

Office of
Small Business Programs (OSBP)

where small business makes a **big** difference



OSBP Newsletter
Spring 2016



Industry Achievement at NASA

Truphelia M. Parker, Program Specialist

NASA Office of Small Business Programs

Ever since fiscal year (FY) 2008, the NASA Office of Small Business Programs (OSBP) has presented the NASA Small Business Advocates Awards (SBAA) and Small Business Industry Awards (SBIA) to deserving civil servants and companies who have worked hard to support the Agency's Small Business Program and its missions. In the FY 2015 cycle, a new category was added to each program: the Small Business Technical Advisor/Coordinator of the Year was added to the SBAA program, and the Mentor-Protégé Agreement of the Year was added to the SBIA program. All SBAA and SBIA Center-level awards are presented at their appropriate sponsoring Center. The FY 2015 SBIA Agency-level awards were presented at the 2016 spring NASA Industry Forum meeting at Headquarters on March 8. Making the awards presentations were NASA Deputy Associate Administrator Lesa Roe and OSBP Associate Administrator Glenn A. Delgado. To learn more about NASA's small business awards programs, visit <http://www.osbp.nasa.gov/award.html>. Please join OSBP in congratulating these individuals and companies!

» **FY 2015 NASA Agency-Level Small Business Advocates Awards (SBAA) Winners**

Small Business Specialist of the Year

Joyce C. McDowell
Kennedy Space Center

Small Business Technical Advisor/Coordinator of the Year

Ronald Young
Armstrong Flight Research Center

Procurement Person of the Year

Lisa M. Harvey
Langley Research Center

Technical Team of the Year

Solutions for Enterprise-Wide Procurement (SEWP) Team

*Darlene Coen, LaShawn Faimster,
Darlene Harkins, Theresa Kinney,
Joanne Woytek*
Goddard Space Flight Center

Program/Science/Research and Development Person of the Year

Robert J. Devlin
Marshall Space Flight Center

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MISSION STATEMENT

To advise the Administrator on all matters related to small business, to promote the development and management of NASA programs that assist all categories of small business, to develop small businesses in

high-tech areas that include technology transfer and commercialization of technology, and to provide small businesses maximum practicable opportunities to participate in NASA prime contracts and subcontracts.

VISION STATEMENT

The vision of the Office of Small Business Programs (OSBP) at NASA Headquarters is to promote and integrate all small businesses into the competitive base of contractors that pioneer the future of space exploration, scientific discovery, and aeronautics research.

» FY 2015 NASA Agency-Level Small Business Industry Award Winners

Small Business Prime Contractor of the Year

Dynetics Technical Services, Inc.
Marshall Space Flight Center

Small Business Subcontractor of the Year

Arcata Associates, Inc.
Armstrong Flight Research Center

Large Business Prime Contractor of the Year

Teledyne Brown Engineering, Inc.
Marshall Space Flight Center

Mentor-Protégé Agreement of the Year

Hamilton Sundstrand Space Systems International, Inc. (Mentor)

Mathematical Research, Inc. (Protégé)
Johnson Space Center

» FY 2015 NASA Center-Level Small Business Industry Award Winners

Center-Level Small Business Prime Contractors of the Year

Monterey Technologies, Inc.
Ames Research Center

InuTeq, LLC
Armstrong Flight Research Center

Science Engineering Associates, Inc.
Glenn Research Center

LJT & Associates, Inc.
Goddard Space Flight Center

Malin Space Science Systems, Inc.
Jet Propulsion Laboratory

Logical Innovations, Inc.
Johnson Space Center

Chenega Security & Support Solutions, LLC
Kennedy Space Center

Brandan Enterprises, Inc.
Langley Research Center

Healtheon, Inc.
Stennis Space Center

Center-Level Small Business Subcontractors of the Year

AerospaceComputing, Inc.
Ames Research Center

MSM Group, Inc.
Glenn Research Center

Adcole Corporation
Goddard Space Flight Center

Bastion Technologies, Inc.
Johnson Space Center

Olsen Associates, Inc.
Kennedy Space Center

Willbrook Solutions, Inc.
Marshall Space Flight Center

Mobomo, LLC
NASA Shared Services Center

Global Contracting, LLC
Stennis Space Center

Center-Level Large Business Prime Contractors of the Year

Jacobs Technology, Inc.
Armstrong Flight Research Center

Parsons
Goddard Space Flight Center

Exelis, Inc.
Jet Propulsion Laboratory

Raytheon Company
Johnson Space Center

Jacobs Technology, Inc.
Kennedy Space Center

Jet Propulsion Laboratory
NASA Management Office

Lockheed Martin Corporation
Stennis Space Center

Mentor-Protégé Agreements of the Year

Honeywell Technology Solutions, Inc. (Mentor)

Advocates in Manpower Management, Inc. (Protégé)
Goddard Space Flight Center

Teledyne Brown Engineering, Inc. (Mentor)

Martin Federal Consulting, LLC (Protégé)
Marshall Space Flight Center »

» NASA Center Highlight NASA Armstrong Flight Research Center

Robert Medina, Small Business Specialist

NASA Armstrong Flight Research Center

“Flight Opportunities Program”

The Flight Opportunities Program within the Space Technology Mission Directorate (STMD) helps fulfill the strategic objective of transforming NASA missions and advancing U.S. spaceflight capabilities by fostering operational readiness and infusing innovative space technologies into future activities. Through the Flight Opportunities Program, STMD selects promising technologies from industry, academia, and Government and tests them in a relevant

environment through flights on commercial launch vehicles. This approach takes technologies from a laboratory environment and gives them flight heritage, simultaneously stimulating the development and use of U.S. commercial spaceflight capabilities and infrastructure.

