Abstract Submitted
for the NWS18 Meeting of
The American Physical Society

Effect of Seed Density on Splash Cup Seed Dispersal PATRICK WIGGER, RACHEL PEPPER, Univ of Puget Sound — Splash cup plants are plants that utilize a small, mm-sized cup filled with seeds as a method of seed dispersal. The cup uses kinetic energy of an incident raindrop in order to project the seeds away from the plant up to 1 meter. The dispersal distance is important to ensure the offspring are not clustered too tightly to the parent plant. It has previously been found that a cup angle of 40 degrees to the horizontal is optimal for maximum dispersal of water from cups with no seeds. In this study we examine if the 40 degree cup is optimal for cups containing seeds with varying densities. We released uniform water drops above 5.0 mm 3D printed models of splash cups, using 1.0 mm plastic and glass microspheres of varying densities to simulate seeds. We observed the dispersal characteristics of each bead type by measuring the final seed locations after each splash, and by recording high speed video to determine the angle and velocity of the seeds as they exited the cup.

Patrick Wigger
Univ of Puget Sound

Date submitted: 26 Apr 2018 Electronic form version 1.4