Proposals Selected for Negotiation of Contracts

- **Focus Area 1 In-Space Propulsion Technologies (8)**
  - CU Aerospace, LLC
    3001 Newmark Drive
    Champaign, IL 61822
    David Carroll (217) 239-1703
  - University of Michigan
    3003 South State Street
    Ann Arbor, MI 48109
    19-1-T2.02-2527 GRC
    Advanced Flow Control System for In-Space Electric Propulsion [1]
  - En'Urga, Inc.
    1201 Cumberland Avenue, Suite R
    West Lafayette, IN 47906
    Deepa Divakaran (765) 497-3269
  - University of Michigan
    3003 South State Street
    Ann Arbor, MI 48109
    19-1-T2.03-3834 AFRC
    Planar Chemiluminescence Absorption Tomography [2]
  - Espace, Inc.
    30 Lynn Avenue
    Hull, MA 02045
    Francois Martel (781) 925-3893
Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 02139
19-1-T2.03-2775 MSFC

Plasma Controls, LLC
1180 La Eda Lane
Fort Collins, CO 80526
Casey Farnell (970) 581-2239

COLORADO STATE UNIVERSITY
Sponsored Programs; 601 S. Howes St.
Fort Collins, CO 80523
19-1-T2.02-2644 GRC

Georgia Institute of Technology-Main Campus
225 North Ave
Atlanta, GA
19-1-T2.03-3789 MSFC

QorTek, Inc.
1965 Lycoming Creek Road, Suite 205
Williamsport, PA 17701
Cathy Bower (570) 322-2700

COLORADO STATE UNIVERSITY
Sponsored Programs; 601 S. Howes St.
Focus Area 3 Autonomous Systems for Space Exploration (3)

ASTER Labs, Inc.

155 East Owasso Lane

Shoreview, MN 55126

Suneel Sheikh (651) 484-2084
**The Regents of the University of Minnesota**  
200 Oak Street S.E.  
Minneapolis, MN 55455  
19-1-T4.03-3451 JPL  
Provably Convergent Game-Theoretic Coordination for Space Vehicle Swarms [9]

**Orbit Logic, Inc.**  
7852 Walker Drive  
Greenbelt, MD 20770  
Ella Herz (301) 982-6234

**Regents of the University of Colorado**  
3100 Marine Street  
Boulder, CO 80303  
19-1-T4.03-3131 JPL  
Mars/Interplanetary Swarm Design and Evaluation Framework (MISDEF) [10]

**Tyvak Nano-Satellite System, Inc.**  
15330 Barranca Parkway  
Irvine, CA 92618  
Todd Mosher (949) 562-8684

**Stanford University**  
3160 Porter Drive Suite 100  
Palo Alto, CA 94304  
19-1-T4.03-4413 JPL  
Distributed Multi-GNSS Timing and Localization (DiGiTal) 2.0 for Nanosatelites [11]

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**Focus Area 4 Robotic Systems for Space Exploration (2)**

**New Rights Group, Inc. DBA Development Seed**  
1226 9th Street Northwest, Second Floor  
Washington, DC 20001  
Mark Wronkiewicz (573) 578-1453
Arizona State University
650 E Tyler Mall Goldwater Center # 208
Tempe, AZ 85281
19-1-T4.01-2855 ARC

**Planetary-Scale Surface Feature Detection and Mapping for Future Exploration Missions** [12]

Veth Research Associates, LLC
4591 Highway 20E, Premier Building, Suite 202J
Niceville, FL 32578
Michael Veth (937) 529-8384

Georgia Institute of Technology-Main Campus
225 North Ave
Atlanta, GA
19-1-T4.01-3821 ARC

**Autonomous Navigation on Icy Moons and Ocean Worlds** [13]

- **Focus Area 5 Communications and Navigation (2)**

  **Electro Magnetic Applications**
  7655 West Mississippi Avenue, Suite 300
  Lakewood, CO 80226
  Matthew Miller (217) 840-1382

