THE INNOVATION CATALYST

AUGUST 2023

IN THIS ISSUE:

TECH TRANSFER TIP

with GSFC SBIR/STTR Project Support Specialist Marcus Payne:

Did you know that in 2022, NASA's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs allocated a whopping $33 million to support small businesses working on research and development projects? These projects directly contribute to the success of Goddard missions, projects, and research.

UPCOMING EVENTS:

- **INNOVATOR HOUR**
  TUESDAY, AUGUST 15, 2023
  1:00 - 2:00 P.M.

Register Now!

STRATEGIC PARTNERSHIPS OFFICE

NP-2023-7-117-GSFC

PGCTC panel, from left to right, Jennifer Perez, Darryl Mitchell, Nipa Shah, Congressman Glen Ivy, Kush Patel and Tracy Dorsey, Photo Credit: Prince Georges County Economic Development Corporation (PGEDC)

Partnering with Goddard

Prince George's County Business Leaders Discover How They Can Work and Partner with Goddard

Darryl Mitchell, GSFC Strategic Partnerships Office Chief, Photo Credit: Prince Georges County Economic Development Corporation (PGEDC)

Strategic Partnership Office (SPO) Chief Darryl Mitchell highlighted a dynamic panel discussion and question and answer session with members and guests of Prince George's County Tech Council (PGCTC) to make them aware of the unique opportunities to partner with Goddard. Hosted by Prince George's County Economic Development Corporation (PGEDC), the "Partnering with NASA Goddard" event provided Mitchell with the perfect backdrop to explain how and why they can partner with the agency. The standing room only event took place on June 27 at the PGEDC offices in Largo, Maryland.

Among the PGEDC officials to present was David Iannucci, its president and CEO. Iannucci explained that their organization's mission is to attract new businesses, stimulate private investment, encourage expansion and retention of existing companies, and provide businesses with workforce training and financial assistance. Aside from Goddard, PG County is home to several other major federal and commercial enterprises. Some of those include the National Oceanic and Atmospheric Administration, Joint Base Andrews, FedEx Field, Six Flags America, and National Harbor. "While we are excited about these and many other projects," said Iannucci, "there are tremendous opportunities for small businesses in the county to work and grow with Goddard."

"On behalf of the Goddard team and Goddard center management, I want express how excited we are to be here today," said Mitchell to begin the event. "I met this morning with Makenzie Lystrup, our center director and she reiterated

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Kevin Simpson (Left) City of Greenbelt Economic Development Manager, speaks with GSFC Strategic Partnerships Office Chief Darryl Mithcell (Right), Photo Credit: Prince Georges County Economic Development Corporation (PGEDC)

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how very strongly she wants to work more with Maryland, PG County, and the local government to build a strong relationship moving forward."

As the home of the nation's largest organization of engineers and scientists who develop new technology to study the Earth, the Sun, our solar system and the universe, Mitchell set the tone of the two-hour event. He shared with the audience what NASA Goddard does, what technolgy transfer is, and how businesses, small and large, can take advantage of that opportunity. He noted that many companies and organizations lack awareness of Goddard programs and the many opportunities and benefits they offer to businesses.

Mitchell described NASA's Tech Transfer Program, "as an opportunity for businesses to benefit from the amazing research that is going on at Goddard or any of the NASA centers. There is a tremendous amount of research and development that is going on at Goddard, so there are a lot of technologies we have developed that companies like yours can leverage to help your business. We make a lot of those technologies available to use in a licensing arrangement and that is what the Tech Transfer Program is all about."

Mitchell stressed that one of his main takeaway messages from this event was for business owners and entrepreneurs to know that patented technologies developed at NASA are available for licensing. That involves not only hardware-related technologies but software as well.

"We also have some special licensing packages called Startup NASA specifically targeted to small startup businesses," he said. "The bottom line for SPO is to help small businesses grow."

