MEGHAN E. HUBER

ASSISTANT PROFESSOR
Department of Mechanical and Industrial Engineering (MIE), University of Massachusetts Amherst
Engineering Lab I, Room 207C, 160 Governors Drive, Amherst, MA 01003-2210

PROFESSIONAL APPOINTMENTS

UNIVERSITY OF MASSACHUSETTS AMHERST

2020 – Present	Assistant Professor, Mechanical and Industrial Engineering
2022 – Present	Adjunct Faculty, Manning College of Information and Computing Sciences
2021 – Present	Adjunct Faculty, Biomedical Engineering
2021 – Present	Affiliated Faculty, Neuroscience and Behavior Graduate Program

OTHER

2016 – 2020	Postdoctoral Researcher, Mechanical Engineering, Massachusetts Institute of Technology
07-12/2014, 5/2015	Junior Scientist, Autonomous Motion Department, Max Planck Institute for Intelligent Systems
2011 – 2016	Graduate Research Assistant, Bioengineering, Northeastern University
2011 – 2012	Research Analyst, Oncology Knowledge Management
2009 – 2011	Graduate Research Assistant, Arts and Technology, University of Texas at Dallas
2007 – 2009	Undergraduate Research Assistant, Electrical and Computer Engineering, Rutgers University

EDUCATION

2016	PhD in Bioengineering, Northeastern University
2011	MS in Biomedical Engineering, University of Texas at Dallas
2009	BS in Biomedical Engineering, Rutgers University

AWARDS

2019	1st Place Presenter at MIT Mechanical Engineering Research Exhibition
2018	Rising Star in Mechanical Engineering from MIT Department of Mechanical Engineering
2018	1st Place Technical Design Team Award from MIT Assistive Technologies Hackathon
2016	Conference Travel Award (2016 Biomechanics and Neural Control of Movement)
2015	Graduate Dissertation Research Award from Northeastern University College of Engineering
2013	Best Student Poster Award (2013 International Conference on Virtual Rehabilitation)
2013	Student Travel Award (2013 International Conference on Virtual Rehabilitation)
2011	Dean's Fellowship from College of Engineering at Northeastern University
2011	Faculty-Nominated Top 25 Spring 2011 Engineering Graduate from University of Texas at Dallas
2008	Jim Jones Leadership Award from Drum Corps International Hall of Fame
2007 – 2009	Biomedical Engineering Honors Academy at Rutgers University
2005 – 2009	School of Engineering Honors Program at Rutgers University
2005 – 2009	Rutgers University Merit Scholarship
2005 – 2009	School of Engineering Merit Scholarship at Rutgers University
2005 – 2009	Edward J. Bloustein Distinguished Scholar

INTELLECTUAL PROPERTY

[IP1] (Pending) Sup, IV., F.C., Huber, M.E., Follette, D., (2020) Protective Mask. *Application Number:* 63/000,281 (US).

[IP2] (Pending) Huber., M.E., Hermus, J., Enns, G., & Hogan, N. (2020). Variable Compression Body Anchor. *Application Number:* 16/789,638 (US).

[IP3] (Pending) Hart, A. J., Pattinson, S.W., Huber, M. E., Lee, J., & Roberts, R. (2019). Additively manufactured mesh materials, wearable and implantable devices, and systems and methods for manufacturing the same. *Application Number:* 16/773,313 (US) PCT/US20/15192 (International).

PUBLICATIONS

JOURNAL PAPERS UNDER PEER REVIEW

[JP1] Price, M.A., Huber, M.E., & Hoogkamer, W., (Under Review) Minimum effort simulations of split-belt treadmill walking produce positive step asymmetry.

[JP2] West, Jr., A.M., Huber, M.E., & Hogan, N. (Under Review). Role of path information in visual perception of joint stiffness. *Journal of Neurophysiology*.

[JP3] Huber, M.E., Koeppen, R., Sternad, D., & Hogan, N. (In Revision). Humans do not minimize muscle effort to control constrained motion. *Journal of Neurophysiology*.

[JP4] Abdikadirova, B., Price, M.A., Hoogkamer, W., & Huber, M.E. (In Preparation) Forward simulations of walking on a variable surface-impedance treadmill: A comparison of two methods.

PEER-REVIEWED JOURNAL PAPERS

[JP5] Lee, J., Huber, M.E., & Hogan, N. (2022). Gait entrainment to torque pulses from a hip exoskeleton robot. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 30:656-667.

[JP6] West, Jr., A.M., Hermus, J.R., Maurice, P., Huber, M.E., Sternad, D., & Hogan, N. (2022). Dynamic primitives limit human force regulation during motion. *IEEE Robotics and Automation Letters*, 7(2): 2391-2398.

