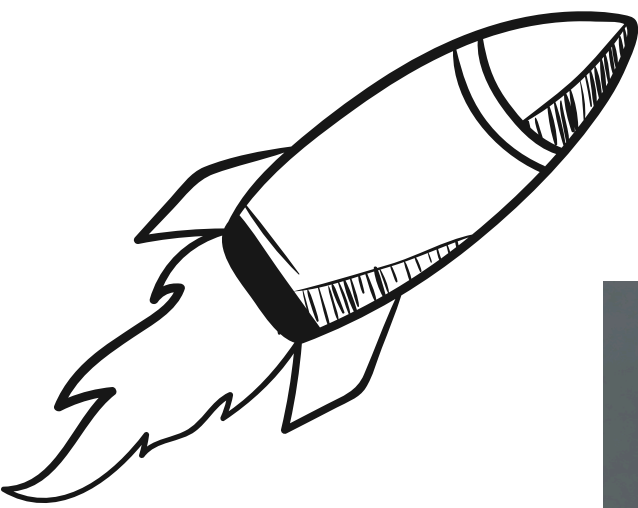
- Please wait for food to be set up.

## Reimbursements:

- We have set time aside to complete the paperwork needed.

## Networking:

- Breaks and poster sessions are an excellent time to meet new colleagues!



# NDSGC Team



**Caitlin Milera**  
Director



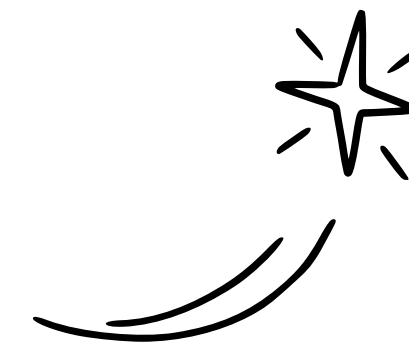
**Tori McIntosh**  
Associate Director



**Laurie Salander**  
Assistant Director



**Grecia Flaws**  
Office Manager




# STEM Ambassadors

Cassandra Taggart  
Atmospheric Sciences &  
Middle-Level Education  
UND



Thomas Iken  
Physics  
UND



Amanda Curatti  
Commercial Aviation  
UND



Maddalene Guthrie  
Commercial Aviation  
UND




Mia Nixon  
Communications  
UND



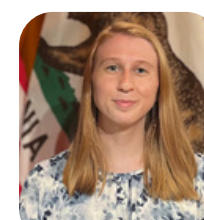
Hailey Olson  
Commercial Aviation  
UND




Grace Larson  
Communication Sciences  
and Disorders  
UND



Kate Kesler  
Biochemistry  
UND



Laina Behrenbrinker  
Mechanical Engineering  
UND



Cheyenne Harrision  
Mechanical Engineering  
UND

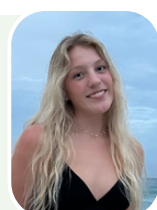


Josh Lakoduk-Ernst  
Mechanical Engineering  
NDSU



Jacob Stanley  
Mathematics  
UND


Hanna Krause  
Physics  
UND



Sarah Frankson  
Commercial Aviation  
UND



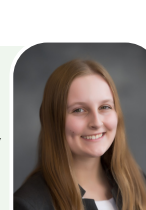
Gabrielle Wahl  
Mathematics  
UND




Eden Parkinson  
Commercial Aviation  
UND



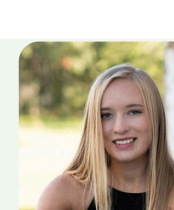
Autumn Landwehr  
Physics & Chemistry  
UND



Elisabeth Starosta  
Biochemistry  
UND



Casia Steinhaus  
Physics & Mathematics  
UND



# NASA OSTEM

NASA Space Grant housed in NASA's Office of STEM Engagement

1. NASA Space Grant
2. NASA EPSCoR (Established Program to Stimulate Competitive Research)
3. Next Gen STEM (K-12)
4. MUREP (Minority University Research and Education Project)

**2023 OSTEM Highlights:**

<https://tinyurl.com/NASA-OSTEM-23>

National Aeronautics and  
Space Administration



**NASA STEM**  
**Highlights 2023**

# What is Space Grant?

- National Space Grant College and Fellowship Project
- Established in 1989
- Network of colleges and universities (and STEM orgs/industry partners)
- Expand opportunities for individuals to understand and participate in NASA projects
- Consortia: 50 states, DC, Puerto Rico, Virgin Islands, Guam



## Websites:

<https://tinyurl.com/NASASpaceGrant>

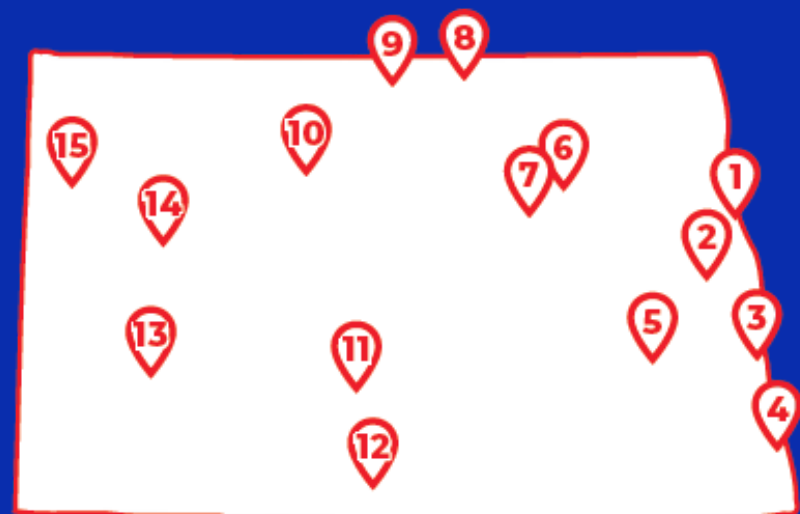
<https://ndspacegrant.und.edu/>



# North Dakota Space Grant Consortium

## Mission Statement:

The NDSGC fulfills the Space Grant mission by involving ND students, faculty, and K-12 teachers and students in multi-institutional, collaborative, NASA-relevant research and education projects, while also educating the ND citizenry about NASA, its purpose, and its missions.



## 20 Affiliate Institutions



NDVS/SB & Dakota Science Center  
Officially added as affiliates!

# NDSGC by the Numbers

**FY24 (Sum24, F24, Sp25)**

- 24 NASA Internships
- 1 Industry Internship
- 15 Student Research Fellowships
- 161 Scholarships
- 19 STEM Ambassadors
- 4 Graduate Assistantships
- 10 College Competition Teams
- 12 K-12 Competition Teams
- 2 College Student Mini Grants
- 12 Educator Mini Grants
- 4 Affiliate Mini Grants
- 36 Plant the Moon/Mars Teams
- 9 Faculty Course Development Stipends
- 10 ND Educators at 2024 IDEAS Workshop
- 1 ASCEND Grant

# NDSGC AURORA



VIEW ARCHIVED ISSUES OF  
AURORA ONLINE!

[ndspacegrant.und.edu/aurora](https://ndspacegrant.und.edu/aurora)



NORTH DAKOTA SPACE GRANT CONSORTIUM | 2025 EDITION

# NDSGC Highlights

Thank you to all of our affiliate representatives, staff, faculty, and students!

Together, we are #NASAinND!

