



BMSIS Young Scientist Program

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About BMSIS

Blue Marble Space Institute of Science is a non-profit research institute with an interdisciplinary approach to studying the relationship between Earth system science, space exploration, and the future of humanity. Our participants constitute a distributed network of scientists across the world that integrate research across disciplinary boundaries and facilitate scientific conversations with the public in traditional and innovative ways.

Specific areas of research include: *planetary habitability · origin(s) of life · climate change · sustainable development · human spaceflight · space biology · solar system exploration · global catastrophic risk*

Our scientists engage in interdisciplinary research using virtual communication tools to collaborate and share ideas. We publish our research in academic journals, and we engage the public in thinking about science by sharing our research through our seminar and publications/podcast series as well as through the SAGANet social network and the Sciworthy.com news platform. We pursue scientific, historical, philosophical, and transdisciplinary perspectives of questions such as:

- How did life on Earth originate, and how long will Earth remain habitable for humans?
- How can analog environments on Earth help us understand the environments of other planets?
- How do human civilization and the Earth system co-evolve?
- What technologies allow human civilization to co-exist with a dynamic planet?
- What human spaceflight models will be effective in short-term transportation of humans into low-Earth orbit as well as long-term travel to the Moon, Mars, and beyond?
- How do humans adapt to the spaceflight environment?
- Has life ever developed on another planet in the Solar System or in other star systems?
- How unique is Earth among other planets in the galaxy?

Website: <http://www.bmsis.org/about/>

BMSIS Young Scientist Program

BMSIS provides opportunities for early career scientists to reach new potential with our institute. The BMSIS Young Scientist Program (YSP) provides opportunities to participate in basic research, learn about effective science communication, and develop critical ethical thinking skills. BMSIS conducts two such programs. The “**NASA/BMSIS Young Scientist Program in Space Biology**” is a collaboration between NASA Ames Research Center Space Biosciences Division and BMSIS in developing the next generation of Space Biology professionals, which focuses on post-bachelors and pre-doctoral students. The “**BMSIS Young Scientist Program**,” which focuses on undergraduate students (or equivalent) is a typically unpaid,



online-only program with the same requirements as the NASA program, except that science mentors are BMSIS scientists instead of NASA Space Biology scientists. Participants in the program earn the title of Research Associate (RA), and may work on-site or remotely, depending on the needs of the project, mentor, and RA. Funding is available for some projects but not all. Unpaid projects will last nominally a maximum of three months, while funded projects may often last longer. NASA/BMSIS RAs not pursuing a doctoral degree may remain in the program for a period of 5 years. NASA/BMSIS Doctoral students may remain RAs up to their defense date.

Goals of the BMSIS Young Scientist Program:

- To welcome early career scientists as members of our science institute during the duration of their internship;
- To train early career scientists in professional activities that enhance their oral, verbal, and auditory communication capabilities;
- To help early career scientists begin to build a network of professionals in astrobiology and space-related fields;
- To provide early career scientists with an understanding of the role of science in society;
- To engage early career scientists in intellectual pursuits leading to increased technical understanding and practice.

Research Associates in the YSP will conduct scientific research with a NASA or BMSIS research scientist as well as training by communication experts to help develop skills in science communication. The RAs will also complete training modules in ethics, policy, & society with guidance from an ethics mentor.

Upon successful completion of the Young Scientist Program and its science, communication, and ethics requirements, RAs shall receive a certificate of completion. Alumni from the internship program may also receive requests for follow-up program evaluation.

Website: <http://www.bmsis.org/ysp/>

Program Modules

Scientific Research

Young Scientist Program Research Associates will conduct research under direct supervision of a NASA or BMSIS mentor. The RAs may work on-site or remotely, depending on the needs of the project, mentor, and the RA. Research Associates will write a report of their research. This report may be used in a variety of applications, including (but not limited to): undergraduate or masters project/thesis, conference proceedings, peer-reviewed journal, magazine/newspaper article, writing samples for job applications.

YSP RAs will also be expected to present the results of their internship either internally (to a larger audience of BMSIS scientists using virtual communication tools) or externally (to a larger audience of scientists at an academic conference or other large science communication venue, either in person or virtually).



Networking & Communication Module

Research Associates will have the opportunity to attend a wide range of seminars sponsored by BMSIS, including team meetings, communication workshops, ethics and policy lectures, and more. The RAs will also join our larger community of scientists, scholars, thinkers, and doers and will have opportunities to be involved with a variety of projects.

The RAs also will have to complete a minimum of two items from the following list during the course of the internship:

- Write an article explaining recent scientific research in common language for [Sciworthy](#)
- Develop a video that explains a topic in science for Sciworthy or another BMS initiative such as BMSIS, GreenSpace, or One Flag in Space
- Write an article for the BMSIS website (topics can range from scientific explanations to personal experiences in the sciences and far more!)
- Deliver a public talk (in-person or online) that communicates science with a broad audience
- Develop and run a weeklong social media campaign to explain a scientific topic through a BMS initiative
- Deliver a talk about your research to the BMS community through our BlueSciCon meeting
- Complete the policy requirement by writing a letter to an elected official or other authority to argue for a specific cause or action that you feel strongly about
- Mentor a pre-teen student on a scientific project through our new mentoring program

Ethics & Society Module

Our Ethics & Society module is intended to engage the Research Associates in modern issues with regard to science, moral theory, governance, and society. RAs will work with Dr. Jacob Haqq-Misra to address a specific issue within the realm of ethics and society and will engage in a group discussion/argument about the topic.

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