  **Wichita State University**
  1845 N. Fairmount
  Wichita, KS
  19-1-T5.02-3243 KSC

  **Power Balance Solver Enhanced by an Experimental Absorption Cross-Section Database** [14]

  **SoneLite, Inc.**
  2311 Via Aprilia
  Del Mar, CA 92014
Paul Bremner (619) 977-4048

**Oklahoma State University-Main Campus**

107 Whitehurst

Stillwater, OK

19-1-T5.02-3311 KSC

*Electric Field Prediction and Mapping Methods Within Spacecraft Enclosures* [15]

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**Focus Area 6 Life Support and Habitation Systems (7)**

**Alphacore, Inc.**

398 South Mill Avenue, Suite 304

Tempe, AZ 85281

Kimberlee Olson (480) 494-5618

**Vanderbilt University**

2101 West End Avenue

Nashville, TN

19-1-T6.05-4023 LaRC

*Model and Testing Based Assurance of COTS Systems in Space Radiation Environments* [16]

**Cactus Materials**

7700 S River Parkway

Chandler, AZ 85284

Mohammed Rafiqul Islam (480) 213-4704

**Arizona State University**

650 E Tyler Mall Goldwater Center # 208

Tempe, AZ 85281

19-1-T6.06-4319 JSC

*Controlling Silver Release from Antimicrobial Surface Coatings for Biofouling Control* [17]

**CertainTech, Inc.**

20695 Settlers Point Place

Sterling, VA 20165
Ponniah Srinivasan (703) 584-5721

**George Washington University**
2121 I Street, NW
Washington, DC
19-1-T6.06-3792 ARC

*Nanoporous Carbon Nitride Photocatalyst Based Water Recovery System* [18]

**H2O Insights, LLC**
12794 E Sahuaro Drive
Scottsdale, AZ 85259
Kelly Westerhoff (480) 209-9140

**Arizona State University-Tempe**
551 E. Tyler Mall St ERC RM 159
Tempe, AZ 85281
19-1-T6.06-2448 JSC

*Side-Emitting Optical Fibers for Delivery of UV-C Light to Disinfect Key Bacteria in Space Station Water and Storage and Conveyance Systems* [19]

**Nanomatronix, LLC**
700 Research Center Boulevard
Fayetteville, AR 72701
Matthew Leftwich (479) 215-9438

**University of Arkansas at Little Rock**
2801 S University Ave
Little Rock, AR
19-1-T6.06-4074 JSC

*Thermally Partially Reduced Graphene Oxide Membranes for Water Recovery from Wastewater* [20]

**Nanosonic, Inc.**
158 Wheatland Drive
Pembroke, VA 24136
Melissa Campbell (540) 626-6266
Virginia Tech
Virginia Tech MC 0238
Blacksburg, VA 24061
19-1-T6.06-3677 JSC


Streamline Automation, LLC
3100 Fresh Way Southwest
Huntsville, AL 35805
Alton Reich (256) 713-1220

Alabama A&M University
Normal, Alabama 35762
Normal, AL 35762
19-1-T6.05-3299 LaRC

Testing of COTS Systems in Space [22]

- Focus Area 9 Sensors, Detectors and Instruments (7)

Applied NanoFemto Technologies, LLC
181 Stedmen Street, Unit #2
Lowell, MA 01851
Jing Chen (978) 761-4293

Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 77058
19-1-T8.02-3207 JSC

Photonics Integrated Circuit Enabled miniature On-Chip Urine Test system with High Sensitivity and Reliability [23]

Lynntech, Inc.
2501 Earl Rudder Freeway South
College Station, TX 77845
Darla Hisaw (979) 764-2219

**Texas A&M Engineering Experiment Station**

7607 Eastmark Drive

College Station, TX 77840

19-1-T8.02-2760 GRC

*Integrated Multi-Mode Photonic Crystal Spectrometer with On-Chip Photodetection* [24]

Mirios, Inc.

