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Size DOES Matter (the smaller the better)[1] ANNIE O, HARJYOT MOHAR, VICTOR HERNANDEZ, ARTURO ESTRADA, Hartnell College — A micro droplet generator was designed and constructed to automatically form and eject droplets in the micron size range in a repeatable manner. These droplets were used to investigate dynamic properties such as velocity, acceleration, and drag force. The working medium was composed of a 3 to 1 ratio of water to propylene glycol. An apparatus consisting of a camera, lamp, and electronics were used to facilitate observations of the droplets. Using Stokes' law we extrapolated the terminal velocity through precise measurements of droplet radii. The data revealed that during the ejection process, the droplets experienced a drag force many times their own weight. This led us to the surprising discovery that the droplets were experiencing a significantly large deceleration up to 30 times that of gravity.

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