

# Education Sponsorship Opportunities



## Limitless Educator Sponsorship (United States)

**\$6000**

- 12-month immersion in the Limitless Educator program
- Registration and travel to the Space Exploration Educator Conference in Houston, TX (February)
- 5-day Limitless Summer Institute in Houston, Texas (July)
- Access to our Global Education Network
- Access to LSI online curriculum and experts

*100% of current educator participants stated they would recommend this program to other educators.*



## Limitless Education Virtual Curriculum Sponsorship

**\$15,000**

- Sponsors 35 educators
- 12 month subscription to LSI online curriculum
- Access to monthly subject matter experts
- Monthly one-on-one instruction with LSI education experts

**\$30,000**

- Sponsors 100 educators

*More than 94% of educators feel confident or very confident in their ability to teach STEM concepts effectively, highlighting the course's success in boosting teaching confidence.*



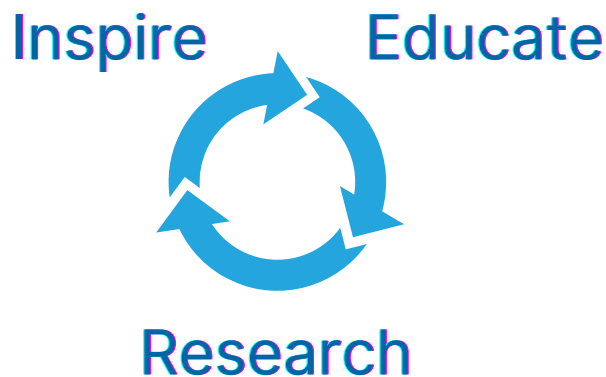
## Go Incredibly Fast

Our ultimate goal is to achieve interstellar human space travel by the end of this century.

We will accomplish this by supporting the research in pertinent fields and empowering educators with the knowledge to prepare future generations for the STEM workforce.



# The Cycle of Progress



We **inspire** the next generation to dream about the future that could be. We **educate** the next generation by providing resources and professional development for teachers and educators.

We do this so that the next generation will do the **research** necessary for interstellar travel.

## Vision

Advance human exploration beyond our solar system.

## Mission

**Inspire** and **educate** the next generation to travel beyond our solar system and support the **research** and development of enabling technologies.

## Core Values

Our core values are **Integrity, Courage,** and **Imagination.**

# Company Overview

Our vision is to advance human exploration beyond our solar system. As incredible as it may seem, there will be a time, and it may be closer than you think, when we live on other worlds; the Moon, Mars, and in the space between. But few people have the foresight to think about what comes next. The Limitless Space Institute (LSI) is doing the work now that will lead to the exploration of the moons of Jupiter, the surface of Pluto, and planets in other star systems. To achieve this grand vision, we must “Inspire and educate the next generation to travel beyond our solar system and support the research and development of enabling technologies.”

LSI’s commitment to education and outreach programs coupled with our university and research partnerships are critical components to the discovery of enabling technologies. The advancements made because of our research and support will lead to the *cycle of progress* where the next generation of STEM professional will be inspired by the work we’ve done, seek out the appropriate education, and add to the growing body of research into interstellar travel. These innovation will also have a direct impact on the quality of life here on Earth while ultimately allowing us to traverse vast distances in space.

## About

The Limitless Space Institute is a 501(c)3 non-profit organization established in 2020. We are committed to education and outreach programs that foster the pursuit and discovery of advanced power and propulsion such as solar sails, nuclear electric propulsion, direct nuclear propulsion, and space warps. LSI works closely with and has provided research funding to several universities that are attempting to make strides in these fields including Texas A&M, MIT, Caltech, UCLA, the Frankfurt Institute for Advanced Studies, Australian National University, Universitat Luxemburg, the Israel Institute of Technology, and many others. LSI brings an impressive capacity to successfully implement immersive professional development for educators across the globe. We also have partnership agreements with Axiom Space, the Perseid Foundation, International Space Station National Labs, Space for Teachers and Cosmic Girls. This enables us to provide high-quality and meaningful experiences for educator program participants.



