Elizabeth M. Boatman

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University of California, Berkeley • **Berkeley, California**
Doctor of Philosophy *in* Materials Science and Engineering, *expected May 2012*
Master of Science *in* Materials Science and Engineering, *conferred May 2009*

Beloit College • **Beloit, Wisconsin**
Bachelor of Science *in* Physics and Applied Chemistry, *conferred May 2007*
Summa cum laude

MAJOR RESEARCH PROJECTS (*PRESENT*)

- ***Mechanical characterization of composite ceramics*** • supervised by Dr. Robert Ritchie, UC Berkeley
- ***Electron microscopy and X-ray characterization of novel microstructures in fossilized bones*** • supervised by Dr. Ronald Gronsky, Dept. of Materials Science and Engineering, and Dr. Mark Goodwin, UC Museum of Paleontology, UC Berkeley

RESEARCH PROJECTS (*PAST*)

- ***Carbon sequestration: Fabrication of a novel, bio-inspired $CaCO_3$-based construction material*** • supervised by Dr. Hari Dharan, UC Berkeley **(Fall 2009)**
- ***High-temperature evolution of the sapphire-platinum interface*** • supervised by Dr. Andreas Glaeser, Dept. of MSE, UC Berkeley **(Fall 2007 - Spring 2009)**
- ***The bionic man: An exploration of physical and neural interface techniques for rebuilding the human body*** • Chemistry Dept. senior thesis, Beloit College **(Spring 2007)**
- ***Formation mechanisms of giant planets*** • Physics Dept. senior research project, Beloit College **(Spring 2007)**
- ***The effect of Prozac exposure on the development of* Xanthapus *tadpoles*** • supervised by Dr. Brett Woods, Dept. of Biology, Beloit College **(Spring 2007)**
- ***Vapor deposition growth of carbon nanotubes*** • supervised by Dr. George Lisensky, Dept. of Chemistry, Beloit College **(Fall 2005)**
- ***Cholesteric liquid crystals*** • supervised by Dr. George Lisensky, Dept. of Chemistry, Beloit College **(Spring 2005)**
- ***Installation of new tracking and imaging systems of 22-inch optical telescope and photography of stellar bodies*** • supervised by Dr. Paul Stanley, Dept. of Physics, Beloit College **(Spring 2005)**

RESEARCH INTERNSHIPS

Woods Hole Oceanography Institute • Department of Marine Chemistry and Geochem.
- *Selenium fractionation and dating the rise of atmospheric O_2*
- Mentored by Dr. Olivier Rouxel **(Summer 2007)**

Stanford University • Materials Science and Engineering Department
- *Measuring exciton diffusion length in organic photovoltaics for use in solar cells*

- Mentored by Dr. Michael McGehee and funded by CPIMA (Summer 2005)

Beloit College • Chemistry Department

- *Development of a safer, easier, faster synthesis of CdSe quantum dots*
- Mentored by Dr. George Lisensky and funded by the Sanger Summer Scholars Program **(Summer 2004)**

PUBLICATIONS

- E. M. Boatman, "High-Temperature Evolution of the Sapphire-Platinum Interface," Master of Science official project report, Department of Materials Science and Engineering at the University of California, Berkeley (2009).
- E. M. Boatman, G. C. Lisensky, and K. J. Nordell, "A Safer, Easier, Faster Synthesis for CdSe Quantum Dot Nanocrystals," *J. Chem. Ed.*, **82**, 1697-1699 (2005).
- G. C. Lisensky and E. M. Boatman, "Colors in Liquid Crystals," *J. Chem. Ed.*, **82**, 1360A (2005).

TEACHING, LEADERSHIP, SERVICE, AND EXTRACURRICULAR

Teaching and tutoring:

- *University of California, Berkeley* • Conduction of all laboratory sessions for Transmission Electron Microscopy Laboratory, a graduate student course **(Spring 2010)**
- *University of California, Berkeley* • Engineering PREP tutor **(Summer 2009)**
- *Elizabeth House* • Volunteer homework assistance **(Spring 2008, Spring 2009)**
- *Beloit College* • **teaching**: General Physics II **(Spring 2007)**, Finite Mathematics **(Spring 2007)**, General Physics I **(Fall 2006),** Introduction to Astronomy **(Fall 2006),** General Chemistry **(Spring 2004 - Fall 2005)**, Chemical Equilibrium **(Spring 2005)** • **tutoring**: General Physics I **(Fall 2006)**, Elementary school student tutor through the Campus and Community Outreach Center (**Fall 2006 - Spring 2007)**

***Laboratory coordinating and conducting*:**

- *Africa Materials Research Society* meeting in Tanzania • Nanotechnology labs in the undergraduate curriculum **(December 2007)**
- *Beloit College* • Girls and Women in Science **(Spring 2007, Spring 2005),** Introduction to Astronomy **(Fall 2006)**, General Physics I **(Fall 2006)**, Materials Science and Nanotechnology for Chemists workshop **(August 2004)**

Newspaper and website publications:

- *Berkeley Science Review* • Website blog contributing writer **(2010-present)**
- *Dept. of Materials Science and Engineering* • Writer of graduate student spotlight pieces for department website **(in progress)**
- *University of California Museum of Paleontology (UCMP)* • Online museum research blog contributing writer **(2010-present)**
- *Beloit College* • Contributing writer (**Fall 2004 - Spring 2007)**
- *John Burroughs High School* • Opinions Editor **(2002-2003)**, Contributing writer **(1999-2002)**

Leadership and service:

- *University of California, Berkeley* • Founder of the MSE Graduate Student Council **(2010),** SINAM outreach effort conducting nanotechnology labs with 8th grade children from disadvantaged backgrounds **(2010),** Women in Materials Science (WIMS) Co-chair **(2010)** and Signatory **(2009)**

- *Beloit College* • Physics and Chemistry Depts. new faculty search committee member **(Spring 2007),** Habitat for Humanity shift leader **(Fall 2006 - Spring 2007),** Student Representative to new science building Planning Committee **(Spring 2004 - Spring 2005)**

Athletics:

- *University of California, Berkeley* • Intramural soccer team: Balls of Ferrite, Captain, defensive back **(present) and** Shear Strength, striker **(Summer 2008 – 2010)**; Intramural softball: Your Mom, second base **(present)**; Materials Science and Engineering Grand Prix: go-kart driver **(Spring 2008, finalist Winter 2008, Spring 2010)**

FELLOWSHIPS, AWARDS, AND HONORS

- Jurassic Foundation research grant **(2010)**
- Department of Defense, National Defense Science and Engineering Fellowship (NDSEG) **(August 2007 - present)**
- University of California, Berkeley, Chancellor's Fellowship **(received 2007)**
- John H. McNair Award **(Spring 2007)**
- Elizabeth W. Souter Award **(Spring 2007)**
- Ferwerda Science Scholarship **(Beloit College: Fall 2006 - Spring 2007)**
- Dean's List **(Beloit College, Fall 2003 - Spring 2007)**
- Phi Beta Kappa **(inducted May 2006)**
- Best Public Speaker **(Pew Science and Mathematics Research Symposium, October 2005)**
- Ernie Guenther Memorial Scholarship **(ASM-Milwaukee Chapter, 2005)**
- Physics Dept. Prize for Exceptional Work in the Observatory **(Beloit College, May 2005)**
- The Leadership Institute **(Beloit College, Summer 2004 through Spring 2005)**
- First-year Outstanding Student in Chemistry **(CRC Press Handbook, May 2004)**
- Xerox Corporation National Merit Scholarship **(Fall 2003 - Spring 2007)**