1145-62-780 **Alex Cloninger*** (`acloninger@ucsd.edu`), 9500 Gilman Dr, San Diego, CA 92093. *Fast Detection of Inter-Group Differences in Images.*

We will focus on fast algorithms to do two sample testing between groups, as well as algorithms for interpreting the tests and marking significant regions of difference, along with associated p-values of certainty that sed region isn't just due to random chance. We will focus on kernel methods and maximum mean discrepancy for the testing, and data that lies near or on low-dimensional manifolds, but the data sources can easily be preprocessed by neural networks, random forests, etc. We'll demonstrate applications on diffusion MRI, hyperspectral imaging, and other types of imaging modalities. (Received September 14, 2018)