



Science Mission
Directorate

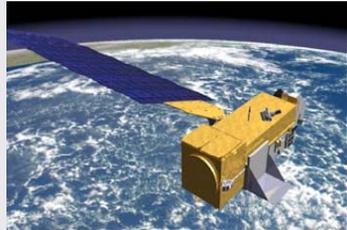
SBIR Program Overview

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Jet Propulsion Laboratory, California Institute of Technology



July 28, 2010

Some SBIR Mission Technologies



Aura



Phoenix



Hubble



Rosetta

DeMaria Electro Optics Systems
Infrared Lasers

Spaceborne, Inc.
Correlator Chip for Radio Astronomy

Yardney Technical Products
Lithium-Ion Batteries

SpaceDev
Wet Chemistry Analysis

Honeybee Robotics, Inc.
Icy Soil Acquisition Device

Starsys Research
Heat Switch Control Radiator

IA Tech
Collaboration For Planning Software

Maxwell Technologies
Electronics

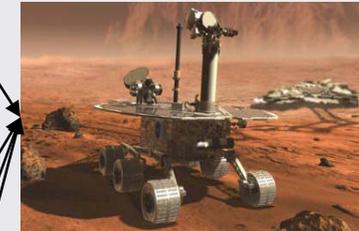
Advanced Optical Systems
Video Guidance Sensor

Surface Optics Corporation
Mirror Coating Process

Sensor Sciences, LLC
UV Detectors



SOFIA



MER



Kepler



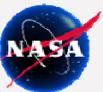
TIMED





SMD Solicitation/Award Process

- **Solicitation development (done for 2010)**
 - Identification and prioritization of technology needs by field center technologists, SMD missions and programs
 - Assessment of alignment and fit with SBIR program
- **Proposal development (now in progress)**
 - Small Businesses develop technical concepts to address needs
 - Small Businesses bring in partners as applicable
 - Small Businesses write and submit proposals
- **Award selection**
 - NASA field centers review and rank the proposals
 - SMD division technologists review the center ranked proposals and provide the recommendation to SBIR program office for award
 - NASA field centers manage the funded proposals



