Editorial: A brief welcome to this new electronic journal on microfluidic applications to biology and medicine

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Spurred by breakthroughs in molecular characterization and microcircuit fabrication techniques, the last decade has seen significant growth in the fields of biophysics and biomedical engineering. Quantum dots, PCR amplification, optical tweezers, AFM, nanocolloids, electrosprays, etc., have catalyzed a myriad of new ways to detect antigens, assay proteins, diagnose diseases, and decipher the genome. Nanomedicine based on immunocolloids is no longer a dream. The time is ripe to bring these diagnostic and drug delivery techniques out of the laboratory and into miniature chips that can be used in the field. Glucose detection kits, DNA hybridization microarrays for genetic identification, insulin inhalers, etc., are just the first of such products that can drive a major biotechnology industry in the near future. This extension from the lab to field requires, however, a robust microfluidic platform that is the focus of our new journal, *Biomicrofluidics*. These microfluidic techniques allow us to transport fluids and manipulate colloid/cells/molecules in small devices. Cellular and molecular level operations, like electroporation and chip-scale optical spectroscopy of molecules, all require specific microfluidic designs that are not yet available. Indeed, the same microfluidic know-how can be used to assemble biological materials (membranes and bones) via directed assembly.

The large Editorial Board of *Biomicrofluidics* is interdisciplinary and multinational, which reflects the composition of this new community. With rapid turnaround and wide circulation, we hope to promote interaction among the large but scattered research communities over the globe. The open-access format and full-media capability are designed to allow rapid dissemination of new techniques and information to the biotechnology industry. The Blog page on the journal website is intended to be a bulletin and sounding board for the community to announce conferences and to solicit responses to new ideas/technological challenges.

We anticipate a major growth in the biotechnology industry and a corresponding increase in microfluidic research. It is our hope that *Biomicrofluidics* will serve this growing community by offering a common link and a communication conduit among the various scientific and engineering disciplines that participate in this exciting new field. We welcome your submissions; visit the journal's submission and peer review website at <http://bmf.peerx-press.org>.