Friday, June 7

**Commonwealth Lobby**

**North 1**

### Morning Plenary

8:30 am - 9:45 am

"Space 2.0: Into a New Space Age"

Panelists: Lori Garver (former NASA Deputy Administrator), Greg Autry (Vice President for Space Development, National Space Society), Bruce Pittman (Senior Vice President and Senior Operating Officer, National Space Society) and Dr. Allison Zuniga (NASA Ames Research Center).

Moderator: Rod Pyle, Space Author, Journalist, Historian and Editor-in-Chief, *Ad Astra* Magazine, National Space Society

### Student Plenary

10:00 am - 10:45 am

"How To Prepare for the Astronaut Job Fair"

Keynote Speaker: Mike Mongo, Astronaut Teacher, Author, The Astronaut Instruction Manual, and Founder, Mike Mongo's Astronaut Job Fair

### 10:00 am - 12:00 noon

#### Morning Sessions

**North 2**

**Bio-Sustainability in Space**

- **10:00 am** The Big Picture for Bio-Requirements. John Mankins and Willa Mankins (Moon Village Association)
- **10:20 am** (tbd)
- **10:40 am** Lessons Learned from Biosphere 2. Rodrigo Romo (Pacific International Space Center for Exploration Systems)
- **11:00 am** NSS Student Space Settlement Contest Presentation
- **11:20 am** Life Support Systems. Grant Anderson (Paragon Space Technology Company)
- **11:40 am** Role of Aquaculture in Space. Bryce Meyer (St. Louis Space Frontier)

**Mars**

- **10:00 am** Travel to and Mars, Base and Settlement Based on BFS Transport. Dr. Robert Zubrin (Mars Society)
- **10:40 am** NSS Student Space Settlement Contest Presentation
- **10:55 am** NSS Student Space Settlement Contest Presentation
- **11:10 am** Doctors’ Panel: Space Medicine on Mars. Dr. Dwight Holland (Human Systems Integration Associates), Dr. Carlos Salicrup (Mars Academy USA), Dr. Maria Harney (Mars Academy USA).
  Moderator: Dr. Susan Ip-Jewell (Mars Academy USA)

**Moon**

- **10:00 am** Commercial Moon

  - **10:15 am** Commercial Lunar Exploration to Support NASA's Science Goals (CLPS). Steven Clarke (NASA)
  - **10:30 am** Evolutionary Lunar Base Strategy. Charles Miller (NextGen Space LLC)
  - **10:45 am** Reusable Lunar Lander. Robert Chambers (Lockheed Martin)
  - **11:00 am** MOBIUS: An Evolutionary Strategy for Lunar Tourism Future of ISS. Mehdi Lali (Boeing St. Louis)
  - **11:30 am** (tbd)
  - **11:45 am** Buzzcraft: LEO Architecture in Support of Lunar Activities Dr. Buzz Aldrin (Human Spaceflight Institute)
### ISDC 2019 Schedule

**Friday, June 7**

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>10:00 am</td>
<td>Concourse 1</td>
<td>NASA Innovated Advanced Concepts</td>
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<td>NIAC Program Description and Q&amp;A. Jason Derleth (NASA), Michael LaPointe (NASA),</td>
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<td>Ronald Turner (Analytical Services, Inc.), Katherine Reilly (Bryce Space and</td>
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<td></td>
<td>Technology), John Nelson (Bryce Space and Technology) and Tara Halt (Bryce Space</td>
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<tr>
<td>11:00 am</td>
<td>Concourse 1</td>
<td>NSS Student Space Settlement Contest Presentation</td>
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<td>11:15 am</td>
<td>Mezzanine 3</td>
<td>Comments from a Member of the NIAC External Council (NEC), with Q&amp;A. Dr. David Brin</td>
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<td>(Scientist, Author)</td>
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<td>10:00 am</td>
<td>Teacher Session</td>
<td>A Revolutionary Artificial Intelligence and Space Education Focus Group - A</td>
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<td>Demonstration for Teachers</td>
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<td>12:00 noon - 1:50 pm</td>
<td>Commonwealth South</td>
<td>&quot;How Digital Telepresence Can Fund a Robust Luna City For Our Generation&quot; Keynote Speaker: Dr. Martine Rothblatt, Chairman &amp; CEO, United Therapeutics Corporation Presenting of NSS Space Pioneer Award to Dr. Martine Rothblatt Presenting of Jim Baen Memorial Short Story Award MC: Carlton Johnson, Chairman, National Space Society Board of Governors</td>
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<td>1:30 pm - 3:30 pm</td>
<td>Cavalier</td>
<td>NSS Space Settlement Contest posters on display with the student presenters.</td>
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<td>2:00 pm - 5:00 pm</td>
<td>North 2</td>
<td>Afternoon Sessions</td>
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<td>Bio-Sustainability</td>
<td>Bio-Sustainability in Space</td>
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<td>Carbon’s Role in Sustainable Space Settlement. Dan Hawk (ITS Space Agency)</td>
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<td>The Man on the Moon Needs Health Care. Simona Lovin (Cognosante Foundation)</td>
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<td>Exploiting Indoor Cannabis Cultivation Techniques and Technologies for Farming in</td>
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<td>Space. Elliott Gorfain (Higher Ground Initiative)</td>
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<td>Limitations, Constraints, and Hazards of the &quot;Standard Approach&quot; to Space</td>
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<td>Development. Dr. James Logan (Space Enterprise Institute)</td>
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<td>Mars</td>
<td>Mankind’s Future on Mars</td>
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<td>Policy Panel: Will Planetary Protection Stop Musk from Building a City on Mars? Dr. Doug Plata (Space Development Network), Michelle Hanlon (For All Moonkind, Inc.), Alfred Anzaldua (National Space Society). Moderator: Dale Skran (National Space Society)</td>
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<td>Practical Mars Terraforming – Mars Needs Nitrogen. John Strickland (National</td>
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<td>Mars Surface Architecture. Vera Mulyani (Mars City Design)</td>
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<td>Ice-Rich Lava Tubes on Earth: Implications for the Moon and Mars. Dr. Pascal Lee</td>
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<td>Autonomously 3-D Printed Surface Habitats. Melodie Yashar (Space Exploration</td>
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<td>Moon</td>
<td>Architecture and Technologies</td>
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<td>Space Launch Systems for Lunar Missions. Benjamin Donahue (Boeing)</td>
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<td>Deep Space Radiation Issues. Dr. James Logan (Space Enterprise Institute)</td>
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<td>NASA 3D Printed Habitat Centennial Challenge. (tbd) (NASA)</td>
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<td>Apollo 11 Lunar Laser Ranging Experiment 50th Anniversary. Hildreth (Hal) Walker,</td>
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Friday, June 7

