

University of Florida
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Current Positions

Robert W. Adenbaum Professor in Engineering Innovation, J. Crayton Pruitt Family Department of Biomedical Engineering, U. of Florida. 6/17-pres.

UF Research Foundation Professor, U of Florida. 8/24-pres.

Affiliate Faculty, Department of Mechanical Engineering, U. of Florida. 6/17-pres.

Affiliate Faculty, Department of Neurology, U. of Florida. 6/21-pres.

Past Positions

Senior Associate Chair, J. Crayton Pruitt Family Department of Biomedical Engineering, U. of Florida. 8/17-6/20

Visiting Scholar, Department of Mechanical Engineering, U. of South Florida. 9/15-7/16

Adjunct Professor, Dept. of Physical Medicine & Rehabilitation, U. of Michigan. 9/12-5/17

Professor, School of Kinesiology, U. of Michigan. 9/11-5/17

Professor, Dept. of Biomedical Engineering, U. of Michigan. 9/11-5/17

Associate Dean for Research, School of Kinesiology, U. of Michigan. 3/10-6/13

Visiting Scholar, Institute for Neural Computation, UC San Diego. 1/08-6/08

Adjunct Associate Professor, Dept. of Physical Medicine & Rehabilitation, U. of Michigan. 9/07-8/12

Associate Professor, Dept. of Biomedical Engineering, U. of Michigan. 9/06-8/11

Associate Professor, School of Kinesiology, U. of Michigan. 9/06-8/11

Graduate Program Chair, School of Kinesiology, U. of Michigan. 9/06-6/09

Faculty Member, Neuroscience Graduate Program, U. of Michigan. 3/06-5/17

Adjunct Assistant Professor, Dept. of Physical Medicine & Rehabilitation, U. of Michigan. 5/05-8/07

Assistant Professor, Dept. of Biomedical Engineering, U. of Michigan. 9/01-8/06

Assistant Professor, School of Kinesiology, U. of Michigan. 9/01-8/06

Post-Doctoral Fellow, Dept. of Electrical Engineering, U. of Washington. 5/00-8/01

Post-Doctoral Fellow, Dept. of Neurology, UCLA. 10/98-4/00

Visiting Scholar, Division of Neurophysiology, Panum Institute, U. of Copenhagen. 4/97-5/97

Education

Ph.D. University of California, Berkeley, 1998

M.S. University of Miami, 1994

B.S. University of Central Florida, 1992

Research Highlights

- Director of Human Neuromechanics Laboratory (09/2001-present)
 - Research focus is on neural control and biomechanics of human locomotion in health and disability, including work on mobile brain imaging, robotic exoskeletons, and bionic prostheses
 - Average laboratory annual research expenditures ~\$1,000,000
 - Secured more than \$17 million in external funds from 12 agencies to support my own laboratory
 - Government funding agencies – National Institutes of Health, National Science Foundation, Army Research Laboratory, Office of Naval Research, U.S. Army Medical Research and Materiel Command
 - Private funding agencies – Christopher Reeve Paralysis Foundation, Paralyzed Veterans of American Spinal Cord Research Foundation, Rick Hansen Man-In-Motion Foundation, American Heart Association

- Experience working on large multidisciplinary, multi-university research projects
 - Army Research Laboratory Collaborative Technology Alliance on Cognition and Neuroergonomics had \$56 million funding for >8 universities and multiple industry partners
 - U.S. Army Medical Research and Materiel Command bionic lower limb prosthesis project had \$8.7 million funding for three universities (U. Michigan, MIT, U. Washington)
 - Office of Naval Research brain imaging project had \$3.4 million funding for 4 universities (UCSD, U. Michigan, Columbia U., Wake Forest U.)
 - NIH U01 project on multi-modal brain imaging in healthy elderly humans funded with ~\$5.5 million with 5 main faculty labs
- Experience consulting and working with industry partners
 - Adicep Technologies, Inc.: projects on robotic exoskeletons
 - Lockheed Martin Corp.: projects on robotic exoskeletons
 - Ekso Bionics: projects on robotic exoskeletons
- Published 133 research papers in peer-reviewed journals
- h-index of 75 (Google Scholar), 63 (Semantic Scholar)
- >18,000 citations (Google Scholar)
- Supervised 19 doctoral students to graduation and currently supervising 5 more
- Supervised 14 post-doctoral scholars that have left the lab and 3 currently in lab
- Given > 110 international and national invited research presentations

Administrative Highlights

University of Florida

- Senior Associate Chair, J. Crayton Pruitt Family Department of Biomedical Engineering, U. of Florida (08/2017-6/2020)
 - Led academic team (Associate Chair for Graduate Studies, Associate Chair for Undergraduate Studies, Undergraduate Coordinator, and Graduate Academic Advisor, and Undergraduate Academic Advisor) to provide overall long-range management, strategic vision and coordination of department academic programs
 - Responsible for establishing and maintaining department academic program requirements, policies, procedures, and course offerings
 - Provided oversight and leadership of SACS accreditation
 - Served as the Chair's representative in her absence
 - ABET Coordinator for initial application for undergraduate program certification in 2018

University of Michigan

- Rehabilitation Robotics Faculty Group Leader, University of Michigan (01/2010-05/2017)
 - Obtained funding from Provost for 4 new Rehabilitation Robotics faculty cluster hires across four departments (>\$3.5 million)
 - Organized multiple retreats and meetings to bring together 4 new hires and 7 current faculty to form Faculty Group of 11 tenure-line faculty
 - Secured additional funding from School of Kinesiology, College of Engineering, School of Medicine, Rackham Graduate School, and Vice President of Research for Rehabilitation for a Rehabilitation Robotics Seminar Series and website
 - External funding for collaborative projects among group members was over \$2 million
- Associate Dean for Research, School of Kinesiology, University of Michigan (03/2010-06/2013)
 - Oversaw research activities for school (~\$7 million annual research expenditures)
 - Developed and implemented research activity procedures and policies
 - Facilitated and approved grant and contract proposal submissions (~70 proposals per year)
 - Supervised two staff members (Contract and Grant Specialist, and Research Engineer)
 - Assisted with large, cross campus, multidisciplinary awards
 - Sport, Health, Activity Research and Policy (SHARP) Center for Girls and Women with ~\$1 million award from Women's Sports Foundation

- Adidas/University of Michigan partnership to provide biomechanics and human performance expertise to the company
- Responsible for faculty and school adherence to policies of Human Subject Institutional Review Board, University Committee for Use of Animals in Research and Education, Conflict of Interest/Commitment and Office of Technology Transfer
- Established and documented research productivity metrics for assessing performance
- Promoted research marketing (media relations, press releases, web site)
- Worked with other Associate Deans for Research across campus to represent school's interests and develop collaborative research activities
- Mentored junior faculty on their research programs
- Developed and implemented policy for postdoctoral research fellows
- Served in Dean's place at Provost meetings when Dean was traveling
- Graduate Program Chair, School of Kinesiology, University of Michigan (09/2006-06/2009)
 - Graduate enrollment increased from 38 to 58 students
 - Funding for doctoral students increased to 100%
 - Doctoral student yield increased from 53% to 86%
 - Implemented new Graduate Program Newsletter to increase visibility of program
 - Created an online process for review of graduate applications
 - Established system to track graduate student funding and achievements
 - Revised student orientation to improve graduate student success and sense of community
 - Created new required course on Professional Skills for Research Scientists
 - Supervised one staff member (Graduate Program Coordinator)
- General School Leadership, University of Michigan
 - Served on hiring committees for >10 staff positions including Chief Administrative Officer
 - Chaired 5 faculty search committees
 - Graduate Program Committee, 2002-2006
 - Executive Committee, 2009
 - New Building Committee to obtain administrative approval, funding, and planning for additional space, 2011-2014
- General University Leadership, University of Michigan
 - Model Spinal Cord Injury Care System Advisory Board, 2003-2012
 - Faculty Senate Assembly, 2009-2011
 - Advisory Committee for Recreational Sports, 2009-2013
 - Global Health Visioning Committee, 2011
 - Provost's Faculty Advisory Committee, 2011-2013
 - SHARP Center for Girls and Women Internal Advisory Group, 2011-2013
 - Responsible Conduct for Research and Scholarship Task Force, 2011-2013
 - Global Challenges Advisory Committee, 2012-2015
 - Chair of Committee, 2013-2015
 - CIC Academic Leadership Program Fellow, 2012-2013
 - Administrative Services Transformation Advisory Committee, 2013-2014

Journal Papers (Peer Reviewed)

- 139.** Jacobsen NA, Ferris DP (2024) Exploring electrocortical signatures of gait adaptation: differential neural dynamics in slow and fast gait adaptors. *eNeuro*, 0515-23.2024.
- 138.** Jacobsen NA, Ferris DP (2024) Electrocortical theta activity may reflect sensory prediction errors during adaptation to a gradual gait perturbation. *PeerJ*, 12:e17451.
- 137.** Hwang J, Liu C, Winesett SP, Chatterjee SA, Gruber AD, Swanson CW, Manini TM, Hass CJ, Seidler RD, Ferris DP, Roy A, Clark DJ (2024) Prefrontal cortical activity during uneven terrain walking in younger and older adults. *Front. Aging Neurosci. - Neurocognitive Aging and Behavior*, 1389488.

136. Richer N, Bradford JC, **Ferris DP** (2024) Mobile neuroimaging: What we have learned about the neural control of human walking, with an emphasis on EEG-based research. *Neuroscience & Biobehavioral Reviews*, 105718.
135. Liu C, Downey RJ, Salminen JS, Rojas SA, Richer N, Pliner EM, Hwang J, Cruz-Almeida Y, Manini TM, Hass CJ, Seidler RD, Clark D, **Ferris DP** (2024). Electrical brain activity during human walking with parametric variations in terrain unevenness and walking speed. *Imaging Neuroscience*, 2:1-33.
134. Studnicki A, **Ferris DP** (2024) Dual-layer electroencephalography data during real-world table tennis. *Data in Brief*, 52:110024.
133. Studnicki A, Seidler RD, **Ferris DP** (2023) A table tennis serve versus rally hit elicits differential hemispheric electrocortical power fluctuations. *Journal of Neurophysiology*, 130:1444-1456.
132. Hauge TC, **Ferris DP**, Seidler RD (2023) Individual differences in cooperative and competitive play strategies. *PLoS One*, 18(11): e0293583.
131. Hybart RL, **Ferris DP** (2023) Gait variability of outdoor vs. treadmill walking with bilateral robotic ankle exoskeletons under proportional myoelectric control. *PLoS One*, 18(11): e0294241.
130. Downey R, **Ferris DP** (2023) iCanClean removes motion, muscle, eye, and line-noise artifacts from phantom EEG. *Sensors*, 23(19):8214.
129. Huang H, **Ferris DP** (2023) Non-invasive brain imaging to advance the understanding of human balance. *Current Opinion in Biomedical Engineering*, 28:100498.
128. Symeonidou E, **Ferris DP** (2023) Visual occlusions result in phase synchrony within multiple brain regions involved in sensory processing and balance control. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 31: 3772-3780.
129. Jacobsen NA, **Ferris DP** (2023) Electrocortical activity correlated with locomotor adaptation during split-belt treadmill walking. *Journal of Physiology*, 601:3921-3944.
128. Barrutia WS, Bratt J, **Ferris DP** (2023) A human lower limb mechanical phantom for the testing of knee exoskeletons. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 31:2497-2506.
127. Liu C, Downey RJ, Mu Y, Richer N, Hwang J, Shah VA, Sato SD, Clark DJ, Hass CJ, Manini TM, Seidler RD, **Ferris DP** (2023) Comparison of EEG source localization using simplified and anatomically accurate head models in younger and older adults. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 31: 2591-2602.
126. Hybart R, Villancio-Wolter KS, **Ferris DP** (2023) Metabolic cost of walking with electromechanical ankle exoskeletons under proportional myoelectric control on a treadmill and outdoors. *PeerJ*, 11:e15775.
125. Hybart RL, **Ferris DP** (2023) Neuromechanical adaptation to walking with electromechanical ankle exoskeletons under proportional myoelectric control. *IEEE Open Journal of Engineering in Medicine and Biology*, 4:119-128.
124. Symeonidou E, **Ferris DP** (2023) Practice walking on a treadmill mounted balance beam modifies beam walking sacral movement and alters performance in other balance tasks. *PLoS One*, 18(6), e0283310.
123. Studnicki A, **Ferris DP** (2023) Parieto-occipital electrocortical dynamics during real-world table tennis. *eNeuro*, 10(4):0463-22.2023.
122. Hybart RL, **Ferris DP** (2023) Embodiment for robotic lower-limb exoskeletons: a narrative review. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 31:657-668.
121. Bu A, MacLean MK, **Ferris DP** (2023) EMG-informed neuromuscular model assesses the effects of varied bodyweight support on muscles during overground walking. *Journal of Biomechanics*, 151:111532.
120. Gonsisko CB, **Ferris DP**, Downey RJ (2023) iCanClean improves independent component analysis of mobile brain imaging with EEG. *Sensors*, 23(2):928.
119. Downey RJ, Richer N, Gupta R, Liu C, Pliner EM, Roy A, Hwang J, Clark DJ, Hass CJ, Manini TM, Seidler RD, **Ferris DP** (2022) Uneven terrain treadmill walking in younger and older adults. *PLoS One*, 17(12):e0278646.
118. Studnicki A, Downey RJ, **Ferris DP** (2022) Characterizing and removing artifacts using dual-layer EEG during table tennis. *Sensors*, 22(15):5867.

