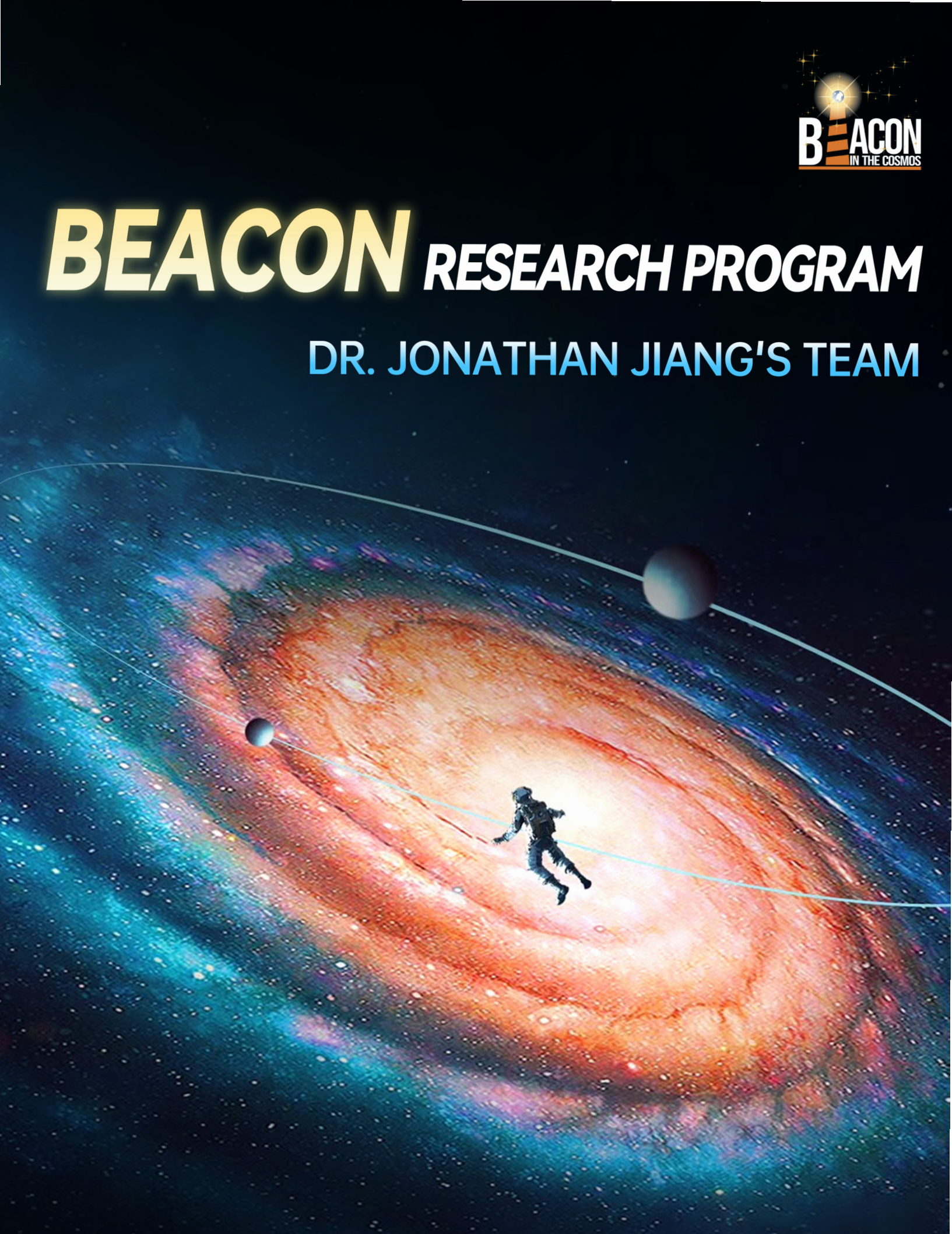
BEACON RESEARCH PROGRAM

DR. JONATHAN JIANG'S TEAM



Dr. Jonathan Jiang's Research Group

At BEACON IN THE COSMOS, we offer research programs for high school, undergraduate, and graduate students in the following areas:

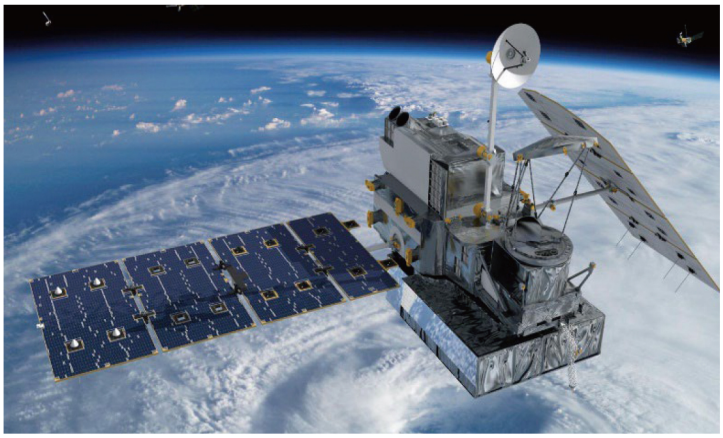
*Research topics are subject to change

1.Earth Science Satellite Observations and Analysis

This area focuses on utilizing satellite data to study various aspects of Earth's environment. Interns will engage in analyzing satellite imagery and data to understand earth science phenomena such as weather patterns, ocean currents, and land changes. This work involves using advanced analytical tools and techniques to interpret satellite data, contributing to our understanding of the Earth's systems.

