

CONRAD

CHALLENGE

2022 — 2023 GLOBAL STUDENT GUIDE





EMPOWERING YOU TO CHANGE THE WORLD

[CLICK TO WATCH OUR HIGHLIGHT VIDEO](#)

WHEN IT COMES TO INNOVATION, WHO NEEDS A BOX? It is commonly believed there are two fundamental ways to think: inside the box and outside the box. At the Conrad Challenge, we encourage you to think freely, like there is no box.

The Conrad Challenge is an annual innovation and entrepreneurship competition that encourages young minds like yours (ages 13-18) to change the world. You'll form a team of 2-5 students and compete with other teams from around the world to create innovations that address some of the most pressing global challenges. Grow past the title of "student" and become an "innovator," addressing social, scientific and societal issues through creativity and critical thinking.

The Conrad Challenge is unlike any STEM competition out there. This isn't a science fair. This is an innovation competition that is creating the next generation of entrepreneurs who are going to change the world and make it more sustainable for future generations...
AND THAT'S YOU!

CHALLENGE OVERVIEW



1 ACTIVATION STAGE | OCT 14, 2022

GATHER YOUR TEAM

Welcome to the Conrad Challenge! Kick off your entrepreneurial journey by registering your teammates and coach. Don't take it too quickly – gathering the right squad is one of the chief ingredients of successful Conrad teams.

2 LEAN CANVAS STAGE | NOV 11, 2022

BRAINSTORM & SELECT INNOVATION

It's time to brainstorm! Complete several Lean Canvases to vet different ideas among Challenge categories. Select one innovation to focus on and take an invaluable step towards bringing your innovation to life.

3 INNOVATION STAGE | JAN 13, 2023

DEVELOP INNOVATION & BUSINESS PLAN

Now let's work out the details! Share your innovation, its impact, marketing and economics in your Innovation Brief and Innovation Video. Our esteemed Judges will provide valuable feedback. Be named a Conrad Innovator. Top teams are selected as Finalists.

4 POWER PITCH STAGE | APR 2023

PRESENT AT THE INNOVATION SUMMIT

At the Conrad Innovation Summit, Finalists meet with Judges, speakers and amazing students from around the world. Enjoy workshops and tours and receive scholarships and other benefits! Deliver a Power Pitch to the Judges for live feedback and compete for our top award, Pete Conrad Scholar.

WE ARE HERE TO SUPPORT YOUR JOURNEY. FOR QUESTIONS EMAIL US AT INFO@CONRADCHALLENGE.ORG

ACTIVATION STAGE: OVERVIEW

IT STARTS HERE.

Embark on your journey to collaborate, to innovate, and to change the world.

STEP 1: GATHER YOUR CREW

- Create a team of 2-5 students. Collaborate without limits by inviting students from other schools, cities, states or countries. Having the right team members is a key ingredient for our successful teams.
- Recruit a coach. This can be a teacher, parent, subject-matter expert or other qualified mentor over the age of 18.

STEP 2: REGISTER YOUR TEAM

All of your team members and your coach must register through our [Conrad Portal](#) under one submission. As part of registration, you and your legal guardian must review this Student Guide, [Rules and Regulations](#) and [Terms and Conditions](#) which apply to all participants.

CLICK HERE TO ACCESS THE CONRAD PORTAL
[HTTPS://CONRADCHALLENGE.AWARDSPLATFORM.COM/](https://conradchallenge.awardsplatform.com/)

**SUBMIT BY OCTOBER 14, 2022,
11:59 PM ET**

We encourage you to submit as soon as you're ready. We are approving submissions on a rolling basis, so the sooner you submit, the sooner we can advance your team to the Lean Canvas Stage, where you can get a head start on ideation. We like to call this "bonus time!"

(THERE IS NO ENTRY FEE IN THIS STAGE!)



CONRAD FOUNDATION

Did you know... The Conrad Foundation was founded in 2008 in order to create the next generation of young entrepreneurs who will change the world. Since then, Conrad has engaged more than one million students from over 1000 schools worldwide.

ACTIVATION STAGE: GUIDANCE

PUT YOUR BEST FOOT FORWARD IN THIS STAGE WITH ADVICE FROM OUR JUDGES, ALUMNI AND LEADERSHIP!



If you love what you do, then you will find triumph while aiding humanity. Let your discoveries be solutions to our earthly enigmas and challenges in space. Think about and serve humanity first, and you will find success!

