Arturo J. Mateos

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5522 Chase Harbor
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EDUCATION

Texas A&M University — **College Station, TX**
Bachelor of Science in Mechanical Engineering — **Graduation: May 2013**
Awty International School — **Houston, TX**
Earned Bilingual International Baccalaureate Diploma (Spanish and English) — **Graduated: May 2009**

EXPERIENCE

Polymer NanoComposites Group, Texas A&M University, Research Assistant — **College Station, TX**
Advisor: Jaime C. Grunlan, PhD — **Spring 2011 – Present**

- Studying layer-by-layer assembly of nanostructured thin films for flame retardant applications.
- Evaluating thermal stability of intumescent coatings according to ASTM standards and other flammability tests.
- Working on automating the layer-by-layer deposition process for textiles.

The Dow Chemical Company, Corrosion and Materials Engineer — **Deer Park, TX**
Advisor: Keith F. Briegel — **May 2011 – August 2011**

- Reviewed corrosion rates and predicted an accurate end of life for operating equipment.
- Performed multiple failure analyses using microscopy on corrosion and metallurgic related failures.
- Set up new electrochemical corrosion, electropolishing, and electroetching lab equipment.
- Collaborated in plant tours for interns from other Dow chemical plants.

Computational Mechanics and Materials Group, Cornell University, Research Assistant — **Ithaca, NY**
Advisor: Derek H. Warner, PhD — **May 2010 – August 2010**

- Performed atomistic simulations of dislocation-precipitate interactions in Al-Cu alloys to predict a resultant increase in alloy strength.
- Calculated critical shear stress values and mechanisms required for a screw dislocation to overcome Guinier-Preston (GP) zones.
- Executed molecular models using angular dependent EAM potentials and LAMMPS code.
- Published results in *Scripta Materialia* (see *Publications* section below).

LEADERSHIP AND INVOLVEMENT

American Society of Mechanical Engineers, ASME — **2009 – Present**
Senior Liaison (2011 – Present)

- Promoting ASME's mission to participate and explore the meaning of mechanical engineering outside of class.
- Increase senior membership by informing students of company visits and engineering events.

Sophomore Liaison (2010 – 2011)

- Represented mechanical engineering sophomores and improved the relationship between students and ASME.
- Informed sophomores of ASME benefits and bridged the gap between companies and mechanical engineers sophomores.

Society of Automotive Engineers, SAE — **2009 – Present**
Events Coordinator (2010 – 2011)

- Organized trips to engineering companies such as FMC Technologies, Lockheed-Martin, and Ferrari of Houston.
- Organized social events to increase membership and promote Texas A&M Racing.

National Mechanical Engineering Honor Society, Pi Tau Sigma — **2010 – Present**
National Engineering Honor Society, Tau Beta Pi — **2011 – Present**
Phi Kappa Phi Honor Society — **2011 – Present**

SKILLS

- MATLAB, LabVIEW, AutoCAD, SolidWorks, EES
- Microsoft Office, LaTeX, Photoshop
- C/C++, Unix, Linux, Basic, various editors
- SEM Microscopy, Stereo Microscopy
- Electropolishing, Electroetching, Metallurgical Mounting
- Fluency in English and Spanish

HONORS

Texas A&M Mechanics Scholar — **Fall 2009**

- Awarded one of 25 Mechanics Scholar Certificates out of 300+ students.
- Certificate demonstrates high achievement in Physics 218: Mechanics.

National Society of High School Scholars Academic Paper Award — **Fall 2009**

- Authored research paper on *Space Debris and its Effect on Spacecrafts*.
- 22-page report on the selection process, design, and characteristics of materials used to protect space vehicles from orbital debris.
- One of 25 awards out of 1500+ entries.

PUBLICATIONS

C.V. Singh, **A.J. Mateos**, and D.H. Warner. 2011 "*Atomistic simulations of dislocation-precipitate interactions emphasize importance of cross-slip.*" Scripta Materialia 64(5): 398-401.

INTERESTS

- Materials science, nanotechnology, deformation mechanics, molecular dynamics, material imperfections, programming

Specific information available upon request