ISS NATIONAL LABORATORY®
CENTER FOR THE ADVANCEMENT OF SCIENCE IN SPACE®

ISS National Laboratory Q4FY25 Report

Quarterly Report for the Fiscal Year 2025 Period July 1, 2025 – September 30, 2025

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Ramon Lugo (Oct 29, 2025 12:33:21 CDT)

Q4FY25 Metrics

ISS NATIONAL LAB UTILIZATION AND OPERATIONS TARGET METRICS

In alignment with NASA's current budgetary guidance and internal allocation constraints, our program has paused new grant awards for FY25. This decision reflects NASA's strategic prioritization in response to broader fiscal challenges and the anticipated limitations on available payload opportunities through the ISS National Lab.

The pause in awards has impacted performance against the metrics outlined below; however, we continue supporting NASA's objectives and stand ready to resume awards as soon as conditions allow.

TARGET METRICS	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	YTD FY25 Total	FY25 Target	FY25 Stretch
DEMAND FOR ISS RESOURCES							
1) Ratio of awardable proposals evaluated to expected awards (year to date)	3:1	3:1	4:1[d]	4:1[d]	**4:1[d]**	**3:1**	**N/A**
2) Leverage ratio of external funding to internal funding (new awards) (year to date)	11:1	6:1	6:1	2:1	**2:1**	**1:1**	**2:1**
FUNDAMENTAL SCIENCE							
3) Fundamental Science projects selected	--	1	--	6	**7**	**7**	**9**
4) External funding supporting Fundamental Science users of the ISS National Lab	$--	$0.8M	$--	$2.8M	**$3.6M**	**$6M**	**$9M**
APPLIED RESEARCH & DEVELOPMENT							
5) Applied Research & Development projects selected	1[c]	--	0[d]	0[d]	**1[d]**	**2[a]**	**3**
6) Ratio of external funding (self-reported) to CASIS and MI&O funding supporting Applied Research & Development users of the ISS National Lab (year to date)	--	--	0[d]	0[d]	**0[d]**	**1:1**	**2:1**
TECHNOLOGY DEMONSTRATION							
7) Technology Demonstration projects selected	3	4	0[d]	0[d]	**7[d]**	**11**	**14**
8) Ratio of external funding (self-reported) to CASIS and MI&O funding supporting Technology Demonstration users of the ISS National Lab (year to date)	14:1	6:1	6:1[d]	6:1[d]	**6:1[d]**	**4:1**	**6:1**
EDUCATION & OUTREACH							
9) Education & Outreach projects selected	1	--	--	0[d]	**1**	**2**	**3**
10) New Corporate or OGA sponsorships agreements	0	0	0	0	**0**	**1**	**2**
PROPOSAL MANAGEMENT							
11) Time from solicitation close to selection/non-selection notification (year to date)	67 days	65 days	57[d] days	57[d] days	**57[d] days**	**≤65 days**	**≤60 days**

ISS NATIONAL LAB UTILIZATION AND OPERATIONS TRACKING METRICS

The following metrics have no target for FY25 but will be tracked internally and discussed in face-to-face meetings with NASA.

TRACKING METRICS	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	YTD FY25 Total
OVERALL PROJECT QUALITY AND DEMAND					
1) Percent of proposals reviewed that were awardable (year to date)	61%	61%	62%	62%	**62%**
2) Percent of proposals reviewed that were high quality (year to date)	13%	13%	15%	15%	**15%**
3) Percent of high-quality proposals not selected (year to date)	0%	40%	50%[d]	47%[d]	**50%[d]**
4) Percent of completed projects that met research objectives (year to date)	75%[c]	89%[c]	83%	81%	**83%**
5) Percent of completed Technology Dev/Demo and In-Space Production projects demonstrating technology readiness level (TRL) advancement (year to date)	100%	100%	100%	100%	**100%**
6) **ISS National Lab projects selected**	5[c]	5	1[d]	7	**18[d]**
7) Users by new/returning					
(a) ISS National Lab return users	2[c]	0	0[d]	3[d]	**5[d]**
(b) ISS National Lab new users	3	5	1[d]	4[d]	**13[d]**
8) Projects by type					
(a) Commercial	4[c]	4	1[d]	1[d]	**10[d]**
(b) Academic/nonprofit	1	1	0[d]	6[d]	**8[d]**
(c) Government agency	0	0	0[d]	0[d]	**0[d]**
9) Leverage ratio of external funding to internal funding (year to date)	11:1	5:1[c]	5:1	2:1	**2:1**
10) Active solicitations	2	3	1[cd]	0[d]	**6[d]**
11) ISS National Lab concepts received	53[c]	173[c]	54[e]	1[de]	**281[e]**
12) ISS National Lab proposals received	23	13	77	8[d]	**121[d]**
13) Time from selection notification to agreement draft sent to principal investigator (year to date)	39 days	34 days	35 days	35 days	**35 days**
14) Time from agreement draft to award (year to date)	32 days	33 days	31 days	35 days	**35 days**
15) Time to flight	16[c] months	12 months	22 months	17 months	**17 months**

