The Conrad Foundation honors the legacy of Apollo 12 astronaut, Charles “Pete” Conrad, Jr., and his four-decade passion for innovation and entrepreneurship. Pete spent 20 years as a U.S. Navy test pilot and NASA astronaut. In November 1969, he became the third man to walk on the Moon. After many years as an aerospace explorer, Pete’s entrepreneurial spirit took flight. He founded four companies devoted to the commercialization of space travel. Unfortunately, Pete’s pursuits were cut short with his passing in 1999.

Pete’s wife, Nancy Conrad, shared his passion for inspiring future explorers. After his passing, Nancy wanted to keep Pete’s spirit for innovation and entrepreneurship alive while targeting the next generation of explorers. As a result, this former high school teacher launched the Conrad Foundation with its flagship program, the Conrad Challenge. Since then, she has become a recognized leader in transformative education, testifying before Congress and speaking at global conferences. She is dedicated to energizing and engaging students in STEM fields through unique entrepreneurial opportunities.

Today, the Conrad Foundation is the only organization of its kind whose programs combine science and technology-based education, innovation and entrepreneurship to inspire solutions for achieving global sustainability.
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 students to enjoy the freedom of thinking like there is no box.

The Conrad Challenge is an annual, virtual, innovation and entrepreneurial competition that encourages participants (ages 13-18) to change the world. Each year, teams of 2-5 students from around the world create products and/or services that address some of the most pressing global challenges. You are able to take direct control of your learning experience extending well beyond the bounds of the school day. Leave the title of “student” and become entrepreneurial problem-solvers, 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. It’s 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!
REGISTRATION AND ROUND 1: THE INVESTOR PITCH — SUBMISSION DEADLINE NOVEMBER 6, 2020

With this virtual competition, students are encouraged to step out of their comfort zones and collaborate without classroom, state or country borders. Researching global issues within the Challenge categories and determining where they can influence sustainability and change, students complete two simple steps to begin their innovation journey: 1) register their team, and 2) develop an Investor Pitch to explain their product/service concept and how it creates a solution to a real-world challenge.

ROUND 2: THE BUSINESS PLAN — UPON ACCEPTANCE EMAIL — JANUARY 8, 2021

Teams develop a strategic Business Plan to support their product/service. Within this round, teams collaborate and use their critical thinking skills to present a business prospectus, technical concept report and graphic representation of their solution.

All Business Plans are scored by top professionals in industry, government, research and academia. Students who complete this round will be recognized as Conrad Innovators. These students will be invited to join the Conrad Alumni Network and are encouraged to share this distinction on their college applications. The top five teams in each category advance to the final round of the competition.

ROUND 3: THE INNOVATION SUMMIT — APRIL/MAY 2021

The Conrad Challenge culminates at the Innovation Summit where teams present their innovations before an esteemed panel of expert judges. Teams are scored and provided on-the-spot feedback from the judging panel, like on the hit TV show “Shark Tank.” The winning teams receive scholarships, patent assistance and business services to fine-tune their concepts to create companies or license their IP to top-tier corporations. This unique event gives students direct exposure to industry experts, corporations, investors and universities. Another important outcome of the Innovation Summit is the opportunity for participants to meet like-minded students from around the world and build a level of confidence that will benefit them for years to come.

The Conrad Foundation will host either a virtual or in-person Innovation Summit to celebrate the 2020-2021 Finalist Teams in April/May 2021. The decision will be made based on government and health guidelines surrounding the COVID-19 pandemic. The Foundation will announce plans by February 1, 2021.

CONTINUED SUPPORT FROM THE CONRAD COMMUNITY

The Conrad Challenge is just the beginning of the Foundation’s engagement with students. Our board, partners, judges and subject matter experts often continue mentoring our students after the competition. Additionally, many of our students return to Summit after graduation to speak to our Finalists, and even join Conrad’s Alumni Leadership Council to continue an active role within the Challenge.
Student teams develop solutions to global challenges within the following categories:

**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.

**CYBER-TECHNOLOGY & SECURITY**
Student solutions have included – a three-device platform to connect people with high-functioning autism to local businesses that are hiring; a mini blackbox allowing people to access high-performance computing in difficult operating and/or 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.