<https://tinyurl.com/NDSGC-Aurora>

# NDSGC AURORA



NORTH DAKOTA SPACE GRANT CONSORTIUM | 2025 EDITION

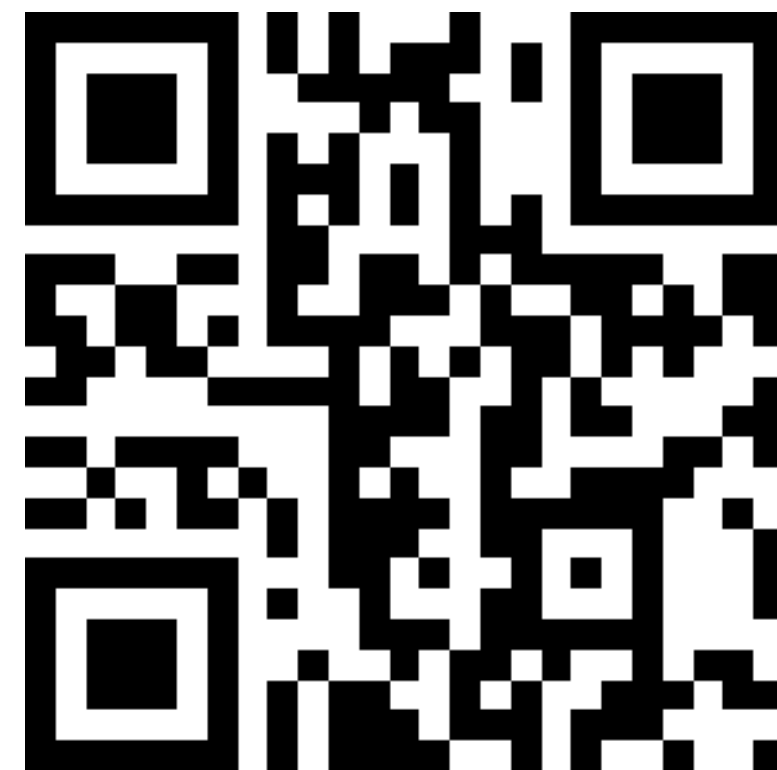
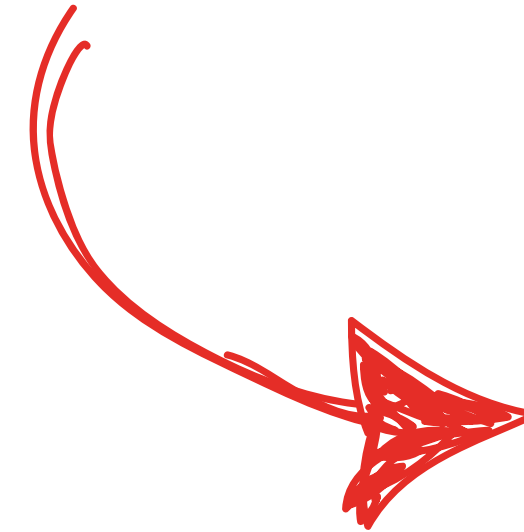
# Stay in the loop!

- Apply on [ndspacegrant.und.edu](https://ndspacegrant.und.edu)
- Blog / Newsletter
  - Regular updates
- Web Calls
  - Informational Webinars
  - Virtual "Award Kickoffs"
- Submittable
  - Apps, Check-ins, Reports

Join our electronic mailing list:

<https://tinyurl.com/NDSGCemail>

<https://tinyurl.com/NDSGC-blog>



*Stay  
TUNED*

# Stay in the loop!

@NorthDakotaSpaceGrant 

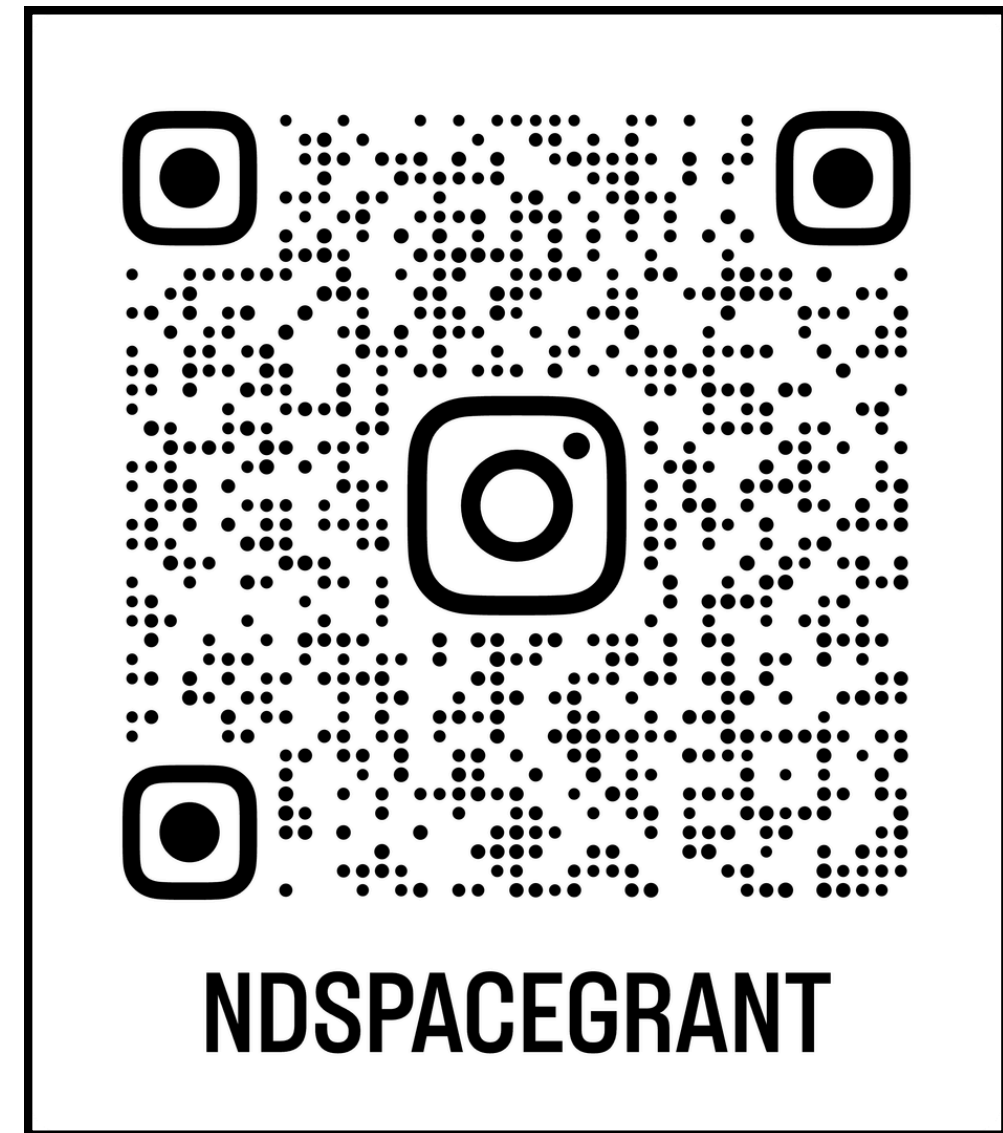
@NDSGC 

@NDSpaceGrant

North Dakota Space Grant

North Dakota Space Grant Consortium

*Don't Forget*  
to **FOLLOW** on  
**Us** *Instagram*



<https://tinyurl.com/NDSGC-sm>

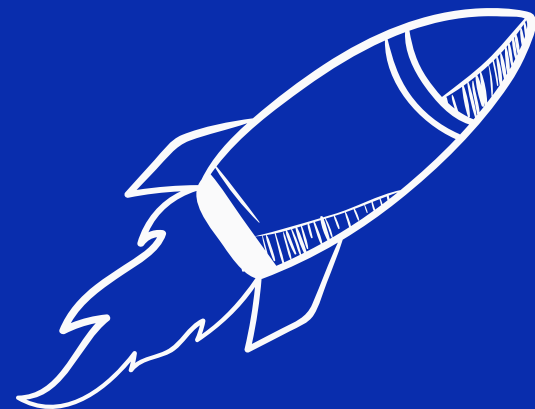
# Internships

## NASA Internships:

- Students complete research at a NASA center under a research mentor for one semester
- Undergraduate Summer: \$7,300
- Graduate Summer: \$9,000
- 24 students funded in FY24

## Industry Internships:

- Students complete research with an industry partner under a mentor for roughly one semester
- Graduate: \$24.75/hr
- Undergraduate: \$20.50/hr
- 1 Position funded in FY24