Antoine Tannous, Judge



Working on a project with somebody who you're really close with also has its own set of challenges. So it's really important to set boundaries and almost treat this like a professional setting.

Laalitya Acharya, Conrad '22



In today's world, diversity means a lot of different things to a lot of people. For me, when assembling a new Conrad team, it's very important to have a team of people who think differently about how to solve problems.

Regina Schofield, Judge & Board Member

[CLICK HERE](#) TO ACCESS OUR STUDENT RESOURCES LIBRARY

ACTIVATION STAGE: SUBMISSION CHECKLIST

DO YOU HAVE QUESTIONS? EMAIL US AT
INFO@CONRADCHALLENGE.ORG

[CLICK HERE TO WATCH
WALKTHROUGH VIDEO](#)



Did You...

Ensure all team members and their legal guardians have read the Student Guide, [Rules and Regulations](#), [Terms and Conditions](#) and check that you meet the eligibility requirements?

What's Next?

Your team is free to move on to the Lean Canvas Stage - Continue to the next "tab" in your portal. Be on the lookout for email communications from the Challenge team.

Did You...

Confirm your coach selection and hold a team discussion on goals, team member roles, and communication plans?

Did You...

Complete the Getting Started and Activation Stage tabs in the [Conrad Portal](#) and double check that you've registered all of your teammates and your coach?

DEADLINE:
OCT 14, 2022 BY 11:59 PM ET

[CLICK SAVE AND NEXT](#)

LEAN CANVAS STAGE: OVERVIEW

PLAN IT OUT NOW.

In this stage, you'll brainstorm ideas, select your innovation, lay out the details for us and take an invaluable first step on your entrepreneurial journey.

STEP 1: IDEATE

Partner with your teammates to brainstorm as many different ideas as you can think up for important problems to work on and what some innovative solutions might be. You'll find some great resources for how to come up with good ideas in our [Student Resources Library](#).

STEP 2: COMPLETE YOUR LEAN CANVASES

A Lean Canvas is a widely adopted tool used by founders to quickly map out the fundamentals of their new venture while they are in the early stages. In the Lean Canvas, you'll share with us your early thoughts to 12 questions that outline your innovation, your market and your business model. Keep it brief: you're limited to a maximum of 40 words for most questions.

STEP 3: CHOOSE YOUR NAME AND CATEGORY

You'll now finalize a name for your innovation and a Challenge category in your Conrad Portal. If those have changed since the Activation Stage, please go back to the "Getting Started" tab and revise.



Did you know... When the Conrad Challenge's namesake, Pete Conrad, stepped off Apollo 12 in 1969, he became the third man to walk on the moon. Famously, Pete's first words were, "Whoopee! Man, that may have been a small one for Neil, but that's a long one for me."

**SUBMIT BY NOVEMBER 11, 2022,
11:59 PM ET**

If you're able to, we recommend you submit ahead of the deadline. We will review your Lean Canvas and let you know if your team can move ahead to the Innovation Stage within 5 business days of your submission.

The sooner you submit, the faster you'll be on to the next stage.

(THERE IS NO ENTRY FEE IN THIS STAGE!)

LEAN CANVAS STAGE: THE 12 QUESTIONS

In your Lean Canvas, you'll briefly answer 12 essential questions about your innovation, your market and your business model. Get your team fired up and start making several Lean Canvases... trust us that one idea will stand out!

Problem

What is the customer need your innovation will address? Is there a social or environmental challenge you aim to take on?
(40 words)

Existing Alternatives

How is this problem solved today? Consider other products in the market.
(40 words)

Solution

What are the key characteristics of your innovation?
(40 words)

Key Metrics

What are the most important numbers that track your success?
(40 words)

Unique Value Proposition

What makes your innovation different from what's already in the market?
(40 words)

High-Level Concept

What is the tagline of your innovation, in 10 words or less?

Sustainable Advantage

Why will it be difficult for others to copy you?
(40 words)

Channels

How will you sell your innovation to your customers? How will you deliver it?
(40 words)

Customer Segments

Who is the target audience who is served by your innovation? Describe them. (40 words)

Early Adopters

Who will be your very first customers? Describe them.
(40 words)

Cost Structure

What are your most significant costs?
(40 words)

Revenue Streams

How will you make money to fund your operations on an ongoing basis?
(40 words)

LEAN CANVAS STAGE: CHALLENGE CATEGORIES

Choose your favorite Lean Canvas, and pick the category that best fits your innovation.



