



Space Dynamics

LABORATORY

Utah State University Research Foundation

General Services Administration
Federal Supply Service
Professional Services Schedule (PSS)
Federal Supply Group: 00CORP

Contract: GS-23F-0046P

Utah State University Research Foundation Space Dynamics Laboratory

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<http://spacedynamics.org/company/contract-info>

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Type: Large Business, non-profit wholly owned and operated by Utah State University

DUNS: 097760433

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Contract Holder

On line access to contract ordering information, terms and conditions, up to date pricing, and the option to create an electronic delivery order are available through *GSA Advantage!*[®], a menu driven database system. The Internet address *GSA Advantage!*[®] is: GSAAdvantage.gov.

For more information on ordering from Federal Supply Schedules, select the FSS Schedules button at fss.gsa.gov

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CAPABILITIES STATEMENT

Utah State University Research Foundation doing business as the Space Dynamics Laboratory (SDL) conceives and develops state-of-the-art sensor and satellite systems and subsystems; performs space-, air- and ground-based experiments; conducts rapid development of prototype sensor hardware and associated software; performs concept definition and planning, validation studies and demonstrations; performs simulations, modeling and analyses; develops thermal management systems including cryogenic and cryocooler systems, thermal links and thermal switches; and calibrates and characterizes the performance of electro-optical systems. SDL's intelligence, surveillance and reconnaissance branch develops state-of-the-art technologies for data acquisition, transmission and visualization applications.

Core competencies include infrared, visible, ultraviolet, hyperspectral, hypertemporal, and polarimetric electro-optical sensor systems; lidar and ladar systems; small rockets and payloads; data compression and visualization; contamination control and materials science; space agriculture; vehicle environment interaction; atmospheric science; calibration and on-orbit performance assessment and validation including stray light modeling and performance analyses; cryogenics and thermal management; specialized mechanisms and controls; structures and structural analysis.

SDL provides full program management, systems engineering, cost analysis, scheduling, documentation, environmental testing (thermal, thermal-vacuum, vibrational, EMI/EMC), computer aided design and machining, surface mount circuit board design and production, and full optical, electrical, and mechanical design and analysis services under complicated radiative environmental condition.

1. CUSTOMER INFORMATION

1.1 Awarded Special Item Numbers (SINs) and Professional Engineering Disciplines

SDL has been awarded the following Special Item Numbers (SINs) and Professional Engineering Disciplines:

Special Item Number	Description	Primary Engineering Discipline	
		Electrical	Mechanical
871-1	Strategic Planning for Technology Programs/Activities	X	X
871-2	Concept Development and Requirements Analysis	X	X
871-3	System Design, Engineering and Integration	X	X
871-4	Test and Evaluation	X	X
871-5	Integrated Logistics Support	X	X
871-6	Acquisition and Life Cycle Management	X	X
00CORP-500	Order-Level Materials	X	X

Please see Appendix A for full descriptions of the SINs, Professional Engineering Disciplines, and Services not provided for under this Schedule.

1.2 Labor Categories and Hourly Rates

SDL has negotiated the labor categories and hourly rates shown in Appendix B & C. These categories and rates are applicable to all SINs. For services performed at SDL-owned facilities, On-site rates are used. For services performed in facilities not owned by SDL, Off-site rates are used. All rates are inclusive of 0.75% Industrial Funding Fee.

Other Direct Costs: To be determined on a Task Order by Task Order basis

Annual Escalation Factor: 2.98%

Descriptions and qualifications for the labor categories can be found in Appendix B