TRACKING METRICS (Continued)	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	YTD FY25 Total
PAYLOADS DELIVERED					
16) Commercial Service Provider Facility Utilization payloads delivered	14	2	33	31	**80**
(a) Percentage of Commercial Service Provider Facility Utilization payloads flown that met mission success criteria (previous fiscal year quarter)[b]	100%	96%	N/A	100%	**99%**
17) Education & Outreach payloads delivered	2	0	3	3	**8**
18) **Fundamental Science payloads delivered**	5	0	4	5	**14**
(a) Percentage of Fundamental Science payloads flown that met mission success criteria (previous fiscal year quarter)[b]	100%	100%	N/A	80%	**93%**
19) Applied Research & Development payloads delivered	2	0	1	4	**7**
(a) Percentage of Applied Research & Development payloads flown that met mission success criteria (previous fiscal year quarter)[b]	0%	67%	N/A	0%	**22%**
20) Technology Demonstration payloads delivered	2	0	1	3	**6**
(a) Percentage of Technology Demonstration payloads flown that met mission success criteria (previous fiscal year quarter)[b]	N/A	100%	N/A	0%	**50%**
21) Total ISS National Lab-sponsored payloads delivered	25	2	42	46	**115**
COMMUNITY ENGAGEMENT AND INVESTMENT					
22) New partnerships formed	0	3[c]	1	1	**5**
23) Total external funding committed	$5,474,854	$1,857,634	$0[d]	$2,799,276[d]	**$10,131,764[d]**
24) Funds raised post award and postflight by startup companies with ISS National Lab-sponsored flight projects					
(a) Funds raised postflight	$146.4M	$56.3M	$28.5M	$19.6M	**$250.8M**
(b) Funds raised post award	$146.4M	$56.3M	$31.6M	$31.7M	**$266.0M**
25) External funding committed from new OGA partnerships	$0	$0	$0	$0	**$0**
26) New educational partnerships	0	0	0	0	**0**

TRACKING METRICS (Continued)	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	YTD FY25 Total
COMMUNITY ENGAGEMENT AND INVESTMENT (CONTINUED)					
27) (a) Number of high school and higher education students contributing to research projects completed during the fiscal year	11[c]	28[c]	11	--[f]	**50**
(b) Number of interns supported by ISS National Lab - Industry Partner cost-share program	0	0	18	--[f]	**18**
28) Total individuals participating in ISS National Lab Education & Outreach programs and projects (self-reported)	1,232,064	347,832	91,386	--[f]	**1,671,282**
29) Total individual users of ISS National Lab online education products (self-reported)	2,535,547	1,291,474	3,534,518	--[f]	**7,361,539**
IMPLEMENTATION PARTNERS AND COMMERCIAL SERVICE PROVIDER ACTIVITIES					
30) Number of Implementation Partners (year to date)	33	33	32	32	**32**
31) Number of Commercial Service Providers (year to date)	13	13	13	13	**13**
32) New Umbrella User Agreements executed	0	0	1	0	**1**
33) New commercial facilities added	0	0	0	1	**1**
34) Commercial facilities (year to date)	23	23	23	23	**23**
35) RRFs submitted	26	23	14	4[g]	**67**
36) RRFs approved	25	21[c]	14	4[g]	**64**
37) RRF approval time	6 days	10[c] days	9 days	22 days[g]	**12 days**
RESOURCE UTILIZATION					
38) Crew time (actual vs. increment pair – 3 months allocation)	51%		49%		**50%**
(a) Ascent flight resources					
Upmass	91%	96%	98%	133%	**105%**
Cold stowage	51%	N/A	12%	63%	**59%**
Big bags	38%[c]	N/A	13%	19%	**23%**
Powered lockers	75%	N/A	N/A	22%	**49%**
(b) Facility resources (reported in Q2 and Q4)					
Commercial facilities	42%		58%		**50%**
JEM airlock	100%		67%		84%
Life Sciences Glovebox	33%		67%		50%
Microgravity Science Glovebox	67%		70%		69%