Mitchell also highlighted partnerships with the agency through a Space Act Agreement and Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) grants. "Our job at SPO," he emphasized, "Is to interact with you at the entry point to help you find the contacts at Goddard – or one of our satellite campuses – work with you, and to get you to where you want your business to be."

Among the tech transfer success stories Mitchell shared with the audience was NASA's Commercialization Training Camp. At the workshop, he explained, retired players from professional sports leagues like the National Football League (NFL) and the Women's National Basketball Association learn about the technologies available in NASA's portfolio and how they could take advantage of different licensing agreements to start their own business.

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Photo Credit: Prince Georges County Economic Development Corporation (PGEDC)

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"Many athletes, including Obafemi Ayanbadego who played with the Baltimore Ravens, have pursued successful careers as entrepreneurs after retirement," noted Mitchell. "The goals of our partnerships with professional associations like the NFL are to provide their members with knowledge of NASA programs and technologies available for business creation."

Mitchell was later joined in a lively panel discussion about working with Goddard by Congressman Glenn Ivey, who represents Maryland's Fourth District, which includes PG County and Goddard. "NASA Goddard is certainly one of the biggest and best employers that is anchored in the county. I have a very strong interest in making sure that we grow not only the number of businesses that we have in the county but also the number of the companies that do work for them," he stressed. "I want to make sure that we do everything that we can do to help that."

Also representing Goddard on the panel was Nipa Shah, deputy director for Acquisitions in the Office of Procurement and Jennifer Perez, senior small disadvantaged business specialist in the Small Business Office. Both provided advice on how to find the right partnership or procurement opportunities with Goddard. Rounding out the panel was Kush Patel, CEO of Relative Dynamics, and Tracy Dorsey, vice president of the Space Engineering Division, Space, and Missions Solutions, at KBR, Inc., who both have existing partnerships with Goddard. The two business leaders described their experience and provided tips on how to approach working with Goddard.

Many, including Husein Sharaf, CEO of Cloudforce, a cloud computing services company located in the county, noted that hearing about available partnering and licensing opportunities with NASA Goddard was a very consequential message for small businesses. "This is an important conversation," said Sharaf, who also serves as chair of PG County Tech Council. "Understanding how to leverage resources here in the county is super important to growing businesses like mine that has grown from two employees in 2010 to 60 today. We are adding new employees every week. NASA Goddard is a huge resource for businesses."

"On behalf of the PG County Tech Council, I want to thank Darryl Mitchell for coming out and speaking with us and to all the individuals who showed up at this event to learn more about what NASA Goddard is doing right here in Prince George's County," concluded Mayank Kapur, director at PGEDC and panel moderator. "We want to make sure that the entire PG business community knows about the amazing opportunity to work with Goddard. As you heard, there is a lot of technological advancements and innovation that is happening at Goddard, which small businesses can take advantage of."

