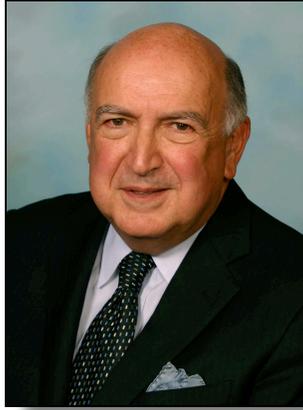


Ensuring Florida's Success in Aerospace

Space Florida FY2011 Annual Report



Welcome to the FY2011 Space Florida Annual Report

This has been an extremely dynamic and challenging year for Florida's space industry, but I am happy to report that Space Florida has made significant strides in achieving our mission of tripling the size of Florida's aerospace industry by 2020.

In last year's report we introduced you to Space Florida's "Vision 2020," which identified 10 target markets – both traditional and non-traditional – that we believe hold great promise in relation to growing Florida's aerospace market in the coming years. While the NASA's historic Space Shuttle program is now officially retired – our organization has engaged with 100+ new and expanding companies in recent months, reflecting most of these market sectors.

In this report, you will find highlights of already executed deals with many of these companies, as well as current progress on the most promising prospects. As you will see, diversity in market targets continues to be the key to growth. With Florida's 50+ year history of excellence in space launch and ground operations, it is easy to understand why this particular sector holds significant business development opportunities for our state. But as you will see in this report, we have also engaged a number of innovative companies tied to other emerging aerospace markets – such as clean energy, life sciences, small satellite systems, environmental monitoring, robotics and civil protection.

When looking at the "To 10" deals in Space Florida's business development pipeline alone, we see potential for 4,832 new jobs by 2014. Perhaps the best news, however, is that Space Florida only had to provide 6% of the total investment into these companies, leveraging those taxpayer dollars into the 94% remaining investment contributed by third party sources. Space Florida will continue to develop business opportunities in this manner moving forward.

In the past year, I am pleased to announce that Space Florida was able to secure commitments for launches from both of our Cape Canaveral-based launch sites, Space Launch Complexes 36 and 46. In addition, we worked closely with NASA-KSC and the 45th Space Wing (USAF) to establish interest from companies that may have the ability to reutilize existing spaceport infrastructure. In FY2011, Space Florida also made significant progress in the buildout of Exploration Park, KSC's next-generation science and technology research facility.

From a State and Federal delegation perspective, this has been a challenging year of competing priorities for our dedicated government officials – balancing the economic struggles of the nation with state and local needs. Through regular dialogue with our legislators at both levels, I feel Florida was well represented. I am particularly thankful to Lt. Governor Jennifer Carroll who worked hard to advocate for Florida's aerospace economy in every venue she could.

Another exciting develop this year occurred when Cecil Field was granted a Space Launch Operating License from the FAA – bring us another step closer to establishing a network of spaceports that will be unrivaled in any other state.

I look forward to continuing to share important milestones tied to all of our growth markets as we move forward on aggress business development activities on behalf of the State of Florida. I strongly encourage you to keep an eye of Space Florida’s website (www.spaceflorida.gov) as we all through our social media channels (Twitter, Facebook and LinkedIn) to stay apprised of these exciting activities.

As a final note, I’d like to thank our newly appointed Board of Directors for committing to our state’s success in the aerospace economic development arena. Your leadership is critical to our success.

Sincerely,

Frank A. DiBello, President
Space Florida



Setting a Foundation for Success

Strategic relationships, solid funding and targeted regulation are all key to Florida's aerospace-related economic success in this time of intense change in the industry.

In FY2011, a robust series of funding measures and high-level partnerships set the stage for Space Florida to engage more than 100 companies interested in establishing and/or growing operations and supply chain activities in our state.

Throughout the year, Space Florida leadership made many personal visits to Washington D.C. and Tallahassee to educate legislators and reinforce aerospace industry priorities for Florida. These personal visits served the State well and resulted in:

A Solid Budget

A total of \$43 million was committed to aerospace-related economic development initiatives for the coming year, including \$10 million for Space Florida's operating budget, \$16 million in infrastructure funding for launch support facilities, \$10 million in space business tax credits/incentives and \$7.1 million in tax credits for research and development work accomplished within the state.

Maintenance of Statutory Power

With the introduction of a new Governor and Lt. Governor, several significant organizational changes took place at a State level, including the inception of the Department of Economic Opportunity and a restructuring of the way economic development funds are dispersed. One of the unique statutory entitlements Space Florida has – an entitlement that makes it truly competitive among other space states – is an Independent Special District status, which enables us to initiate and preserve conduit financing deals and own real property (and other assets). Thanks to concerted efforts by Space Florida leadership to spend time with Governor Rick Scott and Lt. Governor Carroll – providing specific examples of past and upcoming transactions that could not have taken place without these unique capabilities – Space Florida remains able to aggressively pursue the kind of projects that will foster job growth in our state.

Increased Federal Support

In FY2011, Space Florida continued to work aggressively with Congress and the White House to best position Florida for the 2010 NASA Reauthorization Bill, which passed in a Senate version earlier in the year. Funding to NASA KSC for a 21st Century Spaceport, a \$40 million Economic Development Administration (EDA) grant for the Space Coast, and the development of a commercial crew office at KSC were all seriously considered, laying the groundwork for adoption of these initiatives in FY2012.

Throughout the year, Space Florida also spent significant time advocating with NASA and Congress to assure the smooth transfer of selected facilities at Kennedy Space Center to Space Florida for commercial lease management. This transition greatly simplifies the process of securing more commercial space companies to establish facilities and create jobs.

Finally, Space Florida made significant strides working with senior staff in the Atlanta regional office of the U.S. EDA to propose funding for SLSL innovations and upgrades for future commercial tenants. As a result, Space Florida will submit a grant application for consideration by the EDA in the coming months.

All of these measures empowered Space Florida leadership to ensure that the organization's mission of achieving triple growth of the state's aerospace industry by 2020 remains truly achievable.

Increased State Support

As the year progressed, Space Florida leadership had the opportunity to work very closely with board chair Lt. Governor Carroll. As a team, Space Florida and Lt. Gov. Carroll submitted a letter to the NASA Administrator advocating for the KSC-based Space Life Sciences Center to be part of the National Lab. Lt. Gov. Carroll has been integral to organizational projects and board meetings, and has become an aggressive advocate in Washington, D.C. for Florida's space industry. Having the strong support of our Lt. Governor at a State and Federal level during this critical time in our industry has been invaluable in accomplishing our short-term goals as a State economic development entity.

In addition to working with Lt. Gov. Carroll, Space Florida worked closely with all major state and local agencies – including Enterprise Florida, AIF, FL Chamber, Space Coast EDC, Cornerstone Regional Development Partnership, and Brevard County – to develop critical legislative priorities for 2012, ensuring the state's economic development goals stayed at the forefront of messaging to critical funding groups and stakeholders.

One of Space Florida's statutory empowerments includes being able to develop policies and procedures aimed at designating spaceport territories for management and board consideration. Consistent with this authority, the Board of Directors of Space Florida unanimously adopted a resolution in June 2011 encouraging the Florida Legislature to recognize Cecil Field as a spaceport territory.

In FY2012, it will be critically important for Space Florida to continue working very closely with the Florida delegation to communicate why commercial space initiatives are so important to Florida's future.





Space Transportation and
Technologies Support Systems



Space Transportation & Technologies Support Systems

In the coming years, the commercial, military and civil markets for space launch and technologies is expected to grow – not only as a result of U.S.-based providers, but also a growing international space marketplace. Florida is well-positioned – through proven infrastructure, an existing high-tech workforce and a 50+ year legacy of safe flight – to take the lead in providing these services for customers around the globe.

