Program Itinerary - 19th Annual International Mars Society Convention
Catholic University of America, Washington, D.C.
September 22 - 25, 2016

Thursday, September 22

9:00am - Opening Plenary
Dr. Robert Zubrin, President, The Mars Society, *Humans to Mars in a Decade*

9:30am - Plenary
Representative (TBD), Institute for Biomedical Problems, Moscow (via Skype) - *Mars 500 & Beyond*

10:00am - Plenary
Dr. Jennifer Stern, NASA Goddard Space Flight Center & MSL Sample Analysis Team - *Ingredients for Life on Mars*

10:30am - Plenary
Dr. Geronimo Villanueva, NASA Goddard Space Flight Center - *Latest Searches for Trace Signatures of Current & Ancient Life on Mars*

11:00am - Plenary
Dr. Adrian Brown, NASA Ames Research Center & SETI Institute - *The Martian Water Cycle*

11:30am - Plenary
Dr. Michael Hecht, PI, NASA Mars 2020 MOXIE Instrument & MIT - *Got Oxygen? MOXIE: A Practical Demonstration of Martian Resource Harvesting & Transformation*

12:00pm - 1:00pm - Lunch Break

1:00pm - 5:30pm - Session Tracks:

	Technology Track 1	Technology Track 2	Science Track 1	PP Track 1
1:00	ISS Technology for Manned Mars Missions? A Critical Engineering Assessment, Jurgen Herholz	Nuclear Fusion: The Solution to the Energy Problem & to Advance Space Propulsion, Gerald Black	Evidence Terran Life Originated on Mars, Steven Brennan, Hyo-Joong Kim, Yoshihiro Furukawa & Elisa Biondi	Private Funding Proposal for Mars Landing/Exploration Outpost Leading to a Permanent Solution, Robert Riccardi
1:30	Mars Atmosphere In Situ Resource Utilization Projects at the Kennedy Space Center, Anthony Muscatello	UAV for Mars Surface 3D Mappping, Jimmy Gora	Evaluation of the Human Microbiological Impact at Different Distances Around the MDRS Martian Analog Base, Jeel Moya-Salazar, Roberto Ubidia-Incio & Marcos Bruno	Mars: A 200 Year Plan, Mike Helton
2:00	Mars Flyby: The Essential "Apollo 8" for Mars, Art Harman	Fractalnet - A Dynamically Expandable Network of Radio Replays to Enable Communications in Occluded Underground	Fire Ants in Space!? On the Ethical Values of Biodiversity in Human Space Exploration, Michael Waltemathe	Cryptocurrencies and the Martian Economy, Heidi Hecht

		Environments, Lawrence Vaughn		
2:30	Confronting the Credibility Gap for Crewed Exploration of Mars, Casey Handmer	Blue Skies Research or Curiosity-Driven Science Applied to Mars Surface Images, Holger Isenberg	Martian Microbes Formed Ooids on Mars, Liangtai Lin	Exploring Mars to Civilize Earth, Marvin Hilton
3:00	Mars Transit Bureau - Human to Mars 2030, Wayne McCain	Considering O2PTIMA Rebreather Technologies for Mars Space Activity Suit (MSAS) Application, Wayne McCain	The Occupy Mars Learning Adventures, Bob Barboza	Humanity, the Interplanetary Species & the Legality of Colonizing Space, Zach Miller
3:30	Mars Mission Hybrid Approach, Bill Hargenrader & Ron Sparkman	Meet the Next Generation Rover to Explore Mars, MD Sabbir Bin Azad	How Can We Use Art to Engage a Wider Public in Discussions about the Human Settlement of Mars, Ella Good & Nicki Kent	Bringing Martians to Earth, Philip Turek
4:00	Concepts for Advanced Space Transportation Architecture, Jayakumar Venkatesan	Clamping System for Electromyography Signal Acquisition for Planetary Analogue EVA, Orson Lazo & Monica Arbaca	Mars Exploration 101, Mohsen Marefat	Addressing Religious Oppositions to Human Space-exploration, Michael Waltemathe
4:30	Entry, Descent, and Landing for Human-Class Mars Missions, Kshitij Mall	A Simple Reliability Model for a Human Mission to Mars Using Monte Carlo Analysis, Wayne McCain	Engaging the Public in Mars Exploration by Integrating Science and Engineering with the Arts, Jancy McPhee	Life on Mars, Matthew Luttenberger
5:00	Innovative Low Cost Mars Flyby Spacecraft for Safe Interplanetary Human Mission, Aswath Suresh & Others	Traveling to Mars? Do it Now!, Douglas Gage		New World/New Worlds: Parallels in Evolution of Enterprise-based Exploration Financing from the 16th and 21st Centuries, Brent Lant

5:30pm - 7:00pm - Dinner Break

7:00pm - Debate
Planetary Protection - Does It Go Too Far?
TBD

8:00pm - Debate
Do We Need the Asteroid Redirect Mission (ARM)?