# The Challenge

Very soon, we will live on other nearby worlds: the moon, Mars, and spaces between. Beyond Mars, distances between worlds grow immensely, and become truly vast between stars. If we want to reach out across these distances, we need to develop the capability to go incredibly fast. For this, we need to look to solutions such as nuclear electric propulsion, fusion propulsion, and the frontiers of physics to develop breakthrough propulsion concepts such as space warps or even wormholes. But we may be facing a shortage of capable STEM professionals in the near future.

The United States is confronting a critical shortage of STEM-capable students. Exacerbated by the COVID-19 pandemic, this deficit will imperil our nation's economy and technological capabilities. Projections from the National Association of Manufacturers and Deloitte suggest that by 2025, the U.S. will face a staggering deficit of 3.5 million STEM workers. This scarcity of highly skilled candidates in STEM fields could have far-reaching implications for our nation's workforce and technological ability to be leaders, innovators, and problem solvers.

As we address this challenge, it becomes crucial to prioritize STEM education, foster interest in these fields among students, and ensure a robust pathway of talent to meet the growing demands of STEM industries around the world.

## The Solution: Exploration Provides Limitless Opportunities

Since the dawn of humanity, we have sought to make sense of the universe around us. This curiosity took humanity from being a hunter-gatherer species to exploring the cosmos in a relative blip of celestial time, yet there is still much to learn and do. Our impulse to seek new worlds has been part of who we are for as long as we have existed.

Through our past investments in space exploration, we have been able to advance many technologies that have had a significant impact on our daily lives including, but not limited to, Global Positioning Systems (GPS), cell phones, laptops, 3D printers, air purifiers, and water filtration systems. The next logical step with continued innovation is to move beyond our planet to other worlds. The further we venture into space, the more we learn about energy production, material refinement, automation, and the quantum realm. And these advancements will have tremendous applications here on Earth.

# Education

The Limitless Space Institute is committed to revolutionizing K-12 education by enhancing STEM learning with a focus on space exploration. Our initiatives are designed to support educators, extend community outreach, and develop cutting-edge STEM curricula.



**Professional Development:** We provide educators with workshops, industry leader interactions, and the Limitless Educator Summer Institute to enrich their skills in delivering engaging space exploration content, fostering innovation in the classroom.

**Community Outreach:** Our aim is to make STEM education accessible to all, particularly underserved communities, by partnering with local organizations to inspire diverse students towards STEAM careers.

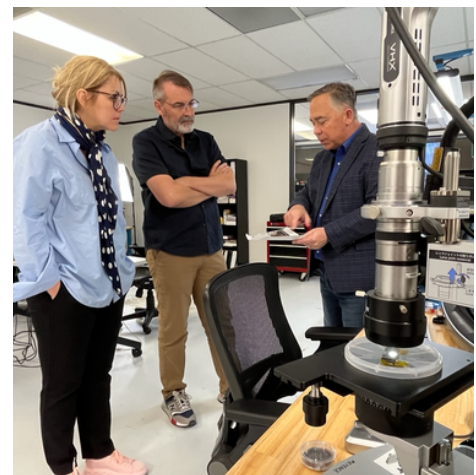
**Curriculum Development:** Working alongside educators, we're creating adaptable, standards-aligned K-12 lesson plans and digital curriculum that reflects the latest in space science and teaching best practices.

# Research

Since our inception, LSI has pursued research and concepts that have the potential to reshape our understanding of physics and lead to significantly faster travel across incredible distances. Some of this research has taken place in-house while further research is accomplished through our partnerships and grant recipients.

**Onsite Laboratory:** We will continue and expand our research into negative vacuum pressure on the quantum scale and its application as an energy source and potential relationship to exotic matter on the macro scale, ideally bridging the gap between quantum mechanics and general relativity.

**University and Research Partnerships:** Our partners are turning theory into practical application in the areas of solar sails, laser propulsion, nuclear fusion drives, Casimir thrusters, and more.