AEROSPACE & AVIATION

Student solutions have included – improving storage efficiency onboard the International Space Station and warehouses via sustainable RFID technology; an autonomous magnetic take off and landing system



HEALTH & NUTRITION

Student solutions have included – a cloud-based web and mobile app that generates insights about cancer mutations from biomedical literature; a novel rehabilitative medical device to improve joint health; a nutrition bar used as a meal supplement for astronauts



DELLTechnologies

CYBER-TECHNOLOGY & SECURITY

Student solutions have included – a mini-blackbox allowing people to access high-performance computing in harsh environments



ENERGY & ENVIRONMENT

Student solutions have included – a low-cost potable water filtration system to help people in underserved areas; an unmanned surface vehicle (USV) to regularly monitor the water quality of lakes and ponds



[CLICK HERE TO LEARN MORE ABOUT CHALLENGE CATEGORY OPTIONS](#)

LEAN CANVAS STAGE: GUIDANCE

PUT YOUR BEST FOOT FORWARD IN THIS STAGE WITH ADVICE FROM OUR JUDGES, ALUMNI AND LEADERSHIP!



It is a good idea to have each member of your Conrad team complete an initial Lean Canvas independently. I bet you will have a productive discussion that will lead the team to all have ownership and a better understanding of the project.

Dr. Myra Halpin, Judge & Director of Teacher PD



Great innovations are not created in a vacuum. Leverage your network as a sounding board to accelerate the development of your overall thesis, your go to market strategies, your financial models and your pitch articulating your venture.

Nick Costides, Judge & Board of Advisors



I find that the problems I'm most passionate about are problems that address a situation in my community. It helps to envision what the ideal world around you would look like and tackle the situations preventing it from becoming a reality.

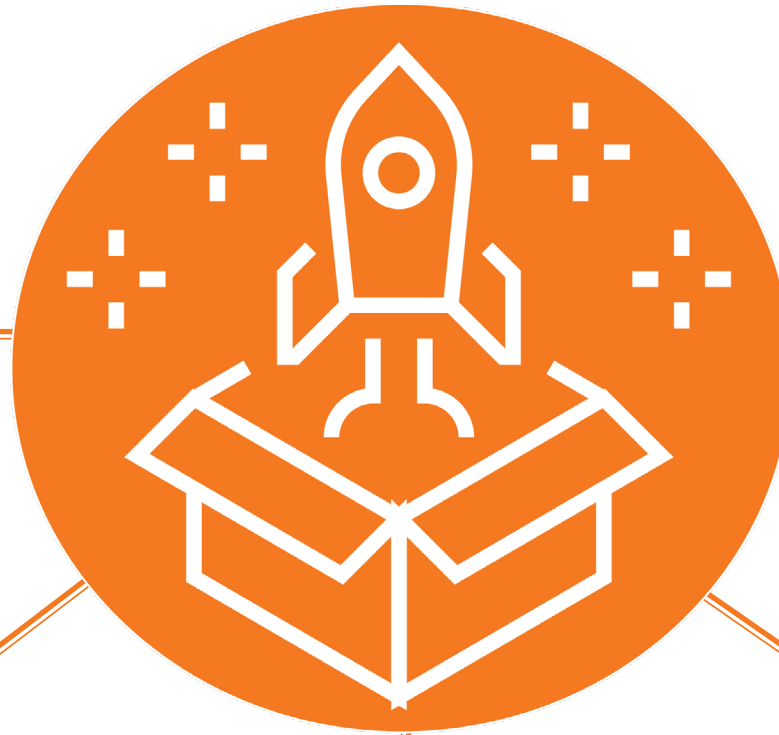
Afolabi Williams, Conrad '18

[CLICK HERE](#) TO ACCESS OUR STUDENT RESOURCES LIBRARY

LEAN CANVAS STAGE: SUBMISSION CHECKLIST

DO YOU HAVE QUESTIONS? EMAIL US AT
INFO@CONRADCHALLENGE.ORG

CLICK HERE TO WATCH
WALKTHROUGH VIDEO



Did You...

Generate a catchy/creative name for your innovation? This will become your official team name for the remainder of the Challenge. Be sure it matches in your [Conrad Portal](#) in all references.