Dr. Louis Friedman, Former Executive Director, The Planetary Society
Dr. Robert Zubrin, President, The Mars Society

Friday, September 23

9:00am - Plenary
Dr. Jennifer Eigenbrode, NASA Goddard Space Flight Center - *Update on MSL Curiosity*

9:30am - Plenary
Jim Green, Director, NASA Planetary Science Division - *Mars & International Cooperation*

10:00am - Plenary
Jim Watzin, Director, NASA Mars Exploration Program - *The NASA Mars Program*

10:30am - Plenary
Representative (TBD), Lockheed Martin Corporation - Plan for a Mission to Mars

11:00am - Panel
Ethics & Mars Exploration

12:00pm - 1:00pm - Lunch Break

1:00pm - 4:30pm - Session Tracks:

	Technology Track 3	Technology Track 4	Medical Track 1	PP Track 2
1:00	Hydroponic-Aquaponic Food Production System for the Mars Desert Research Station, Matthew Maccarrone, Constanza Cuneo & Peter Merkle	Astronaut Assisting Autonomous Rover for Extra-terrestrial Exploration, Unnikrishnan VJ, Akshay Krishnakumar, Deepu P Mathew & Anad S	Mars Crew Selection: An Operations Research Approach, Lynnane George	Mars: The Next Generation, Olivia Scharfman
1:30	Feasibility of Implementing an Automated Drip Irrigation System for Greenhouses, E. Centurion Cancio	Universal Robotic Arm System with Interchangeable End Effectors and Advanced Human-Rover Interface, Maciej Recko, Michael Ostaszewski & Justyna Tostoj-Sienkiewicz	Human Radiation Exposure Tolerance & Expected Exposure During Colonization of the Moon and Mars, Lonie Joseph Parker	Funding the First Colony, Jerry McMahan
2:00	To Evaluate Germination of Prosopis Pallida Simulators Martian Soil, Nolver William Huaman Minga	Mars Rover Analogue Integrated Controller, Based on Real Time Operating System, Piotr Czaplicki, Maciej Baka & Justyna Tostoj-Sienkiewicz	Psychological & Environmental Factors Associated with Hermetic Habitat for Long-duration Planetary Mission Simulators, Sandhya Rao & Sreemon Chowdhury	The Space Age Agenda for the Next President, Art Harman

2:30	Optimization of Agal Extracellular Polysaccharide Breakdown to Ethanol, John Hursh	Acquisition Module Transportation Rover, Marcus Bruno & Gabriel Caballero	The Physiological Aspects of Sending Humans to Mars, Antonio Paris	Space Exploration and Terrorism: Apolitical, Techno-savvy, Mission-intensive, and Fighting for the Future, Martin Fowler
3:00	How to Grow a Mars Base: Sustaining Life on Mars is More than Just Whether a Plant Will Grow, Morgan Irons	Hexapod Robot Based on Arthropod L for Difficult Exploration Areas on Mars, Jenory Celeste Balladares	Sweet Surrender II: Recent Results from ISS Studies of Underlying Genetic, Nutritional Status, and Endocrine Factors in Ophthalmic Changes in Astronauts Point to Improved Means for Preparing Humans for Travel to Mars, William Gardiner	The Great Exhaustion or the Great Liftoff? Joshua, Mitchell
3:30	Moon then Mars, Why the Moon is Essential to Survive on Mars, Art Harman	Control System, Telemetry and Navigation of Mars Rover Analogue, Artue Stanislaw Milewski, Jakub Barosz Kurylo & Justyna Tostoj-Sienkiewicz	Impact of Long term Microgravity on the Human Brain Assessed by Magnetic Resonance Imaging in Astronauts, Donna Roberts, Moritz Albrecht, A. Rano Chatterjee, Michael Atonucci & M. Vittoria Spampinato	**STEM Track 2** Simulation of Simulation: Using Virtual Reality to Sim the Sim, Robert Madsen
4:00	Feasibility Study of Ultrasonic Erosion of Cellulose for Mars, Sherry Draisey	The Design and Iteration of a Mars Rover with McGill Robotics, Oliver Lamarre	Astronaut Radiation Exposure During Mars-Earth Transit from Perspective of Modern Radiation Oncology Treatment, Brian Thorndyke	The Leadership Matrix Beyond Tomorrow, James Melton