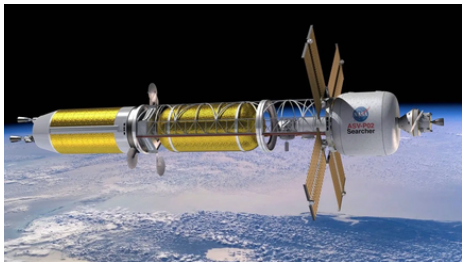
# The Outcome

Imagine a world of plentiful, clean power sources that draw energy from the quantum realm. A world where a trip to Europa is not only possible but becoming commonplace as a vacation destination. Where all the resources that pass through our solar system are usable and part of our expanding economy. Where reaching new worlds and star systems are within our capabilities. This is the world we are building now... Looking towards our Limitless future.

## Big Hairy Audacious Goals



Voyager 1 spacecraft would take more than 70,000 years to reach Proxima Centauri.



A spacecraft using nuclear fission propulsion could reach Saturn in two years and take another ~2000 years to reach Proxima Centauri.



A spacecraft using nuclear fusion, like the process that happens in the heart of our Sun, could cross the orbit of Saturn in ~5 months and reach Proxima Centauri in just over a century.



The ultimate goal is a spacecraft that contracts space in front of it and expands space behind it. A ship such as this could cross enormous distances effectively faster than the speed of light, reaching Saturn in a matter of minutes and Proxima Centauri in less than 6 months.

# SOLVING THE TIME - DISTANCE CHALLENGE

## FISSION

NUCLEAR ELECTRIC  
PROPULSION (NEP)



Power: **2 - 50 MW**



Locomotives: **1 - 25**



Enables human exploration of  
outer solar system



Enables interstellar precursors  
~1000 AU

**1,000s  
OF YEARS**

TRAVEL TIME TO PROXIMA CENTAURI



PHYSICS



ENGINEERING

## FUSION

FUSION ELECTRIC  
PROPULSION (NEP)



Power: **50 - 500 MW**



Locomotives: **25 - 250**



Enables faster human exploration  
of outer solar system



Enables slow interstellar

**100s  
OF YEARS**

TRAVEL TIME TO PROXIMA CENTAURI



PHYSICS



ENGINEERING

## BREAKTHROUGH

SPACEDRIVES,  
WORMHOLES, SPACE  
WARPS



Power: **>500 MW**



Locomotives: **>250**



Enables fast interstellar

**A FRACTION  
OF A LIFETIME**

TRAVEL TIME TO PROXIMA CENTAURI



PHYSICS



ENGINEERING

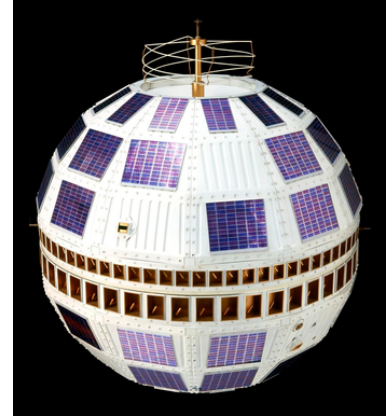


# Why Space?

If you look back from when humanity achieved flight through the space race and finally to present day, it becomes clear that a focus on space has encourage vast leaps in our technological capabilities. Those leaps then became ubiquitous technology that we use nearly every day and have improved our quality of life considerably.

## Global Communication

- AT&T Telstar 1 launched 1962 provided first live television broadcast between the United States and Europe.
- In 1977, Intelsat IVA satellite enabled first Internet demonstration linking ARPANET, PRNET and SATNET.
- Mega satellite constellations (Starlink, OneWeb, Kuiper) beginning to provide ubiquitous global high bandwidth data/comm services.



## Global Navigation

- NAVSAT satellite radio navigation system commissioned 1964.
- Timation-1 (1967) and Timation-2 (1969) satellites demonstrated atomic clocks in space (critical ingredient for GPS).
- Navstar 1 (first GPS satellite) launched 1978, full constellation of 24 satellites operational in 1993.
- Mid-1990's, NASA JPL developed GPS error-correction software allowing position accuracy of ~inches.