What's Next?

Your Lean Canvas will be reviewed for completeness and feasibility within 5 business days. While you wait, hop along with designing your innovation!

Did You...

Choose the Challenge category that fits your innovation best?

Did You...

Complete the Lean Canvas Stage in your team's Conrad Portal, ensuring you've answered each of the 12 Lean Canvas questions within the word limit?

DEADLINE:
NOV 11, 2022 BY 11:59 PM ET

INNOVATION STAGE: OVERVIEW

BRING IT TO LIFE

This is where you will begin designing, creating, and telling us your plan for success!

STEP 1: WRITE YOUR INNOVATION BRIEF

The Innovation Brief is the most important submission item reviewed by the judges in the Innovation Stage. You'll answer 10 essential questions that will tell your story, describe your innovation and its impact, detail your progress, explain your market and propose your business model.

STEP 2: COMPLETE YOUR INNOVATION VIDEO

Your Innovation Video is a 3-minute demonstration of your innovation. In the video, you'll give us a tour of an Innovation Model. You may use sketches, 3D models, storyboards, wireframes, physical prototypes or any other visual artifact to achieve this.

STEP 3: CREATE YOUR WEBSITE (CYBER-TECHNOLOGY REQUIRED)

Cyber-Technology & Security teams must create a website that describes your team, innovation and intended impact to the general public.

**SUBMIT AND COMPLETE PAYMENT BY
JANUARY 13, 2023, 11:59 PM ET**

ENTRY FEE IS \$499 USD

(Discounts are offered to teams who have financial constraints. Please email info@conradchallenge.org)

Once you submit, a group of 3-5 judges will score your submission in the [Conrad Portal](#) according to the Scoring Guide. Judges will also provide your team with feedback for your innovation. We will release judge feedback and announce Conrad Innovator and Finalist teams in February!



Did you know... Blue Origin teamed up with the Conrad Challenge in commemoration of the 50th anniversary of the Moon landings to create the Moonwalker Capsule, which digitally housed hundreds of Conrad student projects. This memory disk flew to space aboard the New Shepard and is currently at the Museum of Flight in Seattle with Pete Conrad's collection of memorabilia.

INNOVATION STAGE: BRIEF

Here, you'll share with us concise explanations about your story, innovation, progress, market and business model. Combined, the brief is a maximum of 3,000 words, so you'll need to be succinct!

1. Elevator Pitch (150 words)

- Pitch your innovation, sharing the essence of your innovation, impact, customers and business potential.

2. Team (150 words)

- How did your team form?
- What role will each team member play?
- What motivates you to make your innovation?
- What special capabilities, resources or experiences do your team members bring?

3. Opportunity (300 words)

- What issue or pain point does your innovation address?

4. Innovation (150 words)

- Describe your innovation, its design, and your technology. How does it work?
- What is new or proprietary about the innovation?
- How does it meet needs and resolve pain points?
- What impact does your innovation create for individual users and humankind? Describe qualitatively and quantitatively.
- How can new or proprietary aspects be protected and made valuable by one or more methods such as a patent, trade secret, copyright or otherwise competitively defensible configuration?

5. Validation/Progress (450 words)

- How have you validated your innovation, technology, or processes?
- What progress have you made in developing your innovation?

6. Market (300 words)

- Describe your customer and your target segments.
- What is important to them?
- What is the size of the opportunity?
- Is the buyer or payer different from the customer in this market?
- Describe the industry ecosystem.

7. Competition (300 words)

- What competes with your innovation, and how does your innovation compare?
- What are the advantages and disadvantages of your innovation?
- What is your positioning?

8. Go-To-Market (150 words)

- How will you attract and sell to customers?
- Who are the best initial or pilot customers?
- Is the market best served through direct sales, distribution, licensing, strategic partnerships or other strategies?

9. Business Model (300 words)

- What are your key revenues and costs?
- What are the pricing and costs to deliver one product or service unit?

10. Fundraising (150 words)

- What funds do you need to get started, and how will you use these funds?
- How much will it cost to develop the product and roll out?
- What different sources will you pursue for funding, and why are these a fit?

Reference Attachment

Add a list of the references you cited throughout the Innovation Brief here. Your background research sources may include websites, videos, news sources, scientific papers, interviews and other citable sources.

