NSRC 2023 Abstracts

Title: Citizen-Science Astronautics Testbeds for Team and Science Training for Suborbital Flight

Authors: Shawna Pandya, Aaron H. Persad, Jason Reimuller

Category (1st Choice): Commercial Applications
Category (2nd Choice): Human Factors, Flight Crew Training

Abstract:
Human performance in spaceflight is optimized through testing and training in space-like environments, as well as in teams to enhance crew dynamics. Through our research testbeds at the International Institute for Astronautical Sciences (IIAS), our citizen-scientist participants gain familiarity with space and astronautics testbeds through exposure to parabolic flight, gravity-offset testing, suborbital science mission simulations, and more. Participants are also taught scientific methods as they pertain to the microgravity environment, payload preparation and testing, and technology readiness level advancement. Team dynamics are reinforced through simulations in relevant operational environments such as those previously listed, as well as through high-altitude research flights, field work, medical training and simulation and more. Team concepts reinforced include prebriefing, rehearsal, communication patterns, and debriefing. This model has proven successful in engaging an emerging generation of citizen-scientists to contribute to the body of research in bioastronautics and suborbital sciences, and can further be leveraged to enhance performance for spaceflight participants, commercial astronauts and flight crew in suborbital flight.