In FY2011, Space Florida worked with 20+ extremely qualified, space-related entities in the space transportation sector. We believe these organizations have solid business models grounded in technologies that will keep Florida at the top of the global space exploration market.

Significant Activities:

1. Project Ladon: Space Florida and NASA/KSC representatives worked with this customer to develop a proposal to enhance their business case, providing infrastructure that would assist in increasing the company's spacecraft and booster processing operations and establish booster recovering, refurbishing and manufacturing operations in Florida. This proposal was formally presented by Frank DiBello to the company's leadership team at the AIAA conference held in Anaheim, CA in late August. As a result of this proposal, the company issued a formal RFI seeking information on facility and infrastructure options, as well as financial and regulatory incentives that would be available to assist the company in meeting future booster and satellite processing requirements. Space Florida created a capture team (with representatives from NASA/KSC, the U.S. Air Force's 45th Space Wing and the Economic Development Commission of Florida's Space Coast) to respond to the RFI.

Today, the company's Concept of Operations (CONOPS) continues to mature and the team is supporting the company as it models different operational scenarios. The Air Force provided a Real Property License to the company in conjunction with their expansion efforts.



2. Project Syros: Space Florida joined forces with Enterprise Florida and the Economic Development Commission of Florida's Space Coast to assist a high-profile NASA contractor in exploring the possibility of establishing a commercial crew development program (from research and design to manufacturing and assembly to launch) in Florida. Space Florida worked closely with the company to (1) explore all available State and local incentives that might be available (critical to the company's business case analysis); (2) develop a time line for the application of such incentives (if Florida is selected); and (3) commence the initial incentives questionnaire process. Space Florida assisted the company in completing EFI's application forms for Quick Action Closing Fund and QDSC.

Space Florida funded \$50,000 for modeling and simulation efforts to demonstrate how the target company's proposed operations would fit within current facilities at Kennedy Space Center (KSC) and Cape Canaveral Air Force Station (CCAFS). In addition, Space Florida funded \$30,000 for a Master Plan and Statement of Work definition for the next major phase of the effort.

The company is finalizing its anticipated headcount and expects to close this deal immediately.

3. Project Rock: Space Florida and the Tallahassee/Leon County EDC have worked closely with this space propulsion technology company interested in coming to Florida. During the past year, this promising company executed a stock offering on a foreign stock exchange, raising \$1million in new capital. The company also secured a commitment from NASA to host a demonstration test on the International Space Station. Space Florida will continue to work with this company as they continue capital raising efforts.
4. Project Halo: Project Halo is developing rockets that may be used by commercial and research entities for lunar, Martian and micro-gravity research. Space Florida facilitated meetings between the company, NASA-KSC and several Florida academic institutions regarding sub-orbital rocket launch opportunities from KSC.

Space Florida submitted a Project Halo Program Introduction to the 45 SW and continues to work closely with Wing Safety on the data submissions necessary for permission to fly Project Halo's vehicle from SLC-36. During Q4, a contract was executed for demonstration flights from SLC-36 (funding will be utilized from a NASA \$1.1 million grant award).



5. Project Hawking: Space Florida partnered with the University of Central Florida (UCF) to establish a Microgravity Research Center that will have locations at the University campus as well as the Space Life Sciences Lab (SLSL) at KSC. Locating a facility like this in Central Florida will give our state a competitive advantage among others that do not have the same level of expertise in microgravity studies or accessibility to space launch facilities tied to the ISS. Space Florida provided \$50,000 in initial funding to get this program off the ground.

Related to Project Hawking, Space Florida supported the UCF-UF Planetary Science Program. Scientists from the University of Arizona at Tucson and UCF are planning to launch a spacecraft that will rendezvous with asteroid RQ36, collect samples, and then return home so the team can analyze the findings. The project, named OSIRIS-Rex, was selected as the featured project for a 2016 NASA space mission. is one of three finalists bidding for NASA's space mission set to launch in 2016. The OSIRIS-Rex mission is budgeted for approximately \$800 million, excluding the launch vehicle. Part of these funds will support research at UCF associated with the Microgravity Research Institute.





6. Project Athena: Space Florida worked closely with proven launch services provider ATK to pursue Cape support for booster processing and launch capability tied to LC-46. The 45 SW provided a Statement of Capability, and officially accepting the program onto the Eastern Range. Space Florida was granted a Right of Entry (ROE) for shared use of the requested facility, allowing Athena to move operational equipment there. A Real Property License from the USAF is expected to be issued in early FY2012.
7. Florida High Speed Rail System: In FY2011, Space Florida initiated discussions with the Global Rail Development Consortium in South Korea regarding the prospects of a Florida-based High Speed Rail System Research Institute to provide training to laid-off shuttle workers pursuing employment in the emerging high speed rail industry in Central Florida.

While Governor Scott decided against supporting the Florida High Speed Rail project, the Florida Department of Transportation has given its approval to the Central Florida SunRail Project. SunRail proponents indicate that the estimated economic impact is 261,420 direct and indirect jobs and some \$8.8 billion in economic activity over 30 years.



8. Project Stormy: Space Florida provided LC-36 geo-technical data and utility information to a potential launch vehicle customer interested in bringing a new commercial vehicle to LC-36. Space Florida provided options for processing and other off-complex facilities in addition to reviewing and follow-on discussions regarding the customer's business plan and how Space Florida might partner to bring this new vehicle to Florida.

Space Florida intends to submit a Letter of Intent for financing in early FY2012.

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9. NASA Orion ATB: During Quarter 1, Space Florida provided detailed engineering data, tours, cost estimates and schedules for refurbishment to the NASA *Orion* Abort Test Booster team as part of their trade study looking at the use of LC-46. The team is researching the viability of flying a demo from the Cape versus White Sands Missile Range, New Mexico.

The uncertain nature of the NASA FY2011 budget is resulting in a delay of a decision on launch location until 1Q FY2012 for an anticipated 2015 launch.

10. Project Arro: Space Florida worked with another launch vehicle customer for a potential operating location at LC-36. They wish to arrange for a liquid-propellant rocket motor static stand of sizable proportions. Space Florida determined LC-36 B-pad would be a viable location. We continue to work with this customer and await their business plan and financial prospectus.



11. Project Sanswire: During Quarter 2, Space Florida held introductory meetings with Sanswire Corporation. Sanswire provides unmanned platforms to both the government and commercial sectors through the development and construction of various lighter than air (LTA) unmanned aerial vehicles (UAVs), capable of carrying payloads that provide persistent surveillance and security solutions at various altitudes over extended durations. Space Florida assisted in securing corporate headquarters for Sanswire at the KSC Visitors Complex and continues to assist Sanswire in obtaining use of KSC's restricted airspace for their next test flights; which will be the first untethered flights of their vehicles.

Space Florida provided \$200,000 in support of initial efforts tied to developing performance data from test flights that will benefit negotiations with the USAF Eastern Range. Space Florida also issued a Letter of Intent to match other/private investment funds raised by Sanswire on not less than a 1:1 basis.

Meetings with NASA/KSC's Center Planning Office to explore the establishment of a NASA Space Act Agreement are expected to follow.

In 4Q, Sanswire legally changed its name to World Surveillance Group.



12. Project Alpha: In FY2011, Space Florida supported Earthrise Space Incorporated (ESI), the sole Florida-based entity competing in the \$20 million Google Lunar X Prize competition. ESI will be represented as team ‘OMEGA ENVOY,’ and the winner of the competition will be the first team to land a rover on the Moon and send signals back to Earth.

Following a NASA RFP, ESI was awarded a contract for Innovative Lunar Demonstrations and they plan to use these funds to locate a permanent facility with offices, lab, testing area and a clean room in Florida. The total amount of the NASA Contract to ESI could reach \$10M. Space Florida signed an NDA with the ESI, and as ESI continues its growth and the building of a Lunar Lander prototype at Embry Riddle Aeronautical University (ERAU), Space Florida signed a Letter of Commitment for \$100,000 to support this development. This Letter will allow work at ERAU to continue until funds are disbursed to ESI from the NASA Contract.

During Quarter 3, under the NASA Stennis Shared Services Center contract, ESI received \$10,000 from NASA as partial payment for work performed by the organization. Space Florida matched these funds, as promised, under the Letter of Commitment.

Meanwhile, Space Florida continues to match funds for essential components such as solar cells, hardware/software and re-work stations.



13. Project Starfighters: Starfighters provides high-altitude, high-g and supersonic flights to test equipment, train pilots and conduct experiments in a near space environment and is a current NASA commercial contractor. Space Florida representatives worked with Starfighters to assist in restructuring the company’s outstanding debt obligations in order to acquire funding to obtain additional aircraft from the company’s European partners. Additionally, Space Florida continued to assist the company in its efforts to obtain specific Florida customers for sub-orbital tourism flights.

In addition, Space Florida met with the company and its advisors to discuss a suborbital flight incentive program aimed at stimulating Florida’s nascent suborbital research market. The company currently employs seven people and believes that the acquisition of additional aircraft, along with participation in the suborbital flight incentive program, will allow it to grow to 15 employees in 2012.

14. Super Loki Rockets: Space Florida provided a Department of Defense contractor at the U.S. Army’s MacGregor Range, Texas, the majority of our remaining stock of Super Loki motors and rockets in support of DoD research
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projects. This leaves Space Florida with nine Super Loki motors in storage at Camp Blanding available for sub-orbital flight opportunities.

Space Florida is in ongoing discussions with NASA/KSC Engineering for potential flight opportunities of the remaining Super Loki Rockets. KSC Engineering is interested in a full-fledged flight program encompassing everything from payload design and development through launch and flight.

15. Shannon Global Aerozone: Space Florida signed an MOU in September 2010 with Shannon Global Aerozone. Located in Shannon, Ireland, their objective is to commercially operate and develop all forms of aerospace and aviation enterprises in partnership with Florida entities. During a Florida visit Space Florida facilitated meetings for Shannon Global with representatives from Bristow Helicopter Academy (Titusville), Embry Riddle Aeronautical University, Florida Institute of Technology, NASA-KSC and Cecil Field to discuss areas of mutual interest.

Shannon Global Aerozone concentrated its focus on a new International Humanitarian Aid Hub which will link Shannon, Ireland and Jacksonville, Florida. This endeavor is picking up speed in terms of support from the Irish government, as well as the commercial and academic sectors. The initiative will involve physical procurement, inventory, pick-pack, and rapid response deployment by air - of high value, low volume items such as medicines & vaccines and ITC equipment for front line aid workers in catastrophic situations around the world, from both Shannon and Jacksonville airports.

Shannon Global Aerozone has engaged with UN and EU agencies. Shannon and Jacksonville aim to establish joint degree programs in Humanitarian Aid with student rotations between Limerick/Shannon and Florida that also feature work experience (in the commercial businesses that service the sector) as part of the curriculum. In Q4, a representative from Jacksonville FL visited Shannon in May 2011 to sign MOUs between both sets of entities. Plans are being set to commence the joint degree programs in the Fall, 2011.

16. During Quarter 1, Space Florida served on the Florida Transportation Plan (FTP) 2060 Steering Committee meeting at the July and September statewide meetings. During Quarter 2, Space Florida supported the October 2010 review and consensus on final revisions and to adopt the final report. The FTP 2060 Plan was adopted and published in December 2010. Space Florida intends to continue to advocate for aerospace interests in the State's long-range transportation planning processes.

Space Florida served on the FTP 2060 Economic Competitiveness and Mobility Advisory Group. Aerospace continues to be a significant element in the State's long term transportation planning.



17. Space Florida participated in the Space Coast Transportation Planning Organization (TPO) July and September Technical Advisory Committee-Citizens Advisory Committee (TAC-CAC) meetings, and the August 2035 Long Range Transportation Plan meeting. Space Florida submitted 10 Transportation Improvement Program projects for the FDOT five year work program that were approved by the SCTPO which consist of the following:

- LC-40-Spacecraft processing, launch vehicle storage, booster recovery and refurbishment facility
 - LC-40-Heavy launch vehicle hangar/integration facility
 - LC-41-Launch Control Center and infrastructure improvements
 - LC-41-21st century vertical integration facility and mobile launch platform
 - LC-46-Transportation improvements to support launch and test infrastructure requirements
 - Spaceport Master Plan-Planning document for 2011-2012
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- Shuttle Landing Facility-Improvements and payload vehicle integration facility
 - LC-36-Transportation improvements to support launch and test infrastructure requirements
 - Space Life Sciences Lab and Exploration Park-Spaceflight operations and data center
 - Exploration Park-Phase II 139 acre mixed use multi tenant technology/commerce park
- Space Florida will be working with the Department of Transportation regarding the specific details associated with these efforts; future reporting will identify any activities related to the above referenced efforts.

During Q4, Space Florida participated in the SCTPO Project Priorities 2011 process which consisted of updating the 2010 Project Priorities to reflect current spaceport infrastructure needs to meet Florida's space transportation capacity and connectivity requirements.

During Q4, Space Florida also continued to engage with the Florida Department of Transportation Aviation and District 5 staff, and the Kennedy Space Center Planning staff to review the Scope of Work documentation requirements and processes to fulfill the Strategic Intermodal System Grant for the Shuttle Landing Facility Improvements Projects.



18. Launch Complex 46: Space Florida received a Launch Site Operator's License from the FAA Office of Commercial Space Transportation. This makes LC-46 available to support solid-propellant commercial launch vehicles.

Space Florida issued a contract to refurbish the Communications System at SLC-46 utilizing funds from a State Defense Infrastructure Grant. The contract is scheduled to last one year.

19. Federal Aviation Agency Center of Excellence (COE) in Commercial Space Transportation (CST): During Quarter 2, Space Florida supported, FIT and FCAAP (ERAU, UF, UCF, and FSU) also known as the "Florida Institutional Members of the FAA COE-CST", a cost sharing partnership of academia, industry, and government that will focus on research areas of primary interest to the FAA and the US commercial space transportation industry as a whole. This is a union of public sector (FAA, spaceport authorities, NASA, State/local government, etc.), private sector, and academic institutions to create a world class consortium that will identify solutions for existing and anticipated commercial space transportation concerns. The FAA COE-CST will perform several million dollars of basic and applied research each year.

During Quarter 3, Space Florida received notification of the research projects approved and funded by the FAA for completion by the Florida partners (FIT and FCAAP {FSU, UF, ERAU, and UCF}) of the FAA Center of Excellence for Commercial Space Transportation Research. Space Florida is in the process of authorizing matching financial support for those research projects contributing to the development of commercial space transportation in Florida.