2. Exoplanets Research and Data Analysis

Interns working in this field will dive into the fascinating world of exoplanets. They will analyze data collected from telescopes and space missions to discover and study planets outside our solar system. The focus is on understanding these distant worlds' characteristics, such as their atmospheres, orbits, and potential for supporting life. This research area combines astrophysics, mathematics, and computer science to expand our knowledge of the universe.



3.Humanity’s Message to the Stars (HMTS)

This intriguing project revolves around updating the iconic Voyager's Golden Record for extraterrestrial communication. Interns will be involved in the thoughtful and critical selection of images to represent human civilization to potential extraterrestrial audiences. This process involves a deep understanding of human culture, history, and achievements. The challenge lies in capturing the essence of humanity in a limited number of images, showcasing our planet's diversity, achievements, and aspirations. This project not only requires a keen eye for visual storytelling but also an understanding of interstellar communication and the potential implications of contacting extraterrestrial life. It's a blend of art, science, and philosophy, aiming to create a timeless message from humanity to the cosmos.

4.Climate Change Solutions

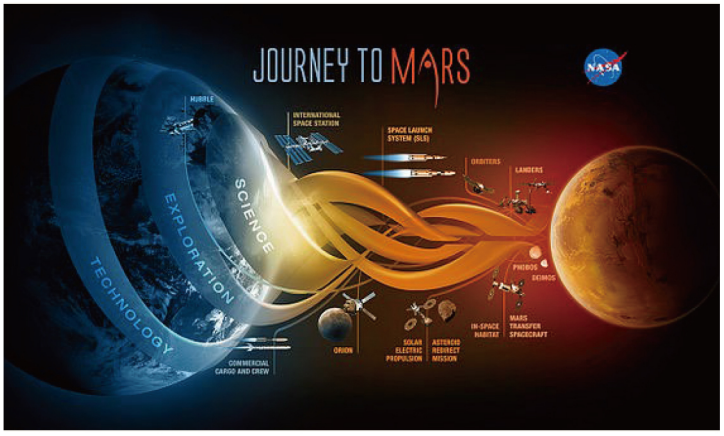
Interns in this area will explore and develop strategies to mitigate and adapt to climate change. This may include researching renewable energy sources, carbon capture technologies, or sustainable agriculture practices. The focus is on practical, innovative solutions to reduce greenhouse gas emissions and address the impacts of climate change on various ecosystems and communities. This research is crucial for guiding policy decisions and promoting sustainable practices globally.

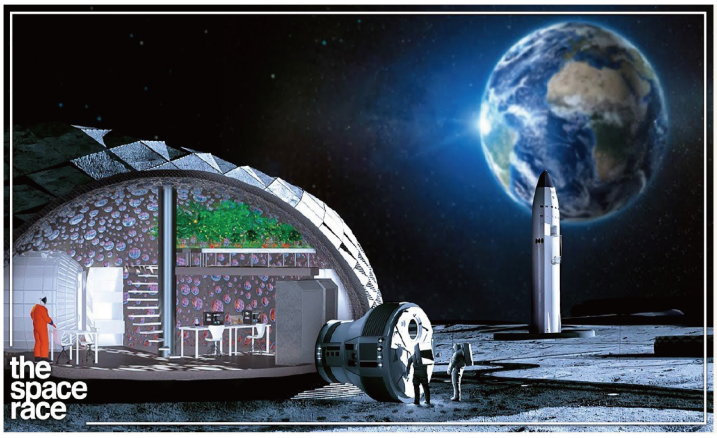
5.Mars Exploration

This project invites students to design future human settlements on Mars. Interns will conceptualize and develop plans for habitats that can support human life on the Red Planet. This includes considerations of life support systems, energy sources, food production, transportation, and protection from the harsh Martian environment. The project combines elements of engineering, environmental science, and space technology. Additionally, students will define science research objectives for human exploration on Mars, focusing on geology, atmospheric science, potential resources, and astrobiology to understand the planet's past, present, and future potential for life.

6. Moon Base Project

This project challenges students to design a base on the Moon, including living quarters, power stations, transportation systems, and greenhouses. Interns will explore the unique challenges of living and working on the lunar surface, such as dealing with low gravity, extreme temperatures, and limited resources. This project aims to develop practical and innovative solutions for sustaining human life on the Moon, combining aspects of architecture, engineering, and sustainability. Furthermore, students will establish science research objectives for the Moon base, which include studying lunar geology, regolith properties, potential water resources, and the effects of long-term lunar habitation on human health and biology.





Dr. Jonathan H. Jiang

Astrophysicist | Space & Atmospheric Scientist
American Meteorological Society Fellow
Member, National Academies' Human Mars Exploration Committee
President, AGU Global Environmental Change Section
Founding Editor-in-Chief, Journal of Humanity's Future in the Cosmos
A Recipient of 3 NASA Exceptional Scientific Achievement Medals

Helpful Resources: (links are clickable)

Tedx Talk: If Aliens can hear us, maybe they can help us

New Book Released:

Avoiding the Great Filter:

Illuminating Pathways to Humanity's Future in the Cosmos

Humanity's Message to the Stars (HMTS):

Read Article: An Update to the Golden Record

A Science Strategy for the Human Exploration of Mars:

Visit National Academy's Website

To learn more about Dr. Jonathan Jiang: Just Google “Jonathan H. Jiang”

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Phone/WhatsApp: 1.818.280.7960
Email: info@abeaconinthecosmos.com
WeChat: beaconcosmos

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