[JP7] Lee, J., Huber, M.E., & Hogan, N. (2021). Applying hip stiffness with an exoskeleton to compensate gait kinematics. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 29: 2645-2654.

[JP8] Huber, M. E., Chiovetto, E., Giese, M. & Sternad, D. (2020) Rigid soles improve balance in beam walking, but improvements do not persist with bare feet. *Scientific Reports*, 10:7629.

[JP9] Levac, D., Huber, M. E., & Sternad, D. (2019). Learning and transfer of complex motor skills in virtual reality: A perspective review. *Journal of NeuroEngineering and Rehabilitation*, 16:21.

[JP10] Huber, M. E., Folinus, C., & Hogan, N. (2019). Visual perception of limb stiffness. *Journal of Neurophysiology*, 122:51-59.

[JP11] Pattinson, S. W., Huber, M. E., Kim, S., Lee, J., Grunsfeld, S., Roberts, R., Dreifus, G., Liu, L., Hogan, N., & Hart, A. J. (2019). Additive manufacturing of biomechanically tailored meshes for compliant wearable and implantable devices. *Advanced Functional Materials*, 1901815.

[JP12] Zhang, Z., Guo, D., Huber, M. E., Park, S.-W., & Sternad, D. (2018). Exploiting geometry of solution space to reduce sensitivity to neuromotor noise. *PLoS Computational Biology*, 14(2): e1006013.
Finalist for Klein-Vogelbach Award for Research on Skill Learning and Rehabilitation

[JP13] Chiovetto, E., Huber, M. E., Sternad, D., & Giese, M. (2018). Low-dimensional organization of angular momentum during walking on a narrow beam. *Scientific Reports*, 8(1):95.

[JP14] Maurice, P., Huber, M. E., Hogan, N., & Sternad, D. (2018). Velocity-curvature patterns limit human–robot physical interaction. *IEEE Robotics and Automation Letters*, 3(1): 249-256.

[JP15] Huber, M. E., Kuznetsov, N., & Sternad, D. (2016). Persistence of reduced neuromotor noise in long-term motor skill learning. *Journal of Neurophysiology*, 116(6):2922-2935.

[JP16] Huber, M. E., Brown, A. J., & Sternad, D. (2016). Girls can play ball: stereotype threat reduces variability in a motor skill. *Acta Psychologia*, 169:79-87.

[JP17] Huber, M. E., Seitz, A. L., Leeser, M., & Sternad, D. (2015). Validity and reliability of Kinect skeleton for measuring shoulder joint angles. *Physiotherapy*, 101(4):389–393.

[JP18] Huber, M. E., & Sternad, D. (2015). Implicit guidance to stable performance in a rhythmic perceptual-motor skill. *Experimental Brain Research*, 23(6):1783-99.

[JP19] Huber, M. E., Seitchik, A. E., Brown, A. J., Sternad, D., & Harkins, S. G. (2015). A mere effort account of stereotype threat in performance of a rhythmic motor skill. *Journal of Experimental Psychology: Human Perception and Performance*, 41(2): 525-541.

[JP20] Sternad, D., Huber, M. E., & Kuznetsov, N. (2014). Acquisition of novel and complex motor skills: stable solutions where intrinsic noise matters less. *Advances in Experimental Medicine and Biology*, 826:101-124.

[JP21] Huber, M., Rabin, B., Docan, C., Burdea, G., Abdelbaky, M., & Golomb, M. (2010). Feasibility of modified remotely-monitored in-home gaming technology for improving hand function in adolescents with cerebral palsy. *IEEE Transactions on Information Technology in Biomedical Engineering*, 14(2):526-534.

[JP22] Golomb, M., McDonald, B., Warden, S. J., Yonkman, J., Saykin, A., Shirley, B., Huber, M., Rabin, B., Abdelbaky, M., Nwosu, M., Barkat-Masih, M., & Burdea, G. (2010). In-Home virtual reality videogame telerehabilitation in children with hemiplegic cerebral palsy. *Archives of Physical Medicine and Rehabilitation*, 91:1-8.

CONFERENCE PAPERS UNDER PEER REVIEW

None at present

PEER-REVIEWED CONFERENCE PAPERS

[CP1] Price, M.A., Hoogkamer, W., Abdikadirova, B., Locurto, D., Moreno Jaramillo, J., Cline, N., Hoogkamer, W., & Huber, M.E. (2022) Unilateral stiffness modulation with a robotic hip exoskeleton elicits adaptation during gait. Paper to be presented at *2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS),* Kyoto, Japan.

