Opportunities for New Hampshire Small Businesses To Support NASA Programs
June 19, 2020
Hosted By
U.S. Senator Jeanne Shaheen
NASA Administrator Jim Bridenstine
Agenda

9:00: Welcome & Housekeeping
9:05: Jeanne Shaheen, U.S. Senator
9:10: Jim Bridenstine, NASA Administrator
9:15: Dr. Bob Kline-Schoder, President, Creare, NASA SBIR Phase II awardee
9:20: Dr. Harlan Spence, Director, Inst. for Study of Earth, Oceans, & Space, University of New Hampshire
9:25: Jenn Gustetic, NASA Program Executive for SBIR/STTR Program
9:40: Glenn A. Delgado, Associate Administrator for the NASA Office of Small Business Programs
9:50: Q&A Session
10:00: Conclusion
Housekeeping

• This event is being recorded.
• If you have any questions during the presentation, please enter them into the Q&A box and select “All Panelists” in the dropdown.
• With your questions please include your name, company, and panelist you wish to address.
• Questions will be answered during the Q&A session after the presentations, and read by a moderator.
• All attendee participants will be on mute for the duration of the event.
• A link to these slides will be e-mailed to all who have RSVP’d for today’s event.
June 19, 2020 | Opportunities for New Hampshire Small Businesses to Support NASA Programs
Creare SBIR History

• Creare’s president worked with NH Senator Warren Rudman on the SBIR program's founding legislation
• Creare was an early participant in the program and has been active ever since
• Most of Creare’s growth since 1982 can be traced to the SBIR program
• Creare’s commercialization/transition successes include:
  – Computational Fluid Dynamics software
  – Threaded fasteners
  – Cryogenic refrigerators
  – Miniature vacuum pumps
  – Aircraft carrier arresting gear and launch catapult support equipment
  – Laser metrology tools for inspecting the F35 Joint Strike Fighter
NASA SBIR and Creare Products

• Cryogenic Refrigerator for the Hubble Space Telescope
  – Provides cooling for deep space imaging
  – Resuscitated dormant instrument after HST was retrofit with refrigerator
NASA SBIR and Creare Products

- Miniature Vacuum Pumps for Interplanetary Exploration
  - NASA Mars Science Laboratory
  - European Space Agency ExoMars
  - NASA Dragonfly mission to Titan
NASA SBIR and Creare Products

- Oxygen cooler and flow meter for the Exploration Space Suit System
  - Critical astronaut life support system
  - Enables a more capable, lighter weight ESS System
  - Planned use on Gateway, Moon, and Mars missions

Image: NASA
NASA SBIR and Creare Products

• Cryogenic Refrigerator for Human Landing System
  – Critical for management of cryogenic propellants, including zero-boil-off cryogen storage, transfer, and liquefaction
  – Teamed with small and large businesses across 17 states
  – Expands our technical portfolio for manned missions
  – Creare is becoming a visible part of the supply chain for national space missions
Summary of UNH Leadership in the US Space Program and Opportunities for NH Small Business Partnerships

Dr. Harlan E. Spence
Director UNH Institute for the Study of Earth, Oceans, and Space
& Professor of Physics and Astronomy

• UNH “numbers” document the past and ongoing high performance in space missions and especially our long and strong partnership with NASA’s Science Mission Directorate (SMD)
  • 25 UNH leadership on 25 active missions
  • 100% UNH leadership on at least one active mission in each of SMD’s Divisions (Astrophysics, Earth Science, Heliophysics, Planetary)
  • 73% UNH leadership on 16 of all 22 active Heliophysics missions
  • 40 Total number of spacecraft in UNH active “fleet”
  • 560 Number of cumulative years in orbit of UNH active fleet
  • >50 Both total number of UNH missions - and - total number of UNH suborbital (balloons and sounding rocket) launches
  • ~2 Approximate average number of satellite, balloon, or sounding rocket launches per year since 1960
UNH heliophysics expertise in space weather measurements and prediction, **key to enabling human and robotic exploration**

- *Science enables exploration; Exploration enables science, the “Wargo Axiom”*
- LRO celebrated a Happy 11th Launchday just yesterday!
- UNH’s Cosmic Ray Telescope for the Effects of Radiation (CRaTER) on LRO continues to advance lunar science while also monitoring the radiation environment at the Moon in support of the Artemis program

**UNH poised to continue its leadership with in-development (iMAP, GLIMR, LEAP, AETHER, SWFO-L1) plus additional pending missions and programs; future partnering opportunities always on the horizon**

- Interested in exploring new small business partnerships with our UNH space program which continues to grow and flourish and additional space exploration initiatives

