From: Manasterski, Stephanie P <SPM100@pitt.edu>
Sent: Tuesday, August 31, 2021 12:57 AM
Subject: SOAR Club Outreach - Chemistry Department

Dear Chemistry department,

We represent SOAR, an aerospace club on campus, and we have opportunities for students interested in chemistry on the team. Would you be able to pass on the email below to the undergraduate students in the chemistry department (or direct us to someone who is able to)? Doing so would help us to connect with interested students in your department.

Thank you for your time, Steph Manasterski

Do you watch SpaceX's rocket landings with awe, wishing you could build something that cool?
Or love watching NASA's Perseverance rover and helicopter land and explore the Martian surface?
...Because SOAR is the team for you!

The **Society of Astronautics and Rocketry (SOAR), a young and energetic club focused on bringing rocketry and aerospace to Pitt**, has something for all interests and majors. We have 3 different competitions/teams for the upcoming year, along with many professional development events and participation in SEDS, a national space organization:

1. **NASA University Student Launch Initiative** (USLI) - The classic rocketry team. We design, build, and launch rockets over half a mile into the air with a drone payload to locate the rocket after landing. Want to visit Rocket City (Huntsville, Alabama) for the end-of-year launch competition? We're the team for you.
2. **Mars Ice** - Much like NASA would search for ice on Mars' surface, we build a drill that tears through feet of soil and rocks, extracts the ice water through sublimation, and filters it. You'll get a rush out of the hands-on experience this team offers.
3. **PropLab** - The most important part of any rocket is its engine(s), and why buy them when you can design and optimize your own? As SOAR's newest team, our goal is to fully design, manufacture, test fire, and fly both a solid rocket motor and a liquid engine! We are searching for students to fill leadership roles later this Fall and lead the team on the path to success.

As a Chemistry student, you could learn and contribute in many ways:

- Research and select chemicals to be used as fuel in a solid and a liquid rocket engine
- Get hands-on experience mixing chemicals and creating grains (which are the hardened fuel chunks that are put inside a motor)
    - There will be lots of trial and error as we create grains, light them up in test fires, and make new chemical compositions or grains!
- Utilizing computer programs such as OpenMotor to optimize grain shapes and chemical recipes
- Work with the university safety department (EH&S) to establish safe handling procedures for chemicals and motor grains (rocket motors present a host of safety issues, so chemistry students will play a critical role in the team and working with the university!)
- And many more! *With a bigger team, we have so much more creativity to develop those awesome "Wouldn't it be so cool if we did..." side projects, so bring your crazy ideas and motivation!*

Note: The majority of chemistry-specific applications exist within the PropLab team, but you are very welcome to join in on other aspects of the team if you find your interest lies elsewhere!

What if I don't know how to do most of these things?

There are many experienced members who are willing to teach students the basics, and teams hold bootcamps when necessary to get members up to speed with the skills needed to be successful. Time commitment is whatever you're willing to give since we're all students here, but we ask that members attend our weekly meetings to stay caught up on current developments and designs.

Interested?
Our first GBM (general body meeting) will be held this Wednesday September 1st at 8:30pm in 120 Lawrence Hall. Team leads will present more on their teams and there will be a meet and greet/time for individual discussion afterwards.
Also, sign up for our email list below to get team meeting notifications and info on next steps!
https://docs.google.com/forms/d/e/1FAIpQLSf1b46wi1mcvDVHZcUE4gHaufZKwvVn51zWS-SN61Y46LvniQ/viewform

Questions?
We could talk all day about how cool this club is, so we love receiving questions via email! Our officers have included contact information below, and we can redirect you to the appropriate lead if necessary.

Ad astra,

Joe Wright | SOAR President | jrw154@pitt.edu
Steph Manasterski | PropLab Co-Chief Engineer | spm100@pitt.edu
Nik Schunn | PropLab Co-Chief Engineer | nik.schunn@pitt.edu
Cole Bowman | Mars Ice Chief Engineer | cdb92@pitt.edu
Eric Trimbur | USLI Chief Engineer | eat44@pitt.edu