For flight demonstrations performed under the program, Flight Opportunities procures commercial flight services on reusable launch vehicles. The commercial nature and reusability of the launch vehicles are emphasized in order to support the U.S.

space industry and to encourage launch vehicle technological innovation, responsiveness, and cost effectiveness.

The NASA Armstrong Flight Opportunities Program Team made significant contributions in fiscal year (FY) 2015 to the NASA Small Business Program by proving that small business commercial suborbital launch providers are capable of supporting NASA technology flight payloads or missions. In FY 2015, four small business launch providers conducted and flew seven successful flight campaigns. The small business were Up Aerospace, Masten, World View, and Near Space. » [Continued on next page](#)

» Small Business Specialist Spotlight

Felicia Bell, Section Manager

Jet Propulsion Laboratory

I was born and raised in Northern California. I am the third of four children. My mom was from Louisiana and my dad was from Texas. My mom was a registered nurse and my dad was an executive at IBM; both stressed the need for education and hard work. I received my bachelor's degree in finance from one of the leading Historically Black Colleges and Universities (HBCU), Howard University. I received my master's degree in industrial engineering from Clemson University.

I worked my way through my undergraduate studies with various jobs in fast food, retail, and in corporate and Government jobs. My first job after graduating from college was as a purchasing agent for the Department of Justice. I later moved from purchasing to contracts management.

My time at Howard University exposed me to the struggles of HBCUs and small business enterprises. In my capacity as a Contracts Manager, I have served as a Small Business Liaison Officer (SBLO)

on different projects within different industry organizations from healthcare to construction. I believe my contracts background has enabled me to be more effective in performing the duties of a SBLO.



*Felicia Bell, Section Manager
Jet Propulsion Laboratory*

I recently left the number-one engineering and construction company in the United States to assume the role of manager of the Small Business Programs Office (SBPO) at the Jet Propulsion Laboratory (JPL) in Pasadena, CA. NASA/JPL's small business program has had a long-standing reputation of success, and our team is dedicated to the continuous efforts of cre-

ativity and innovation to help small businesses increase their award successes at NASA/JPL. We are expanding the awareness of our small business program through newsletters, more outreach events and participating in road shows like the upcoming NASA HBCU Technology Infusion Tour for 2016.

One of my favorite parts of serving in the capacity of a small business specialist is

understanding the scope and capabilities of small businesses and being able to successfully match their skill sets with the needs and objectives of NASA/JPL. In addition, I like being part of the process through which a company grows and flourishes after successfully securing new work at NASA/JPL. In my own personal travels, I like to find small businesses that demonstrate the essence of the place I am visiting. I have found such businesses to be inviting, intriguing, and friendly—they want you to come back there again.

In my opinion, one of the biggest issues that faces small businesses is the perception that there are limitations to their ability to compete against the resources larger organizations can provide. In this day and age where technology is constantly evolving and time is of the essence, small businesses sometimes struggle to maintain a competitive edge in keeping pace with the larger companies. One of the ways the NASA/JPL small business program works to dispel this type of perception and enhance relationship-building is through our product demonstration program, where small businesses can showcase their products or services directly with JPL projects and end users. The JPL SBPO is also increasing its efforts in more face-to-face meetings with small businesses to help develop relationships and trust toward meeting the goal of awarding new business in support of NASA's mission. »

» NASA Center Highlight (Continued)

The successful flights by these small businesses support the Flight Opportunities Program's decision to open up opportunities for small businesses to participate in the development of a new commercial launch industry. This decision will provide frequent flight opportunities for technology payloads on suborbital reusable launch vehicles (sRLVs) that are capable of flying to various altitudes, including altitudes that are above 100 kilometers but remain suborbital. This is significant because in the current commercial market, there are more small businesses than large businesses that have flight-qualified vehicles, and currently, only small businesses are flying technology payloads.

Of those seven successful flight campaigns, the most significant was Masten's

test flights for Mars Landing Technology. Engineers at NASA's Jet Propulsion Laboratory (JPL) in Pasadena, CA, have been developing cutting-edge technologies that will enable spacecraft to land at a specific location on Mars—or any other planetary body—with more precision than ever before. In collaboration with Masten Space Systems in Mojave, CA, engineers at JPL have recently tested these technologies on board a high-tech demonstration vehicle called the Autonomous Descent and Ascent Powered-flight Testbed (ADAPT). ADAPT is a test system built on Masten's XA-0.1B (Xombie) vertical launch, vertical landing reusable rocket. The Xombie platform provides a good approximation of Mars-like descent conditions through high-speed

descent rates at low altitudes. Two sophisticated lander technologies were recently tested onboard this rocket: Terrain Relative Navigation with a sensor called the Lander Vision System (LVS) and the Guidance for Fuel-Optimal Large Diverts (G-FOLD) algorithm. ADAPT had two successful test flights, one on December 4, 2014, and the second on December 9, 2014. In both cases, the rocket reached a maximum altitude of 1,066 feet (325 m) before beginning its descent.

At NASA Armstrong, we strive "To separate the real from the imagined..." and "To fly what others only imagine." Small businesses in support of the Flight Opportunities Program have and will continue to contribute to Armstrong's success to achieve this vision. »



AA's Corner



Glenn A. Delgado
*Associate Administrator
NASA Office of Small
Business Programs*

As I start off the spring edition of the “AA’s Corner,” I would like to thank the Agency Senior Management, the Center Senior Management, the Small Business Specialists and the Agency Procurement Officers for helping the Small Business Program exceed our FY 2015 goal of 17.0 percent, with an actual achievement of 17.4 percent. The total small business prime dollars obligated in FY 2015 was \$2.5 billion, which was an increase from our FY 2014 obligations.