**2020-2021 SPECIAL CATEGORIES**
In addition to the four traditional categories, the Foundation partners with various organizations each year to present special categories. This year the Conrad Challenge is addressing two major social and global issues:

In partnership with the Foundation for a Smoke-Free World, students can join the movement to advance global progress through multiple challenges: to end vaping usage among teens and pollution from e-cigarettes (LEARN MORE HERE) or to reduce the impacts of smoking decline on tobacco-dependent farmland economies (LEARN MORE HERE) or to reduce the impacts of smoking decline on tobacco-dependent farmland economies.

In partnership with Dell Technologies, this year’s Energy & Environment category features a special sustainable packaging sub-challenge. LEARN MORE HERE.

CLICK HERE TO LEARN MORE
JOIN THE CHALLENGE

IT IS ALRIGHT IF YOU ARE NOT ABLE TO ANSWER EVERYTHING AT THE TIME OF REGISTRATION... YOU WILL BE ABLE TO MAKE CHANGES TO YOUR ENTRY UNTIL YOU HIT SUBMIT.

STEP 1: GATHER YOUR TEAM
- 2-5 team members (ages 13-18)
- Recruit a coach (over the age of 18)
- Obtain Parent/Guardian consent (for all team members under the age of 18) [DOWNLOAD FORM HERE]
- Select a “team captain” - This team member will be the primary user in the system and receive all communications/notifications from the Conrad Challenge via email.

STEP 2: READ STUDENT GUIDE & RULES
It’s important to fully understand the Challenge prior to registering. The Conrad team will also be there to help you every step of the way, offering resources throughout the process. [DOWNLOAD RULES HERE]

STEP 3: REGISTER YOUR TEAM
HTTPS://CONRADCHALLENGE.AWARDSPLATFORM.COM/

ROUND 1: THE INVESTOR PITCH DEADLINE NOV. 6 @ 11:59 P.M. EST
1. **Team captain (primary user)**

Registers online and creates new account

These steps are for the team captain only. Other team members will join in the following steps.

- Complete and submit the registration form.
- A new screen will appear asking for additional details to complete and submit.
- If participating in multiple categories, a new account will need to be created with a different team captain. Each team captain in the Conrad system can only be affiliated with one team entry.

2. **Team captain (primary user)**

will receive an email to confirm account

- Click the link within the email to confirm account.
WELCOME TO THE TEAM DASHBOARD!

Once you have confirmed your account, all information will be stored moving forward. This allows your team to edit and update the entry throughout the Challenge process. Continue working through all the following tabs as time permits.

The following steps are completed through the team captain’s account, but it is required that all team members collaborate for the submission of the Investor Pitch.

BEGIN YOUR SUBMISSION BY CLICKING “START NEW ENTRY”

Basic Project Information

• Again, do not stress... you don’t need all of the answers right away... you can edit anytime until you hit submit.

• Your team’s ‘Entry Name’ should be the name of your company (example: Apple). Your product/service could have a different name (example: iphone). We recommend you keep product marketing in mind when naming your company and innovation.
This year we have a Conrad Challenge China Chapter - If you are a team participating from China, please select the China Chapter from the drop down menu. At least 1 team member must be a resident of China to participate in the China Chapter. Teams participating in the China Chapter are also encouraged to enter the Global Challenge as well.

All other participants should select Global.

Enter all information within the Basic Project Info tab, then click “Save+Next”

**Team Registration**
- Enter ALL team member’s information within this section.
- TEAM MEMBERS ARE NOT REQUIRED TO BE FROM THE SAME SCHOOL. We encourage collaboration, even across countries!

**Parental Release**
- ALL TEAM MEMBERS are required to sign and upload the release form. If you are competing and 18 years old, you can sign for yourself. If you are under 18 years old, you must have a parent/guardian sign your form.
- Scans or photos of the signed release are acceptable for upload.

