Josue Santana

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EDUCATION

CORNELL UNIVERSITY
Doctor of Philosophy (Ph.D.)
Biomedical Engineering
Focus Area | Biomechanics
- NSF Graduate Research Fellow
- Cornell Colman Diversity Fellowship Scholar
- Graduate Student Ambassador
- Graduate School Dean's Scholar

FLORIDA INTERNATIONAL UNIVERSITY
Bachelor of Science
Biomedical Engineering
- December 2015 | Miami, FL
- Cum. GPA: 3.6 / 4.0
- Cum Laude Graduate
- The Honors College (Alumnus)
- Ronald E. McNair Program (Fellow)

MIAMI DADE COLLEGE
Associate in Arts
Biomedical/Medical Engineering
- August 2013 | Miami, FL
- The Honors College Dual Language Program (Alumnus)
- Cum. GPA: 3.9 / 4.0
- Dean's List (All Semesters)
- Graduated with Highest Honors & Distinction

LINKS

LinkedIn:linkedin.com/in/santanajosue
Twitter:@_JosueSantana_

LANGUAGES

SPANISH
Native Language

ENGLISH
Full Professional Proficiency

PORTUGUESE
Reading Proficiency

ORGANIZATIONS

ORS | 2018

SACNAS | 2017

SHPE | 2017

BMES | 2015

PTK | 2013

RESEARCH EXPERIENCE

GRADUATE STUDENT RESEARCHER | Cornell University
Hernandez Research Group
August 2016 - Present | Ithaca, NY
- Exploring the direct effect of microdamage in cancellous and trabecular bone, and the contributions of microdamage to bone marrow lesions (BMLs), radiology findings associated with early stage of osteoarthritis.
- The current research project is targeted to the use of a novel preclinical model to enhance our understanding of the etiology and physiology of fatigue damage-induced BMLs.
- Currently, three-dimensional dynamic bone histomorphometry techniques are utilized to localize areas of bone remodeling and microdamage within cancellous bone as a response to an external mechanical stimulus.

SUMMER GRADUATE RESEARCH FELLOW | Hospital for Special Surgery
Department of Biomechanics
June 2017 - August 2017 | New York, IN
- Conducted a retrospective study to investigate demographic and skeletal-specific risk factors for periprosthetic fractures in a cohort of patients requiring a surgical revision after total knee arthroplasty (TKA).
- Conducted a pilot study evaluating the feasibility of a novel surgical tool to measure the in vivo force applied to pedicle screws during spine surgical procedures.
- Worked with ex-vivo human bone specimens to assess the accuracy of a digital torque wrench used to measure the insertional force of pedicle screws in bones with compromised material and structural properties.

SUMMER RESEARCH INTERN | University of Notre Dame
Tissue Mechanics Laboratory
May 2015 - July 2015 | Notre Dame, NY
- Researched the effects of *low magnitude mechanical stimulation* in trabecular bone to determine the primary mechanical signal driving bone adaptation.
- Constructed FE models to conduct CFD &. Solid Mechanics simulations exploring the mechanostimulatory signals in the trabecular bone marrow.
- Studied the effect of shear stress in the bone marrow *in silico* from pre-treatment CT scans of porcine vertebral bone explants.

HONORS & AWARDS

May 2017	DPE First Year Graduate Student of the Year - Recipient
July 2016	Cornell Graduate School Dean's Scholar - Recipient
Apr. 2016	National Science Foundation Graduate Research Fellowship - Recipient
Mar. 2016	Cornell Colman Diversity Fellowship Program - Recipient
Dec. 2015	Biomedical Engineering Outstanding Bachelors Graduate - Recipient

COMPUTER SKILLS

Basic	Python, MS Project & MS Access, ANSYS, ADINA CFD, NI LabVIEW
Intermediate	SolidWorks, JMP, Arduino, LaTeX, Minitab, Adobe Photoshop & Illustrator
Advanced	MATLAB, R Programming, Amira, ImageJ, GraphPad, Minitab, Excel

ORAL & POSTER PRESENTATIONS

Aug. 2017	Cornell Clinical Summer Immersion Term Symposium | Poster
Dec. 2015	BME Senior Design Project Expo and Competition | Oral
Oct. 2015	Annual Biomedical Research Conference for Minority Students | Poster
Oct. 2015	Biomedical Engineering Society Annual Meeting | Poster