117. MacLean MK, Ferris DP (2022) Effects of simulated reduced gravity and walking speed on ankle, knee, and hip quasi-stiffness in overground walking. *PLoS One*, 17(8):e0271927.
116. Wade FE, Kellaher GK, Pesquera S, Baudendistel ST, Roy A, Clark DJ, Seidler RD, Ferris DP, Manini TM, Hass CJ (2022) Kinematic analysis of speed transitions within walking in younger and older adults. *Journal of Biomechanics*, 138:111130.
115. Symeonidou E, Ferris DP (2022) Intermittent visual occlusions increase balance training effectiveness. *Frontiers in Human Neuroscience*, 16:748930.
114. Peterson SM, Ferris DP (2021) Human electrocortical, electromyographical, ocular, and kinematic data during perturbed walking and standing. *Data in Brief*, 39:107635.
113. Fleming A, Stafford N, Huang S, Hu X, Ferris DP, Huang HH (2021) Myoelectric control of robotic lower limb prostheses: a review of electromyography interfaces, control paradigms, challenges and future directions. *Journal of Neural Engineering*, 18:041004.
112. MacLean MK, Ferris DP (2021) Human muscle activity and lower limb biomechanics of overground walking at varying levels of simulated reduced gravity and gait speeds. *PLoS One*, 16(7), e0253467.
111. Schlink BR, Nordin AD, Brooks C, Ferris DP (2021) Fatigue induces altered spatial myoelectric activation patterns in the medial gastrocnemius during locomotion. *Journal of Neurophysiology*, 125(5):2013-2023.
110. Schlink BR, Nordin AD, Ferris DP (2020) Human myoelectric spatial activation differs among lower limb muscles and locomotion speeds. *Physiological Reports*, 8(23):e14652.
109. MacLean M, Ferris DP (2020) Design and validation of a low-cost bodyweight support system for overground walking. *Journal of Medical Devices*, 14:4.
108. Richer N, Downey, RJ, Hairston WD, Ferris DP, Nordin AD (2020) Motion and muscle artifact removal validation using an electrical head phantom, robotic motion platform, and dual layer mobile EEG. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 28:1825-1835.
107. Schlink BR, Nordin AD, Ferris DP (2020) Comparison of signal processing methods for reducing motion artifacts in high-density electromyography during human locomotion. *IEEE Open Journal of Engineering in Medicine and Biology*, 1:156-165.
106. Nordin AD, Hairston WD, Ferris DP (2020) Faster gait speeds reduce alpha and beta EEG spectral power from human sensorimotor cortex. *IEEE Transactions on Biomedical Engineering*, 67:842-853.
105. Clark DJ, Manini TM, Ferris DP, Hass CJ, Brumback BA, Cruz-Almeida Y, Pahor M, Reuter-Lorenz PA, Seidler RD (2020) Multimodal imaging of brain activity to investigate walking and mobility decline in older adults (Mind in Motion Study): hypothesis, theory, and methods. *Frontiers in Aging Neuroscience*, 11:358.
104. Schlink BR, Ferris DP (2019) A lower limb phantom for simulation and assessment of electromyography technology. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 27(12):2378-2385.
103. MacLean M, Ferris DP (2019) Energetics of walking with a robotic knee exoskeleton. *Journal of Applied Biomechanics*, 35(5):320-326.
102. Bradford JC, Lukos JR, Passaro A, Ries A, Ferris DP (2019) Effects of locomotor demands on cognitive processing. *Scientific Reports*, 9:9234.
101. Peterson S, Ferris DP (2019) Group-level corticomuscular connectivity during visual and physical perturbations to walking and standing balance. *NeuroImage*, 198:93-103.
100. Nordin AD, Hairston WD, Ferris DP (2019) Human electrocortical dynamics while stepping over obstacles. *Scientific Reports*, 9:4693.
99. Ingraham KA, Ferris DP, Remy CD (2019) Evaluating physiological signal salience for estimating metabolic energy cost from wearable sensors. *Journal of Applied Physiology*, 126(3):717-729.
98. Peterson S, Ferris DP (2019) Combined head phantom and neural mass model validation of effective connectivity measures. *Journal of Neural Engineering*, 16(2):026010.
97. Peterson S, Rios E, Ferris DP (2018) Transient visual perturbations boost short-term balance learning in virtual reality by modulating electrocortical activity. *Journal of Neurophysiology*, 120:1998-2010.

96. Nordin AD, Hairston WD, **Ferris DP** (2018) Dual-electrode motion artifact cancellation for mobile electroencephalography. *Journal of Neural Engineering*, 15(5):056024.
95. Peterson S, **Ferris DP** (2018) Differentiation in theta and beta electrocortical activity between visual and physical perturbations to walking and standing balance. *eNeuro*, 5(4) ENEURO.0207-18.2018.
94. Peterson S, Furuichi E, **Ferris DP** (2018) Effects of virtual reality high heights exposure during beam-walking on physiological stress and cognitive loading. *PLoS One*, 13(7):e0200306.
93. Voloshina A and **Ferris DP** (2018) Design and validation of an instrumented uneven terrain treadmill. *Journal of Applied Biomechanics*, 34:236-239.
92. Koller JR, Remy CD, **Ferris DP** (2018) Biomechanics and energetics of walking in powered ankle exoskeletons using myoelectric control versus mechanically intrinsic control. *Journal of Neuroengineering and Rehabilitation*, 15:42.
91. Symeonidou E, Nordin AD, Hairston WD, **Ferris DP** (2018) Effects of cable sway, electrode surface area, and electrode mass on EEG signal quality during motion. *Sensors*, 18:1073.
90. Jacobs DA, Koller JR, Steele KM, and **Ferris DP** (2018) Motor modules during adaptation to walking in a powered ankle exoskeleton. *Journal of Neuroengineering and Rehabilitation*, 15:2.
89. Oliveira AS, Schlink B, Hairston WD, Konig P, and **Ferris DP** (2017) Restricted vision increases sensorimotor cortex involvement in human walking. *Journal of Neurophysiology*, 118:1943-1951.
88. Young AJ, Gannon H, and **Ferris DP** (2017) A biomechanical comparison of proportional electromyography control to biological torque control using a powered hip exoskeleton. *Frontiers in Bioengineering and Biotechnology*, 5:37.
87. Schlink BR, Peterson SM, Hairston WD, Konig P, Kerick SE, and **Ferris DP** (2017) Independent component analysis and source localization on mobile EEG data can identify increased levels of acute stress. *Frontiers in Human Neuroscience*, 11:310.
86. Melnik A, Hairston WD, **Ferris DP**, and Konig P (2017) EEG correlates of sensorimotor processing: independent components involved in sensory and motor processing. *Scientific Reports*, 7:4461.
85. Oliveira AS, Schlink B, Hairston WD, Konig P, and **Ferris DP** (2017) A channel rejection method for attenuating motion-related artefacts in EEG recordings during cyclical head motion. *Frontiers in Neuroscience*, 11:225.
84. Melnik A, Legkov P, Izdebski K, Kärcher S, Hairston WD, **Ferris DP**, and Konig P (2017) Subjects, systems, sessions: to what extent do these factors influence EEG data? *Frontiers in Human Neuroscience*, 11:150.
83. **Ferris DP** and Schlink B (2017) Robotic devices to enhance human performance. *Kinesiology Review*, 6:70-77.
82. Young A and **Ferris DP** (2017) State-of-the-art and future directions for robotic lower limb exoskeletons. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 25:171-182.
81. Koller J, Gates D, **Ferris DP**, and Remy CD (2017) Confidence in the curve: establishing instantaneous cost mapping techniques using bilateral ankle exoskeletons. *Journal of Applied Physiology*, 122:242-252.
80. Wahn B, **Ferris DP**, Hairston WD, and Konig P (2017) Pupil sizes scale with attentional load and task experience in a multiple object tracking task. *PLoS One*, 11(12): e0168087.
79. Young AJ, Foss J, Gannon H, and **Ferris DP** (2017) Influence of power delivery timing on the energetics and biomechanics of humans wearing a hip exoskeleton. *Frontiers in Bioengineering and Biotechnology*, 5:4.
78. Cherry MS, Kota S, Young A, and **Ferris DP** (2016) Running with an elastic lower limb exoskeleton. *Journal of Applied Biomechanics*, 32:269-77.
77. Oliveira A, Schlink B, Hairston D, Konig P, and **Ferris DP** (2016) Proposing metrics for benchmarking novel EEG technologies towards real-world measurements. *Frontiers in Human Neuroscience*, 10:188.
76. Oliveira A, Schlink B, Hairston D, Konig P, and **Ferris DP** (2016) Induction and separation of motion artifacts in EEG data using a mobile phantom head device. *Journal of Neural Engineering*, 13(3):036014.
75. Huang S, Wensman JP, and **Ferris DP** (2016) Locomotor adaptation by transtibial amputees

- walking with an experimental powered prosthesis under continuous myoelectric control. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 24:573-581.
74. Jacobs D and **Ferris DP** (2016) Evaluation of a low-cost pneumatic plantar pressure insole for predicting ground contact kinetics. *Journal of Applied Biomechanics*, 32:215-20.
 73. Kline JE, Huang HJ, Snyder KL, and **Ferris DP** (2016) Cortical spectral activity and connectivity during active and viewed arm and leg movement. *Frontiers in Neuroscience*, 10:91.
 72. Bradford JC, Lukas J, and **Ferris DP** (2016) Electro cortical activity distinguishes between uphill and level walking in humans. *Journal of Neurophysiology*, 115:958-966.
 71. Snyder KL, Kline JE, Huang HJ, and **Ferris DP** (2015) Independent component analysis of gait-related movement artifact recorded using EEG electrodes during treadmill walking. *Frontiers in Human Neuroscience*, 9:639.
 70. Koller JR, Jacobs DA, **Ferris DP**, and Remy CD (2015) Adaptive gain for proportional myoelectric control of a robotic ankle exoskeleton. *Journal of Neuroengineering and Rehabilitation*, 12:97.
 69. Jacobs D and **Ferris DP** (2015) Estimation of ground contact forces and ankle moment in multiple human locomotion tasks. *Journal of Neuroengineering and Rehabilitation*, 12:90.
 68. Kline JE, Huang HJ, Snyder KL, and **Ferris DP** (2015) Isolating gait-related movement artifacts in electroencephalography during human walking. *Journal of Neural Engineering*, 12(4):046022.
 67. Voloshina A and **Ferris DP** (2015) Biomechanics and energetics of running on uneven terrain. *Journal of Experimental Biology*, 218:711-9.
 66. Gramann K, Jung T, **Ferris DP**, Lin C, Makeig S (2014) Towards a new cognitive neuroscience: Modeling natural brain dynamics. *Frontiers in Human Neuroscience*, 8:444.
 65. Kline JE, Poggensee K, and **Ferris DP** (2014) Your brain on speed: cognitive performance of a spatial working memory task is not affected by walking speed. *Frontiers in Human Neuroscience*, 8:288.
 64. Huang S, Wensman JP and **Ferris DP** (2014) An experimental powered lower limb prosthesis using proportional myoelectric control. *ASME Journal of Medical Devices*, 8:024501.
 63. Lau TM, Gwin JT and **Ferris DP** (2014) Walking reduces electrocortical sensorimotor network connectivity compared to standing. *Journal of Neuroengineering and Rehabilitation*, 11:14
 62. Gramann K, **Ferris DP**, Gwin JT, and Makeig S (2014) Imaging natural cognition in action. *International Journal of Psychophysiology*, 91:22-29.
 61. Sipp A, Gwin JT, Makeig S and **Ferris DP** (2013) Loss of balance during balance-beam walking elicits a broadly distributed theta-band electrocortical response. *Journal of Neurophysiology*, 110: 2050-2060.
 60. Voloshina A, Kuo AD, Daley MA, and **Ferris DP** (2013) Biomechanics and energetics of walking on uneven terrain. *Journal of Experimental Biology*, 216: 3963-3970.
 59. Alcaide-Aguirre RE, Morgenroth DC, and **Ferris DP** (2013) Motor performance and learning with lower extremity myoelectric control in amputees. *Journal of Rehabilitation Research and Development*, 50: 687–698.
 58. Gordon KE, Kinnaird C and **Ferris DP** (2013) Locomotor adaptation to soleus EMG-controlled antagonistic exoskeleton. *Journal of Neurophysiology*, 109:1804-1814.
 57. Gwin JT and **Ferris DP** (2012) Beta- and gamma-range human lower limb corticomuscular coherence. *Frontiers in Human Neuroscience*, 6:258.
 56. Lau TM, Gwin JT and **Ferris DP** (2012) How many electrodes are really needed for EEG-based mobile brain imaging? *Journal of Behavioral and Brain Science*, 2:387-393.
 55. Huang S and **Ferris DP** (2012) Muscle activation patterns during walking from transtibial amputees recorded within the residual limb-prosthetic interface. *Journal of Neuroengineering and Rehabilitation*, 9:55.
 54. Lau TM, Gwin JT, McDowell K and **Ferris DP** (2012) Weighted phase lag index stability as an artifact resistant measure to detect cognitive EEG activity during locomotion. *Journal of Neuroengineering and Rehabilitation*, 9:47.
 53. Gwin JT and **Ferris DP** (2012) An EEG-based study of discrete isometric and isotonic human lower limb muscle contractions. *Journal of Neuroengineering and Rehabilitation*, 9:35.

