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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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Capitalizing on Florida’s unique position to spur research and access Commercial Space

Duane Ratliff
29 April 2015
Contineo Strategic Applications, LLC
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