[CP2] Abdikadirova, B., Lee, J., Hogan, N., & Huber, M.E. (2021) Muscle-reflex model of human locomotion entrains to mechanical perturbations. Paper presented at *2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Prague, Czech Republic.

[CP3] Huber, M.E., Lee, J., Agarwal, V., Warren, H.R., Huber, M.E., & Hogan, N. (2020) Overground gait patterns changed by modulating hip stiffness with a robotic exoskeleton. Paper presented at *2020 8th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob),* New York, USA.

[CP4] Lee, J., Warren, H.R., Agarwal, V., Huber, M.E., & Hogan, N. (2020) Modulating hip stiffness with a robotic exoskeleton immediately changes gait. Paper presented at *2020 IEEE International Conference on Robotics and Automation (ICRA),* Paris, France.

[CP5] Lee, J., Goetz, D., Huber, M.E., & Hogan, N. (2019, November) Feasibility of Gait Entrainment to Hip Mechanical Perturbation for Locomotor Rehabilitation. Paper presented at *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Macau, China.

[CP6] Lee, J., Huber, M.E., Chiovetto, E., Giese, M., Sternad, D., & Hogan, N. (2019, May). Human-inspired balance model to account for foot-beam interaction mechanics. Paper presented at *2019 IEEE International Conference on Robotics and Automation (ICRA),* Montreal, Canada.

[CP7] Lee, J., Huber, M. E., Sternad, D., & Hogan, N. (2018, October). Robot Controllers Compatible with Human Beam Balancing Behavior. Paper presented at *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Madrid, Spain.

[CP8] Koeppen, R., Huber, M. E., Sternad, D., & Hogan, N. (2017, October). Controlling physical interactions: Humans do not minimize muscle effort. Paper presented at *2017 Dynamic Systems and Control Conference (DSCC)*, Tyson's Corner, VA.
Best Student Paper Finalist

[CP9] Huber, M. E., Folinus, C., & Hogan, N. (2017, September). Visual perception of limb stiffness. Paper presented at *2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Vancouver, BC.

[CP10] Huber, M. E., Seitz, A. L., Leeser, M., & Sternad, D. (2015, June). Accuracy of Kinect for measuring shoulder joint angles in multiple planes of motion. Paper presented at the *2015 International Conference on Virtual Rehabilitation*, Valencia, Spain.

[CP11] Huber, M. E., Seitz, A. L., Leeser, M., & Sternad, D. (2014, April). Validity and reliability of Kinect for measuring shoulder joint angles. Paper presented at the *40th Annual Northeast Bioengineering Conference*, Boston, MA.

[CP12] Huber, M. E., & Sternad, D. (2014, April). Implicit guidance to dynamic stability in rhythmic ball bouncing. Paper presented at the *40th Annual Northeast Bioengineering Conference*, Boston, MA.

[CP13] Kuznetsov, N., Huber, M. E., & Sternad, D. (2014, April). Exploratory aspects of variability in learning a novel skill. Paper presented at the *40th Annual Northeast Bioengineering Conference*, Boston, MA.

[CP14] D. Guo, Huber, M. E., & Sternad, D. (2014, April). State space analysis of human timing. Paper presented at the *40th Annual Northeast Bioengineering Conference*, Boston, MA.

[CP15] Huber, M. E., Leeser, M., & Sternad, D. (2013, August). Development of a low-cost, adaptive, clinician-friendly virtual rehabilitation system. Paper presented at *2013 International Conference on Virtual Rehabilitation*, Philadelphia, PA.
Best Student Poster Award

[CP16] Zielke, M., LeFlore, J., Dufour, F., Hardee, G., Huber, M., Thomas, P., Kanipe, K., Whetstone, E., & Buxkamper, A. (2010, November). Game-based virtual patients – educational opportunities and design challenge. Paper presented at *Interservice/Industry Training, Simulation, and Education Conference 2010*, Orlando, FL.

[CP17] Huber, M. (2010, February). Next generation design for an in-home video game enhanced physical therapy system. Paper presented at the *2010 Central American Society of Biomechanics Meeting*, Denton, TX.

[CP18] Golomb, M.R., Barkat-Masih, M., Rabin, B., Abdelbaky, M., Huber, M., & Burdea, G. (2009, June). Eleven months of home virtual reality telerehabilitation - lessons learned. Paper presented at the *2009 International Conference on Virtual Rehabilitation*, Haifa, Israel.