TRACKING METRICS (Continued)	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	YTD FY25 Total
RESOURCE UTILIZATION (CONTINUED)					
39) Number of payloads that did not turnover per the nominal delivery schedule	2	0	1	2	**5**
Principal investigators	0	0	1	1	**2**
Implementation Partners	2	0	0	0	**2**
CASIS	0	0	0	0	**0**
NASA	0	0	0	1	**1**
40) Number of re-flight experiments flown	0	0	0	1	**1**
Fundamental Science	0	0	0	1	**1**
Applied Research & Development	0	0	0	0	**0**
Technology Demonstration	0	0	0	0	**0**
Education and Outreach	0	0	0	0	**0**
Commercial Service Provider Utilization	0	0	0	0	**0**
41) Number of payloads ready to fly that were left on the ground due to limited resources (upmass, crew time, cold stowage, etc.)	0	44	7	0	**51**
42) Number of payloads removed from the manifest after the freeze date because the principal investigator/payload could not make the flight	1	0	0	0	**1**
OVERALL PROJECT RESULTS					
43) Number of peer-reviewed papers, including those accepted for publication in Tier 1 journals	18[c]	15[c]	15	16	**73**
44) Number of new patents pending	2	2	4	5	**13**

a. Beginning in FY25, the Applied Research & Development target metric will not include an estimate of NASA InSPA NRA awards flying under ISS National Lab allocation.

b. Data is from the previous fiscal year quarter. Whether a payload met research objectives often cannot be determined until it has been returned to the investigator and initial data has been reviewed.

c. Additional/new data available after previous quarterly report completion.

d. Numbers impacted due to budget reductions beginning in Q3.

e. Includes the 53 fully compliant ISS National Lab-evaluated Orbital Edge Accelerator concepts. (In total, 193 concepts were submitted to the Orbital Edge Accelerator.)

f. Due to new priorities, we are no longer collecting STEM education partner metrics beginning in Q4 FY2025.

g. RRFs were paused due to limited volume available on launches.

