Igniting Innovation in the Space Economy

A Transformative Competition

2023 -2024

LUKE FOUNDATION

TABLE OF CONTENTS

Unleash Your Potential: Join the Space Economy Workforce Readiness Space Competition

Calling All Visionaries

High school and college students, are you ready to dive into the cutting-edge realms of AI, Computing, and Engineering? The LUKE Foundation invites you to showcase your skills and imagination. Whether you're a theoretical thinker, hands-on creator, or self-taught prodigy, this competition is your launchpad.

Your Mission

Imagine, Innovate, Implement – that's the mantra of this competition. Your challenge? Craft a usable product or service for the space economy powered by AI technology. Let your innovation soar, as you devise concepts that are not just groundbreaking, but practical and doable. Excitingly, each team will present their final masterpiece before an esteemed panel of judges.

Embark on a 6-Month Journey

In a span of 6 months, embark on an exhilarating journey to develop and materialize your ideas. Together, we'll push boundaries, redefine possibilities, and create a future-ready space economy.

Forge Teams, Ignite Brilliance

Teamwork fuels brilliance. Form dynamic squads of up to 4 members. Categories await 2-tiers:

- 9th -12th Grade Teams
- 1st - 2nd Year College Teams

Epic Rewards Await

Excellence deserves recognition. First, Second, and Third Place, along with Honorable Mention in each Project Category and Division, will bring home the prestigious Medal of Merit. Every participant is a star – those not securing top spots will proudly wear the Recognition Medal.

Championed by Experts

Innovation beckons recognition. Corporate and scientific professionals will handpick the torchbearers of tomorrow. Prizes encompass cash rewards, prized gift certificates, and exclusive internship avenues.

Venture into Uncharted Territories

Space Exploration:
Devise products and services aiding space exploration – autonomous robots, navigation systems, and communication marvels.

Space Manufacturing:
Pioneer products facilitating space manufacturing – 3D printers, food production systems, recycling innovations.

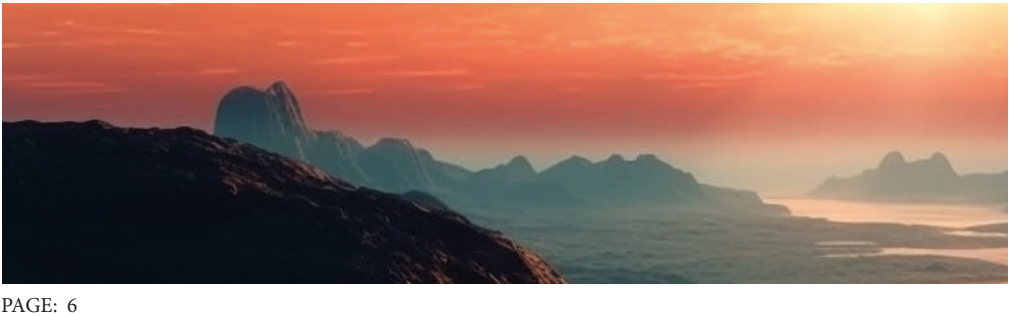
Space Transportation:
Unleash solutions for seamless space transportation – propulsion systems, space vehicles, and futuristic space stations.
Elevate space tourism with virtual reality extravaganzas, entertainment marvels, and health-enhancing technologies.

Guidelines for Greatness

The following regulations will help keep the projects uniform and within the judging guidelines of the LUKE Foundation. During the time that the competition is open to the public, the perception of the projects must be positive, and precautions must be taken for the security of each project.

All projects must abide by the following:

1. Present your vision through innovative research design.
2. Stay aligned with LUKE Foundation's evaluation criteria.
3. Clearly distinguish your effort from external contributions.
4. Emerge as an original, standout visionary.
5. Submit project information online.
6. Harness the power of visuals, relying solely on illustrations or photos.
7. Craft titles that unveil the essence of your research.
8. Ensure clarity in methodology presentation, use SI units & clear labels.
9. Respect prescribed space limitations for physical presentations.
10. Agree to the authority of LUKE Foundation judges to make final decisions.



Unveiling Your Concept's Essence

The judges will evaluate your concept for a space-related product or service idea based on its innovation and creativity, its practicality and feasibility, your proposed technical implementation, and its impact on the space economy.

Innovation and Creativity

- Stoke the fires of innovation through collaborative brainstorming.
- Thrive on daring experimentation, venturing into uncharted territories.

