the prominence of bars, the specifics of bar evolution and their role in galactic dynamics and galactic evolution remains abstract. Galactic bars are thought to affect the star formation rates (SFRs) of galaxies by transferring angular momentum to the outer regions of the galaxy which causes gas to flow inward towards the center. Using PanSTARRS data, we measured the bar strength of 40 galaxies using isophote analysis to determine the percentage of stellar mass that resides in each galaxy's bar. SFRs were determined by measuring the luminosity in the 22-24 micron mid-infrared. We compared these measurements for possible correlations and found a strong correlation does not exist between a galaxy's SFR and the strength of its bar. However, the data does indicate an average range of bar strength versus SFR with a separate group of star-burst galaxies with strong bars. This work was supported by the National Science Foundation's REU program through NSF awards AST-1560016 and AST-1852136.

Poster Session 168 — Dwarf and Irregular Galaxies

168.01 — ALFALFA Harvest: 3D Modeling of HI-Rich Candidate Local Group Dwarf Galaxies

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The ALFALFA blind extragalactic survey has populated the faint end of the neutral hydrogen (HI) mass function with statistical confidence for the first time. Of particular interest is a subset of the ALFALFA detections, termed "ultra-compact high-velocity clouds" (UCHVCs). These systems, if located within ~1 Mpc, would populate the lowest-mass end of the HI mass function. Subsequent optical imaging has revealed that some of these UCHVCs harbor associated (though sparse) stellar populations, revealing that they may be some of the most extreme galaxies known in the Local Volume, with optical properties akin to ultra-faint dwarf galaxies but with significant neutral gas reservoirs. In this campaign, we investigate the neutral hydrogen properties of six UCHVC candidate galaxies using deep VLA HI spectral line imaging. A companion poster (Paine et al.) presents details on the data reduction, imaging, and resulting products. Here, we examine the morphological and kinematic properties of selected sources. We apply the modeling software 3D-Barolo to our deep HI images in order to derive the rotation curve and constrain the inclination angle for each source. Successful modeling allows us to determine the dynamical masses of these objects and thus to consider them in the context of various fundamental scaling relations defined by more massive galaxies.

168.02 — ALFALFA Harvest: HI Imaging of Candidate Local Group Dwarf Galaxies

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168.03 — Minor Galaxies with a Major Impact

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