

HUMAN SPACEFLIGHT SYMPOSIUM (B3)  
Astronaut Training, Accommodation, and Operations in Space (5)

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COMMERCIAL ASTRONAUT TRAINING

**Abstract**

The emerging commercial space market will soon provide unprecedented opportunities for researchers and scientists to conduct research on commercial space vehicles. While vehicle-specific training may be provided by some vehicle operators for spaceflight participants, there has yet to be a comprehensive program devoted to the unique training needs of the researcher or the scientist. This paper describes how one company is providing comprehensive academic and operationally-specific training to the commercial spaceflight community and how procedural training and techniques can help future commercial scientist-astronauts understand and manage physiological responses associated with spaceflight.

The American Astronautics Institute (AAI) provides customized high fidelity training using instrumentation, mission profiles, and operational procedures unique to science applications in analog sub-orbital and orbital training environments. AAI is currently providing training needs for research projects such as Project PoSSUM, a suborbital program devoted to study of noctilucent clouds and other observables from the upper atmosphere.

The AAI features two educational programs: the Flight Operations Engineer program and the Research Specialist program. The Flight Operations Engineer Program is a 5-month, graduate-credential level program that provides a comprehensive education for the aerospace professional requiring a generalized education in commercial space operations as applied to the next-generation of commercial space vehicles. This program includes courses on spaceflight physiology, spatial disorientation training, spaceflight operations, spacecraft egress and rescue, wilderness and sea survival, life support systems, the space environment, and science applications in space missions. AAI also features a one-week Research Specialist program that provides mission simulation training with biometric analysis in high-G and microgravity environments while providing spacesuit operations training, high-altitude training, and crew resource management training.