429 West Valerio Street, #25

Santa Barbara, CA 93101

Alexander Spott (805) 364-2987

**The Regents of the University of California, Santa Barbara**

3227 Cheadle Hall, 3rd Floor

Santa Barbara, CA 93106

19-1-T8.02-3360 GSFC

*Multispectral Mid-Infrared Laser* [25]

**Multi3D, LLC**

434 Golden Harvest Loop

Cary, NC 27519

Allen Gray (919) 667-7499

**Duke University**

103 Allen Bldg

Durham, NC

19-1-T8.04-3301 GSFC

*Rapid Prototyping of Beam-Shaping Metamaterial Antennas via Additive Manufacturing of a Highly Conductive Filament* [26]

**Nanohmics, Inc.**

6201 East Oltorf Street, Suite 400

Austin, TX 78741

Mike Mayo (512) 389-9990
Research Foundation of the City University of New York-Advanced Science Research Center
85 Saint Nicholas Terrace
New York, NY 10031
19-1-T8.04-3418 GSFC

Metagrating Beam Shaping Optics [27]

Renan Moreira
4453 La Paloma Avenue
Santa Barbara, CA 93105
Renan Moreira (805) 319-2491

The Regents of the University of California, Santa Barbara
3227 Cheadle Hall, 3rd Floor
Santa Barbara, CA 93106
19-1-T8.02-4150 GSFC

Broadband Arrayed Waveguide Grating with Microwave Kinetic Detector Array for Fully Integrated High-Resolution Photonic Spectrograph [28]

Rochester Precision Optics
850 John Street
West Henrietta, NY 14586
Stephanie McCaig (585) 292-5450

Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 77058
19-1-T8.04-3019 JPL

Hierarchical Metasurface Optics for Multiplexed Visible to Terahertz Cross-Band Systems [29]

- Focus Area 14 In-Space and Advanced Manufacturing (4)
  Cornerstone Research Group, Inc.
  510 Earl Boulevard
  Miamisburg, OH 45342
Chrysa Theodore (937) 320-1877

The University of Texas at Austin
110 Inner Campus Drive
Austin, TX
19-1-T12.05-3201 JSC

In-Situ Application of Multi-Layer Thermal Protection System [30]

Intelligent Optical Systems, Inc.
2520 West 237th Street
Torrance, CA 90505
Reuben Sandler (424) 263-6305

University of Southern California
3720 S. Flower Street, 3rd Floor
Los Angeles, CA 90089
19-1-T12.05-3033 ARC

A Modular In-Situ Curing Apparatus for Thermoset Resin Mixtures Applied as Thermal Protection Systems [31]

Nanosonic, Inc.
158 Wheatland Drive
Pembroke, VA 24136
Melissa Campbell (540) 626-6266

Virginia Tech
245 Goodwin Hall
Blacksburg, VA 24061
19-1-T12.05-3378 JSC

Cure in Place Hybridsil Polyimide Materials for Next Generation Additively Manufactured TPS Heat Shields [32]

Tethers Unlimited, Inc.
11711 North Creek Parkway South, Suite D113
Bothell, WA 98011
Robert Hoyt (425) 486-0100
Western Washington University
516 High Street
Bellingham, WA
19-1-T12.05-4015 JSC

Resin Additive Manufacturing Processed Thermal Protection Systems (RAMP TPS) [33]

Focus Area 15 Materials, Materials Research, Structures, and Assembly (4)

AnalySwift
5413 Crus Corvi Road
West Jordan, UT 84081
Allan Wood (801) 599-5879

Purdue University-Main Campus
155 South Grant Street
West Lafayette, IN 47907
19-1-T12.01-3920 LaRC

Efficient High-Fidelity Modeling of High Strain Thin-Ply Composites [34]

Navatek, LLC
841 Bishop Street, Suite 1110
Honolulu, HI 96813
Todd Peltzer (808) 551-4713

University of Maine
168 College Avenue
Orono, ME
19-1-T12.01-3729 LaRC

Thin-Ply Inflatable Composites with Drop Stitch Reinforcement [35]

Opterus Research and Development, Inc.
4221 Rolling Gate Road
Fort Collins, CO 80526
Thomas Murphey (505) 250-3006
North Carolina State University at Raleigh
2701 Sullivan Drive
Raleigh, NC 27695
19-1-T12.01-2915 GRC

Braided Thin-Ply Tapes [36]

Touchstone Research Laboratory, Ltd.
The Millennium Centre, 1142 Middle Creek Road
Triadelphia, WV 26059
Brian Gordon (304) 547-5800