*NOTE: Your team will not be able to submit for Round 1 until all team members have release forms on file!*

Then click “Save+Next” to continue your entry.
Coach Information

- Meet with your coach and discuss the Conrad Challenge.
- Once they agree to be your team’s coach, enter their full name and email address into the system.
- The coach will then receive an email confirming their participation.
- Then click “Save+Next” to continue your entry.

NOW THAT ALL THE INFORMATION GATHERING IS OUT OF THE WAY... IT’S TIME TO TELL US A LITTLE ABOUT YOUR IDEA!
To complete this round, teams must effectively explain their real-world solution by completing the Conrad Challenge Investor Pitch form. This form details their idea, while also explaining and defending its viability as an innovative solution that is unique to the market. When completing the form, remember to be clear, short and concise.

Please utilize our resources to guide your team through the Challenge. The Conrad Design Method® No Box Toolbox community is available to support the brainstorming processes with instructional videos to aid in their product development. Be sure to also investigate THE USE OF NASA TECHNOLOGY available specifically to Conrad students!

NOW IT’S TIME TO COMPLETE YOUR INVESTOR PITCH!

**Investor Pitch**

- Complete all 4 questions.
- TIP: Create your Investor Pitch in a separate document prior to entering into the system. This will allow your team to collaborate before submitting.
HOW TO SUBMIT & PROCESS ROUND 1 PAYMENT

CLICK “PREVIEW” TO REVIEW YOUR ENTIRE SUBMISSION. MAKE SURE YOUR ENTIRE TEAM REVIEWS AND APPROVES THE ENTRY. WHEN YOU’RE READY, HIT “SUBMIT ENTRY” AT THE BOTTOM OF THE PAGE.

The system will flag and alert you of any errors that need to be corrected.

THE ENTRY FEE FOR ROUND 1 IS $149.00 USD PER TEAM.
Discounted rates may apply for qualified title one schools or schools with multiple team participation. Please email our team at info@conradchallenge.org if you qualify or need assistance with payment instructions.

Next, you will be prompted to complete the billing address associated with the debit/credit card being used. Once complete, click “Proceed to Payment.”

Finally, you will be redirected to PayPal to finish processing your payment. All payments will be processed through PayPal, however, you do not need a PayPal account to complete this step.

• If you or someone on your team has a PayPal account, you can log in. Setting up a team PayPal account is another great way to collect funds from each team member and store raised money from fundraisers as well.

• If your team DOES NOT have a PayPal account, click the grey box “Pay with Debit or Credit Card” to continue to the check out screen.
Once you submit your payment, you will be brought back to our system!

This screen confirms your payment is complete. Here you can download your invoice receipt.

In your dashboard, you will see a $ symbol, indicating you have paid for your entry.

ALL PAYMENTS need to be completed upon submission of Round 1: The Investor Pitch.

Entries submitted without payment will not be reviewed for admission into Round 2: The Business Plan.
CONGRATULATIONS YOUR TEAM HAS ADVANCED TO ROUND 2: THE BUSINESS PLAN!

Your account profile may look a little different now. Please continue to review this guide for next steps.

This marks the end of Registration & Round 1: The Investor Pitch. Good luck to all teams!
CONGRATULATIONS! YOU’VE ADVANCED TO ROUND 2: THE BUSINESS PLAN

STEP 1: PAY TEAM ROUND 2 ENTRY FEE
This must be completed under the team captain’s account. Log into the portal, select your team’s entry, and hit the green button underneath the title of your project that says “Pay Round 2 Entry Fee”.

- The Entry Fee for Round 2 is $499 USD per team. Discounted rates may apply for qualified title one schools or schools with multiple team participation. Please email us at info@conradchallenge.org for special payment instructions and arrangements if you qualify for these discounts.

- Please keep in mind that as the team captain, you are in charge of collecting funds from your team members to cover the payment.
Next, you will be prompted to complete the billing address associated with the debit/credit card being used. Once complete, click “Proceed to Payment.”

Finally, you will be redirected to PayPal to finish processing your payment. All payments will be processed through PayPal, however, you do not need a PayPal account to complete this step.

- If you or someone on your team has a PayPal account, you can log in. Setting up a team PayPal account is another great way to collect funds from each team member and store raised money from fundraisers as well.

