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Continuous separation of human blood components through deterministic lateral displacement[1] JOHN DAVIS, DAVID INGLIS, JAMES STURM, ROBERT AUSTIN, Princeton University — Using a microfluidic device, the continuous separation of red and white blood cells from their native blood plasma has been demonstrated. The device takes advantage of the asymmetric bifurcation of laminar flow around obstacles. This asymmetry creates a deterministic path through the device which depends on the particle size. All components of a given size follow equivalent migration paths, leading to high resolution, and continuous throughput. One micron diameter fluorescent polystyrene beads were added to a mixture of blood. The blood was sorted into three distinct streams, consisting of the one micron beads, red blood cells and white blood cells, respectfully.

[1]Davis JA, Inglis DW, Sturm JC, Austin RH

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