

## AGENDA

as of 10.15.10

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### **Tuesday, October 19, 2010**

9:30am-11:30am	<b>ISPCS Public Forum - Education Outreach, open to the public</b>  Pan American Center, New Mexico State University  Sponsored by: NASA, Las Cruces Sun News, and Coas Books Inc
12:00pm-1:15pm	<b>ISPCS Public Forum - NMSU Community, open to the public</b>  Pan American Center, New Mexico State University  Sponsored by: New Mexico Space Grant Consortium and Las Cruces Bulletin
1:30pm-3:00pm	<b>Spaceport Community Council, open to the public</b>  Pan American Center, New Mexico State University  Sponsored by: Steinborn TCN Commercial Real Estate, Bohannon Huston Inc, and Village of Hatch
All Day	<b>Space and Sand Tour, registration required</b>
5:30pm-7:00pm	<b>Speakers and Sponsors Reception - by invitation only</b>
7:00pm-9:00pm	<b>Registration and Opening Reception</b>  Hotel Encanto de Las Cruces  Sponsored by: Spaceport Sweden and Finnair

### **Wednesday, October 20, 2010**

**All events at New Mexico Farm and Ranch Museum unless state otherwise**

7:30am-8:30am	<b>Registration and Hot Breakfast</b>
8:30am - 8:45am	<b>Pat Hynes - Welcome</b>
8:45am-9:30am	<b>Keynote Address- Neil Sheehan, Pulitzer-Prize-winner and Author</b>  Description: From Thermonuclear Warheads to Astronauts: How pioneering Air Force General Bernard Schriever and his colleagues defied bureaucracy and entrenched opponents to build the Intercontinental Ballistic Missile, thereby giving birth to an aerospace industry in America and fostering the

	<p>penetration and exploration of Space.</p> <p>Sponsored by: Air Force Research Lab (AFRL)</p>
9:30am–10:00am	<p>Break</p> <p>Sponsored by: CALCULEX</p>
10:00am-11:0 am	<p><b>Past is prologue: The future of the space industry from the perspective of the those who helped get it started</b></p> <p>Chair: Jeff Greason, CEO, XCOR Aerospace</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Guruswami Ravichandran, Director of Graduate Aeronautics Lab, California Institute of Technology</li> <li>• Neil Sheehan, Pulitzer Prize Winner and Author</li> <li>• Bill Campbell, Retired Chief Engineer, Aerojet</li> <li>• Rick Sturdevant, Deputy Director of History, U.S. Air Force Space Command</li> <li>• Fredrick Bachtel, Director Strategic Planning &amp; Initiatives, Pratt &amp; Whitney Rocketdyne</li> </ul> <p>Description:</p> <p>Each of the panelists has their own story on how their organization contributed in the beginning of the space industry and what their role is now in the emerging commercial space industry.</p> <p>In 1926, the Daniel Guggenheim Fund for the Promotion of Aeronautics established eleven Guggenheim schools or research centers. The GALCIT lab, then named the Guggenheim Aeronautical Laboratory at the California Institute of Technology was among those funded. In 1935, the Daniel and Florence Guggenheim Fund funded Robert H. Goddard to work full time on rocketry. Guggenheim’s funding and vision enabled Goddard’s patents to be developed into operational technologies, initially researched at the GALCIT lab, directed by Theodore von Karman, founder of Aerojet General. In 1953, Air Force officer Bernard Shriver met with John von Neumann at the Princeton Institute for Advanced Study to discuss creating the Intercontinental Ballistic Missile Program. Entrepreneurs and GALCIT graduates, Simon Ramo and Dean Wooldridge were early partners in the ICBM program. These two men, founders of TRW, fostered the beginnings of the aerospace industry. They were hired by Air Force Brigadier General Bernard “Benny” Shriever to develop what became both the commercial and military space programs of today. By 1960, the synergy of private funding, university research and government support helped create the \$261 billion global aerospace industry of today.</p>