20. Florida Space Research Program (FSRP): During Q3, as part of Space Florida's contribution (\$125K total) to an annual Florida Space Research Program with the Space Grant Consortium, eight awards were given under the Space Transportation and Technologies Support Systems category:

- Computational Modeling of Solid Rocket Plume Radiation, PI Dr. Mark Archambault, MAE Department at Florida Institute of Technology
- Hyperdog Planetary Sniffer, PI Dr. Robert Peale, UCF Physics Department
- Novel Hybrid Light Weight Photovoltaic Cells for use in Next Generation Spacecrafts, PIs' Dr. Kunal Mitra & Dr. Rudy Werlick, Mechanical & Aerospace Department, Florida Institute of Technology
- The Detection of Precise Undulation of Light Sensors, PI Dr. Peter Erdman, Physical Sciences Embry Riddle Aeronautical University
- Continuing Studies of Materials Degradation Under Simulated Mars Surface Condition, PIs' Dr. Melanie Correll, Mr. Ray Bucklin & Mr. Joseph Palaia, University of Florida & 4Frontiers.
- Advanced Sensors for Space Applications, PI Dr. Norma A. Alcantar, Chemical & Biomedical Engineering, University of South Florida
- Mitigation of Partial Surface Coating Spalling in Coated Textiles CMC's, PI Dr. Qingda Yang, Mechanical & Aerospace Engineering, University of Miami
- Thermal Barrier Coatings Advancement through Experiments & Simulations for Rocket Combustion Chamber Linings, PI Dr. Seetha Raghavan, MMAE, UCF

During Q4, FSGC issued an RFP for research proposals. This annual research program which is co-sponsored by Space Florida and FSGC expects to announce the its annual research awards in the first quarter of 2012.



Satellite Systems & Payloads

Significant Activities:

1. Advanced Space Technologies Research & Engineering Center, (“ASTREC”): Space Florida supported ASTREC, the Advanced Space Technologies Research & Engineering Center through its annual membership program. Located at the University of Florida, ASTREC utilizes a "design-build-fly" philosophy in the development of its small satellite systems. ASTREC aims to transform the culture of the space industry from risk-averse to intelligently risk-tolerant by offering a paradigm that demands and produces innovation. The purpose of ASTREC membership is to support the development of faster product delivery, greater functionality and increased cost-effectiveness, so as to provide a technological leading edge to Florida.

Space Florida participated in the ASTREC Industry Advisory Board Meeting at Harris to select future research projects for funding by membership fees and a grant from NSF.

Space Florida continues to assist ASTREC with launch opportunities for its small satellites. In addition, discussions are in progress regarding opportunities for funding from USAID for agricultural, climate, and environmental monitoring in Africa.

2. Florida Space Research Program (FSRP): During Quarter 3, as part of Space Florida’s contribution (\$125K total) in the annual Florida Space Research Program with the Space Grant Consortium, four awards were made under the Satellite Systems and Payloads category:

- Development of Hoberman Type Mechanisms for Small Satellites Subsystem Deployments, PI Dr. Glorinda Wiens, Mechanical Aerospace Department, University of Florida
- Non-Invasive Real-Time Continuous Hemodynamic Monitoring with Ambulatory Cardiography within remote, Austere Environments, PI Dr. Luis Moreno, KSC Innovative Health Applications
- Bio-Inspired Energy Optimal Attitude Control for CubeSats, PI Dr. Yunjun Xu, MMAE, UCF
- Modular Standardized CubeSat Bus (platt), PI Dr. Aroh Barjatya, UCF

3. UFL research on STS 134 & STS 135: During Quarter 4, Space Florida supported research undertaken on STS-134 and STS-135, entitled “Host-Microbe Interactions in the Space Environment: Role of Microgravity in Bacteria-induced Animal Development.” The PI was Dr. Jamie S. Foster, University of Florida working from the SLSL. A complete report is expected to be provided during the first quarter of 2012.

The STS-134 experiment called “Spiders in Space” proved to be very popular with Florida students and teachers alike, with 335 schools in 34 Florida Counties registering on-line to follow this experiment live on board the ISS.

4. Nano-Satellite Launcher Challenge: During Q4, NASA Centennial Challenges were established to conduct prize competitions to generate innovative solutions to technical problems of interest to NASA. NASA solicited proposals for an organization to manage the Nano-Satellite Launch Challenge to place a small satellite into Earth orbit, twice in one week. The NASA prize purse is \$2 million. Space Florida submitted a proposal and was selected to manage this competition. The goal of the competition is to encourage the development of a safe, low-cost, small payload delivery system for frequent access to Earth orbit. This would result in more launches from Florida and a potential new market for government, commercial, and academic customers. Space Florida and NASA are negotiating a Space Act Agreement to govern this Challenge.



Ground and Operations Support Systems

More than ever, Florida is poised to become the premier launch site for small, medium and heavy lift programs in the growing commercial sector, and will continue to be the “go to” launch site for many civil and DoD missions. Ground support operations, including design, development, construction, operation and maintenance of hardware and software elements of payload and launch vehicle processing is much more cost-effective when accomplished at or near the launch site. Optimal manufacturing and assembly facilities, repurposed NASA depots and laboratory support capabilities already exist here in Florida, and provide an attractive incentive to companies looking for a prime location to establish and grow their businesses.

Significant Activities:

1. Project Highlight: This company has been in discussions with Space Florida throughout the past year and is currently fleshing out a business case for performing non-launch related maintenance services at CCAFS launch pads. Space Florida has offered to provide to assist with facilities and equipment acquisition, and the company is also working with the Space Coast EDC and Brevard Workforce to identify potential training support.



2. AAR Corporation: AAR Corporation is a publicly traded aviation company recruited by Space Florida and the Space Coast EDC. The company relocated from North Carolina to the Melbourne International Airport in Q2 and held a groundbreaking ceremony for the relocation of its airlift services on April 18, 2011. During these ceremonies, AAR’s Division President announced that it had hired or relocated some 225 employees in the Melbourne area.

Space Florida continues to work with AAR to discuss future financing potential for permanent hanger facilities at Melbourne International.



3. Orion Aerospace: Orion Aerospace was formed by two managers previously with NASA Shuttle contractor United Space Alliance (USA) and performs outsourced flight hardware development for other aerospace companies. Space Florida facilitated the use of Space Life Sciences Lab (SLSL) facilities and continues dialogue with the company regarding future space needs, including potential to lease space in a multi-tenant building in Exploration Park.
4. \$1.1M Earmark – Senator Nelson: In Q1, Space Florida received notification of NASA grant funds of \$1.1M to be used to research the ability of LC-36 & LC-46 to support currently-available and proposed new launch vehicles. In FY2011, funds were utilized to:

Conduct a study into the current condition of the LC-46 Mobile Access Structure (MAS) rail system. This research identified the critical requirements for MAS rail system refurbishment and provided alternatives and options.

Conduct a study to investigate new test and launch activities at LC-36. Expansion of operational capabilities to include rocket motor static test stands, cryogenic test facilities, and university small rocket launches.

Additionally, a series of technical studies will be performed with this funding to evaluate the operational requirements (commercial, civil, defense) for launch vehicles and processing infrastructure, make recommendations on optimum operational scenarios, determine program schedules to achieve near-term launch capability, and derive potential employment and revenue estimates for these optimized facilities once they are fully operational.

Research will also determine the best concept of operations (CONOPS) for each location to support multiple commercial launch vehicles from a single launch complex, a method of operations not previously employed at the Cape Canaveral Spaceport (KSC and CCAFS).