3:00 pm  A Holistic View on Lunar Habitats. Dr. Hyam Benaroya (Rutgers University)
3:10 pm  CisLunar Explorer Project. Dr. Dean Larson (National Space Society) and Aaron Zucherman (Cornell University)
3:20 pm  LROC Update. Dr. Brett Denevi (Johns Hopkins University Applied Physics Laboratory)
3:30 pm  Break
3:40 pm  Integrated Parametric Modeling Systems for Lunar Architecture. Daniel Inocente (Skidmore Owings Merrill)
3:50 pm  1-G Lunar Habitat. Dr. Thomas Matula (Sul Ross State University)
4:00 pm  Lunar Daytime: Concept For Behavioral Experiments in a Space Analog Living & Working Environment. Dr. Marc Cohen (Astrotecture Inc.)
4:10 pm  The Subterranean Option; Lunar-Mars Lava Cave Habitat Development Efforts Update. Michael Dunn (4th Planet Logistics Inc.)
4:20 pm  Innovation in Lunar Robotic Construction Methods. Dr. Behrokh Khoshnevis (University of Southern California)
4:30 pm  Site Selection Strategy for a Permanent Lunar Settlement. Dr. David Schrunk (Science of Laws Institute) and Madhu Thangavelu (University of Southern California)
4:40 pm  (tbd)
4:50 pm  Making the Moon Accessible to the World. Dan Hendrickson (Astrobotic Technology Inc.)

NIAC

Concourse 1

NASA Innovated Advanced Concepts

2:00 pm  Astrobotic Future Missions and Technology. Dr. Andrew Horchler (Astrobotic Technology)
2:30 pm  Space Propulsion through Direct Conversion of Nuclear Energy. Dr. John Slough (MSNW, LLC)
3:00 pm  NSS Student Space Settlement Contest Presentation
3:15 pm  The Apis™ Mission Architecture to Revolutionize Human Exploration and Space Industrialization. Dr. Joel Sercel (Trans Astronautica Corporation; MOMENTUS Space)
3:45 pm  Probing the Habitable Zones of Planetary Systems with Large Space Telescopes. Christopher Walker (FreeFall Aerospace; University of Arizona)
4:15 pm  NSS Student Space Settlement Contest Presentation
4:30 pm  Contour Crafting/Planetary Construction. Dr. Behrokh Khoshnevis (Contour Crafting)

Student spUN Debates

2:00 pm - 3:30 pm  Galaxy & Stars (16th floor)
Debate Round 1. Resolved: Space development contributes to achieving the United Nations Sustainable Development Goals. Four simultaneous debates in Stars rooms and Galaxy

Student NextGen Program

3:30 pm - 5:00 pm  Commonwealth South
Astronaut Job Fair

Silent Auction

4:00 pm - 7:00 pm  Prefunction Area
Space memorabilia and collectables can be yours for the highest bid.

NSS Meeting

6:00 pm - 7:00 pm  Boardroom
NSS International Committee meeting

Showcase Event

5:00 pm - 6:00 pm  Cavalier
Georgian Ensemble "Chakrulo" sponsored by the Alexander Kartveli Association.
Friday, June 7

**Cocktail Reception**
6:00 pm - 7:00 pm
Prefunction Area
Open reception includes a cash bar and appetizers.

**Governors' Dinner**
7:00 pm - 9:30 pm
Commonwealth South
Keynote Speaker: Salvatore T. "Tory" Bruno, President & CEO, United Launch Alliance
Presenting of NSS Wernher von Braun Award to Tory Bruno
Presenting of NSS Space Pioneer Award to Miles O'Brien, Aerospace Journalist
Presenting of NSS Chris Pancratz Activist of the Year Award
Presenting of NSS Excellence Awards
MC: Art Dula, Heinlein Prize Trust and National Space Society Board of Governors
Dinner Sponsored by the Heinlein Prize Trust

**Movie Screening**
7:30 pm - 9:30 pm
Galaxy (16th floor)
ISDC Film Festival

**NSS Meeting**
10:00 pm - Till
tbd