MARIBEL VAZQUEZ

Department of Biomedical Engineering, Rutgers, The State University of New Jersey
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PROFESSIONAL PREPARATION

Undergraduate:	Cornell University (Ithaca, NY) Bachelor of Science in Mechanical & Aerospace Engineering
Graduate:	Massachusetts Institute of Technology (MIT, Cambridge, MA) Master of Science in Mechanical Engineering
	Massachusetts Institute of Technology (MIT, Cambridge, MA) Doctor of Science in Mechanical Engineering

ACADEMIC APPOINTMENTS

06.2020- Present	Professor (with Tenure) in Biomedical Engineering, Rutgers, The State University of New Jersey
01.2019- 06.2020	Associate Professor (with tenure) in Biomedical Engineering, Rutgers, The State University of New Jersey
01.2006- 12.2018	Associate Professor (with tenure) in Biomedical Engineering, City College of New York (CCNY)
09.2002- 12.2006	Assistant Professor in Biomedical Engineering, CCNY
09.2001- 08.2002	Assistant Professor in Mechanical Engineering, CCNY

PUBLICATIONS (5 MOST RECENT RELATED TO PROPOSAL)

1. Pena, J.S.; **Vazquez, M.**, 'Harnessing the Neuroprotective Behaviors of Müller Glia for Retinal Repair,' Front Biosci (Landmark Ed), 2022 May 30;27(6):169.
2. Mut, S.; **Vazquez, M**.,' Emerging hybrid explant systems bring promise to retinal replacement therapy,' Frontiers Neuroscience 2021 Jul 23;15:714094.
3. Mishra S.; **Vazquez, M**., 'A Gal-MµS device to evaluate cell migratory response to combined galvano-chemotactic fields,' Biosensors (Basel) 2017 Nov 21; 7(4).
4. Unachukwu, U.; Warren, A.; Zhou, J.; Li, Z.; Mishra, S.; Sauane, M.; Lim, H.; **Vazquez, M*.** Redenti, S.*; 'Molecular signaling guiding photoreceptor precursor cell migration following transplantation into damaged retina,' Nature Scientific Reports 2016 March 3:2, 69.
5. Beck C, Singh T, Farooqi A, Venkatesh T, **Vazquez M**., 'Controlled microfluidics to examine growth-factor induced migration of neural progenitors in the Drosophila visual system,' J Neurosci Methods. 2015 Dec 29; 262:32-40.

PUBLICATIONS (5 MOST RECENT NON-RELATED TO PROPOSAL)

1. Oprysk, L.; **Vazquez, M**.; Shinbrot, T., "Internal Cohesion Gradient as a Novel Mechanism of Collective Cell Migration,' PLoS Comput. Biol. 2025 (Accepted 01/2025)
2. Castro N.; Pena, J.S.; Cliver, R.; Berthiaume, F.; and **Vazquez, M**., 'Estradiol impacts Müller glia and endothelial cell responses in hyperglycemic microenvironments with advanced glycation end products,' Exp. Eye. Res. 2024 Nov 29:251:110185.
3. Pena, J.S.; Berthiaume, F.; and **Vazquez, M**., 'Muller glia co-regulate barrier permeability with endothelial cells in an in vitro model of hyperglycemia,' Int. J. Mol. Sci. 2024, 25(22), 12271.
4. Leverant, A.; Oprysk, L.; Dabrowski, A.; Kyker-Snowman, K..; and **Vazquez, M**., 'Three-Dimensionally Printed Microsystems to Facilitate Flow-Based Study of Cells from Neurovascular Barriers of the Retina', Micromachines 2024, 15(9), 1103.
5. Markey, M.W.; Pena, C.; Venkatesh, T.; Cai, L.; and **Vazquez, M**., Retinal progenitor cells exhibit cadherin-dependent chemotaxis across transplantable extracellular matrix of in vitro developmental and adult models, J Tissue Eng Regen Med 2023, Volume 2023 | Article ID 1381620.