	<p>This panel will be chaired by Jeff Greason - an engineer, entrepreneur and leading member of the community building the commercial space industry.</p> <p>Sponsored by: International Institute of Space Commerce</p>
11:00 am–12:00pm	<p><b>Closing the credibility gap: The role of suborbital testing as a pathfinder to orbital markets or as an end market in itself</b></p> <p>Chair: Debra Facktor Lepore, President, DFL Space LLC</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Jeff Greason, CEO, XCOR Aerospace</li> <li>• Julia Tizard, Operations Manager, Virgin Galactic</li> <li>• Neil Milburn, VP of Program Management, Armadillo Aerospace</li> </ul> <p>Description:</p> <p>Panelists will share their test plans and results in moving from a small-scale or component test environment to a full-scale commercial market (human or payload), what elements does the test program need to demonstrate to satisfy multiple constituents (customers, regulators, investors, general public, insurers, etc), what challenges must be overcome from traditional to entrepreneurial test philosophies, and how will the companies know they are "there" and have the credibility to successfully enter and operate in the desired market.</p> <p>Sponsored by: The Boeing Company</p>
12:00pm-1:30pm	<p><b>Lunch</b>  <b>George Sowers, Vice President, Business Development, United Launch Alliance- Enabling early exploration</b></p> <p>Sponsored by: United Launch Alliance</p>
1:30pm-2:30pm	<p><b>Establishing the commercial space market: Matching business strategy with funding sources</b></p> <p>Chair: Lee Rand, Partner, Sun Mountain Capital</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Grant Anderson, P.E., VP of Engineering, Co-founder, Paragon Space Development Corporation</li> <li>• Mark Sirangelo, Corporate Vice President and Chairman, Sierra Nevada Space Systems and Chairman, Commercial Spaceflight Federation</li> <li>• Tim Pickens, Commercial Space Advisor / Chief Propulsion Engineer, Dynetics</li> <li>• Robert Bigelow, Owner and Founder, Bigelow Aerospace, LLC</li> </ul>

	<p><b>Description:</b>  Focus on component investments technologies and services. Each of the speakers owns or is a majority stake holder in their company. They have developed enabling technologies, and are interested in speaking on the idea that large, complete systems, are built through compiling components that create systems, and compiling systems create larger products and services. The test panel discussion that precedes this session helps explain where components fit into the larger picture of this new industry. The preceding session will also address how mature the test programs of the sub-system are, how they are progressing, and whether the sub-systems are ready for component investment.</p> <p>Sponsored by: El Paso Electric and Mesilla Valley Economic Development Alliance (MVEDA)</p>
<p>2:30 pm-3:00pm</p>	<p><b>FAA Center of Excellence for Commercial Space Transportation</b></p> <p>Chair: Ken Davidian, FAA</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Pat Hynes, Executive Director, FAA Center of Excellence for Commercial Space Transportation</li> <li>• Sam Durrance, Professor, Physics and Space Sciences, Florida Institute of Technology</li> <li>• Van Romero, Vice President for Research and Economic Development, New Mexico Institute of Mining and Technology</li> <li>• Jim Vanderploeg, Associate Professor of Aerospace Medicine, University of Texas Medical Branch, Galveston</li> <li>• Farrukh Alvi, Professor of Mechanical Engineering Director, Florida Center for Advanced Aero-Propulsion (FCAAP) FAMU-FSU College of Engineering</li> <li>• Barbara Couture, President, New Mexico State University</li> <li>• Jay Kapat, Professor, FCAAP, Univeristy of Central Florida</li> <li>• Larry Ukeiley, Professor, FCAAP - Univeristy of Florida</li> </ul> <p>Description: Ken Davidian will introduce the leadership team for the Center of Excellence for Commercial Space Transportation. New Mexico State University in Las Cruces will lead a team of colleges and universities throughout the country. These include: Stanford University in California, the Florida Institute of Technology in Melbourne, the New Mexico Institute of Mining and Technology in Socorro, NM, the Florida Center for Advanced Aero-Propulsion (FCAAP) at Florida State University in Tallahassee, the University of Colorado at Boulder, and the University of Texas Medical Branch at Galveston.</p>

