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Phenotypic variability and selection of lipid-producing microalgae in a microfluidic centrifuge[1] ANDRÉ ESTÉVEZ-TORRES, TROY MESTLER, ROBERT H. AUSTIN, Department of Physics, Princeton University — Isogenic cells are known to display various expression levels that may result in different phenotypes within a population. Here we focus on the phenotypic variability of a species of unicellular algae that produce neutral lipids. Lipid-producing algae are one of the most promising sources of biofuel. We have implemented a simple microfluidic method to assess lipid-production variability in a population of algae that relays on density differences. We will discuss the reasons of this variability and address the promising avenues of this technique for directing the evolution of algae towards high lipid productivity.

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