# Panelists

Nick Holte | NASA Langley

Cassandra Taggart | NASA Langley

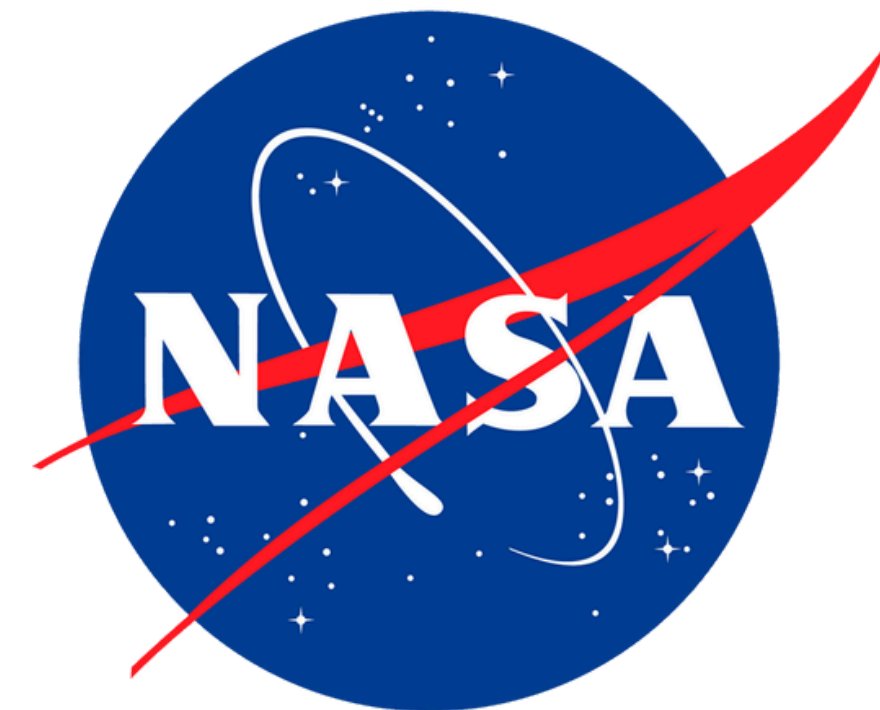
Kristian Haugen | NASA Langley

Felicia Haseleu | NASA Langley

Zoe Graham | NASA Langley

Manna Khan | NASA HQ

Jenny Mulholland | NASA Langley



# Research Fellowships

## College Students:

- Students complete research on ND campus (or remotely for online students) under a faculty mentor for one semester
- Undergraduate Stipends:
  - F/Sp: \$5,000 & Sum: \$3,100
- Graduate Stipends:
  - F/Sp: \$6,000 & Sum: \$3,800
- 15 students funded in FY24

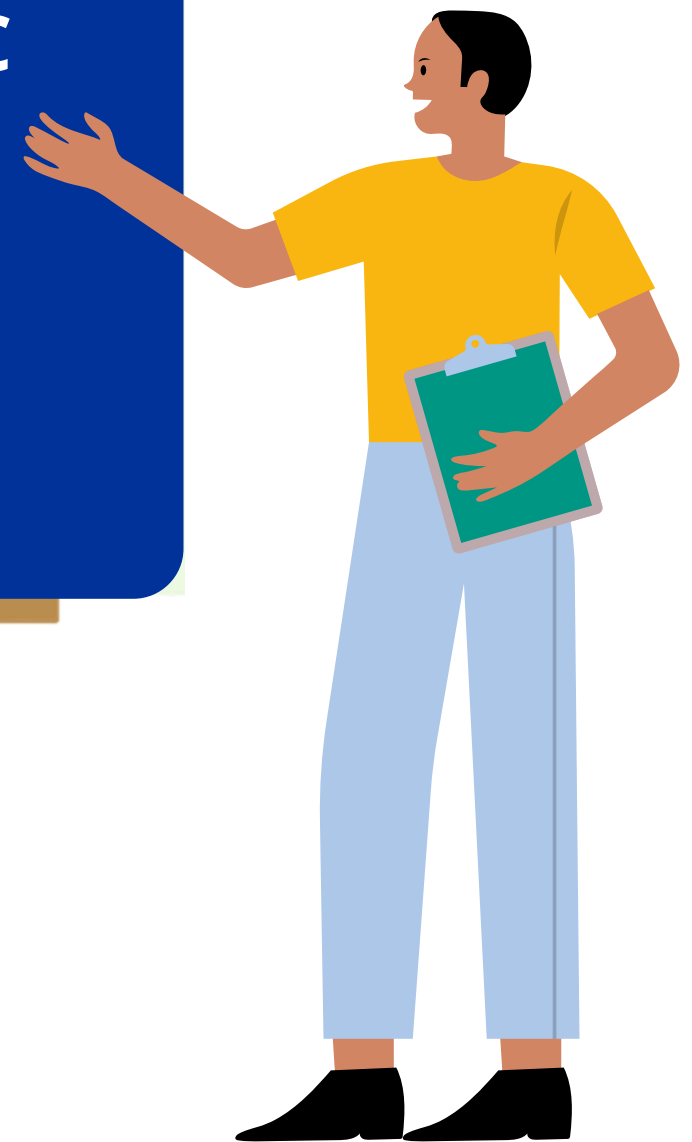
## Faculty:

- ND Affiliate faculty revise or develop STEM and NASA relevant courses
- Summer Stipend: \$4,500
- 9 faculty funded in FY24



# Poster Session: Elevator Speeches

Check out my NDSGC  
funded research!  
I have some  
out-of-this-world  
results!





# Poster Session

**Network with NDSGC awardees and hear about their NASA internships and research fellowships while you enjoy the snack break.**



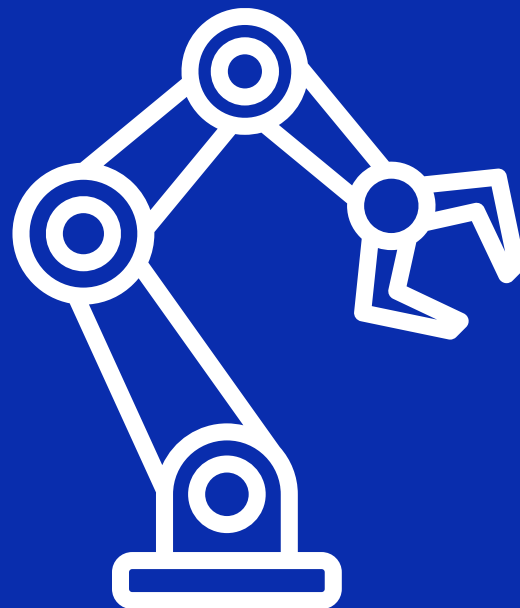
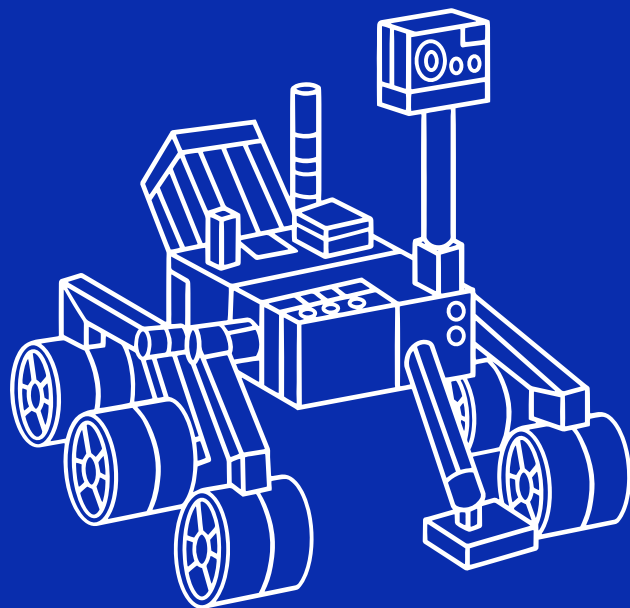
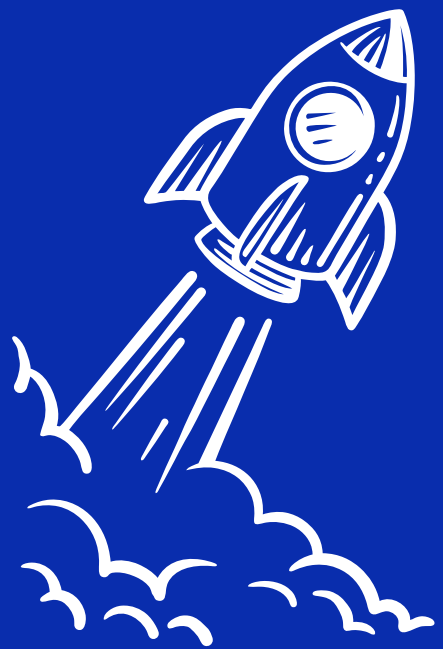
**Welcome**