5. \$400,000 Thermal Vacuum Support – Senator Nelson: Space Florida also received NASA grant funds of \$400,000 under a Senator Nelson Congressionally-Directed Item. Funds will be used to support the Thermal Vacuum Chamber retrofit at the KSC Operations & Checkout Building. The chambers will have numerous applications, including spacecraft testing.
6. Project Bulldog: Space Florida provided a Letter of Commitment regarding the purchase of a high-tech, aerial surveillance technology prototype (value up to \$1.2M). Space Florida will issue a multi-year lease of the prototype back to the Client with the option to purchase. The product provides broad area visualization capabilities and uses suborbital-related techniques for implementation of the product. Space Florida provided \$100,000 as an initial commitment to the effort, followed by an initial Promissory Note in the amount of \$500,000. To date, confidential test data and video progress reports on the development of their technology have been provided. This data will also serve as a valuable marketing resource for this product.
7. Project Bronco: Space Florida has committed \$500,000 in long-term support to support a defense-related, high-tech surveillance technology. Space Florida deployed \$100,000 of the original commitment to complete prototype development and will issue a multi-year lease of the prototype product back to the Client with the option to purchase. To date, confidential test data and video progress reports on the development of this technology have been provided. This data will also serve as a valuable marketing capability as the company moves into marketing and sales of this product.
8. 21st Century Space Launch Complex: Space Florida supported numerous technical interchange meetings with NASA-KSC Planning and Development staff on preparing Florida's "21st Century Space Launch Complex." KSC solicited launch complex requirements from both commercial spaceflight providers and government users. To this end, NASA is seeking to achieve improvements that will enhance the effectiveness and access to KSC and the Eastern Range. The program plan includes a process to define the improvements and associated investment strategy, and requires immediate and continuing engagement with commercial and other spaceflight providers to assist in the identification and prioritization of the plan. KSC intends to identify emerging opportunities for access to and use of KSC facilities and technical assets.

In Q2, Space Florida provided funding of a special study by Reynolds, Smith & Hills (RS&H) to research alternative use schemes for KSC LC-39B and continues to engage with NASA KSC in refinement of their "21st Century Space Launch Complex" effort.

9. Educational Balloon Releases: Space Florida continued to improve operational processes associated with Educational Balloon Releases, preparing for Educational sounding rocket launch activities in the future. Education Balloon Release Documentation for nine total balloon releases was submitted and approved by the 45th Space Wing and Kennedy Space Center Safety.
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Space Florida Facilities:



1. Launch Complex 36 (LC-36): LC-36 is a liquid fueled, light-to-medium lift launch pad leased by Space Florida. We envision LC-36 serving a key role in upcoming commercial launches and have taken several steps in FY2011 to prepare the site for launch, including:
 - Reactivated fire alarm notification system
 - Installed signage around site
 - Provided a contract to purge the four NASA surplus cryogenic dewars
 - Abated all asbestos and lead paint from the blockhouse annex
 - Removed old wiring, piping and interior wall partitions that was no longer usable
 - Rebuilt exterior wall on the south side and installed a commercial rollup door
 - Installed a ramp for access to the new vehicle processing area
 - Completed activation of Building 5550 (Admin)
 - Surveyed located launch pad position and propellant storage areas

Within FY2011, a company identified as “Project Solo” committed to performing demonstration launches from this site in fall 2012. In preparation for these launches, Space Florida additionally completed the following activities:

- Renovations in Building 5501A including floor refinishing, painting-interior and exterior, installed electric service panel, lights, switches, ventilation fan, oxygen sensor, electric generator, and automatic transfer switch.
- Installed area warning light system
- Renovated windsock pole and frame
- Completed construction of the launch pad and approach drive
- Cleared peppertrees from the visual field
- Completed data and electrical wiring to the top of the blockhouse dome
- Completed construction of 2 concrete pads for the LOX and IPA fuel storage buildings
- Completed installation of Gate A electric gate with keypad entry



2. Launch Complex 46 (LC-46):

Significant interest has been shown by commercial customers in using LC-46 for solid fuel, small-to-medium sized rockets. Space Florida took significant measures to assure the site was prepared for customers, including:

- Received FAA Launch Site Operator's License
- Worked with NASA - Dryden Flight Research Center to develop a modification plan to the Mobile Access Structure (MAS) to accommodate the *Orion* Abort Test Booster
- Issued an RFP for replacement of the communications infrastructure. Funding will be under a State Defense Infrastructure Grant.
- Performed a study of the MAS rails to verify integrity and recommend options for refurbishment.
- Performed corrosion control work on the MAS wheels and rails.
- Successfully completed a test roll of the MAS.

3. Launch Complex 47(LC-47):

Ongoing maintenance was completed throughout the year to keep LC-47 in peak operating condition for future educational research and other Super Loki, small dart launches.

4. Camp Blanding Operational Storage Facility (OSF):

Camp Blanding is located on Florida National Guard property west of St. Augustine. The site serves as a storage facility for United Launch Alliance (ULA) Atlas V rocket motors. The facility sustained a significant lightning strike in FY2011 and lost a telephone, a fax machine, a copier, and the gate motor. All were repaired or replaced. Energy efficient lighting was also installed at the facility – resulting in a significant reduction in energy usage. In Q4, Space Florida began the process of renewing the property license for 12 months.

5. Business Incubator (South Campus):

This 5,160 sf Business Incubator space has hosted a variety of aerospace companies in the past year, including L2 Aerospace (4 offices), Special Aerospace Services (3) and the IT Center of Excellence.



6. RLV Hangar:

The 50,000 sf Reusable Launch Vehicle (RLV) Hangar is located adjacent to the Shuttle Landing Facility and currently provides leased space to Starfighters, as well as NASA for helicopter storage and service.



7. Space Life Sciences Lab:

Space Florida worked with Kennedy Space Center Planning & Development to discuss the transfer of direct management of this facility to Space Florida. Also discussed was NASA's anticipated level of occupancy for FY2012 (beginning 10/1/2012).

Space Florida continues to actively market to multiple potential tenants for utilization of this facility and in conjunction, has engaged the firm Sheer Partners to help determine appropriate lease pricing for the facility.



Agriculture, Climate and Environmental Monitoring

High altitude and space-based surveillance and monitoring capabilities will continue to provide key intelligence to scientists, farmers and marine life/environmental specialists. Data collection and monitoring will establish the state as a world leader using high-altitude and satellite-based technologies. In FY2011, Space Florida worked with a number of university and high school teams to research, build and release weather balloons, GPS trackers, and other scientific payloads. A total of 228 students participated in these programs.

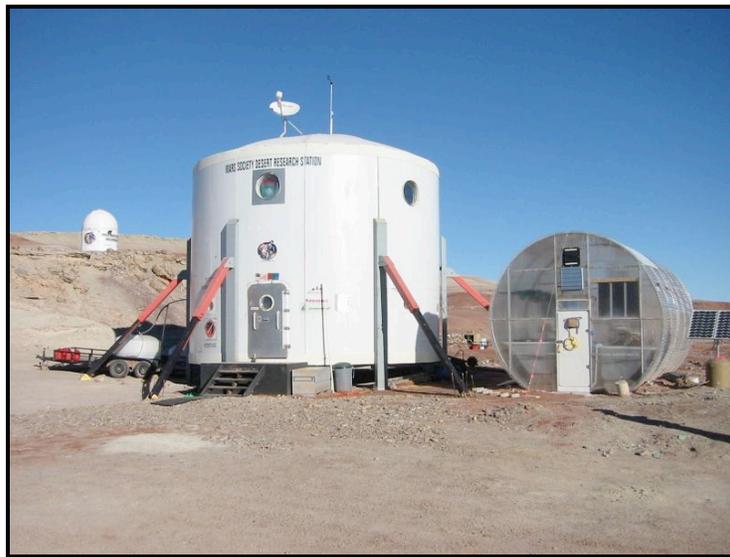
Space Florida also teamed up with the Mars Society and NASA-KSC to send an FIT professor (Dr. John Deaton) to the Mars Desert Research Station (MDRS) in Utah for two weeks with three experiments designed by 13 middle school students.

