

Intern Project Showcase

JAMES LEE

SOLAERO / PROGRAM MANAGEMENT
PROJECT MANAGEMENT INTERN



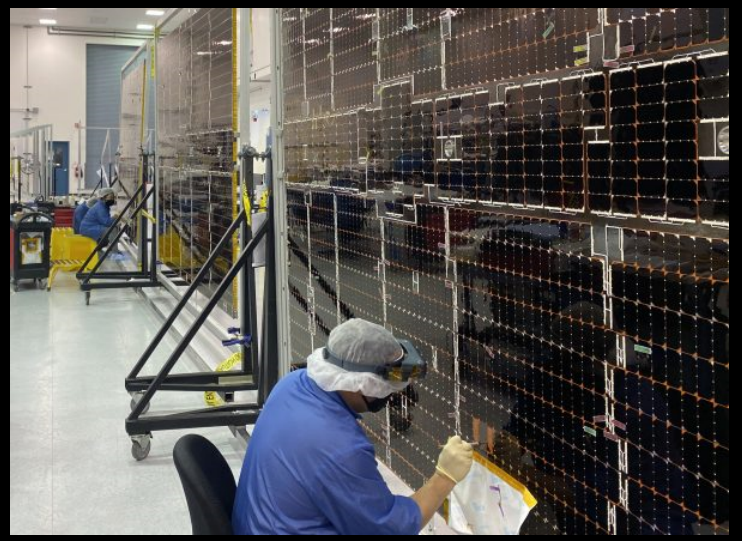
Speaker Profile/ About Me:

- Rising senior mechanical engineering student at Rowan University (Glassboro, New Jersey)
- DoD SMART Scholar – will work as a control systems engineer at Philly navy yard next year
- Team captain for Rowan Rocketry (IREC)

- Previously worked as an assistant project manager at a concrete subcontractor, coordinating construction between trades and creating my own 3D models and rebar shop drawings

HIGH LEVEL OVERVIEW

- Coordinated CHIPS Act facility renovation for next-generation solar cell manufacturing
- Implemented chemical abatement system – designed and installed trial unit system for hazardous gas processing
- Assisted new germanium reclaim system to recover thousands in recyclable materials
- Managed stakeholder coordination between German suppliers, architects, and internal teams
- Created comprehensive project schedules for multi-million-dollar facility upgrades
- Provided contractor management and cross-team construction support
- Designed custom safety systems including collection tanks and leak detection





PROJECT LOCATION /AREA OF FOCUS

- CHIPS Act Context
  - $52B federal investment to boost domestic semiconductor manufacturing
  - Reduces dependence on foreign supply chains
  - SolAero selected as key participant for space-grade solar cell production
- Primary Focus Areas
  - Burn-Wet Chemical Abatement System - converts toxic arsenic/phosphine gases to manageable solid waste
  - Germanium Reclaim System - recovers valuable germanium dust from wafer grinding process





PROJECT LOCATION /AREA OF FOCUS

- How these Systems are Special
  - Most complex projects requiring extensive planning and coordination
  - Personal interest in industrial chemistry applications
  - Critical for environmental compliance and cost savings
- Supporting Work
  - ROI cost-benefit analysis models
  - Comprehensive project scheduling and timeline development
  - Stakeholder coordination across multiple engineering disciplines



CROSS FUNCTIONAL PARTNERS

- Internal Rocket Lab:
  - R&D Engineering Team
  - Facilities Management
  - Other Project Management Interns
  - My Manager/Supervisor
- External Partners:
  - German Equipment Suppliers/Engineers
  - Architects
  - MEP Engineers (Mechanical, Electrical, Plumbing)
  - Construction Contractors
  - Fabrication Vendors
- Key Stakeholders:
  - SolAero Leadership
  - Environmental Compliance Teams
  - Safety/EHS Personnel

Cross communication with all parties was paramount– everyone needs to be on the same page to proceed in a project!

