

## PISCES: A Lunar Outpost for ISRU Partnerships

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**Abstract.** The Pacific International Space Center for Exploration Systems (PISCES) will feature a fully simulated lunar outpost on the Big Island of Hawaii as part of a complex for research and development of new technologies to enable long-term stays on the Moon and other extra-terrestrial bodies. PISCES will have unique capabilities in *In-Situ* Resource Utilization (ISRU), including fully equipped laboratory facilities, pilot-scale testing on fine volcanic ash, and field areas in the lunar-like setting of the Big Island volcanoes. The Center will provide an unparalleled opportunity for ISRU research and development in partnerships between industry, academia and government in both the US and Japan. Scientists and engineers will be able to move new technologies rapidly from the laboratory out into one of the highest-fidelity lunar simulation environments on Earth. Other capabilities of PISCES will include robot testing on lunar-like terrain, astronaut training in areas where the Apollo astronauts trained, and educational outreach through the auspices of the University of Hawaii and other participating universities. A distinguishing feature of PISCES will be the promotion of collaborative research and education in space exploration. PISCES was initiated by the Japan-US Science, Technology and Space Applications Program (JUSTSAP), a bi-lateral organization founded to foster cooperation between the US and Japan in space research and applications. Initial funding of PISCES is anticipated to be provided by the State of Hawaii through a bill currently in the State legislature. PISCES will be a user facility for groups located primarily in the US and Japan. A PISCES ISRU user group is currently being formed. More information on PISCES can be found at <http://pisc.es.hilo.hawaii.edu/>.