Significant Activities:

Balloon Launches: High altitude balloon launches provide a unique, hands-on way for high school and university students and teachers to experience the thrill of preparing payloads for flight, collecting data and analyzing results. Throughout the year, Space Florida hosted a wide variety of student groups that had the opportunity to participate in these unique programs:

1. Three Grambling State University students who were funded by a NASA CIPAIR award (Curriculum Improvement Partnership Award for the Integration of Research into the Undergraduate Curriculum) developed three weather balloon payloads – GPS, temperature sensor and a live camera – to monitor changing atmospheric conditions as the balloon was released from KSC and rose to a height of 80,000 feet.
 2. Under the same NASA CIPAIR grant, 13 STEM undergraduates from Claflin University, SC participated in an environmental monitoring activity at KSC – researching, building and releasing three payloads – a live camera, GPS and a weather sensor, to an altitude of nearly 100,000 feet. Three of the undergraduates will be participating as Bio-science interns at the SLSL in the Summer of 2011.
 3. Space Florida hosted the University of Florida's sponsored Space Scientists Training Program (SSTP) at the Labs for two days in July. Fourteen high school students attended in conjunction with UF staff. The SSTP students built both a GPS and camera payload for a high altitude weather balloon, which was released from KSC.
 4. The Kansas Cosmosphere sent 30 high school students for 5 days to participate in a series of environmental programs where they designed, built and released a number of weather monitors and attached them as payloads on a high altitude balloon, released from KSC.
 5. Sixteen Florida university undergraduates undertook a five-day workshop at KSC to design, build, test and release a meteorological balloon and three scientific payloads up to 100,000 feet (20 miles). The payloads comprised a GPS unit, live video camera and a temperature sensor. Three payloads worked perfectly up to almost 90,000 feet and the students received and collected data for almost 2 hours following the release. On the final day a team of aerospace panelists discussed job opportunities in the Market Horizon areas. Partners in the Academy included the Florida Space Grant Consortium, NASA-KSC and US Air Force.
 6. Lockheed Martin sponsored a five-day undergraduate Academy for 16 Florida students at KSC. The group had several on-site visits to key LM sites in both CCAFS and KSC, where job opportunities were discussed. The hands-on activity on day five saw the undergraduates release a meteorological balloon and payloads from KSC.
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7. The NASA-KSC, the Florida Space Grant Consortium and Space Florida sponsored a five-day Workshop for 16 STEM undergraduates at KSC. Students had an opportunity to visit key KSC locations and a Workforce Panel Discussion was held on the final day to provide details on Internships, Co-Ops' and STEM opportunities in the Market Horizons.
8. Over a period of several weeks, 20 high school students from the St. Augustine HS Academy prepared a number of meteorological experiments that flew from the HS on board a high altitude balloon. NASA-KSC Education also participated in the event and presented guidelines for the students to obtain working STEM internships at local universities and KSC.
9. Space Florida, NASA-KSC and FSGC hosted 17 STEM undergraduates who participated in onsite visits and released a high altitude balloon and three payloads (GPS, temperature and video camera) from KSC.
10. Florida hosted 12 undergraduates from Savannah Technical College GA. Students built both a GPS and camera payload for a high altitude weather balloon, which was released from KSC.
11. FSGC and Space Florida hosted 11 Merritt Island HS students at KSC, June 13-17. In addition to briefings and hands-on activities in the Satellite Ground Station, they also released a high altitude balloon and three payloads they had assembled from KSC.
12. Kansas Cosmosphere sent two separate groups of HS students to KSC, each with 30 students. The students visited the SLSL and received several demonstrations in both the Chemistry and Physics Labs, as well as on-site to the Growth Chambers. Both groups assembled and tested their payloads for separate high altitude balloon releases from KSC.



Mars Desert Research Station: Space Florida, the Mars Society and NASA-KSC partnered to send an FIT professor (Dr. John Deaton) to the Mars Desert Research Station (MDRS) in Utah. Dr. Deaton took three (3) STEM experiments with him from Pt. Charlotte Middle School, FL. Designed by thirteen (13) students from the school and under the guidance of the science teacher, the experiments range from Biology to Geology to Human Factors. Dr. Deaton spent two weeks at the MDRS and will be presenting the results of his experiments to the students and other parties on the NASA DLN network. During Q4, Dr. Deaton/FIT presented the results of the three experiments on NASA television as well as several experiments undergraduate students at FIT had specifically designed for the Mars Habitat.



Civil Protection and Emergency Management

Communications reliant on aerospace systems are key in the timeliness and success of response before, during and after emergency events. Florida's Emergency Management proficiency, combined with core aerospace and information communications capabilities, is a unique nexus of expertise upon which to build innovation and new enterprise.

Two of the companies Space Florida worked with this year – also mentioned in other areas of this report – have technologies that have the additional benefit of being utilized in the areas of Civil Protection and Emergency Management.

Significant Activities:

1. Project Sanswire (as described in "Space Transportation and Technology Support Systems): Sanswire provides unmanned platforms to both the Government and Commercial sectors through the development and construction of various lighter than air (LTA) unmanned aerial vehicles (UAVs), capable of carrying payloads that provide persistent surveillance and security solutions at various altitudes over extended durations. Space Florida assisted in securing corporate headquarters for Sanswire at the KSC Visitors Complex. Space Florida is continuing to assist Sanswire in obtaining use of KSC's restricted airspace for their next test flights; which will be the first untethered flights of their vehicles.

The surveillance technology provided by Sanswire through these products has the potential to provide unique vantage points for those in emergency management and civil protection.

In 4Q, Sanswire legally changed its name to World Surveillance Group.

2. Project Marlin (as described in "Communications, Cybersecurity and Robotics): This project, run by a high-profile, international space contractor, relates to the development and demonstration of an Autonomous Underwater Vehicle (AUV) and related computer hardware with DOD and Homeland Security (ports, harbors and piers) applications, as well as uses in inspection and repair of offshore platforms.

This type of technology has the capability to provide underwater civil protection at ports, harbors and piers across the U.S.



ISS and Human Life Sciences

FY2011 was a critical year for Florida in relation to establishing the state as a ground node for the ISS. The Center for Advancement in Science in Space (CASIS), a Space Florida initiated, Florida-based organization that has been officially named by NASA to serve as the manager of International Space Station (ISS) commercial science and research programs through 2020.

In addition to this landmark announcement, Florida is already home to the Space Life Sciences Lab (SLSL), long known as the home base for processing life sciences experiments for flight to the ISS via the Shuttle. Moving forward, Space Florida is working with Master Developer Pizzuti Companies to utilize the SLSL as an anchor facility for the Exploration Park – a science and technology research park currently being built on the grounds of KSC.

There is significant opportunity for microgravity-based R&D to provide insight into disease growth and vaccine development. Space Florida will continue to work to make Florida the natural choice for life science companies to do business.

Additional Activities:

Ireland Exchange Program: Space Florida and Dr. Gary Stutte of the SLSL formed an exchange program with the Limerick Institute of Technology in Ireland to host three bioscience graduates to intern at the SLSL for periods of up to six months, at no cost to the SLSL. The SLSL Biosciences Internship program named ‘Discover Science,’ and three LIT life sciences grads have already been selected to commence their internships at the SLSL starting in October 2011.

NASA CIPAIR Program: A NASA CIPAIR (Curriculum Improvement Partnership Award for the Integration of Research into the Undergraduate Curriculum) grant enabled 12 bioscience undergraduates from Robeson Community College (NC) to participate in a second internship at the SLSL in summer 2011.

NASA-KSC National Lab Day: NASA-KSC External Affairs invited Space Florida to participate in National Lab Day (May 12, 2011) at the SLSL. Eighty Florida high school students participated in the event, along with KSC Director Bob Cabana.

NanoRacks: Space Florida signed an MOU with NanoRacks to promote scientific and commercial research on ISS and develop marketing materials to promote Florida-based research.



