
Space Dynamics

LABORATORY

Utah State University

General Services Administration Federal Supply Service GSA Multiple Award Schedule GSA MAS

Contract: GS-23F-0046P

**Utah State University
Space Dynamics Laboratory**

1695 North Research Park Way

North Logan, Utah 84341

Phone: 435-713-3600

Fax: 435-713-3007

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

Contract Period: November 12, 2003 - November 11, 2023

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

Price list current as of Modification #PS-A812 effective February 4, 2020



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 (USU) 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 the following:

- Electro-optical sensor systems research and development
 - Innovative sensor components and systems
 - Cryo-systems, thermal design, development and handling
 - Sensor calibration, characterization, test and evaluation
- Ground, airborne and space rated instruments and payload development, test and evaluation integration, validation and operations to include Technology insertion including form, fit, function and miniaturization of mechanical, optical and electronic devices
- Modular Open Systems Architecture for airborne, space, and ground applications
- Autonomous and Intelligent Unmanned Sensor Systems.
- Geo-Based Active Stabilization and pointing for airborne, space, and ground applications
- Large scale data processing, handling, compression/ decompression and visualization techniques for sensor analysis, data exploitation, data fusion, and data dissemination
- Phenomenology measurements, modeling and simulation
- Sensor modeling and simulation
- Small/micro satellite sensor systems and components
- Prototype development of ground systems to support ground, airborne, and space instruments
 - Multi-domain Command and Control (C2), including C2 research and analysis, and developing C2 concept of operations (CONOPS)
- Cyber analytics and high-speed networks

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

1A. 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
541330ENG	Engineering Services	X	X
541380	Testing Laboratories Services	X	X
541420	Engineering System Design and Integration Services	X	X
541715	Engineering Research and Development and Strategic Planning	X	X
OLM	Order-Level Materials (OLMs)	X	X

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

1B. IDENTIFICATION OF LOWEST PRICED MODEL NUMBER AND LOWEST UNIT PRICE FOR THAT NUMBER

Prices are based on a unit of one (1) Hour of Labor Category for all SINs listed in 1A. An activity is designated as offsite, and offsite hourly rates applied, if the office locations of personnel performing the activity are located in facilities provided by the sponsor, including equipment, computers, and operating supplies. If these criteria are not met, the activity is designated as onsite and onsite hourly rates are applied.

1C. 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
- A description of all job titles, experience, functional responsibility, functional responsibility and education corresponding to labor hour rates can be found in Appendices B and 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)	Worldwide.
5. POINTS OF PRODUCTION	<ul style="list-style-type: none"> • North Logan, Utah • Bedford, Massachusetts • Albuquerque, New Mexico • Houston, 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	<p>9a. Government Purchase Cards are accepted <u>below</u> the micro-purchase threshold.</p> <p>9b. Government Purchase Cards are accepted <u>above</u> the micro-purchase threshold.</p>
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)	Destination.
13. A. ORDERING ADDRESS(ES)	<p><i>Ordering Address:</i> For requests, purchase orders and contracts</p> <p>Utah State University Space Dynamics Laboratory 1695 North Research Pkwy North Logan, UT 84341</p> <p>Attn: Jason M. Kohl Phone: (435) 999-7055 E-mail: jason.kohl@sdl.usu.edu</p>

13. B. ORDERING 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> 	<i>Ordering procedures:</i> For supplies and services, the ordering procedures, information on Blanket Purchase Agreements (BPA's) are found in Federal Acquisition Regulation (FAR) 8.405-3.
14. PAYMENT ADDRESS	Controller, Utah State University Space Dynamics Laboratory 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.

COMPETITIVE AND SOLE SOURCE OPTIONS

Services under this scheduled can be secured via an abbreviated competitive process (per *GSA Advantage!*) and/or sole source procurement process (per FAR 6.304)

SECURITY / CLASSIFIED WORK

- 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.

ENTITIES THAT CAN USE THIS SCHEDULE

- All Federal Agencies
- Federally-owned corporations
- Land Grant Universities
- Government prime contractors and subcontractors under cost reimbursable contracts

SERVICE CONTRACT ACT

The Service Contract Labor Standards, formerly the Service Contract Act (SCA), apply to this contract and it includes SCLS applicable labor categories. Labor categories and fixed price services marked with a (**) in this pricelist are based on the U.S. Department of Labor Wage Determination Number(s) identified in the SCLS/SCA matrix. The prices awarded are in line with the geographic scope of the contract (i.e., nationwide).

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	30082 Technician II	WD 15-5501

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. MULTIPLE AWARD SCHEDULE 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 www.gsa.gov/buying-selling/purchasing-programs/gsa-schedules/gsa-schedule-offerings/mas-categories - click on “Professional Services Category.”
- SIN descriptions were pulled 07 May 2020 from GSA eLibrary by entering the SIN number in the search field.