EJSM Technologies in SBIR

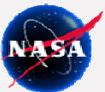
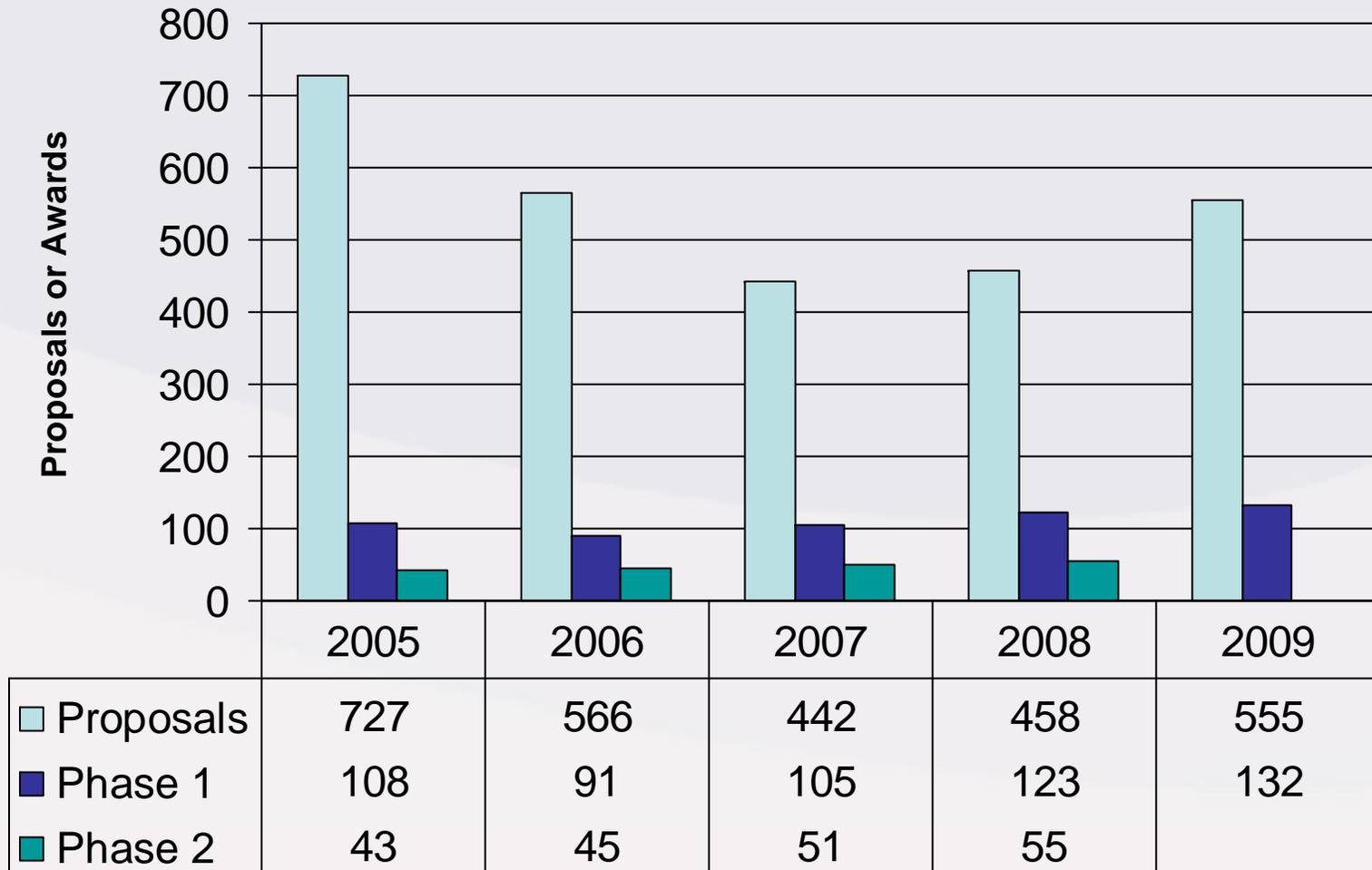
| EJSM Technology Need | 2010 SBIR/STTR Solicitation Subtopic |
|---|---|
| Components, structures and materials for extreme environments | S3.01 Command, Data Handling and Electronics |
| | S5.05 Extreme Environments Technology |
| Charge dissipation and discharge technologies | T8.01 Flexible Charge Dissipation Coatings for Spacecraft Electronics |
| | T8.02 Spacecraft Internal Electrostatic Discharge (IESD) Resistant Circuit Boards Materials |
| Detectors and instruments for extreme environments | S1.04 Sensor and Detector Technology for Visible, IR, Far IR and Submillimeter |
| | S1.05 Detector Technologies for UV, X-Ray, Gamma-Ray and Cosmic-Ray Instruments |
| Surface exploration | S5.03 Surface and Subsurface Robotic Exploration |
| Planetary protection | S5.06 Planetary Protection |