Additional Attachments

Include up to two optional attachments that provide additional context to the judges. These visual aids or resources should supplement your responses above.



ASTRONOMICAL ACHIEVEMENT

Nancy Conrad founded the Conrad Challenge in 2008. A former teacher, Nancy has become a recognized leader in transformative education and named one of the top 100 leaders in STEM education. Nancy serves as a featured speaker at national and international conferences including TED, MIT, the Global Competitiveness Forum and the Global Diversity Leadership Conference at Harvard University. Nancy has also testified before the U.S. House of Representatives Committee on Science, Space and Technology detailing how the Conrad Foundation exemplifies the use of partnership to improve STEM education.

INNOVATION STAGE: VIDEO

(REQUIRED BY ALL CATEGORIES)

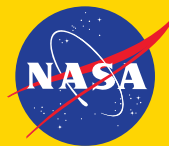
OVERVIEW

In your Innovation Video, you'll record a 3-minute Innovation Video demonstrating the product or service and explaining how it works. Use a model of your innovation to highlight its technology, use and features. Judges will watch the video to understand your innovation.

See the specific requirements for your video below.

REQUIREMENTS

- Feature your Innovation Model
- Create a video no more than 3-minutes in length
- Upload a direct link to your video in YouTube or Vimeo. The link must be publicly accessible
- Upload your video in the MP4 file format, which should be smaller than 300 MB



Did you know... NASA's Goddard Space Flight Center has a partnership with the Conrad Challenge that makes dozens of NASA's advanced patented technologies available to Conrad students to use in their innovations.

INNOVATION STAGE: WEBSITE

(REQUIRED BY CYBER-TECHNOLOGY & SECURITY CATEGORY ONLY)

OVERVIEW

With your website, you'll create a space to broadcast to the public what you're working on and the impact you intend to have. The judges will review your website to understand not only your vision and your technology, but also how you plan to communicate your idea to the world.

See our guidance on the website below.

REQUIREMENTS

- Present your innovation, explain its benefits and show an image of your Innovation Model to a public audience
- Communicate your brand, including the URL, your logo, the color scheme and language
- Be actively published to the public and accessible by direct link by our judges. You may choose to hide your website from search engines

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Smart in your world®
Arent Fox

Did you know... Conrad partners with generous sponsor firms, awarding valuable pro bono legal services. In 2022 they supported eight finalist teams with their intellectual property rights.



ASTRONOMICAL ACHIEVEMENT

Pete Conrad was a famous US Navy test pilot and NASA astronaut who commanded Gemini, Apollo and Skylab missions to space. After many years as an aerospace explorer, Pete's entrepreneurial spirit took flight, and he founded four companies devoted to the commercialization of space travel. Despite his great successes later in life, many don't realize that Pete struggled with dyslexia for most of his school education, at one point even being expelled for failing exam grades. However, it was the belief in his potential from the teachers at the Darrow Boarding School that Pete's fortunes turned around, enabling him to earn a Navy scholarship to Princeton.

INNOVATION STAGE: SCORING GUIDE

THEME	Description	% of Score
INNOVATION	How new or unique? How impactful? Is the technology either innovative or does it combine existing technologies in a unique way to create new results? Perform an online search to verify originality of the approach or innovation. Is the innovation and originality incremental, strong or audacious when compared with existing solutions and technologies? Would the innovative technology or business concept either transform an industry sector or create meaningful impact for customers or humankind? Is it incremental, strong, inspiring or audacious? Is the Intellectual Property protectable and made valuable through one or more patent, legally valid trade secret, copyright or otherwise competitively defensible?	30%
STORYTELLING AND PROFESSIONALISM	Would a reasonable investor be motivated to learn more? Has the team described the opportunity and its interests and motivation well? Are you inspired? Does Innovation Video (& Website for Cyber-Technology only) enhance credibility? Present a logical story? Show expertise & inspiration? Would the appearance, writing and organization in all sections be credible to a reasonable investor?	20%
PRACTICALITY	Will it work? Is the technology employed realistic and attainable within a reasonable development time and budget? Consider the Innovation Concept Video and other submissions. Does the team give proof of concept for new technologies or combinations? Proof of concept may include one or more of: existing applications of component technologies, expert testimony, research verifying feasibility, convincing graphic representation, partial or full prototype or demonstration, or describing further research/experiments likely to verify feasibility.	20%
MARKETING STRATEGY	Does the team understand key markets? Does the team understand its potential customers? Does the team have a market entry and adoption strategy? Does the team understand the industry ecosystem? How to become part of it? Considered licensing or partners, if appropriate? How well does the team explain differentiators between their innovation and current products/services? Pilot – How effective is the website to demonstrate product value, tell a story and engage potential customers and/or buyers?	20%
FINANCES	Does the team understand costs and funding? Has the team presented reasonable revenues and costs for the company overall? For one unit of product? Has the team estimated the costs needed to take their innovation to market? Cost includes material and component estimates and R&D including grants, licenses, market studies and labor costs. Has the team addressed raising funds for product development and rollout? Is the budget reasonable?	10%

