



Oregon NASA Space Grant

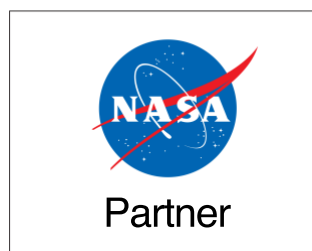
2023-24

Dr. Nancy Squires Memorial Scholarship

Program Guide

**Open to students attending OSGC Community College and
4-Year Member Institutions**

Application Deadline June 9, 2023



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Dr. Nancy Squires was a senior instructor in the School of Mechanical, Industrial, and Manufacturing Engineering at Oregon State University (OSU) where she taught for 15 years. She also taught courses in the OSU Honors College. Prior to coming to OSU in 2004, Dr. Squires retired from a career as an engineer in the aerospace industry. Dr. Squires was instrumental in establishing the OSU chapter of the American Institute of Aeronautics and Astronautics (AIAA) student club as well as playing a vital role in developing the aerospace engineering minor at OSU. Dr. Squires passed away unexpectedly on June 19, 2020.

Dr. Squires had a passion for engineering and aerospace that ran deep, and that passion served to inspire, motivate, and pave the way for success for every student who crossed her path. Having experienced the struggles of being a woman in aerospace, Dr. Squires understood the challenges the industry faces. She was a champion of women and underrepresented students in engineering, her positive outlook lifting students up along the way. Dr. Squires had a gentle soul, full of calm and compassion and was a bright light to so many. She challenged students but always believed in them even when they doubted themselves. She worked side-by-side with students to determine a path forward to achieve their goals and help them be the best version of themselves, even in the face of adversity. Never short on time for her students, Dr. Squires gave endlessly to mentoring and coaching the student rocketry teams, working through their challenges and celebrating their successes along the way. She was their biggest motivator and their most loyal supporter.



Oregon Space Grant is grateful for Dr. Squires' many contributions to STEM education and honors her commitment to building the next generation of inspired and passionate aerospace engineers. She leaves behind a legacy that continues to live and grow and inspire. *Ad astra* Dr. Squires.

Truly more than an educator, to those in this community, she was a mentor, role model, advisor, and friend. She was a bright light in a world that sometimes feels very dark. Using these abilities, she tirelessly worked with each student to help them follow and grow their love for aerospace. Helping to nurture that spark, she brought out the determination, drive, and fortitude in each and every student. This profound impact on each of our lives led to the confidence to carry on and accomplish our goals. Not only that, but as a close confidant, Dr. Squires spent countless hours providing guidance to each project or team and mentoring all the students within them. And no matter the outcome of a project or competition, she was always able to find the positive. Many times, she provided us with the much-needed reassurance to learn from our failures, never losing faith in us or our abilities, ultimately teaching us to do the same for ourselves. It is these attributes and so many more that made Dr. Squires a truly amazing and special human being.

- Adam Ragle
Oregon State University Student, Mechanical Engineering
Former President of OSU AIAA

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SECTION 1: INTRODUCTION AND OVERVIEW OF THE SCHOLARSHIP PROGRAM

INTRODUCTION TO OSGC

The Oregon NASA Space Grant Consortium (OSGC) is a member of the National Aeronautics and Space Administration's (NASA) National Space Grant College and Fellowship Program (National Space Grant Program) within the NASA Office of STEM Engagement (OSTEM). OSGC supports the agency's objectives of fostering and encouraging careers in Science, Technology, Engineering, and Mathematics (STEM) and STEM education to develop a skilled, high-performing, capable, and diverse next-generation workforce. Access to experiential learning and research opportunities are crucial to enhancing a student's academic experience in order to meet the needs of NASA and the nation. OSGC programs are directed towards students in STEM fields as well as non-STEM fields with a significant connection to aerospace and space science. OSGC scholarships are designed to help build a student's STEM identity and sense of belonging, as well as complement a student's academic career experience.

NASA and OSGC are committed to supporting the national priority to increase diversity in the STEM workforce. Oregon Space Grant is dedicated to embedding and integrating inclusive excellence throughout all aspects of OSGC programs and activities. Individuals from underserved and underrepresented groups in STEM fields, including women, students of color, persons with disabilities, first-generation students, students from rural communities, and students in the LGBTQ+ community are strongly encouraged to participate in our programs.