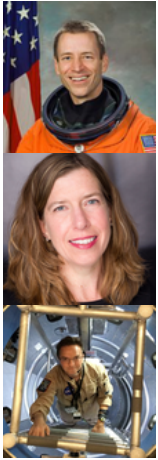
## Global Observation

- NASA TIROS-1 first weather satellite launched 1960 allowed observation of planet's weather systems.
- NOAA currently operates 16 satellites to monitor earther weather and environment.
- USGS currently operates 8 satellites to collect environmental data and imagery of the planet.
- Commercial providers such as Planet, Decartes Labs, Orbital Insight, Maxar fly constellations of earth observing satellites providing nearly instantaneous global imagery.

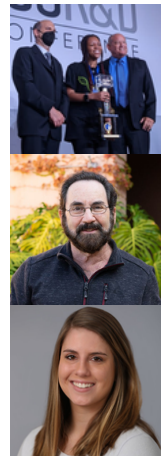




# Teacher Professional Development



Educators participate in a monthly virtual classroom where they receive lessons and instruction on how to integrate aerospace content into their classrooms while meeting appropriate standards. The monthly themes are aligned with the LSI 12-month curriculum which connects advanced aerospace concepts to the daily life of the participants. Using a scaffolded approach and assuming little prior knowledge, the curriculum guides our educators from introductory space lessons to the future space economy. In addition, there will also be a monthly virtual conversation with a subject matter expert in a related field.



In February, educators convene in Houston, Texas, to attend the Space Exploration Educators Conference (SEEC) where teachers and SMEs from all over the world share their techniques, lessons, and physical hardware used to teach STEM through the lens of space exploration. All sessions at SEEC include a hands-on component designed to engage teachers and students in STEM exploration and best practices. Limitless Ambassadors are also encouraged to present the lessons they've developed and other concepts they've learned through the LSI program.



Educators return to Houston in July to participate in the Limitless Global Educator Institute, a week-long aerospace-specific professional development. Educators visit the campuses of our partner organizations to see the developing science and engineering that are revolutionizing the space industry and learn from the very STEM professionals who are designing and producing these technologies. The week is also used for the educator participants to develop new lesson plans that the educators can implement with their students and will be provided to the public through the LSI website.

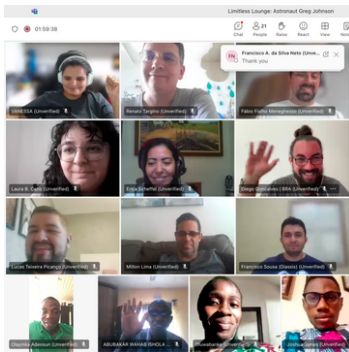
# Limitless Benefits

Your support of STEM education through the lens of space exploration brings hands-on and exciting learning experiences to educators and students across the country.