**Senator**  
**John**  
**Hoeven**



# Competition Teams

- College and K-12 student teams participating in STEM and NASA challenges
- Funding can cover travel and materials funding
- Applications due Nov. 1st annually
- 10 College Teams supported in FY24
- 12 K-12 Teams supported in FY24



# Speakers

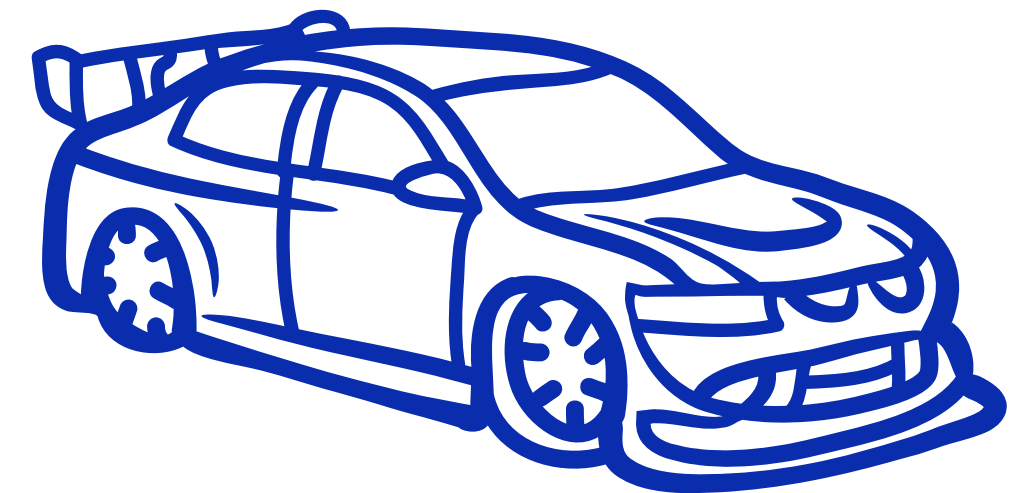
NDSU Bison Robotics

NDSU Design, Build, Fly

NDSU Formula SAE

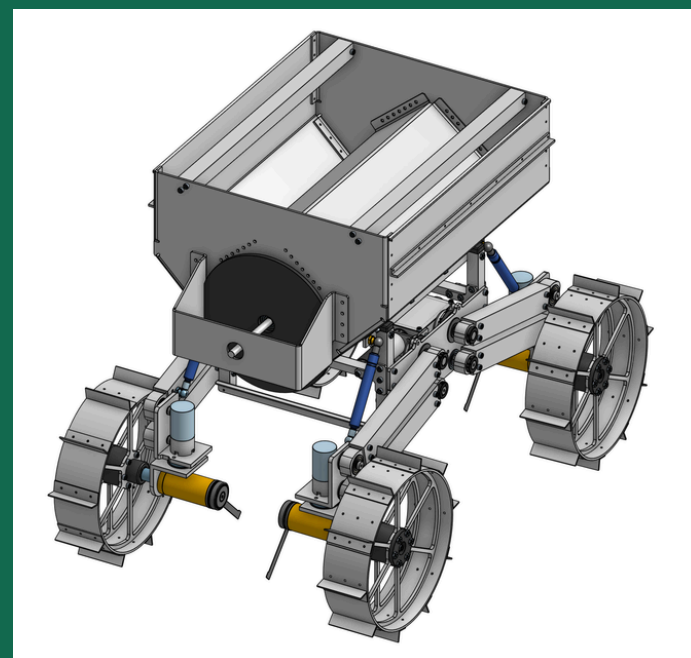
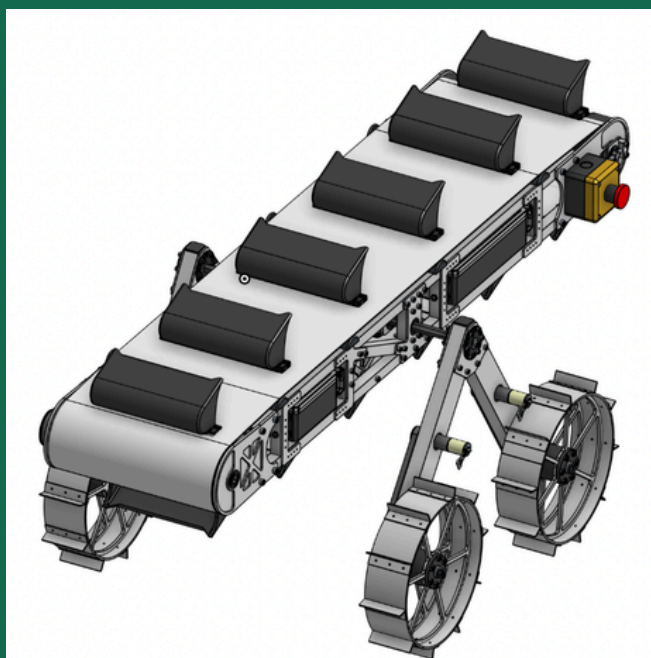
UND Advanced Rocketry

UND Robotics



# NDSU NASA Lunabotics

- Two robot system
- Twenty active team members
- Mechanical design and machining parts
- Electrical design
- Software development
- Outreach



# North Dakota State University AIAA Chapter

- **What is Design/Build/Fly**

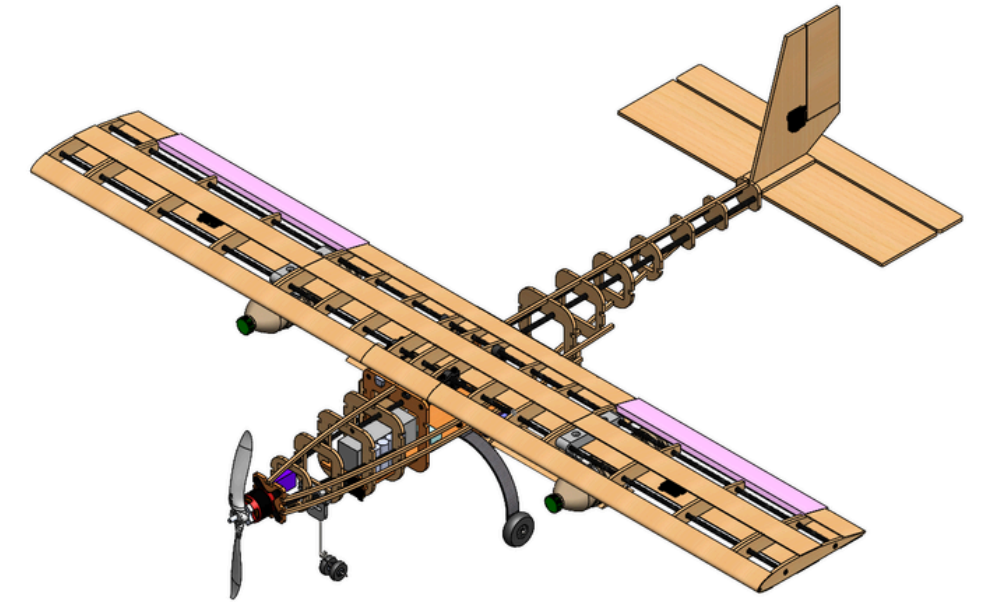
- International Collegiate competition with over 100 Schools
- This year's mission is to design a remote-controlled plane capable of carrying a payload and an autonomous glider capable of flight.

