

**LUNAR PERSONAL ELECTRIC VEHICLE (PEV)****BACKGROUND**

Personal Electric Vehicles (PEV) have the potential to reduce all of the driving parameters of space missions: Size, Weight, and Power (SWaP), as applied to human surface transportation. Potential applications for PEVs might include emergency walk-backs, scouting, or errands.

The lunar environment has special challenges, including rugged terrain with no weathering, and deep piles of loose dry abrasive dust that is difficult to grip and penetrates machinery. Riders face challenges also like weight difference. And transporting anything to the moon is not cheap.

**PROBLEM/DESCRIPTION**

This challenge will open the trade space to Personal Electric Vehicles. Students may consider several design options and then choose one to develop further.

Some resources:

<https://www.youtube.com/watch?v=yCJz41JV7ek>

[https://kithub.cmu.edu/articles/thesis/Traction\\_Processes\\_of\\_Wheels\\_in\\_Loose\\_Granular\\_Soil/6724034](https://kithub.cmu.edu/articles/thesis/Traction_Processes_of_Wheels_in_Loose_Granular_Soil/6724034)

<https://hackaday.com/tag/electric-unicycle/>

<https://forum.electricunicycle.org/topic/2906-egg-electric-unicycle%C2%A0diy-and-opensource-design-that-is-easy-to-customize-for-your-specific-needs/>

<https://www.youtube.com/playlist?list=PLHu3LpOcWhxyn11v0Hx8pvxD1ymyQL4SX>

**DESIGN TEAM PROFILE**

<b>NASA MENTOR:</b>	Chatwin Lansdowne
<b>LEVEL:</b>	Upper Division Students [SOPH/JR/SR]
<b>MAJOR / DISCIPLINES:</b>	All Engineering Majors
<b>TEAMS:</b>	Mentor may accept more than one team
<b>DURATION:</b>	Two-Semester Project

