

MICHAEL S. JOSEPH, PH.D.

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EDUCATION

- 2016 *Ph.D.*, Molecular Cellular and Integrative Physiology, emphasis on Neuroscience, UCLA, Los Angeles, California
Doctoral Dissertation: Mechanisms of spinal learning related to a simple motor task in a mammalian system
- 2012 *M.S.*, Physiological Sciences, UCLA, Los Angeles, California
Master's Thesis: Effects of diet and/or exercise in enhancing spinal cord sensorimotor learning.
- 2007 *M.S.*, Biological Sciences, CSULA, Los Angeles, California
Master's Thesis: The effect of locomotor training on the expression of BDNF mRNA in the lumbar spinal cord of spinally transected rats.
- 1998 *B.S.*, Gerontology, USC, Los Angeles, California

RESEARCH HISTORY

- 2017- present Assistant Professor, California State University, Los Angeles
- Basic science research in the field of spinal cord Injury and Plasticity
 - Mentoring Undergraduate and Graduate students in basic science research
- 2018- Present Visiting Faculty, Center for Heterogeneous Integration and Performance Scaling, CHIPS UCLA Los Angeles, California
- Developing wearable devices to facilitate physical activity and mobility.
- 2016-2017 Consultant at Edgerton Lab, UCLA, Los Angeles, California
- Manuscript
 - o Publication on EMG validation of the spinal learning model
 - o Publication on spinal circuitry involved in spinal cord learning
 - Advising and mentoring a graduate student on a joint project examining spinal cord learning and plasticity in an APP over expressed (J20) model of Alzheimer's disease in a murine model.

EXPERIENCE

- 2020 - Present. Medical Director at Medical Cost Review, Inc. – Los Angeles, CA
Over look complex medical files. Training of MCR team. Review of bills, medicals and charts along with assessing valuation of such services.
- 2019-Present CEO Sequence Analytics, INC. LA BioSpace, Los Angeles CA: Next Generation Sequencing, Bioinformatic Analytics,
- 2017- Present Fulltime Tenure Track Faculty, California State University, Los Angeles
Department of Kinesiology, Nutritional and Food Sciences
- 2016-2017 Part-time faculty, Instructor, Mount Saint Mary's University
- 2009-2016 Graduate Teaching Assistant/Graduate Student Researcher (UCLA)
- 2007-2008 Part-Time/Adjunct Instructor (CSULA)
- 2004-2006 Graduate Teaching Assistant at (CSULA)

RELEVANT SKILLS

- *Neuroscience*: Extensive experience and background spinal cord injury in the murine and human model. Deep understanding of the mechanism of learning and memory in the CNS. Broad knowledge of neurodegenerative diseases and disorders such as Alzheimer's and Parkinson's diseases.
- *Bioinformatics*: biological computational modeling of Next generation sequencing data. Design, develop and analysis of genome sequence data.
- *Integrative Physiology*; Extensive working knowledge in disease states encompassing cardio pathologies, neuroendocrine disorders, and cancer physiology.
- *Genetics*: Extensive experience molecular and biochemical techniques IHC, FISH, RT-PCR, primer design, PCR, HPLC, GC and developing molecular probes.
- *Animal Models*: Broad experience working with murine model, aseptic survival surgeries, implantation of EMG electrodes, head plugs, and terminal microdissection.
- *Computational*: Proficient in JMP Pro12.0, Image-Pro Plus image processing software, Prizm Graph Pad 12.0 and the Microsoft suite of programs. General working knowledge of MatLab, Python, and LabVIEW 8.
- *Interpersonal*: Highly proficient in scientific communication (oral and written). Participated in lab group discussions and reported findings at scientific meetings and intradepartmental symposiums.

HONORS AND AWARDS

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| 2013-2014 | UCLA Engineering, Center for Heterogeneous Integration and Performance. Visiting Faculty Member |
| 2013-2014 | UCLA, Integrative Biology and Physiology Annual Retreat: Best Poster and Presentation |
| 2011-2014 | National Institutes of Health/NINDS Diversity Supplement Award NS056413 (Gomez-Pinilla /Joseph) |

PROFESSIONAL MEMBERSHIPS

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| 2018- Present | Member, of American Physiological Association |
| 2004-Present | Member, of Society for Neuroscience |
| 2003-Present | Beta Beta Beta, Theta Epsilon chapter Biological Honor Society |

PUBLICATIONS

R. Huang, A. Nikooyan, B. Xu, H.G. Damavandi, **Joseph M.S.**, N. von Trotha, L. Li, A. Bhattarai, D. Zadeh, Y. Seo, X. Liu, P.A. Truong, E.H. Koo, J.C. Leiter, D.C. Lu. Machine learning identifies genotype- and age-

specific locomotory features in human amyloid precursor protein (hAPP) over-expressing mice.

Nature Scientific Reports., 2021

A. Alam A., Molter, M., Gaonkar B., Hanna A., Irwin R., Benedict S., Ezhilarasu G., Macyszyn L., **Joseph M. S.**, and Iyer S.S., A High Spatial Resolution Surface Electromyography (sEMG) System Using Fan-Out Wafer-Level Packaging. Electronic Components and Technology Conference (ECTC) pp 985-990. IEEE 2020

Joseph M.S., Tillakaratne N.J., de Leon R.D. Treadmill training stimulates brain derived neurotrophic factor mRNA expression in motor neurons of the lumbar spinal cord in spinally transected rats. *Neuroscience*. 2012 Nov 8; 224:135-44. PubMed PMID: 22917619.

Joseph M.S., Ying Z., Zhuang Y., Zhong H., Wu A., Bhatia H.S., Cruz R., Tillakaratne N.J.K., Roy R.R., Edgerton V.R., Gomez-Pinilla F. Effects of diet and/or exercise in enhancing spinal cord sensorimotor learning. *PLOS One*. 2012; 7(7): e41288.PMCID: PMC3401098.

Joseph M.S., Bilousova T., Zdunowski S., Wu Z.P., Middleton B., Boudzinskaia M., Wong B., Ali N., Zhong H., Yong J., Washburn L., Escande-Beillard N., Dang H., Edgerton V.R., Tillakaratne N.J.K., Kaufman D.L. Transgenic mice with enhanced neuronal major histocompatibility complex class I expression recover locomotor function better after spinal cord injury. *J Neurosci Res*. 2011 Mar; 89(3):365-72.PubMed PMID: 21259323

Jindrich D.L., **Joseph M.S.**, Otoshi C.K., Wei R.Y., Zhong H., Roy R.R., Tillakaratne N.J., Edgerton V.R. Spinal learning in the adult mouse using the Horridge paradigm. *J Neurosci Methods*. 2009 Sep 15; 182(2):250-4. Epub 2009 Jun 9. PubMed PMID: 19520117

PUBLICATION IN PREPERATION:

Joseph M.S., Griffis K, Tillakaratne N.J.K, Edgerton V.R. Physiological characterization of the PaWL paradigm. *Journal of Neuroscience*

Joseph M.S., Faynerman Y, Tillakaratne N.J.K, Edgerton V.R. Mechanisms of spinal learning related to a simple motor task in a mammalian system. *Journal of Neuroscience*