SPACE (Surface Payloads and Advanced Concepts for Exploration) Open Access Database/Spreadsheet Tool and Working Group. P.E. Clark[1], D. Dunlop[2], [2]Catholic University of America@NASA/GSFC, Greenbelt, MD 20771, [2]National Space Society, Board of Directors, Washington, DC 20005 (Correspondence email: Pamela.E.Clark@NASA.gov).

Surface Payloads and Advanced Concepts Tool: As part of the effort to develop science (and other constituency) requirements for human and/or robotic exploration of the lunar and planetary surfaces, and originally in support of Project Constellation, P.E. Clark created an extensive spreadsheet representing development history, design, applications, and requirements, and operating characteristics of potential payloads and supporting components at various stages of development to support a broad range of applications (resource utilization, field geology, monitoring packages, observatories) [1]. The list began as an extension of the Apollo J mission payloads list, but evolved to include much more detail and many more components, devices, instruments, and technologies of potential interest, organized by application. Inputs were obtained from a range of disciplines and programs supporting new developments. At various LEAG meetings, the spreadsheet became the subject of discussion and a great deal of national and international interest pertinent to potential mission planning and commercial investment and 'on ramp' opportunities. , creating the basis of a 'central clearing house' of information, which could continue to be supplemented, on existing and newly developing instrument concepts and engineering applications worth obtaining or investing in for future missions.

Current Activities: We are currently making arrangements for a web–accessible home for our tool to provide 1) a tool which enables a easy and quick identification of members of the lunar "community of interest" and their proposed projects in lunar surface scientific investigation and potential commercial lunar surface operations; 2) a spreadsheet format which can be easily customized for various groups of interest to identify potential lunar surface mission participants whose interests might be 'complimentary', and to identify resources in aggregate which might enable a mission proposal and a commercial 'on ramp'. This tool should reflect not only sources from NASA Centers but also national and international aerospace nodes of private and government agencies.

The spreadsheet would be continually updated, and maintained as an open source directory (publicly present and/or published in the open literature) of available or under–development surface instruments, instrument components, tools, engineering resources, and equipment relevant to lunar and planetary surface exploration and science investigation, and surface operations. This directory would be hosted and administered on at least two websites, including the National Space Society. The tool would exist at two levels: short for quick identification (PI, sponsoring and participating organizations, TRL, application, public reference), and extended, to include such characteristics as mass, power, operational characteristics, manner of deployment.

We are forming a committee of those interested in and concerned with payload development and representing working groups and institutions participating and contributing to space exploration. Individual members will contribute information on current developments in their groups/institutions that would be used to update the directory. Participants' affiliations would include, but not be limited to: NASA and international space agency centers, Space Resources Roundtable, future exploration and science planning working groups, major research institutes and corporations involved in developing space technology.

References: [1] Dunlop, A Common Open-Source Database of Desired Lunar Surface Missions, Moon Miner's Manifesto, India Quarterly Edition, #6 (2010).