



**USF SOCIETY OF AERONAUTICS AND ROCKETRY**  
THE SKY IS NOT THE LIMIT.

## **SPONSORSHIP INFORMATION**



[www.usfsoar.com](http://www.usfsoar.com)  
[contact@usfsoar.com](mailto:contact@usfsoar.com)

Society of Aeronautics and Rocketry at the University of South Florida



# ABOUT SOAR



***SOAR is a multidisciplinary organization dedicated to the research and development of rocketry and aerospace technologies.***

## WHAT WE DO

The USF Society of Aeronautics and Rocketry (SOAR) at USF promotes engineering education, academic performance, and the advancement of the entire aerospace engineering field through participation in challenging competitions and projects. SOAR provides an opportunity of students from all majors and fields to enhance their knowledge in research, engineering, and other tangential skills pertinent to the aerospace industry as well as the operation of a large organization. SOAR is a professional and competitive research organization that produces industry-relevant data, innovations, and reports.

SOAR competes annually in the NASA Student Launch Initiative and Florida Space Grant Consortium Hybrid Rockets Competition, and recently announced participation in the Base 11 Space Challenge. Besides competing, SOAR also takes on projects that advance student skills, organizational knowledge, or demonstrate technical achievements. All of these competitions and projects are detailed on the following pages.

## WHO WE ARE

SOAR consists of approximately 50 graduate and undergraduate USF students, divided into several project and competition teams. The organization is led by the Executive Board, including the President, Vice President, and Chiefs of Engineering, Finance, Rocketry, Operations, and Safety. Because a company cannot employ engineers alone, SOAR is, by necessity, a multidisciplinary organization. Members include students of mechanical, chemical, electrical, and computer engineering; communications and marketing; finance; entrepreneurship; physics; mathematics; computer science; graphic design; photography; supply chain management; and more.

**THE SKY IS NOT THE LIMIT.**



# CURRENT PROJECTS

## NASA UNIVERSITY STUDENT LAUNCH INITIATIVE

The NASA Student Launch Initiative challenges university students across the nation to design, analyze, and build a high-powered rocket capable of carrying an innovative payload to an exact, team-selected altitude. The competition requires nearly 1,000 pages of reports and documentation, and three team presentations to NASA prior to launch week.

This year, SOAR is creating *Apis III*, which will launch to exactly 5,000 feet using an integrated dynamic braking system. An remotel activated onboard rover payload will deploy upon landing, roll 10 feet, and collect a soil sample. The payload and rocket must reliably operate in conditions ranging from desert-like with hard, packed clay to muddy, swampy fields.

TARGET ALTITUDE

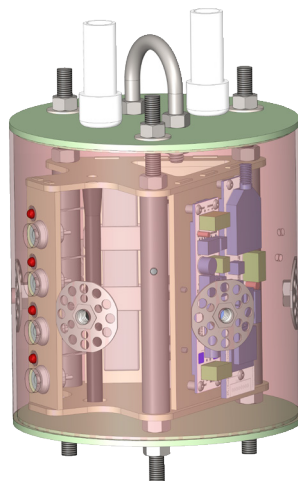
**5,000 ft**

PAGES OF REPORTS

**1,000**

LAUNCH DATE

**Apr 2019**



EST. LIFTOFF MASS

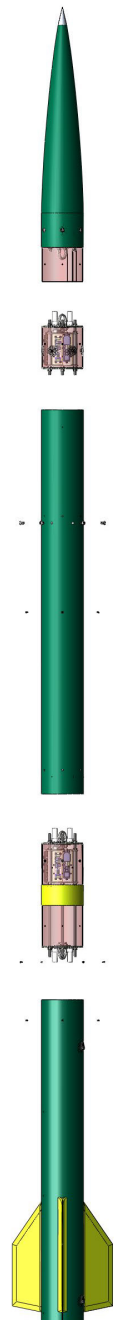
**53.8 lb**

ROCKET LENGTH

**11.75 ft**

EST. MAX. VELOCITY

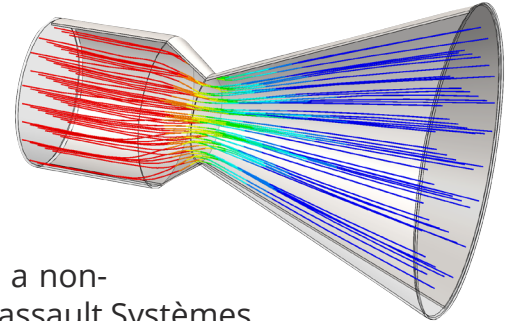
**415 mph**



## BASE 11 SPACE CHALLENGE



The Base 11 Space Challenge is a national competition fueled by student innovation and extreme ambition. Dozens of university teams are competing to become the first university to launch a single-stage, liquid-fueled rocket to the infamous Kármán Line (330,000 ft; the boundary of space) by 2021. The competition is hosted by Base 11, a non-profit STEM accelerator, and sponsored by Dassault Systèmes, the creators of SolidWorks. Along with the prestige of becoming the first ever university team to launch a rocket to space, the competition carries a cash prize of \$1,000,000.