The colder winter months are finally leaving us and spring is on the horizon. The winter was filled with innovation, and our office has been busy with creative new ideas for the Small Business Program. For example, Program Manager Tabisa Kalisa is coordinating NASA’s new pilot initiative to support Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MSI) by visiting select institutions to establish new relationships. This initiative will allow NASA and our large primes to harvest new technology and pave the future for our various missions. Additionally, Program Specialist Truphelia Parker is coordinating small business regional outreach events in

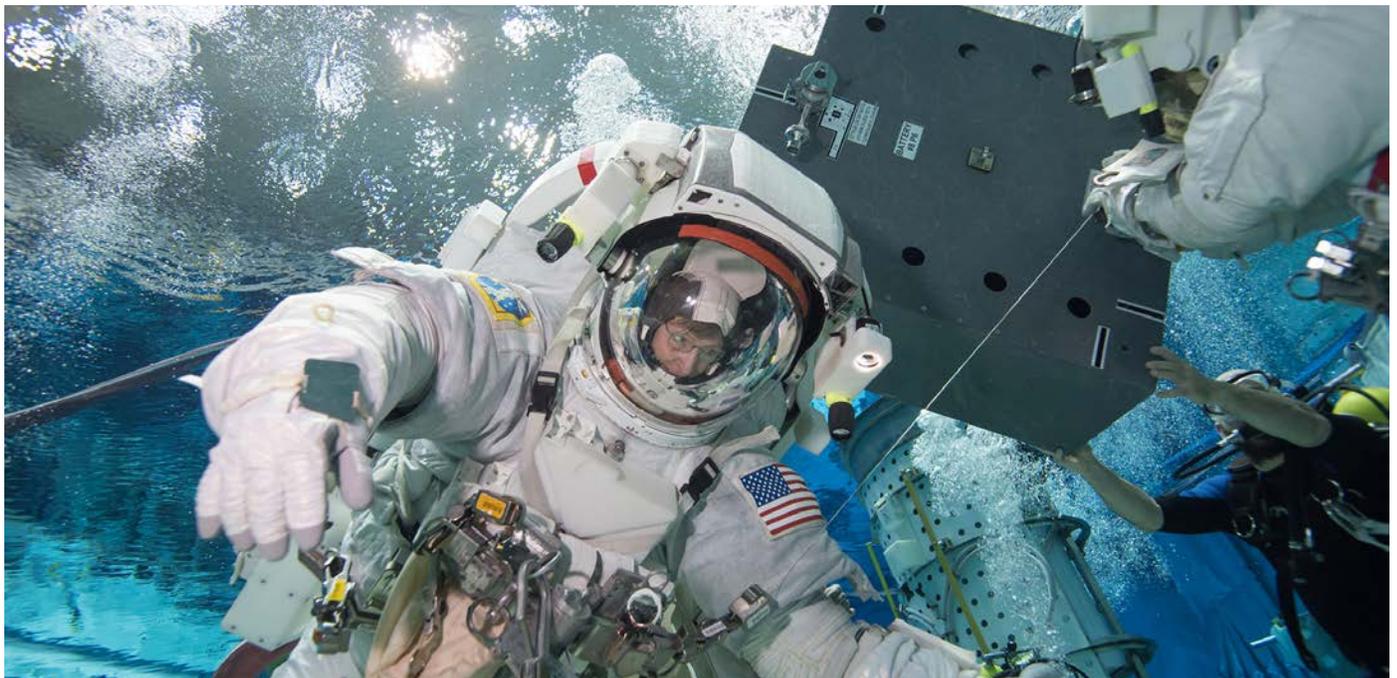
areas where NASA doesn’t have a current presence in an effort to engage new businesses and expand our industrial base. This fiscal year we will visit Denver, CO, and Springfield, MA.

I would like to take the time to honor and congratulate the Center-level FY 2015 NASA Small Business Industry Awards (SBIA) winners in the categories of Small Business Prime Contractors of the Year, Small Business Subcontractors of the Year, Large Business Prime Contractors of the Year and—in our newest category—Mentor-Protégé Agreements of the Year! The Agency-level award winners were announced at the Spring 2016 NASA Industry Forum (NIF) Meeting at Headquarters.

I also want to congratulate the winners of our Small Business Saturday Photo Contest: Robert Watts, Small Business Specialist at Stennis Space Center; and Christine Monroe, Small Business Specialist at Ames Research Center. Congratulations on a job well done overachieving and supporting this nationwide event! Small Business Saturday is a way that NASA takes time to thank and give back to communities by supporting the small businesses in our neighborhoods.

Kudos to Jet Propulsion Laboratory (JPL) for hosting a successful Service-Disabled Veteran–Owned Small Business (SDVOSB) Industry Day event on March 1, 2016. Thanks for a great job!

In closing, I want to thank every small business that helps NASA achieve all of our missions, and I want to welcome those that are looking to do business with us. ➤



NASA astronaut Peggy Whitson trains underwater for a spacewalk at the Neutral Buoyancy Laboratory (NBL) at Johnson Space Center in Houston. Whitson is scheduled to launch to the International Space Station in late 2016 as part of Expedition 50/51. Image Credit: Bill Brassard (NBL)

Social Media Update

Tabisa T. Kalisa, Program Manager
Chelsea Gaetani, Program Analyst (Contractor)

NASA Office of Small Business Programs

Small Business Saturday Photo Contest Winners

Robert Watts, Small Business Specialist at Stennis Space Center, and Christine Monroe, Small Business Specialist at Ames Research Center, are the winners of our first-ever Small Business Saturday Photo Contest! The contest took place on Saturday, November 28, 2015, on the Office of Small Business Programs Twitter and Facebook accounts. Congratulations for submitting your photos and for going above and beyond in support of the small businesses in your local community. Small Business Saturday is a day that NASA dedicates to appreciating small businesses nationwide. >>

Twitter Winner



Robert Watts, the Stennis Space Center Small Business Specialist, submitted this photo of Pink Petunia Designs on Small Business Saturday via Twitter. His submission earned the highest media tweet for November, with 2,069 impressions.