SYNERGISTIC ACTIVITIES

1. **Invited Lectures and Leadership**: Invited Plenary: Biomedical Engineering Society (BMES), Council of Chairs 5th Annual Education Summit (2024); Keynote Lecture: Gordon Research Seminar in Microscale Fluid Phenomenon (2023); Professional Impact Award: American Institute for Medical & Biological Engineers (AIMBE 2023); Elected Fellow of the Biomedical Engineering Society (BMES, 2022); Elected Fellow of the American Institute for Medical and Biological Engineers (AIMBE, 2020); Coulter College for Translation of BME Innovation (2015-2017); Accreditation Coordinator (CCNY 2014-2016); Co-founding faculty member: CCNY BME Department (2001-2006).

2. **Community Outreach**: Invited panelist: Importance of Minority Serving Institutions (NSF 2014-2017); HBCU/MSI Career Panels (DoD 2009-2011), Minority Partnership Programs (NIH 2004-2008); Media: Hispanic Outlook in Higher Education Magazine: CUNY Decade of Science (2015); Univision STEM and the Elusive Role Model (2013, Channel 41); New York City Council (State Senator Y. Rodriguez) Televised Discussion of STEM initiatives (2013); CUNY Lecture Series: The Science of Female Negotiation (2011 Keynote Speaker Podcast). Student Societies: Society of Hispanic Professional Engineers (SHPE) Graduate Research Symposium Chair (2009-2012), Northeast Regional Conference session chair (2002-2005);

3. **Mentoring Awards and Activities**: President's Award for Excellence in Research, Mentoring and Teaching (2017 CCNY); Biomedical Engineering Society Department Diversity Award (2015, BMES); Young Leadership Award (2012, 100 Hispanic NY Women Inc.); Mentoring Award: NSF Louis Stokes Alliance for Minority Participation (2010, CCNY); Mentoring Award: Alfred P. Sloan Foundation for Minority Education (2007); NSF Bridge to the Doctorate Programs and Faculty Mentoring (2005); CUNY High School Summer STEM Institute Research Director (2014-2018).

4. **Conference Engagement**: Biomedical Engineering Society (BMES) conference abstract reviewer (2006-2014), session co-chair (glial engineering 2013, microenvironments 2011-2012, cell motility 2009 and cancer metastasis 2005-2007) and track co-chair (micro- and nano-technologies 2015). BMES Special Interest Groups in Cell and Molecular Bioengineering (2012-2017), Health Disparities (2014-2017), National Society of Black Engineers (NSBE) industry initiatives (2017) and Coulter College for Translation of BME Innovation (2014-2017). American Institute of Chemical Engineering (AIChE) conference abstract reviewer (2001-2006)

5. **Service to the Profession**: Proposal reviewer for NSF (EECS, 2005-2009, MRI, 2005-2007, CBET 2003-2009, NER 2003-2006). Proposal reviewer for NIH (ISD study section 2007-2017, Special Emphasis Panel (NEI 2016, NIBIB 2013-2017, NIGMS 2010-2012, NCI 2008-2010), Shared Instrumentation Panel (NIBIB 2009, NIGMS 2006-2007). Reviewer of State Awards: Louisiana Innovation in Engineering Research Fund (2010-2012); University of Connecticut Internal Grants (2011-2009); Ohio Office for the Advancement of Research Scholarship (2008-2009). Reviewer of International Awards: Universidad Panamericana de Cuenca (Ecuador, 2013-2015); Universidad de Monterrey (Mexico, 2011-2012); University of British Columbia (Canada, 2008-2011). Journal reviewer for: Analytical Chemistry, Annals of Biomedical Engineering, Biosensors, Brain Research, Journal of Biomechanical Engineering, Journal of Nanoscience and Nanotechnology, Journal of Pediatric Biochemistry, Nanomedicine, Nature Communications.