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Juliana Bernal Ostos

EDUCATION

University of California, Santa Barbara, Materials Department — **Fall 2007 Present**
Graduate student in Macromolecular and Biomolecular Materials,
Ph.D. expected 2012. GPA 3.91

Franklin W. Olin College Of Engineering — **Fall 2003 Spring 2007**
Member of the second graduating class,
BS in Mechanical Engineering, May 2007. GPA 3.60

SKILLS

Extensive experience with presentations and team work. Bilingual (Spanish, English).

Computer	**Laboratory**	**Machine Shop**
Matlab, Solidworks, Microsoft Office, Adobe CS3, LaTeX, Molden, Chimera, PyMol	NMR, GPC, DSC, TGA, FTIR - Raman, UV-VIS, Rheology, Optical Microscopy, XRD, SEM	Lathe, Mill, Band Saw, Drill Press, work with Sheet Metal

RESEARCH EXPERIENCE

Graduate Research Assistant: Stucky Group — **Fall 2007 Present**
UC Santa Barbara, Materials Department
Work on developing bio-inspired energy-dispersive composites. Create new materials and test mechanical properties. Pursue and maintain collaboration with Prof. Frank Zok and Prof. Tony Evans at UCSB.

Senior Consulting Program for Engineering — **Aug 2006 May 2007**
Franklin W. Olin College Of Engineering, Boeing Company
Work on materials selection for design of lightweight aircraft seat. Independently study polymer flammability and flame-retardant mechanisms to inform materials selection. Present biweekly to faculty and peers. Write two reports for Boeing. Manage the $15,000 budget and keep project records.

Materials Science Laboratory Assistant — **Jan 2006 May 2007**
Franklin W. Olin College Of Engineering, Prof. Debbie Chachra
Maintain materials science laboratory equipment (order parts, schedule repairs, perform upkeep). Instruct students in its use.

Materials Science Research Intern — **Jun 2006 Aug 2006**
Bose Corporation, Supervisor: Lifun Lin, Ph.D.
Investigate the effects of ink formulation and preparation methods on coating properties. Establish the coating transfer conditions and characterize the coating uniformity and composition by SEM/EDX analysis. Present findings to Materials Science Division.

Nanofluids Research Assistant — **May 2005 May 2006**
Franklin W. Olin College Of Engineering, Prof. Rebecca Christianson
Make and characterize nanofluids. Write research papers. Aid in the preparation for conferences. Present research to various audiences.

AWARDS

- UCSB Women in Science and Engineering Diversity Award: Inaugural recipient of award celebrating mentorship and outreach activities of graduate students (2009)
- MRL Diversity Fellowship (2008)
- Olin Scholarship: Four-year, $130,000 full room and tuition merit scholarship (2003-2007)

MENTORING AND TEACHING

School for Scientific Thought, Reverse Engineering Instructor — **Fall 2009**
UC Santa Barbara, California NanoSystems Institute Program

Design and teach a course for local high school students on reverse engineering and mechanical design. Course introduces engineering to high school students through hands-on activities and gets them excited about the engineering fields.

Apprentice Researcher Program, Mentor — **Summer 2009**
UC Santa Barbara, California NanoSystems Institute Program

Mentor two local female high school students in different 4-week projects. Introduce chemistry and engineering ideas behind the project, train them in relevant laboratory techniques, data analysis, and presentations. Provide feedback to students and to program directors.

Structure and Properties of Materials, I. Teaching Assistant — **Fall 2008**
UC Santa Barbara, Prof. David Clarke

Hold office hours, grade homeworks and exams, create answer keys and attend lectures. Class has students from Mechanical, Electrical and Chemical Engineering.

West Point Cadet Research Mentor — **Fall 2008 Present**
UC Santa Barbara, Materials Department

Provide advice and mentoring to cadet involved in current research project. Set goals and expectations for the year. Discuss current papers and applications of new ideas to research project. Help prepare for two technical conferences. Assess cadet's progress and performance and provide a grade.

UCSB-West Point AIAD Program Mentor — **Summer 2009 Summer 2008**
UC Santa Barbara, Materials Department

Mentor two cadets from West Point. Explain research project, train on laboratory techniques, data analysis and research presentations. Provide feedback to cadets and to West Point professors.

OUTREACH ACTIVITIES

FIRST Robotics Team, Mechanical Engineering Mentor — **Fall 2008 Present**
Dos Pueblos Engineering Academy, Goleta CA

Teach high school seniors how to use the machine shop. Oversee design and manufacturing of a robot in six weeks. Lead a team of female students in charge of two robot sub systems. Organize and oversee scouting team during competition. Chaperone students during out-of-town competitions.

It's a Material World, Volunteer — **Spring 2007 Present**
UC Santa Barbara, Materials Research Laboratory Program

Participate in Science Night at elementary schools around the area. Man an exhibition and explain scientific concepts to elementary school students and their parents.

Family Ultimate Science Exploration (FUSE) Night, Volunteer — **Spring 2007 Present**
UC Santa Barbara, California NanoSystems Institute Program

Lead Spanish-speaking sections at local middle schools' FUSE Night. Explain scientific concepts to middle school students and their parents, run a demonstration and lead a hands-on activity.

LEADERSHIP AND ACTIVITIES

- Webmaster and photographer for Hands-on Research School in Complex Systems; Sao Paulo, Brazil summer 2009; http://www.handsonresearch.org/
- Webmaster for Stucky group; Fall 2007 to present; http://www.chem.ucsb.edu/~stuckygroup/stuckygroup/
- Member of recruiting weekend committee, Materials and Chemistry Departments UCSB
- Soccer and Ultimate Frisbee player, intramurals and local leagues
- Class of 2007 Representative in student government; Fall 2006 to Spring 2007
- Founding Member and Treasurer of ASME Section at Olin College; Fall 2005 to Spring 2007
- Student representative to various college-wide committees; Fall 2003 to Spring 2007