**Come to poster session for more information,
and to meet potential partners!**



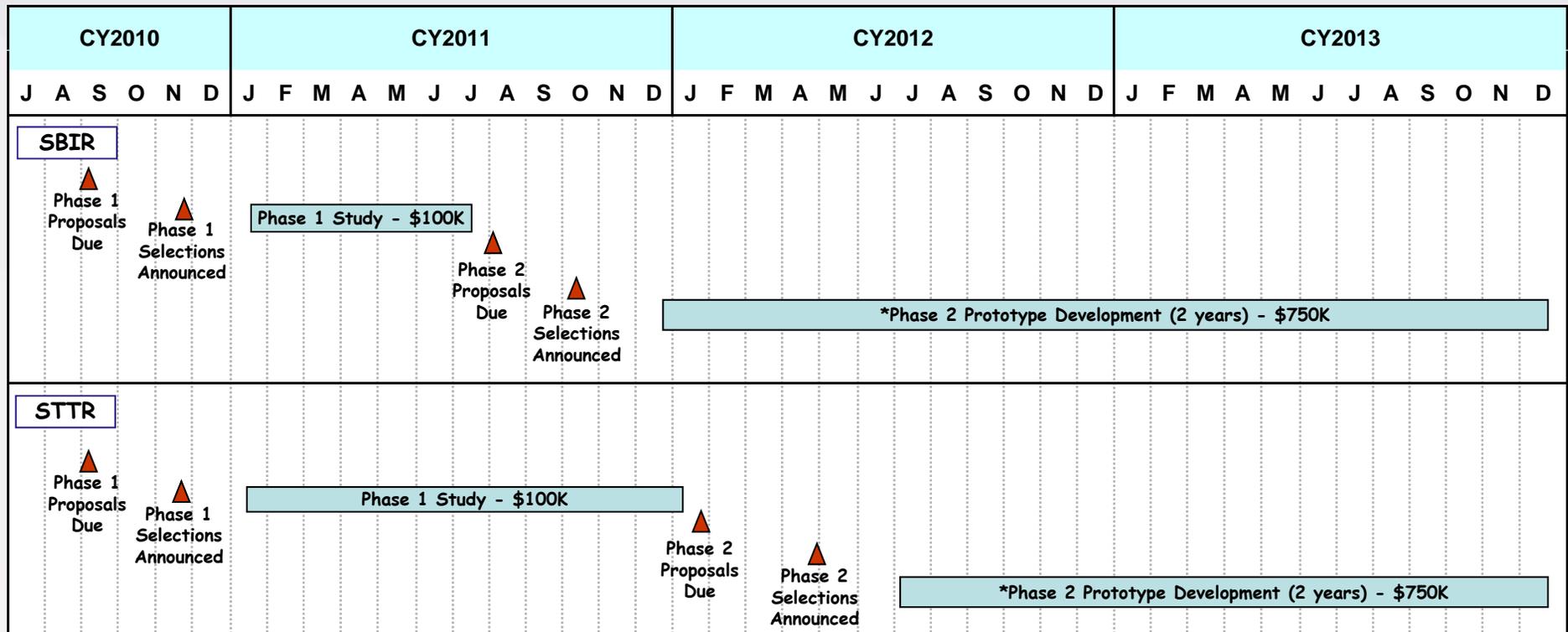
SMD SBIR Proposals & Awards



Source: NASA SBIR Electronic Handbook, ehb8.gsfc.nasa.gov

SBIR Program Schedule

- SBIR/STTR Solicitation Open - July 19 Through September 2, 2010
- SBIR/STTR Phase 1 Selections Announced - November 2010*
- SBIR Phase 2 Selections Announced - October 2011*
- STTR Phase 2 Selections Announced - May 2011*

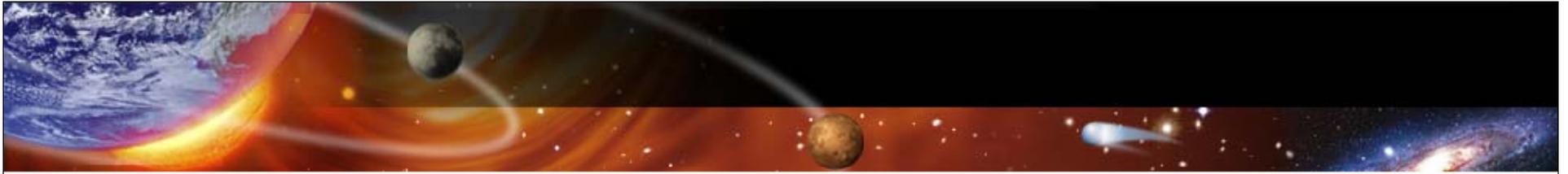


*SBIR/STTR dates are approximate and subject to change

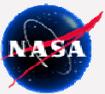


- **SBIR program can be a valuable source for advanced technologies for EJSM Instruments**
- **For more information, visit <http://sbir.nasa.gov>**
 - Solicitation information
 - Past awards and abstracts
 - Program Office contacts