OSGC is pleased to provide students attending our member colleges and universities an opportunity to apply for a one-year scholarship award to support their academic study in STEM, STEM education, and non-STEM majors with a connection to aerospace and space science. These awards will also serve to recognize a student's achievements in these fields.

Applicants will need to demonstrate how their field of study relates to the NASA Vision and the activities of the various Mission Directorates. See *Appendix A: Agency Information and Strategic Framework*.

PROGRAM OVERVIEW

OSGC offers the following three scholarship programs:

- Community College Scholarships
- Undergraduate Scholarships
- STEM Pre-Service Educator Scholarships (MAT or MS students)

Awards will be made in the following six categories:

- STEM Education: Preparation to be a classroom teacher or an informal educator in a STEM field
- Life Science: The study of living organisms—includes biology, anatomy, astrobiology, zoology, botany, microbiology, physiology, biochemistry, neuroscience, and other related areas
- Physical Science: The study of natural sciences dealing with non-living organisms—includes physics, astronomy, chemistry, earth science, geology, space science, material science, etc.
- Mathematics
- Engineering and Technology
- Non-STEM field with a significant connection to aerospace or space science (community college and undergraduate programs only)

Scholarships will be awarded to students enrolled at OSGC affiliate institutions in eligible fields of study. In addition to the traditional aerospace-related fields of engineering and mathematics, we encourage those from diverse fields of study to apply. "NASA is more than astronauts. We are scientists, engineers, IT specialists, human resources specialists, accountants, writers, technicians, and many other kinds of people working together to break barriers to achieve the seemingly impossible." (Careers at NASA 2023) Go to <https://www.nasa.gov/careers> for information on careers at NASA. *We encourage students to contact OSGC if they have questions about whether their field of study is suitable.*

This document provides students and mentors with information about eligibility, deadlines, and other aspects of the application process and should be read in its entirety.

AWARD FUNDS

For the 2023-24 Academic Year*, programs are funded at the following levels:

- **Community College Scholarships - \$1,000 awards**
- **Undergraduate Scholarships - \$3,000 awards**
- **STEM Pre-Service Educator Scholarships - \$5,000 awards**

Scholarship descriptions and eligibility requirements vary by program. Please review all terms and conditions included in this program guide before applying.

Note: Students receiving awards in past competitions **may apply** and receive awards for subsequent competitions.

**OSGC's ability to make awards is contingent upon funding from NASA*

ELIGIBILITY

Applicants must be currently enrolled and in good academic standing at one of the following OSGC member institutions:

4-Year Colleges and Universities

- Eastern Oregon University (EOU)
- George Fox University (GFU)
- Oregon Institute of Technology (OIT)
- Oregon State University (OSU)
- Pacific University (PU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- University of Portland (UP)
- Western Oregon University (WOU)

Community Colleges

- Lane Community College (Lane)
- Linn-Benton Community College (LBCC)
- Oregon Coast Community College (OCCC)
- Portland Community College (PCC)
- Southwestern Oregon Community College (SOCC)

Visit the following webpage for your institution representative's contact information.
<http://spacegrant.oregonstate.edu/members-oregon-nasa-space-grant-consortium>.

SECTION 2: COMMUNITY COLLEGE SCHOLARSHIPS

This scholarship is designed to encourage community college students to explore programs in STEM and STEM education fields of study. Scholarships will be competitively awarded to students enrolled at OSGC affiliated community colleges. Students who are dual enrolled in a community college and a 4-year institution are eligible to apply as long as minimum enrollment eligibility is met.

Awards in the amount of \$1,000 per student will be offered during the 2023-24 academic year. These awards will be made in two equal disbursements of \$500, the first in October 2023. The second disbursement of \$500 in March 2024 will be contingent upon the submission of documentation showing student progress toward stated educational goals. This is a non-renewable award, paid in two disbursements over one academic year only.

DATES | DEADLINES

Important dates and deadlines for the 2023-24 competition for all institutions are as follows:

- **Application Deadline: Friday, June 9, 2023**
- Award Selections: August 2023
- Award Disbursements (\$500 each): October 2023 and March 2024

STUDENT ELIGIBILITY

Scholarships are open to community college students who meet the following eligibility criteria:

- Student is enrolled in a minimum of 6 credit hours per term at an **affiliated community college** during the 2023-24 academic year.
- Student is enrolled in a STEM field, STEM education coursework, or a non-STEM field with a significant connection with aerospace or space science.
- Student maintains good academic standing.
- Student is a U.S. Citizen.