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NASA Small Business Innovation Research (SBIR) & Small Business Technology Transfer (STTR) Program
Space Technology Mission Directorate (STMD)

Jenn Gustetic, Program Executive | June 19, 2020
Agenda

- NASA SBIR/STTR Basics
- Program Impact
- Changes Due to COVID-19
MISSION

Create opportunities through SBIR/STTR awards to leverage small business knowledge and technology development for maximum impact and contribution

VISION

Empower small businesses to deliver technological innovation that contributes to NASA’s missions, provides societal benefit, and grows the U.S. economy
As a program under STMD, the NASA SBIR/STTR Program funds the research, development, and demonstration of innovative technologies that fulfill NASA needs, including those needed for the Artemis mission.

NASA’s SBIR/STTR Program has awarded more than $3.3 billion to research-intensive American small businesses.

Engineers and scientists from more than 12,000 small businesses in all 50 States, DC and Puerto Rico have participated.
Includes SBIR and STTR Phase I and Phase II awards from first Program award (1983) through May 2020.
NASA SBIR/STTR Opportunities

- **PHASE I**
  - Idea Generation
  - $125,000
  - SBIR 6 months
  - STTR 13 months
  - **I-CORPS**

- **PHASE II**
  - Prototype Development
  - $750,000
  - 24 months

- **PHASE III**
  - Infusion/Commercialization
  - Non-SBIR Funding

**POST PHASE II OPPORTUNITIES**

- **PHASE II – E**
  - Reqs matching funding
  - up to $375,000
  - 6 to 12 months

- **CCRPP**
  - Reqs matching funding
  - $500,000 to $1,000,000
  - 24 months
Creating Lightweight Carbon Nanotubes

PHASE III SUCCESS: $385K in follow-on Phase III contracts with NASA; additional revenue from commercial customers including Boeing and Lockheed Martin

SNAPSHOT:

• Developed a line of carbon nanotube materials in macro formats that can be used to replace heavier materials for spacecraft, defense platforms, and a host of other commercial applications.
• Enables NASA to construct payloads that weigh less and perform better

Leveraging Satellites to Monitor Global Rice Growth

PHASE III SUCCESS: Approx. $2.5 million in post Phase II funding from NASA, international aid agencies, and the private sector

SNAPSHOT:

• Created a real-time rice mapping and production forecasting tool that is being piloted in the U.S. through NASA SBIR is being further developed to reduce greenhouse gas emissions in Vietnam.
• Company’s president said: “SBIR provided us with a unique opportunity to help promote economic stability while addressing key humanitarian issues associated with the global food supply system.”
• Utilizes data from a number of satellites already in orbit
Increasing Impact of SBIR/STTR

SBIR/STTR Reauthorizations

• Importance of **Flexibility**

• Administrative pilot program authority
  • I-Corps
  • SBIR Road Tours
  • NASA HBCU/MSI Technology Infusion Road Tours
  • Industry Day – Innovation & Opportunity Conference

Legislative Proposals

• Increase maximum CCRPP award to $10M and funding cap to 20% of SBIR budget

• Allow direct to Phase II authority

There are currently several bills before Congress that address SBIR, including a bill sponsored by Senator Shaheen (S. 2045)
Program Changes Due to COVID-19

Current Contracts
- Provisional acceptance of deliverables to pay for work performed on existing contracts

Solicitations
- Extended 2020 Solicitation deadline by four weeks

Phase II
- Reduced time between selection and first payment from five months to two months

Coordination with OGAs
- Sharing other current funding and loan opportunities
Questions?

Visit our website:
www.SBIR.NASA.gov

Contact:
Jenn Gustetic, Program Executive
jennifer.l.gustetic@nasa.gov
DOING BUSINESS WITH NASA

Glenn A. Delgado
Associate Administrator
June 19, 2020
SMALL BUSINESS

FY14-FY19 SMALL BUSINESS PRIME DOLLARS TREND ANALYSIS
FY19 PRIME DATA GENERATED NOVEMBER 13, 2019 FROM FPDS-NG

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<td>Prime</td>
<td>$2,492,259,589</td>
<td>$2,498,551,080</td>
<td>$2,666,446,582</td>
<td>$2,720,775,694</td>
<td>$2,840,872,957</td>
<td>$3,073,214,371</td>
<td>23%</td>
<td>$580,954,782</td>
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### FY14-FY19 Small Business Subcontracting Dollars Trend Analysis