Labor hour rates can be found in Appendix C

2. MAXIMUM ORDER	Agency Task Orders may be issued up to \$1,000,000 in value. Agencies may place, and SDL may honor, orders exceeding this limit in accordance with FAR 8-404. For these larger orders, Ordering Agencies are encouraged to seek price reductions. Additionally, for orders in excess of \$1,000,000, SDL may propose lower rates to ensure the best value for the government.
3. MINIMUM ORDER	\$100.00
4. GEOGRAPHIC COVERAGE (DELIVERY AREA)	48 contiguous states. Does not include Alaska, Hawaii, or Puerto Rico.
5. POINTS OF PRODUCTION	<ul style="list-style-type: none"> • Logan, Utah • Bedford, Massachusetts • Albuquerque, New Mexico • Colorado Springs, Colorado • Huston, Texas • Fort Belvoir, Virginia • Huntsville, Alabama • Los Angeles, California • Washington, DC
6. DISCOUNT FROM LIST PRICES OR STATEMENT OF NET PRICE	The prices listed in Appendix C are discounted hourly rates.
7. QUANTITY DISCOUNTS	None
8. PROMPT PAYMENT TERMS	Net 30 - Information for Ordering Offices: Prompt payment terms cannot be negotiated out of the contractual agreement in exchange for other concessions
9. NOTIFICATION THAT GOVERNMENT PURCHASE CARDS ARE ACCEPTED	9a. Government Purchase Cards are accepted <u>below</u> the micro-purchase threshold. 9b. Government Purchase Cards are accepted <u>above</u> the micro-purchase threshold.
10. FOREIGN ITEMS (LIST ITEMS BY COUNTRY OF ORIGIN)	SDL currently does not have any foreign items that will be used on this schedule.
11. TIME OF DELIVERY	<p><i>Time of Delivery:</i> To be negotiated per task order.</p> <p><i>Expedited Delivery:</i> No items are listed for expedited delivery. Expedited delivery can be negotiated per task order.</p> <p><i>Overnight and 2-day Delivery:</i> No items are listed for expedited delivery. Expedited delivery can be negotiated per task order.</p> <p><i>Urgent Requirements:</i> Urgent requirements will be negotiated per task order.</p>
12. F.O.B POINT(S)	F.O.B. points will be negotiated per task order.
13. ORDERING ADDRESS AND PROCEDURES <i>Can be used for both:</i> <ul style="list-style-type: none"> - <i>Abbreviated, competitive contracting</i> - <i>Sole source contracting</i> <i>Can accept:</i> <ul style="list-style-type: none"> - <i>Time & Materials/Labor Hour</i> - <i>Firm Fixed Price</i> - <i>Blanket Purchase Orders</i> 	<p><i>Ordering Address:</i> For requests, purchase orders and contracts</p> <p>Utah State University Research Foundation 1695 North Research Pkwy North Logan, UT 84341</p> <p>Attn: Kathleen D. Hegemann Phone: (435) 713-3060 E-mail: kay.hegemann@sdl.usu.edu</p> <p><i>Ordering procedures:</i> For supplies and services, the ordering procedures, information on Blanket Purchase Agreements (BPAs) are found in Federal Acquisition Regulation (FAR) 8.405-3.</p>

14. PAYMENT ADDRESS	Controller, Utah State University Research Foundation 1695 North Research Pkwy North Logan, UT 84341
15. WARRANTY PROVISION	Warranty language will be negotiated on a per Task Order basis.
16. EXPORT PACKING CHARGES	Export packing charges will be negotiated on a per Task Order basis.
17. TERMS AND CONDITIONS OF GOVERNMENT PURCHASE CARD ACCEPTANCE	Contact Contractor.
18. TERMS AND CONDITIONS OF RENTAL, MAINTENANCE, AND REPAIR	Terms and conditions of rental, maintenance, and repair will be negotiated on a per Task Order basis.
19. TERMS AND CONDITIONS OF INSTALLATION	Terms and conditions of installation services will be negotiated on a per Task Order basis.
20. TERMS AND CONDITIONS OF REPAIR PARTS INDICATING DATE OF PARTS PRICE LISTS AND ANY DISCOUNTS FROM LIST PRICES	Terms and conditions of repair parts indicating date of parts price lists and any discounts from list prices will be negotiated on a per Task Order basis. General contract terms and conditions for all services can be downloaded from the GSA eLibrary (www.gsaelibrary.gsa.gov) and can be provided upon request.
21. LIST OF SERVICE AND DISTRIBUTION POINTS	Not applicable
22. LIST OF PARTICIPATING DEALERS	Not applicable
23. PREVENTATIVE MAINTENANCE	Terms and conditions for preventative maintenance will be negotiated on a per Task Order basis.
24. SPECIAL ATTRIBUTES	<i>Special Attributes Such as Environmental Attributes:</i> Not applicable. <i>Section 508 Compliance:</i> Not applicable.
25. DATA UNIVERSAL NUMBER SYSTEM (DUNS) NUMBER	097760433
26. NOTIFICATION REGARDING REGISTRATION IN SAM.GOV	SDL is registered on SAM.gov under DUNS 097760433 and CAGE 05924.
27. COMPETITIVE AND SOLE SOURCE OPTIONS	Services under this scheduled can be secured via an abbreviated competitive process (per <i>GSA Advantage!</i>) and/or sole source procurement process (per FAR 6.304)
28. SECURITY / CLASSIFIED WORK	<ul style="list-style-type: none"> • SDL maintains facilities capable of supporting work performed at all levels of security classifications (to include Top Secret and, where appropriate, Top Secret SCI). • SDL personnel are cleared to these levels.
29. ENTITIES THAT CAN USE THIS SCHEDULE	<ul style="list-style-type: none"> • All Federal Agencies • Federally-owned corporations • Land Grant Universities • Government prime contractors and subcontractors under cost reimbursable contracts

30. SERVICE CONTRACT ACT

The Service Contract Act (SCA) is applicable to this contract and it includes SCA applicable labor categories. The prices for the identified SCA labor categories are based on the U.S. Department of Labor WD Number identified in the SCA matrix. The prices offered are based on the preponderance of where work is performed and should the Contractor perform in an area with lower SCA rates, resulting in lower wages being paid, the task order prices will be discounted accordingly.