THE STRATEGIC PARTNERSHIPS OFFICE (SPO) PRESENTS

INNOVATOR HOUR

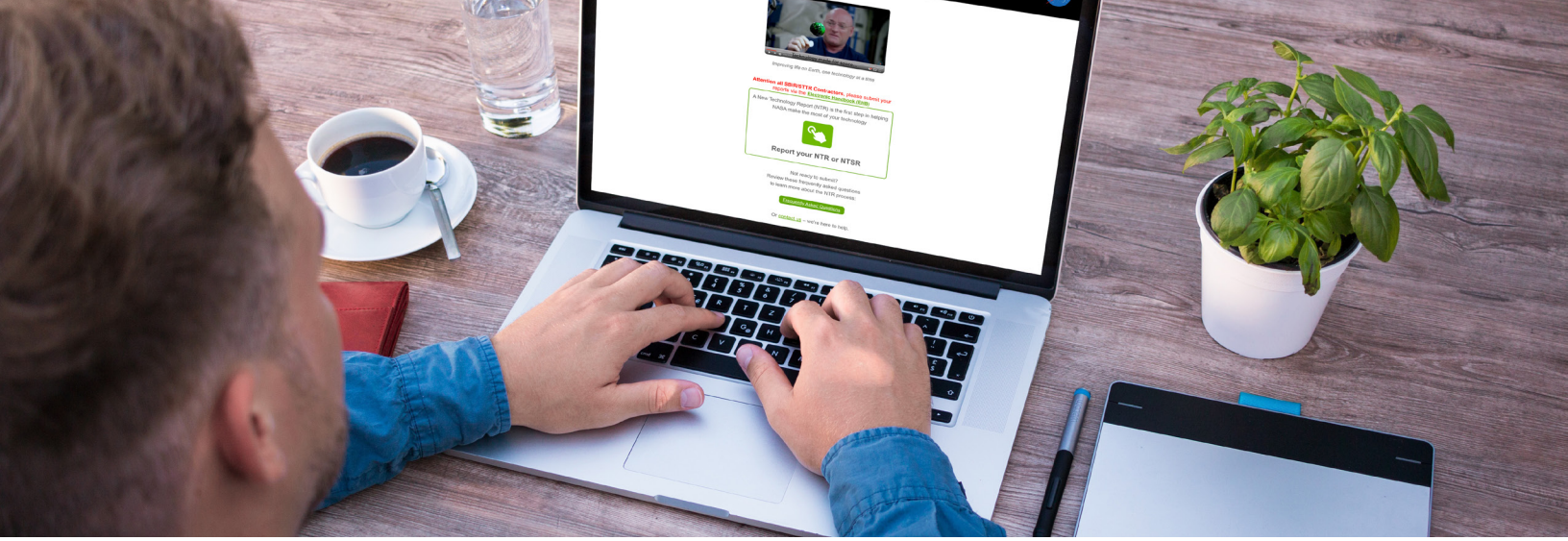
Have questions about protecting your innovation?
Want to learn more about how to submit New Technology Reports?
Have general questions about technology transfer and partnerships?
Sign up for a one-on-one 20-minute timeslot with a SPO representative.
Meetings will be held virtually via Microsoft Teams.

NEXT SESSION: **TUESDAY, AUGUST 15, 2023**
1:00-2:00 P.M.

Available Timeslots
1:00-1:20 P.M.
1:20-1:40 P.M.
1:40-2:00 P.M.

How to Sign Up

To register for the upcoming session and secure your timeslot, complete the registration form.



Why Should You File an NTR? A Cautionary Tale

In the early 1970s, Manohar Deshpande designed, built, and tested an antenna called an End Launcher for a Cylindrical Waveguide that could simultaneously track multiple satellites, aircraft, and missiles over a wide area. Hearing about the design, a California-based contractor, contacted Deshpande and asked for more information, including blueprints and documentation. Excited that someone was interested in his antenna design, Deshpande sent all the information to the company. That was a mistake. A few months later a friend showed Deshpande a magazine article describing how that contractor had designed and built a similar antenna.

"After I initially sent them all the information, I never got any feedback from them or anything," lamented Deshpande, who today is an aerospace science and technology engineer at Goddard. "A few years later, I was attending a conference and went up to that contractor's booth and I saw a model of what appeared to be my antenna design. They made a few changes to make it fit into their specifications, but it was basically my waveguide. They stole my design. I learned my lesson the hard way. Always file an NTR (New Technology Report) and, if advised, apply for a patent."

"As Manohar discovered, if you don't submit an NTR, then after explaining your technology to other people outside NASA, you cannot claim you are the originator of the technology or idea," explained Josh Levine, technology manager at Goddard's Strategic Partnership Office (SPO). "Once you talk with them, unfortunately, those people can see the merit of the invention and develop it on their own and you cannot claim that you were the first person to do that. That is why it is very important that you fill out an NTR as soon as you get an idea because the date on the NTR shows that you have a claim on your technology."

