Tuesday, August 23

8:30 Welcome & Overview Jason Derleth, NIAC Program Executive
8:50 Flight Opportunities Robert Yang, Program Executive, NASA Flight Opportunities
9:00 Keynote Address Rick Loverd, Program Director, National Academy of Sciences
The Science & Entertainment Exchange
Joe Robert Cole, Screenwriter, Producer, Director

10:00 AIAA Welcoming Remarks Tobey Jackson, AIAA

10:05 Break


11:10 Jonathan Sauder, NASA Jet Propulsion Laboratory, Automaton Rover for Extreme Environments (AREE)

11:35 Lynn Rothschild, NASA Ames Research Center, Urban biomining meets printable electronics: end-to-end destination biological recycling and reprinting

12:00 Lunch

1:30 POSTER SESSION

2:30 Robert Youngquist, NASA Kennedy Space Center, Cryogenic Selective Surfaces

2:55 Melville Ulmer, Northwestern University, Further Development of Aperture: A Precise Extremely Large Reflective Telescope Using Re-configurable Elements

3:20 Robert Skelton, Texas A&M University, Tensegrity Approaches to In-Space Construction of a 1g Growable Habitat

3:45 Break

4:05 Bruce Wiegmann, NASA Marshall Space Flight Center, Heliopause Electrostatic Rapid Transit System (HERTS)

4:30 Adrian Stoica, NASA Jet Propulsion Laboratory, Trans-Formers for Lunar Extreme Environments: Ensuring Long-Term Operations in Regions of Darkness and Low Temperatures


5:20 Adjourn

7:00 Revolutionary Grand Challenges Session with Robert Cassanova and Frank Martin
Wednesday, August 24

8:30  NIAC Plans and Announcements  
     Jason Derleth, NIAC Program Executive

9:00  Keynote Address  
     Dr. Roger Launius, Associate Director for Collections & Curatorial Affairs, National Air & Space Museum

10:00 Break

10:20  Marco Quadrelli, NASA Jet Propulsion Laboratory, E-Glider: Active Electrostatic Flight for Airless Body Exploration

10:45  Masahiro Ono, NASA Jet Propulsion Laboratory, Journey to the Center of Icy Moons

11:10  Robert Mueller, NASA Kennedy Space Center, Mars Molniya Orbit Atmospheric Resource Mining

11:35  Chris Mann, Nanohmics, Inc., Stellar Echo Imaging of Exoplanets

12:00 Lunch

1:30  POSTER SESSION

2:30  Joshua Rovey, University of Missouri, Rolla, Experimental Demonstration and System Analysis for Plasmonic Force Propulsion

2:55  Philip Lubin, University of California, Santa Barbara, Directed Energy for Interstellar Study

3:20  David Kirtley, MSNW, LLC Magnetoshell Aerocapture for Manned Missions and Planetary Deep Space Orbiters

3:45 Break

4:05  Steven Oleson, NASA Glenn Research Center Titan Submarine: Exploring the Depths of Kraken Mare

4:30  Jeffrey Nosanov, Nosanov Consulting, LLC PERISCOPE: PERIapsis Subsurface Cave Optical Explorer

4:55 Adjourn
Thursday, August 25

8:30  Other Topics  Final Remarks, Jason Derleth

9:00  Keynote Address  Dr. Penelope Boston, Director, NASA Astrobiology Institute
NIAC Fellow, NIAC External Council Member
“Gadgets, Widgets, and Contraptions: Technology Needs for Astrobiology”

10:00  Break

10:20  Siegfried Janson, The Aerospace Corporation, Brane Craft

10:45  Gary Hughes, California Polytechnic State University, Molecular Composition Analysis of Distant Targets

11:10  Jason Dunn, Made In Space, Inc., Reconstituting Asteroids into Mechanical Automata

11:35  Ratnakumar Bugga, NASA Jet Propulsion Laboratory Venus Interior Probe Using In-situ Power and Propulsion (VIP-INSPR)

12:00  Lunch

1:30  POSTER SESSION

2:30  Javid Bayandor, Virginia Polytechnic Institute and State University, Light Weight Multifunctional Planetary Probe for Extreme Environment Exploration and Locomotion

2:55  Bin Chen, University of California, Santa Cruz, 3D Photocatalytic Air Processor for Dramatic Reduction of Life Support Mass and Complexity

3:20  Justin Atchison, Johns Hopkins University, Swarm Flyby Gravimetry

3:45  Break

4:05  William Engblom, Embry-Riddle Aeronautical University, Flight Demonstration of Novel Atmospheric Satellite Concept

4:30  John Bradford, Spaceworks Engineering, Inc., Advancing Torpor Inducing Transfer Habitats for Human Stasis to Mars

4:55  NIAC Q&A  NIAC Staff

5:20  Adjourn
ABOUT NIAC:

The NASA Innovative Advanced Concepts (NIAC) Program supports early studies of visionary concepts that could one day “change the possible” in space and aeronautics. NIAC studies develop and assess revolutionary, yet credible, aerospace architecture, mission, and system concepts. They aim to enable far-term capabilities, and spawn exciting innovations to radically improve aerospace exploration, science, and operations.