SCA MATRIX

SCA Eligible Contract Labor Category	SCA Equivalent Code - Title	WD Number
Technician III-PCB Design	30083 Engineering Technician III	WD 15-5501
Administrative Assistant	01313 Secretary III	WD 15-5501
Facilities Technician II	23370 General Maintenance Worker	WD 15-5501
Secretary IV	01313 Secretary III	WD 15-5501
Technician II-Electronics	30081 Engineering Technician I	WD 15-5501

31. CONTRACT TYPES

Under this schedule, SDL can accept the following type of contracting vehicles:

1. Time & Materials / Labor Hour
2. Firm Fixed Price
3. Blanket Purchase Order

APPENDIX A. PSS SPECIAL ITEM NUMBERS (SIN)

INTRODUCTORY NOTES

- Professional engineering solutions do not include architect-engineer services as defined in the Brooks Act and FAR Part 2 or construction services as defined in the Federal Acquisition Regulation Part 36 and Part 2.
- An implementation guide for Space launch Integration Services (SLIS) can be found at www.gsa.gov/psschedule - click on "Professional Engineering Solutions". Guide is applicable to SINs 871-2, 871-3, 871-4 and 871-5.
- Definitions pulled November 2018 from:
<https://www.gsaelibrary.gsa.gov/ElibMain/scheduleSummary.do?scheduleNumber=00CORP>

871-1 STRATEGIC PLANNING FOR TECHNOLOGY PROGRAMS/ACTIVITIES

Services required under this SIN involve the definition and interpretation of high level organizational engineering performance requirements such as projects, systems, missions, etc., and the objectives and approaches to their achievement. Typical associated tasks include, but are not limited to an analysis of mission, program goals and objectives, program evaluations, analysis of program effectiveness, requirements analysis, organizational performance assessment, special studies and analysis, training, and consulting.

Example: *The evaluation and preliminary definition of new and/or improved performance goals for navigation satellites such as launch procedures and costs, multi-user capability, useful service life, accuracy and resistance to natural and man-made electronic interference.*

871-2 CONCEPT DEVELOPMENT AND REQUIREMENTS ANALYSIS

Services required under this SIN involve abstract or concept studies and analysis, requirements definition, preliminary planning, the evaluation of alternative technical approaches and associated costs for the development of enhancement of high level general performance specifications of a system, project, mission or activity. Typical associated tasks include, but are not limited to requirements analysis, cost/cost performance trade-off analysis, feasibility analysis, developing and completing fire safety evaluation worksheets as they relate to professional engineering services, regulatory compliance support, technology/system conceptual designs, training, consulting, define interfaces and environments, collision avoidance analysis, perform plume impingement analysis, coupled load analysis, conduct spacecraft / satellite manifesting, and creating interface control documents.

Example: *The development and analysis of the total mission profile and life cycle of the improved satellite including examination of performance and cost tradeoffs.*

871-3 SYSTEM DESIGN, ENGINEERING AND INTEGRATION

Services required under this SIN involve the translation of a system (or subsystem, program, project, activity) concept into a preliminary and detailed design (engineering plans and specifications), performing risk identification/analysis, mitigation, traceability, and then integrating the various components to produce a working prototype or model of the system. Typical associated tasks include, but are not limited to computer-aided design, e.g. CADD, design studies and analysis, design review services, shop drawing review services, submittal review services, conducting fire protection facility surveys, developing risk reduction strategies and recommendations to mitigate identified risk conditions, fire modeling, performance-based design reviews, high level detailed specification and scope preparation, configuration, management and document control, fabrication, assembly and simulation, modeling, training, consulting, analysis of single or multi spacecraft missions, and mission design analysis.

Example: *The navigation satellite concept produced in the preceding stage will be converted to a detailed engineering design package, performance will be computer simulated and a working model will be built for testing and design verification.*

871-4 TEST AND EVALUATION

Services required under this SIN involve the application of various techniques demonstrating that a system (subsystem, program, project or activity) performs in accordance with the objectives outlined in the original design. Typical associated tasks include, but are not limited to testing of a prototype, first article(s) testing, environmental testing, performing inspections and witnessing acceptance testing of fire protection and life safety systems as they relate to professional engineering services, independent verification and validation, reverse engineering, simulation and modeling (to test the feasibility of a concept), system, quality assurance, physical testing of the product system, training, consulting, receptions and inspection of Government Furnished Equipment / Satellite, conduct testing and safety audits.