Facebook Winner



Christine Monroe the Ames Research Center Small Business Specialist, submitted the most photos in the contest. Thirteen of her photos reached over 20,000 people on Facebook.

The NASA Office of Small Business Programs (OSBP) has a Facebook page and Twitter handle! Why? Because NASA OSBP would like the public to have instant access to small business information. Whether it is news that impacts the small business community, outreach and matchmaking events, or procurement opportunities, we want to simplify the process.

Please take a moment to like us on Facebook at <http://www.facebook.com/NASASmallBusiness>.

Follow us on Twitter at http://twitter.com/NASA_OSBP.

Also, tune in to Glenn's blog at <http://nasaosbp.blogspot.com>.

It will take only a few minutes of your time, and we would love to hear from you!



>> NASA Center Highlight NASA Management Office (NMO)

Rick Ellerbe, Small Business Specialist

NASA Management Office

The NASA Management Office

The NASA Management Office (NMO) is the NASA Headquarters (HQ) on-site Government organization serving the functions of contract management and programmatic and institutional implementation oversight at NASA's contractor-operated Federally Funded Research and Development Center, the Jet Propulsion Laboratory (JPL), and of contract management and oversight at the Applied Physics Laboratory (APL). The NMO makes every

effort to assist JPL with all of their small business events and programs. JPL currently provides an annual round table event as well as the Small Business Supplier Fair. The NMO also provides JPL with their annual small business goals on the prime contract. Together as a team, NMO and the JPL Small Business Opportunity Office work together each year to promote Small Business Week and let small businesses know that there are opportunities here at JPL. The NMO assisted JPL with hosting the NMO/JPL SDVOSB Industry Day on March 1, 2016. To view information on the event, please visit <https://www.eventbrite.com/e/nasajpl-and-the-city-of-pasadena-service-disabled-veteran-owned-small-business-industry-day-tickets-19016670373> >>

» Small Business Success Story

NASA SBIR/STTR Program

G. M. Green, Director for Communications and Operations

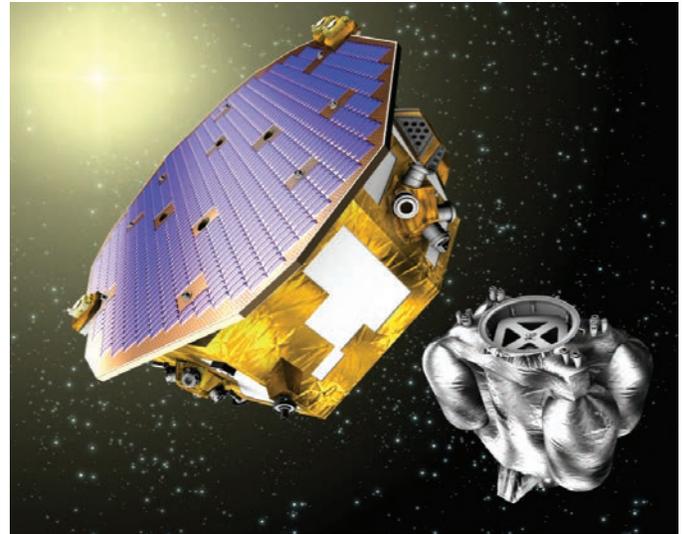
NASA Headquarters Space Technology Mission Directorate

NASA's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, a part of the Agency's Space Technology Mission Directorate, provide the small business sector with an opportunity to compete for funding to develop technology for NASA and to commercialize that technology to help drive economic growth.

The SBIR and STTR programs have three phases that reflect the innovation and commercialization processes. Phase I is the opportunity to establish the early-stage research and idea generation and awards feasible studies up to \$125K for 6 months. The most promising Phase I projects are awarded Phase II contracts through a competitive selection process, based on scientific and technical merit, expected value to NASA and commercialization potential. Phase II is the development, demonstration and delivery of a prototype. Phase II projects range up to \$750K for 24 months. Phase II-Extended allows existing Phase II contracts more time for additional research and development by matching non-SBIR/STTR investments up to a set amount. Phase III is the commercialization of innovative technologies, with contracts being awarded with non-SBIR/STTR funds for work performed under prior SBIR/STTR funding agreements.

Research and technologies funded by SBIR and STTR contracts have made important contributions not only to NASA but also to commercial markets. Examples of funded research include bringing 3D-printing and manufacturing to space, developing analytical software, and building technologies that can detect weapons systems and provide decision makers with the intelligence needed to respond appropriately.

One example that exemplifies successfully bringing a concept into commercialization is the state-of-the-art Disturbance Reduction System (DRS), a thruster technology developed at NASA's Jet Propulsion Laboratory, in Pasadena, CA. The Disturbance Reduction System uses colloid micronewton thrusters—the first of their



Artist's impression of ESA's LISA Pathfinder and its propulsion module after separation. Photo courtesy of ESA.

kind—to keep the spacecraft as still as possible and compensate for solar pressure. These thrusters electrically charge small liquid droplets and accelerate them through an electric field in order to generate thrust. Developed by Busek Co. in Natick, MA, with technical support from JPL, the thrusters will deliver 5 to 30 micronewtons of thrust (about the weight of a mosquito) continuously, with exquisite precision, to counteract the force of sunlight.

