

## LILIAN P. DAVILA

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### EDUCATION

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**Ph.D.**, UNIVERSITY OF CALIFORNIA, DAVIS

Department of Chemical Engineering and Materials Science, 99–6/04 (granted 3/05)

Advisors: Prof. James F. Shackelford and Prof. Subhash Risbud

Technical Advisor: Dr. Maria-Jose Caturla, Lawrence Livermore National Laboratory

Dissertation: *Atomic-Scale Simulations of Vitreous Silica under High Pressure: Structure and Properties.*

**Master of Science (M.S.)**, UNIVERSITY OF CALIFORNIA, DAVIS

Department of Chemical Engineering and Materials Science, 93–6/98 (GPA 3.5)

Advisors: Prof. James F. Shackelford and Prof. Subhash Risbud

Thesis: *Computer Modeling Studies of the Interstitial Structure of Selected Silicate Polymorphs.*

**Bachelor of Science (B.S.)**, UNIVERSITY OF CALIFORNIA, DAVIS

Mechanical Engineering and Materials Science, 9/87–6/92

### DISTINCTIONS SUMMARY (PLEASE SEE ALSO FELLOWSHIPS & HONORS AND AWARDS)

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**UC President's Postdoctoral Fellowship**, UNIVERSITY OF CALIFORNIA, MERCED and LLNL

Awarded by the Office of the President, University of California 2006-2008

Highly competitive (6% success rate) fellowship provided to encourage outstanding Ph.D. recipients to pursue academic careers at the University of California. PPF program seeks qualified candidates committed to university careers in research, teaching and service that will enhance the diversity of the academic community at the University of California.

**Nominated for the Munir Award for Outstanding Dissertation 2004-2005**, College of Engineering, UNIVERSITY OF CALIFORNIA, DAVIS 2005

**Student-Employee Graduate Research Fellowship**, LAWRENCE LIVERMORE NATIONAL LABORATORY, Livermore, California 2000-2004

Awarded competitive fellowship to aspiring graduate students from interdisciplinary areas of research to perform doctoral research.

**Soroptimist Sierra Nevada Region's Fellowship**, SOROPTIMIST INTERNATIONAL OF THE AMERICAS, Sacramento 2000

Awarded competitive fellowship to outstanding women students working for doctoral degrees. Award encourages women in non-traditional fields of study.

**Appreciation Award**, CAPITOL CENTER MESA (Math, Engineering and Science Achievement) Program, Sacramento State University, Sacramento 2000

Recognized in annual ceremony as community supporter of the statewide program that encourages high school students to pursue these careers.

**Towards Outstanding Post-graduate Students Award**, UC DAVIS 1998

Award to encourage science and engineering students to pursue doctoral degrees.

### PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

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- ❖ Materials Research Society
- ❖ American Ceramic Society, TMS and Materials Advantage
- ❖ Tomorrows-professor affiliate since 1999, facilitated by Stanford University
- ❖ Women in Materials Science and Engineering affiliate since 2003.