Filing an NTR is the first step in an important process for identifying novel discoveries and protecting NASA's intellectual property. It ensures that an inventor's work has a chance to make a difference in the world. Simply put, if NASA does not know about a new technology or software, the agency can't share or commercialize it effectively.

NTRs also are a requirement. As mandated under U.S. law, every NASA civil servant and contractor needs to fill out an NTR for any new technology formulated or conceived at NASA. As prescribed under the National Aeronautics and Space Act, the Stevenson-Wydler Technology Innovation Act of 1980, the Bayh-Dole Act of 1980, and the Federal Technology Transfer Act of 1985, NASA is required to ensure that innovations developed for exploration and discovery are broadly available to the public and the Nation. An NTR is the first step.

"Two other reasons why we file an NTR are, one, so we can catalog all the technology on campus and, two, so we can evaluate it for commercialization," said Levine. "We only patent things that we believe can be actively commercialized by the private sector. Either I or another technology manager at SPO will work closely with patent attorneys at Goddard's Office of the General Council to evaluate the NTR and make decisions regarding patent filing, release of software, and, whether and how to pursue technology transfer."

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After filing an NTR, one of the first things Levine or another tech manager at SPO will do is assess the commercial landscape of the innovation and if anyone else has invented or developed a similar technology. That is the jumping off point between assessing the difference between a NASA-developed technology and a commercial off-the-shelf technology.

"When I first went to work at NASA, I just thought an NTR was just submitting a report, but I know better now," said Deshpande, who since 2008 has applied for and received five patents for his inventions with the U.S. Patent and Trademark Office (USPTO). "Once I submitted an NTR, somebody from SPO followed up and wanted to know, 'What is the advantage of this technology and what is the current status of the technology?' I chose to submit a patent application when SPO concluded that the invention was suitable for filing a patent after considering all of the responses to these questions."

If SPO recommends a technology should be patented, the inventor will then work with the Goddard patent attorneys to put together an application for patent for the USPTO. "The process was really good," recalled Berhanu Bulcha, PhD, a research engineer at the Microwave Instruments and Technology Branch at Goddard, who has also applied for five patents. "They usually start with a draft application. In my case, I prepared a three-page document with an introduction, background, the research surrounding the work and the advantages of the technology, which is divided into different subsections. What they do is convert that into legal terms and try to avoid redundancies in the application."

Both Deshpande and Bulcha said this part of the process required ongoing conversations and exchange of draft documents and information with Goddard's patent attorneys. After about four-to-six weeks, the patent attorneys were able develop a good draft for review. Once Deshpande and Bulcha felt the document was an accurate description of the technology and the attorneys believed they had inserted the required legal language, they then had a polished patent application, which was then filed with USPTO.

"The important thing is that when you apply for a patent, your technology is protected," said Levine. "Once, a Goddard patent attorney has filed your patent with USPTO, the technology is claimed and assigned to NASA, and you are recorded as the inventor of the technology."

What is it like to work with a Goddard patent attorney who files your patent with USPTO? The Innovation Catalyst caught up with ***Matt Johnston****, Goddard's lead patent attorney. Next month in the September newsletter, read about what the process is like, how to work with a patent attorney, and what you need to do to get your invention patented.*

