

Xiufang (Nadine) Guo, PhD**Work Address**

Research Professor
 NanoScience Technology Center
 12424 Research Parkway, Suite 400
 Orlando, FL 32826
 Email: xguo@ucf.edu

Professional Interests: Stem cell differentiation, functional *in vitro* systems especially neural circuits modeling, neurobiology and disease, regenerative medicine and drug discovery. Technical expertise includes cell culture, neuronal-related functional/cellular/molecular analysis, immunocytochemistry, confocal microscopy, histology, electrophysiology, cellular and molecular biology and genetics.

Webpage: [Google Scholar Profile](#)

Homepage: <http://www.nanoscience.ucf.edu/faculty/guo.php>

Experience:

- 2023 August Professor (Research), NanoScience Technology Center, University of Central Florida, Orlando, FL
- 2022- Graduate Faculty in NanoScience Technology, College of Graduate Studies, University of Central Florida, Orlando, FL
- 2016 - 2023 July Associate Professor (Research), NanoScience Technology Center, University of Central Florida, Orlando, FL
- 2018 - present Graduate Faculty, College of Graduate Studies, University of Central Florida, Orlando, FL
- 2010 - 2016 Assistant Professor (Research), NanoScience Technology Center, University of Central Florida, Orlando, FL
- 2006 - 2010 Research Associate, NanoScience Technology Center, University of Central Florida, Orlando, FL
- 2006 Adjunct Faculty, Department of Biology, Seminole Community College, Orlando, FL

Education:

PhD. Degree: University of Pennsylvania, Philadelphia, PA

Neuroscience. 2004. Advisor: Dr. Konrad Zinsmaier

Carried out a genetic screen in *Drosophila* leading to the identification and cloning of a gene essential for axonal transport of mitochondria, utilizing the vital technologies in genetics, molecular and cellular biology, including immunocytochemistry and electrophysiology.

M.S. Degree: University of Science and Technology of China, Hefei, Anhui

Biophysics. 1994. Advisor: Tiande Shou

B.S. Degree: Chinese Pharmaceutical University, Nanjing, Jiangsu

Pharmacology, 1991

Awards and Honors:

- 1996-1998 University Fellowship, University of Pennsylvania

1999-2002 Research Fellowship, University of Pennsylvania
 2002-2004 Research Fellowship, University of Arizona
 2018 Elected as Member of National Academy of Inventors, UCF chapter
 2019 Award for the trainings of Neurotherapeutics Discovery and Development for Academic, Scientists, NIH

Professional Activities:

2023- NIH/NINDS Panel Reviewer
 2023- Guest editor for *Biomedicines (MDPI)*
 2022- Graduate Faculty in NanoScience Technology, College of Graduate Studies, University of Central Florida, Orlando, FL
 2022 Invited Grant Reviewer for Inserm ATIP-Avenir Grant
 2022 Invited Grant Reviewer for UCF Seed Funding Program
 2022 Invited Grant Reviewer for KU Leuven (University of Leuven, Belgium)
 2021 Session Chair in the International Conference: Neurovascular and Neurodegenerative Diseases (NVND-2021)
 2020-present Project Grant Referee for Motoneuron Disease Association
 2020 Project Grant Referee for Ministry of Science, Technology & Space, Life Science and Biomedical Program 2020, Israel
 2018- Graduate Faculty in Biomedical Science, College of Graduate Studies, University of Central Florida, Orlando, FL
 2018 Member of National Academy of Inventors, UCF chapter
 2018 Merit Reviewer for National Science Foundation
 2017-present Panel Reviewer for Research Foundation of Paralyzed Veterans of America, American Institute of Biological Science
 2020 Peer Reviewer for *Advanced Science*
 2019-present Peer reviewer for MDPI journals
 2011-present Peer reviewer for *Regenerative Medicine*
 2011-present Peer reviewer for *Tissue Engineering*
 2011-present Peer reviewer for *In Vitro Cellular and Development Biology - Animal*
 2011-present Member, Society for Neuroscience
 2011-present Member, Tissue Engineering and Regenerative Medicine International Society

Teaching and Mentoring Experience:

Courses taught

Biomedical Nanotechnology (Instructor, University of Central Florida, FL. 2023, 2024)

Human Anatomy and Physiology (Instructor, Seminole Community College, FL. 2006)

It is a core course for Nursing students. As an instructor without any assistant, I took the full responsibility of teaching the basic discipline of this subject (6 hours/wk), answering questions and conduct student assessment.