## PROFESSIONAL EXPERIENCE

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- UC President's Postdoctoral Fellow**, UC MERCED and LLNL 2006 - present  
Fellowship awarded by the Office of the President, University of California  
Investigate structure and properties of amorphous nanostructures and rare-earth oxides using computer simulations. Prof. V.J. Leppert, School of Engineering, UCM and Dr. E.M. Bringa, LLNL, Advisors.
- Guest Researcher**, UNIVERSITY OF CALIFORNIA, DAVIS 11/03 - 07/05  
Participated in development of a visualization tool for materials science learning. Prof. B. Hamann, Computer Science and Prof. J. Shackelford, Dept. of Chem. Eng. & Mat. Sci.
- Graduate Research Fellow**, LAWRENCE LIVERMORE NATIONAL LABORATORY 4/03 - 11/05  
Performed multi-million MD simulations of shock-induced faulted loop emission in FCC metals. Dr. E. Bringa, Chemistry and Materials Science Directorate.
- Graduate Research Fellow**, LAWRENCE LIVERMORE NATIONAL LABORATORY 10/02 - 6/04  
Examined nature of silicate melts at high pressures using MD simulations. Dr. B. Sadigh, Chemistry and Materials Science Directorate.
- Student-Employee Graduate Research Fellow**, UC DAVIS & LLNL 7/00 - 12/04  
Performed MD and *ab-initio* simulations to study modifications of silicate glasses in relation to densification and degradation of optical properties. Prof. J. Shackelford and Prof. S. Risbud, Dept. of Chem. Eng. & Mat. Sci, UC Davis. Dr. M.-J. Caturla, CMS, LLNL.
- Graduate Student Researcher**, UNIVERSITY OF CALIFORNIA, DAVIS 1/00 - 3/00  
Reproduced internal surface area and energies of zeolite structures using simulations. Prof. A. Navrotsky and Prof. J. Shackelford, Dept. of Chem. Eng. & Mat. Sci.
- Graduate Student Researcher**, UNIVERSITY OF CALIFORNIA, DAVIS, LAWRENCE BERKELEY NATIONAL LABORATORY & CERP FOUNDRY, McClellan Air Force Base, CA 1/99 - 2/00  
Three concurrent projects: 1) Used AEM to characterize chemical, structural and morphology of aerosols at the National Center for Electron Microscopy in LBNL, 2) Analyzed green sand using XRD, SEM and mechanical tests at UCD/McClellan Air Force Base. Prof. J. Shackelford, Dept. of Chem. Eng. & Mat. Sci & Prof. T. Cahill, Atmospheric Science, UC Davis, and 3) Characterized Si nanoparticles via AEM at LBNL. Prof. S. Risbud, Dept. of Chem. Eng. & Mat. Sci, UC Davis.
- Graduate Student Researcher**, UNIVERSITY OF CALIFORNIA, DAVIS 9/96 - 12/98  
Analyzed void structures of selected silicate polymorphs in 3-D and quantified its volume. Prof. J. Shackelford and Prof. S. Risbud, Dept. of Chem. Eng. & Mat. Sci.
- Research and Development Assistant**, CERACON INC., Sacramento, CA 6/93 - 11/94  
Prepared SEM samples, analyzed photomicrographs of metals, ceramics, plastics and bioengineering materials. Dr. S. Rele, R&D Laboratory.

## FELLOWSHIPS

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**Inspiring the Coalescence of Fundamental & Application Specific Functional Nanomaterial Development Fellowship**, NORTHWESTERN UNIVERSITY, Evanston, IL July 9-12, 2007

Awarded fellowship to attend **NSF-sponsored** short courses focused on nanotechnology: from atomic-level to molecular level manufacturing and applications. Awarded full fellowship (\$2000-tuition, travel and lodging costs).

**Electron Microscopy Summer School**, CORNELL UNIVERSITY, Ithaca, NJ July 13-15, 2006

Awarded scholarship to participate in specialized microscopy course. Competitive course focused on the principles of electron energy loss spectroscopy (EELS) theory, image simulation at the atomic scale and image formation in the electron microscope. Full scholarship awarded (\$2500 tuition, travel expenses and lodging costs).

**Nanoscale rare-earth and silicon oxides studies via experimental and computational methods**, UC PPF, Research Proposal, UC MERCED & LLNL 2006-2008

Awarded full research fellowship (\$80,000 and \$8,000 research expenses).

**Nanotechnology, Biotechnology and Green Manufacturing for Creating Sustainable Technologies Fellowship**, NORTHWESTERN UNIVERSITY, Evanston, IL June 20-24, 2005

Awarded fellowship to attend **NSF-sponsored** short courses focused on nanotechnology, biotechnology and green manufacturing for creating sustainable technologies. Awarded full fellowship (\$2000-tuition, travel and lodging costs).

**Multi-scale Modeling and Simulation of Nano Mechanics and Materials Fellowship**, NORTHWESTERN UNIVERSITY, Evanston, IL June 7-11, 2004

Awarded fellowship to attend **NSF-sponsored** short courses focused on multi-scale modeling and simulation of nano mechanics and materials. Awarded full fellowship (\$2000-tuition, travel and lodging costs).

**Computational Nanomechanics of Materials Fellowship**, RENSSELAER POLYTECHNIC INSTITUTE, Chicago, IL April 25-26, 2004

Awarded full fellowship to participate in **NSF-sponsored** workshop focused on tutorials of computational nanomechanics for junior scientists. Awarded full fellowship (\$2500-tuition, travel and lodging costs).

