



CLARP

FALL 2026
NEWSLETTER
9.28.2026

INTRODUCING YOUR NEW — PROJECT MANAGER —



JUDE MERRITT
*Electrical Computer
Engineering '28*

Hello Reader,

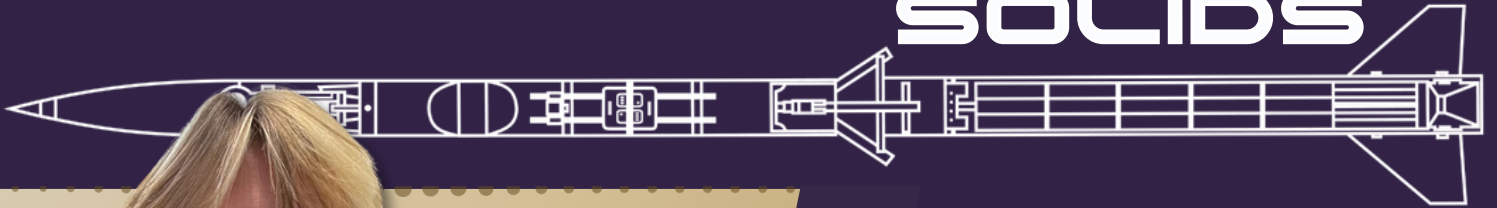
As SARP's incoming Project Manager, I'm excited to welcome you to our quarterly newsletter!

In 2012, SARP became a registered student organization. This upcoming year marks our 15th anniversary! Over the years, SARP has pursued increasingly ambitious projects, and this year is no exception. But with over 120 members, and more than 800 alumni backing us, I wholeheartedly believe that there is no shortage of what this team can accomplish.

Here's to another year of building, learning, and pushing the boundaries of what we can do together!

YOUR NEW CHIEF ENGINEERS

SOLIDS



**MIKHAIL
KOROBKOV**

*Mechanical
Engineering '27*

LIQUIDS



**AARON
MCBRIDE**

*Electrical Computer
Engineering '27*

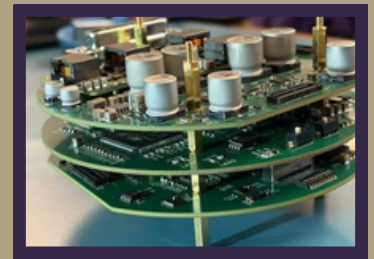


END-OF-YEAR SHOWCASE - MAY 4

SARP's End-of-Year Showcase celebrated the dedication, innovation, and accomplishments of our team over the past year.

The showcase featured projects from each of our subteams and capstone teams, highlighting the breadth of work happening across SARP. The Liquid Propulsion subteam presented its custom-built liquid rocket engine, while the Solid Propulsion team showcased a student-researched and developed solid motor. The Recovery team displayed parachutes that members designed and sewed themselves, while the Payload team demonstrated its airbrakes, which can slow our rocket down when it's on track to exceed a target apogee. The event also featured the unveiling of Vandal, our IREC competition rocket, representing months of work and collaboration across the team.

These projects represent one of the things that makes SARP unique: nearly every component of our rockets is designed and manufactured by our members. From initial concepts, to testing and flight, our members have the opportunity to experience the complete engineering process. Thank you to everybody who attended, we hope to see you again next year!