*Excited and inspired educators = Excited and inspired students*

## For Educators

### Hybrid Learning



### Global Network



### Advanced Curriculum



## For Students

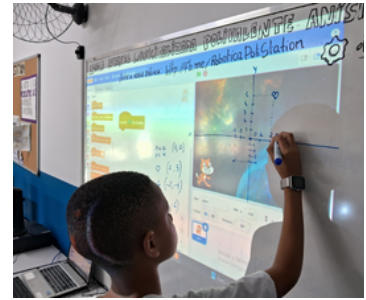
### Workforce Development



### Hands-On Learning

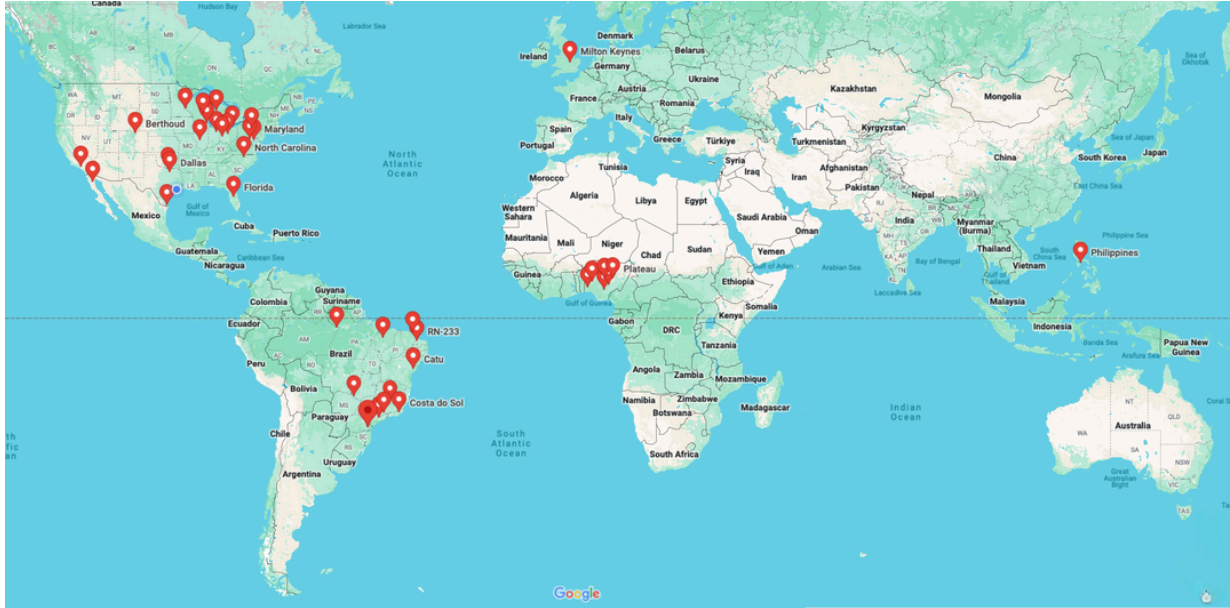


### Real World Connections



# Limitless Reach

The Limitless Space Institute has almost fifty educators across the globe impacting over 4000 students through the lens of space education.



The Limitless Space Institute has many strategic partnerships to further our mission of inspiring and educating the next generation of explorers to travel beyond our solar system.

- IHS Towers
- Brazilian Space Agency
- ISS National Labs
- Perseid Foundation
- Axiom Space
- Space For Teachers
- Cosmic Girls
- ARES Learning



## Why Now?

There is a myriad of non-profits that seek to inspire the next generation of STEM professionals through space exploration. What does the Limitless Space Institute offer that the other organizations do not?

### We are Future-Focused

LSI is one of the only organizations on the planet that is already asking the question, “What comes after Mars?” If the goal is to prepare students for the world that will be, LSI is uniquely positioned as we are among the only organizations that is building our infrastructure around the state of space exploration one hundred years from now!

### We are Furthering the Research

We aren't just an educational non-profit. LSI is accomplishing and supporting research right now that will impact the propulsion systems of the future. We are on the cutting edge of what is known and what more we will understand about physics in the future. We even have access to private observatories and telescopes that teachers can control remotely, allowing students to accomplish their own research.

### We are Where Space Happens

Our proximity to the Houston Spaceport has provided us with unprecedented access to companies that are shaping the future. LSI has formal and informal agreements with Axiom Space, Intuitive Machines, Venus Aerospace, and many other new exciting companies that are pushing the boundaries of what private space companies can do.

## What Comes Next?

The Limitless Space Institute plans to be self-sustaining in the near future. We will accomplish this by monetizing several of the components of our education strategy, including our 12-month curriculum, the Global Educator Institute, and our monthly virtual touchpoints. Clients can buy individual memberships for educators or they can choose to sponsor large groups. We will also offer tailored outreach for sponsors purchasing group memberships. And as we grow, our capacity will as well, allowing us to:

- Deepen university and STEM collaborations and enhance the team and course capacity
- Launch global initiatives to target over 1000 educators with self-funded programs.
- Grow the online platform to exceed 10,000+ registered users, becoming a central hub for STEM education resources and educator community engagement.
- Place 20 students and educators in R&D internships/fellowships annually, with participant satisfaction exceeding 90%.



# The Team



## **Kaci Heins** (Executive Director)

- B.S. in Elementary Education from Southeast Missouri State
- M.A. in Secondary Education from Southeast Missouri State
- Alan Shepard technology in Education Award
- AIAA Educator Achievement Award
- ISS National Lab Exceptional Educator Award
- Air Force Association's National Teacher of the Year Award

Kaci has significant experience in STEM education, leadership, and project management. With over 20 years in the education sector, her primary focus has been on STEM education through aviation and space exploration. Kaci was the Air & Space Forces Association National Aerospace/STEM Teacher of the Year in 2014. That same year, she also won the Civil Air Patrol National ACE Teacher of the Year and in 2015 she was the American Institute of Aeronautics and Astronautics Distinguished Educator. Kaci continues to be an active Aerospace Education Member with the Civil Air Patrol and the Air & Space Forces Association.