**Student-Employee Graduate Research Fellowship**, LAWRENCE LIVERMORE NATIONAL LABORATORY, Livermore, California 2000-2004

Awarded competitive fellowship to aspiring graduate students from interdisciplinary areas of research to perform doctoral research. Awarded full funding for four years (\$120,000+).

## HONORS AND AWARDS

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**Scholarship Blackwell-Tapia**, INSTITUTE FOR MATHEMATICS AND ITS APPLICATIONS, Minneapolis November 2006

**Awarded Diversity Certificate**, Diversity Programs, UC DAVIS September 2005

**Graduate Student Travel Award**, Office of the Graduate Studies, UC DAVIS May 2003

**First-place Poster Award**, UC DAVIS April 2001

Organized by the AMERICAN CERAMIC SOCIETY Northern California Section.

**Member of Program in College Teaching**, Teaching Resources Center, UC DAVIS 1999-2000  
Selected fellow in one-year program aimed to train future educators.

**National School of X-ray and Neutron Diffraction Scholarship**, ARGONNE NATIONAL LABORATORY, Chicago, IL August 2000

Awarded full scholarship to attend a two-week program designed to address use of x-ray and neutron diffraction techniques to analyze the structure of materials.

**LANCE-HIPPO Workshop on Neutron Diffraction Scholarship**, LOS ALAMOS NATIONAL LABORATORY, Santa Fe, NM August 1999

Awarded full scholarship to learn about diffraction facilities and establish collaborations.

**Guest graduate student panelist in national conference**, NFS-funded NATIONAL ALLIANCE FOR MINORITY PARTICIPATION (AMP) PROGRAM, Florida July 1998

Panelist to speak to UG students from nationwide AMP-universities about graduate school.

## PEER-REVIEWED PUBLICATIONS

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1. **Davila, L.P.**, P. Erhart, E.M. Bringa, M.A. Meyers, V.A. Lubarda, M. Schneider, R. Becker and M. Kumar, "Atomistic Modeling of Shock-Induced Void Collapse in Copper," *Applied Physics Letters*, 86: 1619021-1619023 (2005).
2. **Davila, L.P.**, M-J Caturla, A. Kubota, B. Sadigh, T. Diaz de la Rubia, J.F. Shackelford, S.H. Risbud and S.H. Garofalini, "Transformations in the Medium-Range Order of Fused Silica under High Pressure," *Physical Review Letters*, 91 (20): 2055011-2055054 (2003).
3. Felter, T.E., L. Hrubesh, A. Kubota, **L.P. Davila** and M-J Caturla, "Laser Damage Probability Studies of Fused Silica Modified by MeV Ion Implantation," *Nuclear Instruments and Methods B*, 207: 72-79 (2003).
4. **Davila, L.P.**, S.H. Risbud and J.F. Shackelford, "Interstitial Nanostructures in Engineered Silicates," *Ceramic Nanomaterials and Nanotechnology, Ceramic Trans.*, 137: 209-219 (2003).
5. **Davila, L.P.**, V.J. Leppert and S.H. Risbud, "Microstructure and Microchemistry of Silicon Particles Formed during Electrical-Discharge Machining," *Journal of Materials Science: Materials in Electronics*, 14(8): 507-510 (2003).
6. Kubota, A., M-J Caturla, **L.P. Davila**, J. Stolken, B. Sadigh, A. Quong, A.M. Rubenchik and M.D. Feit, "Structural Modifications in Fused Silica Due to Laser-Damage-Induced Shock Compression," *Proceedings of the SPIE - The International Society for Optical Engineering*, 4679: 108-16 (2002).
7. Moloy, E.C., **L.P. Davila**, J.F. Shackelford and A. Navrotsky, "High-Silica Zeolites: a Relationship Between Energetics and Internal Surface Areas," *Microporous and Mesoporous Materials: Zeolites, Clays, Carbons and Related Materials*, 54(1-2): 1-13 (2002).
8. **Davila, L.P.**, S.H. Risbud and J.F. Shackelford, "Quantifying the Interstitial Structure of Non-Crystalline Solids", *Recent Research Developments in Non-Crystalline Solids*, 1: 73-84 (2001).
9. Wong, K.B. and **L.P. Davila**, "Who are you?," *Journal of Engineering Education*, 90(4): 659-660 (2001).