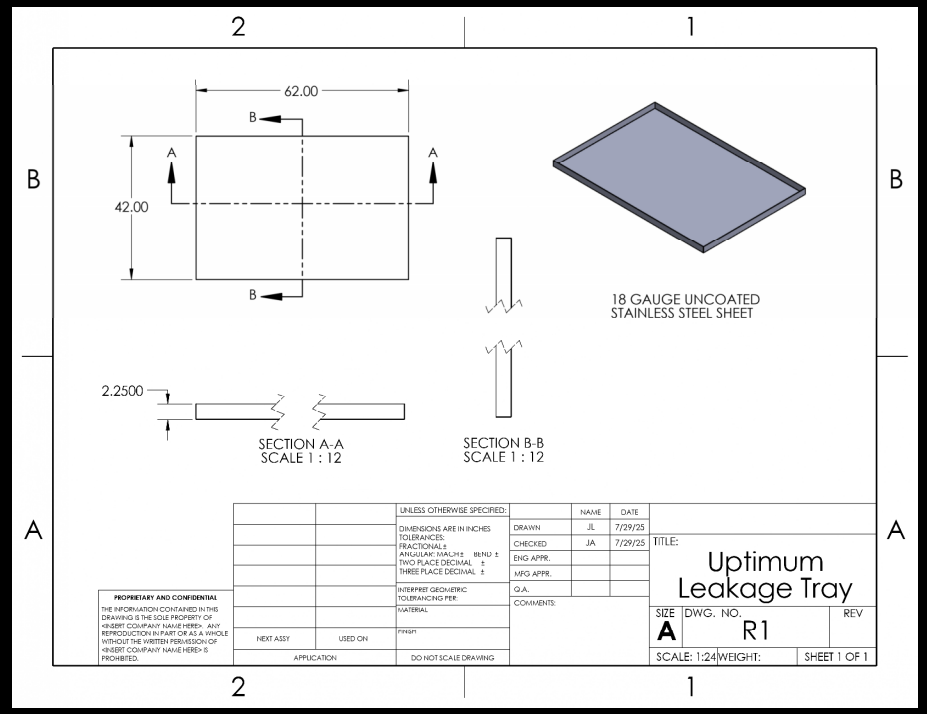
TIMELINE

1. **Facility orientation** – tours, explanations, understanding manufacturing processes
2. **Self-directed learning** – semiconductor manufacturing fundamentals and industry knowledge
3. **Initial project contributions** – first stakeholder meetings, Simulink modeling, Excel logistics analysis
4. **Increased autonomy** – attending meetings independently, leading cross-team communication
5. **Advanced applications** – contributing to finance ROI models and comprehensive CHIPS project scheduling
6. **Design implementation** – trial unit delivery, designing installation systems (containment, collection, piping)
7. **Construction coordination** – daily contractor management, site tours, hands-on project assistance

Over time, I transitioned from learning to leading, making independent technical contributions with lasting project impact.

CAD WORK

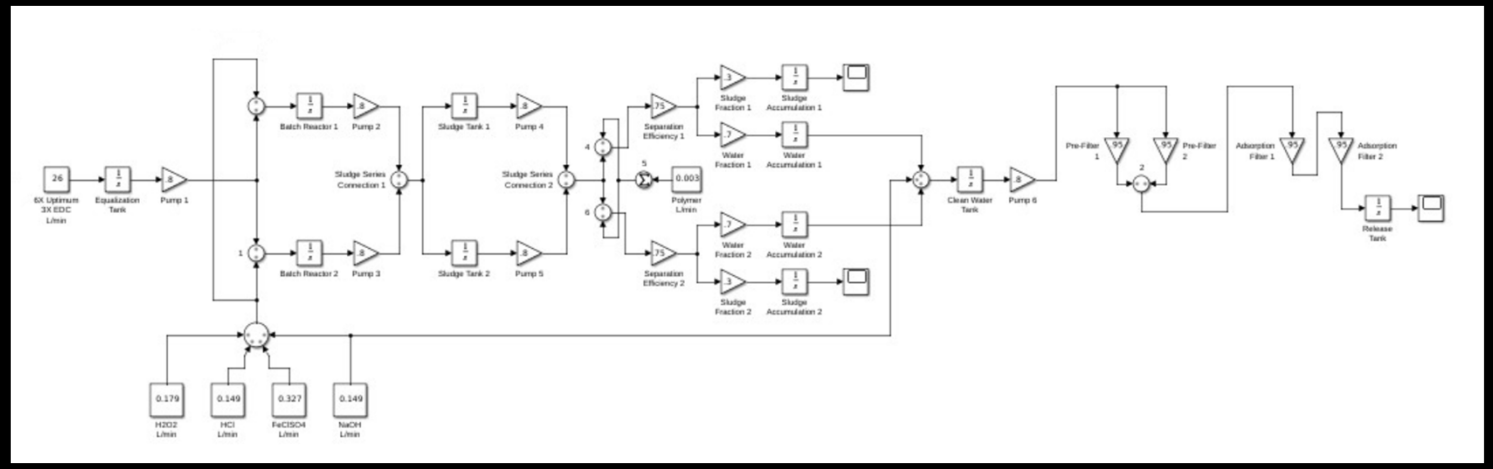
- Designed leakage trays for new equipment, communicated with external contractors, and had them fabricated for the best price