NIAC also contributes to the Nation's leadership in key research and technology areas, and fosters outreach, education, and economic benefits. Part of the Space Technology Mission Directorate, NIAC is the most open-ended and far-reaching program in NASA.

2016 NIAC SYMPOSIUM SPEAKERS:

Keynote Address
Rick Loverd, Program Director
National Academy of Sciences
The Science & Entertainment Exchange

Rick Loverd directs a program of the National Academy of Sciences called The Science & Entertainment Exchange. Its mission is to inspire better science in Hollywood by introducing entertainment professionals to great science communicators. Since its launch in 2008, The Exchange has completed more than 1,500 consults including IRON MAN 2, THOR, TRON: LEGACY, AVENGERS: AGE OF ULTRON, STAR TREK: INTO THE DARKNESS, MAN OF STEEL, Fringe, CASTLE, BOURNE: LEGACY, The Good Wife, CAPTAIN AMERICA: THE WINTER SOLDIER, BIG HERO 6, and 10 CLOVERFIELD LANE. During his time at The Exchange, the program has produced more than 250 events in Los Angeles, New York, Scottsdale, and Napa Valley targeted at the Hollywood community.

Keynote Address
Joe Robert Cole
Screenwriter, Producer, Director

Joe Robert Cole is a writer/producer/director who enjoys crafting smart, rich character journeys as well as creating tentpole, world-building projects. Currently writing Marvel’s “Black Panther,” Joe spent last year as a Producer/Writer on the Emmy nominated “American Crime Story: The People Vs. OJ” for FX. For Lionsgate he wrote "Revoc" a grounded sci-fi action thriller with Mandeville Films producing and is adapting the James Rollins Sigma Force novel series into a feature franchise. Joe recently was part of a Hasbro think tank to create a cohesive cinematic universe for the toy brands: GI JOE, ROM, M.A.S.K. and Visionaries.
Keynote Address

Dr. Roger Launius
Associate Director for Collections & Curatorial Affairs
National Air & Space Museum


He is a recipient of the Exceptional Service Medal and the Exceptional Achievement Medal from NASA. In 2009 he received the John F. Kennedy Astronautics Award from the American Astronautical Society, the Secretary’s Research Prize from the Smithsonian Institution, and the Roger R. Trask Award from the Society for History in the Federal Government, 2009. In addition, he is a Fellow of the American Association for the Advancement of Science, the International Academy of Astronautics, and the American Astronautical Society; and Associate Fellow of the American Institute for Aeronautics and Astronautics. He is frequently consulted by the electronic and print media for his views on space issues, and has been a guest commentator on National Public Radio and all the major television networks.
Keynote Address
Dr. Penelope Boston
Director, NASA Astrobiology Institute
Past NIAC Fellow and NIAC External Council Member

Dr. Penelope Boston is Director of the NASA Astrobiology Institute at NASA Ames Research Center in California. Personal research areas include geomicrobiology and astrobiology in extreme environments (especially caves and mines, hot and cold deserts, high latitudes and altitudes); geological processes creating caves on other planets and moons; human life support issues in space and planetary environments; and use of robotics and other technologies to assist exploration and science in extreme Earth and extraterrestrial environments.

Boston is author of over 160 technical and popular publications and editor of 4 volumes. Her work has been featured in ~200 print and broadcast media outlets, as a child of a theatrical family, she first went on the stage at the age of 3 and apparently hasn't come off since.... She has served on the NRC Space Studies Board, the NASA Advisory Council Planetary Protection Subcommittee, and the External Council of the NASA Innovative Advanced Concepts. Boston is recipient of the 2010 Lifetime Achievement in Science Award from the National Speleological Society, a Fellow of the NASA Institute for Advanced Concepts (since 2000), and a recent Distinguished Visiting Lecturer for Phi Beta Kappa (2013-2014). As a graduate student in the 1980’s, she co-founded the Case for Mars series of conferences and activities devoted to the human exploration of Mars.

Dr. Boston holds a PhD from the University of Colorado, Boulder in Microbiology and Atmospheric Chemistry, earned on an Advanced Studies Program Fellowship at the National Center for Atmospheric Research. She was a National Research Council Post-doctoral Fellow at NASA Langley Research Center in Virginia. From 2002-2016, she was Director of the Cave & Karst Studies Program and Chair of the Earth & Environmental Sciences Dept. at New Mexico Institute of Mining & Technology, in Socorro, New Mexico and the Associate Director of the National Cave and Karst Research Institute in Carlsbad, New Mexico.