## **Dr. Harold "Sonny" White** (Director of Advanced Research and Development)

- B.S. in Mechanical Engineering from University of South Alabama
- M.S. in Mechanical Engineering from Wichita State University
- Ph.D. in Physics from Rice University
- Silver Snoopy Award Winner

Dr. White has accumulated 25+ years of experience working in the aerospace industry with Boeing, Lockheed Martin, NASA, and Limitless Space Institute. He currently serves as Director of Advanced Research and Development at LSI. In this role, he leads all R&D work for LSI and establishes priorities for investigations and expenditures. Dr. White obtains grants and other resources in support of R&D efforts; markets LSI to major benefactors to increase resources and related R&D efforts; and arranges/schedules/conducts events ensuring appropriately related well-known individuals are involved.



## **Chaka Jaliwa** (Deputy of Education and Operations)

- B.A. in Electrical Engineering from Yale University
- M.A. in Educational Technology from UT Rio Grande Valley
- E-Learning, Technology Leadership, and Online Instructional Design certificates from UT Rio Grande Valley
- Agile Project Management certificate from LinkedIn Learning

Chaka has worked in informal science education his entire professional career and has developed space science curriculum at two large museums, the California Science Center and Space Center Houston. He will be the primary point of contact for all partners and stakeholders and will be responsible for the strategic direction and operational execution of the program.

## Board of Directors



### **Kam Ghaffarian** (Chairman, Co-Founder)

Kam is a visionary entrepreneur and engineer whose mission to advance the state of humanity and human knowledge has led him to create companies transforming the space and energy sectors. He is the CEO of IBX, the co-founder and Executive Chairman of X-energy, Intuitive Machines, and Axiom Space, and supports several other innovative companies and charities.



### **Brian "BK" Kelly** (Treasurer, Co-Founder)

BK retired from NASA in February 2019 after a career of over 37 years. As Director, Flight Operations at NASA's Johnson Space Center (JSC) he directed a diverse civil service, military, and contractor workforce of over 2400 employees. He was responsible for selecting and assigning NASA astronauts and flying human spaceflight and aviation missions. Over his career he supported 110 shuttle missions, 58 International Space Station Expeditions, 40 shuttle launches, and 35 Soyuz Launches.



### **Gregory "Ray J" Johnson** (Secretary)

Gregory "Ray J" Johnson served as the pilot of STS-125, the fifth and final Hubble Space Telescope servicing mission in 2009. After his spaceflight, Ray J took on several management roles at NASA, including Deputy, Flight Operations Directorate. Post-retirement from NASA, he joined Blue Origin as Senior VP for New Shepard and became Chief Safety Officer and Test Pilot for World View Space. Now retired, he enjoys supporting space education and spending time with his family.



### **Yunhee Chang** (Director)

Yunhee Chang leads the Humans In Space Youth (HIS Youth) program at Boryung, a healthcare investment company in Seoul, Korea. She is passionate about STEM education and space exploration, aiming to inspire young students. Previously, Yunhee served as Managing Director at Kingsports. She holds a B.S. in English Literature and Business from Yonsei University and a Master of Science in Management from Stanford Graduate School of Business.



### **Claire Haidar** (Director)

Claire Haidar is passionate about the space where humans and technology interact in work spaces. She has dedicated her career to understanding and leading in this space. She has recently moved into an executive chair role in WNDYR and is now turning her efforts towards the future of work in space, as we slowly move towards becoming an interplanetary species. She also farms with sheep, pilots, and works in ecological restoration.

## The Opportunity

The Limitless Space Institute is seeking partnerships to continue funding research and educators to achieve our ultimate goal of interstellar travel by the end of the century.

### Take Action Today!

Contribute to inspire and educate the next generation to travel beyond our solar system.



## THANK YOU

## CONTACT

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