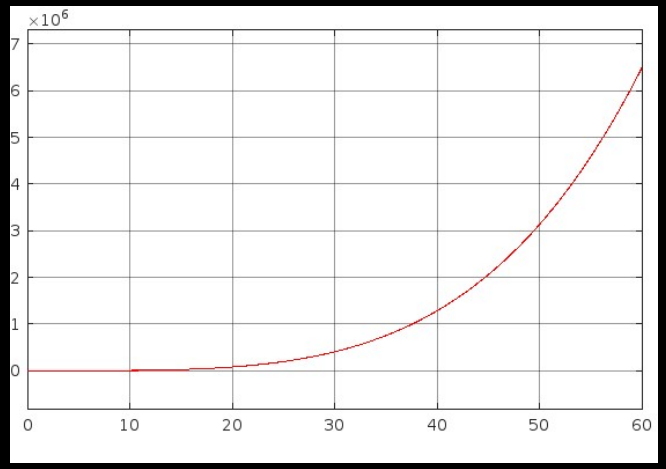




MATLAB SIMULATIONS / ANALYSIS

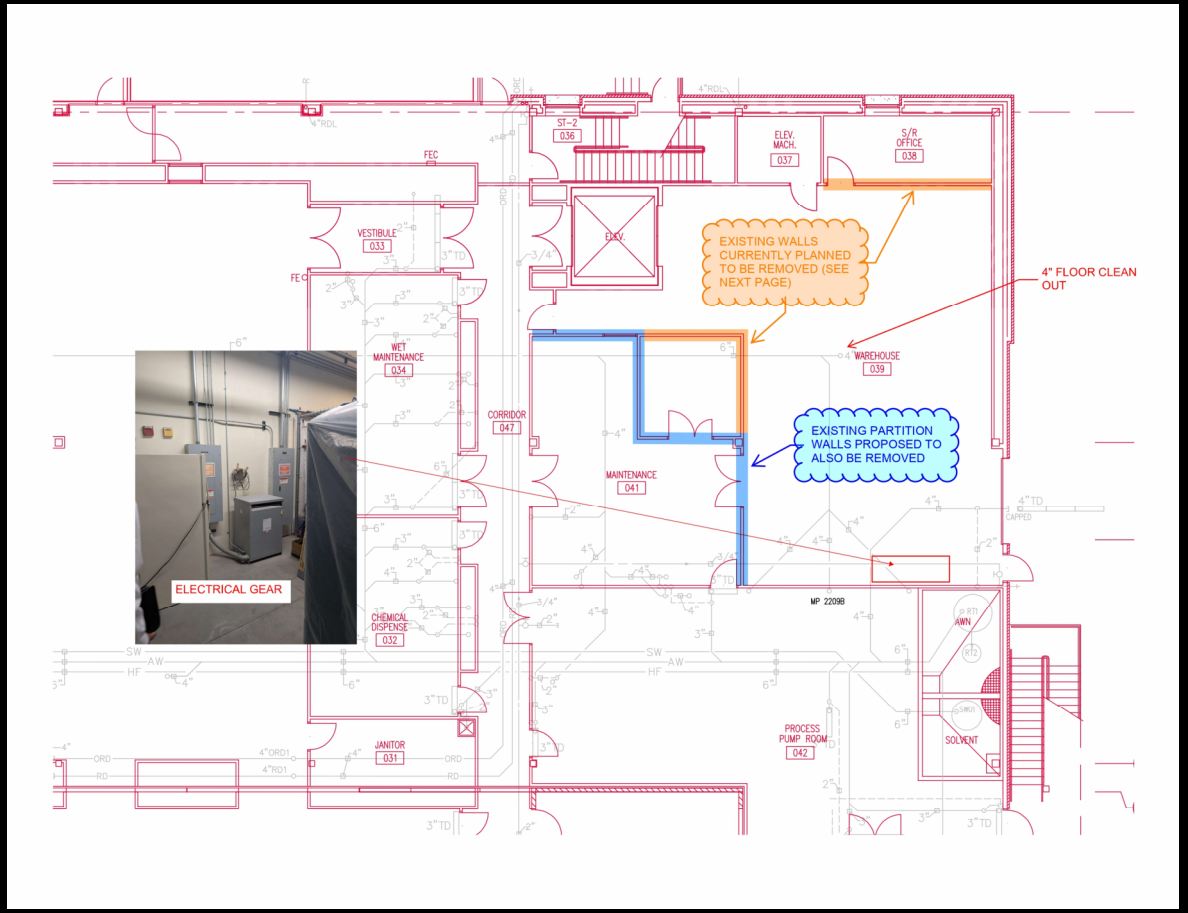
- Developed Simulink analysis of physical sludge accumulation – demonstrating worker impact from new abatement system.





