Jose E. Cotelo

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Objective Make a contribution to society through a research oriented career in engineering.

Education

Bachelor of Science in Mechanical Engineering – *May 2016*
Minor in Mathematics
University of Central Florida – *Orlando, FL*
Cum GPA: 3.43/4.0

Academic Experience

Space Launched Autonomous Glider *SLAG* (Fall 2015-Present) – *Space Operations Research Laboratory,* *University of Central Florida*

Design of fully autonomous glider. Structural, modal, and thermal analysis lead. Materials selection. Structural integrity and optimization; fatigue analysis. Represented UCF in Citizens in Space Initiative hosted by U.S. Rocket Academy. Collaborated with Florida Space Grant Consortium and Terran Sciences Engineers.

Study Abroad (Spring 2015) – *University of Surrey, Guildford, United Kingdom*

Coursework: Turbomachinery and Aircraft Propulsion, Aircraft Materials and Structures, Space Engineering and Mission Design, Linear Algebra.

Heat Transfer Fin-Design Project (Fall 2014) – *University of Central Florida*

Collaborated with a partner to design and optimize a heat sink. Performed thermal analysis and optimization on variable fin geometries using Matlab. Determined fin parameters for optimal heat dissipation.

FunSAT Design Competition (Fall 2013) – *American Institute of Aeronautics and Astronautics (AIAA)*

Collaborated with other team members to conceptualize and design a cube satellite while meeting dimension/weight restrictions. Created 3D CAD parts and assemblies of satellite structure. Thermal and modal analysis for structural stability.

Research Experience

Research on Aerospace Materials in Extreme Environments | *(June 2016 – August 2016)* - German Aerospace Center (DLR), Cologne, Germany

Upcoming summer research experience at the German Aerospace Center (DLR) in Cologne on the mechanics of aerospace materials in extreme environments. Project is yet to be determined.

Undergraduate Research Assistant (June 2014 – Present) - *Mechanics of Materials Research Group*

Finite element simulations of AlSiC-30% edge-crack formation and propagation; modeling of thermal-buckling in functionally graded structural panels. Small punch test characterization of IN718/939. Mechanical property optimization of PLA for fused-deposition modeling: torsional, tensile, and fatigue studies.

Research Experience for Undergraduates (June 2015 – August 2015) – *University of California, Irvine*

Micromechanical modeling of heterogeneous materials. Developed C++ code for damage modeling in metal-matrix composites using Voronoi-cell finite elements. Investigation of damage precursors and particle-matrix interface decohesion. Presented at summer research symposium.

Teaching Experience

Undergraduate Teaching Assistant (Fall 2015-Present) - *Department of Mechanical and Aerospace Engineering, UCF*

Courses: Design and Analysis of Aerospace Structures (Fall 2015), Space Systems Concepts (Spring 2016). Managed course, provided supplemental instruction and lectures. Mentored other undergraduate students.

Outreach

SHPEitos Mentor (2014 – Present) – *Society of Hispanic Professional Engineers UCF Chapter*
Provided underrepresented Hispanic mentees with a variety of learning opportunities to support their academic success. Shared knowledge with mentees, helped them maintain a competitive GPA, and provided network of support.

iSTEM Ambassador (2014 – Present) – *Initiatives in STEM Office*
Community outreach in public schools throughout Orlando as well as undergraduates at UCF. Promoted STEM fields through educational activities, presentations, and personal peer mentoring.

Additional Skills

Computer Programming – MATLAB, C++, Mathcad, R-Statistical Software.
Computer Aided Design – SolidWorks, Siemens NX.
Simulation – ANSYS, STAR CCM+, Thermal Desktop.
Language – Fluent in Spanish. High proficiency in French.

Honors and Awards

Society of Hispanic Professional Engineers Scholarship (2015)
Walt Disney World Engineering Scholarship (2015)
Honors in the Major Scholarship (2015)
NSF – CAMP YES Research Fellowship (Tenure: 2014-2016)
McNair Scholar (2014)
Gilman International Scholarship (2014)
Summer Undergraduate Research Fellowship (2014)

Technical Publications

Torres, J., **Cotelo, J.**, Karl, J., and Gordon, A. P., (2014) "Mechanical Property Optimization of FDM PLA in Shear with Multiple Objectives," Journal of Materials. *[In press]*

Cotelo, J., Bearden, T., Torres, J., Smith, K., and Gordon, A. P. (2015) "Characterization of 3DP Polylactic Acid under Monotonic and Cyclic Torsional Conditions," Journal of Additive Manufacturing. *[Submitted for review]*.

Conference Presentations

Florida Undergraduate Research Conference, Feb. 27-29, University of Tampa, Tampa, FL. *Characterization of 3DP Polylactic Acid under Monotonic and Cyclic Torsional Conditions.*

Professional Memberships

Society of Hispanic Professional Engineers (SHPE)
American Institute of Aeronautics and Astronautics (AIAA)
American Society of Mechanical Engineers (ASME)
American Society of Testing and Materials (ASTM)

Current Coursework

Fundamentals of Mechanical Behavior of Materials
Thermodynamics of Mechanical Systems
Senior Design II
Energy Systems Lab
Introduction to Communications