AGENDA: Launching Commercial Space Enterprises Workshop

October 18-20, 2013
Atmel at 1600 Technology Drive, San Jose, CA

Friday October 18			***Commercial Space in Low Earth Orbit (LEO) Meets Silicon Valley***
9:00-9:15	**Welcome and Introduction**	**SVSC/CASIS/Atmel**	*Initial comments from the sponsors on the workshop and some of the 2014 SVSC and CASIS activities in Silicon Valley.*
9:15-9:30	**Workshop Strategy for Participants**	**Eric Brachhausen**, Strategic Innovations Group	*Walk-thru the process, your input and the intended outcome of our workshop designed to lower barriers to industry participation.*
9:30-10:00	**Investing in the Next Great Innovation Economy**	**Richard David**, NewSpace Global	*The head of NewSpace Global, an information services provider for the NewSpace industry, gives his view of the emerging business opportunities.*
10:00-10:30	**ROI in LEO**	**Col. Gregory Johnson**, CASIS	*The seasoned ISS astronaut and Executive Director of CASIS talks about the expected return on investment for R&D in LEO.*
10:30 - 10:45	**Break**		*Participant Comments Capture*
10:45-11:30	**Panel #1** **Protein Crystal Growth in Microgravity**	Mod: **John Cumbers**, SynBioBeta, **Paul Reichert**, Merck **Dr. Joe Ng**, iXpressGenes,	*A leading chemist from a large pharmaceutical company and a director from a synthetic biology company explain their company's research on the ISS lab and discuss implications of microgravity.*
11:30-12:00	**3D Printing- New Services Aboard the ISS**	**Jason Dunn**, Made in Space	*The company founder describes their path from startup to a profitable enterprise including their projected arrival at the ISS.*
12:00 - 12:10	**ISS Welcome**	SVSC/CASIS	*Screen the video made on the ISS that welcomes our Silicon Valley Community to Low Earth Orbit*
12:10-1:00	**Lunch/Comments Capture**		*Onsite lunch with opportunity to feed your ideas, questions, issues into the workshop*
1:00-1:45	**ISS 101**	**Justin Kugler**, CASIS	*The Operations Strategic Analyst for CASIS explores what the ISS National Lab offers entrepreneurs, citing examples of current partnerships and ideal partners for moving forward.*

1:45-2:30	**Panel #2** **ISS Follow-Ons:** **Dragon Lab and Bigelow**	Mod: **Justin Kugler**, CASIS **Chris White**, Space X TBA Bigelow **Dr. John Cumbers**, SynBioBeta	*Additional resources available for microgravity activities. Learn about the basic concept of Space X's Dragon Lab and the Bigelow project and some of the price points involved.*
2:30-3:00	**Break**		Participant Comments Capture
3:00-3:25	**Effect of Microgravity on Gene Expression and Stem Cells**	**Rich Godwin**, Zero Gravity Solutions, Inc.	*CEO of ZGSI, Rich has been sub-contracted as a business development consultant for SpaceX, working on their nascent DragonLab program. He will speak to future products from ZGSI based upon ISS manufacturing.*
3:25 - 3:45	**Radiation Exposure in Low Earth Orbit and Beyond**	**Kathleen Morse**, Advanced Materials Applications	Cost Effective Space-Based Applications: *Discussion of radiation resistant components and the use of ISS as a technology test bed.*
3:45-4:15	**Projections for Radiation Hardened Electronics and the Democratization of Space**	**Carolyn Russell, Aerospace US Tactical Marketing Manager, Andreas Eieland** **Sr. Product Marketing Manager** Atmel	*Atmel's projections for space rated and rad hard semiconductors. They will talk about the technology challenges and how they plan to solve them. Also, an overview of how modern easy to use microcontrollers and open source environments enable shorter development times.*
4:15-4:30	**The Future of Commercial Space in Silicon Valley**	**Sean Casey,** Silicon Valley Space Center	*The Managing Director of the SVSC shares his vision for where this is all headed and the various roles we can play...*
4:30 - 5:00	**Reflection on Silicon Valley Opportunities**	**Col. Gregory Johnson**, CASIS	*The Executive Director of CASIS shares what his team hopes to do in partnership with our community of entrepreneurs in Silicon Valley and takes questions from participants.*
5:00-5:30	**Comments Capture/Media Interviews**		*Use this opportunity to feed your ideas, questions, issues into the workshop.*
5:30-7:30 and Beyond	**Kick-off Celebration**		*Join us for apps and no-host drinks across the street and perhaps keep going at another location with the real space partiers…*