- If your team DOES NOT have a PayPal account, click the grey box “Pay with Debit or Credit Card” to continue to the checkout screen.
Once you submit your payment, you will be brought back to our system!

This screen confirms your payment is complete. Here you can download your invoice receipt.

In your dashboard, the green payment button will no longer appear and your status will show as paid.

ALL PAYMENTS need to be completed prior to submitting for the Round 2: The Business Plan. Deadline for payment is January 8, 2021 by 11:59 p.m. EST.

Entries submitted without payment will not be submitted for judging.
A business plan is a written description of your idea and its future. It tells what you are going to do and how you are going to do it by outlining the strategy for how your company will take your innovative idea to a viable product solution. By completing this plan, your team will look to the future and set goals for your product and business. You will explain how those goals are attainable and how your business would propose to meet those goals.

Please utilize our resources to guide your team through the Challenge. The Conrad Design Method® No Box Toolbox community, as well as the Alumni Docuseries are available to support the brainstorming processes with instructional videos to aid in product development. Be sure to also investigate the use of NASA Technology available specifically to Conrad students!
COMPANY INTRODUCTION

Introduce your company (team) to your potential investors. How did the team form? What roles did each member play? What barriers or hurdles did the team overcome to develop its idea and complete its business plan? (350 words maximum)

TEAM PHOTO(S)

One team photo is required. However, you are encouraged to submit multiple photos of your team collaborating and prototyping.

We recommend that your team works on all fields of the Business Plan in a separate document to allow for team collaboration prior to submitting online. Once your team is ready to submit, you can copy and paste responses into the system easily. If you choose to work in the system, all progress will be saved and available the next time you login.

Remember, there are points in the judging rubric for creativity. Please share your visual elements such as team photos, pitch video and graphics to showcase your creative skills!
BUSINESS PROSPECTUS

An explanation of the innovation’s market, expected development costs and sales strategy. Required fields include:

1. Business Description – Describe your product/service and what makes your concept different from existing businesses. Describe the industry in which your concept best fits and demonstrate knowledge of the industry practices for similar businesses. Describe the factors you think will make your business successful. (750 words maximum)

2. Market Analysis – Explain the market that your business is attempting to reach using its product/service. Do you plan to sell products commercially, license them to other companies, pursue government contracts, or some combination of these options? If commercial, who are the buyers? (500 words maximum)

3. Competitive Analysis – Describe similar product/services already on the market or in development. Why is your concept better than those already in existence? All teams are required to provide at least three companies in this analysis including patent searches. (750 words maximum)

4. Cost – Estimate the expenses in creating, operating and marketing the business and its product/service. You will need to include the proposed team budget for attending the Innovation Summit should your team advance to the Final Round. (750 words maximum)

5. Funding Sources – How will you gather funding needed to create your product (i.e., government research and development grants, venture capital, private investors, etc.)? You will need to include your proposed method of raising the funds to attend the Innovation Summit should your team advance to the final round. (750 words maximum)
TECHNICAL CONCEPT REPORT

An explanation of the innovation’s technical and scientific details. Sections must include:

1. **Technical Summary** – Outline key technical and scientific principles your concept utilizes in its design and functionality. (1,000 words maximum)

2. **Need Statement** – Describe the challenge your concept will address. Provide information and resources on why the concept is important and how it will be used in the selected industry. (1,000 words maximum)

3. **Background Technology** – State existing technology upon which the concept is built. Note any competing technologies or relevant patents and explain how your proposed concept is innovative and better than existing technologies that produce similar results. (1,000 words maximum)

4. **Concept Details** – Describe in detail the concept’s conceived function, operations, proposed development and any other information about the technical or scientific merits that will make this product successful. (2,000 words maximum)
GRAPHIC CONCEPT REPRESENTATION

Develop a graphic depiction of your concept that will help the judges understand your innovation. This could be a computer program drawing (e.g., Photoshop), a 3-D computer model (CAD), or a photograph(s) of an actual prototype or model. If your team builds a prototype, make sure you showcase it in your product video. (Accepted files include JPEG, PNG, GIF, TIFF or PDF. URL links from third party solutions like TinkerCad.com are also welcome)

*NOTE: Working prototypes and models are not a requirement of the Challenge.