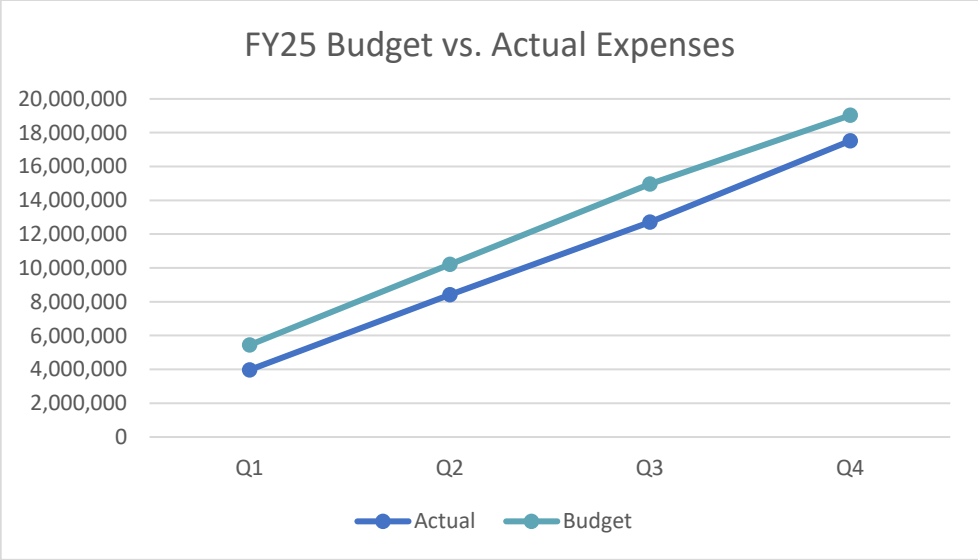
FINANCIALS

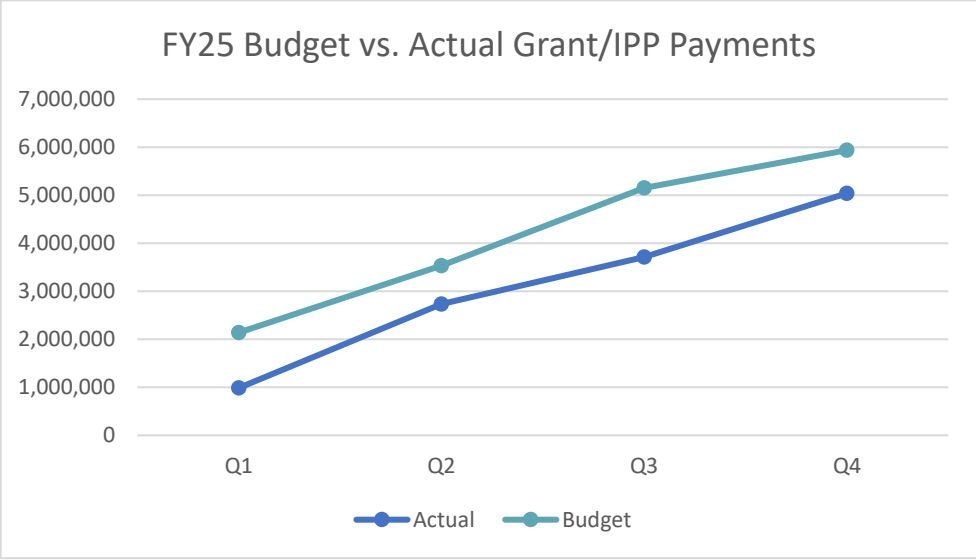
Business Status Report (unaudited)

Expenses	Q4 Actuals	Q4 Budget	Variance	Actual YTD FY25	Budget YTD FY25	Variance YTD FY25
Direct Labor	$2,625,890	$2,451,045	$174,845	$8,935,246	$9,731,418	($796,172)[a]
Subcontracts	$446,205	$200,431	$245,774	$1,311,928	$882,214	$429,714
Other Direct	$249,185	$335,236	($86,051)	$1,540,430	$1,540,345	$85
Travel	$83,797	$166,878	($83,081)	$339,731	$527,709	($187,978)
Office Supplies and Equipment	$84,567	$114,976	($30,409)	$350,479	$405,788	($55,309)
Grants & Implementation Partner	$1,327,077	$788,820	$538,257	$5,039,894	$5,938,361	($898,467)[b]
Total Expenses	$4,816,721	$4,057,386	$759,335	$17,517,708	$19,025,835	($1,508,127)

a. Salaries and Benefits: At 9/30/25 33.5 FTE vs 53 budgeted.

b. Grants & Implementation Partner Payments: Recipient milestone payments shifted based on awardees' actual spend rates and their ability to successfully deliver milestones on schedule.





Breakout of ISS National Lab Grants Payments

	Q1FY25	Q2FY25	Q3FY25	Q4FY25	FY25 YTD Total
Academic	$270,708	$297,877	$277,093	$397,525	$1,243,203
Commercial	$715,465	$1,444,534	$702,139	$929,552	$3,791,690
Other Government Agency	-	$5,000	-	-	$5,000
Total	**$986,173**	**$1,747,411**	**$979,232**	**$1,327,077**	**$5,039,893**

Total Value of Grants Awarded *(i.e., funds committed toward future projects)*

	ACTUAL Q1	ACTUAL Q2	ACTUAL Q3	ACTUAL Q4	ACTUAL FY25
Total value of grants awarded[a]	$487,798	$340,693	$0[b]	$5,622[b]	$834,113[b]

a. Grants include awards to projects and programs as well as modifications and extensions. The ability to award new grants will be dependent on the availability of additional funding for the ISS National Lab.

b. Numbers impacted due to budget reductions beginning in Q3.

