

Biographies for Chairs and Presenters of Session 4 - Small NEA Mission Design Challenges

Session Chair Biographies

Mr. Brent W. Barbee

Brent W. Barbee is an Aerospace Engineer in the Navigation and Mission Design Branch of NASA's Goddard Space Flight Center. He also teaches the graduate astrodynamics course in the Department of Aerospace Engineering at The University of Maryland. He is a member of the flight dynamics team for the OSIRIS-REx asteroid sample return mission scheduled to launch in September 2016, and he is performing planetary defense research as the co-investigator for a Phase 2 NIAC study. He is also the principal investigator for NASA's Near Earth Object Human Space Flight Accessible Targets Study (NHATS). His research interests include astrodynamics, spacecraft trajectory design and optimization, near-Earth asteroid accessibility for human and robotic missions, and planetary defense against hazardous asteroids and comets. Mr. Barbee is a recipient of NASA's Early Career Achievement Medal and the 2012-2013 AIAA National Capital Section Hal Andrews Young Engineer/Scientist of the Year Award. Mr. Barbee received his Bachelor and Master of Science degrees in Aerospace Engineering from the University of Texas at Austin.

Dr. Dan Scheeres

Dan Scheeres is the A. Richard Seebass Endowed Chair Professor in the Department of Aerospace Engineering Sciences at the University of Colorado at Boulder and a member of the Colorado Center for Astrodynamics Research. He has studied the dynamics of the asteroid environment from a scientific, engineering and navigation perspective since 1992. He was involved with the NASA NEAR mission to asteroid Eros and the Hayabusa mission to asteroid Itokawa. He is currently the Radio Science lead on NASA's OSIRIS-REx mission to asteroid Bennu, currently scheduled to launch in 2016. He is also the PI on the Binary Asteroid In-Site Explorer (BASiX) Discovery mission proposal. In 2012 he published a book with Springer-Praxis on orbital mechanics about small bodies entitled "Orbital Motion in Strongly Perturbed Environments: Applications to Asteroid, Comet and Planetary Satellite Orbiters." Asteroid 8887 is named "Scheeres" in recognition of his contributions to the scientific understanding of the dynamical environment about asteroids.

Dr. Steven Chesley

Dr. Steven Chesley is an expert in asteroid and comet orbit determination with NASA's NEO Program Office at the Jet Propulsion Laboratory. He led the development of JPL's Sentry system an automatic process that updates the orbits of recently observed NEOs and assesses their hazard to Earth. He has been active in NASA studies relating to the asteroid impact hazard and in particular in evaluating the performance of potential asteroid search programs. Steve's spaceflight project experience includes NEAR-Shoemaker navigation and the comet ephemeris development for the last five NASA comet-spacecraft encounters, most recently the EPOXI mission to Comet Hartley 2 and the Stardust-NExT mission to Comet Tempel 1. He is presently a co-investigator on the OSIRIS-REx asteroid sample return mission, responsible for the Yarkovsky investigation and the target asteroid ephemeris development. Steve is a recipient of NASA's Exceptional Engineering Achievement Medal in recognition for his work on the Stardust-NExT mission. Asteroid 12104 Chesley is named in his honor.

Presenter Biographies

Dr. Damon Landau

Damon Landau is a planetary mission architect at the Jet Propulsion Laboratory, where his primary interests are mission design and trajectory optimization. Before beginning his career at JPL, he received a Ph.D. in 2006 from Purdue University where he examined various strategies for the sustained human exploration of Mars. In February 2007 Damon moved to sunny CA to pursue the glamorous life of robotic space exploration, specializing in the combination of gravity assist trajectories with solar electric propulsion. He also helped design the trajectory for Junos arrival at Jupiter in July 2016. His current research focuses on how to connect the dots from cis-lunar excursions to Mars round-trips for human exploration missions.

Dr. Steve Broschart

Dr. Steve Broschart is an engineer in the Navigation and Mission Design section at NASA's Jet Propulsion Laboratory who specializes in close-proximity spacecraft operations at primitive bodies. His work in this area has included dynamics analysis, control law development, environment modeling, mission proposal development, autonomous systems design, measurement modeling, and hazardous asteroid mitigation. Steve's research zeal in this area is tempered by his mission operations experiences, which have included trajectory design for the ARTEMIS mission and orbit determination responsibilities on the Akatsuki (JAXA) and GRAIL missions.

Dr. Carlos M. Roithmayr

Carlos M. Roithmayr earned Bachelor and Ph.D. degrees in Aerospace Engineering at the Georgia Institute of Technology in Atlanta, Georgia; he earned an M.S. degree in Aeronautical and Astronautical Engineering at Stanford University. Dr. Roithmayr began his NASA career at the Johnson Space Center in Houston, Texas, and is currently a Senior Aerospace Engineer at the Langley Research Center in Hampton, Virginia. His research interests include dynamics of multibody mechanical systems, spacecraft attitude dynamics and control, and orbital mechanics.

Mr. David C. Folta

Dave Folta is an Aerospace Engineer in the Navigation and Mission Design Branch at NASA's Goddard Space flight Center (GSFC). He is currently the Mission Design and Navigation Lead for the MAVEN Mars Scout mission scheduled for launch Nov 18th, 2013. He has supported numerous operational missions spanning Low Earth, Sun-Earth and Earth-Moon Libration, Lunar, Cometary, and planetary missions. He leads several research and technology development efforts including applications of dynamical systems to end-to-end trajectory designs, innovative fast Mars transfers, autonomous formation flying algorithms flown onboard EO-1, and GSFC CAVE 3-D visualization. Dave was a 2012 recipient of NASA's Distinguished Service Medal. He received his Bachelor degree in Physics from Kutztown University, Pa., and a Masters in Mechanical engineering from George Washington University in Washington D.C.

Mr. John Dankanich

John Dankanich is a project manager at NASA MSFC in the Technology Development and Transfer Office. His area of expertise is technology development, propulsion systems, mission design, and trajectory optimization. John currently serves as the technology representative on the Small

Bodies Assessment Group (SBAG) steering committee. His previous efforts include decadal survey reference mission design, propulsion system development, Mars ascent vehicle design, lunar lander guidance simulations, planetary defense studies, and advanced propulsion design and testing. John has a B.S. in Physics and Aerospace Engineering and an M.S. in Aerospace Engineering from Purdue University.