[CP19] Huber, M., Rabin, B., Docan, C., Burdea, B., Nwosu, M., Abdelbaky, M. & Golomb, M. (2008, August). PlayStation 3-based telerehabilitation for children with hemiplegia. Paper presented at the *2008 International Conference on Virtual Rehabilitation*, Vancouver, Canada.

CONFERENCE ABSTRACTS

[CA1] Huber, M.E., West, Jr., A.M., Folinus, C., & Hogan, N. (2019, November). Visual Perception of Joint Stiffness from Multi-Joint Limb Motion. Poster presented at the *2019 Annual Conference of the Society for Neuroscience*, Chicago, IL.

[CA2] Huber, M.E., Koeppen, R., Hermus, J., Sternad, D., & Hogan, N. (2018, November). Humans do not minimize muscle effort to control constrained motion. Poster presented at the *2018 Annual Conference of the Society for Neuroscience*, San Diego, CA.

[CA3] Ochoa, J., Huber, M. E., & Hogan, N. (2017, June). Influence of Voluntary Intervention on Gait Entrainment. Abstract presented at *Dynamic Walking 2017*, Mariehamn, Finland.

[CA4] Zhang, Z., Huber, M. E., Park, S. W., & Sternad, D. (2016, November). Structure of solution space in a redundant motor task determines learning. Poster presented at the *2016 Annual Conference of the Society for Neuroscience*, San Diego, CA.

[CA5] Huber, M. E., Kuznetsov, N., & Sternad, D. (2016, June). Persistence of reduced neuromotor noise in long-term motor skill learning. Poster presented at *Biomechanics and Neural Control of Movement (BANCOM) 2016*, Mt. Sterling, OH.
NIH Travel Award

[CA6] Guo, D., Huber, M. E., Harrigan, K., Zhang, Z., Maurice, P., Cervantes, O., Cheng, R., Wiedemann, J., Owens, K., Tam, H. & Sternad, D. (2016, April). Pitchers and pianists: the age-dependence of human timing. Poster presented at the *Northeastern University Research, Innovation and Scholarship Expo 2016*, Boston, MA.

[CA7] Huber, M. E., Chiovetto, E., Righetti, L., Schaal, S., Giese, M., & Sternad, D. (2015, July). From humans to robots and back: role of arm movement in medio-lateral balance control. Poster presented at *Dynamic Walking 2015*, Columbus, OH.

[CA8] Chiovetto, E., Huber, M. E., Righetti, L., Schaal, S., Giese, M., & Sternad, D. (2015, July). From humans to robots and back: role of arm movement in medio-lateral balance control. Poster presented at *Progress in Motor Control X*, Budapest, Hungary.

[CA9] Huber, M. E., Chiovetto, E., Righetti, L., Schaal, S., Giese, M., & Sternad, D. (2015, June). From humans to robots and back: role of arm movement in medio-lateral balance control. Poster presented at the *7th International Symposium on Adaptive Motion of Animals and Machines*, Cambridge, MA.

[CA10] Huber, M. E., Chiovetto, E., Righetti, L., Schaal, S., Giese, M., & Sternad, D. (2015, April). From humans to robots and back: Role of arm movement in medio-lateral balance control. Poster presented at the *24th Annual meeting of the Neural Control of Movement Society*, Charleston, SC.

[CA11] Kuznetsov, N., Huber, M. E., & Sternad, D. (2015, April). Neuromotor noise can decrease with long-lasting persistence. Poster presented at the *24th Annual meeting of the Neural Control of Movement Society*, Charleston, SC

[CA12] Guo, D., Huber, M. E., & Sternad, D. (2015, April). Want to win the world series? Here's how to pitch a perfect ninth. Poster presented at the *Northeastern University Research, Innovation and Scholarship Expo 2015*, Boston, MA.

[CA13] Brown, A. J., Huber, M. E., Sternad, D., & Harkins, S. G. (2015, February). The effect of stereotype threat on a novel sensorimotor task: Using mere effort and control mechanisms to predict performance. Poster presented at the *Annual Meeting of the Society for Personality and Social Psychology*, Long Beach, CA.

[CA14] Seitz, A. L., Huber, M. E., Leeser, M., & Sternad, D. (2014, October). Accuracy and precision of a low-cost virtual rehabilitation system utilizing the Microsoft Kinect to measure shoulder joint motion. Presented as a Platform at the *American Society of Shoulder and Elbow Therapists Annual Meeting*, Pinehurst, NC.

