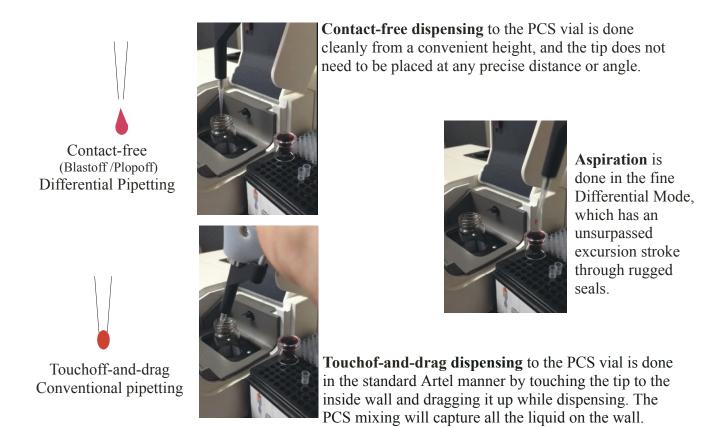
## Measuring the tiny volumes that our Differential Pipettor can handle, both with our preferred contact-free dispense and with conventional touchoff. SCIENCE 2 Donald Schwartz, M.D., President R102515

Our Differential Pipettor<sup>TM</sup> aspirates extremely precisely and accurately in its differential mode from  $20\mu$ L down to 200 nanoliters. It routinely dispenses this volume range cleanly contact-free, but it can also dispense by conventional touchoff. The Artel PCS<sup>®</sup> dual dye ratiometric photometry vial is designed to fully capture liquid that is touched-off to it, but it can also receive samples directly. This combination of powerful pipetting and measurement systems has let us explore and validate very low true here-to-there pipetting transfers. We also use weighing, but we find the Artel PCS is easier to use and more discriminating for the smallest volumes, and it also gets around many evaporation challenges. The clean contact-free delivery is powered by our non-differential "Single" mode, which delivers flow power that lets the sample breakaway from the very tip at the desired Tip Escape Velocity (TEVIA factor<sup>TM</sup>).



A fast TEVIA or Blastoff<sup>TM</sup>, such as 4-5 meters/second, lets a sample cleanly penetrate the surface of a receiving liquid. A slow TEVIA or Plopoff<sup>TM</sup>, such as 1.5 - 2 meters/second, lets a sample break gently free from the tip and plop serenely down onto some firm surface target -- without damaging DNA strings or other fragile elements. The desired speed comes intuitively from user hand and eye.

ACKNOWLEDGMENTS and CREDITS: PCS® is a registered trademark of Artel, Inc. 25 Bradley Drive, Westbrook, ME 04092 www.artel-usa.com. Differential Pipettor<sup>TM</sup>, Differential Pipetting<sup>TM</sup> and Blastoff<sup>TM</sup> are trademarks of Differential Pipetting, Inc.

Differential Pipetting, Inc11 Dory Road, Blackburn Industrial Park, Gloucester, Mass 01930USAwww.DifferentialPipetting.comScience@DifferentialPipetting.com(978) 515-3392