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Lisa J. Burton

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Education

June 2013 — **Massachusetts Institute of Technology**, Cambridge, MA
Candidate for Ph.D., Mechanical Engineering, Minor: Applied Mathematics GPA: 5.0/5.0
National Science Foundation Graduate Research Program Fellow (2008-2011), Meredith Kamm Award for outstanding doctoral student in Mechanical Engineering (2010)
Thesis: How to Move: Optimal Kinematics and Morphology in Bio-inspired Locomotion

June 2009 — **Massachusetts Institute of Technology**, Cambridge, MA
Master of Science in Mechanical Engineering GPA: 5.0/5.0

May 2007 — **Duke University**, Durham, NC
Bachelor of Science in Mechanical Engineering, Magna Cum Laude GPA: 3.9/4.0

Experience

Aug. 2007-Present — **Massachusetts Institute of Technology**, Cambridge, MA
Research Assistant, Hatsopulous Microfluids Lab, Department of Mechanical Engineering
- Became expert in physical, mathematical and computational modeling, optimization, image processing and simplifying complex systems and designs for application
- Modeled biological and artificial swimming systems and optimized strokes for metrics such as speed and efficiency. Developed low order method of characterizing biological motion and compared results with optimal strokes to rationalize biology and inform robotic design
- Advised 5 undergraduate students (2 senior theses) in projects ranging from design to computational modeling

Aug. 2010-Present — **Product Design Startup**, Cambridge, MA
Independent Consultant
- Created *Cocktail Cruisers* in collaboration with Prof. John Bush and Chef José Andrés, earning 3rd place, MIT de Florez Design Award
- Developed and refined prototype for edible culinary device, to appear in restaurants in 2013
- Conceptualized and developed algorithm for blank page detection and note harvesting for *ecoShred*

Aug.-Dec. 2011 — **Massachusetts Institute of Technology**, Cambridge, MA
Teaching Assistant, Mechanics and Materials
- Graded exams for class of 200 students, managed 5 undergraduate graders, assisted with 2 lab sections and led 1 lab section

Aug.-Dec. 2010 — **Harvard University**, Cambridge, MA
Teaching Fellow, Science and Cooking: From Haute Cuisine to Soft Matter Science
- Developed curriculum for new course of 300 students, featuring 11 world-renowned chefs
- Led 1 lab per week for 15 students and held 1 office hour per week

Leadership

Aug. 2009-Present — **MIT Burton Conner Dormitory**, Cambridge, MA
Graduate Resident Tutor
- Dedicated 10 hours per week providing academic, career, and personal mentorship to 47 residents
- Organized dorm-wide baking contest for more than 100 participants and over 150 attendees

Jan. 2005- May 2007 — **Duke University Techtronics Program**, Durham, NC
Program Coordinator (May 2006-May 2007), Student Teaching Fellow (Spring 2005, Spring 2006)
- Oversaw hands-on, inquiry based engineering after-school program for 40 middle school students as 1st undergraduate program coordinator in group's history
- Wrote training manual and resource guide for incoming Techtronics fellows and organized and conducted 2 3-hour training sessions, collaborating with university education professors and middle school science teachers
- Developed math and science curriculum published on www.teachengineering.com

Activities

- **Boston Celtics and Stats, Inc.**-Data collection specialist (2012)
- **Singapore University of Technology and Design** and **MIT Teaching and Learning Laboratory**-Developed product design vignette (2012)
- **Women in Technology Program**-Instructor and Volunteer (2009-2012)
- **Museum of Science Engineering is Elementary (EiE)**-Technical reviewer (2008-2010)
- Member of **American Physics Society**, **American Society of Mechanical Engineering**

Skills

Proficient in: MATLAB, Mathematica, Maple, LaTeX, Microsoft Office Suite, iLife, Adobe Suite, SolidWorks, laser cutting, 3D printing, EazyDraw. Familiar with: AutoCAD, Linux/Unix, C++

Publications

1 first author (refereed), 1 co-author (refereed), 3 conference publications, 6 conference presentations, 2 invited talks and 4 co-author on presentation abstract, featured in ASEE's *Prism* magazine