REQUIRED APPLICATION MATERIAL

Student Essay

Submit an essay that includes the following: (1-2 pages, single spaced, no more than 12 pt font)

1. What are your interests in STEM and what areas would you like to explore in your academic career?
2. Describe your current STEM identity and how this scholarship will contribute to building that identity. STEM identity has been defined as the way people make “**the concept of fitting in within STEM fields, specifically, the way individuals make 'meaning of science experiences and how society structures possible meanings'**” (Carlone and Johnson 2007, Hughes et al. 2013).
3. How do your academic interests relate to the NASA vision and substantively align with one or more of the NASA Mission Directorates? See *Appendix A. Agency Information and Strategic Framework*. For a detailed description of NASA’s mission, history, and future plans, visit the following NASA website: http://www.nasa.gov/about/highlights/what_does_nasa_do.html
4. If you are a non-STEM student, describe how your field of study and interests are significantly connected to aerospace or space science.
5. Include other information that you believe qualifies you for scholarship consideration. This may include extracurricular activities, awards, volunteer opportunities, soft skills, challenges, personal journey, etc.

Letter of Recommendation

One letter of recommendation is required. The letter should specifically address your qualifications and merit for this scholarship. During the application process, you will be asked to provide contact information for your letter writer. Upon submission of your application this individual will receive an email request for the letter and instructions on how it is to be submitted. The due date for the letter is Friday, June 16, 2023.

Academic Transcript

A PDF version of your academic transcript must be submitted with your online application. Unofficial transcripts from your college or university website are acceptable.

Online Application Website

Submit application material to the following website: <https://spacegrant.net/apps/ors5/>

2nd DISBURSEMENT PROGRESS REPORT (If awarded)

Second payments are scheduled for March 2024. To receive the second payment disbursement, students must submit a brief, one-page progress report and an unofficial transcript demonstrating minimum enrollment requirement and academic progress. A formal request for material will be sent via email and will be submitted via an online system.

Progress Reports for Community College Scholarship Recipients

Please provide an update of the progress you have made toward your academic pursuits since receiving the award. Relate your progress back to your essay that was included in your scholarship application. Include the following:

- What classes did you take or are currently taking that will directly help you meet the goals outlined in your essay?
- What other classes do you plan to take this academic year that will directly help with your goals?
- What has it meant to you and your academic progress since receiving the first scholarship payment?
- Has the scholarship helped you achieve your goals outlined in your essay, or have they changed? If so, how?
- Has your STEM identity changed since receiving this scholarship? If so, describe the change.
- Any additional information or comments that you wish to share?

SECTION 3: UNDERGRADUATE SCHOLARSHIPS

This scholarship is intended to promote and retain student enrollment in STEM fields and STEM education programs. Scholarships will be competitively awarded to students enrolled at an OSGC affiliated 4-year institution for the 2023-24 academic year.

Awards in the amount of \$3,000 per student will be offered during the 2023-24 academic year. These awards will be made in two equal disbursements of \$1,500, the first in October 2023. The second disbursement in March 2024 will be contingent upon submission of documentation showing student progress toward stated educational goals. This is a non-renewable award, paid in two disbursements over one academic year only.

DATES | DEADLINES

Important dates and deadlines for the 2023-24 competition for all institutions are as follows:

- **Application Deadline: Friday, June 9, 2023**
- Award Selections: August 2023
- Award Disbursement (\$1,500 each): October 2023 and March 2024

STUDENT ELIGIBILITY

Scholarships are open to undergraduate students who meet the following eligibility criteria:

- Student is enrolled in a minimum of 12 credit hours per term at an **affiliated 4-year institution** during the 2023-24 academic year.
- Student is enrolled in a STEM field, STEM education coursework, or a non-STEM field with a significant connection with aerospace or space science.
- Student maintains good academic standing.
- Student is a U.S. Citizen.

REQUIRED APPLICATION MATERIAL

Letter of Intent

Submit a letter of intent that includes the following: (1-2 pages, single spaced, no more than 12 pt font)

1. Indicate your STEM career goals as they relate to NASA's vision and how they substantively align with one or more of the NASA Mission Directorates. See *Appendix A. Agency Information and Strategic Framework*. For a detailed description of NASA's mission, history, and future plans, visit the following NASA website: http://www.nasa.gov/about/highlights/what_does_nasa_do.html
2. How will this scholarship contribute to your career goals and further development of your STEM identity?
3. Describe how your career choice will benefit the STEM community at large.
4. If you are a non-STEM student, describe how your field of study and interests are significantly connected to aerospace or space science.
5. Include other information that you believe qualifies you for scholarship consideration. This may include extracurricular activities, awards, volunteer opportunities, soft skills, challenges, personal journey, etc.

Student Resume

Include relevant employment, education, and extra-curricular activities. Resume should also provide current contact information including email, phone, and mailing address.

Letter of Recommendation

One letter of recommendation is required. The letter should specifically address your qualifications and merit for this scholarship. During the application process, you will be asked to provide contact information for your letter writer. Upon submission of your application this individual will receive an email request for the letter and instructions on how it is to be submitted. The due date for the letter is Friday, June 16, 2023.

Academic Transcript

A PDF version of your academic transcript must be submitted with your online application. Unofficial transcripts printed from your college or university website are acceptable.

Online Application Website

Submit application material to the following website: <https://spacegrant.net/apps/ors6/>

2ND DISBURSEMENT PROGRESS REPORT (If awarded)

Second payments are scheduled for March 2024. To receive the second payment disbursement, students must submit a brief, one-page progress report and an unofficial transcript demonstrating minimum enrollment requirement and academic progress. A formal request for material will be sent via email and will be submitted via an online system.

Progress Reports for Undergraduate Scholarship Recipients

Please provide an update of the progress you have made toward your academic pursuits since receiving the award. Relate your progress back to your essay that was included in your scholarship application. Include the following:

- What classes did you take or are currently taking that will directly help you meet the goals outlined in your letter of intent?
- What other classes do you plan to take this academic school year that will directly help with your goals?
- What has it meant to you and your academic progress since receiving the first scholarship payment?
- Has the scholarship helped you achieve your goals outlined in your letter of intent, or have they changed? If so, how?
- Since receiving this scholarship, how has your STEM identity further developed or changed?
- Any additional information or comments that you wish to share?

SECTION 4: STEM PRE-SERVICE EDUCATOR SCHOLARSHIPS

This scholarship is intended to recognize those students who have completed an undergraduate degree and are currently enrolled in a Master of Arts in Teaching (MAT) program with a STEM education focus or a Master of Science in Education. Scholarships will be competitively awarded to students enrolled at an OSGC affiliated 4-year institution.

Awards in the amount of \$5,000 per student will be offered during the 2023-24 academic year. These awards will be made in two equal disbursements of \$2,500, the first in October 2023. The second disbursement in March 2024 will be contingent upon submission of documentation showing student progress toward stated educational goals. This is a non-renewable award, paid in two disbursements over one academic year only.

DATES | DEADLINES

Important dates and deadlines for the 2023-24 competition for all institutions are as follows:

- **Application Deadline: Friday, June 9, 2023**
- Award Selections: August 2023
- Award Disbursement (\$2,500 each): October 2023 and March 2024

STUDENT ELIGIBILITY

Scholarships are open to students enrolled in an MS or MAT program who meet the following eligibility criteria:

- Student is enrolled in a minimum of 6 credit hours per term at an **affiliated 4-year institution** during the 2023-24 academic year.
- Student is enrolled in an MS or MAT program with a STEM focus.
- Student maintains good academic standing.
- Student is a U.S. Citizen.

REQUIRED APPLICATION MATERIAL

Letter of Intent

Submit a letter of intent that includes the following: (1-2 pages, single spaced, no more than 12 pt font)

1. What inspired you to become a teacher and where are you in your pre-service educator path?
2. Are you currently engaged in classroom student teaching, and if not, when do you plan to start?
3. How do you plan to incorporate NASA content into your student teaching plan? Describe how this scholarship might prepare you to incorporate NASA content in the classroom.
4. Describe your vision as an educator to help build students' STEM identity.

5. Indicate your STEM career goals as they relate to NASA’s vision and how they substantively align with one or more of the NASA Mission Directorates. See *Appendix A. Agency Information and Strategic Framework*. For a detailed description of NASA’s mission, history, and future plans, visit the following NASA website: http://www.nasa.gov/about/highlights/what_does_nasa_do.html
6. Include other information that you believe qualifies you for scholarship consideration. This may include extracurricular activities, awards, volunteer opportunities, soft skills, challenges, personal journey, etc.

Student Resume

Include relevant employment, education, and extra-curricular activities. Resume should also provide current contact information including email, phone, and mailing address.

Letter of Recommendation

One letter of recommendation is required. The letter should specifically address your qualifications and merit for this scholarship. During the application process, you will be asked to provide contact information for your letter writer. Upon submission of your application this individual will receive an email request for the letter and instructions on how it is to be submitted. The due date for the letter is Friday, June 16, 2023.

Academic Transcript

A PDF version of your academic transcript must be submitted with your online application. Unofficial transcripts printed from your college or university website are acceptable.

Online Application Website

Submit application material to the following website: <https://spacegrant.net/apps/ors7/>

2ND DISBURSEMENT PROGRESS REPORT (If awarded)

Second payments are scheduled for March 2024. To receive the second payment disbursement, students must submit a brief, one-page progress report and an unofficial transcript demonstrating minimum enrollment requirement and academic progress. A formal request for material will be sent via email and will be submitted via an online system.

Progress Reports for STEM Pre-Service Educator Scholarship Recipients

Please provide an update of the progress you have made toward your academic pursuits since receiving the award. Relate your progress back to your essay that was included in your scholarship application. Include the following:

- What classes did you take or are currently taking that were most impactful in helping you build or create your vision for developing STEM identity in your students?
- How have you incorporated NASA content in your classroom student teaching or describe your plan to do so if your student teaching has not yet started.
- What has it meant to you and your academic progress since receiving the first scholarship payment?
- Has the scholarship helped you achieve your goals outlined in your letter of intent, or have they changed? If so, describe the changes?
- Any additional information or comments that you wish to share?

SECTION 5: APPLICATION PROCEDURES FOR ALL PROGRAMS

Step 1: Complete all sections of the appropriate Online Application:

OSGC Community College Scholarships:	https://spacegrant.net/apps/ors5/
OSGC Undergraduate Scholarships:	https://spacegrant.net/apps/ors6/
OSGC STEM Pre-Service Educator Scholarships:	https://spacegrant.net/apps/ors7/

Step 2: Attach the required supporting documentation to the application (varies by program)

REVIEW | SELECTION PROCESS

Applications are evaluated for eligibility upon receipt. Qualified applications will be reviewed by a diverse selection committee who make recommendations for funding based on stated review criteria (see below). Individuals from underserved and underrepresented groups in STEM fields, including women, students of color, persons with disabilities, first-generation students, students from rural communities, and students in the LGBTQ+ community are strongly encouraged to participate in OSGC programs.

REVIEW CRITERIA

Applications are ranked based on the following criteria:

- Academic achievement
- STEM-related career goals
- Strength of Student Essay/Letter of Intent
- Direct relation to NASA vision and alignment with one or more of NASA mission directorates
- Strength of Letter of Recommendation

OTHER REQUIREMENTS

If awarded, recipients agree to:

- Contact Financial Aid office upon receipt of award letter to verify eligibility of scholarship funds.
- Notify OSGC of any changes in mailing address, e-mail address, or telephone number for purposes of progress reports.
- Grant permission to release and/or publish requested recipient information to NASA or other appropriate parties for reporting purposes.
- If applicable, students submit a signed Media Release Form, granting OSGC permission to release information and utilize any submitted photos from posters and/or presentations for publications and/or social media.
- Participate in the OSGC *STEM Success Evaluation Project*, which evaluates the quality of our programs and collects student feedback via surveys.
- Include the following text in all publications resulting from funded work “**...supported in part through funding from NASA / Oregon Space Grant Consortium, cooperative agreement 80NSSC20M0035.**”

FOR MORE INFORMATION

For questions, contact us via email:

Catherine Lanier | Interim Director
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Meghan Megowan | Program Coordinator

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Contact us by phone:

541.737.2414

Visit the Oregon Space Grant Consortium online at:

Website: <http://spacegrant.oregonstate.edu>

Twitter ID: OSGC <http://twitter.com/ORSpaceGrant>

...or find us on Facebook

APPENDIX A: AGENCY INFORMATION AND STRATEGIC FRAMEWORK

NASA's current topics and relevant missions are listed below. Students should use these priorities to guide them in the selection of a STARR research review topic.