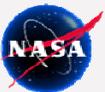
Backup





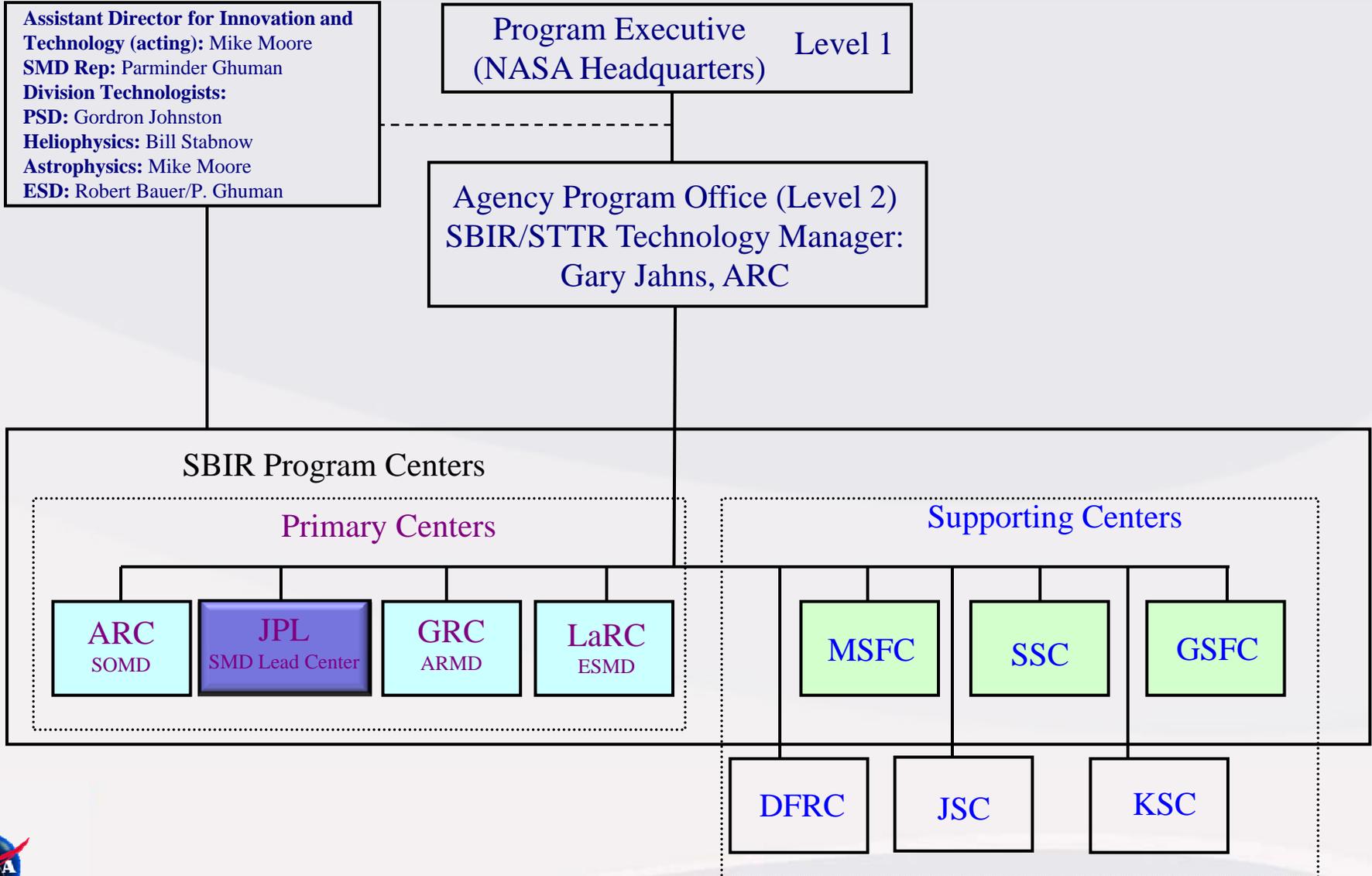
SBIR/STTR Programs

- Small Business Innovation Research (SBIR: 2.5% of extramural R&D budget) program awards contracts to small businesses
 - Two phase program
 - Phase 1: 6 months, \$100K
 - Phase 2: 24 months, up to \$900K max (\$150K available during Phase 2 if program/project contributes \$150K matching funds)
- Small Business Technology Transfer (STTR: 0.3% of extramural R&D budget) program awards contracts of small business for cooperative research & development with non-profit research institution
 - Phase 1: 12 months, up to \$100K
 - Phase 2: 24 months, up to \$750K
- Phase 3 is funded with non-SBIR funds for any amount or time.



SMD is allocated ~35% of SBIR procurement funds.

