

Steps to Achieving a NASA Partnership

1. **Prepare for a NASA Partnership:** *Know your organization's needs.*

Organizations, including small businesses, universities, researchers, government agencies outside of NASA, as well as aerospace and non-aerospace businesses alike, all team up with the Agency for a variety of reasons. Putting some careful consideration on your team's accomplishments, areas of expertise, and what you hope to gain by working with NASA will help facilitate successful agreements and communication.

The steps to achieving a NASA partnership were written with the intention of helping your organization work through a concise evaluation of goals, partnership ideas and past innovation achievements; all important attributes which work together to highlight the proper priorities for the Agency. In turn, a very specific agenda will afford your team a focused conversation with the right people in the proper context.

NASA's IPP urges your organization to read through all the steps, the links, and any additional information included within the context of this web page to gain insight into what missions are currently underway and any corresponding needs. Thoroughly examine your team's long term goals, ideas, innovations and technology achievements in light of what may be achieved with the Agency.

Does your organization have an existing technology or innovation, a piece of knowledge you'd like to share with NASA, or are you looking for specific help?

Why does your team want to partner with the Agency, and specifically, can you identify elements of your work which may be most valued by NASA based on current missions?

Many of NASA's partners achieved success by reaching out to the Agency with focused goals, as well as a vision for advancing their work which clearly met detailed technology gaps within the Agency. Others, still, set out to further a preconceived idea or innovation while working with NASA scientists and engineers. By systematically prioritizing where your team has been, as well as plans for navigating the future, the best match and opportunity for collaborating with the Agency will, ideally, become clearer and steer your organization closer to a potentially rewarding relationship with NASA.

2. **Find a fit:** *Learn what NASA can offer.*

NASA sustains ten centers situated across the country from which various partners are able to support the Agency's Mission Directorates. Each Directorate covers a major focus of research and development, and serves as one of four main pillars of interest within NASA's structure.

Depending on your organization's expertise, alignment with a particular NASA mission may be most practical under NASA's areas of technology. By understanding how the needs of the Mission Directorates drive the Agency, your team will be able to better identify how to propose engaging in NASA's vision. If you'd like to sort through a searchable database which includes particular facilities available within NASA, visit the Major Facility Inventory. For instance, if your organization has a particular interest in "wind" this database will help you determine if NASA has established facilities to provide for that particular practice area.

NASA IPP offers the Facilitated Access to the Space Environment for Technology Development and Training (FAST), which provides opportunities for emerging technologies to perform testing in the space environment, for organizations which qualify for the program. NASA carries out successful missions led by the Agency's Mission Directorates which include:

Aeronautics Research: The Aeronautics Research Mission Directorate is responsible for conducting research and development of aeronautical technologies for safe, reliable and efficient aviation systems.

Science: The Science Mission Directorate executes the scientific exploration of the Earth, Moon, Mars, and beyond. NASA also focuses on charting the best route of discovery and gathers the benefits of Earth and

space exploration on behalf of the United States, within this directorate. This organization also applies NASA's study of Earth to the exploration of the Solar System.

Exploration Systems: The NASA Exploration Systems Directorate manages research and technology which enables sustained and affordable human and robotic exploration. This includes the biological and physical research necessary to ensure the health and safety of a crew during long space flights.

Space Operations: The Space Operations Directorate directs and launches space communications, as well as the operation of integrated systems in low-Earth orbit and beyond.

Continue reading to gather additional information to further define what partnering goals may be realistic and available to your organization. Read NASA's publications, including Spinoff, which tracks many opportunities for strategic alliances. NASA Tech Finder is one stop shopping for commercial and private users to perform simple or advanced searches, and request more detailed information for technology and licensing opportunities, past success stories, and featured technologies leads. Dozens of searchable databases are also on line for your perusal. You can visit all of them in one location by viewing the IPP Searchable Databases.

Each year, NASA also sponsors the Centennial Challenge Competitions. Throughout the year, new events are introduced and updated, and competitors test their knowledge in a variety of circumstances.

3. **Capture the Commonalities:** *Identify areas of mutual interest between NASA and your organization.*

NASA considers several key qualities when evaluating factors for ideal partners. While many characteristics contribute to your organization's candidacy for partnership, your technology and innovation developments and how they match against NASA's technology and innovation needs are most valuable. Also great consideration is given to what items your organization can offer in the construction of a solid partnership. NASA considers all research potentially vital to the success of the Mission Directorates, including what qualities your team can bring to a partnership.

A note on technological and innovation maturity: The Agency rates development based on levels of readiness. An organization in possession of research, but without a tangible invention may still meet an integral technological need. At NASA, the evolution of a basic idea is documented throughout a series of detailed qualifications. Once a concept is evaluated in its infancy, an evaluation continues through the life span and a reporting made at each different step through well defined levels of maturity.

From simple ideas and observations, to prototypes, and "flight proven through successful mission operations," the Agency considers all possible innovation technologies which may potentially match a NASA Mission Directorate's needs.

4. **Create Collaboration:** *Identify what elements your organization can bring to a partnership with NASA.*

NASA maintains six main partnering tools an organization can use as a vehicle towards collaborating with NASA. The Agency strives to establish alliances based on mutual benefits, as well as the strength of an organization's capabilities.

The manner in which an organization can contribute to the Agency is also weighted when an organization comes together to work with NASA in a partnership. Once your team can identify its strongest qualities, as they match against NASA's needs, together, the two parties can begin to examine the scope of a potential agreement. Consideration to the schedule, cost and risks associated with the new technology or innovation are all be considered. Review the Agency's Vision for Space Exploration for more information on how these priorities are valued and vital to the success of a partnership. Demonstrating a strong level of commitment towards a new endeavor with NASA is of great indicator of an organization's intent to move forward.