Example: *The navigation satellite-working model will be subjected to a series of tests, which may simulate and ultimately duplicate its operational environment.*

871-5 INTEGRATED LOGISTICS SUPPORT

Services required under this SIN involves the analysis, planning and detailed design of all engineering specific logistics support including material goods, personnel, and operational maintenance and repair of systems throughout their lifecycles, excluding those systems associated with real property. Typical associated tasks include, but are not limited to ergonomic/human performance analysis, feasibility analysis, logistics planning, requirements determination, policy standards/procedures development, conducting research studies, long-term reliability and maintainability, conducting research studies, long-term reliability and maintainability, training, consulting, conduct acceptance, functional and post acceptance testing, testing, integration of the payload for flight Customer Agency, support provided during launch, orbital maneuvering and satellite separation from the spacecraft.

Example: *The full range of life cycle logistics support for the navigation satellite will be identified and designed in this stage including training, operation and maintenance requirements, and replacement procedures.*

871-6 ACQUISITION AND LIFE CYCLE MANAGEMENT

Services required under this SIN involve all of the planning, budget, contract and systems/program management functions required to procure and or/produce, render operational and provide life cycle support (maintenance, repair, supplies, engineering specific logistics) to (technology based) systems, activities, subsystems, projects, etc. Typical associated tasks include, but are not limited to operation and maintenance, evaluation of inspection, testing, and maintenance program for fire protection and life safety systems, program/project management, technology transfer/insertion, training and consulting.

Example: *During this stage the actual manufacturing, launch, and performance monitoring of the navigation satellite will be assisted through project management, configuration management, reliability analysis, engineering retrofit improvements and similar functions.*

NEW - - 00CORP 500 ORDER-LEVEL MATERIALS (OLMS)

Order-Level Materials (OLMs) are supplies and/or services acquired in direct support of an individual task or delivery order placed against a Federal Supply Schedule (FSS) contract or FSS blanket purchase agreement (BPA). OLMs are not defined, priced, or awarded at the FSS contract level. They are unknown before a task or delivery order is placed against the FSS contract or FSS BPA. OLMs are only authorized for inclusion at the order level under a Time-and-Materials (T&M) or Labor-Hour (LH) Contract Line Item Number (CLIN) and are subject to a Not To Exceed (NTE) ceiling price. OLMs include direct materials,

subcontracts for supplies and incidental services for which there is not a labor category specified in the FSS contract, other direct costs, and indirect costs. OLMs are purchased under the authority of the FSS Program and are not "open market items."

Items awarded under ancillary supplies/services or other direct cost (ODC) SINs are not OLMs. These items are defined, priced, and awarded at the FSS contract level, whereas OLMs are unknown before an order is placed. Ancillary supplies/services and ODC SINs are for use under all order type CLINs [Fixed-Price (FP), T&M, and LH], whereas the Order-Level Materials SIN is only authorized for use under T&M and LH order CLINs.

The Order-Level Materials SIN is only authorized for use in direct support of another awarded SIN. Price analysis for OLMs is not conducted when awarding the FSS contract or FSS BPA; therefore, GSAR 538.270 and 538.271 do not apply to OLMs. OLMs are defined and priced at the ordering activity level in accordance with GSAR clause 552.238-82 Special Ordering Procedures for the Acquisition of Order-Level Materials.

Prices for items provided under the Order-Level Materials SIN must be inclusive of the Industrial Funding Fee (IFF). The cumulative value of OLMs in an individual task or delivery order cannot exceed 33.33% of the total value of the order.

APPENDIX B. LABOR CATEGORY DESCRIPTIONS & QUALIFICATIONS

EXECUTIVE MANAGER

Responsible for managing programs or groups of related programs with a common customer base. Ensures that all required resources such as engineering, manpower, production, computer time, facilities and the like are available for the program. Plans, directs and monitors program budget and serves as primary customer contact for program information.

Level	Qualifications 1	Qualifications 2
Principal	16+ yrs exp with MS	12+ yrs exp with PhD

PROGRAM MANAGER

Responsible for managing complex programs. May manage fixed price contracts. Oversees program budget and schedules. May direct staff, typically has deputy staff conducting supervisory responsibilities. Has primary responsibility for program growth; may be responsible for marketing new technology or follow-on business acquisition.