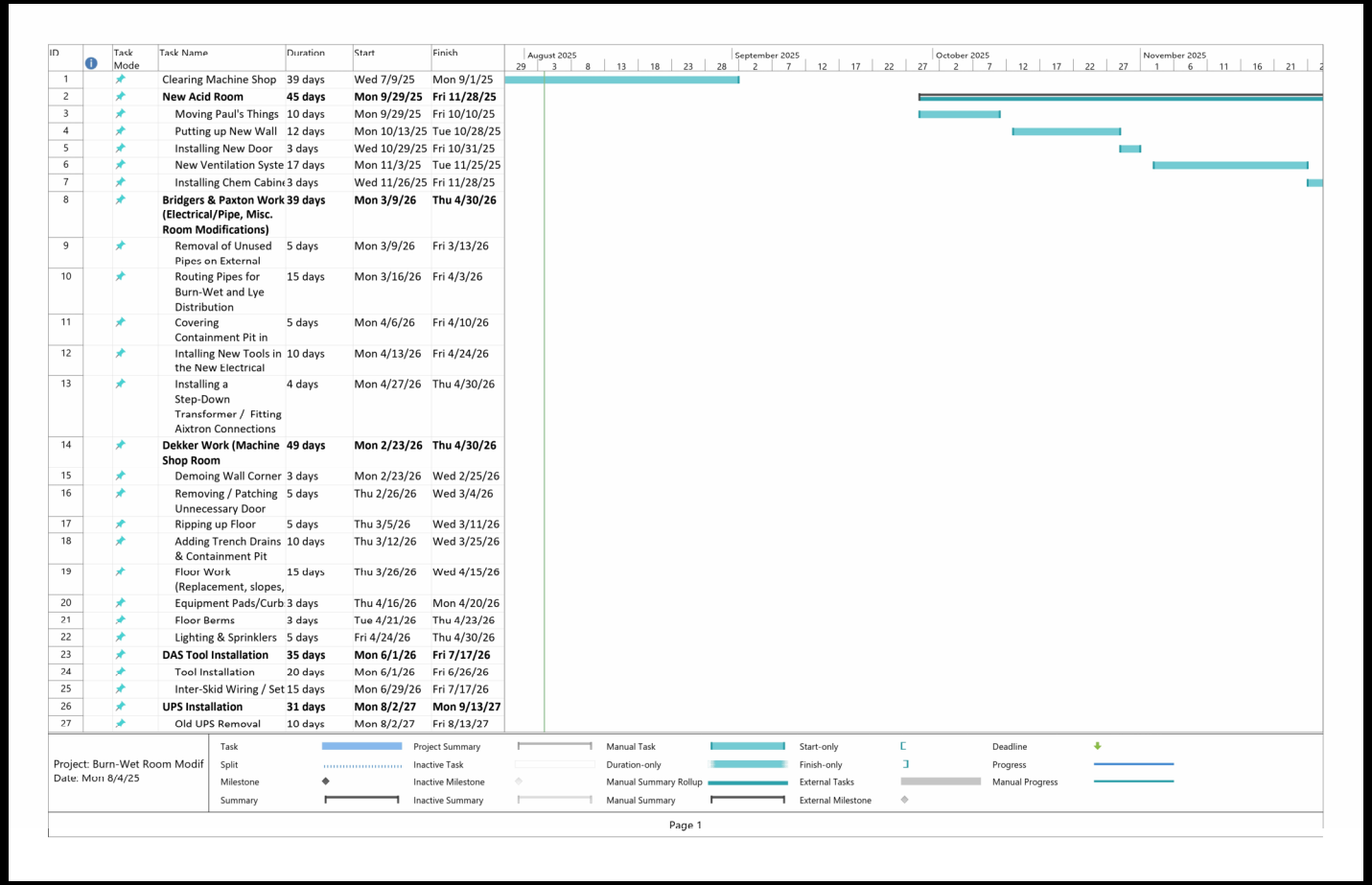
CONSTRUCTION PACKAGES

- Created construction packages– provided highly detailed documents illustrating all work to be done by contractors



PROJECT SCHEDULING / MANAGEMENT