[CA15] Becherer, K., Harris, P. R., Huber, M. E., Seitz, A. L., Leeser, M., & Sternad, D. (2014, April). Accuracy and precision of a low-cost virtual rehabilitation system utilizing the Microsoft Kinect to measure shoulder joint motion. Poster presented at the *Northeastern University Research, Innovation and Scholarship Expo 2014*, Boston, MA.
Second Place Poster Award

[CA16] Guo, D., Huber, M. E., & Sternad, D. (2014, April). State space analysis of human timing: Timing accuracy limit is 9ms. Poster presented at *the Northeastern University Research, Innovation and Scholarship Expo 2014*, Boston, MA.

[CA17] Becherer, K., Harris, P. R., Huber, M. E., Seitz, A. L., Leeser, M., & Sternad, D. (2014, March). Accuracy and precision of a low-cost virtual rehabilitation system utilizing the Microsoft Kinect to measure shoulder joint motion. Poster presented at the *25th Annual Communications Digital Signal Processing Center Research Workshop*, Boston, MA.

[CA18] Seitchik, A., Huber, M. E., Brown, A. J., Sternad, D., & Harkins, S. (2014, February). A mere effort account of the effect of stereotype threat on motor performance. Poster presented at the *Annual Meeting of the Society for Personality and Social Psychology*, Austin, TX.

[CA19] Huber, M. E., & Sternad, D. (2013, November). Implicit guidance to dynamic stability in rhythmic ball manipulation. Poster presented at the *2013 Annual Conference of the Society for Neuroscience*, San Diego, CA.

[CA20] Haffner, B., Huber, M. E., & Sternad, D. (2013, November). Enhancing sensitivity to timing in a throwing task. Poster presented at the *2013 Annual Conference of the Society for Neuroscience*, San Diego, CA.

[CA21] Huber, M. E., & Sternad, D. (2013, July). Learning to exploit dynamic stability in a motor task. Poster presented at *Progress in Motor Control IX*, Montreal, Canada.

[CA22] Korsantia, N., Huber, M. E., & Sternad, D. (2013, July). Persistent decrease in neuromotor noise by manipulating error tolerance. Poster presented at *Progress in Motor Control IX*, Montreal, Canada.

[CA23] Huber, M. E., Sternad, D., & Leeser, M. (2013, March). Low cost, adaptable, and clinician-friendly virtual rehabilitation using the Microsoft Kinect. Poster presented at the *Northeastern University Research, Innovation and Scholarship Expo 2013*, Boston, MA.

[CA24] Korsantia, N., Huber, M. E., & Sternad, D. (2013, March). Persistent decrease in neuromotor noise by manipulating error tolerance. Poster presented at the *Northeastern University Research, Innovation and Scholarship Expo 2013*, Boston, MA.

[CA25] Huber, M. E., Lamattina, A. & Sternad, D. (2012, October). Information signaling error tolerance accelerates learning with long-term retention. Poster presented at the *2012 Annual Conference of the Society for Neuroscience*, New Orleans, LA.

[CA26] Huber, M. E., Kyvelidou, A., & Sternad, D. (2012, April). Augmentation of perceived visual error improves control and enhances retention of a discrete task. Poster presented at the *22nd Annual meeting of the Neural Control of Movement Society*, Venice, Italy.

[CA27] Huber, M. E., & Sternad, D. (2012, March). Translating fundamental motor control principles into physical therapy with virtual reality. Poster presented at the *Northeastern University Research, Innovation and Scholarship Expo 2012*, Boston, MA.

[CA28] Lamattina, A., Huber, M. E., & Sternad, D. (2012, March). Augmentation of perceived visual error improves control and retention. Poster presented at the *Northeastern University Research, Innovation and Scholarship Expo 2012*, Boston, MA.

POPULAR PRESS AND NEWS

BYLINES

[PPN1] We engineered a protective face shield for COVID-19. Here are management lessons that apply to any industry. By Sup, IV, F.C., Huber, M.E., & Follette, D.
Fast Company (2020, April).

EXPERT COMMENTARY

[PPN2] The 6 best school notebooks in 2021.
Business Insider (2021, August).

[PPN3] Walmart ditches major robot contract: So what does this mean for the industry?
Forbes. (2020, November).

RESEARCH NEWS

[PPN4] UMass Amherst designs face shield for fight against coronavirus surge.
Boston Herald (2020, April)

[PPN5] UMass Amherst engineers, nurses design fast-track low-cost face shield.
UMass Amherst Media Relations (2020, April)

[PPN6] Engineers 3-D print flexible mesh for ankle and knee braces.
MIT News (2019, June)

[PPN7] OpenNI brings virtual rehabilitation programs into patients' homes.
OpenNI (2013, May).