Level	Qualifications 1	Qualifications 2
Master	20+ yrs exp with BS degree	18+ yrs exp with MS degree
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS or PhD degree
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS or PhD degree
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree

SYSTEMS ENGINEER

Plans, directs and coordinates the operations of Design, Machinery, Assembly, Testing, and Logistics. Oversees the coordination of building space allocation, layout and communication services. Assists in day-to-day management and coordination of financial, administrative, and personnel matters within the Program Development support group.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Master	18+ yrs exp with BS degree	16+ yrs exp with MS degree	12+ yrs exp with PhD
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS degree	9-12 yrs exp with PhD
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

CALIBRATION ENGINEER

Designs, develops, modifies and evaluates complex Optical hardware devices and/or systems. Knowledgeable of data analysis and understanding of physical measurements. Knowledge of blackbodies and optical test equipment. Diagnoses malfunctions in existing products and makes improvements or modifications to produce desired results. Compiles and evaluates design and test data and prepares technical specifications. Analyzes, develops and recommends design approaches to meet production requirements for new or improved products and/or processes. Interfaces with technical support personnel, drafters, technical writers and engineering technicians as required.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Master	18+ yrs exp with BS degree	16+ yrs exp with MS degree	12+ yrs exp with PhD
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS degree	9-12 yrs exp with PhD
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

MECHANICAL ENGINEER

Designs, develops, modifies and evaluates complex mechanical hardware devices and/or systems. Diagnoses malfunctions in existing products and makes improvements or modifications to produce desired results. Compiles and evaluates design and test data and prepares technical specifications. Analyzes, develops and recommends design approaches to meet production requirements for new or improved products and/or processes. Interfaces with technical support personnel, drafters, technical writers and engineering technicians as required.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Master	18+ yrs exp with BS degree	16+ yrs exp with MS degree	12+ yrs exp with PhD
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS degree	9-12 yrs exp with PhD
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

ELECTRICAL ENGINEER

Designs, develops, modifies and evaluates complex electrical hardware devices and/or systems. Diagnoses malfunctions in existing products and makes improvements or modifications to produce desired results. Compiles and evaluates design and test data and prepares technical specifications. Analyzes, develops and recommends design approaches to meet production requirements for new or improved products and/or processes. Interfaces with technical support personnel, drafters, technical writers and engineering technicians as required.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Master	18+ yrs exp with BS degree	16+ yrs exp with MS degree	12+ yrs exp with PhD
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS degree	9-12 yrs exp with PhD
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

ELECTRO-OPTICAL ENGINEER

Designs, develops, modifies and evaluates complex optical hardware devices and/or systems, knowledge of electromagnetic wave propagation and radiometric modeling. Diagnoses malfunctions in existing products and makes improvements or modifications to produce desired results. Compiles and evaluates design and test data and prepares technical specifications. Analyzes, develops and recommends design approaches to meet production requirements for new or improved products and/or processes. Interfaces with technical support personnel, drafters, technical writers and engineering technicians as required.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Master	18+ yrs exp with BS degree	16+ yrs exp with MS degree	12+ yrs exp with PhD
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS degree	9-12 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD

SOFTWARE ENGINEER

Designs, develops and analyzes complicated and difficult software programs for computer based systems. Performs systems modeling, simulation and analysis. Designs and develops utility programs. Collaborates with hardware design engineers on machine characteristics that affect software systems and work with them to resolve incompatibilities. As required, provides inputs for documentation of new or existing programs.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Master	18+ yrs exp with BS degree	16+ yrs exp with MS degree	12+ yrs exp with PhD
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS degree	9-12 yrs exp with PhD
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

CIVIL ENGINEER

Will provide support for lab and field research campaigns to measure air quality and develop new techniques in air sampling including lidar, Airmetrics, Aerodyne AMS, OPC, EC/OC analyzers, NOx analyzers, passive and active NH3 samplers, and CO/CO2 analyzers, and standard meteorological equipment. Additionally, the applicant must have experience with EPA-approved dispersion models such as ISCST3 and AERMOD.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Master	18+ yrs exp with BS degree	16+ yrs exp with MS degree	12+ yrs exp with PhD
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS degree	9-12 yrs exp with PhD
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

SCIENTIST

Responsible for analyzing problems and developing experimental or theoretical techniques for formalized engineering or scientific studies. Resolves a variety of technical problems leading to advanced engineering studies designed to increase efficiency or reduce costs. Demonstrates creative ability through patent disclosures or published papers. Prepares technical manuals, reports and procedures reflecting advance knowledge in assigned area of expertise.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Master	18+ yrs exp with BS degree	16+ yrs exp with MS degree	12+ yrs exp with PhD
Principal	15-18 yrs exp with BS degree	13-16 yrs exp with MS degree	9-12 yrs exp with PhD
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

DESIGNER

Performs a variety of mechanical design, drawing, and modeling tasks. Teams with engineering, quality assurance, manufacturing, and program management to address design concerns and compliance to design requirements in a timely manner from program proposal through completion. Proposes and implements mechanical design solutions. Creates project models and associated drawings and ensures continuity within the program. Creates and maintains design group drawing library on the Intranet webpages. Prepares required documentation for technical interchange meetings and design reviews. Proficient in the use of applicable CAD equipment.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Principal	16+ years with HS Diploma	15+ years with Certification	14+ years with AS degree
Senior	15+ years with HS Diploma	14+ years with Certification	13+ years with AS degree
General	10-15 years with HS Diploma	9-14 years with Certification	8-13 years with AS degree
Associate	5-10 years with HS Diploma	4-9 years with Certification	3-8 years with AS degree