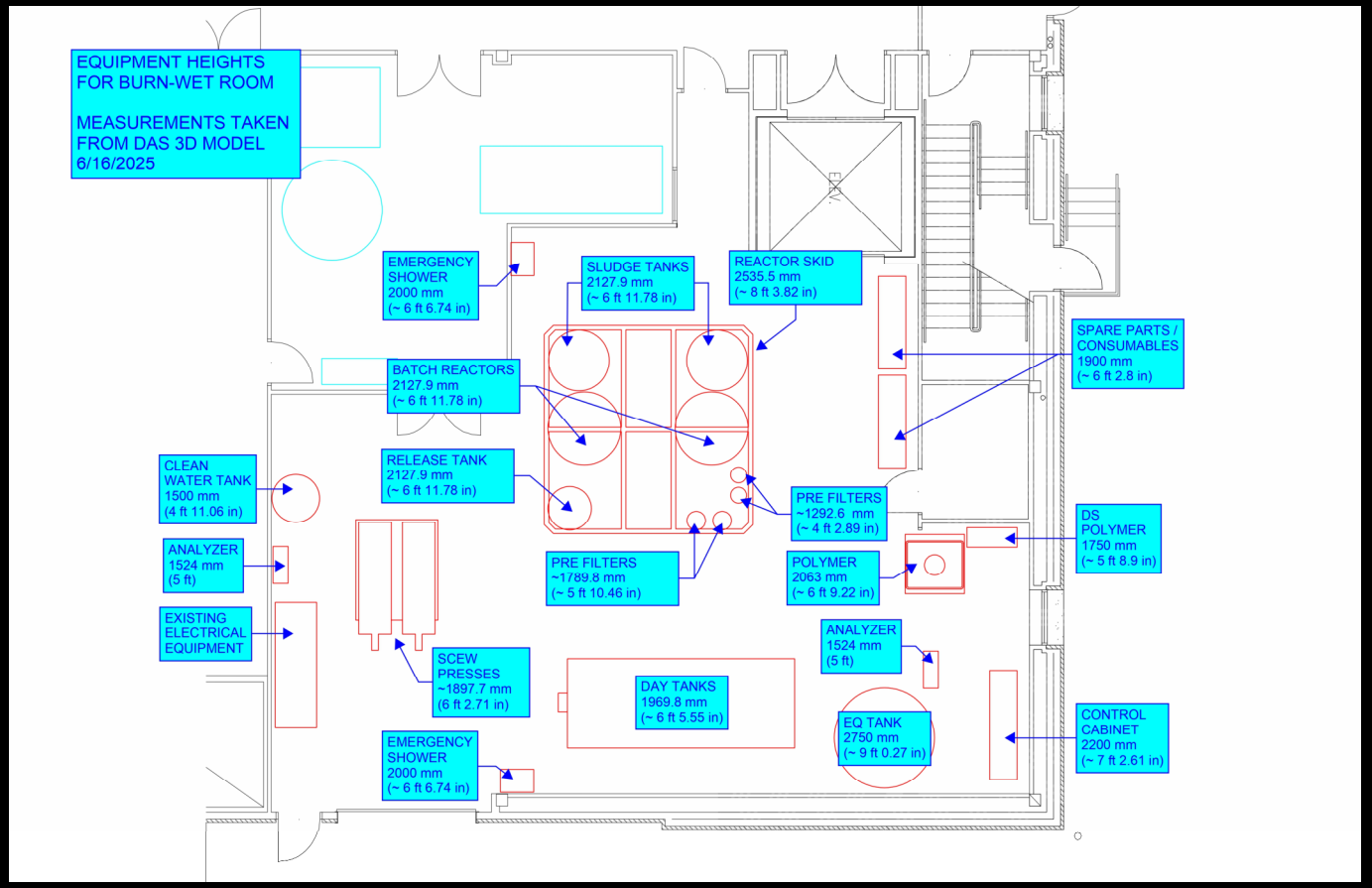
- Developed comprehensive project timeline covering all facility modifications and equipment installations to ensure on-time, on-budget completion.