SOAR is developing an innovative, powerful launch vehicle which will be able to withstand the rigors of supersonic flight and extreme acceleration under liquid propulsion. The Propulsions team is expected to complete design and fabrication of a static motor test stand by early summer of 2019. Simultaneously, the Avionics and Aerostructures teams will finalize the rocket design. Development will continue at a rapid pace until the expected full-scale launch attempt: one full year before the deadline, in December of 2020.

This massive vehicle, codenamed *Iris*, will feature an advanced ablative carbon fiber nozzle and will be fueled by nitrous oxide and RP-1. This propellant choice has been made with safety as the absolutely priority. *Iris'* airframe features a unique aluminum semi-monocoque structure (where loads are born by both the structural frame and vehicle shell), allowing for an extremely lightweight but incredibly strong structure.

EST. MAX. VELOCITY

**Mach 4**

PROPELLANT

**N<sub>2</sub>O & RP-1**

TARGET ALTITUDE

**330,000 ft**

EST. LIFTOFF MASS

**1,260 lb**

# CURRENT PROJECTS

## TRA CERTIFICATION PROGRAM

Education is primary among our many goals at SOAR. Our guiding organization, the Tripoli Rocket Association, recognizes three levels of certification, each authorizing the rocketeer to launch ever more powerful rockets. To this end, SOAR conducts free Level 1 and Level 2 Certification build classes to help members learn the basics of rocketry and build a strong base of knowledgeable members. This endeavor is paramount to the success of our organization as it transmits knowledge and skills that might otherwise be lost as members graduate.



## TWO-STAGE ROCKET

Taurus 1 is SOAR's most advanced rocket design created to date. This fully custom-designed and fabricated 24' tall rocket (that's taller than a two-story house!) features two separate stages and can reach altitudes of nearly 40,000 ft. The powerful motors require a carefully designed staging system and an extremely strong airframe. The rocket provides a stepping stone for SOAR to progress from mid-level high-power rockets towards the ultimate goal of reaching the boundary of space. This rocket is nearly completed, and is expected to launch by the end of summer 2019.

## OUTREACH

Educating and inspiring future engineers is a core belief in this organization. As such, SOAR conducts or participates in dozens of outreach events every year, including the Great American Teach-In, ROBOTICON, Manatee County Engineering Day, USF Student Organization Showcases (which highlight possibilities for potential future USF students), and collaborations with the Museum of Science and Industry and the Girl Scouts.



YOUTH IMPACTED  
IN 2017-18

**2,653**







# SPONSORSHIP BENEFITS

Becoming a sponsor of SOAR has many benefits, whether you are an individual or an organization. Several pre-selected benefits packages are available below, as well as some “add-on” options which can be selected individually. Of course, alternative requests can always be considered. Both monetary and in-kind (material) donations are greatly appreciated.

## AVAILABLE PACKAGES

*All donations are tax deductible.\**

### **SPORT PILOT** \$100 - \$1,000

- Social media promotion
- Company link and logo featured on SOAR website
- Company logo featured in presentations and videos

### **AIRLINE PILOT** \$1,000 - \$2,500

- All “Sport Pilot” benefits
- Companies: Small logo on all rockets built in year of donation
- Individuals: Name printed on all rockets built in year of donation

### **FIGHTER PILOT** \$2,500 - \$5,000

- All “Sport Pilot” benefits
- Large logo or name on rockets
- Logo or name on banners and apparel ordered in year of donation

### **ASTRONAUT** \$5,000+

- All “Fighter Pilot” Benefits
- Customized SOAR plaque for permanent display
- Access to resume database for recruiting members

## ‘À LA CARTE’ (ADD-ON) OPTIONS

\$1,000	Prime logo location on rocket center of gravity
\$1,500	SOAR recruiting event
\$6,000	Rocket naming and livery rights

\* Tax-deductible donations are made to the USF Foundation, a 501(c)(3) non-profit that acts as a proxy for SOAR.

# CONTACT US

Thank you for your interest! If you have any questions or want to learn more about the USF Society of Aeronautics and Rocketry before donating, please contact us directly and/or follow us on social media using the information below:

## STEPHANIE BAUMAN (PRESIDENT)

EMAIL: sbauman1@mail.usf.edu  
PHONE: +1 (334) 549-9144

## IAN SANDERS (VICE PRESIDENT)

EMAIL: iansanders@mail.usf.edu  
PHONE: +1 (239) 324-9843

## SOAR (GENERAL INQUIRIES)

EMAIL: contact@usfsoar.com  
TWITTER: @usfsoar  
FACEBOOK: fb.me/usfsoar  
INSTAGRAM: @usfsoar  
WEB: www.usfsoar.com

If you have already made up your mind and would like to donate directly to SOAR right now, you can easily do so at <http://giving.usf.edu/online>. Be sure to select fund #220111 when donating. Thank you!

### PHOTO CREDIT:

Cover, Page 5 (Footer), Page 7:

© 2017 Nadine Kinney

All photos used with permission.