Saturday, October 19			**Commercial Space Roadmaps**
9:00-9:15	**Welcome**	SVSC	*The Organizers kick-off the day and explain the program.*
9:15-10:00	**Panel #3: Private and Public Partnerships**	Mod: **Eric Brachhausen**, SGI **RIchard Mains**, NASA Flight Opportunities Prgm **Dan Rasky**, NASA Space Portal **Khaki Rodway**, XCOR **Rich Boling**, TechShot	*Representatives from and advocates for the NASA Flight Opportunities Program, NASA Space Portal, XCOR and TechShot share lessons learned doing business over the years at the intersection of NASA and the private sector. Moderated by Eric Brachhausen , who when the VP of American Technology Alliances, helped design and coordinate several NASA-Public Sector collaborations in aerospace.*
10:00-10:20	**Sub-Orbital Options I: Blue Origin**	**Erika Wagner**, Blue Origin	*Overview of the Blue Origin suborbital and orbital services program from their Business Development director -* *Blue Origin is a privately funded aerospace company set up by Amazon.com founder Jeff Bezos. The company is developing technologies to enable private human access to space with the goal of dramatically lower cost and increased reliability.*
10:20-10:35	**Break/Participant Comments Capture**		
10:35-10:50	**NASA's Flight Opportunities Program (FOP): At a Crossroads**	**Richard Mains**, Mains Associates	A look, by the former FOP Technology Liaison, at this pioneering collaboration of public and private partners. FOP supports technology advancement for future NASA missions and commercial applications by funding commercial NewSpace companies to fly payloads in micro-g and other environments including to near space.
10:50-11:10	**Sub-Orbital Options II: XCOR**	**Khaki Rodway**, XCOR	Overview of the XCOR program and offerings.

11:10-11:30	**Sub-Orbital Options III: S-3 (Swiss Space Systems)**	**Robert Feierbach**, S-3	Overview of the S-3 program - suborbital and orbital services. *S-3 develops, manufactures, certifies and operates unmanned suborbital space planes for small satellite deployment.*
11:30 - 11:50	**Panel #4** **Opening the Gates: Scientific Research on Cost Effective Platforms**	Mod: **Sean Casey,** SVSC **Carl Carruthers**, Nanoracks **Manu Sharma,** Infinity Aerospace	*Panel covering the new possibilities for citizen science and entrepreneurs with the availability of platforms like Nanoracks and Ardulabs. How do these businesses work and who can participate and benefit?*
11:50-12:30	**Lunch/Participants Comments Capture**		*Onsite lunch with opportunity to feed your ideas, questions, issues into the workshop*
12:30-1:00	**CASIS 101**	**Duane Ratliff**, CASIS	*Duane, the Chief Operations Officer of CASIS, will break down of the National Lab concept and will walk us through the overall structure of CASIS. He will speak to their goals for commercial space and how CASIS will bring down integration costs and launch timelines.*
1:00-1:20	**Dragonlab Specifications**	**Rich Boling**, Techshot	*Techshot has studied the use of the dragon capsule as a stand alone lab. They will discuss interface requirements including mass, volume and power for the design of experiments.*
1:20 -1:40	**Laboratory Automation**	**Nathan Saichek,** Transcriptic	*Silicon Valley start-up, Transcriptic, will discuss their laboratory automation for ground based biological and chemical facilities and possible applications for space-based research*
1:40 -2:00	**ISS as an Imaging Platform**	**A.T. Stair,** Visidyne	*Tropical cyclone monitoring technology aboard the ISS*
2:00-2:20	**Break/Comments Capture**		*Opportunity to feed your ideas, questions, issues into the workshop*
2:20-2:40	**Nanomaterials for Solar Concentrators**	**Jud Ready**, Georgia Tech	*Cost Effective Space-Based Applications: Solar cells designed for earth based applications are suitable for operation in low earth orbit*
2:40 - 3:20	**Panel #5: ISS Utilization for Start-ups**	Mod: **Jason Dunn,** Made in Space **David Wright,** Base2Space	*Co-founders of Silicon Valley Startups speak to their programs for streamlined payload documentation and the future of internet connectivity in LEO.*