**FY19 Subcontracting Data generated March 23, 2020 from eSRS**

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<td>Subcontracting</td>
<td>$2,322,525,808</td>
<td>$2,439,408,283</td>
<td>$2,587,358,226</td>
<td>$2,810,378,010</td>
<td>$3,016,957,976</td>
<td>$2,977,585,435</td>
<td>28%</td>
<td>$655,059,627</td>
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*Data generated March 23, 2020 from eSRS*
## Top 20 FY19 NASA Contractors

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<tr>
<th>Vendor Name</th>
<th>Total Dollars</th>
<th>% Total Dollars</th>
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<tbody>
<tr>
<td>CALIFORNIA INSTITUTE OF TECHNOLOGY (JPL)</td>
<td>$ 3,031,819,379</td>
<td>16.7058%</td>
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<tr>
<td>THE BOEING COMPANY</td>
<td>$ 1,745,592,148</td>
<td>9.6185%</td>
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<tr>
<td>LOCKHEED MARTIN CORP.</td>
<td>$ 1,355,658,918</td>
<td>7.4699%</td>
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<tr>
<td>NORTHROP GRUMMAN</td>
<td>$ 1,143,417,604</td>
<td>6.3004%</td>
</tr>
<tr>
<td>JACOBS TECHNOLOGY, INC.</td>
<td>$ 915,703,785</td>
<td>5.0457%</td>
</tr>
<tr>
<td>SPACE EXPLORATION TECHNOLOGIES CORP.</td>
<td>$ 914,646,104</td>
<td>5.0398%</td>
</tr>
<tr>
<td>KBR LABORATORIES, INC. (DBA KBRWYLE)</td>
<td>$ 646,485,404</td>
<td>3.5622%</td>
</tr>
<tr>
<td>SCIENCE APPLICATIONS INTERNATIONAL CORPORATION</td>
<td>$ 444,838,866</td>
<td>2.4511%</td>
</tr>
<tr>
<td>AEROPENECROCKETDYNE, INC.</td>
<td>$ 401,732,886</td>
<td>2.2136%</td>
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<tr>
<td>ASRC FEDERAL, INC</td>
<td>$ 342,701,847</td>
<td>1.8883%</td>
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<tr>
<td>BECHTEL NATIONAL, INC.</td>
<td>$ 296,658,688</td>
<td>1.6346%</td>
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<tr>
<td>SSL (MAXAR)</td>
<td>$ 226,713,376</td>
<td>1.2492%</td>
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<tr>
<td>UNITED LAUNCH SERVICES, LLC</td>
<td>$ 212,393,734</td>
<td>1.1703%</td>
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<tr>
<td>SCIENCE SYSTEMS AND APPLICATIONS, INC. (SSAI)</td>
<td>$ 211,208,533</td>
<td>1.1638%</td>
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<tr>
<td>SYNCOM SPACE SERVICES, LLC</td>
<td>$ 210,161,892</td>
<td>1.1580%</td>
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<tr>
<td>HARRIS CORP.</td>
<td>$ 193,875,918</td>
<td>1.0683%</td>
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<tr>
<td>PERATON, INC.</td>
<td>$ 180,627,267</td>
<td>0.9953%</td>
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<td>JOHNS HOPKINS UNIVERSITY</td>
<td>$ 156,829,671</td>
<td>0.8642%</td>
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<td>COLLINS AEROSPACE</td>
<td>$ 143,486,059</td>
<td>0.7906%</td>
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<tr>
<td>GENERAL DYNAMICS</td>
<td>$ 126,203,579</td>
<td>0.6954%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$ 12,900,755,657</strong></td>
<td><strong>71.0852%</strong></td>
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### Top 20 FY19 NAICS Codes