[PPN8] RISE:2013 highlights: Kinect rehab, Lego lobsters, 3D printed tech and more.
Engadget (2013, March)

[PPN9] Northeastern University's haptic ball-racket system is one pricey game of paddle ball
Engadget (2012, November)

[PPN10] Modified home video game shows promise for improving hand function in teens with cerebral palsy.
Rutgers University Media Relations (2010, March).

[PPN11] Virtual reality tele-rehab improves hand function.
Indiana University Media Relations (2010, January).

INVITED TALKS

INSIGHTS FROM HUMAN MOTOR CONTRL

[IT1] RSS 2022 Variable Impedance Robotic Skills: From foundations to current challenges and perspectives, June 2022

HUMAN ROBOT INTERACTION: A HUMAN MOTOR SKILL LEARNING APPROACH

[IT2] University of Massachusetts at Amherst, Neuroscience and Behavior Graduate Seminar, March 2, 2022

HUMAN CONTROL AND PERCEPTION OF PHYSICAL INTERACTION: IMPLICATIONS FOR HUMAN-ROBOT SYSTEMS

[IT3] IROS 2021 Variable Impedance Robotics Skills: Challenges and Opportunities Workshop, September 2021

[IT4] Northeastern University, Department of Mechanical Engineering, November 25, 2020

VISUAL PERCEPTION OF STIFFNESS FROM MULTI-JOINT MOTION: IMPLICATIONS FOR HUMAN-ROBOT SYSTEMS

[IT5] I-RIM 3D 2020 Socio-Physical Interaction Skills for Cooperative Human-Robot Systems in Agile Production Workshop, December 10, 2020

DESIGNING AND MANUFACTURING HUMAN WEARABLES

[IT6] University of Massachusetts at Amherst, Advanced Digital Design & Fabrication Lab, August 25, 2020

IMPROVING PHYSICAL INTERACTION IN HUMAN-ROBOT SYSTEMS

[IT7] University of Massachusetts at Amherst, Department of Mechanical Engineering, February 21, 2020

UNDERSTANDING AND ENHANCING ACQUISITION OF COMPLEX MOTOR SKILLS

[IT8] University of Massachusetts at Amherst, Department of Kinesiology, March 2, 2020
[IT9] Rutgers University, Department of Electrical and Computer Engineering, March 25, 2019
[IT1] Massachusetts Institute of Technology, Department of Mechanical Engineering, March 20, 2019
[IT2] Columbia University, Department of Mechanical Engineering, March 14, 2019
[IT3] University of Texas at Austin, Department of Mechanical Engineering, March 11, 2019
[IT4] Carnegie Melon University, Department of Biomedical Engineering, March 5, 2019
[IT5] University of Florida, Department of Mechanical and Aerospace Engineering, February 26, 2019
[IT6] University of Wisconsin, Department of Mechanical Engineering, February 7, 2019
[IT7] University of Colorado at Boulder, Department of Mechanical Engineering, February 12, 2019

HOW HUMANS LEARN, CONTROL, AND PERCEIVE PHYSICAL INTERACTIONS

[IT8] University of Massachusetts at Amherst, Department of Mechanical Engineering, January 30, 2019
[IT9] University of Delaware, Department of Biomedical Engineering, January 14, 2019
[IT10] New York University, Department of Mechanical and Aerospace Engineering, December 7, 2018

UNDERSTANDING AND ENHANCING COMPLEX MOTOR SKILL LEARNING

[IT11] Apple, November 15, 2017
[IT12] Draper Laboratory, March 7, 2016

VISUAL PERCEPTION OF LIMB STIFFNESS

[IT13] MIT Robocon 2017, February 10, 2017

TELEREHABILITATION: CLINICAL POTENTIAL AND CHALLENGES

[IT14] 25th Annual Communications Digital Signal Processing Center Research Workshop, March 28, 2014

MATLAB-BASED VIRTUAL REHABILITATION USING MICROSOFT KINECT

[IT15] The Mathworks, January 16, 2013

RESEARCH FUNDING

TO BE AWARDED

2022 – 2023 Mobile robot system to measure human kinematics in the real-world environments
PI: Meghan E. Huber, co-PI: Donghyun Kim
$30,000, Stanford University Restore Center Pilot Project Award

ONGOING

2021 – 2022 Portable, robotic footwear for real-time control of foot-ground stiffness
PIs: Meghan E. Huber, Wouter Hoogkamer
$15,000, UMass Amherst ADVANCE Collaborative Research Award