TECHNOLOGIST

Assists in the design, development, construction and laboratory testing of developmental equipment and assemblies. Using basic engineering principles, develops or directs the set-up of test equipment and the appropriate testing on new or experimental units. Assignments are typically of a non-repetitive R&D nature and complexity requiring considerable judgment and initiative in resolving problems and making recommendations. Collaborates with project scientists and engineers in the design, development and evaluation of experimental apparatus, equipment, experimental facilities and instrumental systems. Directs the development of apparatus, equipment and systems by interpreting objectives and translating them into design concepts and definition of job requirements. Collects data and analyzes results from scientific experiments and assists in the preparation of reports relating such results to project objectives. Requires expertise in one of the following areas: physics, engineering, optics, or other specialized area.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Principal	16+ years with HS Diploma	15+ years with Certification	14+ years with AS degree
Senior	15-16 years with HS Diploma	14-15 years with Certification	13-14 years with AS degree
General	10-15 years with HS Diploma	9-14 years with Certification	8-13 years with AS degree
Associate	0-10 years with HS Diploma	0-9 years with Certification	0-8 years with AS degree

QUALITY ENGINEER

Responsible for a wide variety of detailed resource analysis, forecasting, tracking, and coordinating tasks as a member of the management team in support of significant management planning and tracking activities affecting the administration and operation of a large technical research laboratory. Adopts modern modeling techniques to relate program forecasts to human resource, financial, and facilities requirements, and provides recommendations to assist management in decision making.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

TECHNICAL WRITER

Writes and edits a variety of scientific and non-technical documentation including proposals, plans, procedures, reports, design review presentations and journal articles. Assists engineers, scientists, and other technical personnel in clearly and accurately conveying complex presentations. Ensures adherence to specifications. Follows established procedures and formats to standard grammatical practices, in-house stylistic conventions, and publication-specific requirements. Guides publications through all phases of production.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD

COST ANALYST / PROGRAM COORDINATOR

Develops proposal budgets, prepare detailed cost volumes, perform financial tracking, reporting, and forecasting on government project as well as and internal accounts, and develop and maintain program schedules.

Level	Qualifications 1	Qualifications 2	Qualifications 3
Senior	10-15 yrs exp with BS degree	8-13 yrs exp with MS degree	4-9 yrs exp with PhD
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

GENERAL ASSEMBLERS, LOGISTICS, SUPPORT STAFF

Support staff working in any one of various functions: administration, logistics, travel or other support functions.

GENERAL GRADUATE STUDENTS

May have any one of various technical disciplines. Serves in a support role to engineers, scientists and technologists. Has finished a BS degree and in pursuit of MS or PhD.

GENERAL UNDERGRADUATE STUDENTS

May have any one of various technical disciplines. Serves in a support role to engineers, scientists and technologists. Is working on undergraduate degree.

