NASA OSGC Proposal Brain Storm & Outline

* Project Description
  + *Briefly describe the research that is proposed including methodologies and approaches. Summarize the scholarly and creative aspects of the project and how this supports your educational objectives. What are the expected outcomes from your research (e.g. senior thesis, increased understanding of research, art exhibition, etc), and how will you achieve these outcomes?*
* Synergy
  + *What aspects of your research enhance your collaborative learning experience between you and your advisor? What are the leveraging opportunities for funding or further research? In other words, will the project lead to additional opportunities for either you or the advisor? (New or additional funding for the work; professional/creative opportunities that would not have otherwise been developed), or is the activity being used as a mechanism to fund a project (senior thesis)?*
* Aerospace Relevancy
  + *How does your research support the mission of NASA? For a detailed description of NASA's mission, history, and future plans, visit the NASA Headquarters website at (*[*http://www.nasa.gov/about/highlights/what\_does\_nasa\_do.html*](http://www.nasa.gov/about/highlights/what_does_nasa_do.html)*)*

**Brainstorm:**

* Project Description
  + Overview of URC
  + Overview of Mars Rover functionality
    - 4-barr system for terrain
    - Wireless controls
    - Wireless video
    - GPS
    - Robotic Arm
    - PCBs designed by our team
  + Mention of Chassis Mechanical Senior Project
  + Mention of Arm Mechanical Senior Project
  + Methodologies and Approaches
    - Team leadership organization
    - Team / sub team meetings
    - Collaboration through the wiki
    - Design reviews with OSU faculty
    - Design Testing
    - Competition rehearsals
  + Scholarly Aspects
  + Creative Aspects
  + How do these aspects support educational objectives?
  + Education Objectives? (Same as Outcomes?)
  + Outcomes:
    - Boost Engineering publicity for OSU (Boosted Esteem)
    - Teaching group cohesion, process management, to students
    - Improved implementation of design concepts in Mars Rover prototypes
    - Increased interest in STEM activities at the University level
    - Rover
    - Bush Mobbing
    - Experience in real engineering projects
    - Stronger embedded programming skills
    - RF, analog, and digital design experience
    - Outlet for creative, upcoming engineers to solve challenging problems
  + How will we achieve these outcomes?
* Synergy
  + Aspects enhancing collaboartive learning experience with advisor and us?
  + What are the leveraging opportunities for further funding or research?
    - NSF grant (part of $5000 through Dr. Hurst)
    - Atmel Grant ($5000)
    - Mentor Graphics Grant ($5000)
    - Garmin ($500)
  + Is the project going to lead to additional opportunities for either us or the advisor?
    - (New or additional funding for the work)
    - (Professional/Creative opportunities that would not have otherwise been developed)
  + Is the activity being used as a mechanism to fund a project (senior thesis)?
* Aerospace Relevancy
  + How does this research support the mission of NASA?
    - Supporting mission:
    - Supporting history:
    - Supporting future plans:
      * Developing / Fostering new ideas for Mars Rover prototypes for use during colonization and occupation