# Stephen J. DeCamp

www.stephenjdecamp.com

906-399-3286 | decamp@hsph.harvard.edu | www.linkedin.com/in/stephenjdecamp | Somerville, MA

---

## SCIENTIFIC RESEARCH PROFESSIONAL

RESEARCH PROGRAM DEVELOPMENT | TARGETING MISSION DRIVEN RESEARCH INDUSTRIES

An independent and creative research associate with strong scientific communication skills and over 10 years of research experience in academic labs. A focus on understanding pathophysiological processes by interfacing cell biology with soft-matter physics. Proficient at balancing high-level research strategy simultaneously with 'down-in-the-weeds' details. As an experimentalist, I approach research problems with goal-oriented strategies, an open mind for creative solutions, a collaborative, team-oriented attitude, and a sense of humor.

## AREAS OF EXPERTISE

Cell Culture | Microscopy | Quantitative Image Analysis | Cell Mechanics | Cell Metabolism | Coding

Active Matter Physics | Project Leadership & Development | Personnel Management | Communication

---

## EXPERIENCE

Harvard T.H.Chan School of Public Health — Boston, MA

Research Associate — September 2019 – Present

Postdoctoral Research Fellow — September 2016 – August 2019

The goal of this project is to measure the metabolic requirements of cell mechanical processes. I discovered that cells in epithelial layers undergo a significant metabolic switch when transitioning from a low-motility to a high-motility state exhibiting collective cell migration. This model recapitulates cell mechanical activities observed in cancer metastasis, asthma pathogenesis, wound healing, and embryonic development.

- Generated a new cell line with transfected metabolism biosensors.
- Coded image analysis algorithms to quantify cell metabolic properties.
- Initiated project and acted as project lead; managed a team of researchers with diverse backgrounds.
- Simultaneously measured cell mechanics, dynamics, and metabolic properties of single cells.
- Discovered a spatial gradient in the cell metabolic state during epithelial cell layer migration.

Brandeis University — Waltham, MA

Graduate Research Associate — September 2010 – August 2016

This project explored emergent phenomena that arises from systems composed of collections of biological active matter. I developed a model experimental system of topologically confined active gels and active nematic liquid crystals composed of reconstituted cell cytoskeleton and motor proteins. This research resulted in the discovery of a new ordered phase of nematic defects and resulted in numerous publications in *Science* and *Nature*.

- Created custom image analysis algorithms to quantify the dynamics of active nematic liquid crystals.
- Generated protocols for stable and reproducible microtubule polymerizations and protein purifications.
- Invented an experimental technique for generating large, flat, 2D oil-water interfaces.
- Performed sample prep, polarization-light microscopy and fluorescence-light microscopy.
- Designed and fabricated custom micro-fluidics using CAD software and soft-lithography cleanroom processes, resulting in rapid-prototyping PDMS chips.

---

## EDUCATION

Doctor of Philosophy, Physics, Attachment in Quantitative Biology, 2016, BRANDEIS UNIVERSITY

Bachelor of Science, Physics, Secondary in Astrophysics, 2010, MICHIGAN STATE UNIVERSITY