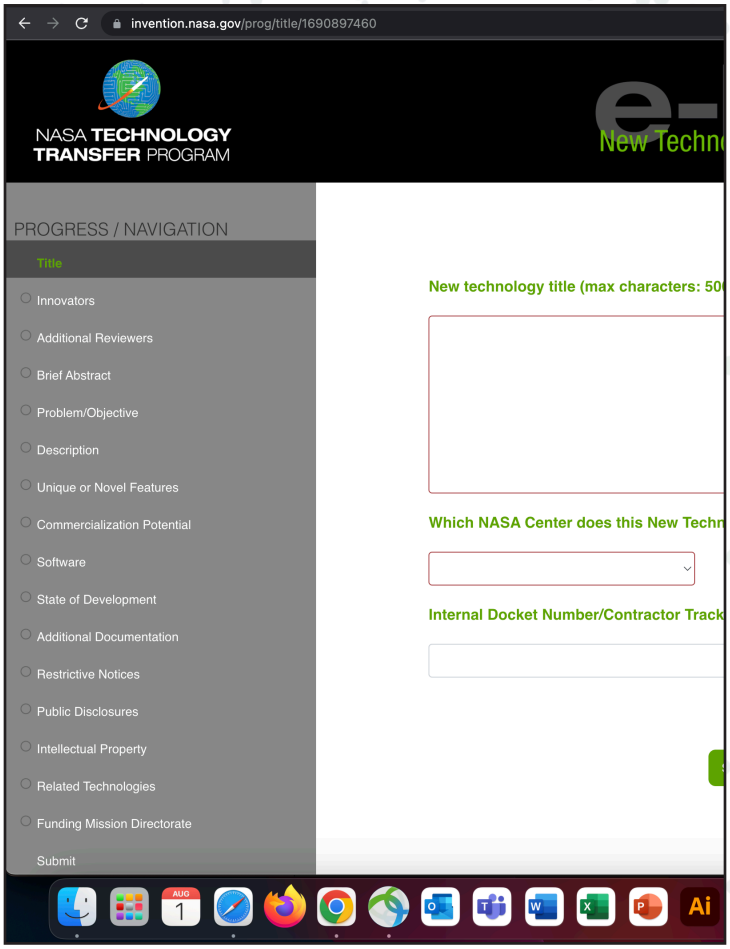
Myth	-VS-	Reality
NASA inventors should not submit an NTR if their innovation is in the conception phase.		An inventor should submit an NTR as soon as possible after idea conception to provide optimal opportunity for the Strategic Partnerships Office (SPO) to work with the Office of Patent Council (OPC) to protect the new innovation.
If an invention was developed by a contractor, the contractor should submit the NTR.		An invention developed by NASA either by contractors or civil servants, must by NASA policy, be disclosed by submitting an NTR.
Goddard engineers don't need to submit NTRs related to software.		Software development is a core competency for Goddard and an NTR is required with each version change.
Inventors should not submit an NTR if they question the commercial viability or the patentability or an invention.		Inventors should submit an NTR for any innovation. SPO or OPC will evaluate commercial potential and patentability respectively.
A NASA patent can only be licensed by a single company.		A single patent can be licensed for multiple companies for multiple uses. SPO has experts will versed in such licensing strategies.

Filing an NTR Made Easy: A Step-by-Step Guide

Submitting a New Technology Report (NTR) is simple using e-NTR, NASA's electronic Technology Reporting System. Acceptance of the NTR is the final step of the submission process. For anyone who has not filed an NTR or has had difficulties in the past using NASA's e-NTR, here is a step-by-step guide to help you though the process.

Filing an NTR begins by going to the e-NTR webpage at https://invention.nasa.gov/ and clicking the big box in the center of the page that says, "Report your NTR or NTSR." An NTSR is a New Technology Summary Report used by a contractor doing work with NASA under a cooperative agreement. Clicking that box will take you to the "Sign In" page, where you can easily gain access to the system by clicking "Login" by using your NASA credential/PIV card inserted in your laptop. (You can also login and register as a guest if you like.) After clicking "Login" with your NASA credential/PIV card, e-NTR will automatically recognize you. You can now click one of three choices, "Report" to submit a new NTR, "Dashboard" to access and review a previously filed NTR, or "Address Book," which stores an inventor's contact information for a future NTR submission.