## MANUSCRIPTS SUBMITTED & IN PREPARATION (\* Available upon request)

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- ❖ **Davila, L.P.**, V.J. Leppert and E.M. Bringa. "Atomistic Modeling of the Structure and Mechanical Behavior of Vitreous Silica Nanowires", 2007. (\*) *Forthcoming*.
- ❖ McNaney, J.M., B.A. Remington, E.M. Bringa, K.T. Lorenz, J. Edwards, B. Torralva, **L.P. Davila**, N. Tanushev and P. Erhart. "The Application of Simulation with Recovery Based Techniques to Evaluate the Dynamic Behavior of Materials", 2007. (\*) *Forthcoming*.
- ❖ **Davila, L.P.**, M-J. Caturla, B. Sadigh, T. Diaz de la Rubia, J.F. Shackelford and S.H. Risbud. "Structural and optical properties of silica glass under compression". In Prep.
- ❖ **Davila, L.P.**, M-J. Caturla, B. Sadigh, J.F. Shackelford and S.H. Risbud. "The role of voids in the behavior of vitreous silica at high pressures". (\*) In Prep.
- ❖ **Davila, L.P.**, J.F. Shackelford and T.A. Cahill. "Health Effects by Metallic Elements in PM2.5 and PM10 aerosols". In Prep.

## BOOK CHAPTERS AND THESES

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- ❖ **Davila, L.P.**, S.H. Risbud and J.F. Shackelford. *Quartz and Silicas, Ceramic and Glass Materials: Structure, Properties and Processing*, J.F. Shackelford & R.H. Doremus, Springer 2007. *In Press*.
- ❖ **Davila, L.P.**, "Atomistic-scale Simulations of Vitreous Silica under High Pressure: Structure and Properties". University of California, Davis. Ph.D. dissertation (2005).
- ❖ **Davila, L.P.**, "Computer Modeling Studies of the Interstitial Structure of Selected Silica Polymorphs", University of California, Davis. M.S. thesis (1998).

## TEXTBOOK AND JOURNAL CONTRIBUTIONS

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- ❖ *Introduction to Materials Science for Engineers*, J.F. Shackelford, 6<sup>th</sup> edition (2004) & 4<sup>th</sup> edition (1996). Computer-generated images of engineering materials.
- ❖ *Ceramics: Proof that Art and Science (and Engineering) are One*, J.F. Shackelford, California Alliance for Minority Participation in Science, Engineering and Mathematics (CAMP) Quarterly magazine, Fall 2002, 10-12 & 32.

## CONFERENCE PRESENTATIONS

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- ❖ **Davila, L.P.**, V.J. Leppert and E.M. Bringa, *Atomistic Modeling of Silica Nanowires*. Oral presentation, President's Postdoctoral Fellowship Program Academic Spring Retreat, Berkeley, California, April 2007.
- ❖ **Davila, L.P. et al.**, *Atomistic Simulations of the Medium-Range Order of Amorphous Systems under High Pressure*. Oral presentation, Theory and Computer Simulation of Materials Symposium, XV International Materials Research Congress, Cancun, Mexico, August 2006.
- ❖ **Davila, L.P. et al.**, *Modeling Amorphous Systems under High Pressure at the Nanoscale via Atomistic Simulations*. Oral presentation, Nanostructured Materials and Nanotechnology Symposium, XV International Materials Research Congress, Cancun, Mexico, August 2006.
- ❖ **Davila, L.P. et al.**, *Understanding the Medium-Range Structure of Vitreous Silica under High Pressure through Molecular Dynamics Simulations*. Oral presentation, NSTI Nanotechnology Conference and Trade Show 2005, Anaheim, May 2005.
- ❖ **Davila, L.P. et al.**, *Understanding Medium-Range Order of Amorphous Systems under High Pressure through Molecular Dynamics Simulations*. Oral presentation, Materials Research Society Fall Meeting, Boston, MA, December 2003.
- ❖ **Davila, L.P. et al.**, *Modeling Amorphous Systems under High Pressure at the Nanoscale via Molecular Dynamics Simulations*. Oral presentation, Materials Research Society Fall Meeting, Boston, MA, December 2003.
- ❖ **Davila, L.P. et al.**, *Modeling Studies of the Transformations in the Medium-Range Order in Fused Silica under High Pressure*. Oral presentation, 55th Pacific Coast Regional & Basic Science Division Fall Meeting of the American Ceramic Society, Oakland, CA, October 2003.
- ❖ **Davila, L.P. et al.**, *Atomistic Modeling of the Structural Modifications and Performance of Fused Silica under High Compressive Loads*. Oral presentation, Fall Meeting of the Glass & Optical Materials Division of the American Ceramic Society, Pittsburgh, PA, October 2002.
- ❖ **Davila, L.P.** and J.F. Shackelford, *Quantifying the Interstitial Structure of Silicates*. Oral presentation, PAC RIM 4 Conference of American Ceramic Society, Maui, November 2001.

