Andre Montes

Ph.D. Candidate · Mechanical Engineering

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Education

University of California, Berkeley — *Berkeley, CA*
M.S./Ph.D. Mechanical Engineering — *Aug 2019 - present*
- Advisers: Mohammad Mofrad, Ph.D. & Grace O'Connell, Ph.D.
- GPA: 3.96/4.00

Colorado School of Mines — *Golden, CO*
B.S. Mechanical Engineering — *Aug 2013 - Aug 2016*
- Adviser: Ozkan Celik, Ph.D.
- *Summa Cum Laude*

Awards, Fellowships, & Grants

2022	**Ford Predoctoral Fellowship**, National Academies of Science Engineering & Medicine	*$ 81,000*
	Professional Development Grant, PPG Foundation	*$ 500*
2021	**Robert N. Noyce Fellowship**, UC Berkeley College of Engineering	*$ 75,000*
	Diversity & Community Fellowship, UC Berkeley Graduate Division	*$ 15,000*
	SURF SMART Fellowship, UC Berkeley Graduate Division	*$ 5,000*
	EDGE in Mentoring, UC Berkeley CITRIS	*$ 1,000*
2020	**Graduate Remote Instruction Innovation Fellowship**, UC Berkeley Graduate Division	*$ 5,000*
2019	**Graduate Student Research Fellowship**, UC Berkeley College of Engineering	*$ 18,000*

Publications

**co-author*

Montes A, Gutierrez G, Tepole AB, Mofrad, MRK. 2023. Multiscale Computational Framework to Investigate Molecule-to-Cell Integrin Mechanosensing. *Submitted to Journal of Applied Physics*.

McKinley J*, **Montes A***, Wang M, Kamath A, Jimenez G, Lim J, Marathe S, Mofrad MRK, O'Connell GD. 2022. Design of a flexing organ-chip to model *in situ* loading of the intervertebral disc. *Biomicrofluidics*, 16, 054111.

Arevalo S*, **Montes A***, O'Connell GD. 2022. Research seminar designed for undergraduate students builds confidence and access to research opportunities. *Proceedings of ASEE Conference*. 37513

Harris M, McCarty M, **Montes A**, Celik, O. 2016. Enhancing Haptic Effects Displayed via Neuromuscular Electrical Stimulation. *Proceedings of DSC Conference*. V001T07A003.

Presentations

** presenting author; + mentored undergraduate*

Conference Presentations

Montes A*, Tepole AB, Mofrad MRK. Oct 2022. Towards a Multiscale Mechanical Model of Cell Adhesion Dynamics. *Biomedical Engineering Society Annual Conference*. Podium Talk. San Antonio, Texas.

Montes A*, McKinley J, Mofrad MRK, O'Connell GD. June 2021. *Summer Biomechanics, Bionengineering, and Biotransport Conference*. Podium Talk. Virtual.

Montes A*. Jan 2021. Spine-on-a-chip: We got your back. *Global Young Scientists Summit*. Video Abstract. Virtual.

Gutierrez G*+, **Montes A**, O'Connell GD, Mofrad MRK. Aug 2022. Modeling Cell Adhesion Molecules as a Mechanical System. *NSF CAMP Symposium*. Poster. Berkeley, CA.

Baeza M*+, **Montes A**, Mofrad MRK. Nov 2021. Quantifying cell elasticity through a microchannel using finite element analysis. *McNair Scholars Research Conference*. Poster. Miami, FL.

Lim J*+, **Montes A**, Mofrad MRK. Aug 2021. Computationally revealing cell elasticity within a micro-stretching device. *Berkeley SURF Symposium*. Poster. Virtual.

Lindgren J*+, **Montes A**, Mofrad MRK. Aug 2021. Quantifying cell elasticity by modeling microfluidics. *Berkeley CalTeach Summer Research Symposium*. Poster. Virtual.

Wang M*+, **Montes A**, McKinley J, O'Connell GD, Mofrad MRK. May 2021. Determining Mechanical Strains of Cells in 2D vs 3D Culture within a Deforming Microphysiological Chip. *Berkeley Bioengineering Research Symposium*. Poster. Virtual.

Cruz F*+, **Montes A**, McKinley J, O'Connell GD, Mofrad MRK. Aug 2020. Spine-on-a-chip: Finite Element Modeling of Strains in the Annulus Fibrosus. *Berkeley CalTeach Summer Research Institute Symposium*. Poster. Virtual.

Invited Talks

Spring 2022. *Multiscale Modeling in Cell Biomechanics*. Special Topics in Biomechanical Engineering Seminar, UC Berkeley.

Teaching Experience

Summer 2021	**ME W85 Introduction to Solid Mechanics**, Graduate Student Instructor	*UC Berkeley*
Spring & Fall 2021	**ME 198/298 Finding Your Research Pathway**, Instructor	*UC Berkeley*
Fall 2020 Spring 2021	**E295 Communications for Engineering Leaders**, Graduate Student Instructor	*UC Berkeley*
Spring 2015	**ENGN150 Multidisciplinary Engineering Lab**, Undergraduate Teaching Assistant	*CSM*

Professional Experience

Dec 2019 Jun 2020	**Research Engineer**, Respira Labs
Aug 2016 Jun 2019	**R&D Engineer**, Philips Healthcare

Outreach & Professional Development

Service and Outreach

Jan 2023	**Bioengineering Faculty Search**, Student Committee Chair	*UC Berkeley*
Fall 2022	**Discipline Cluster**, Graduate Student Instructor Workshop Leader	*UC Berkeley*
Fall 2021	**First Steps in Research**, Founder and Director	*UC Berkeley*
Fall 2020	**Latino/a Assoc. of Grad Students in Engineering & Science**, Outreach Chair	*UC Berkeley*
Fall 2020	**First-Gen &/or Low-Income Grads**, Co-founder	*UC Berkeley*

Development

NextProf Nexus 2022, a multi-day program that is part of a nationwide effort to strengthen and diversify the next generation of academic leaders in engineering. Sponsored by: Michigan, UC Berkeley and Georgia Tech.