The fundamental colloid microthruster technology originated from NASA's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs. The 1998 SBIR/STTR Phase I concept led to a Phase II prototype of the thruster, which featured extremely low-noise thrust, and the first use of a carbon nanotube-based electron field emission neutralizer in electric propulsion. Seeded by this SBIR/STTR work, the technology subsequently received additional Department of Defense (DOD) and NASA contracts for follow-on development, ultimately resulting in JPL selecting this technology for further development and use within its ST7-DRS system. The thrusters were brought to TRL6 (NASA flight-readiness level) as part of the ST7-DRS project and have been successfully qualified for the LISA Pathfinder mission.

Overall, participating American small businesses, including woman-owned and disadvantaged firms, are challenged to develop, transition, and bring to market their innovative concepts and technologies in ways that contribute to the NASA mission, the Nation's prosperity, and their own commercial growth. For more details about our program, visit: <http://www.sbir.nasa.gov>. »

OSBP Staff

The OSBP team is committed to providing excellence in service and information to the small business community.

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NASA Mentor-Protégé Program Update

Tabisa T. Kalisa, Program Manager

Melanie A. Osei, Program Analyst (Contractor)

NASA Office of Small Business Programs

Mentor-Protégé Program Overview

Happy New Year! The NASA Mentor-Protégé Program begins this new calendar year with 30 approved mentors and 15 active and approved Mentor-Protégé Agreements. The value of the subcontracting credit to be received is \$2.2 million.

This year the NASA Office of Small Business Programs, in collaboration with the Office of Education and the Space Technology Mission Directorate, will be rolling out new initiatives targeting the Nation's Historically Black College and Universities/Minority-Serving Institutions (HBCU/MSIs).



NASA HBCU/MSI Technology Infusion Road Tour

In September 2015, OSBP announced the outline of the HBCU/MSI Road Tour initiative at the 2nd Annual NASA HBCU/MSI Partnerships Meeting in Huntsville, AL. Since then, we have engaged in productive discussions with our partners and universities interested in facilitating and hosting this new pilot that will be beneficial for all stakeholders. We are pleased to confirm the following universities that will kick off the new "NASA HBCU/MSI Technology Infusion Road Tour":

- North Carolina Central University,
- University of Texas El Paso,
- Morgan State University, and
- Florida Agriculture and Mechanical University.

The NASA HBCU/MSI Technology Infusion Road Tour will provide an open platform for university and institution representatives (i.e. deans, professors, and faculty) to learn about the NASA Mentor-Protégé Program (MPP) and Small Business Innovative Research/Small Business Technical Transfer (SBIR/STTR) opportunities as well as NASA's Office of Education's Cooperative Agreements and internship opportunities. By using various methods of communication and presentations, we will connect participants with several technical and business representatives from NASA, our large prime contractors and past participants from the MPP and SBIR/STTR Programs.

NASA is the only Federal Agency with a 1 percent HBCU/MSI goal, and as we host the Road Tour this fiscal year, we look forward to engaging HBCUs/MSIs on how to do business with NASA and our large prime businesses, while increasing the Agency's industrial base. NASA looks forward to harnessing the technology these institutions offer to assist in achieving our mission. In addition, we hope to assist HBCUs/MSIs obtain non-grant based funding opportunities and strengthen collaboration efforts with NASA and all large prime contractors to better assist with developing technology helpful to achieving the Agency's mission.

Marshall Space Flight Center's HBCU/MSI Joint Counseling Initiative

On February 17, 2016, the Marshall Space Flight Center (MSFC) OSBP, MSFC's Prime Contractor Supplier Council (MPCSC), and Small Business Executive Leadership Team (SBELT) hosted the first HBCU/MSI joint counseling session. The joint counseling session was another avenue geared to help HBCUs/MSIs meet with representatives from MSFC, NASA/MSFC prime contractors, and Small Business Specialists to market their capabilities and learn about partnering and subcontracting opportunities.

With an array of attendees from both small and large businesses, HBCUs/MSIs representatives presented capability briefings on what their institution has to offer NASA. The value these universities bring as strategic partners to NASA was validated, new relationships were developed, and OSBP looks forward to successful collaborations in the future.

The MP Corner will feature success stories, program and policy updates, and program statistics on a quarterly basis and will be available on our Web site, <http://www.osbp.nasa.gov>. »

OSBP Web Site

The NASA OSBP Web site helps individuals and companies to navigate small business policies, procedures, and best practices at NASA.

The purpose of the Web site, <http://www.osbp.nasa.gov>, is to share the vision of the Small Business Program at NASA, as well as provide pertinent information on how to do business with NASA.



<http://osbp.nasa.gov>

» NASA Center Highlight NASA Ames Research Center

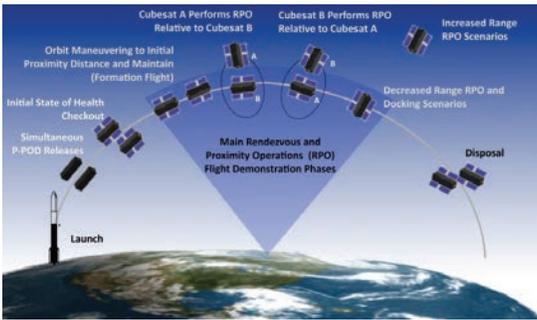
Christine Munroe, Small Business Specialist

NASA Ames Research Center

Tyvak Nano-Satellite Systems, Inc.

By Marianne Shelley, Contracting Officer at ARC

Tyvak Nano-Satellite Systems, Inc., is a very small business based in Irvine, CA, and is a prime example of a NASA small business success story. Founded in 2011, it is a provider of innovative NanoSat and MicroSat vehicles and services. Tyvak provides industry-leading, cost-effective solutions for both Government and commercial customers focused on space-based research, Earth observation, and telecommunications.