52. Gramann K, Gwin JT, **Ferris DP**, Oie K, Jung TP, Lin CT, Liao LD and Makeig S (2011) Cognition in action: imaging brain/body dynamics in mobile humans. *Reviews in the Neurosciences*, 22:593-608.
51. Lewis CL and **Ferris DP** (2011) Invariant hip moment patterns when walking with a robotic hip exoskeleton. *Journal of Biomechanics*, 44:789-793.
50. Gwin JT, Gramann K, Makeig S and **Ferris DP** (2011) Electrocortical activity is coupled to gait cycle phase during treadmill walking. *Neuroimage*, 54:1289-1296.
49. Huang HJ and **Ferris DP** (2010) Neural mechanisms for upper and lower limb neural coupling. *Journal of Neuroengineering and Rehabilitation*, 7:59.
48. Gramann K, Gwin J, Bigdely-Shamlo N, **Ferris DP** and Makeig S (2010) Visual evoked responses during standing and walking. *Frontiers in Human Neuroscience*, 4:202.
47. Domingo A and **Ferris DP** (2010) The effects of error augmentation on learning to walk on a narrow balance beam. *Experimental Brain Research*, 206:359-370.
46. Kao PC, Lewis CL and **Ferris DP** (2010) Short-term locomotor adaptation to a robotic ankle exoskeleton does not alter soleus Hoffmann reflex amplitude. *Journal of Neuroengineering and Rehabilitation*, 7:33.
45. Gwin JT, Gramann K, Makeig S and **Ferris DP** (2010) Removal of movement artifact from high-density EEG recorded during walking and running. *Journal of Neurophysiology*, 103:3526-3534.
44. Kao PC, Lewis CL and **Ferris DP** (2010) Joint kinetic response during unexpectedly reduced plantar flexor torque provided by a robotic ankle exoskeleton during walking. *Journal of Biomechanics*, 43:1401-1407.
43. Kao PC, Lewis CL and **Ferris DP** (2010) Invariant ankle moment patterns when walking with and without a robotic ankle exoskeleton. *Journal of Biomechanics*, 43:203-209.
42. Domingo A and **Ferris DP** (2009) Effects of physical assistance on learning balance during narrow beam walking. *Gait and Posture*, 30:464-468.
41. Simon AM, Kelly BM and **Ferris DP** (2009) Sense of effort determines lower limb force production during dynamic movement in individuals with post-stroke hemiparesis. *Neurorehabilitation and Neural Repair*, 23:811-818.
40. Huang HJ and **Ferris DP** (2009) Upper limb effort does not increase maximal voluntary muscle activation in individuals with incomplete spinal cord injury. *Clinical Neurophysiology*, 120:1741-1749.
39. Huang HJ and **Ferris DP** (2009) Excitatory neural coupling between upper and lower limbs is bidirectional and ipsilateral. *Medicine and Science in Sports and Exercise*, 41:1778-1789.
38. Klimstra MD, Thomas E, Stoloff RH, **Ferris DP** and Zehr EP (2009) Neuromechanical considerations for incorporating rhythmic arm movement in the rehabilitation of walking. *Chaos*, 19:026102.
37. Sawicki GS, Lewis CL and **Ferris DP** (2009) It pays to have a spring in your step. *Exercise and Sport Sciences Reviews*, 37:130-138.
36. Sawicki GS and **Ferris DP** (2009) A pneumatically powered knee-ankle-foot orthosis (KAFO) with myoelectric activation and inhibition. *Journal of Neuroengineering and Rehabilitation*, 6:23.
35. Kinnaird CR and **Ferris DP** (2009) Medial gastrocnemius myoelectric control of a robotic ankle exoskeleton for human walking. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 17:31-37.
34. Kao P-C and **Ferris DP** (2009) Motor adaptation during dorsiflexion-assisted walking with a powered orthosis. *Gait and Posture*, 29:230-236.
33. Gordon KE, **Ferris DP** and Kuo AD (2009) Metabolic and mechanical energy costs of reducing vertical center of mass movement during gait. *Archives of Physical Medicine and Rehabilitation*, 90:136-144.
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31. Sawicki GS and **Ferris DP** (2009) Mechanics and energetics of incline walking with robotic ankle exoskeletons. *Journal of Experimental Biology*, 212:32-41.

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21. Gordon KE and **Ferris DP** (2007) Learning to walk with a robotic ankle exoskeleton. *Journal of Biomechanics*, 40:2636-2644.
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2. Kram R, Domingo A and **Ferris DP** (1997) Effect of reduced gravity on the preferred walk-run transition speed. *Journal of Experimental Biology*, 200:821-826.
1. **Ferris DP**, Signorile JF and Caruso JF (1995) The relationship between physical and physiological variables and volleyball spiking velocity. *Journal of Strength and Conditioning Research*, 9:32-36.

Selected Conference Papers (Peer Reviewed)

17. Jacobsen NA, Prieschl JC, **Ferris DP** (2023) Timescales of the posterior parietal cortex during locomotor adaptation. 11th International IEEE/EMBS Conference on Neural Engineering (NER), Baltimore, MD, USA, pp. 1-6.
16. Hybart RL, Ferris DP (2022) Preliminary validation of proportional myoelectric control of a commercially available robotic ankle exoskeleton. *IEEE International Conference on Rehabilitation Robotics (ICORR)*, Rotterdam, Netherlands, pp.1-5.
15. Nordin AD, Hairston WD, Ferris DP (2019) Faster gait speeds suppress human auditory electrocortical responses. *IEEE International Conference on Systems, Man, and Cybernetics*, Bari, Italy, pp. 235-240.
14. Richer N, Downey, RJ, Nordin AD, Hairston WD, **Ferris DP** (2019) Adding neck muscle activity to a head phantom device to validate mobile EEG muscle and motion artifact removal. *9th International IEEE/EMBS Conference on Neural Engineering (NER)*. 4 pages.
13. Ingraham KA, **Ferris DP**, Remy CD (2017) Using wearable physiological sensors to predict energy expenditure. *IEEE Proceedings of the International Conference on Rehabilitation Robotics*, pp. 340-345.
12. Koller JR, Remy CD, **Ferris DP** (2017) Comparing neural control and mechanically intrinsic control of powered ankle exoskeletons. *IEEE Proceedings of the International Conference on Rehabilitation Robotics*, pp. 294-299.
11. Izdebski K, Oliveira AS, Schlink BR, Legkov P, Kärcher S, Hairston WD, **Ferris DP**, and König P (2016) Usability of EEG systems: user experience study. *Proceedings of the 9th ACM International Conference on Pervasive Technologies Related to Assistive Environments*, Corfu Island, Greece, (4 pages).
10. Koller J, Gates D, **Ferris DP**, and Remy CD (2016) 'Body-in-the-loop' optimization of assistive robotic devices: a validation study. *Robotics: Science and Systems*, Ann Arbor, MI. (10 pages).
9. Snyder R, Vindiola M, Vettel JM and **Ferris DP** (2013) Cortical connectivity during uneven terrain walking. *Proceedings of the 6th International IEEE EMBS Conference on Neural Engineering*, San Diego, CA, pp. 231-234.
8. Gwin JT and **Ferris DP** (2011) High-density EEG and independent component analysis mixture models distinguish knee contractions from ankle contractions. *Proceedings of the 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Boston, MA, pp. 4195-4198.
7. Cherry MS, Kota S and **Ferris DP** (2009) An elastic exoskeleton for assisting human running. *Proceedings of the International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, August 30-September 2, San Diego, CA, USA, DETC2009-87355 (12 pages).

6. Simon AM, Kelly BM and **Ferris DP** (2009) Preliminary trial of symmetry-based resistance in individuals with post-stroke hemiparesis. *Proceedings of the 31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Minneapolis, MN, pp. 5294-5299.
5. Reinkensmeyer DJ, Akoner OM, **Ferris DP** and Gordon KE (2009) Slacking by the human motor system: computational models and implications for robotic orthoses. *Proceedings of the 31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Minneapolis, MN, pp. 2129-2132.
4. **Ferris DP** and Lewis CL (2009) Robotic lower limb exoskeletons using proportional myoelectric control. *Proceedings of the 31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Minneapolis, MN, pp. 2119-2124.
3. Cherry MS, Choi DJ, Deng KJ, Kota S and **Ferris DP** (2006) Design and fabrication of an elastic knee orthosis - preliminary results. *Proceedings of the International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC/CIE)*, September 10-13, Philadelphia, PA, USA, DETC2006-99622 (9 pages).
2. Sawicki GS, Gordon KE and **Ferris DP** (2005) Powered lower limb orthoses: applications in motor adaptation and rehabilitation. *IEEE Proceedings of the International Conference on Rehabilitation Robotics*, pp. 206-211.
1. Danek KA, Gillespie RB, Aldridge JW, **Ferris DP** and Grizzle JW (2005) A dual input device for self-assisted control of a virtual pendulum. *IEEE Proceedings of the International Conference on Rehabilitation Robotics*, pp. 313-318.

Publications (Non-Peer Reviewed)

3. **Ferris DP**, Schlink BR & Young AJ (2019) Robotics: Exoskeletons. In R. Narayan (Ed.), *Encyclopedia of Biomedical Engineering*, vol. 2, pp. 645–651. Elsevier.
2. **Ferris DP** (2009) The exoskeletons are here. *Journal of Neuroengineering and Rehabilitation*, 6:17.
1. **Ferris DP** (2008) Case Study: an ankle-foot orthosis powered by artificial pneumatic muscles. In *Wearable Robots: Biomechatronic Exoskeletons*, ed. Pons JL. (Wiley, John & Sons) pp. 349-355.

Invited Book Review

1. **Ferris, DP** (2003) Neurotechnology for Biomimetic Robots, ed. J. Ayers, J.L. Davis, and A. Rudolph. *The Quarterly Review of Biology*, 78(3):380.

Extramural Grants (Active)

3. *NCS-FO: Electrocortical Processes in Real World Locomotion*
Principal Investigator: Daniel Ferris (8% effort)
Agency: National Science Foundation
Period: 9/01/2018 – 8/31/2024
Amount: \$863,641 Total Costs
Aim: The major goal of the project is to develop methods for measuring high fidelity electrocortical dynamics of humans moving through the real world.
2. *Multimodal imaging of brain activity to investigate walking and mobility decline in older adults*
Principal Investigators: Rachael Seidler, Todd Manini, David Clark (Co-PIs) (Daniel Ferris, Co-I, 20% effort)
Agency: National Institutes of Health (U01 AG061389)
Period: 09/30/2018-05/31/2025
Amount: \$6,043,333 Total Costs
Aim: To test Compensation Related Utilization of Neural Circuits Hypothesis (CRUNCH) models to explain differences in locomotor neural processes between older adults and young adults.
1. *Intermittent Visual Perturbations to Enhance Balance Training*

Principal Investigator: Daniel Ferris (22.8% effort)
Agency: National Institutes of Health (R01 NS104772)
Period: 04/01/2024-02/28/2029
Amount: \$2,754,638 Total Costs
Aim: The major goal of the project is to optimize and determine the neural mechanism of balance training improvements that accompany intermittent visual perturbations.

Extramural Grants Completed

- 32.** *Supraspinal Control of Human Locomotor Adaptation*
Principal Investigator: Daniel Ferris (20% effort)
Agency: National Institutes of Health (R01 NS104772)
Period: 04/01/2018-03/31/2024
Amount: \$2,069,209 Total Costs
Aim: The major goal of the project was to use high-density electroencephalography to document how the brain controls gait adaptation.
- 31.** *Cognition and Neuroergonomics Collaborative Technology Alliance (CTA)*
Principal Investigator: Tim Lee, DCS Corporation (Daniel Ferris, Co-I, 20% effort)
Agency: Army Research Laboratory (W911NF-10-2-0022)
Period: 07/01/10 – 12/30/20
Amount: \$56,000,000 Total Costs (Ferris subcontract \$~7,000,000 Total Costs)
Aim: To advance technologies for real world mobile brain imaging
- 30.** *Conference on Biomechanics and Neural Control of Movement*
Principal Investigator: Daniel Ferris (0% effort)
Agency: National Science Foundation
Period: 07/01/16 – 06/30/18
Amount: \$23,250 Total Costs
Aim: To support publication of meeting consensus review papers from a conference
- 29.** *NRI: Wearable eMbots to Induce Recovery of Function*
Principal Investigator: Brent Gillespie (Daniel Ferris, Co-Investigator, 2% effort)
Agency: National Institutes of Health
Period: 09/01/14 – 08/31/17
Amount: \$840,171 Total Costs
Aim: To develop and test novel self-teleoperated rehabilitation exoskeletons
- 28.** *Controller for Robotic Exoskeleton*
Principal Investigator: Daniel Ferris (0% effort)
Agency: Lockheed Martin
Period: 12/08/15 – 12/31/16
Amount: \$8,000 Total Costs
Aim: To build a hip exoskeleton with series elastic actuators
- 27.** *Biomechanics and Neural Control of Movement*
Principal Investigator: Daniel Ferris (2% effort)
Agency: National Institutes of Health (R13 NS096934)
Period: 06/15/16 – 5/31/17
Amount: \$16,000 Total Costs
Aim: To provide travel funds to graduate students and postdoctoral scholars to attend a meeting
- 26.** *Electrical Neuroimaging of Brain Processes during Human Gait*
Principal Investigator: Daniel Ferris (25% effort)

Agency: National Institutes of Health (R01 NS073649)
Period: 09/01/11 – 7/31/16
Amount: \$1,313,866 Total Costs
Aim: To quantify electrocortical dynamics involved in the control of human walking

- 25.** *Hip Exoskeleton with Series Elastic Actuators*
Principal Investigator: Daniel Ferris (1% effort)
Agency: Lockheed Martin
Period: 01/01/16 – 06/30/16
Amount: \$24,000 Total Costs
Aim: To develop and test a robotic hip exoskeleton
- 24.** *Intelligent Prosthetic Knee-Ankle-Foot System with Coordinated Joint Action*
Principal Investigator: Art Kuo, UM (Daniel Ferris, Co-I, 17% effort)
Agency: U.S. Army Medical Research and Materiel Command (W81XW-08-DRMRP-ATTDA)
Period: 09/21/09 – 09/20/15
Amount: \$8,712,373 Total Costs (UM portion \$3,463,351 Total Costs; Ferris subcontract \$799,383 Total Costs)
Aim: To develop a bionic lower limb prosthesis
- 23.** *The Preparation of Leadership Personnel to Implement the Research to Practice Model in Adapted Physical Education and Pediatric Physical Therapy.*
Principal Investigator: Dale Ulrich, UM (Daniel Ferris, Mentor, 0% effort)
Agency: Department of Education / U.S. Office of Special Education Programs (H325D110003)
Period: 10/01/11 – 09/30/15
Amount: \$977,302 Total Costs
Aim: To support pre-doctoral and post-doctoral training
- 22.** *Review of Robotic Exoskeleton Technologies*
Principal Investigator: Daniel Ferris (10% effort)
Agency: Army Research Laboratory
Period: 09/24/14 – 06/30/15
Amount: \$69,539 Total Costs
Aim: To produce an expert analysis of current and future robotic exoskeleton technologies that could benefit the U.S. Dept. of Defense
- 21.** *STTR Phase II: Integrated Powered Knee-Ankle Prosthetic System*
Principal Investigator: Kurt Amundson, Ekso Bionics (Daniel Ferris, Co-Investigator, 10% effort)
Agency: National Science Foundation (IIP-1026872)
Period: 09/15/10 – 02/28/15
Amount: \$1,000,000 Total Costs (Ferris subcontract \$348,380 Total Costs)
Aim: To develop ankle actuation for robotic orthoses and prostheses
- 20.** *Metabolic Advantage of Robotic Hip Assistance*
Principal Investigator: Daniel Ferris (10% effort)
Agency: Lockheed Martin
Period: 11/01/14 – 12/31/14
Amount: \$32,519 Total Costs
Aim: To develop and test a robotic hip exoskeleton on human walking

- 19. *Control for Robotic Exoskeleton***
 Principal Investigator: Daniel Ferris (10% effort)
 Agency: Lockheed Martin
 Period: 04/15/14 – 11/30/14
 Amount: \$94,068 Total Costs
 Aim: To develop and test a myoelectric controller for a lower limb robotic exoskeleton
- 18. *Compliant Nonlinear Quasi-Passive Knee Orthotic (SBIR Phase II)***
 Principal Investigator: John Rokosz, Adicep Technologies (Daniel Ferris, Consultant, 2% effort)
 Agency: National Science Foundation (IIP-1152605)
 Period: 03/01/12 – 02/28/14
 Amount: \$499,999 Total Costs (Ferris subcontract \$10,000 Total Costs)
 Aim: To develop a novel non-linear torsion orthotic knee brace
- 17. *Wearable Robotic Knee Osteoarthritis Active Living Assistant - KOAALA (SBIR Phase I)***
 Principal Investigator: John Rokosz, Adicep Technologies (Daniel Ferris, Consultant, 2% effort)
 Agency: National Science Foundation (IIP-1248325)
 Period: 01/01/13 – 06/30/13
 Amount: \$150,000 Total Costs (Ferris subcontract \$5,000 Total Costs)
 Aim: To develop an orthotic knee brace to prevent knee damage and record movement data
- 16. *Mobile Brain Imaging: Monitoring the Brain Dynamics of Motivated Action***
 Principal Investigator: Scott Makeig, UCSD (Daniel Ferris, Co-I, 10% effort)
 Agency: Office of Naval Research (N000140811215)
 Period: 11/1/08 – 10/31/12
 Amount: \$3,402,119 Total Costs (Ferris subcontract \$261,169 Total Costs)
 Aim: To develop EEG based functional brain imaging for use during human movement
- 15. *The Preparation of Leadership Personnel to Implement the Research to Practice Model in Adapted Physical Education and Physical Therapy.***
 Principal Investigator: Dale Ulrich, UM (Daniel Ferris, Mentor, 0% effort)
 Agency: Department of Education / U.S. Office of Special Education Programs (H32D070081)
 Period: 08/01/07 – 07/31/12
 Amount: \$1,535,015 Total Costs
 Aim: To support pre-doctoral and post-doctoral training.
- 14. *The University of Michigan Medical Rehabilitation Research Training Program***
 Principal Investigator: Denise Tate, UM (Daniel Ferris, Mentor, 0% effort)
 Agency: National Institutes of Health (T32 HD007422)
 Period: 05/01/06 – 01/30/12
 Amount: \$1,572,758 Total Costs
 Aim: To support post-doctoral training in rehabilitation research
- 13. *Compliant Nonlinear Quasi-Passive Orthotic Joint (SBIR Phase I)***
 Principal Investigator: John Rokosz, Adicep Technologies (Daniel Ferris, Consultant, 2% effort)
 Agency: National Science Foundation (IIP-1046005)
 Period: 01/01/11 – 06/30/11
 Amount: \$147,000 Total Costs (Ferris subcontract \$5,000 Total Costs)
 Aim: To develop a novel non-linear torsion orthotic knee joint
- 12. *Robotic Orthoses for Gait Rehabilitation***
 Principal Investigator: Daniel Ferris (21% effort)

Agency: National Institutes of Health (R21 NS062119)

Period: 02/01/08 – 07/31/10

Amount: \$351,688 Total Costs

Aim: To determine if individuals with incomplete spinal cord injury improve their energetics, biomechanics, and neural control from practice walking with powered ankle-foot orthoses

11. *High-Density Electroencephalography System*

Principal Investigator: Daniel Ferris (0% effort)

Agency: Army Research Laboratory (W911NF-09-1-0139)

Period: 04/15/09 – 04/14/10

Amount: \$179,000 Total Costs

Aim: Equipment grant to purchase a high-density electroencephalography system

10. *CAREER: Biomechanics and Energetics of Human Locomotion with Powered Exoskeletons*

Principal Investigator: Daniel Ferris (15% effort)

Agency: National Science Foundation (BES-0347479)

Period: 04/01/04 – 03/30/09

Amount: \$426,218 Total Costs

Aim: To determine if powered lower limb exoskeletons can reduce the metabolic cost of walking

9. *Motor Adaptation during Human Locomotion*

Principal Investigator: Daniel Ferris (40% effort)

Agency: National Institutes of Health (R01 NS45486)

Period: 09/01/02 – 07/31/07

Amount: \$1,233,622 Total Costs

Aim: To determine how healthy subjects adapt to walking with powered ankle-foot orthoses

8. *Control of Balance during Human Walking*

Principal Investigator: Arthur D. Kuo, UM (Daniel Ferris, Co-Investigator, 10% effort)

Agency: National Institutes of Health (R21 DC006466)

Period: 1/15/04 – 12/31/06

Amount: \$392,141 Total Costs

Aim: To determine how humans balance their bodies during walking

7. *Efficacy of Coupled Rhythmic Arm and Leg Movement as an Alternative to Body Weight Supported Walking Training for Recovery of Walking after Incomplete Spinal Cord Injury*

Principal Investigator: E. Paul Zehr, U. of Victoria (Daniel Ferris, Co-Investigator, 5% effort)

Agency: Rick Hansen Man In Motion Foundation

Period: 07/01/05 – 6/30/06

Amount: \$27,813 Total Costs

Aim: To compare reflex modulation in spinal cord injury subjects during rhythmic movements

6. *Network Collaboration for CRPF Grantees*

Principal Investigator: Daniel Ferris (5% effort)

Agency: Christopher Reeve Paralysis Foundation

Period: 07/15/04 – 12/15/04

Amount: \$5,000 Total Costs

Aim: To compare reflex modulation patterns for walking and recumbent stepping

5. *Recumbent Stepping for Gait Rehabilitation after Spinal Cord Injury*
Principal Investigator: Daniel Ferris (20% effort)
Agency: Paralyzed Veterans of America Spinal Cord Research Foundation (2293-01)
Period: 10/01/03 – 03/31/06
Amount: \$150,000 Total Costs
Aim: To assess the feasibility of using self-assisted recumbent stepping as gait rehabilitation therapy after spinal cord injury
4. *A Powered Lower Limb Exoskeleton to Assist Locomotor Training*
Principal Investigator: Daniel Ferris (20% effort)
Agency: Christopher Reeve Paralysis Foundation
Period: 12/15/01 – 12/15/04
Amount: \$150,000 Total Costs
Aim: To build a pneumatically-powered orthosis for locomotor training after spinal cord injury
3. *Motor Adaptation during Human Locomotion*
Principal Investigator: Daniel Ferris (100% effort)
Agency: National Institutes of Health (F32 AR08602)
Period: 05/01/00 – 06/30/01
Amount: \$65,212 Total Costs
Aim: To assess the feasibility of using myoelectrically controlled orthoses to study gait adaptation
2. *H-Reflex Modulation During Human Locomotion*
Principal Investigator: Poul Dyhre-Poulsen, Univ. of Copenhagen (Daniel Ferris, Co-Investigator)
Agency: Danish Sports Research Council
Period: 1997
Amount: \$5,667 Total Costs
Aim: To examine H-reflex gain during simulated reduced gravity locomotion
1. *The Biomechanics of Reduced Gravity Locomotion*
Principal Investigator: Daniel Ferris (50% effort)
Agency: NASA (NGT-51416)
Period: 09/01/95 – 08/30/98
Amount: \$66,000 Total Costs
Aim: To examine the effects of reduced gravity on human locomotion

Extramural Training Grants for my Doctoral and Post-Doctoral Trainees (Funded)

9. *Cortical Processes during Walking Post-stroke* (post-doctoral fellowship)
Principal Investigator: Chang Liu (Daniel Ferris, mentor)
Agency: American Heart Association (23POST1011634)
Period: 01/01/23 – 7/1/24
Amount: \$140,558 Total Costs
Aim: To quantify electrocortical dynamics in post-stroke subjects walking with bodyweight support.

8. *Efficacy of balance training with intermittent sensory perturbations* (post-doctoral fellowship)
Principal Investigator: Erika Pliner (Daniel Ferris, mentor)
Agency: National Institutes of Health (F32 AG072808)
Period: 09/01/21 – 09/30/23
Amount: \$152,487 Total Costs
Aim: To quantify electrocortical dynamics related to different types of sensory signals
7. *MICHR Postdoctoral Translational Scholars Program* (post-doctoral fellowship)
Principal Investigator: Daniel Jacobs, PhD (Daniel Ferris, mentor)
Agency: NIH CTSA
Period: 06/01/15 – 05/31/17
Amount: \$100,000 Total Costs
Aim: To examine metabolic benefit of robotic assistance on individuals with multiple sclerosis
6. *Postdoctoral Research Fellowship in Intersections of Biology and Mathematical and Physical Sciences* (post-doctoral fellowship)
Principal Investigator: Kristine Snyder, PhD (Daniel Ferris, mentor)
Agency: National Science Foundation
Period: 06/01/12 – 05/30/14
Amount: \$123,000 Total Costs
Aim: To assess effective connectivity for brain networks in human locomotor activities
5. *Postdoctoral Research Fellowship in Biological Informatics* (post-doctoral fellowship)
Principal Investigator: Monica Daley, PhD (Daniel Ferris, mentor)
Agency: National Science Foundation (BIO-0630664)
Period: 10/01/06 – 09/31/08
Amount: \$120,000 Total Costs
Aim: To build a neuromechanical computer simulation of a running biped
4. *Self-Assisted Neurological Rehabilitation* (pre-doctoral fellowship)
Principal Investigator: Helen Huang (Daniel Ferris, mentor)
Agency: National Institutes of Health (F31 NS056504)
Period: 06/09/06 – 06/08/09
Amount: \$100,152 Total Costs
Aim: To assess neural interlimb coupling during recumbent stepping
3. *Upper Limb Control of Robotic Lower Limb Assistance during Walking* (post-doctoral fellowship)
Principal Investigator: Cara Lewis, PT, PhD (Daniel Ferris, mentor)
Agency: National Institutes of Health (F32 HD055010)
Period: 07/09/07– 07/08/09
Amount: \$96,472 Total Costs
Aim: To build and test an upper limb controller for robotic lower limb assistance
2. *Effects of Physical Assistance on Walking Balance* (pre-doctoral fellowship)
Principal Investigator: Antoinette Domingo, PT (Daniel Ferris, mentor)
Agency: National Institutes of Health (F31 HD056588)
Period: 06/01/07– 05/30/09
Amount: \$56,884 Total Costs
Aim: To determine how physical assistance affects motor learning of walking balance

1. *Symmetry-Based Resistance for Stroke Rehabilitation* (pre-doctoral fellowship)
Principal Investigator: Ann Simon (Daniel Ferris, mentor)
Agency: American Heart Association
Period: 09/01/07– 10/31/08
Amount: \$51,139 Total Costs
Aim: To test a novel lower limb exercise for improving functional ability in post-stroke subjects

Intramural Grants (Active)

1. *AI Powered Athletics*
Principal Investigators: Jennifer Nichols, Daniel Ferris, Kristy Boyer,
Agency: University of Florida President's Office
Period: 01/01/2024 – 12/31/2026
Amount: ~\$1,000,000 Total Costs
Aim: The focus of the project is to advance artificial intelligence and data analytics methods for improving student-athlete health, wellness, and performance.

Intramural Grants Funded (Completed)

6. *A Novel Electroencephalography System that is Free from Motion Artifacts*
Principal Investigator: Daniel Ferris (0% effort), Euisik Yoon Co-PI
Agency: University of Michigan Provost
Period: 09/01/15 – 5/31/2017
Amount: \$100,000 Total Costs
Aim: The focus of the project is to develop a novel EEG system that can perform artifact subtraction in real-time.
5. *Faculty Cluster Hire in Rehabilitation Robotics*
Principal Investigator: Daniel Ferris (0% effort)
Agency: University of Michigan Provost
Period: 2010 – 2017
Amount: minimum \$3,600,000 Total Costs
Aim: This award provided start-up funds and salary support for four new faculty hires across four departments (Movement Science, Mechanical Engineering, Biomedical Engineering, Physical Medicine and Rehabilitation) in three schools and colleges.
4. *Powered Lower Limb Orthoses for Stroke Rehabilitation*
Principal Investigator: Daniel Ferris (0% effort)
Agency: University of Michigan OVPR and Rackham Graduate School
Period: 05/01/07 – 8/31/07
Amount: \$4,000 Total Costs
Aim: To collect pilot data on stroke subjects wearing powered orthoses for gait rehabilitation
3. *Apparatus and Preliminary Data for an Interdisciplinary Project in Self-Teleoperated Stabilization*
Principal Investigator: Jessy Grizzle, UM (Daniel Ferris, Co-Investigator, 5% effort)
Agency: University of Michigan Office of the Vice President for Research
Period: 5/1/03 – 4/30/04
Amount: \$10,000 Total Costs
Aim: To build a tele-operated device for studying control of human standing

2. *Artificial Neural Oscillator Control of Functional Electrical Stimulation during Gait Rehabilitation after Spinal Cord Injury*
Principal Investigator: Daniel Ferris (5% effort)
Agency: University of Michigan Rackham Graduate School
Period: 1/1/02 – 12/31/02
Amount: \$14,944 Total Costs
Aim: To test the efficacy of artificial neural oscillators as adaptive controllers

1. *Powered Lower Limb Orthoses for Gait Rehabilitation*
Principal Investigator: Daniel Ferris (5% effort)
Agency: University of Michigan Office of the Vice President for Research
Period: 10/1/01 – 9/30/02
Amount: \$12,000 Total Costs
Aim: To build a pneumatically powered knee-ankle-foot orthosis

Scholarships, Fellowships, and Honors

1st place MOBI Award for best paper, 2024 (<https://mobi-award.com/>)
 3rd place MOBI Award for best paper, 2024 (<https://mobi-award.com/>)
 Fellow, American Association for the Advancement of Science, 2024
 Fellow, American Society of Biomechanics, 2023
 2nd place MOBI Award for best paper, 2022 (<https://mobi-award.com/>)
 1st place MOBI Award for best paper, 2020 (<https://mobi-award.com/>)
 2nd place MOBI Award for best paper, 2018 (<https://mobi-award.com/>)
 Founder's Award, American Society of Biomechanics, 2018
 Fellow, American Institute of Medical and Biological Engineering, 2017
 Fellow, National Academy of Kinesiology, 2015
 Invited Participant for Neuromechanical Engineering Workshop sponsored by National Science Foundation, 2009 (one of 35 attendees)
 Invited Participant for "Summit of Experts in Biomechanics" sponsored by U.S. National Committee of Biomechanics, 2007 (one of 50 attendees)
 NSF CAREER Award, 2003
 NIH Individual Post-Doctoral Research Fellowship, 2000-2001
 NIH Institutional Post-Doctoral Research Fellowship, 1998-2000
 APS Graduate Student Award Finalist, Integrative Biology of Exercise, 1996
 NASA Graduate Student Researcher's Program Fellowship, 1995-1998
 University of California Regents Fellowship, 1994-1995

Invited Presentations (Local - 61)

VA Center for Excellence in Limb Loss Prevention and Prosthetic Engineering, Seattle VA, Aug 2000
 Daniel Laboratory, Department of Zoology, University of Washington, Oct 2000
 Center for Ergonomics, Department of Industrial and Operations Engineering, University of Michigan, Oct 2001
 Department of Biomedical Engineering, University of Michigan, Dec 2001
 Department of Physical Medicine and Rehabilitation Residents Lecture Series, University of Michigan, Apr 2002
 Orthopaedic Research Laboratories, Department of Surgery, University of Michigan, May 2002
 MedRehab Physical Therapy, University of Michigan Health System, May 2003
 Department of Biomedical Engineering, University of Michigan, Oct 2003
 Health Sciences Scholars Program, University of Michigan, Mar 2005
 Health Sciences Scholars Program, University of Michigan, Jan 2006
 Department of Biomedical Engineering, University of Michigan, Oct 2006
 Investing in Ability Week, University of Michigan, Oct 2006

Undergraduate Research Opportunity Program, University of Michigan, Nov 2006
Department of Physical Medicine and Rehabilitation Residents Lecture Series, University of Michigan,
Nov 2006
Health Sciences Scholars Program, University of Michigan, Mar 2007
Health Sciences Scholars Program, University of Michigan, Oct 2008
Women in Science and Engineering, University of Michigan, Nov 2008
Campus Day (Featured Faculty Lecture), University of Michigan, Nov 2008
UM Chapter of the Biomedical Engineering Society, University of Michigan, Apr 2009
Amazin' Blue Preview Lecture Series, University of Michigan, Apr 2009
Department of Neurology Residents Lecture Series, University of Michigan, May 2009
Department of Neurology Residents Lecture Series, University of Michigan, June 2009
M-STEM Academy, College of Engineering, University of Michigan, July 2009
Middle School FIRST Robotics Teams, Women In Science and Engineering, University of Michigan,
Oct 2009
Campus Day (Featured Faculty Lecture), University of Michigan, Nov 2009
Health Sciences Scholars Program, University of Michigan, Mar 2010
Department of Biomedical Engineering, University of Michigan, Mar 2010
Amazin' Blue Preview Lecture Series, University of Michigan, Apr 2010
TEDxUofM, University of Michigan, Apr 2010
Department of Physical Medicine and Rehabilitation Residents Lecture Series, University of Michigan,
May 2010
Health and Biomedical Engineering for Girls Summer Camp, Women In Science and Engineering,
University of Michigan, July 2010
Biopsychology Seminar Series, Department of Psychology, University of Michigan, Sept 2010
Health Sciences Scholars Program, University of Michigan, Apr 2011
Department of Physical Medicine and Rehabilitation Post-Doctoral Training Seminar, University of
Michigan, Mar 2011
Amazin' Blue Preview Lecture Series, University of Michigan, Apr 2011
Center for Exercise Research, School of Kinesiology, University of Michigan, Apr 2011
Department of Neurology Residents Lecture Series, University of Michigan, June 2011
Health and Biomedical Engineering for Girls Summer Camp, Women in Science and Engineering,
University of Michigan, July 2011
Neuroscience Retreat, University of Michigan, Oct 2011
Health Sciences Scholars Program, University of Michigan, Feb 2012
Amazin' Blue Preview Lecture Series, University of Michigan, Apr 2012
Health and Biomedical Engineering for Girls Summer Camp, Women in Science and Engineering,
University of Michigan, June 2012
Camp Michigania, University of Michigan, July 2012
Society 2030 Annual Meeting, University of Michigan, Sept 2012 (Keynote)
Health Sciences Scholars Program, University of Michigan, Mar 2013
Department of Physical Medicine and Rehabilitation Residents Lecture Series, University of Michigan,
April 2013
Camp Michigania, University of Michigan, July 2013
Department of Biomedical Engineering, University of Michigan, Sept 2013
Department of Physical Medicine and Rehabilitation Grand Rounds, University of Michigan, Oct 2013
Department of Physical Medicine and Rehabilitation Residents Lecture Series, University of Michigan,
April 2014
Saturday Morning Physics, University of Michigan, Dec 2014
Huron High School, Ann Arbor, Mar 2015
Camp Michigania, University of Michigan, June 2015
Udall Center for Parkinson's Disease Research Symposium, University of Michigan, Sept 2016
Slauson Middle School, Ann Arbor, Dec 2016
Center for Movement Disorders and Neurorestoration, University of Florida, Feb 2018
Rehabilitation Sciences Doctoral Program, University of Florida, Mar 2018

Department of Mechanical and Aerospace Engineering, University of Florida, Mar 2018
GNV Science Café, Gainesville, Nov 2018
Controls Seminar, University of Florida, Sept 2019
Developmental Science Seminar, Department of Psychology, University of Florida, Jan 2020

Invited Presentations (National - 83)

Brain Research Institute, UCLA, Nov 1997
Department of Exercise Science, UC Davis, Feb 1998
Department of Exercise and Sport Science, Oregon State University, Apr 1998
Department of Exercise Science and Physical Education, Arizona State University, Feb 1999
Department of Exercise and Movement Science, University of Oregon, Mar 1999
Department of Exercise and Sport Sciences, University of Florida, Jan 2000
Motor and Locomotion Control group, University of Southern California, Feb 2000
Division of Kinesiology, University of Michigan, Mar 2000
School of Biomedical Engineering & Sciences, Virginia Tech-Wake Forest University, April 2003
Department of Kinesiology, University of Toledo, May 2003 (Keynote for Graduate Research Day)
School of Applied Physiology, Georgia Institute of Technology, Aug 2004
Department of Mechanical Engineering, Drexel University, Oct 2004
National Rehabilitation Hospital, Washington DC, Jan 2005
Department of Biokinesiology and Physical Therapy, University of Southern California, Feb 2005
Department of Kinesiology, Arizona State University, Feb 2005
Department of Integrative Physiology, University of Colorado at Boulder, Mar 2005
Institute for Neural Computation, UC San Diego, Dec 2006
Summit of Experts in Biomechanics, U.S. Nat. Committee on Biomechanics, Keystone, CO, June 2007
Department of Biomedical Engineering, Wake Forest University, Dec 2007
Engineering, Neuroscience & Health Seminar Series, University of Southern California, Apr 2008
Swartz Center for Computational Neuroscience, UC San Diego, June 2008
Dynamics of Biomechanical Processes Symposium, 45th Annual Technical Meeting of the Society of Engineering Science, University of Illinois at Urbana-Champaign, Oct 2008 (Keynote)
Workshop on Robotic Lower Limb Exoskeletons, IEEE RAS / EMBS International Conference on Biomedical Robotics and Biomechatronics, Scottsdale, AZ, Oct 2008
Southeastern Meeting of the American Society of Biomechanics, Gainesville, FL, Apr 2009 (Keynote)
Symposium on Robotic Lower Limb Exoskeletons, 56th Annual Meeting of the American College of Sports Medicine, Seattle, WA, May 2009
33rd Annual Meeting of the American Society of Biomechanics, State College, PA, Aug 2009 (Tutorial)
31st Annual Meeting of the IEEE Engineering in Medicine and Biology Society, Minneapolis, MN, Sept 2009 (Symposium Co-Chair)
Nebraska Biomechanics Core Facility, University of Nebraska at Omaha, NE, Nov 2009
36th Annual Meeting of the American Academy of Orthotists and Prosthetists, Chicago, IL, Feb 2010
Department of Biomedical Engineering, University of North Carolina, Chapel Hill, NC, May 2010
Department of Biomedical Engineering, North Carolina State University, Raleigh, NC, May 2010
Beyond Brain Machine Interface, Army Research Office and IEEE EMBS Workshop, Long Beach, CA, June 2010
Howard Hughes Medical Institute Summer Lecture Series, Claremont Colleges, Claremont, CA, June 2010
Dynamic Walking 2010 Conference, Boston, MA, July 2010
34th Annual Meeting of the American Society of Biomechanics, Providence, RI, Aug 2010 (Symposium Chair and Speaker)
Brain Rehabilitation Research Center, North Florida/South Georgia Veterans Health System, Gainesville, FL, Aug 2010
Department of Kinesiology and Nutrition, University of Illinois, Chicago, IL, Oct 2010
Department of Physical Therapy, University of Utah, Salt Lake City, UT, Nov 2010
Human Research & Engineering Directorate, Army Research Laboratory, Aberdeen, MD, Feb 2011

American Physical Therapy Association Combined Sections Meeting, Chicago, IL, Feb 2012 (Panel)
Department of Biomedical Engineering, Cleveland Clinic, Cleveland, OH, Mar 2012
Department of Ocean and Mechanical Engineering, Florida Atlantic University, Boca Raton, FL, Mar 2012
Center for Sensorimotor Neural Engineering, University of Washington, Seattle, WA, Oct 2012
Action Club, Northeastern University, Boston, MA, Oct 2012
Department of Bioengineering, University of Texas at Dallas, Richardson, TX, Jan 2013
Division of Physical Therapy, Washington University, St. Louis, MO, Feb 2013
Human Centered Robotics Conference, University of Cincinnati, OH, Nov 2013
Department of Human Physiology, University of Oregon, Eugene, OR, Jan 2014
2nd Piper Health Solutions Workshop on Rehabilitation Robotics, Arizona State University, Tempe, AZ, Feb 2014
Symposium: Designing for the Future: Remote Rehabilitation and Integration of New Technologies in Spaceflight. National Space Biomedical Research Institute, Houston, TX, May 2014
7th World Congress of Biomechanics, Boston, MA, July 2014
Camp Michigan East, New York, August 2014
Department of Integrative Physiology, University of Colorado, Boulder, Sept 2014
Human Augmentation and Army Vision 2025, US Army NSRDEC Workshop, Dec 2014 (Keynote)
1st Chittenden Symposium on Mobility, Technology and the Future of Health, University of Illinois, Urbana-Champaign, IL, Jan 2015 (Keynote)
Department of Bioengineering, University of Pennsylvania, PA, Feb 2015
The Michigan Seminars in Florida, West Palm Beach, FL, Feb 2015
Department of Mechanical Engineering, University of Texas, Austin, TX, June 2015
Neurotalk, University of Florida, Gainesville, FL, Dec 2015
Department of Biomedical Engineering, Marquette University, Milwaukee, WI, Dec 2015
Department of Biomedical Engineering, University of Florida, Gainesville, FL, Jan 2016
Neuroengineering and Medicine, UC Davis, CA, Jan 2016
Kavli Summer Institute for Cognitive Neuroscience, UC Santa Barbara, CA, June 2016
American Society of Biomechanics Annual Meeting, Raleigh, NC, Aug 2016 (tutorial)
National Academy of Kinesiology Annual Meeting, Albuquerque, NM, Oct 2016
Department of Health and Exercise Science, Colorado State University, Ft. Collins, CO, Mar 2017
Army Research Laboratory, Aberdeen Proving Ground, MD, Mar 2017
Department of Kinesiology, Penn State University, State College, PA, Apr 2017
International Society of Posture and Gait Research World Congress, Ft. Lauderdale, FL, June 2017
American Society of Mechanical Engineers' International Mechanical Engineering Congress and Exposition, Tampa, FL, November 2017
Center for Neural Engineering and Computation, Columbia University, New York, NY, November 2017
Nike Innovation Laboratory, Portland, OR, June 2018
American Society of Biomechanics Annual Meeting, Rochester, MN, Aug 2018
Robotics Institute, Georgia Institute of Technology, GA, Sept 2019
Norm Asbjornson College of Engineering, Montana State University, Bozeman, MT, Jan 2020
American Association of Neuromuscular & Electrodiagnostic Medicine Annual Meeting, (online), Oct 2020
IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob), (online) New York, NY, Dec 2020 (Keynote)
Biomedical Engineering Seminar Series, George Washington University, (online) Washington, DC, Apr 2021
Center for Biomechanical Engineering Research (CBER) Annual Symposium, University of Delaware, (online), Newark, DE, May 2021 (Spotlight talk)
Shirley Ryan Ability Lab, (online) Chicago, IL, Aug 2021
Department of Health Sciences and Research, Medical University of South Carolina, May 2023
Reinkensmeyer Laboratory, UC Irvine, Sept 2023
Institute for Interdisciplinary Brain and Behavioral Sciences, Chapman University, Feb 2024
Department of Biomedical Engineering, University of Pittsburgh, Mar 2024

Invited Presentations (International - 38)

School of Health Sciences, Deakin University, Melbourne, Australia, Feb 1999

12th World Congress for the International Society of Prosthetics and Orthotics, Vancouver, BC, Aug 2007

5th Scientific Meeting of the Neurorehabilitation and Reconstructive Neurosurgery Committee of the World Federation of Neurosurgical Societies, Taipei, Taiwan, Sept 2007

Department of Physical Therapy, National Taiwan University, Taipei, Taiwan, Sept 2007

International Workshop on Biomimetic Complex System Design, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea, June 2008

Mexican National Congress on Biomechanics, Tecnológico de Monterrey, Leon, Mexico, June 2008 (Keynote)

Division for Applied Robot Technology, Korea Institute of Industrial Technology (KITECH), Chungnam, South Korea, Sept 2009

NeuroHike, 40th Meeting of the Alberta Motor Control Group, Kananaskis Provincial Park, Alberta, Canada, Sept 2010 (Keynote)

Shanghai Jiao Tong University-University of Michigan 1st Bilateral Symposium on Biomedical Engineering, Shanghai, China, Jan 2011

Institute of Bioengineering, University College London, Sept 2011

Department of Health Sciences and Technology, Swiss Federal Institute of Technology (ETH Zurich), Switzerland, Dec 2011

ORTHOPÄDIE + REHA-TECHNIK Conference, Leipzig, Germany, May 2012

International Functional Electrical Stimulation Society Conference, Banff, Alberta, Canada, Sept 2012

1st International Workshop of Brain/Body Imaging, Delmenhorst, Germany, Sept 2013

20th Annual Meeting of the Organization for Human Brain Mapping, Hamburg, Germany, June 2014

Human Performance Laboratory, University of Calgary, Canada, Oct 2015

Neural Controlled Man-Machine Interface Workshop, Reykjavík, Iceland, Oct 2016

Neural Control of Movement Society, Dublin, Ireland, May 2017

BioMechanical Engineering, Delft University of Technology, The Netherlands, Oct 2017

4th International Autumn School on Movement Science, Humboldt University of Berlin, Germany, Oct 2017

School of Kinesiology, University of British Columbia, Vancouver, BC, Mar 2018

Department of Biomedical Physiology and Kinesiology, Simon Fraser University, Burnaby, BC, Mar 2018

5th Annual PERFORM Centre Research Conference, Concordia University, Montreal, Quebec, May 2018

3rd International Mobile Brain-Body Imaging Conference (MoBI), Berlin, Germany, July 2018

Gait & EEG Workshop, Institute for Advanced Study, Delmenhorst, Germany, Nov 2019

Integrating Multidisciplinary Approaches to Advance Physical Human-Robot Interaction Workshop, ICRA, (online), May 2020

International Society for Posture and Gait Research (ISPGR) Symposium, (online), Dec 2020 (Keynote)

Institute of Cognitive Science, University of Osnabrück, (online) Germany, Apr 2021

WeaRAcon21 Virtual Conference, (online) Apr 2021 (Keynote)

Mobile Brain/Body Imaging (MOBI) Workshop, (online) Berlin, Germany, May 2021 (Keynote)

Faculty of Behavioural and Movement Sciences, (online) VU Amsterdam, The Netherlands, Dec 2021

International Ergonomics Association Webinar on Human-Robot Interaction, (online), Apr 2022

International Society for Posture and Gait Research (ISPGR) Conference, Montreal, Canada, June 2022 (Keynote)

Institute of Biomedical Engineering, University of Toronto, Canada, Mar 2024

5th International Mobile Brain/Body Imaging Conference, Slovenia, June 2024 (Keynote)

Presentations at Scientific Meetings (unsolicited submissions as first & presenting author - 23)

1993 American College of Sports Medicine, Seattle, WA (podium)
 1995 American Society of Biomechanics, Palo Alto, CA (podium)
 1996 American Physiological Society & American College of Sports Medicine Intersociety Meeting, "Integrative Biology of Exercise", Vancouver, B.C. (poster)
 1997 Neural Control of Movement, Cancun, Mexico (poster)
 1997 Bay Area Biomechanics Meeting, Hopkins Marine Station, Monterey, CA (podium)
 1998 North American Congress on Biomechanics, Waterloo, Canada (poster)
 1998 Society For Neuroscience, Los Angeles, CA (poster)
 1998 Society For Neuroscience Satellite Meeting on Motor Control, Tucson, AZ (poster)
 1999 Society For Neuroscience, Miami, FL (poster)
 2000 Society For Neuroscience, New Orleans, LA (poster)
 2001 National Center for Medical Rehabilitation Research Symposium, "Medical Rehab on the Move: Spotlight on BioEngineering", National Institutes of Health, Bethesda, MD (poster)
 2001 American Society of Biomechanics, San Diego, CA (poster)
 2002 World Congress of Biomechanics, Calgary, Alberta, Canada (podium)
 2003 International Society of Biomechanics Bi-Annual Congress, Dunedin, New Zealand (podium)
 2004 Christopher Reeve Paralysis Foundation Spinal Cord Symposium, Oak Brook, IL (poster)
 2004 Neural Control of Movement, Sitges, Spain (panel)
 2005 Neural Control of Movement, Key Biscayne, FL (panel chair)
 2006 World Congress of Biomechanics, Munich, Germany (podium)
 2008 American Spinal Injury Association, San Diego, CA (podium, awards session)
 2010 Joint Meeting of the Gait and Clinical Movement Analysis Society and the European Society of Movement Analysis in Adults and Children, Miami, FL (tutorial)
 2017 Neural Control of Movement, Dublin, Ireland (tutorial)
 2017 International Society of Biomechanics Meeting, Brisbane, Australia
 2018 Engineering in Medicine and Biology Conference, Honolulu, HI
 2019 International Society of Posture and Gait Research World Congress, Edinburgh, Scotland
 2023 American Society of Biomechanics, Knoxville, TN (workshop organizer)

Teaching Experience

HUMAN BIODYNAMICS 103 Musculoskeletal Biomechanics, UC Berkeley. Spring 1995 (~40 students). Undergraduate laboratory course on human movement biomechanics.
INTEGRATIVE BIOLOGY 132L Mammalian Physiology, UC Berkeley. Spring 1996 (~40 students). Undergraduate laboratory course on principles of cellular and systemic physiology.
HUMAN BIODYNAMICS 101 Muscle Biology and Plasticity, UC Berkeley. Fall 1997 (~40 students). Undergraduate lecture and laboratory course on muscle physiology.
KINESIOLOGY 533 / BIOMEDICAL ENGINEERING 533 Neuromechanics, U. of Michigan. Fall 2001 (7 students), Fall 2003 (25 students), Fall 2005 (16 students), Winter 2007 (12 students), Winter 2010 (18 students). Graduate lecture and computer laboratory course on neuromechanical control of movement.
KINESIOLOGY 600 Graduate Seminar in Movement Science, U. of Michigan. Winter 2003 (11 students). Graduate course where students present their own research.
KINESIOLOGY 616 Professional Skills for Research Scientists, U. of Michigan. Winter 2009 (22 students), Winter 2011 (15 students), Winter 2012 (6 students), Winter 2014 (16 students). Graduate course on professional skills necessary for success (grant writing and review, manuscript writing and review, research ethics, career skills).
MOVEMENT SCIENCE 100 First Year Seminar – Movement Science of Batman, U. of Michigan. Fall 2010 (14 students), Fall 2011 (16 students). Freshmen seminar course on the physiology and biomechanics of the superhero Batman.
MOVEMENT SCIENCE 110 Introduction to Movement Science – Biomechanics Module, U. of Michigan. Winter 2013 (90 students). Fall 2016 (120 students). First year introduction of the major.

MOVEMENT SCIENCE 219 Scientific Writing, U. of Michigan. Fall 2013 (16 students). Sophomore level science writing course.

MOVEMENT SCIENCE 330 Biomechanics of Human Movement, U. of Michigan. Winter 2002 (25 students), Fall 2002 (36 students), Winter 2003 (40 students), Winter 2004 (59 students), Winter 2005 (73 students), Winter 2006 (91 students), Fall 2006 (41 students), Winter 2015 (63 students). Undergraduate lecture and laboratory course on musculoskeletal biomechanics.

MOVEMENT SCIENCE 435 Biomechanics of Human Locomotion, U. of Michigan. Fall 2004 (19 students), Fall 2008 (14 students), Fall 2009 (13 students), Fall 2014 (21 students). Problem-based learning course on human locomotion.

Invited Lectures, U. of Michigan. Undergraduate and graduate courses in Biomedical Eng., Industrial & Operations Eng., Mechanical Eng., Program in Biomedical Sciences, and Kinesiology. Resident lectures for Physical Medicine and Rehabilitation, and Neurology.

BME 6938 Neuromechanics, U. of Florida. Fall 2018 (25 students), Spring 2021 (19 students). Graduate course on neuromechanical control of movement.

BME 6938 Professional Skills for Research Scientists, U. of Florida. Fall 2019 (25 students), Spring 2022 (24 students). Graduate course on professional skills necessary for success (grant writing and review, manuscript writing and review, research ethics, career skills).

BME 5401 Biomedical Engineering and Physiology, U. of Florida. Fall 2020 (29 students), Fall 2021 (21 students). Graduate course on human physiology.

BME 4931 Engineering Statics and Dynamics, U. of Florida. Fall 2022 (14 students). Fall 2023 (35 students). Undergraduate course covering applications of statics and dynamics in biomedical engineering.

BME 2202 Engineering Statics and Dynamics in Biological Systems, U. of Florida, Spring 2024 (15 students). Undergraduate course covering applications of statics and dynamics in biomedical engineering.

BME 4409 Quantitative Physiology, U. of Florida. Spring 2023 (49 students). Undergraduate course covering mathematical modeling of physiological systems.

Service

University of Michigan Committee and Supervisory Duties

Member of Kinesiology Graduate Committee, 2002-2009
 Member of Kinesiology Computer Disk Space Committee, 2002-2007
 Member of Advisory Board for UM Model Spinal Cord Injury Care System, 2003-2012
 Member of Biomechanics Committee for Biomedical Engineering Undergraduate Curriculum, 2003
 Temporary Supervisor of Kinesiology IT Staff, Summer 2003
 Chair of Athletic Training Faculty Search Committee (Kinesiology), 2003-2004
 Co-Chair of Biomechanics Faculty Search Committee (Kinesiology), 2005-2006
 Faculty Advisor, UM Men's Club Volleyball Team, 2005-2007
 Chair of Kinesiology Graduate Committee, 2006-2009
 Member of UM Sport Injury Prevention Center Director Search Committee (Orthopaedics), 2007
 Faculty Advisor, UM Women's Club Volleyball Team, 2008-2012
 CIC Kinesiology Diversity Summit Participant, 2008
 Member of Kinesiology Executive Committee, 2009
 Member of the UM Faculty Senate Assembly, 2009-2011
 Member of UM Advisory Committee for Recreational Sports, 2009-2013
 Chair of Biomechanics Faculty Search Committee (Kinesiology), 2010-2012
 Member of UM Recreational Sports Facilities Planning Task Force, 2010
 Member of UM Global Health Visioning Committee, 2011
 Member of UM Provost's Faculty Advisory Committee, 2011-2013
 Chair of Health Management Research Center Director Faculty Search Committee (Kinesiology), 2011-2012
 Member of Kinesiology New Building Committee, 2011-2014
 Member of Associate Director of Recreational Sports Search Committee, 2012

Member of Postdoctoral Advisory Group for the University, 2010-2013
Member of Global Challenges Third Century Program Committee, 2012-2015
Chair of Committee, 2013-2015
Member of SHARP Center for Girls and Women Internal Advisory Board, 2011-2013
Member of Administrative Services Transformation Advisory Committee, 2012-2014
Member of Biomechanics Faculty Search Committee (Kinesiology), 2014

University of Florida Committee and Supervisory Duties

University of Florida Athletics Committee, 2024-2025
Chair of BME Tenure and Promotion Committee, 2023-2025
HWCOE Tenure and Promotion Committee, 2023-2025
HWCOE Commencement Committee, Spring 2024
Chair of BME Research Committee, 2020-2022
Title IX Committee for Intercollegiate Athletics, 2021-2023
Member of College of Engineering Research Advisory Committee, 2017-2022

Professional Societies

Member, American Society of Biomechanics (ASB), 1995-present
Annual Meeting Program Chair, 2019
Executive Board, 2017-2019
Membership Committee, 2002-2005
Abstract Reviewer for Annual Meeting, 2003, 2013, 2023
Nominating Committee, 2006, 2010
Annual Meeting Program Committee, 2006, 2023
Awards Committee, 2007, 2015, 2017, 2018, 2020, 2021
Member, American Physiological Society (APS), 1996-present
Member, Neural Control of Movement Society (NCM), 1997-present
Member, Society for Neuroscience (SFN), 1997-2020
Member, International Society of Biomechanics (ISB), 2007-2020
Member, Biomedical Engineering Society, 2015-present
Session Chair, 2021
Senior Member, IEEE, 2018-present
Member, American Association for the Advancement of Science (AAAS), 2016-present
Member, Institute of Electrical and Electronics Engineers, 2017-present
Awards Chair, 9th International Conference on Rehabilitation Robotics (ICORR), 2005
Program Committee, IEEE BioRob Conference, 2008
Chair, Biomechanics and Neural Control of Movement 2016 conference

Grant Applications Reviewer (17 agencies and institutes)

American Society of Biomechanics
Army Research Laboratory
Congressionally Directed Medical Research Program
Department of Veterans Affairs
Michael Smith Foundation for Health Research
Luxembourg National Research Fund
National Institutes of Health (MRS study section standing member, 2018-2022; Chair 2020-2022)
Natural Sciences and Engineering Research Council of Canada
National Science Foundation
Nazarbayev University
Science Foundation Ireland
Swedish Research Council
University of Michigan Office of Vice Provost for Research
University of Mons, Belgium

U.S. Civilian Research and Development Foundation
U.S. Army Medical Research and Materiel Command
Vienna Science and Technology Fund

Manuscript Reviewer (68 journals spanning biology, engineering, and medicine)

Archives of Physical Medicine and Rehabilitation
Autonomous Robots
Bioinspiration and Biomimetics
Biology Letters
Brain Research
Canadian Journal of Applied Physiology
Cerebral Cortex
Clinical Biomechanics
Clinical Neurophysiology
Communications Medicine
Computers in Biology and Medicine
European Journal of Applied Physiology
European Journal of Neuroscience
Exercise and Sport Sciences Reviews
Experimental Brain Research
Frontiers in Human Neuroscience
Frontiers in Neurorobotics
Gait and Posture
Human Factors
Human Movement Science
IEEE Transactions on Biomedical Engineering
IEEE Transactions on Haptics
IEEE Transactions on Human-Machine Systems
IEEE Transactions on Neural Systems and Rehabilitation Engineering
IEEE Transactions on Robotics
IEEE Transactions on Mechatronics
IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans
IET Control Theory & Applications
International Journal of Robotics Research
International Journal of Sports Science & Coaching
Journal of the American Medical Association
Journal of Applied Biomechanics
Journal of Applied Physiology
Journal of Athletic Training
Journal of Biomechanical Engineering
Journal of Biomechanics
Journal of Experimental Biology
Journal of Hand Therapy
Journal of Morphology
Journal of Motor Behavior
Journal of Neural Engineering
Journal of Neuroengineering and Rehabilitation
Journal of Neurologic Physical Therapy
Journal of Neurophysiology
Journal of Neuroscience
Journal of Physical Activity and Health
Journal of Rehabilitation Research and Development
Journal of the Royal Society Interface
Journal of Theoretical Biology

Mechatronics
Medicine and Science in Sports and Exercise
Nature Biomedical Engineering
Nature Medicine
Neurorehabilitation and Neural Repair
Philosophical Transactions of the Royal Society: Biological Sciences
Physical Therapy
PLoS Computational Biology
PLoS ONE
Prosthetics and Orthotics International
Proceedings of the National Academy of Sciences
Proceedings of the Royal Society of London: Biological Sciences
Scandinavian Journal of Medicine & Science in Sports
Science
Science Robotics
Science Translational Medicine
Scientific Data
Scientific Reports
Stroke

Editorial Boards (4 journals)

Associate Editor, *Journal of Neuroengineering and Rehabilitation*, 2007-2017
Associate Editor, *Exercise and Sport Sciences Reviews*, 2008-2015
Editorial Board Member, *Journal of Neurologic Physical Therapy*, 2010-2017
Associate Editor, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 2014-2017
Editor-in-Chief, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 2018-2023

Advisory Boards

Center for Human-Machine Systems Advisory Board, Cleveland State University, 2016-2021
K. Lisa Yang Center for Bionics Advisory Board, MIT, 2021-present

External Reviewer for Promotion and/or Tenure (62 cases)

Department of Integrative Physiology, University of Iowa
Department of Physical Therapy, University of Florida
Department of Mechanical Engineering, University of British Columbia (2)
Department of Applied Physiology, Georgia Institute of Technology (3)
Department of Kinesiology, University of Massachusetts Amherst
Department of Applied Physiology and Wellness, Southern Methodist University (2)
Department of Physical Medicine & Rehabilitation, Northwestern University
Department of Engineering, College of Technology and Innovation, Arizona State University
Department of Physical Therapy, Northeastern University
Department of Kinesiology and Health, Georgia State University
Department of Kinesiology and Health Education, University of Texas, Austin
Program in Physical Therapy, Washington University in St. Louis
Department of Bioengineering, University of Illinois, Chicago
Division of Physical Therapy, Medical University of South Carolina (2)
School of Applied Sciences and Engineering, Harvard University (2)
Department of Applied Physiology & Kinesiology, University of Florida
Department of Exercise and Sport Sciences, University of Utah
Department of Physical Therapy and Athletic Training, Boston University
Department of Kinesiology and Sport Sciences, University of Miami, FL (2)
School for Engineering of Matter, Transport and Energy, Arizona State University
Department of Health and Exercise Science, Colorado State University

Department of Biomedical Engineering, University of Virginia
Department of Aeronautics and Astronautics, Massachusetts Institute of Technology
Department of Kinesiology, University of Maryland
Department of Mechanical Engineering, University of Texas at Dallas
Department of Kinesiology, Pennsylvania State University
Department of Electrical Engineering and Computer Science, University of Michigan
School of Mechanical Engineering, Shanghai Jiao Tong University
Department of Health and Human Performance, University of Houston
Department of Kinesiology, Michigan State University
School of Biological and Health Systems Engineering, Arizona State University
Department of Integrative Physiology, University of Colorado at Boulder
Department of Biomedical Engineering, University of North Carolina
Department of Integrative Physiology, University of Colorado, Boulder
Division of Biokinesiology and Physical Therapy, University of Southern California
Department of Mechanical Engineering and Materials Science, Yale University
Walker Department of Mechanical Engineering, University of Texas, Austin
School of Kinesiology and Health Studies, Queen's University, Canada
Department of Mechanical Engineering, University of Utah
Department of Mechanical Engineering, University of Michigan
Department of Electrical and Biomedical Engineering, University of Vermont
Department of Biomedical Engineering, University of Delaware
Department of Mechanical Engineering, Pennsylvania State University
Department of Mechanical Engineering, Northern Arizona University
Department of Mechanical Engineering, University of Colorado at Boulder
Department of Mechanical, Aerospace and Biomedical Engineering, University of Tennessee
Department of Mechanical Engineering, University of Michigan
School of Science, Computing and Engineering Technologies, Swinburne University of Technology
Department of Health and Human Performance, University of Houston
Department of Kinesiology and Applied Physiology, University of Delaware
Department of Mechanical Engineering, University of Texas, Austin
Institute for Neural Computation, UC San Diego
Department of Biomedical Engineering, University of Memphis
Department of Biomedical Engineering, NCSU/UNC
Department of Mechanical and Industrial Engineering, University of Illinois, Chicago
Department of Biomedical Engineering, Southern University of Science and Technology, China
Institute for Neural Computation, UC San Diego

Popular Press Coverage

Results from Ferris et al. (2004) *Spinal Cord*, 42:14-23, were covered in a University of Michigan press release and featured on many public news outlets including:

MSNBC, Reuters, Science Daily, BruneiDirect.com, EurekaAlert, Forbes, HealthScout, National Spinal Cord Injury Association, Innovations Report, Indian Express, Spinal Cord Injury Zone

The results were also the focus of two interviews: "Stateside with Charity Nebbe", Michigan Public Radio (01/30/2004), "Health Report" for the Australian Broadcast Corporation radio service (04/05/2004).

Results from Gordon and Ferris (2007) *Journal of Biomechanics*, 40:2636-2644, were covered in a University of Michigan press release and featured on many public news outlets including:

Engadget.com, EurekaAlert.org, Iran Daily (Iran), Live Science, Machine Design, Medical News Today, Pharma-Lexicon.com, The Michigan Daily, New Scientist Tech, PhysOrg.com, Physiatry Practice Management Resources, ScienceBlog.com, Science Daily, ScientificBlogging.com, The Spinal Cord Injury Zone, Technology.com, Virtual Medical Worlds Monthly, and Yubanet.com.

Results from Sawicki and Ferris (2008) *Journal of Experimental Biology*, 211:1402-1413, were covered in a University of Michigan press release and featured on multiple public news outlets including: MSNBC, LiveScience.com, Medical News Today, Scenta (United Kingdom), The Hindu (India), Mangalorean.com (India), Science Centric (Bulgaria), Daily News & Analysis (India), EurekaAlert.org, Media Newswire, Science Daily, Med India (India), RxPG News, Thaindian News (Thailand), NewsPost India (India), MSN India (India), Genetic Engineering & BioTechnology News, Inside Journal of Experimental Biology, PhysOrg.com, & Virtual Medical Centre (Australia)

Results from Gwin et al. (2010) *Journal of Neurophysiology*, 103:3526-3534, and Gwin et al. (2011) *Neuroimage*, were covered in a University of Michigan press release, a Michigan Alumnus Magazine article, Michigan Daily, and featured on numerous public news outlets including: R&D Magazine, PhysOrg.com, Medical Xpress, HighBeam, Softpedia, Polskieradio (Poland), and KolpaniaWiedzy (Poland)

Results from Sipp et al. (2013) *Journal of Neurophysiology*, 110:2050-2060, were covered in a University of Michigan press release, and featured on numerous public news outlets including: PhysOrg.com, Science Daily, Computer Magazine.com, *Real Simple* magazine, LiveScience.com, HighBeam, and Southwestern Airlines *Spirit* magazine.

Results from Kline et al. (2014) *Frontiers in Human Neuroscience*, 8:288, were covered in a University of Michigan press release, and featured on multiple public news outlets.

Results from Studnicki and Ferris (2023) *eNeuro*, were covered by press releases from the University of Florida and the Society for Neuroscience, and numerous articles by organizations such as Science.org, *The Times* (London), *The Independent*, *Popular Science*.