## POSTER PRESENTATIONS

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- ❖ **Davila, L.P.**, S.H. Risbud and J.F. Shackelford, *The Effect of Pressure on the Ring Statistics in Vitreous Silica*. Poster presentation, International Glass Congress, France, July 2007.
- ❖ **Davila, L.P.**, V.J. Leppert and E.M. Bringa, *Atomistic Modeling of Silica Nanowires*. Poster presentation, Multi-scale Modeling of Materials Symposium, Materials Research Society Fall Meeting, Boston, MA, November 27-December 1, 2006.
- ❖ **Davila, L.P. et al.**, *Shock-Induced Void Collapse in Metals*. Poster presentation, Fracture Mechanics Symposium, XV International Materials Research Congress, Cancun, Mexico, August 2006.
- ❖ **Davila, L.P. et al.**, *Modeling Amorphous Systems under High Pressure at the Nanoscale via Atomistic Simulations*. Poster presentation, XIV International Materials Research Congress, Cancun, Mexico, August 2005.
- ❖ **Davila, L.P. et al.**, *Understanding Medium-Range Order of Fused Silica under High Pressure through Simulations*. Poster presentation, Berkeley Nanotechnology Forum Student Poster Contest, UC Berkeley, April 2005.
- ❖ **Davila, L.P. et al.**, *Understanding Medium-Range Order of Fused Silica under High Pressure through Simulations*. Poster presentation, American Ceramic Society Student Poster Contest, Northern California Section, Davis, May 2004.
- ❖ **Davila, L.P. et al.**, *Understanding Medium-Range Order of Fused Silica under High Pressure through Simulations*. Poster presentation, Interdisciplinary Graduate Symposium, UC Davis, CA, March 2004.
- ❖ **Davila, L.P. et al.**, *Atomistic modeling of the structural modifications of fused silica under high pressure*. Poster presentation, Joint 19<sup>th</sup> AIRAPT & 41<sup>st</sup> EHPRG International Conference of High Pressure Science and Technology, Bordeaux, France, July 2003.
- ❖ **Davila, L.P. et al.**, Poster presentations, Annual Poster Symposia organized by Student Employee Graduate Research Fellowship Program, LLNL, Livermore, California, 2003-2001.
- ❖ **Davila, L.P. et al.** Poster presentations: Joe Smith Distinguished Lecture Session, UC Davis, 2002-2000 & American Ceramic Society, Northern California Section, UC Davis, April 2001.

## SPECIALIZED PROFESSIONAL TRAINING

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**Nano Education and Outreach (NEO) Program**, Exploratorium, San Fco. May 21-25, 2007  
Training scientists engaged in nanoscale science and technology working in education and outreach efforts. Professional development focused in inquiry-based education and public communication.

**Multi-scale Computational Methods and Applications Course**, 7<sup>th</sup> World Congress on Computational Mechanics, Hyatt Regency Century Plaza Hotel, Los Angeles July 16-22, 2006  
Course topics included introduction to homogenization, thermo-mechanical multi-resolution multi-scale continuum theory for materials with dynamically evolving microstructures, modeling electro-manipulation of bio/nanomaterials, concurrent and information-passing multi-scale methods and multi-scale applications.