ID	Task Mode	Task Name	Duration	Start	Finish
1		Clearing Machine Shop	39 days	Wed 7/9/25	Mon 9/1/25
2		**New Acid Room**	**45 days**	**Mon 9/29/25**	**Fri 11/28/25**
3		Moving Paul's Things	10 days	Mon 9/29/25	Fri 10/10/25
4		Putting up New Wall	12 days	Mon 10/13/25	Tue 10/28/25
5		Installing New Door	3 days	Wed 10/29/25	Fri 10/31/25
6		New Ventilation Syste	17 days	Mon 11/3/25	Tue 11/25/25
7		Installing Chem Cabin	3 days	Wed 11/26/25	Fri 11/28/25
8		**Bridgers & Paxton Work (Electrical/Pipe, Misc. Room Modifications)**	**39 days**	**Mon 3/9/26**	**Thu 4/30/26**
9		Removal of Unused Pipes on External	5 days	Mon 3/9/26	Fri 3/13/26
10		Routing Pipes for Burn-Wet and Lye Distribution	15 days	Mon 3/16/26	Fri 4/3/26
11		Covering Containment Pit in	5 days	Mon 4/6/26	Fri 4/10/26
12		Intalling New Tools in the New Electrical	10 days	Mon 4/13/26	Fri 4/24/26
13		Installing a Step-Down Transformer / Fitting Aixtron Connections	4 days	Mon 4/27/26	Thu 4/30/26
14		**Dekker Work (Machine Shop Room**	**49 days**	**Mon 2/23/26**	**Thu 4/30/26**
15		Demoing Wall Corner	3 days	Mon 2/23/26	Wed 2/25/26
16		Removing / Patching Unnecessary Door	5 days	Thu 2/26/26	Wed 3/4/26
17		Ripping up Floor	5 days	Thu 3/5/26	Wed 3/11/26
18		Adding Trench Drains & Containment Pit	10 days	Thu 3/12/26	Wed 3/25/26
19		Floor Work (Replacement, slopes,	15 days	Thu 3/26/26	Wed 4/15/26
20		Equipment Pads/Curb	3 days	Thu 4/16/26	Mon 4/20/26
21		Floor Berms	3 days	Tue 4/21/26	Thu 4/23/26
22		Lighting & Sprinklers	5 days	Fri 4/24/26	Thu 4/30/26
23		**DAS Tool Installation**	**35 days**	**Mon 6/1/26**	**Fri 7/17/26**
24		Tool Installation	20 days	Mon 6/1/26	Fri 6/26/26
25		Inter-Skid Wiring / Set	15 days	Mon 6/29/26	Fri 7/17/26
26		**UPS Installation**	**31 days**	**Mon 8/2/27**	**Mon 9/13/27**
27		Old UPS Removal	10 days	Mon 8/2/27	Fri 8/13/27