2021 – 2022 Nurturing Robotics at UMass Amherst: Development of a Core Robotics Research Team
PIs: Frank C. Sup IV, Meghan E. Huber, Rod Grupen, Donghyun Kim
$5,000, UMass Amherst Office of Faculty Development Mutual Mentoring grant

2020 – 2022 A stitch in time: synchronizing wound healing with our body clock
PIs: Cathal Kearney, Meghan E. Huber, Ilia Karatsoreos
$39,938, UMass Amherst Interdisciplinary Faculty Research Award

COMPLETED

2018 – 2021 Novel interventions and assessment measures for robot-aided locomotor rehabilitation
PI: Neville Hogan
Role: Designed experimental plan, wrote proposal, carrying out experiments
$300,000, Samsung Global Research Outreach Program

2013– 2014 Development of an adaptive clinician-friendly virtual rehabilitation system and its evaluation in post-operative shoulder therapy
PIs: Dagmar Sternad, Miriam Leeser, Amee Seitz
Role: Designed experimental plan, wrote proposal, carrying out experiments
$50,000, Northeastern University Provost Office

2012 Development of MATLAB-based virtual rehabilitation system using Microsoft Kinect
PIs: Miriam Leeser, Dagmar Sternad
Role: Designed experimental plan, wrote proposal, carrying out experiments
$20,000, The Mathworks

TEACHING EXPERIENCE

UNIVERSITY OF MASSACHUSETTS AMHERST

2022 Fall	MIE 697RS BioRobotics
2022 Spring	MIE 310 Dynamics
2021 Fall	MIE 697RB Robotics (created course)
2021 Spring	MIE 310 Dynamics
2020 Fall	MIE 310 Dynamics
2020 Spring	MIE 597RS/697RS BioRobotics (re-created course)

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

2019 Spring	2.184(U)/2.183J/9.34J(H) Biomechanics and Neural Control of Movement, MIT (Guest Lecturer)
2017 Spring	2.184(U)/2.183J/9.34J(H) Biomechanics and Neural Control of Movement, MIT (Guest Lecturer)

NORTHEASTERN UNIVERSITY

2014 Summer	Summer Discovery Experience, Northeastern University (TA)
2014 Spring	Exploration and Research: Mathematics, Physics, and Biology, Northeastern University (TA)

2013 Summer	Summer Discovery Experience, Northeastern University (TA)
2013 Spring	Exploration and Research: Mathematics, Physics, and Biology, Northeastern University (TA)
2012 Summer	Summer Discovery Experience, Northeastern University (TA)
2012 Spring	Exploration and Research: Mathematics, Physics, and Biology, Northeastern University (TA)
2009 Spring	14:332:376/8 Virtual Reality and Virtual Reality Lab, Rutgers University (TA)
2008 Spring	14:332:376/8 Virtual Reality and Virtual Reality Lab, Rutgers University (TA)

GRADUATE STUDENT ADVISING

UMASS PHD DISSERTATION COMMITTEE CHAIR

2022 – Present	Emily Pruc (CICS) (**2022 MA Space Consortium Grant**)
2021 – Present	Connor Aikens-Kinney (MIE) (**2021 College of Engineering Dean's Fellowship**)
2020 – Present	Banu Abdikadirova (MIE) (**2020 College of Engineering Dean's Fellowship**)
2020 – Present	Tanner Oliveira (MIE)

UMASS PHD DISSERTATION COMMITTEE MEMBER

2022 – Present	Erica Castro (Kinesiology, Chair: Katherine Boyer)
2022 – Present	Hernan Castaneda (Civil Engineering, Chair: Kara Peterman)
2022 – Present	Adrian Carleton (MIE, Chair: Yahya Modarres-Sadeghi)
2020 – Present	Bridget Benner (MIE, Chair: Yahya Modarres-Sadeghi)
2022 – Present	Dana Parsons (MIE, Chair: Krish Sharman)
2021 – Present	Dorcas Matuwana (BME, Chair: Cathal Kearney)
2020 – Present	Soumitra Sitole (MIE, Chair: Frank Sup)
2020 – 2021	Justin Svegliato (CICS, Chair: Shlomo Zilberstein)

UMASS PHD QUALIFYING EXAM COMMITTEE MEMBER

2022	Adrian Carleton (MIE, Chair: Yahya Modarres-Sadeghi)
2022	Dana Parsons (MIE, Chair: Krish Sharman)
2021	Dorcas Matuwana (BME, Chair: Cathal Kearney)
2020	Soumitra Sitole (MIE, Chair: Frank Sup)
2020	Bridget Benner (MIE, Chair: Yahya Modarres-Sadeghi)