	<p>The center is a partnership of academia, industry, and government, developed for the purpose of creating a world-class consortium that will address current and future challenges for commercial space transportation.</p> <p>Sponsored by: New Mexico State University</p>
3:00pm-3:30pm	<p><b>Break – Book signing- Neil Sheehan, Pulitzer-Prize-winner and Author</b></p> <p>Sponsored by: Milagro Coffee</p>
3:30 pm – 4:30 pm	<p><b>The practical impact of ITAR and reform on commercial space</b></p> <p>Chair: Bob Dickman, Major General, USAF (Retired), and Executive Director, AIAA</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Debra Facktor Lepore, President, DFL Space LLC</li> <li>• Sven Grahn, Senior Advisor, Swedish Space Corporation and Senior Consultant for Spaceport Sweden</li> <li>• Francesca Schroeder, Principal, Fish &amp; Richardson P.C., Washington, DC</li> <li>• Clay Mowry, President, Arianespace, Inc</li> </ul> <p>Description:</p> <p>Many people feel that limits on technology exports set by ITAR regulations have slowed development of commercial space in the United States. Members of this panel will examine how the booming international "ITAR Free" space business has been enabled by the current IRAR regime, what reforms are necessary in the ITAR process to enhance the growth of the U.S. industry.</p> <p>Sponsored by: Hot Springs Land Development</p>
4:30 pm–5:30 pm	<p><b>The path forward from DC-X/XA</b></p> <p>Co-Chairs: Bill Gaubatz, President, SpaceAvailable and Jess Sponable, Technical Advisor Air Vehicles Directorate, Air Force Research Laboratory</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Nino Polizzi, Vice President, Customer Integration Universal Space Network</li> <li>• David Masten, President and CEO, Masten Space Systems</li> <li>• Yoshifumi Inatani, JAXA to Yoshifumi Inatani, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency</li> </ul>

	<p>(JAXA)</p> <ul style="list-style-type: none"> <li>• Neil Milburn, VP Program Management, Armadillo Aerospace, LLC</li> <li>• James Ball, Senior Manager, Flight Engineering, The Boeing Company</li> <li>• Fredrick Bachtel, Director Strategic Planning &amp; Initiatives, Pratt &amp; Whitney Rocketdyne</li> </ul> <p>Description:</p> <p>The DC-X program was originally planned as a three-phase program with incremental steps to develop an operational, fully reusable space transportation system with single-stage-to-orbit as a goal. The DC-X/XA steps provided demonstrations of the technologies associated with (1) achieving low cost, routine aircraft-like ground and flight operations, (2) achieving the flight characteristics of a totally reusable, autonomously controlled, liquid oxygen and liquid hydrogen propulsion, vertical takeoff and landing vehicle that can safely return in the event of an emergency and (3) showing that low-cost demonstrations can be carried out in a rapid prototyping environment to significantly reduce overall system development time and risk. The DC-X/XA provided positive answers derived from operating real ground and flight systems and from flying a real demonstration vehicle, Unfortunately, the subsequent phases and incremental steps that would have flight demonstrated a sub-orbital, Mach 8 - 12 prototype leading to a full scale orbital operational prototype were not funded and the DC-X industry and government team was abandoned.</p> <p>Fortunately the DC-X concept of low cost, aircraft-like operations was not forgotten and has been vigorously pursued by the entrepreneurial new-space and aerospace companies in the US and abroad. This session will provide a brief overview of the DC-X program and where it left-off and the on-going efforts and progress in the private and government sectors to reach the low-cost, safe, fully reusable space transportation system.</p> <p>Sponsored by: EADS Astrium</p>
6:00pm -7:30 pm	<p><b>Reception</b></p> <p>Hotel Encanto de Las Cruces</p> <p>Sponsored by: American Institute of Aeronautics and Astronautics (AIAA)</p>
7:30pm-8:30 pm	<p><b>Dinner</b></p> <p>Hotel Encanto de Las Cruces</p> <p>Sponsored by: New Mexico Wine Growers Association</p>

9:00pm -10:30pm	<p><b>After Hours Reception</b></p> <p>Hotel Encanto de Las Cruces</p> <p>Sponsored by: City of Las Cruces</p>
<p><b>Thursday, October 21, 2010</b>  <b>All events at New Mexico Farm and Ranch Heritage Museum</b></p>	
7:30am-8:30am	<p><b>Registration and Hot Breakfast</b></p> <p>Sponsored by: Space Foundation</p>
8:30am-9:30 am	<p><b>Keynote Address- Lori Garver, NASA Deputy Administrator</b></p> <p>Description:  Planning for NASA's programs in science, aeronautics, and human space flight, including the agency's latest plans for commercial access to space</p> <p>Sponsored by: New Mexico Spaceport Authority</p>
9:30am–10:00 am	<p>Break</p>
10:00am -11:00 am	<p><b>The Microgravity market</b></p> <p>Chair: Dennis Stone Assistant Manager, Program Integration, Commercial Crew &amp; Cargo Program, NASA Johnson Space Center</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Cheryl Nickerson, Associate Professor, Center for Infectious Diseases and Vaccinology, the Biodesign Institute, Arizona State University</li> <li>• Andrew Nelson, Chief Operating Officer, XCOR Aerospace, Inc</li> </ul> <p>Description: Microgravity opens a new window on biological and physical processes. Now there are new capabilities to provide microgravity, including parabolic flights, suborbital missions, commercial free-fliers, and ISS. This session will highlight the benefits of "removing gravity," new capabilities to do so, and potential markets in biotech, nanotech, and other industries.</p> <p>Sponsored by: CSSI Inc.</p>
11:00am–12:00 pm	<p><b>Crew transportation systems: The game changer in human spaceflight</b></p> <p>Chair: Brett Alexander President, Commercial Spaceflight Federation</p>