Breakout of Cooperative Agreement Funding

	Q1FY25	Q2FY25	Q3FY25	Q4FY25	FY25 YTD Total
Direct	56%	32%	48%	34%	42%
Indirect	19%	29%	29%	38%	29%
Grants	25%	39%	23%	28%	29%

IN-ORBIT ACTIVITIES

- Axiom Space's Ax-4 mission successfully returned to Earth with 26 ISS National Lab-sponsored investigations spanning biomedical research, materials science, and technology development.
- NASA's SpaceX Crew-11 mission launched to the orbiting laboratory carrying four ISS National Lab investigations, expanding in-orbit research on human health, fluid dynamics, and advanced materials.
- NASA's SpaceX Crew-10 mission returned to Earth with seven ISS National Lab-sponsored investigations—including the final experiment conducted using the Materials Science Research Rack (MSRR) Material Science Laboratory (MSL SCA-PPDC). For more than 15 years, researchers used this facility to advance valuable materials processing research.
- SpaceX's 33rd commercial resupply services mission for NASA launched, delivering 17 ISS National Lab-sponsored investigations. One of the projects, from the Wake Forest Institute for Regenerative Medicine, will study the growth of engineered liver tissue containing blood vessels using Redwire's Multi-Use Variable-Gravity Platform. Originating from NASA's Vascular Tissue Challenge, this ISS National Lab-sponsored project could advance tissue engineering in space to support future organ replacement for patients on Earth.
- NASA's Northrop Grumman commercial resupply services 23 mission launched carrying 15 ISS National Lab-sponsored investigations. The mission included a project from startup TransAstra Corporation to test innovative space debris removal technology that can trap objects of different shapes and sizes and even those that are tumbling.
- In association with Voyager Technologies, the country of Thailand launched its first-ever investigation to the space station on NG-23. Researchers from Kasetsart University will study liquid crystal films in microgravity to help improve liquid crystal display (LCD) technology for energy-efficient, high-resolution, thin displays in electronics such as computer screens and smartphones.

R&D PROGRESS AND SUCCESSES

- In Q4, 16 new peer-reviewed journal articles were published, including two in top-tier journals (view a full list of publications related to ISS National Lab research at www.ISSNationalLab.org/publications/).
  - Barilaro L, Lopresti S, Olivieri L, Wylie M. ASTROBEAT: Advancing cold-welding technology for in-situ spacecraft repairs. *J Space Saf Eng*. 2025;12(3):405-418.
  - Brosius N, Zoueshtiagh F, Narayanan R. Enhancement of heat transfer using Faraday instability. *J Fluid Mech*. 2025;1016:A35.
  - Collman S, Plis EA, Semenova A, et al. Impacts of atomic oxygen exposure on surface morphology of selected spacecraft materials. *J Spacecr Rockets*. 2025;1-8.
  - Friedman MA, Zeineddine Y, Tuyambaze O, et al. Simulated microgravity accurately models long-duration spaceflight effects on bone and skeletal muscle in skeletally immature mice. *Bone Rep*. 2025;26:101871.
  - Hernandez I, Chithiravelu G, Padilla AE, Joddar B. Identifying and establishing the critical elements of a human cardiac in-vitro model for studying type-II diabetes. *Discov Appl Sci*. 2025;7:788.
  - Jain I, Oropeza BP, Hu C, et al. Temporal dynamics of gene and protein signatures following volumetric muscle loss. *Front Cell Dev Biol*. 2025;13:1606609.
  - Kim YJ, Min Hj, Ozbakir Y, et al. Dual-functional amphiphilic copolymer for enhanced dispersion and humidity tolerance of high-performance SnO_2/Pd hydrogen sensors. *Chem Eng J*. 2025;168912.
    - This publication in the top-tier *Chem Eng Journal* describes the development of an enhanced hydrogen sensor. The sensor is twice as responsive to hydrogen, has better long-term stability, works well in humid conditions, and can better distinguish hydrogen from other gases. This is important in places like factories, where hydrogen must be carefully monitored because it is highly flammable.