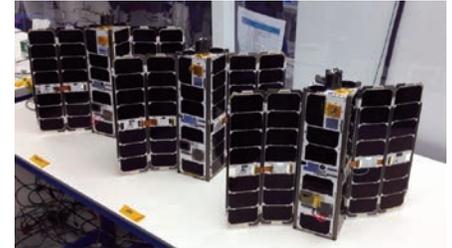
In 2012, Tyvak was awarded a NASA Ames Research Center (ARC) contract under the Edison Small Satellite Flight Demonstration Missions Broad Agency Announcement (BAA). The BAA solicited proposals for the flight validation of new small spacecraft technologies and capabilities. The contract is a Cost-Plus-Fixed-Fee contract valued at \$13.8 million. Under this contract, Tyvak is developing two three-unit (3U) cubesats for the CubeSat Proximity Operations Demonstration (CPOD) project. These cubesats will be released simultaneously into a common orbit, to demonstrate rendezvous, proximity operations, and docking (RPOD) capabilities. This flight demonstration will validate and characterize low-power RPOD technologies, a fully integrated RPOD system, and dedicated software. These technologies are directly applicable to a number of programs currently listed in the NASA roadmap for space exploration. The CPOD mission was selected for a flight opportunity as part of the NASA

Cubesat Launch Initiative, and it is scheduled to launch in 2016.

In order to create the complete RPOD capability in a 3U package during the contract, Tyvak has had to develop unique ways to efficiently integrate spacecraft subsystems and define a new approach to develop multifunctional boards. This effort required the development of new volume-compatible components designed to work as a unified spacecraft. The final 3U package almost completely eliminates the use of harnessing and miniaturized components like reaction wheel or star trackers that are embedded into the mounting structure to optimize stability and thermal dissipation.

During the contract, in order to reduce software development costs, Tyvak leveraged proven open-source software to perform many key functions for the CPOD mission. These software tools were appropriately enhanced and optimized to function effectively in the spacecraft. Specific tools included image processing and recognition, as well as high-throughput and time-dependent functions for the main bus computing functions.

Since award of the ARC contract in 2012, Tyvak has quickly grown in revenue, size, and market share. The company had a reported revenue growth of more than 900 percent between 2012 and 2015 and has grown from 4 to approximately 40 employees. Tyvak currently serves an impressive customer base, ranging from Government organizations such as NASA, JPL, the National Reconnaissance Office (NRO), and the Department of Defense to commercial market leaders in the United States and around the world. Additionally, the company continues to work with higher education institutions, including Cal Poly San Luis Obispo, Vanderbilt University, and Georgia Tech Research Institute. In its short history, Tyvak has received



Two flight units and engineering unit developed for the CPOD mission

different levels of support and appreciation, from both Government and industry customers who recognize the validity of Tyvak's approach.

The advanced technologies developed under contract for the CPOD mission have enabled Tyvak to enhance its industry-leading miniature attitude determination and control systems, advanced on-board data processing capabilities, and low-power distributed processing. These capabilities are now key to Tyvak's competitive advantage in obtaining new business.

Tyvak has strived to distinguish itself among the competition by defining the small satellite industry benchmark for quality and mission assurance. The Tyvak executive team has extensive expertise in the development of leading-edge small satellite technologies. In its quest to develop complete end-to-end mission services, Tyvak has also become a leading provider of rideshare opportunities in both commercial and Government vehicles. Unique among these missions is NASA JPL's Mars Cube One (MarCO), the first CubeSat mission beyond Earth orbit. MarCO consists of a pair of six-unit cubesats to serve as real-time radio relays for NASA's InSight Mars spacecraft as it enters the Martian atmosphere. Tyvak is providing the CubeSat dispenser system and launch integration services for MarCO.

In its short history Tyvak Nano-Satellite Systems has come a very long way! »

» NASA Small Business Legislative Update From the Legal Corner

Eve Lyon, Attorney-Advisor

NASA Headquarters Office of the General Counsel

National Defense Authorization Act (NDAA) for 2016 as it affects NASA's Small Business Program

Congress has focused on small business and continues to do so in the National Defense Authorization Act (NDAA) for 2016. The following highlights those provisions in the NDAA, which will affect NASA's Small Business Program:

- **Section 862** requires the Administrator of the Small Business Administration (SBA) provide the Committee on Small Business of the House of Representatives and the Committee on Small Business and Entrepreneurship of the Senate a certification of the accuracy and completeness of data reported on bundled and consolidated contracts.
- **Section 863** requires the head of an agency publish a notice of a public Web site regarding any acquisition plan for a procurement involving substantial bundling.
- **Section 864** amends 15 U.S.C. 637(a)(17), clarifying that the non-manufacturer Rule (NMR) applies to contracts that principally are for supplies. This clarification means the NMR does not apply to contracts that are primarily for services or construction, but that may have a supply component.
- **Section 865** places certification requirements on Business Opportunity Specialists and Procurement Center Representatives.
- **Section 866** expands the subcategory for HUBZones by 1) including qualified disaster areas, 2) including companies owned by Native Hawaiian Organizations in the same manner as companies owned by Alaska Native Corporations and Indian tribal governments, and 3) including areas that intersect with or are contiguous to base closure areas for a period of at least 8 years.
- **Section 867** addresses joint ventures (JVs) and teaming in the context of bundling. Section 867 requires a procuring agency to consider the capabilities and past performance of all members of a small business team or JV, instead of giving “due consideration” to their capabilities and past performance.
- **Section 868** establishes the weighing criteria for the scorecard the SBA uses to determine agencies’ compliance with small business goals. Section 868 requires that 50 percent of the score be on meeting goals at the prime level and 50 percent be on meeting goals at the subcontract level. Section 868 validates evaluating subcontracting plans as part of NASA major source selections.
- **Section 869** gives the Office of Hearing and Appeals (OHA) jurisdiction to review the SBA’s decisions on size standards. This expanded jurisdiction gives parties a less expensive venue (in lieu of Federal district court) to appeal size protests.
- **Section 870** requires OSBP give contracting officers notices from small business that a procurement unduly restricts the ability of small businesses to compete. When necessary, OSBP shall recommend ways to increase the opportunity for competition. In addition, section 870 requires that OSBP contact the Advocate for Competition and ensure the small business is aware of other resources available to address unduly restrictive provisions.
- **Section 871** modifies the requirement SES goals contain an element “to assume responsibility for the agency’s success in achieving small business contracting goals and percentages support small business” replacing it with to “assume responsibility for the agency’s success in achieving each of the small business prime contracting and subcontracting goals and percentages.” »

