

# SARA L. CAMPBELL

## CONTACT

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<http://web.mit.edu/campsoup/www>

## EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA

- B.S. Physics, June 2010
- Relevant Coursework: Quantum Physics I-III, Statistical Physics I and II, Classical Mechanics II, Experimental Physics I and II, Atomic Physics II, Undergraduate Physics Thesis, Differential Equations, Analysis I, Abstract Algebra I and II, Chinese I-VI

## LEADERSHIP

VICE PRESIDENT

MIT Society of Physics Students

May 2009 - May 2010

- Organized social events, sat on advice panels, gave presentations, hosted guest speakers, made advertisement posters. Proposed and ran several new events.

## ORGANIZER

Conference for Undergraduate Women in Physics

January 2010 - May 2010

- Organized an MIT group trip to the Conference for Undergraduate Women in Physics at Yale.
- Coordinated with Yale about jointly hosting the Northeast conference at MIT next year, held meetings at MIT to select speakers and delegate responsibilities.

## AWARDS

GRADUATE RESEARCH FELLOWSHIP

National Science Foundation

Spring 2010

JOEL MATTHEW ORLOFF AWARD

MIT Department of Physics

Spring 2010

- Awarded for outstanding service to the physics community.

CRITICAL LANGUAGE SCHOLARSHIP

U.S. Department of State

Summer 2010

- Attended an intensive summer Chinese language program at Beijing Language and Cultural University.

## EXPERIENCE

UNDERGRADUATE RESEARCHER for Professor Martin Zwierlein

MIT/Harvard Center for Ultracold Atoms, Cambridge, MA

January 2009 - June 2010

- Senior thesis project was to help build a 2D Magneto-Optical Trap/Zeman Slower/3D MOT machine for ultracold lithium-potassium mixtures.
- Constructed the potassium and lithium laser systems, including components such as grating-stabilized diode lasers and electro-optical modulators.
- Designed PCBs and built electronics for driving and feedback such as acousto-optical modulator drivers, laser lockboxes, and Fabry-Perot drivers.
- Helped clean, assemble and bake the ultrahigh vacuum chamber.

UNDERGRADUATE RESEARCHER for Dr. James Spencer  
SLAC National Accelerator Laboratory, Menlo Park, CA  
Summer 2008

- Designed new photonic bandgap fiber accelerators in the Advanced Accelerator Research Department.
- Used simulation software to design the first new viable accelerating structure with both accelerating and focusing modes. With collaborators at SLAC, filed a U.S. provisional patent application for our original idea.

UNDERGRADUATE RESEARCHER for Professor Joseph Formaggio  
MIT Laboratory for Nuclear Science, Cambridge, MA  
January 2008 - Fall 2008

- Built a prototype for a high-voltage power supply for a compact neutron source to be used for dark matter experiment calibration.

UNDERGRADUATE RESEARCHER for Professor Steven Leeb  
MIT Laboratory for Electromagnetic and Electronic Systems, Cambridge, MA  
Fall 2006 - Summer 2007

- Assembled and tested lab kit prototypes for a new electrical engineering class on integrated circuit design.
- Designed and built a serial chip tester.

#### CAMP COUNSELOR

Awesome Math Summer Program, Dallas, TX  
Summers 2006 and 2007

- Taught problem-solving classes, wrote problem sets, graded tests and homework.
- Residential advisor for an apartment of 8 students.

#### SKILLS

MATLAB, HTML,  $\LaTeX$ , EAGLE, Solidworks, Soldering, Band Saw, Cold Saw, Drill Press, Mill, Lathe, Intermediate Mandarin Chinese