**NASA DEVELOP National Program**

****NASA Jet Propulsion Laboratory

**Summer 2015**

**Short Title: U.S. Disasters II**

**Updated Abstract**

Insert here (150 - 250 words, preferably one paragraph)

* The abstract should be fully contained and give the reader a good grasp of the project.
* While there is a maximum word limit, if you can say it with fewer words, do so.
* State the most important information first.
* Avoid passive words like “might” or “could” – use powerful language.
* Use key words and phrases that will quickly give the reader an idea about the content and focus of the work (ex. Navajo Nation, drought, TRMM, PRISM).
* Don’t include citations.
* Don’t define terms.
* Read other projects’ abstracts for inspiration.
* Any major restrictions or limitations on results (if results are included) should be stated.
* Reread the abstract – did it answer who, what, where, when, and why? If it didn’t, then revise it!

Understanding the relationship between wildfire activity and soil moisture in the United States has been difficult to assess, with limited ability to determine areas that are at high risk. This limitation is largely due to complex environmental factors at play, especially as they relate to alternating periods of wet and dry conditions, and the lack of remotely-sensed products. Recent drought conditions and accompanying low Fuel Moisture Content (FMC) have led to disastrous wildfire outbreaks causing economic loss, property damage, and environmental degradation. Thus, developing a programmed toolset to assess the relationship between soil moisture, which contributes greatly to FMC and fire severity, can establish the framework for determining overall wildfire risk. To properly evaluate these parameters, we used data assimilated from the Gravity Recovery and Climate Experiment (GRACE) and data from the Fire Program Analysis fire-occurrence database (FPA FOD) to determine the extent soil moisture affects fire activity. Through these datasets, we produced correlation and regression maps at a coarse resolution of 0.25 degrees for the contiguous United States. These fire-risk products and toolsets proved the viability of this methodology, allowing for the future incorporation of more GRACE-derived water parameters, MODIS vegetation indices, and other environmental datasets to refine the model for fire risk. Additionally, they will allow assessment to national-scale early fire management and provide responders with a predictive tool to better employ early decision-support to areas of high risk during regions’ respective fire season(s).