Principles of Neuroscience (Teaching Assistant, University of Pennsylvania, PA. 1998)

It is a core course for undergraduate students of Biomedical career path. The responsibility included holding a weekly teaching session for students, answering questions, and assisting the professor for exams and other assessments.

Mentoring experience

Current graduate students:

Akhmetzada Kargazhanov (PhD), Biomedical Science (UCF) (Chair)
 Alice Rodriguez-Fuguet (PhD, Biomedical Science) (Chair)

Rafael Lopez (MS), NanoScience Technology Center (Chair)
 Elijah Banciu (MS), NanoScience Technology Center (Chair)
 Leticia Keler Soares (MS, NSTC) (Chair)

MS student Graduated

Eric LoRusso, Biomedical Science, MS., 2018 (UCF) (Chair)
 Kenneth Hawkins (MS), NanoScience Technology Center (Chair)

Undergraduate student (Honors Undergraduate Thesis)

Riley Brignoni, Biomedical Science, 2023-2024

Others

Have been supervising with Dr. James Hickman the work of 8 postdocs, 6 PhD students, 4 MS graduate students and multiple undergraduate students and research staffs, and served on the Committee of 5 PhD students and 6 MS students.

Currently Funded and/or Recently Completed Projects:

NIH/NIA 1R03AG070514-01 Xiufang Guo (PI) 1/15/2021 – 12/31/2023

Funded amount: \$296,370 Credit: 100

Investigation of the role of glia cells in Alzheimer's pathogenesis in a functional human-based in vitro model

This project aims to develop a human iPSC-derived in vitro model which is functionalized through the integration with BioMEMS technology, and apply it to investigate the role of astrocytes and microglia in AD Alzheimer's pathogenesis.

Hesperos/NIH R44AG071386-01A1 Xiufang Guo (PI, on subcontract) 2/1/2022 - 7/31/2024

Funded amount: \$130,000 Credit: 100

Modulatory Role of Blood-Brain-Barrier and Enzymatic Activity in an Innovative Human Model of Cholinergic Drug Induced Dementia

UCF/Office of Research & Commercialization/Florida High Tech Corridor Council (FHTCC)

Xiufang Guo (PI)

1/24/2023 – 7/31/2024

Funded amount: \$300,000 Credit: 100

Development of printed patterns on microphysiological systems of multi-cellular neuronal circuits for Parkinson's disease

LIFE Gerontology Research Awards at UCF Xiufang Guo (PI) 5/1/2018 – 3/31/2022

Funded amount: \$4,000 Credit: 100

Investigation of hyperglycemia-induced sarcopenia in a human-based functional system

NIH 5R01NS050452 Hickman (PI) 9/1/2016 – 5/31/2022

Funded amount: \$0 Credit: 0

An In Vitro Model of Stem Cell Innervation of Myotubes, Renewal

This project will develop an in vitro model of neurodegenerative disease Amyotrophic Lateral Sclerosis (ALS) utilizing human stem cells.

Role: Co-Investigator. Differentiation and characterization of functional motoneurons and muscle cells from ALS patient-derived iPSCs, integration of these cells into the functional NMJ system for ALS pathological study and drug evaluation.

Hesperos, Inc Hickman (PI on Sub-award for 1R44ES029892) 09/1/2016 - 4/30/2023

Funded amount: 91,234 Credit: 20

Development of an integrated 4-organ animal model

Role: Co-Investigator. Support Hesperos by generating different types of human cells and animal cells utilizing stem cells as the source as well as technical assistance for this project.

Hesperos, Inc. (multi-PI on grant) Hickman (PI on Sub-award for 1R43 AG060886-01) 9/01/2016 - 4/30/2023

Funded amount: \$40,564 Credit 20

Human on a chip system to investigate genetic risk factors in Alzheimer's disease

Role: Co-Investigator. Support Hesperos by generating cortical neurons differentiated from human stem cells harboring particular genetic mutations as well as technical assistance for this project.

Completed Research Support:

DoD (CDMRP) Hickman (PI) 8/15/2014 – 8/31/2016

Funded amount: \$0 Credit: 0

Establishment of a Human-Based in Vitro Functional NMJ System for ALS Drug Screening

Develop an in vitro human-based functional NMJ model that utilizes human stem cells for therapeutic design and pre-clinical efficacy evaluation of compounds for ALS treatment.

Role: Co-Investigator. Differentiation and characterization of functional motoneurons from human iPSCs, and integration of motoneurons and muscle cells into an in vitro BioMEMs system to form functional NMJs.

Patents:

Guo X, Stancescu M, Gonzales M, Hickman JJ. "Formation of neuromuscular junction in a co-culture comprising rat muscle cells overlaid with differentiated human spinal cord stem cells in a serum free medium," U.S. Patent No. 9,952,204, April 24, 2018.

Guo X, and Hickman JJ. "A Synthetic Mammalian Neuromuscular Junction and Method of Making," U.S. Patent No. 9,267,936 B2, Feb. 23, 2016.

Guo X, and Hickman JJ. "Formation of Neuromuscular Junctions in a Defined System," CA Patent Application Number 2,798,777, September 6, 2016.

Guo X and Hickman JJ. "Nociceptor-Like Cells Differentiated from Human Neural Progenitors and Uses Thereof" U.S. Non-Provisional Patent Application No. 15/235,867, filed on 8/12/2016.

Refereed Journal Publications:

1. Barakat N, Jangir H, Gallo L, Grillo M, **Guo X**, Hickman JJ. Inhibition of Metalloproteinases Extends Longevity and Function of In Vitro Human iPSC-Derived Skeletal Muscle. *Biomedicines*. 2024; 12(4):856.
2. **Guo X**, Akanda N, Fiorino G, Nimbalkar S, Long CJ, Colon A, Patel A, Tighe PJ, Hickman JJ. Human iPSC-Derived PreBötC-like Neurons and Development of an Opiate Overdose and Recovery Model. *Advanced Biology (Weinh)*. 2023 2300276
3. Badu-Mensah A, **Guo X**, Mendez R, Parsaud H and Hickman JJ. The Effect of Skeletal Muscle-Specific Creatine Treatment on ALS NMJ Integrity and Function. *International Journal of Molecular Science*. 2023; 24(17):13519.
4. Badu-Mensah A, **Guo X**, Nimbalkar S, Cai Y, Hickman JJ. ALS mutations in both human skeletal muscle and motoneurons differentially affects neuromuscular junction integrity and function. *Biomaterials*.2022.121752.

5. Nimbalkar S, **Guo X**, A Colón, M Jackson, N Akanda, A Patel, M Grillo, JJ. Hickman. Development of a functional human induced pluripotent stem cell-derived nociceptor MEA system as a pain model for analgesic drug testing. *Front Cell Dev Biol.* 2023; 11:1011145.
6. Badu-Mensah A, Valinski P, Parsaud H, Hickman JJ, **Guo X**. Hyperglycemia negatively affects iPSC-derived myoblast proliferation and skeletal muscle regeneration and function. *Cells.* 2022; 11:03674.
7. Sasserath T, Robertson AL, Mendez R, Hays TT, Smith E, Cooper H, Akanda N, Rumsey JW, **Guo X**, Farkhondeh A, Pradhan A, Baumgaertel K, Might M, Rodems S, Zheng W, and Hickman JJ. An induced pluripotent stem cell-derived NMJ platform for study of the NGLY1-Congenital Disorder of Deglycosylation. *Advanced Therapeutics.* 2022; Nov;5(11):2200009.
8. Autar K, **Guo X**, Rumsey JW, Long C, Akanda N, Jackson M, Narasimhan NS, Caneus J, Morgan D, Hickman JJ. Establishment of an hiPSC-cortical neuron differentiation and maturation model and its application to neurological disorders through human body-on-a-chip systems. *Stem Cell Report.* 2022;17(1): 96-109.
9. Badu-Mensah A., **Guo X**, Hickman JJ. (2021). ALS Skeletal Muscle: Victim or Culprit. *The Neuroscience Chronicles.* 2021;2(2):31-33.
10. **Guo X**, Badu-Mensah A, Thomas MC, McAleer CW, Hickman JJ. Characterization of functional human skeletal myotubes and neuromuscular junction derived from the same induced pluripotent stem cell source. *Bioengineering (Basel).* 2020 Oct 22;7(4).
11. Badu-Mensah A, **Guo X**, McAleer CW, Rumsey JW, Hickman JJ. Functional skeletal muscle model derived from SOD1-mutant ALS patient iPSCs recapitulates hallmarks of disease progression. *Sci Rep.* 2020 Aug 31;10(1):14302.
12. Caneus J, Akanda N, Rumsey JW, **Guo X**, Jackson M, Long CJ, Sommerhage F, Georgieva S, Kanaan NM, Morgan D, Hickman JJ. A human induced pluripotent stem cell-derived cortical neuron human-on-a chip system to study A β ₄₂ and tau-induced pathophysiological effects on long-term potentiation. *Alzheimers Dement (N Y).* 2020;6(1):e12029.
13. Colón A, Badu-Mensah A, **Guo X**, Goswami A, Hickman JJ. Differentiation of Intrafusal Fibers from Human Induced Pluripotent Stem Cells. *ACS Chem Neurosci.* 2020 Apr 1;11(7):1085-1092.
14. **Guo X**, Smith V, Jackson M, Tran M, Thomas M, Patel A, Lorusso E, Nimbalkar S, Cai Y, Christopher W. McAleer CW, Ying Wang Y, Long CJ, Hickman JJ. A Human-Based Functional NMJ System for Personalized ALS Modeling and Drug Testing. *Advanced Therapy.* 2020; 3(2000133).
15. LoRusso E, Hickman JJ, **Guo X**. Ion channel dysfunction and altered motoneuron excitability in ALS. *Neurol Disord Epilepsy J.* 2019;3(2).
16. Gonzalez M, **Guo X**, Lin M, Stancescu M, Molnar P, Spradling S, Hickman JJ. Polarity Induced in Human Stem Cell Derived Motoneurons on Patterned Self-Assembled Monolayers. *ACS Chem Neurosci.* 2019 Jun 19;10(6):2756-2764. (Equal contribution)
17. Patrón LA, Nagatomo K, Eves DT, Imad M, Young K, Torvund M, **Guo X**, Rogers GC, Zinsmaier KE. Cul4 ubiquitin ligase cofactor DCAF12 promotes neurotransmitter release and homeostatic plasticity. *J Cell Biol.* 2019 Mar 4;218(3):993-1010.
18. Simandi Z, Pajer K, Karolyi K, Sieler T, Jiang LL, Kolostyak Z, Sari Z, Fekecs Z, Pap A, Patsalos A, Contreras GA, Reho B, Papp Z, **Guo X**, Horvath A, Kiss G, Keresztessy Z, Vámosi G, Hickman J, Xu H, Dormann D, Hortobagyi T, Antal M, Nógrádi A, Nagy L. Arginine Methyltransferase PRMT8 Provides Cellular Stress Tolerance in Aging Motoneurons. *J Neurosci.* 2018 Aug 29;38(35):7683-7700.

19. Santhanam N, Kumanchik L, **Guo X**, Sommerhage F, Cai Y, Jackson M, Martin C, Saad G, McAleer CW, Wang Y, Lavado A, Long CJ, Hickman JJ. Stem cell derived phenotypic human neuromuscular junction model for dose response evaluation of therapeutics. *Biomaterials*. 2018 Jun;166:64-78. (Equal contribution)
20. Lavado A, **Guo X**, Smith AS, Akanda N, Martin C, Cai Y, Elbrecht D, Tran M, Bryant JP, Colon A, Long CJ, Lambert S, Morgan D, Hickman JJ. Evaluation of Holistic Treatment for ALS Reveals Possible Mechanism and Therapeutic Potential. *Int J Pharm Pharm Res*. 2017 Dec;11(1):348-374. (Equal contribution)
21. Colón A, **Guo X**, Akanda N, Cai Y, Hickman JJ. Functional analysis of human intrafusal fiber innervation by human γ -motoneurons. *Sci Rep*. 2017 Dec 8;7(1):17202.
22. **Guo X**, Colon A, Akanda N, Spradling S, Stancescu M, Martin C, Hickman JJ. Tissue engineering the mechanosensory circuit of the stretch reflex arc with human stem cells: Sensory neuron innervation of intrafusal muscle fibers. *Biomaterials*. 2017 Apr;122:179-187.
23. Oleaga C, Bernabini C, Smith AS, Srinivasan B, Jackson M, McLamb W, Platt V, Bridges R, Cai Y, Santhanam N, Berry B, Najjar S, Akanda N, **Guo X**, Martin C, Ekman G, Esch MB, Langer J, Ouedraogo G, Cotovio J, Breton L, Shuler ML, Hickman JJ. Multi-Organ toxicity demonstration in a functional human in vitro system composed of four organs. *Sci Rep*. 2016 Feb 3;6:20030.
24. Berry BJ, Akanda N, Smith AS, Long CJ, Schnepfer MT, **Guo X**, Hickman JJ. Morphological and functional characterization of human induced pluripotent stem cell-derived neurons (iCell Neurons) in defined culture systems. *Biotechnol Prog*. 2015 Nov-Dec;31(6):1613-22.
25. **Guo X**, Greene K, Akanda N, Smith A, Stancescu M, Lambert S, Vandenburg H, Hickman J. In vitro Differentiation of Functional Human Skeletal Myotubes in a Defined System. *Biomater Sci*. 2014 Jan 1;2(1):131-138.
26. **Guo X**, Spradling S, Stancescu M, Lambert S, Hickman JJ. Derivation of sensory neurons and neural crest stem cells from human neural progenitor hNP1. *Biomaterials*. 2013 Jun;34(18):4418-27.
27. **Guo X**, Ayala JE, Gonzalez M, Stancescu M, Lambert S, Hickman JJ. Tissue engineering the monosynaptic circuit of the stretch reflex arc with co-culture of embryonic motoneurons and proprioceptive sensory neurons. *Biomaterials*. 2012 Aug;33(23):5723-31.
28. Davis H, **Guo X**, Lambert S, Stancescu M, Hickman JJ. Small Molecule Induction of Human Umbilical Stem Cells into MBP-positive Oligodendrocytes in a Defined Three-Dimensional Environment. *ACS Chem Neurosci*. 2012 Jan 18;3(1):31-39.
29. **Guo X**, Gonzalez M, Stancescu M, Vandenburg HH, Hickman JJ. Neuromuscular junction formation between human stem cell-derived motoneurons and human skeletal muscle in a defined system. *Biomaterials*. 2011 Dec;32(36):9602-11.
30. **Guo X**, Das M, Rumsey J, Gonzalez M, Stancescu M, Hickman J. Neuromuscular junction formation between human stem-cell-derived motoneurons and rat skeletal muscle in a defined system. *Tissue Eng Part C Methods*. 2010 Dec;16(6):1347-55.
31. **Guo X**, Johe K, Molnar P, Davis H, Hickman J. Characterization of a human fetal spinal cord stem cell line, NSI-566RSC, and its induction to functional motoneurons. *J Tissue Eng Regen Med*. 2010 Mar;4(3):181-93.

32. Das M, Rumsey JW, Gregory CA, Bhargava N, Kang JF, Molnar P, Riedel L, **Guo X**, Hickman JJ. Embryonic motoneuron-skeletal muscle co-culture in a defined system. *Neuroscience*. 2007 May 11;146(2):481-8.
33. **Guo X**, Macleod GT, Wellington A, Hu F, Panchumarthi S, Schoenfield M, Marin L, Charlton MP, Atwood HL, Zinsmaier KE. The GTPase dMiro is required for axonal transport of mitochondria to *Drosophila* synapses. *Neuron*. 2005 Aug 4;47(3):379-93.
34. Bronk P, Wenniger JJ, Dawson-Scully K, **Guo X**, Hong S, Atwood HL, Zinsmaier KE. *Drosophila* Hsc70-4 is critical for neurotransmitter exocytosis in vivo. *Neuron*. 2001 May;30(2):475-88.