Humans in Space

International Space Station (ISS) - Commercial Crew Program (CCP) - NASA Astronauts - Low Earth Orbit (LEO) Economy

Moon to Mars

Commercial Lunar Payload Series (CLPS) Initiative - Lunar Gateway - Artemis Mission - Space Launch System (SLS)

Earth

Air – Climate - Hazards - Water, Oceans, and Ice - Land

Space Tech

Space Travel - Living in Space - Manufacturing, Materials, and 3-D Printing - Robotics - Science Instruments - High-Tech Computing

Flight

Green Aviation - Future Aircraft - Supersonic Flight - Reducing Flight Delays - Unmanned Aircraft

Solar System and Beyond

Planets, Moons, and Dwarf Planets - The Search for Life and Exoplanets - The Sun - Stars and Galaxies - Black Holes - Dark Energy and Dark Matter

Current High-Profile NASA Missions

- Artemis Program
- Commercial Crew Program
- Curiosity Mars Rover
- Hubble Space Telescope
- InSight Mars Lander
- International Space Station
- James Webb Space Telescope
- Juno: Mission of Jupiter
- Lunar Reconnaissance Orbiter
- Mars Perseverance Rover
- New Horizons: Pluto and Beyond
- OSIRIS-Rex Asteroid Mission
- Parker Solar Probe

NASA Vision

To explore the secrets of the universe for the benefit of all

NASA Mission

Lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and bring new knowledge and opportunities back to Earth. Support growth of the Nation's economy in space and aeronautics, increase understanding of the universe and our place in it, work with industry to improve America's aerospace technologies, and advance American leadership.

Strategic themes that make up the foundation of the 2018 Strategic Plan and NASA's goals

- **DISCOVER** - Expand human knowledge through new scientific discoveries
- **EXPLORE** - Extend human presence deeper into space and to the Moon for sustainable long-term exploration and utilization
- **DEVELOP** - Address national challenges and catalyze economic growth
- **ENABLE** – Optimize capabilities and operations

NASA 2018 Strategic Plan

https://www.nasa.gov/sites/default/files/atoms/files/nasa_2018_strategic_plan.pdf

NASA's vision and mission draw support from the organizational structure of the Mission Directorates, each with a specific responsibility.

NASA's Mission Directorates

- **Aeronautics Research Mission Directorate (ARMD):** transforms aviation with research to dramatically reduce the environmental impact of flight, and improves aircraft and operations efficiency while maintaining safety in increasingly crowded skies. ARMD also generates innovative aviation concepts, tools, and technologies for development and maturation by the aviation community. <https://www.nasa.gov/aeroresearch>
- **Exploration Systems Development Mission Directorate (ESDMD):** defines and manages systems development for programs critical to the NASA's Artemis program and planning for NASA's Moon to Mars exploration approach in an integrated manner. ESDMD manages the human exploration system development for lunar orbital, lunar surface, and Mars exploration. ESDMD leads the human aspects of the Artemis activities as well as the integration of science into the human system elements. ESDMD is responsible for development of the lunar and Mars architectures. Programs in the mission directorate include **Orion, Space Launch System, Exploration Ground Systems, Gateway, Human Landing System,** and Extravehicular Activity (xEVA) and Human Surface Mobility.
- **Science Mission Directorate (SMD):** expands the frontiers of Earth science, heliophysics, planetary science, and astrophysics. Using robotic observatories, explorer craft, ground-based instruments, and a peer-reviewed portfolio of sponsored research, SMD seeks knowledge about our solar system, the farthest reaches of space and time, and our changing Earth. <http://science.nasa.gov/>
- **Space Operations Mission Directorate (SOMD):** manages NASA's current and future space operations in and beyond low-Earth orbit (LEO), including commercial launch services to the International Space Station. SOMD operates and maintains exploration systems, develops and operates space transportation systems, and performs broad scientific research on orbit. In addition, SOMD is responsible for managing the space transportation services for NASA and NASA-sponsored payloads that require orbital launch, and the agency's space communications and navigation services supporting all NASA's space systems currently in orbit.
- **Space Technology Mission Directorate (STMD):** pursues transformational technologies that have high potential for offsetting future mission risk, reducing cost, and advancing existing capabilities. STMD uses merit-based competition to conduct research and technology development, demonstration, and infusion of these technologies into NASA's missions and American industry. This mission directorate is being refocused as a new Exploration Research & Technology (ER&T) organization to support exploration as a primary customer. <http://www.nasa.gov/directorates/spacetech/home/index.html>.
- **The Mission Support Directorate (MSD):** enables the Agency's missions by managing institutional services and capabilities. MSD is actively reducing institutional risk to NASA's current and future missions by improving processes, stimulating efficiency, and providing consistency and uniformity across institutional standards and practices. <https://www.nasa.gov/msd>.