Stephen J. DeCamp, PhD

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SUMMARY

An independent, cross-functional, and creative scientist with strong communication skills and over 13 years of research experience. Primary focus leverages the quantitative sciences to elucidate complex biomedical processes. Ability to balance high-level research strategy simultaneously with in-the-weeds details. Track-record of successfully employing image and data analytics to achieve high-impact advances in the field. As an experimentalist, I approach research problems with an open mind for creative solutions, a collaborative, team-oriented attitude, and a sense of humor.

EDUCATION

Brandeis University - PhD. in Physics | Attachment in Quantitative biology   2010 – 2016
Michigan State University - B.S. in Physics and Astrophysics   2006 – 2010

RESEARCH EXPERIENCE

My research has resulted in 10 peer reviewed publications many of which are in high impact journals such as *Nature*, *Nature Materials*, and *Science*. (Full list is available upon request.)

Harvard T.H. Chan School of Public Health   **Boston, MA**
Postdoctoral Research Fellow   **2016 – Present**
- Designed and built a custom image analysis pipeline in Matlab that measures cell metabolic indices (redox, glucose, mitochondria) simultaneously with multi-cell tracking (dynamics), cell segmenting (morphology), and traction force (mechanics) analysis on big datasets (~1M cells).
- Managed a multidisciplinary team of developers, medical doctors, and physicists. Initiated and led a project from initial ideation, strategy, and experimental design, to analysis and publication.
- Coded novel image analysis for cancer pathology research that measures immune cell infiltration into patient derived tumors while integrating tissue mechanics data from large cyclic immunofluorescence images (~100k cells).
- Founded and led a Boston-based meetup group (Boston Soft Matter Socials) that fostered synergy between researchers with diverse backgrounds ranging from physics, math, engineering, and biology.

Brandeis University   **Waltham, MA**
Graduate Research Associate   **2010 – 2016**
- Pioneered novel bioengineered materials, spawning a new area of physics in active matter research.
- Generated experimental and analytical protocols now used ubiquitously throughout the field, including microtubule polymerization and protein purifications resulting in gram-quantities of tubulin.
- Coded novel algorithms for defect orientation analysis and microtubule filament tracking, including statistical analysis, to quantify material properties in novel biological-based active materials.
- Expertise in optics including confocal, fluorescence, and polarization-light microscopy for imaging biological-based samples.

TECHNICAL SKILLS

Computational - Matlab image processing and statistical analysis. Skilled in data visualization and presentation. **Tools:** ImageJ, Mathematica, Ilastik Machine Learning tool for pixel classification.
Wet Lab - Mammalian cell culture and transfection. Protein purification. Light, fluorescence, confocal, phase, and polarization light microscopy. Microfabrication techniques including photolithography, and rapid PDMS microfluidic prototyping.

ADDITIONAL RELEVANT EXPERIENCE

Mentored 11 students on independent research projects spanning 10 years at Brandeis and Harvard.
Presented scientific findings at over 20 national and international meetings and seminars.
Organized and hosted a conference with over 80 participants from local hospitals and research universities.
Extensive experience in grant and publication writing and data visualization/figure creation.