General coverage of my laboratory research projects has been featured in *Applied Neurology* (December 2006), *Today in PT* (March 2007), *The O&P Edge* (March 2009), and *Canadian Running* (February 2010). I was featured in a professor profile piece in *The Michigan Daily* (March 30, 2010) and provided a video interview for Engineering TV (August 27, 2007; <http://www.engineeringtv.com/video/Artificial-Muscles-2>). The BIG TEN Network filmed and presented a story on my research on myoelectric control of robotic lower limb prostheses that aired at various football and basketball game showings (<http://www.youtube.com/watch?v=SS1MFoz1Cp0>).

I have been interviewed for my professional perspective on issues related to spinal cord injury, prosthetics, and sports physiology in the *Detroit Free Press* (October 12, 2004; March 20, 2009), *ScienceNOW Daily News* (May 20, 2008 and November 4, 2009), *WeightWatchers.com* (March 2010), *Men's Health* (July 29, 2011), and the *Wall Street Journal* (September 25, 2013). I was interviewed about running biomechanics on difference surfaces by *Competitor.com* (June 1, 2012), *Outside* magazine (October 24, 2013), *Nautilus* magazine (July 7, 2016), and *The Wall Street Journal* (May 1, 2021); and about Oscar Pistorius and his running biomechanics by the *Edmonton Journal* (July 17, 2012). I was interviewed about robotic exoskeletons for *MIT Technology Review* (April 15, 2014), *Wired* (May 16, 2014; June 22, 2017), *Science* (October 15, 2015), and NBC News MACH (May 15, 2018). I was interviewed about balance training for *Vogue* (March 31, 2016).

Mentoring Experience

Junior Faculty (8 Assistant Professors, 3 Assistant Research Scientists)

Scott McLean, Ph.D. (2007-2015) Assistant Professor, School of Kinesiology, University of Michigan

Chris Mendias, Ph.D. (2009-2011) Research Assistant Professor, School of Kinesiology, University of Michigan

Jane Huggins, Ph.D. (2010-2015) Assistant Professor, Department of Physical Medicine and Rehabilitation, University of Michigan

Amy Sipp, Ph.D. (2010-2012) Assistant Research Scientist, School of Kinesiology, University of Michigan

Helen Huang, Ph.D. (2012-2015) Assistant Research Scientist, School of Kinesiology, University of Michigan

Cindy Chestek, Ph.D. (2012-2013) Assistant Professor, Department of Biomedical Engineering, University of Michigan

Deanna Gates, Ph.D. (2012-2017) Assistant Professor, School of Kinesiology, University of Michigan

Chandramouli Krishnan, Ph.D., P.T. (2012-2017) Assistant Professor, Department of Physical Medicine and Rehabilitation, University of Michigan

Tim Bruns, Ph.D. (2013-2014) Assistant Professor, Department of Biomedical Engineering, University of Michigan

Andrew Nordin, Ph.D. (2017-2020) Assistant Research Scientist, Department of Biomedical Engineering, University of Florida

Jennifer Nichols, Ph.D. (2017-2024) Assistant Professor, Department of Biomedical Engineering, University of Florida

Post-Doctoral Scholars (16 mentees have moved on to other positions, 2 mentees currently in lab)

Monica Daley, Ph.D. (2006-2008) National Science Foundation Bioinformatics Post-Doctoral Research Fellow; currently a Professor at the University of California, Irvine

Cara Lewis, Ph.D., P.T. (2006-2009) National Institutes of Health NRSA Post-Doctoral Fellow, National Institutes of Health T32 NRSA Post-Doctoral Fellow; currently an Associate Professor of Physical Therapy at Boston University

Amy Sipp, Ph.D. (2008-2010) National Institutes of Health T32 NRSA Post-Doctoral Fellow; currently working for U.S. Patent Office in Detroit, Michigan

Troy Lau, Ph.D. (2011) currently a Division Leader at Draper Laboratory, Boston, MA

Kristine Snyder, Ph.D. (2012-2015) National Science Foundation Post-Doctoral Research Fellow; currently working at Stryd in Boulder, CO

J. Courtney Bradford, Ph.D. (2012-2015) Post-Doctoral Researcher; currently a Research Scientist at Aberdeen Proving Ground, Army Research Laboratory

Daniel Jacobs, Ph.D. (2013-2016) Post-Doctoral Researcher, U-M MICHR Postdoctoral Translational Scholar; currently an Assistant Professor at Temple University

Anderson Oliveira, Ph.D. (2014-2015) Post-Doctoral Researcher; currently an Associate Professor at Aalborg University, Denmark

Aaron Young, Ph.D. (2014-2016) Post-Doctoral Researcher; currently an Associate Professor at Georgia Institute of Technology

Andrew Nordin, Ph.D. (2015-2017) Post-Doctoral Researcher; currently an Assistant Professor at Texas A&M University

Yann Thibaudier, Ph.D. (2017-2018) Post-Doctoral Researcher, currently in France in industry

Natalie Richer, Ph.D. (2018-2020) Post-Doctoral Researcher, currently an Assistant Professor at the University of Winnipeg

Ryan Downey, Ph.D. (2018-2023) Post-Doctoral Researcher, currently a Scientific Consultant for NIRx Medical Technologies

Bryan Schlink, Ph.D. (2020) Post-Doctoral Researcher; currently a research engineer at Battelle

Erika Pliner, Ph.D. (2020-2023) Post-Doctoral Researcher; NIH T32 TRAM Fellow; NIH F32 Fellow; currently an Assistant Professor at University of Utah.

Chang Liu, Ph.D. (2021-2024) Post-Doctoral Researcher; American Heart Association Fellow; joining University of Illinois Chicago as an Assistant Professor in summer 2024

Amanda Studnicki, Ph.D. (2023) Post-Doctoral Researcher; currently a postdoctoral fellow at NIH

Charlotte Caskey, Ph.D. (2024) Post-Doctoral Researcher; NIH T32 TRAM Fellow

Doctoral Students (21 mentees graduated, 3 mentees currently in laboratory)

Keith Gordon, Ph.D. (UM Kinesiology, 2001-2005) was a postdoctoral fellow at Rehabilitation Institute of Chicago and Northwestern University Department of Physical Medicine and Rehabilitation,

Chicago, IL; currently an Assistant Professor at Northwestern University Department of Physical Therapy and Human Movement Sciences and Research Health Scientist at Edward Hines Jr. Veterans Affairs Hospital, Chicago, IL

- Greg Sawicki, Ph.D.** (UM Kinesiology & Mechanical Engineering dual Ph.D. degree, 2002-2007) Rackham Pre-Doctoral Fellow; was a post-doctoral fellow at Brown University Department of Ecology and Evolutionary Biology 2007-2009; currently an Associate Professor in the School of Mechanical Engineering at Georgia Institute of Technology
- Ann (Barkowitz) Simon, Ph.D.** (UM Biomedical Engineering, 2005-2008) National Science Foundation Graduate Research Fellow, American Heart Associate Pre-Doctoral Fellow, Rackham Merit Fellow; was a post-doctoral fellow at the Rehabilitation Institute of Chicago, IL; currently a Research Engineer at the Center for Bionic Medicine, Shirley Ryan Ability Lab, IL
- Pei-Chun Kao, P.T., Ph.D.** (UM Kinesiology, 2004-2009) was a post-doctoral fellow at the University of Delaware Department of Physical Therapy; currently an Associate Professor in the Department of Physical Therapy at University of Massachusetts, Lowell
- Helen Huang, Ph.D.** (UM Biomedical Engineering, 2004-2009) National Institutes of Health NRSA Pre-Doctoral Fellow; currently an Associate Professor in the Department of Mechanical and Aerospace Engineering at University of Central Florida, Orlando, FL
- Antoinette Domingo, P.T.** (UM Kinesiology, 2003-2009) Rackham Merit Fellow, Rackham Pre-Doctoral Fellow, National Institutes of Health NRSA Pre-Doctoral Fellow, Foundation for Physical Therapy PODS II Scholar; was a postdoctoral researchers at the University of British Columbia; currently an Associate Professor of Physical Therapy at San Diego State University
- Michael Cherry** (UM Mechanical Engineering, 2005-2009) National Science Foundation Graduate Research Fellow (co-advised with Prof. Kota from Dept. of Mechanical Engineering); currently working as a Senior Engineer for Raytheon in Tucson, AZ
- Joseph Gwin** (UM Kinesiology & Mechanical Engineering dual Ph.D. degree, 2008-2012) National Defense Science and Engineering Graduate Fellow; currently Head of the Boston Health Technology Center, Boston, MA
- Stephanie Huang** (UM Biomedical Engineering, 2009-2014) currently a Human Factors Engineer at Apple, Cupertino, CA
- Sasha Voloshina** (UM Kinesiology & Mechanical Engineering dual Ph.D. degree, 2008-2014) Rackham Merit Fellow, National Science Foundation Graduate Research Fellow Honorable Mention, American Kinesiology Association Writing Scholar; currently an Assistant Professor in Mechanical and Aerospace Engineering, UC Irvine, CA
- Julia Kline** (UM Biomedical Engineering, 2009-2015) Rackham Merit Fellow, National Science Foundation Graduate Research Fellow; currently a Staff Scientist at NIH
- Grant Hanada** (UM Biomedical Engineering, 2012-2018) currently Research Scientist with Intheon, San Diego, CA
- Jeff Koller** (UM Mechanical Engineering, 2013-2017) (co-advised with Prof. C. David Remy from Dept. of Mechanical Engineering) currently a Lecturer at University of Michigan
- Steven Peterson** (UM Biomedical Engineering, 2014-2018) National Science Foundation Graduate Research Fellow; currently a research engineer with Meta
- Bryan Schlink** (UF Biomedical Engineering, 2017-2020); currently a Research Engineer at Battelle
- Mhairi MacLean** (UF Biomedical Engineering, 2017-2020); currently an Assistant Professor at University of Twente, Netherlands
- Evangelia-Regkina Symeonidou** (International Max Planck Research School for Intelligent Systems, Tübingen, 2017-2023); currently a postdoc at the Max Planck Institute for Empirical Aesthetics, Frankfurt am Main, Germany
- Rachel Hybart** (UF Biomedical Engineering, 2017-2023) UF Graduate Student Preeminence Fellow; currently a Research Engineer for Rimkus Consulting, Atlanta, GA.
- Noelle Jacobsen** (UF Biomedical Engineering, 2018-2023) National Defense Science and Engineering Graduate Fellow Alternate, NIH T32 Movement Disorders Fellow; currently a postdoc at UCL in London, UK

Amanda Studnicki (UF Biomedical Engineering, 2018-2023) UF Graduate Student Preeminence Fellow, National Science Foundation Graduate Research Fellow Honorable Mention; currently a postdoc at NIH, Bethesda, MD

Nicole Stafford (UF Mechanical Engineering, 2018-2024) UF Graduate Student Preeminence Fellow; NIH T32 Neuromuscular Plasticity and Rehabilitation Fellow; currently a postdoc at IHMC, Pensacola, FL

W. Sebastian Barrutia (UF Biomedical Engineering, 2019-2024) UF Graduate Student Preeminence Fellow; NIH T32 Neuromuscular Plasticity and Rehabilitation Fellow

J. Raven Morris (UF Biomedical Engineering, 2020-present) UF Graduate Student Preeminence Fellow

Jacob Salminen (UF Biomedical Engineering, 2020-present) UF Graduate Student Preeminence Fellow

Ryan White (UF Biomedical Engineering, 2024-present)

Lauren Hanchar (UF Biomedical Engineering, 2024-present)

Master's Students (22 mentees)

Tiffany Viant (UM Biomedical Engineering, 2002); currently working as a biomedical engineer at a medical device company in southeast Michigan

Mekayla Beaver (UM Biomedical Engineering, 2002); currently owns and operates Gloworm consulting

Pei-Chun Kao, P.T. (UM Kinesiology, 2003); went on to earn her Ph.D. in my lab

Elena (Marin) Haviland (UM Mechanical Engineering, 2003); currently working as a Process Engineer at Ziel Optics, Ann Arbor, MI

Helen Huang (UM Biomedical Engineering, 2004); went on to earn her Ph.D. in my lab

Ann Barkowitz (UM Biomedical Engineering, 2005); went on to earn her Ph.D. in my lab

Stephen Cain (UM Mechanical Engineering, 2005); currently an Assistant Professor at West Virginia University

Evan Pelc (UM Biomedical Engineering, 2007); completed medical school at Michigan State University

Evelyn Anaka (UM Kinesiology, 2014)

Lisa (Perez) Savage (UM Mechanical Engineering, 2012); currently an Autonomous Driving SOTIF Engineer at Aptiv, Wixom, MI

Andrea Sonnleitner (Medical Engineering from Upper Austria University of Applied Sciences, Linz, Austria, 2012; visiting scholar) Marshall Plan Scholar; currently working as a System Architect at LivaNova, Munich, Germany

Mhairi MacLean (UM Kinesiology, 2017); currently a faculty member at U. of Twente

Jon Miles (UF Biomedical Engineering, 2018); currently a research engineer at Exactech

Taylor Yuska (UF Biomedical Engineering, 2021)

Kirsty Carlyle (University of Glasgow Biomedical Engineering, 2019)

Celene Cheddie (UF Biomedical Engineering, 2023)

Peter Schaefer (UF Biomedical Engineering, 2022)

Alex Zaffos (UF Biomedical Engineering, 2022)

Zach Graves (UF Biomedical Engineering, 2022)

Samuel Oyeleye (UF Biomedical Engineering, 2022)

Chandler Walton (UF Biomedical Engineering, 2019)

Christopher Gearhart (UF Biomedical Engineering, 2018)