Book Chapters:

Guo X, Sommerhage F, McAleer C, Martin C, Long C, Wang Y, Santhanam N, Colon A, Oleaga Sancho C, Hickman JJ. “*In vitro* Modeling of Nervous System- Engineering of the Reflex Arc” in *Neural Engineering*. Editor: L.G. Zhang, D.L. Kaplan. Springer International Publishing, Switzerland 2016

Smith A.S.T., Long CJ, McAleer C, **Guo X**, Esch M, Prot JM, Shuler M and Hickman JJ. “Body-on-a-Chip” Technology and Supporting Microfluidics. In: *Human-Based Systems for Translational Research*. Editor, R. Coleman. Royal Society of Chemistry. 2014

Guo X, Hickman JJ. “Treatment of ALS utilizing a stem cell strategy” in *Motor Neuron Diseases: Causes, Classification and Treatments*, Nova Science Publishers, Hauppauge, New York. 2011.

Refereed Conference Proceedings:

Hawkins K, Aiken R, Akanda N, Patel A, Gallo L, Lopez R, **Guo X**, J Hickman. Human iPSC-CMT2s Motoneuron Model for Characterization and Drug Development. American Society for Neural Therapy and Repair (ASNTR), April 25-27, 2024. Clear Water Beach, FL

Powell H, Aiken R, **Guo X**, Hickman J. “Investigation of Alzheimer’s Disease-Related Neuromuscular Dysfunction Using hiPSC-Derived Cells in a Compartmentalized BioMEMs Platform”, American Society for Neural Therapy and Repair (ASNTR), April 25-27, 2024. Clear Water Beach, FL

Guo X, Autar K, Caneus J, Powell H, Santhanam N, Kumanchik L, Smith V, Akanda N, Jackson M, Long C, Grillo M, Hickman J. “In vitro human iPSC-derived neural models for disease investigation and drug development”, New Investigators in Alzheimer’s Disease Grantee Meeting, April 9-11, 2024. NIH, Bethesda, MD (**Speaker, session Moderator**)

X Guo, A Badu-Mensah, V Smith, N Santhanam, T Sasserath, W Hagen, CJ Long, JJ Hickman. “A human-based functional neuromuscular junction system for personalized rare disease modeling and drug testing”, Rare Disease Day, Feb. 29th, 2024. NIH, Bethesda, MD

Autar K, Powell H, Honore C, Grillo M, Narasimhan NS, Bogen W, Long C, **Guo X**, Morgan D, Hickman J. “Evaluation of long-term potentiation and drug efficacy in a familial Alzheimer’s disease and frontotemporal dementia hiPSC-cortical neuron microphysiological system”, Rare Disease Day, Feb. 29th, 2024. NIH, Bethesda, MD

Guo X, Akanda N, Fiorino G, Nimbalkar S, Long C.G., Colon A, Patel A, Tighe P.J., Hickman JJ. Human iPSC-Derived PreBötC-like Neurons and Development of an Opiate Overdose and Recovery Model. 5th Annual NIH HEAL Initiative Scientific Meeting, NIH, Washington D.C., Feb 7-8, 2024. (**Panel Speaker**)

Guo X, Patel A, Poddar S, Srivastava G, Wang H, Gamarra J, Akanda N, Roles J, McAleer C, Long C, Tighe P, Schmidt S, Shuler ML, Hickman JJ. Human-on-a-chip multi-organ system to model overdose and rescue for efficacy and off-target toxicity evaluation, NIH, Washington D.C., Jan 10-11, 2024. (**Speaker**)

Guo X, Autar K, Badu-Mensah A, Smith V, Long C, Hickman JJ. Modeling Human Neurological Diseases Utilizing iPSC-Neurons in Bio-MEMS. V-Nano 2023. 6th edition of Nanotechnology and Nanomaterials, SCIWIDE Webinars. Oct 27th, 2023 (**Keynote speaker**, Virtual)