SBIR/STTR Technical Management





SMD's Topics/Subtopics (cont'd)

- Sensors, detectors, and instrument (*GSFC: Carl Stahl*)
 1. Lidar and Laser System Components (*LaRC*) [*GSFC, JPL*]
 2. Active Microwave Technologies (*JPL*) [*GSFC, LaRC*]
 3. Passive Microwave Technologies (*GSFC*) [*JPL*]
 4. Sensor and Detector Technology for Visible, IR, Far IR and Submillimeter (*JPL*) [*LaRC, GSFC*]
 5. Detector Technologies for UV, X-Ray, Gamma-Ray and Cosmic-Ray Instruments (*GSFC*) [*JPL, MSFC*]
 6. Particles and Field Sensors and Instrument Enabling Technologies (*GSFC*) [*JPL, ARC, MSFC*]
 7. Cryogenic Systems for Sensors and Detectors (*GSFC*) [*JPL, ARC, MSFC*]
 8. In Situ Airborne, Surface, and Submersible Instruments for Earth Science (*GSFC*) [*LaRC, MSFC, ARC, SSC, JPL*]
 9. In Situ Sensors and Sensor Systems for Planetary Science (*JPL*) [*GSFC, ARC, LaRC, MSFC*]
 10. Space Geodetic Observatory Components (*GSFC*) [*JPL*]
 11. Lunar Science Instruments and Technology (*MSFC*) [*JPL, GSFC, ARC*]





SMD's Topics/Subtopics (cont'd)

- **Advanced Telescope Systems** (*JPL: Stuart Shaklan*)
 1. Precision Spacecraft Formations for Telescope Systems (*JPL [GSFC]*)
 2. Proximity Glare Suppression for Astronomical Coronagraphy (*JPL [ARC, GSFC]*)
 3. Precision Deployable Optical Structures and Metrology (*JPL [GSFC, LaRC]*)
 4. Advanced Optical Component Systems (*MSFC [GSFC, JPL]*)
 5. Optics Manufacturing and Metrology for Telescope Optical Surfaces (*GSFC [JPL, MSFC]*)





SMD's Topics/Subtopics (cont'd)

- **Spacecraft and Platform Subsystems** (*GRC: David Anderson*)
 1. Command, Data Handling, and Electronics (*GSFC [LaRC, ARC, JPL]*)
 2. Thermal Control Systems (*GSFC [ARC, GRC, JPL, MSFC]*)
 3. Power Generation and Conversion (*GRC [JSC, GSFC, MSFC, ARC, JPL]*)
 4. Propulsion Systems (*GRC [JPL]*)
 5. Power Management and Storage (*GRC [JSC, JPL, ARC]*)
 6. Guidance, Navigation and Control (*GSFC [JPL, ARC]*)
 7. Terrestrial and Planetary Balloons (*GSFC [JPL]*)
 8. Planetary Ascent Vehicles (*GRC [JPL, MSFC, DFRC]*)
 9. Unmanned Aircraft and Sounding Rocket Technologies (*GSFC [LaRC, GRC, ARC, JPL, DFRC]*)
 10. Earth Entry Vehicle Systems (*LaRC [ARC]*)





SMD's Topics/Subtopics (cont'd)

- **Low-Cost Small Spacecraft and Technologies** (*ARC: Bruce Yost*)
 1. De-orbit Devices/Technologies for Small Spacecraft (*ARC*) [*GRC, KSC*]
 2. Miniature Integrated Payload Suites (*ARC*) [*GSFC*]

- **Robotic Exploration Technologies** (*JPL: Samad Hayati*)
 1. Planetary Entry, Descent and Landing Technology (*JPL*) [*JSC, LaRC, ARC*]
 2. Sample Collection, Processing, and Handling (*JPL*) [*ARC, GSFC, JSC*]
 3. Surface and Subsurface Robotic Exploration (*JPL*) [*JSC, GSFC, LaRC, ARC*]
 4. Rendezvous and Docking Technologies for Orbiting Sample Capture (*JPL*) [*JSC, GSFC*]
 5. Extreme Environments Technology (*JPL*) [*GSFC, ARC, GRC, MSFC*]
 6. Planetary Protection (*JPL*) [*LaRC*]





SMD's Topics/Subtopics

- Information Technologies (ARC: Joseph Coughlan)

1. Technologies for Large-Scale Numerical Simulation (ARC) [GSFC]
2. Earth Science Applied Research and Decision Support (SSC) [JPL, ARC]
3. Algorithms for Science Data Processing and Analysis (GSFC) [LaRC, MSFC, SSC, ARC]
4. Science Data Discovery in Extremely Large Data Environments (GSFC) [JPL, LaRC]
5. Software Engineering Tools for Scientific Models (GSFC)