- **Progress**

- Initial 3D model and complete prototype picture to the right

- **What's Next?**

- Continue to test and improve the plane and glider
- Compete in Tucson April 10-13



# NDSU Formula SAE Club EV/CV: FSAE Competition

## Electric Vehicle Competition

- Key Milestones
  - Frame completion
  - EV motor functional
- What's Next
  - Motor testing
  - Accumulator integration into vehicle
  - Waitlisted for competition



## Combustion Vehicle Competition

- Key Milestones
  - Engine successfully running/integrated into our vehicle
  - Competition registration!
- What's Next
  - Engine tuning
  - Completion of aero kit fabrication



# THE ADVANCED ROCKETRY CLUB

## INTERNATIONAL ROCKET ENGINEERING COMPETITION



### The Rocket

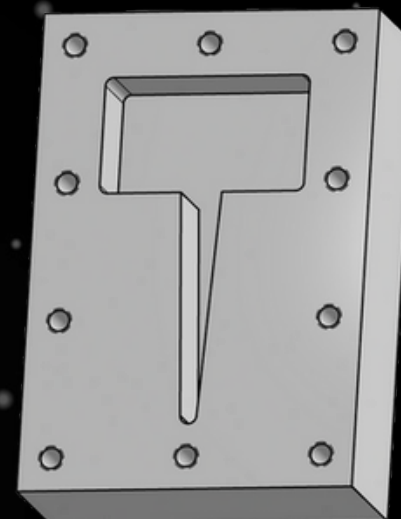
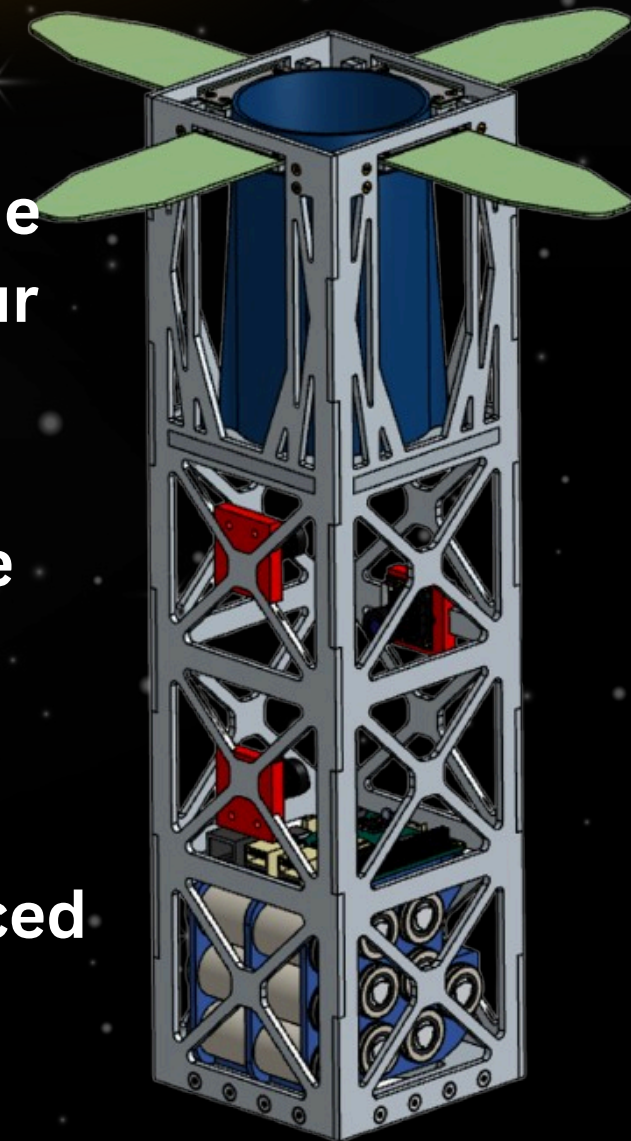
M.A.D L.A.D is a solid fueled supersonic rocket designed to fly to 28,000 feet AGL for the IREC, incorporating a novel fin design

- 28,000 ft Max Altitude
- Supersonic flight with a Mach 1.6 Max Velocity
- Launched on an O5500X Solid Rocket Motor
- Body tubes made from Fiberglass and Carbon Fiber
- Research into use of custom wound carbon fiber body sections
- Custom manufactured aluminum fins have been designed for this project
- Live video will be broadcast from the rocket during the initial stages of the flight

### The Payload

The rocket will carry a 4U CubeSat in the upper body tube, which will perform our experiment

- 3 Liquid Acquisition Devices comprise the experiment
- Deployed at Apogee (28,000 ft)
- Allowed to free fall to 5,000 ft
- Free fall will create a simulated reduced gravity environment
- fluid behavior in response to varying geometries in reduced gravity environment will be recorded and studied
- Pentane is used as the active fluid due to its viscosity being similar to liquid

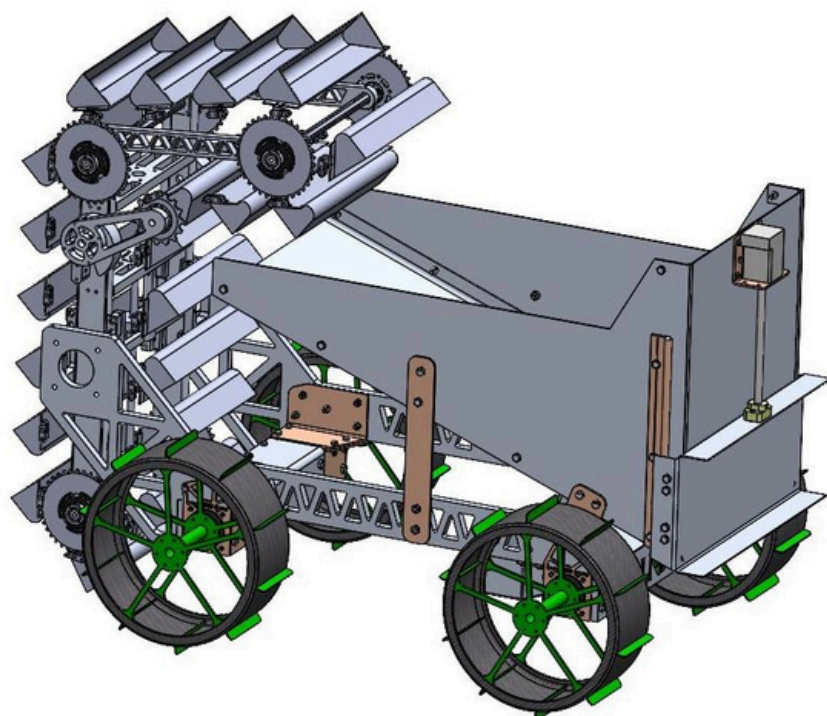


# UND Lunabotics Team

**Competition Overview:** Utilize NASA's Systems Engineering to design and build an autonomous lunar excavation robot.

## Criteria for success:

- *Total weight less than 60 kg*
- *Implement sensors to promote autonomy*
- *Meet all NASA hard requirements*
- *Mine and deposit 0.1 m<sup>3</sup> of regolith*
- *Host one outreach event to a middle school*



MINING	CRITERIA →	Weight Distribution	# of Discrete Parts	Ease of Automation	Speed of Operation	Dust Generated	Manufacturability	Number of Required Actuators	SEPARATE HOPPER?	COST	Knowledge of mechanism	TOTALS
IDEA ↓	MULTIPLIER →	7	3	7	8	8	4	6	5	4	9	
Bucket Ladder		3	1	5	6	2	6	2	0	6	5	186
Bull Dozer		5	6	3	1	6	4	2	1	4	4	192
Water Wheel		6	2	6	4	1	2	2	1	3	2	163
Claw		2	3	1	3	5	3	1	0	2	1	103
Front Loader		1	5	4	2	4	1	2	0	5	4	133
Grain Auger		4	4	2	5	3	5	2	0	1	3	166



## How we've prepared:

- Brainstorming session in August to generate ideas,
- Weighted design matrix
- Determined the ideal design to be a bucket ladder system
- Create a budget and timeline
- During our PDR and CDR milestones, a design was finalized by December.