SIN 541330ENG - Engineering Services

Services include: applying physical laws and principles of engineering in the design, development, and utilization of machines, materials, instruments, processes, and systems. Services may involve any of the following activities: provision of advice, concept development, requirements analysis, preparation of feasibility studies, preparation of preliminary and final plans and designs, provision of technical services during the construction or installation phase, inspection and evaluation of engineering projects, and related services.

NOTE: Services under this SIN cannot include architect-engineer services as defined in the Brooks Act and FAR Part 2, or construction services as defined in FAR Parts 2 and 36.

SIN 541380 - Testing Laboratories Services

Includes testing laboratory services and veterinary, natural, and life sciences; testing services and laboratories; and other professional, scientific, and technical consulting services.

Testing and services include, but are not limited to: physical, chemical, analytical, or other testing services; quality assurance; fire safety inspections; training; safety audits; relying upon experimental, empirical, quantifiable data, relying on the scientific method, and professional services, tasks, and labor categories in the fields of biology, chemistry, physics, earth sciences, atmospheric science, oceanography, materials sciences, mathematics, geology, astronomy, veterinary medicine, statistics, systems science, etc., (excludes social and behavioral sciences).

Examples of labor categories include, but are not limited to, Scientific Researchers, Biologists, Physicists, Mathematicians, Statisticians, Research Engineers, Meteorologists, Lab Technicians, Veterinarians and Veterinary Services, Chemists, Biochemical Engineers, Research Nurses.

SIN 541420 - Engineering System Design and Integration Services

Services include creating and developing designs and specifications that optimize the use, value, and appearance of their products. These services can include determination of the materials, construction, mechanisms, shape, color, and surface finishes of the product, taking into consideration human characteristics and needs, safety, market appeal, and efficiency in production, distribution, use, and maintenance.

Associated tasks include, but are not limited to computer-aided design, e.g. CADD, 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.

NOTE: Services under this NAICs cannot 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 www.gsa.gov/buying-selling/purchasing-programs/gsa-schedules/gsa-schedule-offerings/mas-categories - click on “Professional Services Category.”

SIN 541715 - Engineering Research and Development and Strategic Planning

Service include conducting research and experimental development (except nanotechnology and biotechnology research and experimental development) in the physical, engineering and life sciences such as; such as agriculture, electronics, environmental, biology, botany, computers, chemistry, food, fisheries, forests, geology, health, mathematics, medicine, oceanography, pharmacy, physics, veterinary and other allied subjects.

Typical tasks include, but are not limited to, 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; requirements analysis, cost/cost performance trade-off analysis, feasibility analysis, developing and completing fire safety evaluation worksheets as they relate to professional engineering services; 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.

NOTE: Services under this NAICs cannot 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.

SIN OLM

OLMs are supplies and/or services acquired in direct support of an individual task or delivery order placed against a Schedule contract or BPA. OLM pricing is not established at the Schedule contract or BPA level, but at the order level. Since OLMs are identified and acquired at the order level, the ordering contracting officer (OCO) is responsible for making a fair and reasonable price determination for all OLMs.

OLMs are procured under a special ordering procedure that simplifies the process for acquiring supplies and services necessary to support individual task or delivery orders placed against a Schedule contract or BPA. Using this new procedure, ancillary supplies and services not known at the time of the Schedule award may be included and priced at the order level.

OLM SIN-Level Requirements/Ordering Instructions:

OLMs are:

- Purchased under the authority of the FSS Program
- Unknown until an order is placed
- Defined and priced at the ordering activity level in accordance with GSAR clause 552.238-115 Special Ordering Procedures for the Acquisition of Order-Level Materials. (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)
- Only authorized for use in direct support of another awarded SIN.
- Only authorized for inclusion at the order level under a Time-and-Materials (T&M) or Labor-Hour (LH) Contract Line Item Number (CLIN)
- Subject to a Not-to-Exceed (NTE) ceiling price

OLMs are not:

- "Open Market Items"
- Items awarded under ancillary supplies/services or other direct cost (ODC) SINs (these items are defined, priced, and awarded at the FSS contract level)

OLM Pricing:

- Prices for items provided under the Order-Level Materials SIN must be inclusive of the Industrial Funding Fee (IFF).
- The value of OLMs in a task or delivery order, or the cumulative value of OLMs in orders against an FSS BPA awarded under an FSS contract, cannot exceed 33.33%.

NOTE: When used in conjunction with a Cooperative Purchasing eligible SIN, this SIN is Cooperative Purchasing Eligible.

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
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

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

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

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
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
General	5-10 yrs exp with BS degree	3-8 yrs exp with MS degree	0-4 yrs exp with PhD

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 or 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
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
Associate	0-5 yrs exp with BS degree	0-3 yrs exp with MS degree	NA

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
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

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

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

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, Logistics, 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