Communications, Cybersecurity and Robotics

Space Florida's business diversification strategy includes leveraging the state's aerospace communications systems capabilities to support innovation in IT and robotics for crossover target sectors. These IT sectors are forecast to grow exponentially in the coming years as the demands of government, industry and global consumer markets grow.

In FY2011, Space Florida had the opportunity to work with both large and small technology companies to realize further development of Autonomous Underwater Vehicles and subsurface communications systems, as well as a cybersecurity research institute and growth in local microelectronics manufacturing capabilities.

Significant Activities:

Project Marlin: Space Florida is working with a major aerospace company to develop and demonstrate an Autonomous Underwater Vehicle (AUV) and related computer hardware with DOD and Homeland Security (particularly ports, harbors and piers) applications, as well as uses in inspection and repair of offshore platforms.

As part of the partnership, Space Florida is purchasing and leasing back the technology to the company to fully prove out the technology. Additionally, Space Florida engaged its banking partners to determine next steps on leveraging optimal financing arrangements for the company, which are expected to be in place by 1Q 2012.

Project Magnelink: This project relates to the development of a subsurface communications systems with aerospace, defense and mining applications. The company has completed an initial site demonstration and legal, financial and workforce considerations are now being discussed.

Cybersecurity Research Institute: Space Florida and the Florida Institute of Technology (FIT) began discussions regarding the development of a Cyber Security Research Institute. Funding opportunities are currently being explored to fully realize the project in FY2012.



SolTec Electronics/SolTec Labs: Space Florida representatives worked with the principals of Soltec, a Brevard County-based company, to prepare a loan application for funding under the Florida Economic Gardening Program. The company, a small 10-employee firm started in 2008, is within one of the qualified targeted industries (QTI) and provides decapsulation, testing and authentication services to the microelectronics industry. The loan application was funded in the amount of \$200,000 and loan allows the company to buy and upgrade current equipment, including a specialty x-ray machines, scanning electron microscope, digital curve trace system, microchip sockets, microchip baking oven, and a precision grinding/polishing machine. Additionally, the operation will be able to expand to 20 employees and obtain ISO 9001:2008, ESD S20.20 and AS9100 certifications.

Advanced Solder Technologies, Inc: Through a newly established relationship with Florida Business Bank, Space Florida was introduced to this Rockledge-Florida based company that provides manufacturing services as part of the local aerospace and DoD supply chain. Employees of the company are seeking \$250,000 in funding to purchase the company from the existing owners and establish a working capital line of credit. Florida Business Bank has requested Space Florida's participation in the financing transaction at an \$80,000 level. The significance of this opportunity is that it serves as a test case as to how the organization and Florida Business Bank can leverage their respective resources to seed small business growth in the Space Coast region. The seller of the company agreed to carry a note in favor of the buyer to complete the transaction, mitigating the need for bank financing at this time.

Project Tron: Space Florida is working with a satellite technology company that provides live in-flight entertainment to airlines across the world. The company expects growth in the areas of wireless high-speed data link technology, enabling airplanes to upload new movies at the gate; and provide email, SMS and IM connectivity. The company recently won a contract with a domestic carrier to outfit the carrier's fleet with the technology. This contract requires additional staffing and the company believes the skill set of Shuttle workers may be a good fit. Space Florida plans to assist the company in refining its business plan and take the next steps to realize its goals.



Adventure Tourism

Florida hosts millions of tourists annually and is the threshold for America's human spaceflight program. We believe that market share in this industry will grow in the coming years and Florida plans to position itself as the World's leading space adventure tourism destination.

While this industry is still in development, Space Florida participated in dialogue with an emerging space adventure tourism company regarding establishing future operations in Florida. Our organization also continues to foster innovative university research programs that promote creative solutions in the adventure tourism arena.

Significant Activities:

1. Project Keyhole: Space Florida re-engaged with this company at the National Space Symposium and KSC Center Planning & Development also attended. The company has made progress in defining potential markets beyond Adventure Tourism (e.g., staging for experiments conducted in microgravity; supporting research on the effects of long duration spaceflight on the human body) and has further developed their business case for locating in Florida.
2. Florida Space Research Program: Space Florida contributed \$125,000 toward the annual Florida Space Research Program (FSRP) with the Space Grant Consortium, where four awards were made under the Adventure Tourism category:
 1. STS-125: The Hubble Telescope Restored, PI Mr. Gene Tavares, Astronaut Memorial Foundation, KSC
 2. The Lunar Phases Project: Utilizing the Mental Model Building Instructional Methodology in teaching the cause and process of Lunar Phases, PIs', Dr. Angela Osterman Meyer & Manuel Mom, Florida Gulf Coast University
 3. Education & Outreach with Florida Students through interaction with the crew of a Simulated Mars Mission, PIs' Joseph Palaia & Ruben Nunez. 4Frontiers
 4. Unlocking Earth's Secrets from Space, PI Frank E. Muller-Karger, USF Marine Sciences.



3. Planetary Lander Egg-Drop Competition: Space Florida and NASA-KSC hosted an engineering competition for Florida students at Universal Studios Orlando in May 2011. In the Planetary Lander Egg-Drop Competition, students were tested on their engineering and technical skills as they designed and built planetary Landers that competed against one another. Judges were selected from commercial KSC operators and the payload on board each Lander was a raw egg. Almost 250 Florida students comprising 40 separate school teams participated in this the second annual Lander competition.
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Clean Energy

Demand for cleaner, renewable energy is expected to expand as technologies that reduce costs and the impacts of energy generation develop. This year, Space Florida had the opportunity to work with several cutting-edge companies that are leading the way in solar energy technology, alternative water sources and hydrogen tech demonstrations, as well as participate in clean energy consortia. Space Florida intends to help these types of companies grow in Florida and provide leadership to the nation on best practices for green technologies.

Significant Activities:



1. Project Star: Space Florida partnered with the Space Coast EDC to secure financing for a new facility and new production equipment for Project Bulb, a rapidly growing advanced lighting products (LED) manufacturer in Brevard County. This manufacturer has taken NASA technology originally developed for the ISS and is applying it to a variety of mass market applications.

At its current rate of growth, it is anticipated that Project Star will soon outgrow its manufacturing facility. An EDA proposal was submitted to build a new and larger facility that would accommodate Project Star's anticipated growth and further anchor it to Brevard County and the State of Florida.

Space Florida representatives met with the site consultant firm retained by the company to receive preliminary specifications on the company's expected facilities needs after the expiration of its current facilities lease on its corporate HQ and manufacturing facility. The parties also discussed the State, local and Space Florida-directed incentives that may be available to the company. Retention of the company and its hundreds of headquarters, R&D, and manufacturing jobs is of critical importance to Space Florida.

The company's site consultant is finalizing the design of a new facility and narrowing down potential sites. We expect these activities to be completed in the first quarter of 2012, at which time Space Florida will re-engage on potential financing options.

2. Photovoltaic Manufacturing Consortium: Space Florida supported a UCF effort through Partner, Inc., an advanced technology and manufacturing consortium, which has submitted a concept paper to the U.S. DOE to establish an industry led Photovoltaic Manufacturing Consortium Partner, Inc., a not-for-profit corporation overseeing consortium operations and coordination the collaborative and proprietary efforts across the photovoltaic industry supply chain to drive rapid and substantial improvements in solar cell manufacturing while reducing costs. This project was partially funded by the Department of Energy through \$5 million with potential for additional funds in the future.

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3. Project Wave: SebiaCMET, Inc./Clean-and-Green Energy is seeking to improve on existing technologies related to the generation of renewable energy and alternative water sources through the harnessing of the ocean's subsurface waves. In partnership with Florida Institute of Technology, the company is currently prototype testing in the Atlantic Ocean east of the Fort Pierce, Fl. It is anticipated that the results of this ocean testing will lead to the continued development of commercially viable units with initial customers targeted in the international markets.

Space Florida packaged and submitted a funding application to Access Florida Finance Corporation on behalf of the company and the application was funded in the amount of \$75,000. These funds allowed the company to continue development and open-water testing (off the Southeast Coast of Florida) of its second prototype.



4. Project Blue: This Central Florida company is a fully-integrated solar PV power generator, occupying all segments of the solar power value chain, from manufacturing of components, to the sale of electricity to residential, commercial, and industrial customers. The company's mission is to sell photovoltaic electricity to its utility customers at wholesale prices and to commercial and residential customers at net-metering prices within the framework of long-term power purchase agreements ("PPAs"). The company has been approved by a local government for the issuance of an industrial revenue bond to acquire additional leased facilities, as well as additional real property for the construction of a solar farm. The company currently employs several hundred and continues to hire.

During Q4, Space Florida met with representatives from TD Bank at the company's request to discuss Space Florida's support of bank financing to the company. Space Florida followed up the meeting by providing several years of audited financials to the bank and awaits communication from the bank regarding "workable" financing structures.



5. Project H-2 Demo: During Q3, the Space Florida Board of Directors approved the Space Coast Hydrogen Technology Demonstration and Commercialization Project. Space Florida has begun contract negotiations regarding a feasibility study pertaining to on-site hydrogen generation. The feasibility study is intended to provide an assessment, business case and operations plan to assist Space Florida in determining if a future strategic investment should be considered. It is intended that this effort will also identify possible sites for Florida operations. If feasible, in the event of Florida site selection, the client will provide a commitment to build and operate according to study results and work through Space Florida to facilitate future financing.

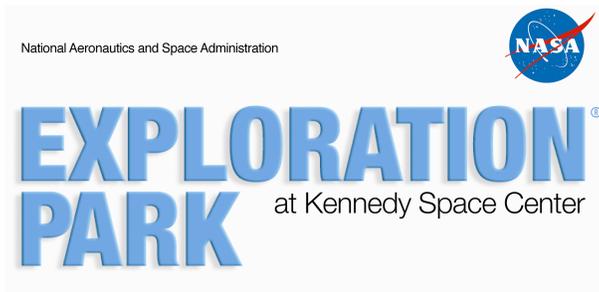
During Q4, Space Florida and Pratt & Whitney Rocketdyne (PWR) entered a contract for completion of the feasibility study re: the Hydrogen Technology Demonstration Project. As part of this project, PWR will also examine the feasibility of a Space to Energy Regional Innovation Center for Technological Development and Commercialization.

This Center will be designed to enable the participants to advance clean energy technologies to commercialization by providing access to facilities, technical skills, and collaborative technology support and other means of lowering maturation and demonstration costs through innovative partnerships and programs with NASA, the Air Force, and aerospace companies.



6. Project Chariot: Project Chariot is tied to a clean manufacturing automobile company considering Florida site selection for production/manufacturing efforts. As such, Space Florida has entered into further discussions with the client regarding the purchase and lease back at “to be determined” terms, of three production vehicles for up to one million dollars. The production vehicles will be configured to facilitate being approved for listings on the GSA schedule. It is envisioned by Space Florida that after GSA approval, the client may obtain pre-buy commitments from Federal/DOD entities thus helping to increase first orders/production. Pre-buy commitments will accelerate hiring/manufacture start-dates as well as allow the client to leverage the pre-buy commitment to attract additional external capital into the company. The company will deliver three production vehicles to Space Florida, five months after the purchase is made.
 7. Igniting Innovation Clean Tech Proposal/EDA: Space Florida became a partner with TRDA to execute the Igniting Innovation (I²) Clean Technology Acceleration Program through an EDA grant. A Clean Technology Center would result in positive economic and job creation impact for the State of Florida. Space Florida supports UCF and TRDA efforts to establish a Gap Fund that is focused on commercializing Florida’s most promising clean technology research. Space Florida intends to provide \$200,000 towards the effort.
 8. Jobs and Innovation Accelerator Challenge Grant Proposal: During Q4, Space Florida committed itself to lead a regional effort with BWDB, TRDA, SCEC, and PWR as partners to submit a proposal focused on creating a Clean Energy Cluster near KSC. This opportunity was designed by the Taskforce for the Advancement of Regional Innovation Clusters in partnership with other Federal agencies. Space Florida and its partners are seeking an award of \$2.2 million, which will be used for cluster development, training the cluster workforce, and providing technical assistance to cluster small businesses.
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Other Key FY2011 Highlights:



In FY2011, six potential tenants signed Letters of Intent for leasing space in KSC's next-generation science and technology complex - Exploration Park. Pizzuti and Space Florida continue to aggressively work these opportunities, with a goal of having 60% tenant commitment and vertical construction on the first building underway no later than early 2012.



In 4Q, Space Florida facilitated and participated in two prospect meetings with Pizzuti – Florida Public Radio and the Technological Research Development Authority (TRDA). Space Florida and Pizzuti, along with KSC Center Planning & Development staff, also met with the International Space University (ISU) at the National Space Symposium. ISU is considering the establishment of their North America site at Exploration Park and Space Florida is assisting ISU with the Florida accreditation process while Pizzuti finalizes a conceptual building design.



Aerospace Economic Impact Study

In Q2, Space Florida commissioned the FSU Center for Economic Forecasting and Analysis to provide an Aerospace Economic Impact Study that would result in more a more detailed breakdown of the Market Horizon areas to accurately gauge the size of the aerospace industry in Florida. The study is now complete and features an economic modeling analysis for Florida aerospace industries (2010 data). The report also outlines and compares current private and public financial incentives currently in use, as well as statistical analysis of the industry through workforce numbers, wages, revenues, assets and other economic indicators.



Cluster Development Initiative

In Q2, following the issuance of a report from the Presidential Task Force calling on government support for the Space Coast Region throughout the transition of the shuttle program, Space Florida received a Department of Commerce Award of \$400,000, with the proviso that additional funding of \$100,000 from Space Florida would be added to the total award. The purpose of this award was to develop an economic strategy for Florida's Space Coast Region. This was completed through the issuance (by Space Florida) of two separate RFPs as follows:

- (a) Regional Analysis and Cluster Strategy Development.
- (b) Cross Cluster Investment and Market Development Services and Deliverables.

Regional Analysis & Cluster Strategy Development: Following the issue of this RFP, three responses were received and the Contract was subsequently awarded to Regionerate LLC, under the direction of Ms. Linda Fowler. A contract was issued for \$210,000. Regionerate engaged with Space Coast Energy Consortium and met with regional leaders on the space coast. Regionerate then commenced the definition of regional clusters for comparative analysis and cluster leaders were identified for the five defined areas. Additionally, Space Florida facilitated meetings between Regionerate representatives from the Disney Entrepreneur Center and Dr. Tom O'Neill (UCF) and Randy Barridge (FL High-Tech Corridor) to discuss mapping of small business resources in the region. An aviation and aerospace cluster meeting is planned for 1Q 2012.



Cross Cluster Investment and Market Development Services: The RFP for Cross Cluster Investment also received three responses and was awarded to TRDA, who titled the initiative the 'Capitol Acceleration Program.' They also defined Board qualifications and commenced the search for a network of subject matter experts to act as mentor entrepreneurs.

During Q4, TRDA created a Qualifications Review Board (QRB) consisting of equity and angel investors to review company applications for participation in a September 2011 showcase called "Igniting Innovation." The QRB reviewed 62 applications and selected 10 companies to present and 18 companies to exhibit (not present) the Showcase. The process generated applications from throughout Florida and interest in the program was aided by an announcement by Space Florida that it would award \$100,000 to the winner of the showcase.