

Space Apps Challenge - Regional Collaboration Project

Space Apps is an international hackathon that occurs over 48 hours in cities around the world. Coders, scientists, designers, storytellers, makers, builders, technologists, and everyone enthusiastic about curiosity come together to address challenges we face on Earth and in space! Don't let the name fool you... it's not just about apps! Tackle a challenge using robotics, data visualization, hardware, design and many other specialties!

The main challenge we focus on is enabling 48 hours of highly engaged collaboration- and discovering what we can create when that happens. PARI is interested in hosting - SMSC is interested in funding, but additional sponsors will be needed. The southeastern region of NC, SC, and GA was not represented in 2018.

How it works:

- NASA develops the challenges for each year's Space Apps event. Challenge statements will be posted on spaceappschallenge.org about one month before the Space Apps event.
- During the event, participants will organize into project teams focused on solving one of the specific challenges issued by NASA. Any project team that includes at least one participant makes that project eligible for awards at that participant's location.
- Some events have only 20 participants, while others have 400+ attendees. PARI can accommodate 100 participants and overnight lodging is available.

Awards:

- Space Apps offers local and global awards. Solutions with intriguing and innovative insights and compelling storytelling rise to the top in the judging process.
- Local judging and awards occur under the direction of the Local Leads at each Space Apps location. Leads may then nominate up to two solutions from each location to compete in the global judging process.
- Global award winners are featured on the Space Apps website and receive an invitation to visit NASA's Kennedy Space Center with the Space Apps Global Organizing Team.
 - Categories include: Best Use of Data, Best Use of Hardware, Best Mission Concept, Galactic Impact, Most Inspirational, and Best Use of Science!

Benefits of the Competition:

- It is FREE to participants (sponsorship is important)
- Many Space Apps communities are interested in ways to grow, incubate, and accelerate high potential projects coming out of the International Space Apps Challenge. In 2015, we developed a Post-Event Acceleration Space Apps Acceleration Toolkit for any Space Apps organizers or community members interested in taking projects built at Space Apps to the next level of development.

List of the challenges (from 2018):

- Design an autonomous free-flyer to inspect a spacecraft for damage from Micro-Meteoroid and Orbital Debris (MMOD).
- Develop a sensor to be used by humans on Mars.
- Create a tool to track international rocket launch information.
- Use NASA Earth imagery data to create 1) an art piece, or 2) a tool that allows the imagery to be manipulated to create unique pieces of art.
- Create and deploy web apps that will enable anyone to explore Earth from orbit!
- Create an easy-to-use way for people to develop their own, custom checklists – both items and plans – for specific kinds of disasters.
- Build a crowdsourcing tool for citizens to contribute to early detection, verification, tracking, visualization, and notification of wildfires.
- Tell the world about the asteroid named Bennu.
- Analyze and/or display data to communicate interesting findings or improve public understanding of our home planet.
- Characterize land cover/land use at informal settlements of displaced populations using NASA satellite datasets.
- Integrate NASA Earth science data and citizen science data to learn more about the connections between human, animal, and environmental health.
- Design a quest-like game to teach others about polar environments and how they are changing.
- Design an app that lets a user pick a location and learn about the parts of Earth's cryosphere that impact that location.
- Design a data analysis and/or visualization tool to show the spatial and temporal changes in Arctic and Antarctic ice to a general audience.
- Create a game using images from the Hubble Space Telescope as integral components!
- Develop a concept for a time capsule with content to educate an extraterrestrial civilization about human culture and our solar system.
- Use NASA Data to Plan a Rover Mission on the Moon!
- Generate Virtual Reality environments for the surface of the Moon and Mars!
- Pose your own challenge, and create a solution of your own choosing!

- Create a short documentary to capture the essence of NASA's International Space Apps Challenge.

The challenges will be different for **OCTOBER 2019**, but the list of challenges has always included a variety of topics from using NASA data, Earth Science, Robotics, and improving the quality of life.

PLANNING GUIDE

AGE RANGE = ?

There is no listing of age limits and pictures include both adults and young people. Ideally, high school and college students would be a good target, but there is NO LIMITATION - any person interested in participating on a team is welcome!

Register event - a lead host must submit an application to host an event. Once the application is approved, we can begin planning our event. **A page for our specific location will be posted on the spaceappschallenge.org website in August.** We will be given instructions on how to edit our page and add information about our local event. This is important, because our location page on spaceappschallenge.org is the only place where participants can sign up for our event. Internet is a basic requirement. There needs to be enough bandwidth for all attendees to use the Internet simultaneously. Attendees need to bring their own laptops or have access to computers.

A Pre-Event Meetup - interested participants introduce themselves in informal meet & greet or a more structured event. This creates and facilitates a dynamic and collaborative atmosphere that supports teamwork, creativity and innovation. This event usually takes place once the challenges have been announced. People can form teams and brainstorm, but are not actually working on a challenge.

In the shared folder for WNC STEM Leaders, the entire "how to" for hosting is available.

The Pre-Event meetup could be at PARI or another location.

It is recommended to make this a 2-3 hour event. An alternative is a day long Bootcamp. Agendas for both these formats for a pre-event meetup are in the planning guide.

Anyone interested in collaboration for this event should contact Randi Neff (SMSC Program Coordinator) at r_neff@southwesterncc.edu or 828.339.4357