4:30pm - Plenary
Rep. Donna F. Edwards (D-MD), U.S. House Committee on Science, Space & Technology - *Remarks on the U.S.*

Space Program

5:00pm - Plenary
Nicholas Cummings, Staff Director, Senate Subcommittee on Space, Science & Competitiveness - *TBD*

5:30pm - 7:00pm - Dinner Break

7:00pm - Panel
Legal Basis for Space Settlement & Sovereignty
Dr. Jacob Haqq-Misra, Blue Marble Space Institute of Science
Rick Tumlinson, Founder, New Worlds Institute, & Chairman, Deep Space Industries

8:00pm - Debate
Likely Views by a Clinton or Trump Administration on U.S. Space Policy
TBD

Saturday, September 24

9:00am - Plenary
Chris Carberry, CEO, Explore Mars, *Creating a Unified Campaign for Mars*

9:30am - Plenary
Dr. Jack Mustard, Brown University, *Mars Geology*

10:00am - Plenary
Dr. Stefanie Milam, NASA Goddard Space Flight Center - *James Webb Space Telescope Mission Update*

10:30am - Plenary
Dr. Paul Herz, Director, NASA Science Mission Directorate - *Kepler Space Telescope Mission Update*

11:00am - Panel
STEM Education & the Pathway to the Red Planet
Jennifer Mandel, STEM Programs, Director, Lockheed Martin
Alyssa Carson, Teenage Astronaut-in-Training & STEM Advocate
Bob Barboza, STEM Advocate & Founder, Kids Talk Radio
Nicole Willett, Moderator & Education Director, The Mars Society

12:00pm - 1:00pm - Lunch Break

1:00pm - 5:30pm - Session Tracks

	Technology Track 5	Miscellaneous Track
1:00	Economics of Mars Infrastructure, James Howard II	Aerodynamic Study for Installation Zones for Wind Turbines in Mars, Luis Felipe Iba&#65533;ez Pachon
1:30	A Detailed, Modern Space Economy, Kent Nebergall	International Cooperation, Why China Cannot be a Trusted Partner, Art Harmon
2:00	Sanctuaries in the Sky. A Comparative	

	analysis of Religious and Space Architecture, Michael Waltemathe	
2:30	Paraterrforming: Achieving an Earth-like Environment Much Earlier, Doug Plata	
3:00	Space Settlement Laboratory, Kent Nebergall	
3:30	AmorHab: Design Reference Architecture for Human Habitation in Deep Space, Peter Vorobieff, Craig Davison, Mahmoud Reda Taha Peng & Christos Christodoulou	
4:00	Inflatable Habitats: Immediate and Shielded, Doug Plata	
4:30	A New Class of Space Habitat, Christopher Jannette	
5:00	The Atlas Program, Michael Bouchard	

5:30pm - 7:00pm - Break

7:00pm Banquet
Update from Crew of Mars Desert 80 Mission (via Skype) from MDRS in Utah

Banquet Speaker: Brig. Gen. (USAF - Ret.) S. Pete Worden, Former Director, NASA Ames Research Center

Awards Ceremony

Sunday, September 25

9:00am - Plenary
Dr. Don McCoy, Project Manager, ExoMars, ESA - *TBD*

9:30am - Plenary
Eric Stalmer, President, Commercial Space Federation - *TBD*

10:00am - Plenary
Kevin Sloan, Director, URC, The Mars Society - *Results from the 2016 University Rover Competition*

10:30am - Plenary
Stuart Woods, Member, Executive Team, UKURC - *Update on the 2016 UK University Rover Challenge*

11:00am - Plenary

Dr. John Grant, Smithsonian National Air & Space Museum, Center for Earth & Planetary Studies - *Road Trip on Mars: NASA Rover Discoveries*

11:30am - Closing Remarks
Dr. Robert Zubrin, President, The Mars Society

Please note that speaking times are subject to change. Visit our web site for updates.