Guo X, Autar K, Caneus J, Akanda N, Powell H, Jackson M, Long C, Grillo M, Hickman JJ. Modeling Alzheimer's Disease Utilizing Human iPSC-Cortical Neurons on MEA. 8th Neurological Disorders Summit (NDS-2023). Rome, Italy, June 12-14, 2023. (**Invited Speaker**, Virtual)

Guo X, Badu-Mensah A, Valinski P, Parsaud H, Hickman JJ. Hyperglycemia Negatively Affects iPSC-Derived Myoblast Proliferation and Skeletal Muscle Regeneration and Function. 8th Edition of International Webinar on Aging and Rejuvenation. Germany, July 17-18, 2023 (**Invited Speaker**, Virtual)

Barakat N, Gallo L, **Guo X**, JJ Hickman. "Inhibition of metalloproteinases extends longevity and function of in vitro aged human iPSC- skeletal muscle", MPS Summit. June 26-30, 2023. Berlin, Germany

Lang S, Patel A, Podder S, Nierenberg D, Grillo M, **Guo X**, Hickman JJ. "Investigation of the efficacy and off-target toxicity of an acute methadone overdose and naloxone treatment in multiorgan Human-on-a-Chip systems", MPS Summit. June 26-30, 2023. Berlin, Germany

X Guo, N Akanda, S Poddar, H Wang, A Patel, CJ Long, PJ Tighe, JJ Hickman. "Development of an iPSC-preBötC neuron opiate overdose and recovery multi-organ platform", NIDA Genetic Consortium Meetings. May 16-17, 2023. NIH, Bethesda, MD (**Speaker**)

Hawkins K, Manalo A, Badu-Mensah A, Patel A, Parsaud H, **Guo X**, Hickman JJ. Exploration of the role of Schwann cells in an ALS pathogenesis in an iPSC-NMJ model. 2023 ASNTR Annual Conference, Clearwater Beach, FL, April 27 – 30, 2023.

Cox I, Powell H, Akanda N, Autar K, **Guo X**, Hickman JJ. Investigation of the effect of Deanna Protocol on the treatment of Alzheimer's Disease in a human iPSC-Derived cortical neuron model. 2023 ASNTR Annual Conference, Clearwater Beach, FL, April 27 – 30, 2023.

Patel A, Poddar S, Wang H, Lang S, Nierenberg D, Emmons R, Gallo L, Brighton R, Akanda N, Roles J, Klion J, McAleer C, Long C, **Guo X**, Shuler ML, Hickman JJ. Multi-organ human-on-a-chip system to address overdose and acute and chronic efficacy and off-target toxicity. 4th Annual NIH HEAL Initiative Investigator Meeting, Feb 21-22, 2023. Virtual (**Invited**)

Guo X, Badu-Mensah A, Smith V, Santhanam N, Kumanchik L, Jackson M, Cai Y, Long CJ, Hickman JJ. Human-based neuromuscular system for personalized ALS modeling and drug testing. MPS Summit, New Orleans, LA, 2022 May 30 – June 3, 2022.

Guo X, Akanda N, Fiorino G, Nimbalkar S, Poddar S, Wang H, Brighton R, Long CJ, Colon A, Patel Aa, Tighe PJ, Hickman JJ. Development of a multi-organ opiate overdose and recovery platform by differentiation of preBötC neurons and nociceptors from iPSCs. MPS Summit, New Orleans, LA, 2022 May 30 – June 3, 2022.

Manalo A, Badu-Mensah A, Patel A, Parsaud H, Lambert S, **Guo X**, Hickman JJ. Integration of Schwann cells to construct a tripartite NMJ model for personalized medicine. MPS Summit, New Orleans, LA, 2022 May 30 – June 3, 2022.

Cox I, Autar K, Lindquist S, Foreman M, **Guo X**, Hickman JJ. Analysis of Rat iPSC-Cortical Neurons on MEA and its Comparison with Human iPSC-Cortical Neurons. MPS Summit, New Orleans, LA, 2022 May 30 – June 3, 2022.