By clicking "Report," it will first ask you if you are "Reporting" a new NTR or a new NTSR. After clicking "NTR," the system will create a new report number for your NTR. Then hit "Continue" in the blue box below. You have now come to the main Progress/Navigation page where you will submit all the relevant information about your invention. There are 15 fields on the left-hand side of the page that all need to be filled out to the best of your ability: Innovators, Additional Reviewers, Brief Abstract, Problem/Objective, Description, Unique or Novel Features, Commercialization Potential, Software, State of Development, Additional Documentation, Restrictive Notices, Public Disclosures, Intellectual Property, Related Technologies and Funding Mission Directorate. You can fill out the 15 fields in any order that you want.



Josh Levine, technology manager at Goddard's Strategic Partnership Office (SPO), advised: "Of the 15 fields, there are basically three that are the most significant, and you should pay the most attention to. Unique or Novel Features is a particularly significant field for SPO since it demonstrates how you solved a technological issue and enables SPO to assess the value proposition, or commercial potential, of your creation. Commercialization Potential is a further crucial area to take into account, where you can

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describe the kinds of businesses you believe might be interested in your idea. Problem/Objective is the third most crucial field because it allows you to explain why you produced this new technology rather than simply purchasing it off the market.

Levine also feels Additional Documentation is another key field that an inventor should pay close attention to because this is where an inventor attaches White Papers, PowerPoints, articles, or other written documentation to the application. "One of the things that I really liked about the e-NTR is the Additional Documentation field," he said. "I always love reading those because it is really another detailed way to show why an inventor has developed the technology itself."

Most of the other fields in the e-NTR require filling out basic information about an inventor's technology or answering simple yes or no questions. Berhanu Bulcha, PhD, a research engineer with Goddard's Microwave Instruments and Technology Branch, who has submitted five NTRs and already received a patent for one of those technologies, said it has taken him about two hours to completely fill out each NTR.

"Actually, the whole process of submitting an NTR is very natural for an inventor, because in most cases, the majority of your documentation work has already been done," noted Bulcha. "The fact is an innovation starts an idea. As that idea matures, you present it to your colleagues at Goddard, or a system engineer or project manager in the form of a PowerPoint or a White Paper description. Or, as in the case of applying for IRAD (Internal Research & Development Program) funding, you have already documented your project in detail. So, to be honest, most of your documentation work may have already been done and all you have to do with the NTR application is answer all the questions and perhaps reformat or rewrite some of your previous documentation."

Levine stressed that while filing an NTR may sound time-consuming, it really isn't. The purpose is also to get as much accurate information about the technology as possible in one place so that the technology managers at SPO can fully understand and ascertain the commercial application of a piece of technology. Ideally, innovators will complete the NTR in full, but Levine says, "we can always add something on to it later in the process. You can always update your application with more documentation. And if you want help with it, you can always call us at SPO and help with certain fields."

Once you have answered all the questions and provided all available information, you can then hit the "Submit" button at the bottom of the page to automatically upload your information into the NASA Technology Transfer System. It will then be reviewed and evaluated by a SPO technology manager for its commercial potential. Only NASA authorized technology transfer personnel have access to the system. The data in the system is not accessible by other civil servants, contractors, or the public. Once you have submitted your application, and is reviewed by SPO, you will receive an e-mail from NASA informing you that either your application is complete or more information is needed.

"In my case, after I filed an NTR, somebody at SPO reached out to me within a few days asking for more information," said Bulcha. "It took a little bit of time for SPO to review all the questions that I answered, but the answers to those questions were important for SPO to help assess whether my technology can be commercialized."

"Don't be intimidated by the amount of work it takes to fill out an NTR. Take your time and complete it," stressed Levine. "Always remember that additional documentation is welcome and you can always upload information or documentation later, and we can re-evaluate the application at that time. If you are serious about commercializing your technology, you'll have to give us enough information in order to make that determination about whether to pursue a patent."

*If you are having a technical problem filing an NTR, contact **Scott Leonardi** at SPO at robert.s.leonardi@nasa.gov or 301/286-4698. If you have a problem answering any of the fields or questions in the application, contact **Josh Levine** at joshua.h.levine@nasa.gov or 301/286-6705.*