**National Science Foundation Day at Sacramento State**, Sacramento December 1, 2005  
Participated in workshop addressing NSF proposal and merit review process, cross-disciplinary and interest programs. Organized by the NATIONAL SCIENCE FOUNDATION.

**MRI Computational Materials Science and Chemistry Summer Institute**, LAWRENCE LIVERMORE NATIONAL LABORATORY, Livermore, California June-August 2003  
Selected among highly qualified graduate students in the country to learn more of cutting edge methods in computational materials science. State-of-the-art and emerging computational techniques focused on practical aspects of their numerical implementation.

## GRANTS

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**Collaborative Research: Integrating Computer Science Interactive Tools in Materials Science for Improved Visual Learning**, Advanced Learning Technologies, NATIONAL SCIENCE FOUNDATION April 25, 2007

Collaborative Proposal, UC Merced PI: L. Davila, UCD PI: Prof. B. Hamann.

Proposal sought funding to implement advanced visualization tools for materials science education and research at both UC campuses. Collaboration with UCD Institute for Data Analysis and Visualization & Dept. of Chemical Engineering and UCM School of Engineering. Submitted.

**Collaborative Research: Development and Experimental Verification of Modeling Tools for Rational Fabrication of Oxide Nanomechanical Structures**, Nanomanufacturing, DMR, Ceramics, NATIONAL SCIENCE FOUNDATION February 2007

PI: Prof. V. Leppert, Co-PIs: L. Davila, J. Jasinski and D. Zhang.

Proposal requested funds to develop framework for synthesis of oxide nanostructures using computational and experimental methods at UC Merced. Submitted.

**Bridge to the Doctorate**, NATIONAL SCIENCE FOUNDATION February 1, 2006

Collaborator in proposal, supplemental grant. Awarded to UC Davis.

Participated in preparation of pre-proposal to implement "Bridge to the Doctorate" (BD) program. BD program funds 12 CAMP-eligible students during two years to conduct research in graduate school. Nearly one million dollars awarded for 2006-08 academic year.

## TEACHING EXPERIENCE

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- Guest Lecturer**, Advanced Topics in the Structure of Materials, UC DAVIS 6/07  
Presented topics in MD simulations of ceramic glasses in **graduate course**.
- Instructor**, Engineering Academic Theme Program, UC DAVIS Fall Qtr. 2005  
Lectured on engineering course for 25+ first-year **undergraduate** students in campus housing. Designed syllabus with goal of introducing engineering field and campus resources to students. Prof. G. Ford & R. Maldonado, College of Engineering.
- Teaching Assistant**, Graduate Course, UNIVERSITY OF CALIFORNIA, DAVIS 3/01 - 6/01  
Lectured in **graduate engineering laboratory** (EMS 245). Demonstrated application of modeling software (Cerius<sup>2</sup> & Insight II) for materials science research, basic concepts of computer simulations, UNIX language. Prof. J. Shackelford, Dept. of Chem. Eng. & Mat. Sci.
- Lecturer**, Properties of Materials, UNIVERSITY OF CALIFORNIA, DAVIS 9/98 - 12/98  
Lectured selected topics to 100+ **undergraduates** in the Properties of Materials course (ENG 45), co-instructor with faculty mentor. Graded midterms and final exam. Designed class website. Prof. J. Shackelford, Dept. of Chem. Eng. & Mat. Sci.
- Teaching Assistant & Class Reader**, UNIVERSITY OF CALIFORNIA, DAVIS 9/95 - 6/98  
Prepared lectures for laboratory sessions, pre-ran experiments, demonstrated experimental techniques and assisted 20+ **undergraduate** students in laboratory routines. Supervised students, graded lab reports, homeworks & quizzes. Prof. J. Shackelford, Prof. D. Howitt, Prof. J. Groza, Prof. S. Risbud & Prof. Z. Munir, Dept. of Chem. Eng. & Mat. Sci.