APPENDIX C. HOURLY RATES

USURF / Space Dynamics Laboratory On-Site Rates Includes 0.75% GSA IFF	OPTION PERIOD 3				
	7/1/19- 6/30/20	7/1/20- 6/30/21	7/1/21- 6/30/22	7/1/22- 6/30/23	7/1/23- 11/11/23
	Year 16	Year 17	Year 18	Year 19	Year 20
Executive Manager - Principal	\$274.20	\$281.60	\$289.20	\$297.01	\$305.03
Program Manager - Senior	\$229.17	\$235.36	\$241.71	\$248.24	\$254.94
Program Manager - General	\$193.39	\$198.61	\$203.98	\$209.48	\$215.14
Systems Engineer - Master	\$217.87	\$223.76	\$229.80	\$236.00	\$242.38
Systems Engineer - Principal	\$197.25	\$202.58	\$208.05	\$213.67	\$219.44
Systems Engineer - Associate	\$97.54	\$100.17	\$102.88	\$105.66	\$108.51
Calibration Engineer - Master	\$248.91	\$255.63	\$262.54	\$269.63	\$276.91
Calibration Engineer - Principal	\$197.22	\$202.54	\$208.01	\$213.63	\$219.40
Calibration Engineer - Senior	\$173.10	\$177.77	\$182.57	\$187.50	\$192.57
Calibration Engineer - General	\$129.16	\$132.65	\$136.23	\$139.91	\$143.69
Mechanical Engineer - Master	\$279.55	\$287.10	\$294.85	\$302.81	\$310.99
Mechanical Engineer - Principal	\$190.80	\$195.95	\$201.24	\$206.68	\$212.26
Mechanical Engineer - Senior	\$171.71	\$176.35	\$181.11	\$186.00	\$191.02
Mechanical Engineer - General	\$141.25	\$145.07	\$148.99	\$153.01	\$157.14
Mechanical Engineer - Associate	\$115.64	\$118.77	\$121.97	\$125.27	\$128.65
Electrical Engineer - Master	\$260.17	\$267.19	\$274.41	\$281.82	\$289.42
Electrical Engineer - Principal	\$218.09	\$223.98	\$230.02	\$236.24	\$242.61
Electrical Engineer - Senior	\$171.09	\$175.71	\$180.46	\$185.33	\$190.33
Electrical Engineer - General	\$147.67	\$151.65	\$155.75	\$159.95	\$164.27
Electrical Engineer - Associate	\$125.26	\$128.64	\$132.12	\$135.68	\$139.35
Electro-Optical Engineer - Master	\$234.44	\$240.77	\$247.27	\$253.95	\$260.80
Electro-Optical Engineer - Principal	\$216.48	\$222.33	\$228.33	\$234.49	\$240.82
Electro-Optical Engineer - General	\$126.64	\$130.06	\$133.57	\$137.18	\$140.88
Software Engineer - Principal	\$198.45	\$203.81	\$209.31	\$214.97	\$220.77
Software Engineer - Senior	\$153.28	\$157.42	\$161.67	\$166.03	\$170.52
Software Engineer - General	\$133.20	\$136.80	\$140.49	\$144.29	\$148.18
Software Engineer - Associate	\$110.00	\$112.97	\$116.02	\$119.15	\$122.37
Civil Engineer - General	\$120.86	\$124.12	\$127.47	\$130.91	\$134.45
Scientist - Master	\$263.63	\$270.75	\$278.06	\$285.57	\$293.28
Scientist - Principal	\$187.60	\$192.66	\$197.87	\$203.21	\$208.69
Scientist - Senior	\$161.26	\$165.61	\$170.08	\$174.68	\$179.39
Scientist - General	\$141.08	\$144.88	\$148.80	\$152.81	\$156.94
Scientist - Associate	\$92.58	\$95.08	\$97.65	\$100.29	\$103.00
Designer - Principal	\$168.51	\$173.06	\$177.73	\$182.53	\$187.46
Designer - Senior	\$151.97	\$156.08	\$160.29	\$164.62	\$169.06
Technologist - Principal	\$157.96	\$162.22	\$166.60	\$171.10	\$175.72
Technologist - Senior	\$127.79	\$131.24	\$134.79	\$138.43	\$142.16
Technologist - General	\$101.09	\$103.82	\$106.62	\$109.50	\$112.46
Technologist - Associate	\$87.28	\$89.64	\$92.06	\$94.54	\$97.10
Quality Engineer - Senior	\$141.29	\$145.11	\$149.03	\$153.05	\$157.18
Quality Engineer - Associate	\$105.26	\$108.11	\$111.02	\$114.02	\$117.10
Technical Writer - Senior	\$141.11	\$144.92	\$148.83	\$152.85	\$156.98
Technical Writer - General	\$101.11	\$103.84	\$106.64	\$109.52	\$112.48
Technical Writer - Associate	\$65.37	\$67.14	\$68.95	\$70.81	\$72.72
Cost Analyst/Program Coordinator - Principal	\$173.79	\$178.48	\$183.30	\$188.25	\$193.33
Cost Analyst/Program Coordinator - Senior	\$124.39	\$127.75	\$131.20	\$134.74	\$138.38
Cost Analyst/Program Coordinator - General	\$103.84	\$106.65	\$109.53	\$112.48	\$115.52
General Assemblers, Logistics, Support Staff	\$105.74	\$108.59	\$111.52	\$114.53	\$117.63
General Graduate Students	\$49.57	\$50.91	\$52.28	\$53.69	\$55.14
General Undergraduate Students	\$30.87	\$31.70	\$32.56	\$33.44	\$34.34