Practicality and Feasibility

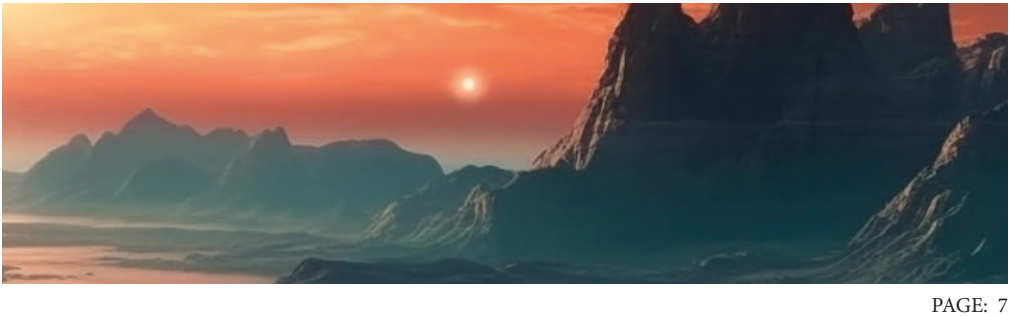
- Anchor your idea in meticulous research and analysis.
- Construct and refine prototypes through rigorous testing.
- Listen to potential users, validating practicality and feasibility.

Technical Implementation

- Forge ahead with technical expertise, your beacon to AI and space technology.
- Seamlessly integrate your product within existing systems.
- Pave the way for scalability and sustainability, ensuring your concept thrives in the long run

Shaping the Space Economy: Impact and Beyond:

- Embrace the economic prospects your concept holds – increased productivity, cost reduction, new job vistas.
- Champion environmental consciousness, unveiling potential benefits like waste reduction, and heightened sustainability in space exploration.



Project Scoring Criteria

Student projects will be scored on a point scale. Students have the opportunity to score a maximum of 4 points and a minimum of 1 point for each category the judges will critique.

Introduction, Experimental Question and Hypothesis

(Hypothesis may not be present in all projects)

Highest scoring projects will:

Boast an original, comprehensive abstract outlining the concept.

Background Research and Exploration

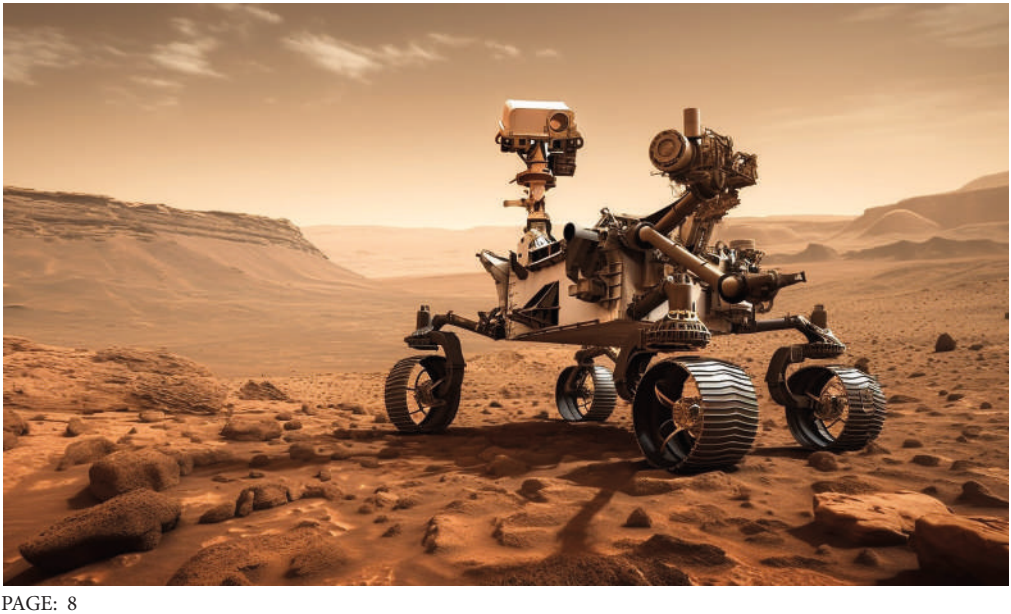
Highest scoring projects will:

Show thorough research conducted on the scientific process manipulated in the experiment, show correctly cited references provided in APA-7 Format.

Procedure, Materials and Methods

Highest scoring projects will:

Show detailed, original procedure outlined for outsiders to comprehend all experiment steps.



Data and Results ***(Some projects do not use graphs with data.)***
Highest scoring projects will:
Show appropriate qualitative and/or quantitative data collected that is well-presented;
Show data that is clear and understandable;
Show sample size and number of trials that are appropriate for the subject.
Show graphs/data/and tables are appropriately used appropriately.
Show data that is appropriately labeled appropriately.
Show grade appropriate data presentation.