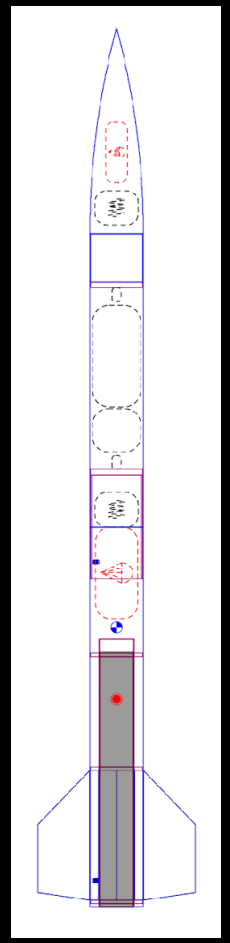
EQUIPMENT LAYOUT / ANALYSIS

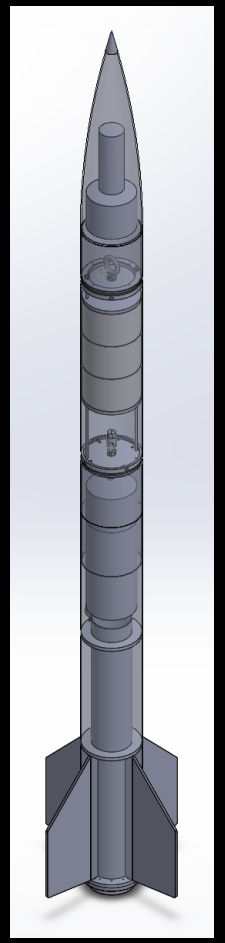
- Continuously updated equipment layout and provided crucial info to all stakeholders to avoid any collisions / problems during design.



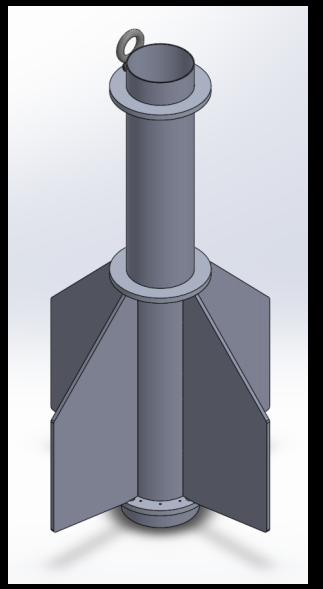
NETWORKING & DESIGN REVIEWS

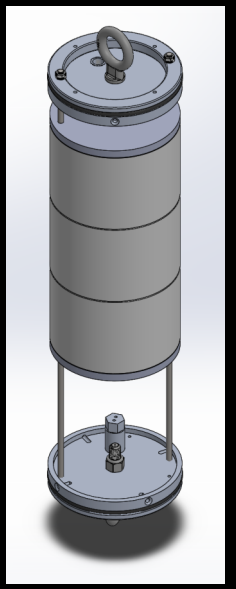
- I made lots of friends here– I had the chance to have design reviews with coworkers on weekends for my school's rocket this year.











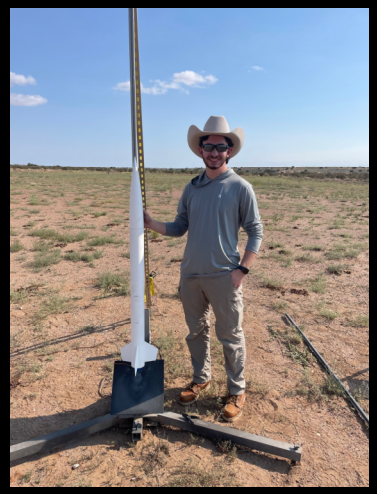
COMPLETED MILESTONES / BIG WINS

Personal

- Experienced living on my own for the first time.
- Experienced a different part of the US– I've lived in New Jersey my whole life!
- Got my High-Powered Rocketry L1 Certification!
- Saw a lot that New Mexico had to offer
  - Mountains, hiking trails
  - Tons of good food
  - Toured Virgin Galactic / Spaceport America
  - Art/Science Museums, Golf, Baseball games











COMPLETED MILESTONES / BIG WINS

At Rocket Lab

- **Professional Certifications** – Earned SOLIDWORKS Associate & Professional certifications (CSWA & CSWP) in just one week through company training
- **Technical Expertise Development** – Gained comprehensive semiconductor manufacturing knowledge through tours and self-learning
- **Communication Skills Mastery** – Developed stakeholder management abilities in fast-paced technical environment
- **Successful Pilot Implementation** – Installed and commissioned trial abatement units, proving system viability


DASSAULT SYSTEMES

SOLIDWORKS

CERTIFICATE

Dassault Systèmes confers upon

JAMES LEE

the certificate for

SOLIDWORKS CAD Design Professional

July 9 2025

DASSAULT SYSTEMES CAD DESIGN SOLIDWORKS PROFESSIONAL

Manish KUMAR
SOLIDWORKS CEO
R&D Vice President

C-DEWK9MQ3J7

SolAero offered the perfect intersection between my previous construction experience and where I want to end up in my career.

I would love to design rockets in the future, and this was my first professional step!



QUESTIONS?