

Research Pre-Proposal

The purpose of this pre-proposal is to help guide you as to whether your idea for your research is do-able or not. There are many things that can cause roadblocks to good research. Some of them include

1. *Projects that are too broad*
2. *Proposals that do not take safety into account (e.g., using carcinogens)*
3. *Projects that have already been done*
4. *Projects that are impractical from an equipment perspective*
5. *Projects that AOS faculty have already informed you are not feasible*

Please fill return the entire form to your research teacher by Wednesday 5/13/2015. Bring a hard copy to class and submit onto turnitin.com by 9:45am.

Student name: Vinith Thangaraj

Subject area of research: Math Modeling/Astronomy

The faculty member who helped you the most with this idea: Mr. Writer

5 sentence (max) description of what you will be doing:

This research project is related to crater equilibrium, which occurs when a surface becomes so heavily cratered that the addition of each new crater of a specific size erases, on average, one old crater of the same size. Crater statistics (used as opposed to radiometric dating due to limited samples) can be used to calculate the age of a surface using a process called crater counting, but this relies on the assumption that all craters formed since the formation of the surface are included in the statistics which becomes problematic when a surface reaches crater equilibrium and it is hard to calculate age. The math modeling part of this project involves creating a simulation model of the impacts of craters over time to find how long surfaces on heavily cratered surfaces such as the Moon or Mercury take to reach crater equilibrium if they have not already so that scientists know when age of surfaces will be not as reliable as before. One overarching purpose in the research project is finding out if there are there any ways to measure the age of a surface even after it has achieved crater equilibrium.

Any materials you know you will need, especially ones that are potentially dangerous or expensive:
(We know this list will grow in the future.)

No materials are needed at the moment except for a computer. There might be a need to buy programs or data in the future.

Teacher Evaluation: _____ Doable (with slight modification) _____ Doable with much modification
 _____ Not doable

Teacher with whom student should discuss project next:

Teacher Comments: