

David Rivera

PRESENT ADDRESS

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PERMANENT ADDRESS

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Research Interests

Physics of materials defects, effects of stress on the damage evolution behavior of refractory metals, material degradation in space propulsion systems, material detriment due to thermal shock, radiation damage, continuum mechanics.

EDUCATION

University of California Los Angeles (UCLA), Los Angeles CA
PhD, Materials Science and Engineering, in progress
G.P.A. 3.5/4.0

University of California Los Angeles, Los Angeles CA
MS, Materials Science and Engineering, 2011

University of Texas El Paso, El Paso TX
BS, Metallurgical and Materials Engineering, Cum Laude 2006

Major Subjects, course-work at UCLA

- Principles of Materials Science I-Solid State Physics
- Physics of Solar Cells
- Principles of Materials Science II-Diffusion and Thermodynamics
- Materials Science of Surfaces
- Linear Elasticity
- Composite Materials
- Composites Manufacturing
- Solid State Chemistry
- Diffraction Methods in Materials Science
- Theory of Nano-materials
- Mechanical Behavior of Thin Films
- Growth Processes of Electronic Materials
- Archaeological Materials Science

EXPERIENCE

Graduate Student Researcher at the UCLA MATRIX Laboratory,
Laboratory is dedicated to testing and simulating materials in extreme environments
Advisor: Nasr Ghoniem
July 2011 to Present

- Conducting research on high heat flux damage to materials for nuclear and space propulsion applications
- Using a combination of experiments and computer simulations to study material behavior in terms of mechanical response to high heat loads
- Collaborate with other researchers in building experimental apparatus capable of testing materials systems in high temperature settings

Teaching Assistant for the UCLA on-line Master of Science in Engineering

Non-Destructive Evaluation course, examines various methods of probing engineering materials for major flaws and defects

Spring Quarter 2010 and 2011

- Conducted office hours for enrolled students
- prepared homework solutions, grading etc.

Course Reader MSE 130, Phase Relations in Solids, Thermodynamics

UCLA Materials Science and Engineering

Fall 2010

- Graded homework assignments
- Reviewed exams
- Updated grade book

Mission Assurance Engineer, Raytheon Intelligence and Information Systems

Garland, TX, 2007-2008

- Worked with other engineers in effort to remove system failures from Raytheon product lines
- Root cause failure analysis
- Reviewed Raytheon procedures in order to help optimize operating standards

Intern, Argonne National Laboratory (ANL)

Chicago, IL, summer 2005

- worked with ANL scientists on a research project aimed at developing materials systems for use in next generation nuclear reactors
- analyzed mechanical testing data of irradiated stainless steel samples
- metallography, preparation and examination of alloy samples, used both SEM and optical microscopes

Lifeguard, Hawkins Indoor Swimming Pool

El Paso, TX

- Oversaw pool activities for any hazardous behavior
- Assisted in maintaining pool and recreational areas
- Assisted with recreational programs

HONORS

- Eugene V. Cota Robles Fellowship, 2008-2012
- National Science Foundation Scholarship, 2005-2006

COMPUTER SKILLS

Operating Systems: Windows, Unix

Languages and Software:

- Matlab
- Experience with C++
- COMSOL (Finite Element Method software), used to study damage mechanisms in materials exposed to high heat flux environments such as those typically found in nuclear applications and space propulsion systems.

MEMBERSHIPS AND AFFILIATIONS

- Society for the Advancement of Materials and Process Engineering (SAMPE), co-authored a technical paper presented at the 2011 Long Beach Convention
- Former Secretary of the American Foundry Society, University of Texas El Paso chapter
- Former Volunteer at University Medical Center (formerly Thomason General Hospital), El Paso TX, 2006

Foreign Language Skills

Fluent Spanish

HOBBIES

Baseball, Soccer, Weights, Automotive Repair, Books