DID YOU
KNOW?

Over 800 small
businesses
are contributing to the
success of the Orion
program.



» Program Manager Highlight

NASA Small Business Policy

David B. Grove, Program Manager

NASA Office of Small Business Programs

Policy comes in many forms, and in Government some may say we have too much policy. The Internet defines *policy* as “a course or principle of action adopted or proposed by a government, party, business, or individual.” My favorite definition of the word *policy* comes from Merriam-Webster: “prudence or wisdom in the management of affairs.” I am not sure I have seen much policy that is prudent and wise, but both the Government and small businesses need to define how things work so we can be more efficient.

As I take over the role of OSBP policy guru, I find it helpful to remind myself how policies start. They start with Public Laws through which the legislative and executive branches of Government formalize the rules. Then, because we have so many laws, laws are codified in the United States Code, or U.S.C. Lastly, laws are expanded in the Code of Federal Regulations, or CFR.

“...both the Government and small businesses need to define how things work so we can be more efficient.”

Public Law

After the President signs a bill it becomes law. The bill is then sent to the National Archives, where it is given a number, such as Public Law 90-206. The “90” means that it was the 90th Congress that passed the measure; the “206” indicates that it was the 206th public bill passed by that Congress.

United States Code (U.S.C.)

The United States Code is a compilation of all Federal legislation organized into 50 titles. It is revised every 6 years with supplementary volumes issued in intervening years. The legislation related to the Space Act and NASA is found in 49 USC Subtitle IX Space Transportation (§§ 70101—70305); examples include Title 10 – Armed Forces and Title 15 – Commerce and Trade.

» [Continued on next page](#)

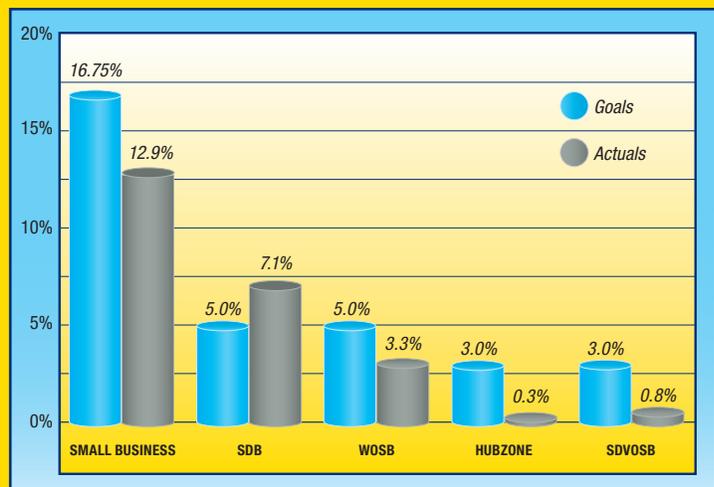
Metrics Update

Melanie A. Osei, Program Analyst (Contractor)

NASA Office of Small Business Programs

FY 2016 NASA Agency Prime Goals vs. Actual Percentages

Category	Dollars
Total Dollars	\$6,023,924,555
Small Business	\$774,158,602
SDB	\$427,998,441
WOSB	\$196,746,974
HUBZone	\$19,156,592
SDVOSB	\$45,678,222



Data generated March 4, 2016, from FPDS-NG

» Program Manager Highlight (Continued)

Code of Federal Regulation CFR

The Code of Federal Regulations is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government. It is divided into 50 titles that represent broad areas subject to Federal regulation. Each volume of the CFR is updated once each calendar year and is issued quarterly. The Federal Acquisition Regulation is 48 CFR. The Space Act is 14 CFR.

From the CFR, NASA sets small business policy in the NASA FAR Supplement,

in the NASA Policy Directive (NPD), and in letters and e-mails. As you can see as you read through the list, the policies go from formal to informal. The distinction is that formal policies last longer than informal policies (i.e., e-mails are usually good for 30 days). If an informal policy set through e-mail is found to be very helpful, it will be incorporated into the next best practice notice. If the best practice is helpful to all Centers, it may be incorporated into the next NPD. »

OSBP Newsletter Article Submission Schedule

DEADLINE:	PUBLISHED:
January 15	March
April 15	June
July 15	September
October 15	December

» NASA Mission Directorate Spotlight

NASA Human Exploration and Operations Mission Directorate

Alotta Taylor

NASA Headquarters

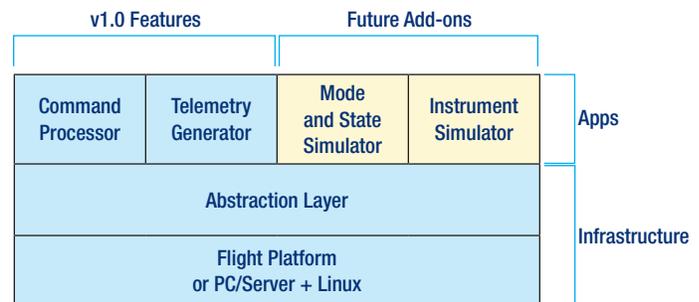
MTI Systems, Inc.—Centralized Rapid Testing Environment (CRaTE)

As applications for both space and the ground grow in complexity, one of the challenges facing developers is the construction and maintenance of an environment into which new applications may be deployed and tested. To address this issue, we have developed a Centralized Rapid Testing Environment (CRaTE).