- Kleischmann F, Vowinckel B, Meiburg E, Luzzatto Fegiz P. Long-term microgravity experiments reveal a new mechanism for particle aggregation in suspension. *npj Microgravity*. 2025;11:63.
- Ma W, McKlin H, Chan R, et al. Post-wildfire soil hydrophobicity and slope erosion remediation by applying environmentally friendly modifiers. *Geomech Energy Envir*. 2025;44:100740.
- Mandal A, Zhang Q, Zhang R, et al. Laser-induced trapping of microbubbles within the bulk solution. *Langmuir*. 2025;41:19437-19443.
- Mulligan MK, Tuma S, Mullins S, et al. Protein crystallization in microgravity: Commercialization and the next chapter. *Curr Stem Cell Rep*. 2025;11(6):1-6.
- Pham J, Isquith J, Balaian L, et al. Nanobioreactor detection of space-associated hematopoietic stem and progenitor cell aging. *Cell Stem Cell*. 2025;32(9):1403-1420.
  - This publication in the high-impact journal *Cell Stem Cell* discusses results from four ISS National Lab-sponsored projects on stem cell aging in space. Researchers found that hematopoietic stem and progenitor cells, which mature into blood cells, age faster in space, showing more stress and aging-related mutations and reduced activity in repair genes. These findings suggest scientists could use stem cells in space as an accelerated model to study aging and diseases like cancer.
- Rau AV, Lu K. Suppression of α-quartz in montmorillonite–SiOC ceramic nanocomposites with water vapor-assisted pyrolysis. *J Mater Chem A*. 2025;13:29379-29395.
  - This publication in the top-tier *Journal of Materials Chemistry A* discusses how water vapor can be used during the production of clay-based ceramics to control the material's structure and chemistry. These findings could help scientists design ceramics with specific features that have valuable applications in spacecraft, insulation, and lightweight building materials.
- Rishty AJ, Lucas J, Croce J, et al. The effects of microgravity on mini-channel flow boiling and CHF behavior. *Int J Heat Mass Transf*. 2026;254:127598.
- Wang M, Savin K. Assessing the scientific and economic impacts of the experiments conducted onboard the International Space Station. *npj Microgravity*. 2025;11(34):1-14.
  - This third-party analysis examined publications and patents resulting from ISS National Lab-sponsored research. It revealed ISS National Lab-sponsored research products were significantly more impactful, as measured by citations, than similar papers and patents produced by the same set of scientists in Earth-based research.
- Yau A, Landolina M, Snow MA, et al. In space fabrication of Janus base nano matrix for improved assembly and bioactivity. npj Microgravity. 2025;11(32):1-6.

- Five patents related to ISS National Lab-sponsored research were identified in Q4:
  - Encapsulate was granted a patent for its multigel tumor-on-a-chip system for screening chemotherapeutics and other drugs in a three-dimensional cellular environment. The company also filed a second international patent for the system.
  - Orbital Sidekick was granted a patent for a space-based hyperspectral imaging system and method to detect and identify leaks in underground oil and gas pipelines.
  - Orbit Fab was granted a patent for its system to transfer and store fuel or propellants in space for the refueling of spacecraft and satellites.
  - Oregon State University filed a patent for bio-compatible scaffolds to support tissues and organoids.
- One product was identified in Q4: VRCORE Education launched a new virtual reality lesson called ISS: Curiosity in Orbit. The lesson, which schools and other educational organizations can purchase for students, was developed as part of an ISS National Lab-sponsored education and workforce development project.
- The FDA approved KEYTRUDA QLEX™, a new injectable formulation of Merck & Co.'s frontline KEYTRUDA® cancer therapeutic, that combines the active pharmaceutical ingredient pembrolizumab in KEYTRUDA with an enzyme. In an ISS National Lab-sponsored investigation, Merck crystallized pembrolizumab in microgravity, where gravity-driven convection and sedimentation are minimized. This allowed the company

to identify conditions that yield uniform crystalline suspensions with properties that would enable drug delivery through a subcutaneous injection instead of the original intravenous delivery required for KEYTRUDA®.

