



ISS and Human Life Sciences



The International Space Station (ISS) was declared a National Laboratory in 2005. Its role as a National Laboratory opens access to the station for research and industry that will bring resources and national and international significance to the role of the ISS and its eventual ground laboratory extension.

The Market Horizon

Thanks to the state's investment in the Space Life Sciences Laboratory (SLSL) at Kennedy Space Center, Florida is the best potential location to host affiliated ground-based research, suppliers and science-based payload processing. Florida is the gateway to the International Space Station, and the gateway to the ISS National Laboratory is the Space Life Sciences Laboratory.

While NASA research on the ISS looks out into the universe, ISS facilities dedicated to the National Lab will focus on inward earth research, facilitating breakthrough scientific discoveries that improve the lives of the inhabitants of Earth. Potential clusters include research, development and commercialization of biomedical, agricultural, environmental and manufacturing technologies.

As a principal adjunct for the ISS National Laboratory, Florida's Earth-based laboratory could potentially host significant research activities sponsored by the National Institutes of Health, the US Department of Agriculture, Department of Defense, and the Department of Energy and attract commercial companies involved in bio-technology, as well as sponsored university research requiring ground-based facilities and research support for early phases of investigation, payload development, assembly and check out, as well as astronaut/operator training. Early designation of a Florida facility will also enhance capabilities for future commercial space research platforms, such as created by Bigelow Aerospace.

The capture plan will ensure Florida's success in leveraging its launch leadership and the Space Life Sciences Laboratory to secure a position in the National Laboratory Network and realize the associated near and long-term economic benefits.

Timing

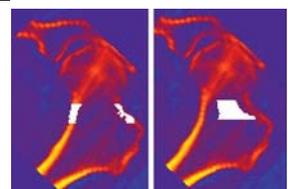
- NASA's target for the initial non-NASA use of the ISS National Lab is 2011
- The market is already beginning to emerge in Florida with bioresearch into areas such as food-borne toxin investigation
- Texas and California are already developing capture programs for the ISS affiliated ground facilities

Florida's Edge

- Space Life Sciences Lab is an innovative facility with 28 scientific research labs in a 100,000 sq. ft. environmentally controlled building (a \$42M investment)
- NASA will allow research using the ISS National Lab's 900 cubic feet of experiment space once the station is complete, some time after 2010
- Science is the primary return on the \$100B investment in the ISS by the international partners
- SLSL is located at Kennedy Space Center, the anchor of the developing commercial Exploration Park
- SLSL provides proximity to the launch vehicles and pre/post-flight activities
- There is an available skilled workforce and specialty companies (such as Astrotech Zero G, Starfighters, and SpaceX)



NASA ISS Science Officer, Jeff Williams, inserts samples into bacteria cultures for microbial growth research in space. Image credit: NASA.



Quantitative Computed Tomography (QCT) imagery, shows the mid-frontal plane of the hip, in testing on ISS of bisphosphonates, a group of antiresorptive agents that block breakdown of bone and are used to treat osteoporosis and other disorders. Image credit: NASA.

M A R K E T H O R I Z O N

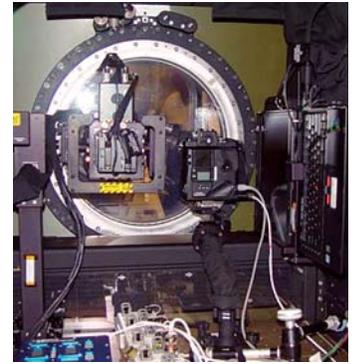


In Sight and Achievable

- Return on State of Florida investment in the Space Life Sciences Laboratory
- Space Life Sciences Laboratory becomes the designated support facility for the ISS National Lab—formally recognized as part of the National Laboratory infrastructure
- Space Florida named to the ISS National Laboratory policy group
- Florida becomes the recognized gateway to the ISS for launch, payload processing and packaging
- Exploration Research Park becomes a hub for pre-and post-flight business
- Jobs and investment for cluster industries associated with National Labs come to Florida

Tactical Development Strategies

- Develop and implement Capture Plan for Ground Based Support Laboratory of ISS National Laboratory
- Coordinate industry-led Florida consortium (industry, academia, others) to support National Laboratory affiliation for Space Life Sciences Laboratory, create consortium-led research programs, funding pursuits and agency liaison
- Engage in an education program for life science, pharmacology, materials development, energy and other R&D entities/organizations not yet aware of the benefits of research and testing in space or the significance of the ISS National Laboratory designation opportunity
- Market capabilities of the ISS National Laboratory; outreach to potential markets on the attributes of space (location, microgravity, vacuum, temperatures, etc.) and how these factors can facilitate research and production; promote consortium partnership, Exploration Research Park facilities and Space Life Sciences Laboratory capabilities, joint marketing and capture plan

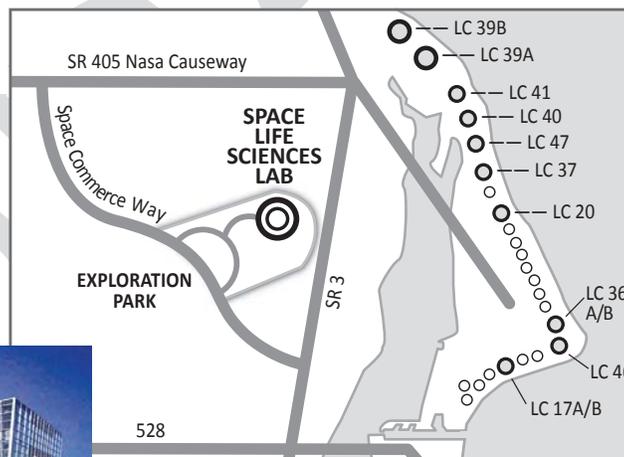


AgCam, a multi-spectral camera on ISS, delivers direct benefits from space, such as nitrogen application maps to improve fertilizer use, improved nutrient and invasive species management, and rangeland management tools to improve livestock allocation and avoid ecosystem damage due to overgrazing and erosion. AgCam may aid in disaster management, such as flood monitoring and wildland fire mapping. Image credit: NASA

The Space Life Sciences Laboratory, with more than 100,000 sq ft of environmentally monitored plant, animal and ISS-bound research laboratory space, will serve as the anchor for Exploration Park, a swiftly developing commercial research park on Kennedy Space Center grounds, with access to major transportation routes and options, including space.



The Space Life Sciences Lab is a tribute to Florida legislature's support of economic and academic growth.



Space Florida was created to strengthen Florida's position as the global leader in aerospace research, investment, exploration and commerce. As Florida's aerospace development organization, Space Florida is dedicated to attracting and expanding the next generation of space industry businesses. Created by the State of Florida as a special district in May 2006, Space Florida serves space-related functions in all three aerospace sectors: civil, military and commercial. Florida's attributes include its superlative workforce, proven infrastructure and unparalleled record of achievement.