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NASA is in a position to help facilitate growth of a technology, and IPP does maintain the IPP Seed Fund, which enhances NASA's ability to meet mission technology goals by providing seed funding to address barriers and initiate cost-shared, joint-development partnerships.

In all instances, however, NASA values a partnership in which an organization offers unique contributions and support to the success of the alliance. An organization's contribution to NASA, in kind, via financial investment, as well as intellectual commitments including specific innovation creation and new technology; all of which helps the Agency realize the needs of the Mission Directorates are of the greatest value to a partnership.

Even if your organization doesn't have a specific product or innovation which has achieved mature development, partnering with NASA may still be of interest to you and the Agency. NASA considers all research potentially vital to the success of the directorates. For instance, there are plenty of opportunities for small businesses interested in exploring partnerships with NASA. NASA's Tech Source provides information on current and recently completed SBIR/STTR Phase 2 projects funded by NASA. The purpose of this site is to facilitate the transition of resulting technologies into further development, investment and utilization for NASA mission programs and commercial applications. You may also view the NASA SBIR and STTR Success Stories which are available online.

5. **Evaluate the approach:** *Understand how a partnership may be mutually beneficial; examine NASA for a sense of how the Agency operates.*

NASA values both "Technology Infusion", the process of introducing new technology and discovery to the Agency, as well as "Innovation Transfusion." Spinning information both "in" and "out" of NASA, is equally vital to the overall success of NASA's missions. Transfusion encourages broader use of NASA derived technologies in the American industrial and academic communities. Infusion, a dynamic, ongoing process, allows the Agency to strategically identify and bind technical needs with solutions. Read more in IPP Director Doug Comstock's article NASA's Innovative Partnerships Program: Matching Technology Needs with Technology Capabilities.

By carefully evaluating how your organization's goals, ideas and innovations match against the Agency's needs, effective communications with representatives from NASA's IPP program can be conducted. The influx of new information and technology from outside of the Agency offers scientists, astronauts and researchers access to very precise, detailed areas of work. An organization hoping to match technology capabilities with NASA's technology needs can expedite the partnering process by becoming familiar with the missions.

NASA, with the help of experts in the IPP program, also facilitates licensing and management of intellectual property. IPP has originated and negotiated licenses, as well as related partnerships with the private sector for more than 1,600 products, all of which are documented in NASA's Spinoff publication. The program has propelled new technologies towards commercialization for a multitude of products in the private sector, while championing ground breaking achievements in medicine, transportation, public safety, consumer goods, agriculture, environmental resources, computer technology, and many other areas of business. Some centers, like the Jet Propulsion Lab located within the California Institute of Technology lead the way in this specified area of development.

IPP licensing terms are negotiated on a case by case basis, although technology fields are generally defined as narrowly and exclusive licenses are avoided. NASA, along with other federal research agencies, must

foster the technology application from its field centers to academia, other government organizations, and industry. View the NASA Technologies Available For Licensing. Each NASA center licenses the technologies developed at their center and the process requires inventors, working on behalf of the Agency including civil servants and contractors, to submit their work in detail in a New Technology Report (NTR).

NTRs are used in the commercial assessment of any new invention, a procedure critical to the patenting of any projects reported via a NTR. The process is managed by NASA IPP. The reports are also used to provide the latest developments for NASA's monthly magazine, Tech Briefs. NASA's Innovative Partnerships Program has helped to advance science and innovation throughout the United States, and all over the world, and the successes are captured in the magazine.

6. **Find a match:** *Match your organization's strengths against NASA's missions.*

NASA's Innovative Partnership Program facilitates agreements which allow the Agency to identify, assist, and ultimately, collaborate with industry leaders from all over the world. Evaluating the current status of your technology against the work NASA is executing within missions will help reveal where the strong matches occur between technology needs, and your organization's technology capabilities.

Endless opportunities exist for technology and innovative teams from many different sectors to work with NASA in the never ending quest for new discoveries. Your organization could potentially be considered a candidate for joint development if the Agency finds interest in furthering the growth of an innovation, piece of information, or an idea you possess. Regardless of the direction information transfers, setting realistic personal and professional goals for the work your team hopes to accomplish within a partnership, will give your team an advantage. Many organizations have navigated the steps towards successful partnerships with NASA. Through their unique innovations, examples and lessons from working with the Agency, you, too, can begin a productive conversation and potentially develop a solid relationship.

Ideally, NASA IPP representatives at each center would like to hear from your team once a proposal for a potential partnership can be drafted. The best partnership solutions bring together an organization's accomplishment with the technology and innovation NASA needs most.

7. **Pursue a path to partnership:** *Reach out to NASA according to your goals.*

This section provides a summary of contacts and available partnering mechanisms which can be useful tools to assist organizations trying to identify an appropriate channel of partnership within NASA.

Once you have completed the six steps outlined above, the IPP Points of Contact are a good start to initiate discussion of your ideas for partnership with NASA. The six steps are summarized as follows:

Prepared for a NASA partnership: Know your organization's needs.

Find a fit: Learn what NASA can offer.

Capture the Commonalities: Identify areas of mutual interest between NASA and your organization.

Create Collaboration: Identify what elements your organization can bring to a partnership with NASA.

Evaluate the approach: Understand how a partnership may be mutually beneficial; examine NASA for a sense of how the Agency operates.

Find a match: Match your organization's strengths against NASA's missions.

You should also understand what the potential Partnering Mechanisms are for partnering with NASA and identify which ones may be most relevant to the partnership you are interested in pursuing with NASA.

Please send an email to adrienne.j.ross@nasa.gov with any questions, comments, concerns or problems you have using the guide, "How to Partner with NASA". If you need any additional information, please don't hesitate to ask.

Thanks for your interest in NASA. We look forward to doing business with you.