Jacobs Space Exploration Group (JSEG)
HBCU/MSI Technology Infusion Road Tour Opportunity Briefing

JoAnn Belt
Jacobs Space Exploration Group
NASA Marshall Space Flight Center
March 27, 2018
Agenda

1. Company Overview
2. Current HBCU/MSI Support
3. Potential Opportunities
Company Overview

• Premier global consulting, design, engineering, construction, operations and maintenance
• Provide innovative solutions for a more connected, sustainable world
• Headquartered in Dallas, TX
• Over 74,000 employees in more than 400 locations across 40+ countries
• Recently acquired CH2M
Company Overview

• Organized by Lines of Business
  – Aerospace, Technology, Environment, and Nuclear (ATEN)
  – Petroleum and Chemicals
  – Industrial
  – Buildings, Infrastructure, and Advanced Facilities (BIAF)

• Committed to Safety, Innovation, and Sustainable Solutions
Company Overview

- Aerospace, Technology, Environment and Nuclear (ATEN) line of business
- Jacobs Space Exploration Group (JSEG)
  - Supporting NASA Marshall Space Flight Center (MSFC) since 1989
  - Awarded the Engineering Services and Science Capability Augmentation (ESSCA) contract December 1, 2017
Company Overview

JSEG Key Mission Areas

- **Space Launch System Program**
  - Design & development of new heavy lift vehicle
  - Systems engineering & integration
  - Flight software, testing & integration
  - Design, analysis, modeling & simulation, test
  - Operation of Systems Integration Lab
  - Insight into prime contractor activities

- **International Space Station**
  - Environmental Control & Life Support System (ECLSS) sustaining engineering, spares, flight anomaly resolution, software
  - Material Science Research Rack operations

- **Earth & Space Science**
  - Gamma-ray Burst Monitor instrument operations center support
  - James Webb Space Telescope primary mirror segment qualification testing
  - Space environments & weather
  - IXPE – Imaging X-ray Polarimeter Explorer
Company Overview

Examples of JSEG Work

- Mechanical & electrical design services
- Systems engineering & integration
- Structures & dynamics
- Electrical engineering & avionics systems development
- Payload development & integration
- Materials engineering & manufacturing
- Propulsion system research & development

Gamma Ray Burst

Additive Manufacturing

24-inch Rocket Motor Test

Thermal Protection System Spray Booth
Company Overview

Examples of JSEG Work

- SLS Solid Rocket Motor Tests
- J-2X Injector Test Firing
- Engine Section Transporter for SLS Structural Test Article
- ISS ECLSS Bosch Test Stand Development
- SLS Weld Tensile Tests in MMTF
- Fluids Modeling for SLS Environments
HBCU/MSI Support

• Tuskegee University
  – Software development and software test
  – Combustion Fluid Dynamics (CFD)
  – Stress Analysis
  – Systems Integration
  – Contamination Control
  – Mass Properties
HBCU/MSI Support

• Alabama A&M University
  – Analysis and Evaluation of Magnetic Shaft Couplings, for Applications Requiring Transmission of Mechanical Work/Power Across the Solid Walls of Cryogenic Tank Structures
    • 18 month task
  – Analysis, systems engineering, data services, and testing to support development of a rolling element bearing kinematics test bed
    • 2 years continued support with plans to continue another year.
Current Needs/Opportunities

- No HBCU/MSI task needs/opportunities at this time