INNOVATION STAGE: GUIDANCE

PUT YOUR BEST FOOT FORWARD IN THIS STAGE WITH ADVICE FROM OUR JUDGES, ALUMNI AND LEADERSHIP!



Build Judge and investor confidence in your innovation and business propositions by showing sources and footnoting facts and established hypotheses. Documented research also shows that the team vets ideas and assumptions rigorously. I want to work with that team!

**Simon Glinsky, Chief Judge
& Board Member**



The presentation of your team's innovation can make or break your score. In addition to making sure your content is good, ensure that you record quality sound, have good lighting and background and use proper editing tools to get the most professional video possible.

Umang Jain, Conrad '20



The patent system can provide immense wealth for commercializing disruptive technology in a sparsely populated field. The best advice I can give to Conrad participants is to investigate the patent landscape to assess the opportunities and risks to their business.

Craig Gelfound, Board Member

[CLICK HERE](#) TO ACCESS OUR STUDENT RESOURCES LIBRARY

INNOVATION STAGE: SUBMISSION CHECKLIST

DO YOU HAVE QUESTIONS? EMAIL US AT
INFO@CONRADCHALLENGE.ORG

[CLICK HERE TO WATCH WALKTHROUGH VIDEO](#)



Did You...

Make sure you've followed the Innovation Brief word limit and video length limits? The [Conrad Portal](#) will warn you about missing requirements.

What's Next?

Be sure to continue to watch your email, as the Conrad team may be in touch with questions. We announce the Conrad Innovators and Finalists in February.

Did You...

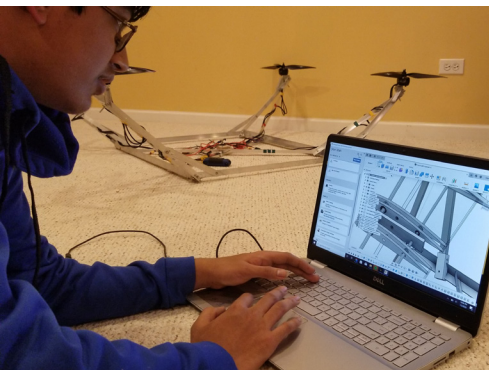
Prepare a list of references that you cited in your Innovation Brief and attach it in the attachment section?

Did You...

Ensure all links entered into the [Conrad Portal](#) are valid, published and viewable by our judges?

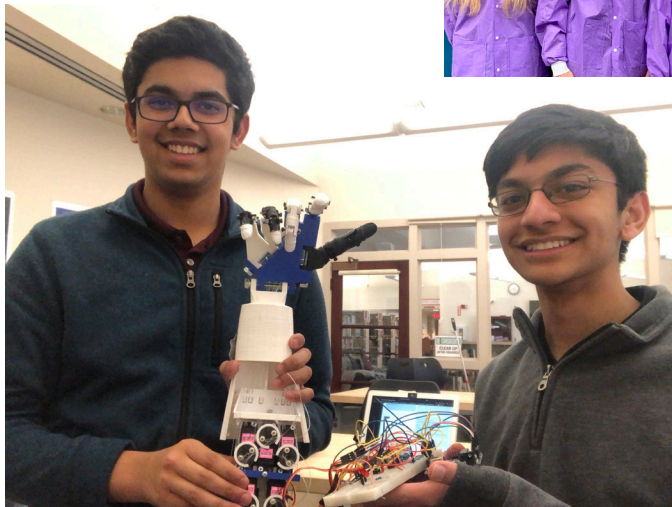
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JAN 13, 2022 BY 11:59 PM ET

