**Important Points from Oral/Proposal Defense for Messina 9/5/14**

**General comments:**

* Too ambitious in scope, possible to accomplish?
  + Data collection and much analysis for Papers One and Two has been completed. Much assistance for Paper Two is being provided by C. Storlazzi et al. at USGS
  + Data collection for Paper Three is underway and supported by on-island staff and adequate NOAA funding

**Paper One:**

* Curve Number method may be inappropriate for modeling Q from the quarry surface in Faga’alu
  + A sensitivity analysis-type approach will be used to vary the CN by ±Some Value (e.g. 15%) to determine some kind of uncertainty range to input into the RMSE Uncertainty equation

**Paper Two:**

* The limited number of drifter and ADCP deployments may not adequately describe the annual scale variance in hydrodynamic forcing. May not be adequate for Paper Three.
  + Oceanographic deployments are always limited. Will attempt to get a full year of data collected by Vetter (2013) as well as a year of WaveWatch3 model and in situ wind data to contextualize measurements made by drifters and ADCP
  + From field observation we sampled an adequate range of swell heights due to a significant swell event that luckily occurred during deployment, but perhaps not an adequate range of trade winds (which are more prevalent May-Sept)

**Paper Three:**

* Level of modeling skill (?) ability (?) precision (?) in Papers One and Two may not be appropriate for the sediment accumulation model in Paper Three
  + That’s possible, and a backup plan is to write Paper Three as more of a qualitative paper, describing the spatial distribution of sediment accumulation in relation to phasing of storms and swell events, and spatial distribution of flow velocities without a deterministic, quantitative model.
* Discuss implications of future climate/environmental change for sediment loading, deposition and long-term accumulation in the context of the future watershed management and recovery of the coral reef
  + Models predict a redistribution of total precipitation toward fewer small storms and more large storms in the Southwest Pacific. This will be addressed in context to the analysis of relative natural/anthropogenic sediment loading by storm size in Paper One
  + Models predict an overall increase in wave period for swells generated in the Southern Ocean. This will increase the propagation of swell energy into Faga’alu Bay by increased refraction of swells from the SW and SSW which are significantly shadowed or attenuated at present.
  + Models predict an overall increase in sea level due to ice cap melting. The data presented in Paper Two and literature indicate that current speeds over the reef flat are strongly regulated by water level controls on wave-breaking at the reef crest, and wind wave development over the reef flat. Increased sea level will increase flow speeds and decrease water and sediment residence time, though there is potential to increase shore erosion and increase terrigenous sediment loading to the reef.