		Brian Barritt, Alanax	
3:20-3:50	**Overcoming Obstacles to Experimentation on the ISS**	**Kira Blackwell,** Chrysalis BioTherapuetics Inc.	*What are the challenges for start-ups attempting to do research on the ISS and how can we overcome them?*
3:50-4:20	**Sub-orbital and Orbital Opportunities**	**Jason Reimuller,** Integrated Spaceflight Services	*Revew of spaceflight services in co-ordination with XCOR*
4:20 - 5:00	**Company Pitches**	**New Start-Up Lightning Talks**	1. *Nadir, Unbound Space Systems* 2. *Sunny Allen, Algae Bioreactors for ISS* 3. *Jason Reimuller, Integrated Spaceflight Systems* 4. *Alex Luebke, Optimus Prime* 5. *Atrem Gassan, WhalePath,* 6. *Alex Grey, Somaxis*
5:00-5:30	**Panel #6: Using the ISS for Technology Development**	Mod: **Dan Rasky** **Jim Keravala,** Shackleton Energy **Rick Tumlinson,** Deep Space Industries, **Jason Dunn,** MiS	*Founders of NewSpace Mining ventures outline the uses of the ISS for technology demonstration for far-reaching solar-system business programs.*
5:30 - 7:30	**Dinner with friends.**		*Join us and others across the street for a no-host italian feast.*
Sunday, October 20			**Lowering Barriers to Our Participation in Commercial Space**
9:00-9:15	**Feedback on Dialog Maps (Content Capture)**	**Eric Brachhausen**, SGI, **Richard Mains,** Mains Associates	*The workshop content capture coordinators will present the key ideas, questions, and issues submitted by participants so far.*
9:15 -9:30	**A Strategy to Identify the Barriers**	**Eric & Richard**	*The process will be described to work together to identify barriers and then breakout as teams to try and lower them.*
9:30 – 10:00	**What Will it Look Like When Barriers are**	**Eric & Richard**	*We capture the different visions from our various perspectives as members of the*

	Lowered?		*commercial space community.*
10:00 – 10:45	**Identification of Common Barriers, Setting Priorities**	**Eric & Richard**	*Capture and prioritize the barriers to achieve the vision.*
10:45-11:00	**Break**		*The 5 facilitators coordinate for breakouts*
11:00 - 11:30	**Form Breakout Teams for Barrier Mitigation.**	**Richard Mains, Traci Parker, Justin Kugler, Eric, Brachhausen**	*Explain how facilitators will handle the process and capture results. We will identify 5 highest priority barriers that need lowering.*
11:30 - 12:00	**Lunch, Burritos**		*Onsite lunch with opportunity to feed your ideas, questions, issues into the workshop*
12:00 - 1:00	**Breakout sessions address barriers**	Facilitator//Teams	*Each breakout group works with facilitator capturing content*
1:00-1:15	**Break for facilitator consultation**		*Facilitators coordinate*
1:15 – 2:15	**Plenary sharing of breakout session results by facilitators – Show the final summary format**	Facilitator/Teams	*Facilitators report to whole group and share results.*
2:15 – 2:45	**Additional comments, summary from Richard Mains and Eric Brachhausen on workshop reporting**	**Eric & Richard**	*What did we accomplish? What didn't we address? What will we include in our report?*
2:45-2:50	**Thanks and Closing Comments**	**Workshop Leaders & Sponsors**	