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<tr>
<th>6 digit NAICS Code (Description)</th>
<th>Total Dollars</th>
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<td>541710 / RESEARCH AND DEVELOPMENT IN THE PHYSICAL, ENGINEERING, AND LIFE SCIENCES (EXCEPT NANOTECHNOLOGY AND BIOTECHNOLOGY)</td>
<td>$8,271,143,341</td>
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<td>541712 / GUIDED MISSILE AND SPACE VEHICLE MANUFACTURING</td>
<td>$2,646,751,415</td>
</tr>
<tr>
<td>481212 / NONSCHEDULED CHARTERED FREIGHT AIR TRANSPORTATION</td>
<td>$1,345,592,376</td>
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<tr>
<td>541330 / ENGINEERING SERVICES</td>
<td>$832,471,441</td>
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<tr>
<td>541512 / COMPUTER SYSTEMS DESIGN SERVICES</td>
<td>$581,405,492</td>
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<tr>
<td>236210 / INDUSTRIAL BUILDING CONSTRUCTION</td>
<td>$438,552,188</td>
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<td>336415 / GUIDED MISSILE AND SPACE VEHICLE PROPULSION UNIT AND PROPULSION UNIT PARTS MANUFACTURING</td>
<td>$389,809,738</td>
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<td>517919 / ALL OTHER TELECOMMUNICATIONS</td>
<td>$351,141,269</td>
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<td>336419 / OTHER GUIDED MISSILE AND SPACE VEHICLE PARTS AND AUXILIARY EQUIPMENT MANUFACTURING</td>
<td>$167,741,780</td>
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<td>334511 / SEARCH, DETECTION, NAVIGATION, GUIDANCE, AERONAUTICAL, AND NAUTICAL SYSTEM AND INSTRUMENT MANUFACTURING</td>
<td>$166,385,838</td>
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<td>333314 / OPTICAL INSTRUMENT AND LENS MANUFACTURING</td>
<td>$165,210,625</td>
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<tr>
<td>541519 / OTHER COMPUTER RELATED SERVICES</td>
<td>$164,873,211</td>
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<td>561110 / OFFICE ADMINISTRATIVE SERVICES</td>
<td>$144,758,805</td>
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<td>541513 / COMPUTER FACILITIES MANAGEMENT SERVICES</td>
<td>$141,478,032</td>
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<td>541611 / ADMINISTRATIVE MANAGEMENT AND GENERAL MANAGEMENT CONSULTING SERVICES</td>
<td>$133,307,038</td>
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<td>236220 / COMMERCIAL AND INSTITUTIONAL BUILDING CONSTRUCTION</td>
<td>$114,151,820</td>
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<td>561612 / SECURITY GUARDS AND PATROL SERVICES</td>
<td>$101,940,792</td>
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<tr>
<td>488190 / OTHER SUPPORT ACTIVITIES FOR AIR TRANSPORTATION</td>
<td>$94,134,256</td>
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<tr>
<td>336411 / AIRCRAFT MANUFACTURING</td>
<td>$74,848,562</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$17,071,025,384</strong></td>
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SMALL BUSINESS

NASA DOLLARS IN NEW HAMPSHIRE

FY 2020 (as of 6/15/2020)
• $17 million total obligated
• Of the $17 million, $5.2 million was obligated to Small Businesses (31%)

FY 2019
• $43 million total obligated
• Of the $43 million, $18 million was obligated to Small Businesses (42%)

FY 2018
• $33 million total obligated
• Of the $33 million, $14 million was obligated to Small Businesses (42%)
Commercial Lunar Payload Services (CLPS)

Small Businesses ($405 Million):

- **Astrobotic Technology**
  - Task Order, $52 million
  - VIPER Task Order, $200 million
- **Deep Space Systems**
- **Firefly Aerospace**
- **Intuitive Machines**
  - Task Order, $77 million
- **Masten Space Systems**
  - Task Order, $76 million
- **Moon Express**
- **Orbit Beyond**
- **Ceres Robotics**
- **Tyvak Nano-Satellite Systems**
SMALL BUSINESS

ARTEMIS AND SMALL BUSINESS

CLPS IDIQ Contracts (Cont’d)
• Large Prime Contractors:
  • Blue Origin
  • Sierra Nevada
  • Space X
  • Charles Draper Labs
  • Lockheed Martin

Human Landing System Contracts Awarded May 2020
• Blue Origin
• Dynetics
• Space X

Lunar Gateway
Spaceflight Demonstration – Power and Propulsion Element
• Maxar Technologies (Space Systems/Loral)

Habitation and Logistics Outpost
• Northrup Grumman (Orbital Sciences)
RELEVANCE OF SUBCONTRACTING AT NASA

- NASA’s highest-profile programs could not have been successful without small business subcontractors
  - **The Orion Program – Lockheed Martin**: Over 2,000 SB subcontractors since inception
    - $1.7 Billion subcontracted to SB’s on Orion since 2006

- **Space Launch System (SLS)**
  - Fact Sheet Link:
    - [https://www.nasa.gov/sites/default/files/atoms/files/0080_sls_fact_sheet_10162019a_final_508.pdf](https://www.nasa.gov/sites/default/files/atoms/files/0080_sls_fact_sheet_10162019a_final_508.pdf)
    - At least $1.8 Billion subcontracted to SB’s under the SLS Program since 2006

- Build up past performance history with both the Large Prime contractor and NASA’s Technical Community

- NASA’s Large Primes have awarded approximately **$3 BILLION** a year to Subcontractors
EXPLORE SMALL BUSINESS

DO YOUR HOMEWORK!