LEO ECONOMY

Demand

- In Q4, seven new projects were selected:
  - Three were selected through the NSF/CASIS 2025 Collaboration on Transport Phenomena Research on the ISS to Benefit Life on Earth:
    - Researchers from North Carolina State University and the University of California Berkeley will use Redwire Space's MVP to study the flow of granular materials under varying gravity conditions for applications in agriculture, pharmaceutical manufacturing, and 3D printing.
    - Researchers from the University of Arizona and Virginia Tech will use the multipurpose MaRVIn platform to examine how acoustic waves can be used to push gas bubbles out of molten solder joints, which would help reduce electronics failures in a wide range of industries.
      - This is the first time an investigation selected through the NSF/CASIS solicitation for transport phenomena research was funded through the Division of Civil, Mechanical and Manufacturing Innovation (CMMI) in NSF's Directorate for Engineering.
    - Researchers from Rensselaer Polytechnic Institute will expand on prior research studying protein solution flow and clumping to improve pharmaceutical manufacturing processes.
  - Three were selected through the NSF/CASIS 2025 Collaboration on Tissue Engineering and Mechanobiology on the ISS to Benefit Life on Earth:
    - Researchers from Emory University will use BioServe's BioCells to study how cells sense and respond to force; insight gained could improve understanding of how cells adapt to extreme environments and help improve cancer diagnostics.
    - Researchers from the University of Connecticut will use Space Tango's multipurpose CubeLab platform to build on prior research to produce injectable nanomaterials that can help regenerate lost or damaged cartilage to improve treatments for osteoarthritis.
    - Researchers from the University of Puerto Rico will explore how gravity and the stiffness of the extracellular matrix affect the healing power of stem cells.
  - One was an unfunded partnership agreement with Tec-Masters.
- One solicitation opened in Q4: NSF/CASIS 2026 Collaboration on Transport Phenomena Research on the ISS to Benefit Life on Earth.

Supply

- BioServe Space Technologies Chief Scientist Louis Stodieck is retiring from the University of Colorado Boulder after nearly five decades. He has been part of BioServe since its founding in 1987, serving as director before recently transitioning to chief scientist.
- Redwire Corporation launched a new venture company for pharmaceutical development in space. SpaceMD will use Redwire's PIL-BOX technology to grow protein crystals in orbit that can be used to create new and reformulated therapeutics on Earth. SpaceMD also announced a licensing agreement with pharmaceutical company ExesaLibero Pharma, Inc., which is developing new drugs to treat bone disease.
- Rhodium Scientific partnered with the U.S. Department of Commerce's National Institute of Standards and Technology (NIST) on research studying the effects of the space environment on organic materials with applications in pharmaceuticals, agriculture, semiconductors, and more. After about four months, the materials will return to Earth for analysis, and a portion of the spaceflight and ground control samples will be stored in the Rhodium Space BioBank™ repository to support future research.

- Space Tango announced its role in designing, building, and operating a layer-by-layer deposition device for LambdaVision to advance its microgravity manufacturing processes for protein-based artificial retinas that restore vision in patients with age-related macular degeneration. The project, which is supported by a recent NASA Phase 2 In-Space-Production-Applications award and builds on several previous flights, will help pave the way for scaled production of the artificial retinas in LEO and future clinical trials.
- Voyager Technologies launched Space Edge™ to demonstrate cloud computing on the space station and the system's ability to integrate with terrestrial networks. Developed by LEOcloud, a recent Voyager acquisition, Space Edge processes data in orbit rather having to transfer the data to a terrestrial data center. LEOcloud conducted a technology demonstration project supported by the ISS National Lab before its acquisition.

Investment

- Q4 of FY25 showed modest continued funding activity in the ISS National Lab's startup ecosystem. In terms of the broader investment environment, more than 60% of venture capital dollars went toward AI companies, and the U.S. non-AI venture capital deal activity remained well below peak levels. Defense tech investment interest remained strong, driving investment in parts of the space technology ecosystem at levels comparable to Q3 of FY25. NASA's revised commercial LEO destinations acquisition strategy and budgetary uncertainties continued to affect the sentiment in the LEO R&D and manufacturing ecosystem.
- Based on the publicly available data, a total of $19.6 million in private capital and grant funding was raised in Q4 by startups that have completed a flight project with the ISS National Lab. To date, close to $2.5 billion of such startup funding has been raised following their ISS National Lab flight projects.
    - Funding activity included capital raises or grant awards for Cosmic Shielding Corporation, Kall Morris Inc., RevBio, Orbital Sidekick, Orbit Fab, Opterus, and others.
- In Q4, several startups that have been awarded an ISS National Lab flight project that has not yet flown raised capital, including FluxWorks, Rendezvous Robotics, SQUID3 Space, Xheme, and others.
- The ISS National Lab investor network now includes more than 330 participants across financial and corporate investment organizations.
- The ISS National Lab has seen a robust interest in its recently launched Orbital Edge Accelerator program, highlighting the growing interest in leveraging space station capabilities in combination with access to private capital. In Q4, six innovative startups were selected to join the program's initial cohort. Each startup will receive up to $500,000, along with mentorship and the opportunity to launch an ISS National Lab-sponsored investigation.
- To date, the ISS National Lab has supported more than 100 startups with flight projects. Further growth and engagement in the ISS National Lab startup and investor ecosystem will be materially affected by funding and ISS flight resources available.