Powell H, Autar K, Cox I, Akanda N, Grillo M, **Guo X**, Hickman JJ. Investigation of AD pathology in iPSC-cortical neurons carrying PSEN1 and APP mutations. MPS Summit, New Orleans, LA, 2022 May 30 – June 3, 2022.

Barakat N, Badu-Mensah A, Jangir H, McAleer CW, **Guo X**, Hickman JJ. Maximizing Skeletal Muscle Adhesion to Enhance Human Neuromuscular Junction Integrity and Function. MPS Summit, New Orleans, LA, 2022 May 30 – June 3, 2022.

Badu-Mensah A, Valinski P, Parsaud H, **Guo X**, Hickman JJ. Investigate the effect of hyperglycemia on muscle development and function utilizing Human iPSC-derived model. MPS Summit, New Orleans, LA, 2022 May 30 – June 3, 2022.

Autar K, Caneus J, **Guo X**, Akanda N, Jackson M, Long C, Grillo M, Lindquist S, Hickman JJ. Development of a Functional Human iPSC-Cortical Neuron-MEA Model for Long Term Potentiation Analysis and Alzheimer's Drug Testing. MPS Summit, New Orleans, LA, 2022 May 30 – June 3, 2022.

Guo X, Emmons R, Patel A, Poddar S, Wang H, Brighton R, Gallo L, Akanda N, Roles J, McAleer C, Long C, Tighe P, Schmidt S, Shuler ML, Hickman JJ. "Multi-organ human-on-a-chip system to address overdose and acute and chronic efficacy and off-target toxicity," 19th NIH Tissue Chip Consortium Meeting. Opioid Addiction and Overdose (NIH HEAL Initiative Project). Virtual, Feb 10th ~11st, 2022 (invited)

Guo X, Badu-Mensah A, Smith V, Jackson M, Tran M, Thomas M, Cai Y, McAleer CW, Wang W, Long CJ, Hickman JJ. "Human-based neuromuscular system for personalized ALS modeling and drug testing," Neurovascular and Neurodegenerative Diseases. Nov 8-9, 2021 (**Invited speaker, Session chair**)

Guo X, Colon A, Santhanam N, Kumanchik L, Badu-Mensah A, Long C, Hickman JJ. "Development of in vitro functional spinal reflex arc system using human stem cells," EuroSciCon Conference on Nanotechnology. Virtual. May 27th ~28th, 2021 (**Invited speaker**)

Poddar S, Akanda N, Pestana Pires DeMello C, Brighton R, Roles J, Caneus J, Fiorino G, Jackson M, Gamarra J, Wang H, McAleer C, Long C, **Guo X**, Shuler ML, Hickman JJ. "Multi-organ human-on-a-chip system to address overdose and acute and chronic efficacy and off-target toxicity," NIH HEAL Investigators Meeting. Virtual, May 17-19, 2021 (**Invited**)

Poddar S, Akanda N, DeMello CPP, Brighton R, Roles J, Caneus J, Fiorino G, Jackson M, Gamarra J, McAleer C, Long C, **Guo X**, Shuler ML, Hickman JJ. "Multi-organ human-on-a-chip system to address overdose and acute and chronic efficacy and off-target toxicity," 18th NIH Tissue Chip Consortium Meeting. Opioid Addiction and Overdose (NIH HEAL Initiative Project). Virtual, March 30th ~31st, 2021 (contributed)

Guo X, Smith V, Jackson M, Tran M, Thomas M, Patel A, Lorusso E, Nimbalkar S, Cai Y, McAleer CW, Wang Y, Long CJ, Hickman JJ. "A Human-Based Functional NMJ System for Personalized ALS Modeling and Drug Testing," ALS/MND symposium. 2020 Dec 9th~11th Virtual. (contributed)

Badu-Mensah A, **Guo X**, McAleer CW, Rumsey JW, and Hickman JJ. "Pathological changes in the ALS skeletal muscle affect NMJ integrity," ALS/MND symposium. 2020 Dec 9th~11th. Virtual. (contributed)

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