## What we've learned:

- How to coordinate with different engineering disciplines
- Project management-how to keep the project moving, manage different disciplines' timelines efficiently, and maintain a high-morality team
- How to settle disputes between conflicting ideas

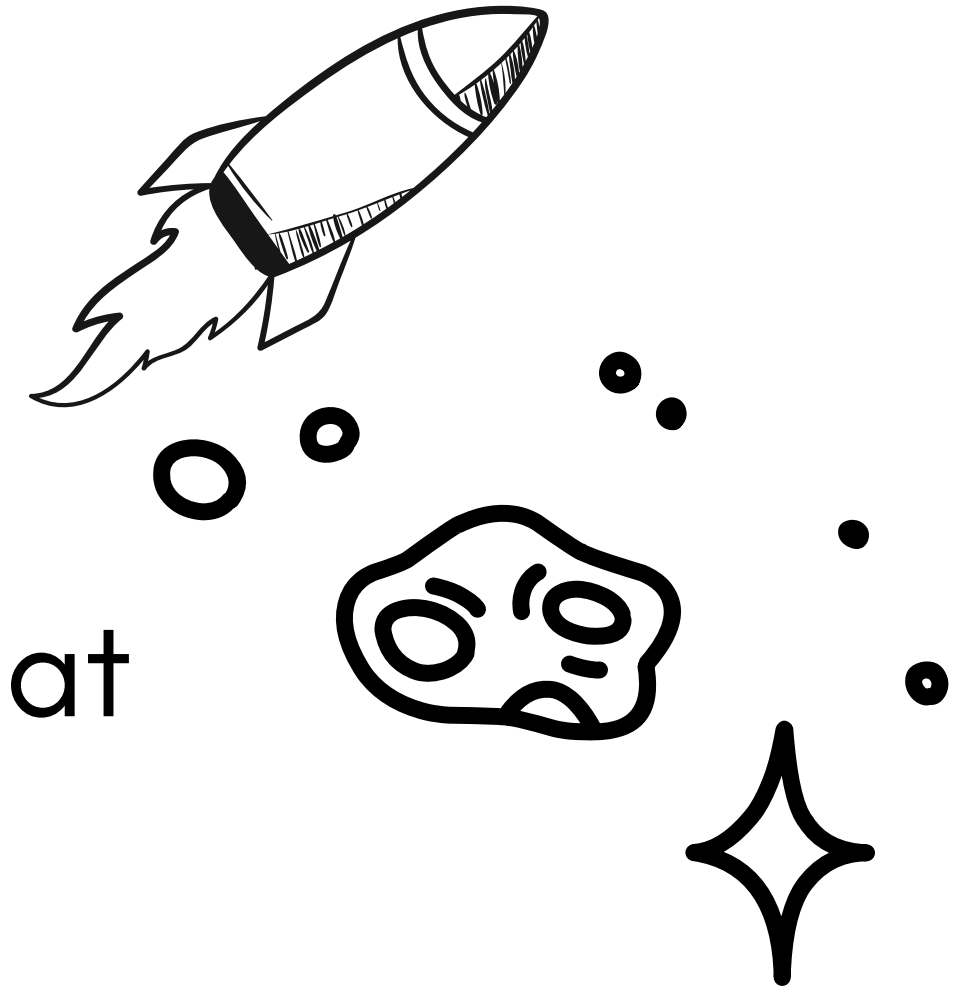


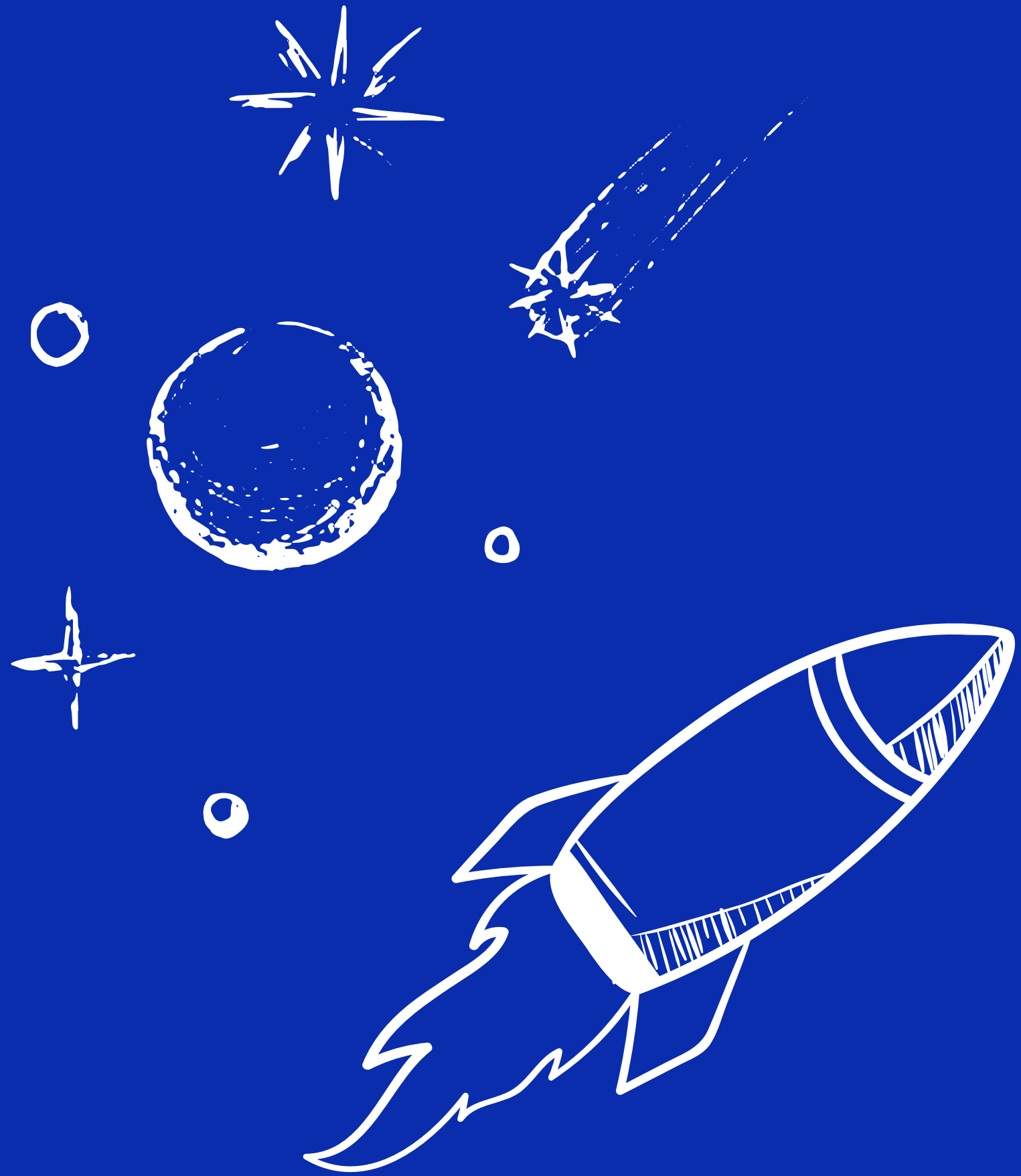
# Lunch

Lunch will be ready at  
12:00 pm.

