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Creating an International Gateway for R&D in Microgravity: Capitalizing on Florida's unique position to spur research and access Commercial Space

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Connecting Strategy, Execution & Management

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Global Health and Healthcare – A multi-$Trillion Industry

- Aging Populations
- Increased incidence of chronic disease
- Increasing access to care / Lack of infrastructure to support
- Technology advancements & Product innovation
- Rising costs / Quality stagnation

1. A high-growth, sustaining market
2. Competitive Innovation needed

Biomedical & Biotechnology Benefits from Space

- Nearly 50 years of R&D translated to diagnostics and care
  - Focus on surviving and living in space
- Many space related issues mimic terrestrial chronic disease
  - Osteoporosis, muscle-wasting disease, neuro-vestibular alterations, etc
- And the environment of space (microgravity) presents as an ideal model for investigations
  - 3D tissue structures, altered gene expression, enhanced cellular responses to altered environment
- Many other opportunities to be discovered
- Translation to health and healthcare is just emerging

Low Earth Orbit is now open for Commercial Business

- NASA has pioneered access to and operation of activities in low Earth orbit
  - Congress is in favor of NASA moving out of LEO to pursue exploration
- Recent efforts have created new opportunities for commercial involvement
  - Commercial Resupply Services, National Laboratory, Commercial Crew, Commercialization of LEO efforts
- ISS is a National Laboratory devoted to commercial interest
  - Existing supply chain to support bio-R&D

Florida – Ideal Epicenter of a New Global Healthcare Market

- Existing biomed/biotech industry
- International business friendly climate and entrepreneurial spirit
- Right-type financing and investment opportunities
- Idea generator – university-based system tied to tech transfer and incubation
- Unique qualifiers & Supply chain surplus – Largest operating spaceport globally
- Bricks and Mortar & Capital Investment – Space/Aerospace focused EDC’s

Florida Commercial Biotech Industry as Example

- # 3 in U.S. for pharma manufacturing
- Nearly 500 companies state-wide conducting Biotech and Pharmaceutical research and product development
- # 2 in U.S. for developing FDA registered medical devices
- Nearly 600 companies developing Medical Devices

Internationally Business Friendly – Necessary Pathway

Florida provides:

- Business-friendly government climate
- More affordable labor and capital
- Tax advantages and exemptions
- Expedited permitting
- Limitless State and private resources for capital

- Compared to California, New York, Massachusetts, ….

Investment Opportunities – Right Type Financing

- Florida is 3rd largest state but only captured 1.5 - 2% of VC deals last year ($0.45 – 1.7B)
- Climate is ripe to advance:
  - Gov’t and business climate along with untapped, growing tech businesses
  - Prominent, aging investors are driven toward the retirement climate that resides among the emerging tech community
  - Strength in growth of mid-market companies will signal need for capital to be raised outside of State

University-based Biomedical/Biotech – Idea Generator

- $1.2B invested annually on R&D by Florida Universities
- 9 Medical teaching schools
- UCF medical school and business incubator
  - Lake Nona anchor and partner with Sanford-Burnham and others
- UF – Sid Martin Biotechnology Incubator
  - $1.2 Billion in Funding for R&D and business development
- USF CONNECT – network for innovation-based companies
  - Tied to SRI International, Draper Labs, Moffitt Cancer Center
- FIT – Space engineering, biomedical R&D, Space Coast

Access to Space – Unique Qualifier

- KSC/CCAFS canvasses the launch to space spectrum
- Unique/necessary testing and certification assets are in place
- Subject Matter Expertise
- Access to all levels of specialized technical support necessary for success in space
- Rail, Water, Land & Air infrastructure converging on gateway to LEO
- Current launch ops center for SpaceX, Boeing CST-100, Air Force
- Gov’t protections when/if needed ….

Bricks and Mortar

- Existing facilities designed specifically for the development, integration, and processing of biotech R&D for LEO
  - As a Collaborative, Shared Services Infrastructure
- Additional Properties among the Space Coast
- Unique access to Space
- Available for Business
- Large Brand potential
- Requires proven models for marketing, operations, ROI

The Opportunity for Florida

International Business Accelerator / Center of Excellence for Driving Commercial, Space-Based R&D to Address the Global Health and Healthcare Market

- Must engage disparate elements to understand risks/benefits
- Gain support and incentive from State leaders to stand up Center
- Identify established entities with experience in managing collaborative research centers and providing expertise in space-based operations