JUNE 13 - LIQUID COURAGE HOTFIRE

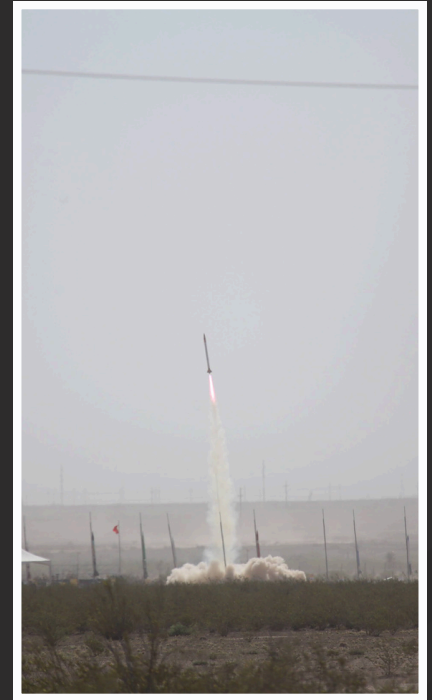


Towards the end of the 2026 school year SARP conducted a rigorous hotfire test campaign of its bi-propellant liquid rocket engine "Liquid Courage Four". On June 13th after five failed attempts and significant iteration, the team finally achieved stable combustion. The motor fired for over six seconds, and produced a peak thrust of 630lbf, exceeding expectations.

This achievement represents the culmination of over a year of diligent engineering, testing and planning from over 40 members on the avionics and liquid propulsion sub-teams. The experience and data gained from this test will be used to engineer SARP's next liquid rocket engine which will be flown at FAR-OUT in 2027 on our new rocket "Steelhead".

RECAP —

IREC LAUNCH - JUNE 15



Our team attended the International Rocket Engineering Competition with Vandal, our first flight with a student-researched and developed (SRAD) motor.

This was a milestone for our team as reliably designing and building SRAD motors both gives flexibility in their characteristics and cuts launch costs for all of our rockets. We also fielded our brand-new single-separation dual-deploy reefed recovery system, which allowed us to reduce complexity, weight, and length while learning how to make our own parachutes, further reducing future costs. Last but not least, the first generation of SARP airbrakes made its debut. The new module, designed to reduce apogee by up to 1% of the target value, is getting redesigned for next year and will help us reach the exact altitudes we want.

Vandal had a wonderful flight to 10620 ft, placing us third in the 10k SRAD category and 19th overall. The team's operations were smoother than ever, with extensive practice, checklists, and experience allowing us to be one of the first seven teams to launch at the competition.





Lead: Luka Laban

This year, we're optimizing our prior IREC design, analysis, and manufacturing process to deliver a first-time-successful, high-performing 30k rocket. We're also designing and integrating SARP's first liquid rocket to compete at FAROUT. With Structures projected at its largest in recent years, we're launching several R&D projects to grow our team's rocketry knowledge and real-world engineering practice, **including:**

- A composite material and failure characterization campaign
- Development of a systems engineering rocket integration process
- A standardized, iterative loads and dynamics analysis process
- An in-flight DAQ system to analyze flight and recovery loads
- In-house manufacturing of composite bulkheads and couplers



Liquids Lead: Alex Holcomb Solids Lead: Kai Anderson

Liquid propulsion is developing a new propulsion system for **Steelhead**. A major iteration from the successfully fired nitrous-ethanol LC4 engine, the engine will provide much more thrust than LC4 to ensure speed and stability off the launch rail. It will remain ablatively cooled, but a new injector and structural architecture are in design. We have also settled upon a self-pressurized concentric piston tank architecture and custom run and dump valves, reducing overall system complexity and mass while advancing the team's capability in component design. Infrastructure-wise, the team is developing a vertical hotfire test stand, enabling full propulsion system testing in a vertical flight-like configuration. Before then, we will upgrade our current horizontal test stand for an earlier engine-only hotfire.

Solid Propulsion is building a rocket to compete for 2027 IREC in the 30,000-foot, student-research-and-development category. The rocket will launch using an all-new solid propellant motor our team designs from scratch. The payload team is bringing a brand new telemetry system and camera bay, which will enable us to get live data and footage of our v2 airbrakes system in action.