Taco Del Mar – Taco Bar

Please be back at 12:30 pm  
for the Business Meeting &  
Scholarship recognition





# **NDSGC Business Meeting**

# External Evaluation

- BEARS (ND) & Goldstream Evaluation (National)
- BEARS (Bureau of Evaluation and Research Services): evaluator for NDSGC
- Student participant interviews & surveys
- F22: STEM Ambassadors & Sp23: Fellowships
- F23: Scholarships & Sp24: GAs
- F24: Travel Grants & Sp25: Competition Teams (*Results by June 2025*)
- STEM Identity, Sense of Belonging, Positive Impacts on Academic & Professional Careers
- Similar schedule for FY25 - FY28



<https://tinyurl.com/NDSGC-eval>

# 2024 - 2025 Event & Mtng Recaps

- Fall 2024: Western Regional in WA
  - Affiliate attendees: Julie R. (UND) & Hope B. (G2S)
  - Blue Origin, Broadening Participation Sessions
- Spring 2025: National Meeting in DC
  - Hill visits w/ students Laina B. (UND) & Turner P. (NDSU)
  - Updates from OSTEM



		Federal		State Match
Year	Base Award	Augmentation	Total	Total
FY10	\$430,000	\$169,000	\$599,000	\$200,000
FY11	\$430,000	\$185,000	\$615,000	\$200,000
FY12	\$430,000	\$0	\$430,000	\$200,000
FY13	\$430,000	\$0	\$430,000	\$200,000
FY14	\$430,000	\$0	\$430,000	\$200,000
FY15	\$430,000	\$0	\$430,000	\$200,000
FY16	\$300,000	\$270,000	\$570,000	\$200,000
FY17	\$300,000	\$270,000	\$570,000	\$184,224
FY18	\$300,000	\$270,000	\$570,000	\$184,224
FY19	\$535,800	\$45,600	\$581,400	\$184,224
FY20	\$700,000	\$60,000	\$760,000	\$184,224
FY21	\$685,000	\$85,000 and \$30,000	\$800,000	\$184,224
FY22	\$685,000	\$85K, \$30K, & \$60K	\$860,000	\$184,224
FY23	\$685,000	\$85K, \$30K, \$60K, & \$50K	\$910,000	\$184,224
FY24	\$685,000	\$225K	\$910,000	\$184,224

# Budget Table

- NCE accepted
- FY25 - 28 Proposal Accepted
- New POP: April '25 - April '29
- \$800K annual (FY25)
- Aug. funds not likely to be awarded

# Opportunity Deadlines

- Summer NASA Internships: Feb. 1st
- Scholarships: Feb. 15th (for Affiliate Decisions)
  - *Check w/ your college on internal deadlines*
- All Summer Awards: March 1st
- STEM Ambassadors: May 1st
- All Fall Awards: May 1st
- ASCEND: Nov. 1st
- Competition Teams: Nov. 1st
- All Spring Awards: Nov. 1st



# Award Eligibility

## GPA:

- “Good Academic Standing”

## Majors:

- All majors
- Scholarships are limited to STEM majors

## Citizenship:

- U.S. Citizens are eligible for direct funding awards
- *Potential to change in future award periods (e.g. NASA Internships & Fellowships vs. other NDSGC programs)*



# 2025 IDEAS Educator Workshop: Alaska!

- **When:** July 7-10, 2025
- **Host:** Alaska Space Grant Consortium
  - Fairbanks, AK
- **Who:** ND In-service Educators
- **What:** Hands-on Teacher Workshop, Innovative Strategies w/ STEM lessons
- Reg. to open ~April 1, 2025
- 2 PD Credits through UND (30 hrs)
- NDSGC will grant stipends to supported teachers (up to ~4 ND teachers)

<https://tinyurl.com/IDEAS-2025>



# Affiliate Opportunities

- NDSGC Team & SAs are available for in-person travel
- Campus Classroom Visits
- Pre-service Educator Workshops
- Campus Career Fairs
- Student Organization Meetings
- K-12 or Informal Education Events
- Potential for Partnerships (ASCEND)
- Upcoming Space Grant Meetings
- *Other opportunities?*



# Scholarship Recognition

Congratulations to each of this year's scholarship awardees! The NDSGC awards scholarships to students at affiliate colleges and universities who are majoring in STEM fields.

**In FY24, the NDSGC awarded scholarships to 161 students.**

## NDSGC Scholars

Justin Burud | Computer Engineering | BSC

Kadin Eagle | Pre-Engineering | UTTC

Sonya Williams | Natural Resource Management | CCCC

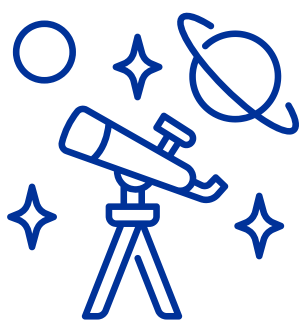
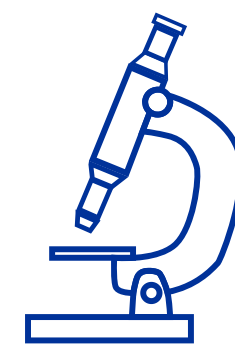
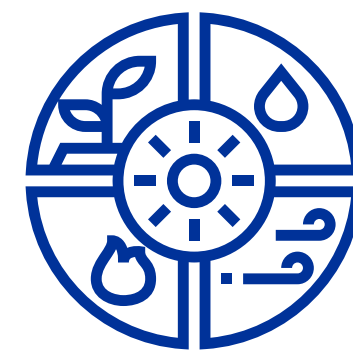
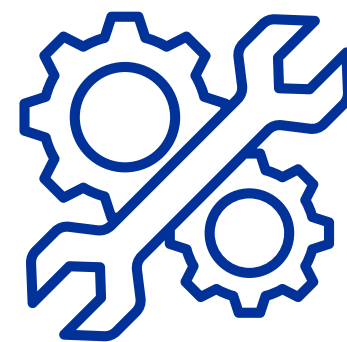
Arie Bratrud | Mathematics | VCSU

Collin Peck | Medical Lab Science | VCSU

Ryan Allard | Cybersecurity Data Privacy | TMCC

Sofia Morales | Astrophysics | WSC

Kevin Goodwin | Computer Science | MSU



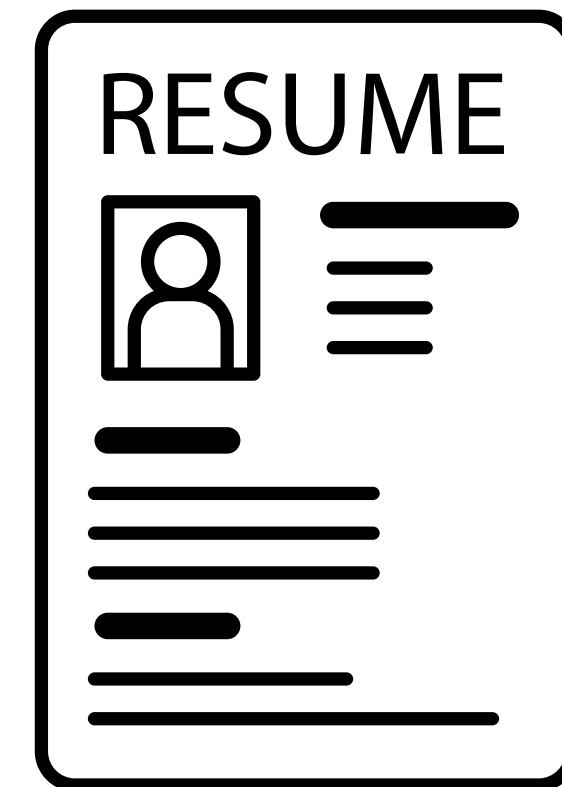
# Resume Review & Hands-on STEM Session

## Resume Success Rates:

- Less than 3% of resumes sent out result in a job interview.
- ATS Screening: Up to 90% of employers use Applicant Tracking Systems (ATS) to manage applications, and only 25% of resumes make it past the ATS and to a human recruiter.
- Resume Rejection: 75% of resumes are rejected before they reach the hiring manager.
- Tailoring Matters: 83% of recruiters are more likely to hire candidates who have tailored their resumes to the specific job.
- Networking leads to 85% of job discoveries, surpassing job listing websites.