Clemson University
201 Sikes Hall
Clemson, SC
19-1-T12.01-4092 LaRC

Precision Heated Tooling for OOA Curing of Thin-Ply Composites [37]

• Focus Area 16 Ground & Launch Processing (2)

Alphacore, Inc.
398 South Mill Avenue, Suite 304
Tempe, AZ 85281
Kimberlee Olson (480) 494-5618

Arizona State University-Tempe
University Drive and Mill Avenue
Tempe, AZ
19-1-T13.01-4035 SSC

Ensuring Correct Sensor Operation and Decisions Under Harsh Environments [38]

Intelligent Fiber Optic Systems Corporation
2363 Calle Del Mundo
Santa Clara, CA 95054
Behzad Moslehi (408) 565-9004

Northwestern University
633 Clark St.
Evanston, IL 60208
19-1-T13.01-2665 SSC

Enhanced Real Time Distributed Strain and Temperature Monitoring for Rocket Ground Testing [39]

Focus Area 18 Air Vehicle Technology (6)

Chemtronergy, LLC
3619 West 1987 South
Salt Lake City, UT 84104
Gege Tao (801) 981-9997

University of Utah
201 Presidents Circle, ROOM 201
Salt Lake City, UT
19-1-T15.03-4336 GRC

Solid State Li-S Battery Based on Novel Polymer/Mineral Composite [40]

Continuum Dynamics, Inc.
34 Lexington Avenue
Ewing, NJ 08618
Barbara Agans (609) 538-0444

Pennsylvania State University-Main Campus
201 Old Main
University Park, PA
19-1-T15.01-3500 AFRC

DEP Aircraft Terminal Area Ride Quality/Safety of Operations Assessment Tool [41]
Barbara Agans (609) 538-0444

**Georgia Institute of Technology-Main Campus**
225 North Ave
Atlanta, GA
19-1-T15.01-2847 ARC

*Next Generation Distributed Electric Propulsion Urban Air Mobility Aircraft Analysis/Design Tools* [42]

**Cornerstone Research Group, Inc.**
510 Earl Boulevard
Miamisburg, OH 45342
Chrysa Theodore (937) 320-1877

**University of Maryland**
3112 Lee Building, 7809 Regents Drive
College Park, MD 20742
19-1-T15.03-3203 GRC

*Hybrid Anode for Electrified Aircraft Propulsion* [43]

**Research in Flight**
1919 North Ashe Court
Auburn, AL 36830
Roy Hartfield (334) 444-8523

**Auburn University**
141 Engineering Drive
Auburn, AL 36849
19-1-T15.01-2965 ARC

*Air Vehicle Gust Response analysis for Conceptual Design* [44]

**SurfPlasma**
8722 Northwest 9th Place
Gainesville, FL 32606
Subrata Roy (810) 516-0991
University of Florida
201 Criser Hall PO Box 114000
Gainesville, FL
19-1-T15.01-3721 GRC

Vortex Control for Low-Noise DEP Urban Aircraft [45]

- **Focus Area 23 Digital Transformation for Aerospace (3)**
  
  Emergent Space Technologies, LLC
  7901 Sandy Spring Road, Suite 511
  Laurel, MD 20707
  Everett Cary (301) 345-1535

  The University of Texas at San Antonio
  One UTSA Circle
  San Antonio, TX
  19-1-T11.03-3448 MSFC

  ROBOT: Rules Oriented Blockchain Operations Transactor [46]

  Mycroft AI, Inc.
  300 East 39th Street
  Kansas City, MO 64111
  Eric Jurgeson (913) 406-4011

  Texas A&M Engineering Experiment Station
  7607 Eastmark Drive
  College Station, TX 77840
  19-1-T11.04-4219 LaRC

  Development of A Digital Assistant for Early Mission Analysis and Design [47]

  Tietronix Software, Inc.
  1331 Gemini Avenue, Suite 300
  Houston, TX 77058
  Frank Hughes (281) 461-9300
University of Houston-Clear Lake
2700 Bay Area Blvd
Houston, TX
19-1-T11.03-2769 MSFC

Blockchain for Model Based System Engineering [48]