

**The 9th ASCE Aerospace Division International Conference on  
Engineering, Construction and Operations in Challenging Environments  
(Earth & Space 2004)**

League City/Houston, TX, U.S.A.; March 07-10, 2004.

**Conference Program Schedule**

*(Date revised: January 18, 2004/RBM)*

Sunday, March 07, 2004
8:00 AM - 11:00 PM
Committee Meetings
4:00 PM - 7:00 PM
Registration
4:00 PM - 9:00 PM
Student Robotics Competition Technical Presentations

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Monday, March 08, 2004			
7:00 AM - 7:45 AM: Authors' Breakfast (For Monday speakers only)			
7:00 AM - 3:30 PM: Registration			
7:50 AM - 8:00 AM			
Welcome and Introduction: Dr. Ramesh B. Malla, Conference General Chair, University of Connecticut, Storrs, CT ASCE Welcome: Dr. Stein Sture, ASCE National Director, University of Colorado, Boulder, CO			
8:00 AM - 8:50 AM			
KEYNOTE LECTURE I, Dr. Alok Das: "Innovative Concepts: Enabling Affordable Warfighting Space Systems"			
9:00 AM - 5:00 PM			
Student Robotics Competition			
TECHNICAL TRACKS			
<b>(M1) Lunar and Martian Exploration and Development</b>	<b>(M2) New Frontiers in Technology</b>	<b>(M3) Life Support Systems</b>	<b>(M4) Structures and Materials</b>
9:00 AM - 10:20 AM CONCURRENT TECHNICAL SESSIONS I			
Engineering and Construction of Lunar and Martian Bases	Field Sensing and Robotics	9:00AM - 9:40AM	9:00AM - 9:40 AM
		SPECIAL LECTURE	SPECIAL LECTURE
		Dr. Bruce Bugbee: " Unique challenges of growing plants in sealed, confined environments	Dr. Christos C. Chamis: "Adaptation of Aerospace Advanced Technology to Composite Enhanced Concrete Infrastructures"
		9:40 AM - 10:20 AM	9:40 AM - 10:20 AM
		Fluid Distribution and Flow in Porous Media with Applications for Life Support Systems I	Aerodynamics
10:20 AM - 10:40 AM Refreshment Break			
10:40 AM - 12 NOON CONCURRENT TECHNICAL SESSIONS II			
In-situ Utilization for Lunar and Martian Base	Robotics and Controls	Fluid Distribution and Flow in Porous Media with Applications for Life Support System II	Uncertainty, Reliability, and Risk in Structural Analysis and Design
12 NOON - 1:00 PM Lunch Break			
1:00 PM - 1:40 PM			
SPECIAL LECTURE, Dr. Buzz Aldrin: "Earth-Moon L1Station - Gateway to the Future"			
1:50 PM - 3:30 PM CONCURRENT TECHNICAL SESSIONS III			
Engineering Properties of Regolith, Granular Soils	Advanced Mechanics and Controls	Life Support Systems I	Design and Analysis of composites I
3:30 PM - 3:50 PM Refreshment Break			
3:50 PM - 5:30 PM CONCURRENT TECHNICAL SESSIONS IV			
Mars on Earth: Engineering, Construction, and Operations in Terrestrial Analog Environments	Structural Response Measurements in Challenging Environments	Life Support Systems II	Design and Analysis of composites II
6:00 PM - 8:00 PM Icebreaker Reception			

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Tuesday, March 09, 2004				
7:00 AM - 7:45 AM: Authors' Breakfast (For Tuesday speakers only)				
7:00 AM – 3:30 PM: – Registration				
8:00 AM - 8:50 AM				
KEYNOTE LECTURE II, Dr. Masanobu Shinozuka: "Remote Sensing for Homeland Security"				
9:00 AM - 5:00 PM				
Student Robotics Competition				
TECHNICAL TRACKS				
<b>(T1) Engineering and Architecture in Extreme Environments</b>	<b>(T2) New Frontiers in Technology</b>	<b>(T3) Advanced Space Systems</b>	<b>(T4) Structures and Materials</b>	<b>(T5) Special Panels</b>
9:00 AM - 10:20 AM CONCURRENT TECHNICAL SESSIONS V				
Building and Living in Earth's Extreme Environments: Theory and Practice	Remote Sensing and Disaster Mitigation	Optical Structures in Space	Smart Structures and Vibrations	
10:20 AM - 10:40 AM Refreshment Break				
10:40 AM - 12:00 Noon CONCURRENT TECHNICAL SESSIONS VI				
Engineering in Extreme Environments	Application of Advanced Technologies in Earthquake response and Recovery	Spacecraft Component Technologies	Advanced Materials Technology	<b>SPECIAL PANEL I:</b> LEO, the Moon, Mars, or Beyond, Future of Space Development and Role of Architecture
12 Noon - 1:20 PM Lunch Break				
1:20 PM - 3:00 PM CONCURRENT TECHNICAL SESSIONS VII				
Human Exploration in Space: Theory and Practice	Remote Sensing, GPS, GIS and Monitoring Technologies	Deployable Space Structures	Advanced Composites and Structures I: Civil Infrastructure Applications	
3:00 PM - 3:20 PM Refreshment Break				
3:20 PM - 5:00 PM CONCURRENT TECHNICAL SESSIONS VIII				
Human Exploration in Space: Design Concepts	Earth-Atmosphere Interaction, Space-Based Water Resources and Hydrology	Spacecraft Thermal Protection Systems	Advanced Composites and Structures II: Mechanics and Structural Health Monitoring	
6:00 PM - 8:30 PM ASD AWARDS BANQUET & SPECIAL LECTURE, Dr. James F. Reilly II: "High-Altitude Construction: Building a Home in a Hostile Environment"				

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Wednesday, March 10, 2004				
7:00 AM - 7:45 AM --Authors' Breakfast (For Wednesday speakers only)				
7:00 AM - 11:00 AM -- Registration				
8:00 AM - 8:50 AM				
KEYNOTE LECTURE III, Dr. Andrew J. Aldrin: "Expressways, Stoplights, and Maps for Human Expeditions in the Solar Systems"				
TECHNICAL TRACKS				
<b>(W1) Engineering and Architecture in Extreme Environments</b>	<b>(W2) New Frontiers in Technology</b>	<b>(W3) Advanced Space Systems</b>	<b>(W4) Structures and Materials</b>	<b>(W5) Special Panels</b>
9:00 AM - 10:20 AM CONCURRENT TECHNICAL SESSIONS IX				
Space Architecture and Operations	Advances in Space Structures and Materials	Enabling Technologies for Space Exploration and Transportation	Applications of Smart Materials	<u>SPECIAL PANEL III:</u> Lunar Resources for Space Development
10:20 AM - 10:40 AM Refreshment Break				
10:40 AM - 12:00 Noon CONCURRENT TECHNICAL SESSIONS X				
Spaceport, Space Power, and Space Commercialization	Special Topics	Systems in Space	Infrastructure Technologies	<u>SPECIAL PANEL II:</u> Challenges of Design and Construction in Extreme Environments: Technical, Logistical, Human