The CRaTE platform provides a rapid development, emulation, and testing platform intended to support applications and libraries running CCSDS-compatible applications. It provides the following out of the box:

- a scriptable REST-based interface that supports the definition and generation of arbitrary CCSDS frames (wrapped in UDP packets);
- a “satellite” emulator packaged as a virtual machine, which provides a lightweight cFE installation configured with a simulated telemetry generator and UDP/CCSDS frame conversion utility; and
- a “MOC” emulator packaged as a virtual machine, which provides:
 - » a lightweight cFE installation configured with a raw frame recorder, a telemetry processor and recorder, and a UDP / CCSDS frame conversion utility;
 - » a PostgreSQL database capable of recording arbitrary telemetry data; and
 - » a Web interface capable of displaying arbitrary telemetry data and command history, and also defining arbitrary CCSDS frame formats for use by the telemetry recorder.

This software eases the burden on the developer by offering a standard, plug-and-play environment into which both new and existing applications may be rapidly deployed and tested. It additionally offers convenient GUI-based CCSDS frame design, generation, and test capabilities, along with graphical review of historical telemetry data / commands as generated by the application(s) under test. Planned future improvements include (but are not limited to) enhanced graphical display of recorded telemetry, the ability for users to create custom dashboards that only display fields they are interested in, and out of the box support for telemetry and command formats used by existing missions.



MTI Systems is a woman-owned small business that recently provided a Centralized Rapid Testing Environment to the Glenn Research Center.

For more information, please contact Colleen McGraw at 410-507-0234 or visit <https://www.mtisystems.com> »

» NASA Office of the Chief Information Officer Spotlight Office of the Chief Information Officer

Eldora Valentine

NASA Headquarters

TechPort: Chronicling Real Martian Technologies

By Ann Whitener, JSC TechPort Representative

NASA is on a journey to Mars and is turning science fiction into science fact. The Advanced Exploration Systems (AES) Program targets human exploration high priorities, including crew mobility, habitats, and vehicle systems. The AES Modular Systems Project aims to develop and demonstrate modular power design concepts for long-term use in human exploration flight vehicles. Data on these and other programs and projects are chronicled in NASA's TechPort.

TechPort is a Web-based software system serving as a comprehensive resource

for locating information about NASA technology development activities. TechPort contains a variety of useful information on these activities including technology descriptions, images, and the NASA Center or facility where work is being performed. The system provides advanced search capabilities to home in on specific areas of development. Users can also export information and create customized reports on selected NASA Programs and Projects.

On March 3, 2015, a portion of TechPort data was made available to the public.

Academic institutions, commercial ventures and the general public can search TechPort to learn about game-changing technology. As NASA develops new technologies and finds innovative solutions to challenges facing aeronautics, space exploration, and the greater scientific community, additional data will become available in TechPort.

Currently, TechPort contains data on more than 1,200 active technology development programs and projects, and thousands of historical records. TechPort influences NASA strategy, budget decision-making process, and technology roadmap development. To learn more, visit TechPort at <http://techport.nasa.gov>, where NASA chronicles real Martian technologies. »

Important Dates To Remember

March 1, 2016

Jet Propulsion Laboratory (JPL) Hosted Service-Disabled Veteran-Owned Small Business (SDVOSB) Industry Day

Pasadena, CA

<http://www.osbp.nasa.gov>

March 8–9, 2016

Spring 2016 NASA Industry Forum Meeting

Washington, DC

<http://www.osbp.nasa.gov>

March 11, 2016

Small Business Breakfast

Springfield, MA

<http://www.osbp.nasa.gov>

March 22–24, 2016

NASA HBCU/MSI Technology Infusion Road Tour at North Carolina Central University

Durham, NC

<http://www.osbp.nasa.gov>

March 24, 2016

Veterans In Business Conference

Arlington, VA

<http://www.veteransbusinessconference.com>

April 6, 2016

2016 Government

Procurement Conference

Washington, DC

<https://www.fbcinc.com/el/procurement/attendeefinfo.aspx>

April 19–21, 2016

NASA HBCU/MSI Technology Infusion Road Tour at University of Texas at El Paso

El Paso, TX

<http://www.osbp.nasa.gov>

May 1–7, 2016

National Small Business Week

Washington, DC

<https://www.sba.gov/nsbw/nsbw>

May 3, 2016

Glenn Research Center (GRC) Hosted Woman-Owned Small Business (WOSB) Industry Day

Cleveland, OH

<http://www.osbp.nasa.gov>

May 24–26, 2016

Space Tech Expo

Pasadena, CA

<http://www.spacetecheexpo.com>

June 1–3, 2016

CelebrAsian 2016 Procurement Conference

Atlanta, GA

<http://celebrasianconference.com>

June 20–23, 2016

VET Training Symposium

Norfolk, VA

<http://www.veterantrainingsymposium.com>

June 28, 2016

Small Business Regional Outreach Day

Denver, CO

<http://www.osbp.nasa.gov>