

MUREP Small Business Technology Transfer (M-STTR) Planning Grants

Title: Developing sensors and instrumentation for Lunar and ground applications

Institution: University of Central Florida

City/State: Orlando, FL

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SUMMARY:

In NASA's continuous endeavors, the certainty of human-crewed missions in *cis*-Lunar space, the Moon, and Mars become apparent. The team will leverage decades of experience in metrology tool development and diagnostic schemes to facilitate solving NASA's most challenging problems. The efforts will address NASA's Program Goals (PGs) and Strategic Objectives (SOs). Forming otherwise non-existing opportunities for diverse student populations. Ultimately cultivating a STEM talent pool to contribute to NASA's aeronautics, space, and science missions.

UCF and SMI have identified two topics that enable focus from UCFs technology transfer to SMI. We have *identified the following technology development areas which could respond to NASA SBIR/STTR calls*:

- (i) Detection of Hydrogen in Oxygen Using Raman Spectroscopy (**STTR22-T14.01**), and
- (ii) Harsh Environment Pressure Sensors (**STTR22-T13.01**)

These collaboration areas will enable the achievement of NASA's SBIR/STTR SOs 3.1 & 3.4; and PGs 3.1.4 & 4.1.3, which will use leveraged interests between UCF and SMI to grow the national economy while simultaneously increasing strategic outreach and business efforts through the advancement of technical solutions to meet NASA's needs. It is envisioned that there will be a minimum of two STTR proposals submitted by this team following the 2023 NASA SBIR/STTR solicitation.