# Job Service: Resumes

John Schirado



*\*\* We will split into two groups  
and rotate between the two  
30 minute stations*



# Group Photo! Break

## Job Interview statistics:

- 38% fail to ask good questions
- 33% over-communicate
- 32% appear disinterested
- 30% of recruiters say a limp handshake makes a candidate seem less impressive
- ***71% of employers cite inappropriate dress as a reason for rejection!!!***



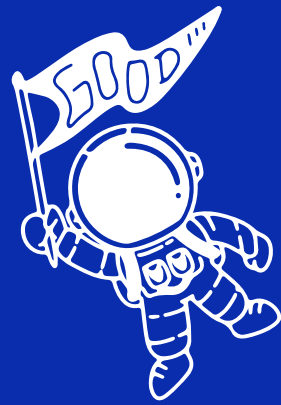
# Job Service: Interviewing

John Schirado



# Mini Grants

- Mini Grants are competitively awarded for STEM- or NASA-relevant education / research initiatives
- **Affiliate** Mini Grants
  - 3 awards in FY24
- **College Student** Mini Grants
  - 2 awards in FY24
- **Educator** Mini Grants
  - 12 awards in FY24
- up to \$2,500 funding awarded for one semester



# Speakers

**Steven Quinlivan**

STEM Supplies for Science Fun Night

**Beth Duchsherer**

Hydroponic Systems

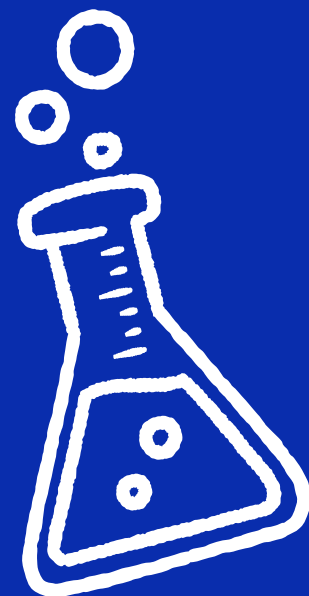
**Tyler Larson**

Harvey Penny House Content Lab



# STEM Ambassador Program

- College students conduct hands-on STEM activities in afterschool programs and community events, and lead college & career fairs, K-12 classroom visits, and other NASA-relevant education events across ND
- 9,581 individuals engaged in SA events
- 19 students supported in FY24
- Apps due: May 1st annually
- \$18/hr



## Speakers



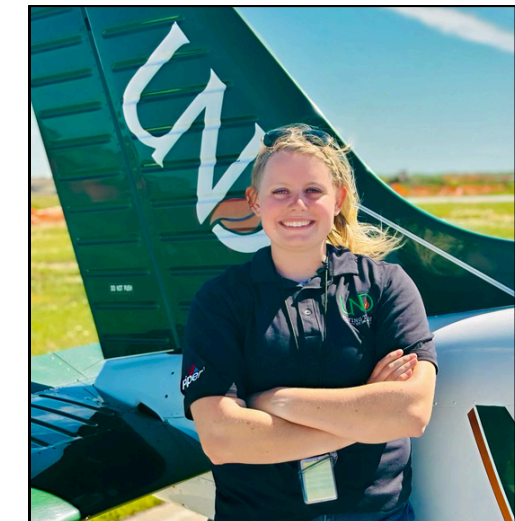
**Amanda  
Curatti**



**Jenny  
Mulholland**



**Cassandra  
Taggart**



**Hailey  
Olson**

# Feedback Survey

We welcome your feedback on  
this year's Affiliates Meeting &  
Student Symposium!

<https://tinyurl.com/Aff-Mtng-Survey-Sp25>





Complete the W9



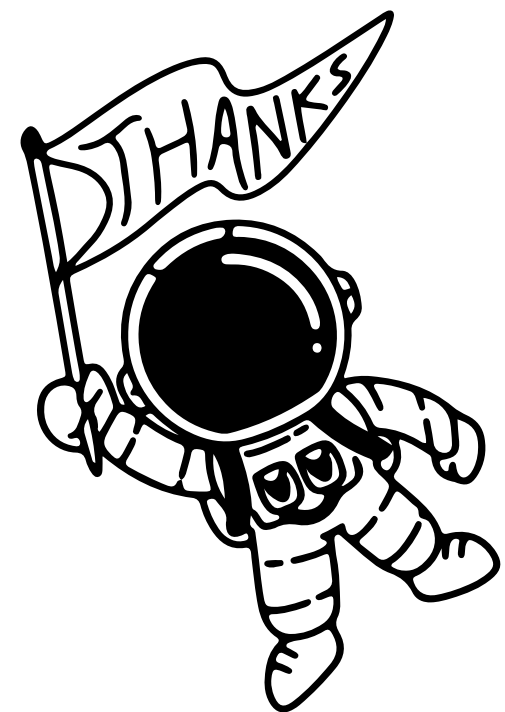
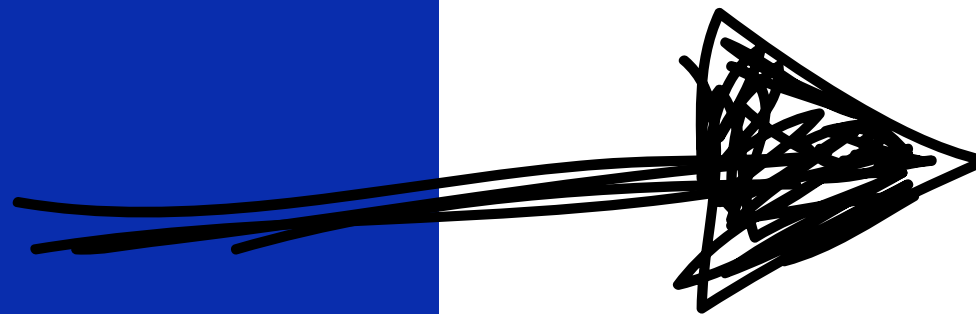
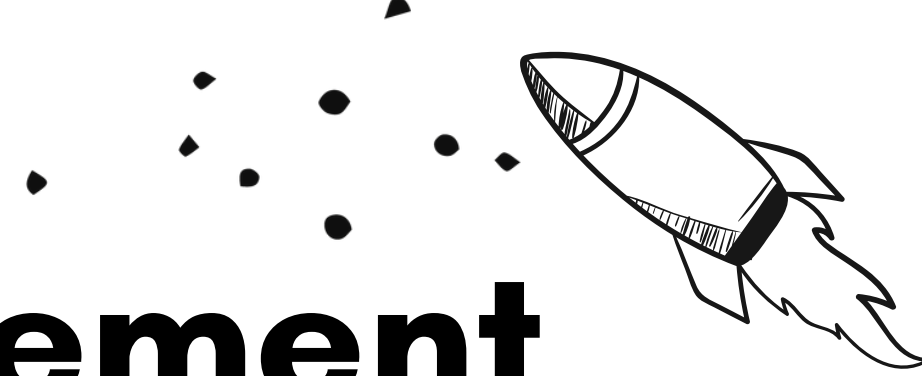
Collect hotel receipts from those who have them

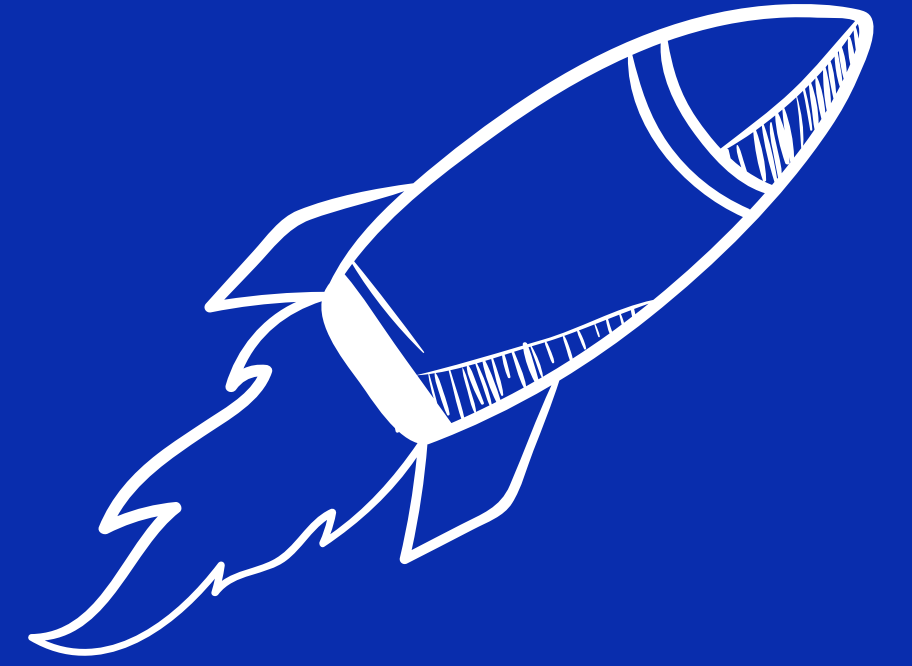


Complete the online Reimbursement form



# Reimbursement Paperwork





Thank You