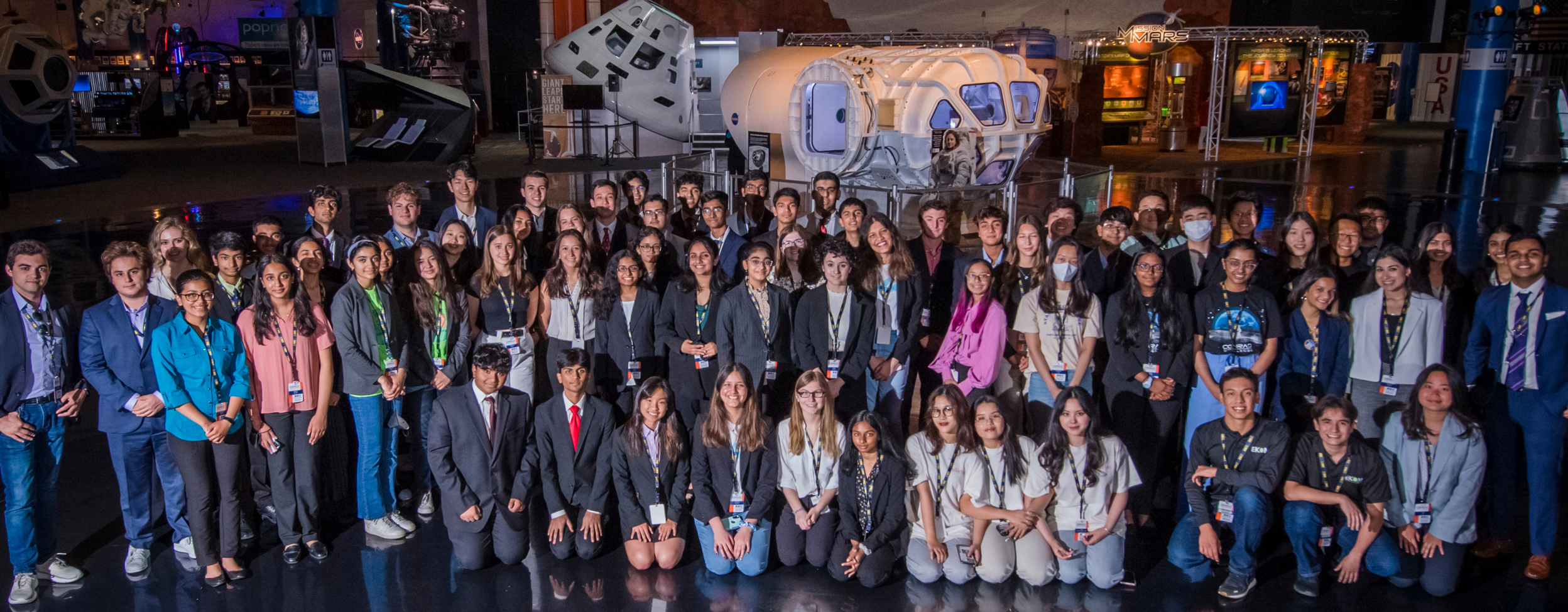
CONRAD INNOVATORS: CELEBRATING EXCELLENCE!



The Conrad Innovator distinction will be awarded to students on teams who excel at all Innovation Stage requirements, as determined by our Judges. This merit of excellence signals that each student team member is among the very top innovators of their generation. Conrad Innovators receive numerous rewards, including academic scholarships to esteemed universities and admission to entrepreneurial accelerators.

[Learn more about life after Conrad from our Conrad Innovators!](#)





THE CONRAD CHALLENGE INNOVATION SUMMIT - APRIL 2023!

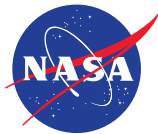
SPACE CENTER HOUSTON & NASA'S JOHNSON SPACE CENTER, HOUSTON, TEXAS

This year, the Conrad Challenge is thrilled to continue with an in-person Conrad Challenge Innovation Summit! Our top teams from the Innovation Stage are named Finalists and invited to pitch their innovations at Summit to our live panels of Judges. In addition, during Summit our Finalists, Judges, alumni and other members of the Conrad Community come together for a multi-day event full of dynamic workshops, tours, community sessions and speakers! The highest scoring teams are named Pete Conrad Scholars and receive prizes such as scholarships, pro-bono legal and consulting services, and Dell Chromebooks!

CONRAD CHALLENGE

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