USURF / Space Dynamics Laboratory Off-Site Rates Includes 0.75% GSA IFF	OPTION PERIOD 3				
	7/1/19- 6/30/20	7/1/20- 6/30/21	7/1/21- 6/30/22	7/1/22- 6/30/23	7/1/23- 11/11/23
	Year 16	Year 17	Year 18	Year 19	Year 20
Executive Manager - Principal	\$211.72	\$217.43	\$223.30	\$229.33	\$235.53
Program Manager - Senior	\$176.25	\$181.01	\$185.90	\$190.92	\$196.07
Program Manager - General	\$148.05	\$152.04	\$156.15	\$160.37	\$164.70
Systems Engineer - Master	\$167.35	\$171.87	\$176.51	\$181.27	\$186.17
Systems Engineer - Principal	\$151.09	\$155.17	\$159.36	\$163.66	\$168.08
Systems Engineer - Associate	\$72.48	\$74.44	\$76.45	\$78.52	\$80.64
Calibration Engineer - Master	\$191.82	\$197.00	\$202.32	\$207.78	\$213.39
Calibration Engineer - Principal	\$151.06	\$155.14	\$159.33	\$163.63	\$168.05
Calibration Engineer - Senior	\$132.05	\$135.62	\$139.28	\$143.04	\$146.90
Calibration Engineer - General	\$97.41	\$100.04	\$102.75	\$105.52	\$108.37
Mechanical Engineer - Master	\$217.76	\$223.64	\$229.68	\$235.88	\$242.25
Mechanical Engineer - Principal	\$147.80	\$151.79	\$155.89	\$160.10	\$164.42
Mechanical Engineer - Senior	\$132.75	\$136.34	\$140.02	\$143.80	\$147.68
Mechanical Engineer - General	\$108.74	\$111.68	\$114.69	\$117.79	\$120.97
Mechanical Engineer - Associate	\$88.55	\$90.94	\$93.40	\$95.92	\$98.51
Electrical Engineer - Master	\$203.02	\$208.51	\$214.14	\$219.92	\$225.86
Electrical Engineer - Principal	\$169.85	\$174.44	\$179.15	\$183.99	\$188.95
Electrical Engineer - Senior	\$132.80	\$136.39	\$140.07	\$143.85	\$147.74
Electrical Engineer - General	\$114.34	\$117.42	\$120.59	\$123.85	\$127.19
Electrical Engineer - Associate	\$96.67	\$99.28	\$101.96	\$104.72	\$107.54
Electro-Optical Engineer - Master	\$181.10	\$185.99	\$191.01	\$196.16	\$201.46
Electro-Optical Engineer - Principal	\$166.94	\$171.45	\$176.08	\$180.83	\$185.71
Electro-Optical Engineer - General	\$96.12	\$98.71	\$101.38	\$104.11	\$106.93
Software Engineer - Principal	\$152.25	\$156.36	\$160.58	\$164.91	\$169.37
Software Engineer - Senior	\$116.63	\$119.78	\$123.02	\$126.34	\$129.75
Software Engineer - General	\$100.81	\$103.53	\$106.32	\$109.19	\$112.14
Software Engineer - Associate	\$82.51	\$84.74	\$87.03	\$89.38	\$91.79
Civil Engineer - General	\$90.87	\$93.32	\$95.84	\$98.43	\$101.08
Scientist - Master	\$203.39	\$208.88	\$214.52	\$220.31	\$226.26
Scientist - Principal	\$143.45	\$147.32	\$151.30	\$155.38	\$159.58
Scientist - Senior	\$122.68	\$126.00	\$129.40	\$132.89	\$136.48
Scientist - General	\$106.77	\$109.66	\$112.62	\$115.66	\$118.78
Scientist - Associate	\$68.55	\$70.40	\$72.30	\$74.25	\$76.25
Designer - Principal	\$130.82	\$134.36	\$137.98	\$141.71	\$145.54
Designer - Senior	\$117.79	\$120.97	\$124.23	\$127.59	\$131.03
Technologist - Principal	\$122.21	\$125.51	\$128.89	\$132.38	\$135.95
Technologist - Senior	\$98.43	\$101.08	\$103.81	\$106.62	\$109.49
Technologist - General	\$77.37	\$79.46	\$81.61	\$83.81	\$86.08
Technologist - Associate	\$66.49	\$68.28	\$70.13	\$72.02	\$73.97
Quality Engineer - Senior	\$106.95	\$109.83	\$112.80	\$115.84	\$118.97
Quality Engineer - Associate	\$78.54	\$80.66	\$82.84	\$85.08	\$87.37
Technical Writer - Senior	\$106.80	\$109.69	\$112.65	\$115.69	\$118.81
Technical Writer - General	\$75.27	\$77.30	\$79.39	\$81.53	\$83.73
Technical Writer - Associate	\$47.09	\$48.36	\$49.67	\$51.01	\$52.39
Cost Analyst/Program Coordinator - Principal	\$132.56	\$136.14	\$139.82	\$143.59	\$147.47
Cost Analyst/Program Coordinator - Senior	\$93.62	\$96.15	\$98.74	\$101.41	\$104.15
Cost Analyst/Program Coordinator - General	\$77.42	\$79.51	\$81.66	\$83.86	\$86.13
General Assemblers, Logistcs, Support Staff	\$78.91	\$81.05	\$83.23	\$85.48	\$87.79
General Graduate Students	\$37.45	\$38.46	\$39.50	\$40.57	\$41.67
General Undergraduate Students	\$22.68	\$23.29	\$23.92	\$24.56	\$25.23