STEM EDUCATION AND WORKFORCE DEVELOPMENT

- The final EarthKAM session ended in Q4, concluding a program that has engaged students in space-based Earth observation since 1996. Through the free program, students could submit requests for a camera on the Space Shuttles, and later the ISS, to capture images of specific areas on Earth.
- As part of an ISS National Lab-sponsored project, VRCORE Education began offering ISS: Curiosity in Orbit, an immersive virtual reality lesson for students to tour the ISS and conduct experiments to learn about the scientific method and how research in microgravity advances science and engineering in space and on Earth.
- The annual Genes in Space competition concluded at the 2025 ASCEND conference, drawing record participation from 263 schools across 41 states. Nitya Johar (17, Skyline High School, WA) won with her proposal on codon usage bias in space, advancing understanding of protein synthesis and biomanufacturing in microgravity.

- Higher Orbits, in partnership with Cook Inlet Region, Inc. (CIRI) and the ISS National Lab's Orbital Edge Accelerator, hosted "Go for Launch! Stellar Space Experience in Alaska," where students worked with retired NASA astronaut Don Thomas to design ISS-bound experiments.

OUTREACH AND STAKEHOLDER ENGAGEMENT

- The ISS National Lab podcast *Between a Rocket & a Hard Space* released three new episodes featuring NASA astronauts Mike Fincke and Zena Cardman, Aegis Aerospace co-founder and ISS National Lab User Advisory Committee Chair Mark Gittleman, and researchers Yupeng Chen and Mari Anne Snow. The series surpassed 2,000 downloads worldwide in FY25.
- The latest issue of *Upward* was published, reaching the magazine's nearly 10,000 subscribers. This issue featured Spatiam Corporation's technology for interplanetary Internet, Encapsulate's research culturing 3D tumor models in microgravity for personalized cancer treatment, and a retrospective on Genes in Space enabling a decade of student-led space research. The issue also featured a perspective by inaugural Genes in Space competition winner Anna-Sophia Boguraev.
- ISS National Lab media coverage during Q4 includes:
  - *SatNews* and other outlets covered the selection of six startups for the Orbital Edge Accelerator program.
  - *Aerospace America* featured the live ISS downlink during the ASCEND conference opening keynote.
  - *R&D World* covered the SpaceX CRS-33 mission, spotlighting biomedical and technology investigations sponsored by the ISS National Lab.
  - *The Medicine Maker* published an in-depth feature on biomedical R&D onboard the space station, emphasizing the ISS National Lab's role in enabling research with benefits for human health on Earth.
- The ISS National Lab hosted SpaceX CRS-33 and NG-23 pre-launch science webinars for the media and public.
- During ASCEND, the ISS National Lab and NASA co-hosted a live downlink with NASA astronauts Anne McClain and Nichole Ayers about the ongoing science onboard the ISS.
- The ISS National Lab and the American Institute of Aeronautics and Astronautics held three days of virtual technical sessions following the decision not to hold the ISS Research and Development Conference this year. More than 700 people registered to attend, and close to 60 researchers presented, highlighting the role of the ISS in advancing R&D and spurring investment in the growing space economy.
- ISS National Lab staff participated in multiple speaking engagements:
  - At the TechConnect Space Industry & Government Summit, staff moderated panels on materials research and investment.
  - At ASCEND, leadership contributed to a panel on the past, present, and future of human spaceflight and the importance of microgravity research.
  - Staff presented at the Committee on Biological and Physical Sciences in Space meeting and organized a webinar with the Cancer Prevention & Research Institute of Texas on accelerated cancer models in space.
- The ISS National Lab published two new pieces in its "Forging the Path" series, "Startups and Government-Backed Access to Space Are Igniting the Orbital Revolution" and "A Unified Vision for Crewed and Uncrewed Platforms."

Full Project Pipeline Details

Visit our project pipeline database for a complete list of ISS National Lab-sponsored projects, including flight status.

Q4FY25 Quarterly Report Final

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