PRODUCT VIDEO

Create a video (7 minutes or less) detailing your team’s innovation. This video serves as your team’s final pitch to advance to Round 3: The Innovation Summit. You will be asked to explain why your concept is needed today, how is it unique, and how your team is going to bring this concept to market. Accepted formats include a direct URL link from YouTube/Vimeo or uploaded MP4 video files.

ADDITIONAL ATTACHMENTS

We welcome additional attachments to further explain any aspect of the Business Plan. Examples could include cost analysis spreadsheets, charts, graphs, or graphics showcasing comparisons and/or additional information.

NOTE: All attachment files must be clearly named as Team Name_File Name. You should also reference attachments within the written fields to encourage judges to review with corresponding points.

Example: Innovative Robot will raise $3 million in capital over the next 3 years through multiple avenues (reference attachment titled: InnovativeRobot_FundingBudget).

SYSTEM NOTE: Large files may take time to upload. If the system says “Processing,” please wait patiently for the upload to complete.
Business Plans will be reviewed by the Conrad team to ensure all requirements have been met. Teams who successfully meet the requirements listed above will be recognized as Conrad Innovators and their plans will be shared with expert judges for official scoring.

Judging of the submitted Business Plans will be conducted online by a panel of subject matter experts from industry and academia.

Each team entry will be reviewed by 3-5 judges who will not only score, but also provide feedback which teams will receive shortly after judging concludes.
Judging Criteria

Technical Innovation: How new or unique is the idea? How Impactful? (25 Points)
- The technology must be unique or existing technologies combined in a unique way to create a new product.
- Does the product or service include innovative technology or business concept(s) that would either transform an industry sector or create large impact for customers?

Technical Practicality: Will this product work technically? (20 Points)
- Is the technology employed realistic and is the invention attainable within a reasonable development time?
- Does the team give some proof of concept such as similar products, expert testimony or other research?
- Does the team explain what research or experiments are needed to prove feasibility? The team does not have to conduct these measures.

Marketability: Does the team demonstrate understanding of the key markets for their product? (20 Points)
- Does the team understand its potential customers? Is there data showing how similar products have been successful?
- Does the team have a market entry and adoption strategy?
- Does the team understand the industry ecosystem and how to become part of it? Has the team appropriately considered licensing, partners, sponsors, etc.?
- Does the team perform a competitive analysis of their market? Does the team explain the differentiators between their innovation and current products/services in the market?

Finances: Does the team demonstrate understanding of the product development costs and funding? (20 Points)
- The team must estimate costs needed to take their innovation to market, including costs to participate during the Innovation Summit. Cost includes material and component estimates, 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 or too high or low?

Team Creativity & Professionalism: Does the team successfully present their concept to potential investors? (15 Points)
- Does the company introduction tell a story?
- Does the team present high quality visuals, graphics, product video and other supporting graphics?
- Would the appearance, writing and organization be credible to a professional investor?
Once your team is ready, click the green “Submit this Entry” button.

- Remember, no changes can be made to your Business Plan once you have submitted. There will be no exceptions.

- The Conrad Challenge team will review all submissions and pass them on to the judging phase. During this time, keep a close eye on your account and the team captain's email address as well, just in case we need additional information.

- We strongly urge you to submit earlier than the deadline. Please note we expect a high number of entries submitting on January 8th, which could cause site delay.

Once your team has submitted, you will receive a confirmation email to the team captain’s email.

Conrad Innovators are teams who complete the Business Plan requirements and have excelled in the development of their product. As this round is very competitive, it is important to the Conrad Foundation that we recognize all of the hard work done by each of the Conrad Innovator teams. We hope teams take pride in this recognition, as it is not an easy feat!

ON FEBRUARY 19, 2021 THE TOP 5 TEAMS IN EACH CATEGORY WILL BE NAMED FINALISTS and invited to compete IN ROUND 3: The Innovation Summit! Teams who advance will receive additional instructions.
THANK YOU TO OUR SPONSORS!