Lead: Joshua Beard

The flight computer has been designed and manufactured, and this year we plan to fully test the hardware, finish developing the software, and build harnesses to connect to valves. We also are building a new data acquisition box (DAQ) that will have upgrades over our previous design. Our large project this year is the development of our power network (PN) controller. The PN controller centralizes the distribution of power and network connection to our test stand. It has an internal (custom) router for network, and current sensing + load switches on the power distribution. **Our goals this year include:**

- Build the new PN Controller!
- Waterproof entire system
- Build a new DAQ for more accurate sensor readings
- Test and validate flight computer, then design a V2 with the lessons learned
- Build a real time operating system for the flight computer software
- Build an integrated software system for all the ground hardware





Lead: Skyler Zapffe

For IREC, we are going to continue refining our single-deployment reefed parachute system, which will be our second year with this project. This includes designing and manufacturing our own parachutes. We are also redesigning the recovery avionics bay to be lighter and take up less space in the rocket. For FAROUT we are using a dual deploy system, which is something our team is more familiar with. We are also designing a recovery system for the deployable payload.

A new project for our team this year is student researched and designed flight computers, which records flight data and actuates rocket separation. **Our goals this year include:**

- Successfully recover both rockets
- Successfully recover the deployable payload
- Improve our teams skills in parachute manufacturing
- Gain some foundational knowledge for our team in avionics and flight computer design.
- Increase transfer of knowledge and documentation within recovery.
- Build members engineering skills through hands-on experience.



Lead: Miles Taranto

This year, Manufacturing's primary goal is to support both the solid and liquid propulsion projects by producing high-quality parts efficiently and reliably, ensuring both vehicles are ready for competition and testing on schedule. Beyond simply manufacturing parts, **we want to continue developing Manufacturing into a stronger and more established**

branch of SARP. Our overall goals include:

- Manufacture the components needed for both solid and liquid rockets reliably and on-schedule
- Train more members in 3-axis and 5-axis CNC machining
- Develop members who can incorporate manufacturability into the design process
- Improve communication between Manufacturing and design subteams
- Standardize manufacturing plans, CAM files, and process documentation
- Create accessible machine training videos and tutorials
- Establish a clearer Manufacturing branch structure and training pipeline
- Improve long-term knowledge transfer and overall manufacturing capability within SARP



Lead: David Huang

This year, the Payload team is taking on 4 projects, 2 of which are brand new. The new projects include a deployable sensor system aboard the liquid propellant rocket aimed at collecting weather data upon descent and a camera bay system aboard the solid propellant rocket which will capture footage of the motor as well as the horizon. The continuing projects include our airbrakes **system as well as our live telemetry system. Our goals this year include:**

- Create a reliable ejection system for the deployable payload to lay the groundwork for more complex future payloads
- Capture clear in flight video of the rocket
- Refine our airbrakes system for better apogee control
- Launch our telemetry system for live rocket data
- Build team skills in mechanical design and controls
- Improve documentation for designing and testing



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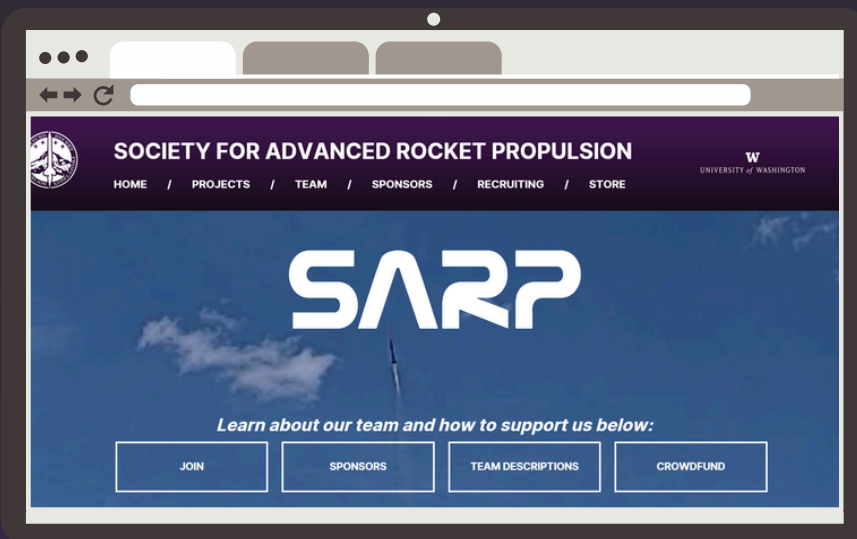
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