• **Start** with a Small Business Specialist (SBS) at each NASA Center
  • Build relationships with the Center SBS and the Industry Small Business Liaison Office (SBLO)

• Learn about NASA's various missions
  • Each NASA Center has different Missions
  • Varied mix of products and services

• Use Small Business resources:
  • Agency Acquisition Forecast
  • Procurement Technical Assistance Center (PTAC)
  • Small Business Administration (SBA)
  • Outreach Events
  • NASA OSBP Mobile App
    ✓ List of SBSs
    ✓ NASA Active Contracts

• Use Trade associations

• Respond to Sources Sought Synopses / Request for Information
NASA SMALL BUSINESS SPECIALISTS ACROSS THE COUNTRY
### NASA SMALL BUSINESS SPECIALISTS

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<th>Center Category</th>
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<tr>
<td></td>
<td>Ames Research Center</td>
<td>Christine L. Munroe</td>
<td>650-604-4695</td>
<td><a href="mailto:Arc-smallbusiness@mail.nasa.gov">Arc-smallbusiness@mail.nasa.gov</a></td>
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<tr>
<td></td>
<td>Armstrong Flight Research Center</td>
<td>Christine L. Munroe</td>
<td>650-604-4695</td>
<td><a href="mailto:Arc-smallbusiness@mail.nasa.gov">Arc-smallbusiness@mail.nasa.gov</a></td>
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<tr>
<td></td>
<td>Glenn Research Center</td>
<td>Eunice J. Adams-Sipp</td>
<td>216-433-6644</td>
<td><a href="mailto:Grc-smallbusiness@mail.nasa.gov">Grc-smallbusiness@mail.nasa.gov</a></td>
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<tr>
<td></td>
<td>Langley Research Center</td>
<td>Robert O. Betts</td>
<td>757-864-6074</td>
<td><a href="mailto:Larc-smallbusiness@mail.nasa.gov">Larc-smallbusiness@mail.nasa.gov</a></td>
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<td><strong>Space Centers</strong></td>
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<td></td>
<td>Johnson Space Center</td>
<td>Robert E. Watts</td>
<td>281-244-5811</td>
<td><a href="mailto:Jsc-smallbusiness@mail.nasa.gov">Jsc-smallbusiness@mail.nasa.gov</a></td>
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<td></td>
<td>Kennedy Space Center</td>
<td>Joyce C. McDowell</td>
<td>321-867-3437</td>
<td><a href="mailto:Ksc-smallbusiness@mail.nasa.gov">Ksc-smallbusiness@mail.nasa.gov</a></td>
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<td></td>
<td>Marshall Space Flight Center</td>
<td>David E. Brock</td>
<td>256-544-0267</td>
<td><a href="mailto:Msfc-smallbusiness@mail.nasa.gov">Msfc-smallbusiness@mail.nasa.gov</a></td>
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<td></td>
<td>Stennis Space Center</td>
<td>Kay S. Doane</td>
<td>228-688-1720</td>
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<td><strong>Science Center</strong></td>
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<td></td>
<td>Goddard Space Flight Center</td>
<td>Jennifer D. Perez</td>
<td>301-286-4379</td>
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<td>Jet Propulsion Laboratory</td>
<td>Charles E. Bray, Jr.</td>
<td>818-354-5620</td>
<td><a href="mailto:smallbusiness.programsoffice@jpl.nasa.gov">smallbusiness.programsoffice@jpl.nasa.gov</a></td>
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<td></td>
<td>NASA Shared Services Center</td>
<td>Troy E. Miller</td>
<td>228-813-6558</td>
<td><a href="mailto:nssc-smallbusiness@mail.nasa.gov">nssc-smallbusiness@mail.nasa.gov</a></td>
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EXPLORE SMALL BUSINESS

CONNECT WITH OSBP AT www.osbp.nasa.gov

OSBP Website
OSBP Learning Series Webinars
Small Business Outreach Events
OSBP Mobile App
NASA Vendor Database
Social Media
Question & Answer Session

Q&A SESSION

• Please enter your questions into the Q&A box in WebEx, and select “All Panelists” in the dropdown.

• With your questions please include your name, company, and panelist you wish to address.

• If we are unable to get to your question today, NASA will follow up after the event with our response. We will also make available all of the questions and responses from today’s event to attendees who RSVP’d.

• If you have questions after today, please feel free to reach out to: smallbusiness@nasa.gov

PRESENTATION SLIDES

A link to these slides will be e-mailed to all who have RSVP’d for today’s event.
Thank you!