Conclusion/Student Standing
Highest scoring projects will:
Show an analysis that is thorough and grade appropriate.
Students have drawn conclusions based on their experiments and research.
Students can discuss the results and cite the data that has been collected.
Students can discuss if/when the research and data match or not.
Students have further questions and research ideas
Students show great depth of understanding

Interview Tips & Tools

1. Think of yourself as part of the science community
2. Find physical comfort before starting. Breathe easily.
3. Speak confidently from your knowledge.
4. Share your ideas among colleagues.
5. Communicate naturally, avoid sounding overly rehearsed.
6. Begin with a strong opening, connecting it to your research.
7. Provide a succinct overview, like an abstract or movie trailer.
8. Think out loud when unsure, use moments for thoughtful dialogue.
9. Employ humor, charm, and eye contact. Stay focused on science.
10. R***emember, this is an interview. Ensure a professional appearance***

Time Management

Allocate sufficient time to reach the interview location and relax beforehand. The interview itself lasts around 10-15 minutes. Sign into your project early.

Interview Panel

You will be interviewed by experts in the field, including scientists, teachers, and retired professionals.

- They are familiar with your Abstract and may have read it.
- They have reviewed your virtual board.
- They come prepared with questions.

Potential Interview Questions

1. Why did you choose this concept?
2. What is the significance of this concept for space industry advancement?
3. What were your variables?
4. What were your controls?
5. What were your significant findings (Results)?
6. How did you utilize AI to develop your concept?
7. How would you implement your concept?
8. How did you incorporate your research?
9. What further experiments or results are you interested in pursuing?

How to Register

Register online at LukeFoundation.org

Notice of Intent

It's advisable to submit a Notice of Intent (NOI) before the Proposal submission. This helps ensure enough reviewers are available for several preparatory events, including:

- A session with the judges
- A proposal development works

NON-DISCRIMINATION POLICY

The LUKE Foundation Space Economy Workforce Readiness Competition is an equal opportunity for all event, regardless of age, ancestry, color, disability (mental and physical), gender, gender identity, sexual orientation, medical condition, national origin, race, and religious creed. Judges and volunteers bear the responsibility to act as guardians and custodians of the 1 student(s) during their volunteering. Their familiarity with the students' special sensitivities is imperative to the overall competitive effort to achieve an equal opportunity for all environments, free of discrimination.

Space Competition Concept Paper Outline

Here's an outline for the essay that students will submit along with their projects. This outline provides a structured approach to presenting their work and ensuring that they cover all the necessary aspects of their projects:

Title: [Title of the Project]
Team Information:
- Team Name: [Provide a creative and unique team name]
- Team Members: [List the names of all team members]
- Team Leader: [Indicate the team leader or point of contact]
- Contact Information: [Email addresses and phone numbers]

Introduction:
- Briefly introduce the project and its significance.
- Mention the competition category (Space Exploration, Space Manufacturing, Space Transportation).
- Explain the purpose of the essay and what readers can expect.

Project Description:
- Provide an overview of the project's main objectives.
- Explain how the project relates to the space economy and AI technology.
- Describe the problem or challenge the project addresses.

Materials and Methods:
- List and describe the materials, equipment, and resources used in the project.
- Explain the methodology or approach followed to develop the project.
- Mention any AI technology integrated into the project.

Project Development:
- Discuss the step-by-step process of how the project was developed.
- Include relevant technical details and challenges faced.
- Highlight any innovative or unique aspects of the project.

Results and Data:
- Present the data and results obtained from the project.
- Include tables, graphs, or visuals if applicable.
- Explain the significance of the results in the context of the project's goals.

Project Video (if applicable):
- If a video was created to demonstrate the project, provide a link.
- Describe the content and purpose of the video.

Presentation Plan:
- Describe how you plan to present your project during the competition.
- Explain the key points and visuals you will use to communicate your project effectively.

Conclusion:
- Summarize the main findings and achievements of the project.
- Reflect on the impact of your project on the space economy and AI technology.
- Discuss any future developments or research directions related to your project.

Acknowledgments:
- Acknowledge individuals, organizations, or resources that contributed to the project's success.

References:
- List any references, sources, or citations used in your project or research.

Appendices (if necessary):
- Include additional materials, diagrams, or documents that support your project.

Essay Length:
- Aim to create a comprehensive essay that is at least 10 pages long, including all relevant content.

Conclusion:
- Summarize the key takeaways from your project and essay.
- Emphasize the innovation and potential impact of your work.
- Express your enthusiasm for participating in the competition.

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