	<p>Speakers:</p> <ul style="list-style-type: none"> <li>• Keith Reiley, Program Manager, Commercial Crew Development, Space Exploration, The Boeing Company</li> <li>• Kenneth Reightler, Vice President, NASA Program Integration, Lockheed Martin Space Systems Company</li> <li>• Robert Bigelow, Owner and Founder, Bigelow Aerospace, LLC</li> <li>• Mark Sirangelo, Corporate Vice President and Chairman, Sierra Nevada Space Systems and Chairman, Commercial Space Federation</li> <li>• Ken Bowersox, Vice President of Astronaut Safety and Mission Assurance, SpaceX</li> </ul> <p>Description: A discussion of commercial spacecraft designs for transport of people to and from low Earth orbit for NASA, industry, and space tourism.</p> <p>sponsored by: Bigelow Aerospace, LLC</p>
12:00pm–1:30 pm	<p><b>Lunch</b></p> <p>sponsored by: Sierra Nevada Corporation</p>
1:30pm -2:30 pm	<p><b>Space policy evolution: Changes portend larger commercial markets to service government needs and greater international cooperation</b></p> <p>Chair: Clay Mowry, President, Arianespace, Inc</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Brendan Curry - Vice President, Space Foundation</li> <li>• Steve Traver,</li> <li>• Philip McAlister, Commercial Crew Development Program within the Exploration Systems Mission Directorate at NASA HQ</li> </ul> <p>Description: On June 28, 2010 a new National Space Policy was released which encouraged the greater use of commercial space services and called for increased international cooperation in space. Panelists will discuss the new policy as well as the direction Federal agencies are headed in utilizing commercial spaceflight for a broad range of services.</p> <p>Sponsored by: Bigelow Aerospace, LLC</p>
2:30pm-3:30 pm	<p><b>Creating the demand: Free and low cost flight opportunities for education and research in space</b></p> <p>Chair: Charles Chafer, CEO, Space Services, Inc.</p> <p>Speakers:</p>

	<ul style="list-style-type: none"> <li>• David Masten - President/CEO, Masten Space Systems</li> <li>• Doug Comstock, Director of the Innovative Partnerships Program, NASA</li> <li>• George Whitesides, CEO, Virgin Galactic</li> <li>• Brienna Henwood, Director of Space Training and Research, NASTAR</li> <li>• Mark Severance, International Space Station National Lab Education Project Manager</li> <li>• Jerry Larson, Founder, President and CEO of UP Aerospace, Inc</li> </ul> <p>Description: The session will examine flight opportunities available for student experiments. Panel members will include representatives from organizations that provide free or reduced cost access to space, both suborbital and orbital. This session will also discuss the downside to the market of offering free flights. We are comparing and contrasting the market that exists for flight-ready experiments vs the non-existent yet potential market for experiments that will emerge from educational programs developed to take advantage of flight opportunities</p> <p>Sponsored by: El Paso Electric</p>
3:30pm-4:00pm	<b>Break</b>
4:00pm-5:00pm	<p><b>Spaceports</b></p> <p>Chair: Patti Grace Smith, Aerospace Consultant, Virgin Galactic</p> <p>Speakers:</p> <ul style="list-style-type: none"> <li>• Karin Nilsson, Director, Spaceport Sweden</li> <li>• Rick Homans, Executive Director, New Mexico Spaceport Authority</li> <li>• Stu Witt, General Manager, Mojave Air and Space Port</li> <li>• Gloria Garcia-Cuadrado, Director, Barcelona Aeronautics &amp; Space Association (BAIE)</li> </ul> <p>Description: Panelist will discuss critical milestones from initial planning, through to construction to profitable operations. Each will address the gaps they encountered in supply chain, workforce development, community support and public engagement.</p> <p>Sponsored by: Jacobs Technology</p>
5:00	<p><b>Closing</b></p> <p>Pat Hynes - ISPCS Chair</p>
<b>Friday, October 22</b>	
All Day	<b>Spaceport America Runway Dedication, registration required</b>