## PROFESSIONAL AND ACADEMIC SERVICES

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- Mentor**, UNIVERSITY OF CALIFORNIA, MERCED 7/07 - present  
Mentoring two male engineering students (CS sophomore & MS junior).
- Diversity in Engineering Link (DEL) Mentor**, UC DAVIS 5/07 - present  
Mentoring a female engineering student (sophomore).
- Women of Color in Sciences & Engineering (WOCISE) Mentor**, UC DAVIS 1/07 - present  
Mentoring two female engineering students (junior and senior).
- Undergraduate Leadership Day at UCM Founder**, UC MERCED 9/06 - 2/07  
Founder of leadership for UCM engineering students with selected UCD student leaders.
- CAMP Statewide Symposium Judge**, UNIVERSITY OF CALIFORNIA, IRVINE 2/06 & 2/07  
Judge for poster (2006) and oral (2007) presentations (physical sciences and engineering). Eighty-nine **undergraduate** CAMP (California Louis Stokes Alliance for Minority Participation) researchers participated from several UC campuses.
- Mentoring Program Coordinator**, SD&R, College of Engineering, UC DAVIS 11/05 - 3/06  
Designed mentoring program for 60+ female engineering **undergraduate** students.
- Engineering Retreat Coordinator**, SD&R, College of Engineering, UC DAVIS 4/05 - 9/05  
Designed 3-day retreat for 25 female **undergraduate** first-year/transfer students.
- Graduate Student Mentor**, UNIVERSITY OF CALIFORNIA, DAVIS 4/99 - 6/00  
Mentored two female engineering students in scientific projects.

## SYNERGISTIC ACTIVITIES

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1. Panelist at Northern California Forum for Diversity in Graduate Education, UC Davis 2007  
Forum to inform over 1,000 undergraduates (UC, CSU and CA independent universities) about how to succeed in a doctoral program.
2. Advisor to UCD Society of Women Engineers (SWE) in outreach activities. 2006
3. Collaborator in "Women in Science and Engineering" (WISE) project. 2006
4. Participant of NSF-sponsored workshop in Cancun, Mexico on strategic planning to develop Materials World Network which enhances opportunities for collaborations in materials research and education between US investigators and their colleagues abroad. 2005

## LANGUAGES AND OTHER SKILLS

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- ❖ Languages: Proficient in English and Spanish (speaking, writing, reading). Basic Italian and Portuguese (reading and speaking)
- ❖ Proficient in computer languages: Pascal, FORTRAN, UNIX
- ❖ Computer software proficiency:
  - Word Processors: Microsoft Office Word, LaTeX
  - PowerPoint, Acrobat, Adobe Illustrator, Photoshop
  - Mathematica
  - Simulations: MDCASK code, CASTEP, Insight II, Cerius<sup>2</sup> & Materials Studio, Wien2K
  - Graphics: Kaleidagraph, Grapher, Cricket Graph, Grab, CAD graphics, Quattro Pro
  - Image/movies: XV, Rasmol, Display, MovieMaker, iMovie HD, Apple QuickTime
  - Utilities: X11, Gnuplot, Convert, ImageMagic
  - Editors: emacs/xemacs, nedit, pico, vi
  - Statistical: Excel, Access, Kaleidagraph
  - Internet browsers: Netscape, Internet Explorer, Safari, Mozilla
  - Network tools: VPN Client, Stuffit, F-secure SSH, Fetch
  - Antivirus software: Symantec Antivirus
  - Bibliographic management programs: Endnote X, Procite
  - Bibliographic Databases: Compendex, Annual Reviews: Physical Sciences, Chemical Abstracts via SciFinder Scholar, INSPEC, Web of Science
- ❖ Operating systems: Windows, Macintosh, NT, IRIS/UNIX and Linux
- ❖ Completed marketing analysis project using TimeLine Software and Pert Charts
- ❖ Designed 6 websites: research group, materials science course, undergraduate programs College of Engineering, UCD, research group at UCM
- ❖ Strong interpersonal and communication skills. Understand complex needs of diverse students and communicate with them in an inclusive manner
- ❖ Excellent ability to work well with people across disciplines, cultures and backgrounds
- ❖ Strong professional and leadership skills
- ❖ Strong organizational and managerial skills. Experience supervising undergraduate and graduate students in research and leadership projects.
- ❖ Ability to maintain confidentiality and to exercise discretion and good judgment in dealing with sensitive issues
- ❖ Ability to manage multiple tasks, projects, responsibilities and demands simultaneously

## REFERENCES

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Available upon request.