UMASS RESEARCH/INDEPENDENT STUDY SUPERVISOR

2022 – Present	Kyle O'Connell (MIE)
2022 – Present	Dominic Locurto (MIE)
2022	Nicholas Cline (MIE)

UNDERGRADUATE STUDENT ADVISING

UMASS HONORS COLLEGE THESIS COMMITTEE CHAIR

2021 – 2022	Aidan Downey (MIE)

UMASS HONORS COLLEGE THESIS COMMITTEE MEMBER

2020	David Javadian (MIE)

UMASS RESEARCH/INDEPENDENT STUDY SUPERVISOR

2022 – Present	Robert Bennett (MIE)
2022 – Present	Dasha Trosteanetchi (MIE)

2021 – Present Kadri Williams (MIE)
2021 – 2022 Dominic Locurto (MIE) (**2021 MA Space Consortium Grant**)
2020 – 2022 Andrew Tierney (MIE)
2020 – 2022 Arthur Wang (MIE)
2021 – 2022 Dillan Wilson (MIE)
2020 – 2022 Paul Crann (MIE)
2020 – 2021 Olivia Taber (MIE)

UMASS SENIOR DESIGN FACULTY ADVISOR
2021 – 2022 Variable Stiffness Treadmill – Variable Stiffness Mechanism (MIE)
2021 Variable Stiffness Treadmill - Treadmill (MIE)

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
2019 – 2020 Gabrielle Enns (MechE) (**2020 Prince Award from MIT Department of Mechanical Engineering**)
2019 Devon Goetz (MechE)
2018 – 2019 Emily Satterfield (MechE)
2018 Brandon Koo (MechE)
2017 – 2018 Charlotte Folinus (MechE)
2016 – 2018 Ryan Koeppen (MechE) (**2017 MIT MERE Best UROP, 2017 DSCC Best Student Paper Finalist**)

NORTHEASTERN UNIVERSITY
2015 – 2016 Keith Harrigian (Math)
2015 – 2016 Julie Wiedemann (Math, Physics)
2015 – 2016 Katie Owens (Behavioral Neuroscience)
2015 – 2016 Hannah Tam (Biology)
2015 – 2016 Oliver Cervantes (Biology)
2015 – 2016 Rebecca Cheng (Biomedical Physics)
2014 – 2016 Dena Guo (Biomedical Physics)
2013 Brittany Haffner
2012 Anthony LaMattina

UNIVERSITY SERVICE

UNIVERSITY OF MASSACHUSETTS AMHERST
2021 – Present Advisory planning committee for the Institute of Neuroscience and Technology
2021 – Present Neuroscience and Behavioral Graduate Program Faculty Member
2021 – Present UMass Robotics Graduate Certificate Steering Committee
2021 – Present UMass Robotics Seminar Series Committee
2020 – Present UMass Robotics Club Faculty Advisor
2021 – 2022 MIE Departmental Personnel Committee
2021 – 2022 MIE Faculty Search Committee
2020 – 2021 MIE Seminar Series Committee

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
2017 Panel Organizer, Office of the Vice President for Research, MIT
2017 Conference Organizer, MIT Robocon, MIT
2016 – 2017 Corresponding Secretary, Postdoctoral Association, MIT

NORTHEASTERN UNIVERSITY

2015 – 2016 Director of Public Relations, Graduate Women in Science, Northeastern University

ROBOTICS COMMUNITY SERVICE

WORKSHOP ORGANIZATION

2022 RSS Variable Impedance Robotic Skills: From foundations to current challenges and perspectives
2022 ICRA 4th annual integrating multidisciplinary approaches to advance physical human-robot interaction
2021 ICRA 3rd annual integrating multidisciplinary approaches to advance physical human-robot interaction
2020 IROS Learning impedance modulation for physical interaction
2020 ICRA 2nd annual integrating multidisciplinary approaches to advance physical human-robot interaction
2019 ICRA 1st annual human movement science for physical human-robot collaboration

CONFERENCE EDITORIAL

2022 ICRA Associate Editor, Reviewer
2021 IROS Reviewer
2021 ICRA Associate Editor, Reviewer
2020 BioRob Associate Editor, Reviewer
2020 ICRA Reviewer
2019 ICRA Reviewer
2018 IROS Reviewer
2018 BioRob Reviewer
2017 IROS Reviewer

JOURNAL EDITORIAL

2022 Guest Editor for Special Issue, "Variable impedance control and learning in complex interaction scenarios: Challenges and opportunities", IEEE Robotics and Automation – Letters

JOURNAL REVIEWER

IEEE Robotics and Automation – Letters
IEEE Transactions on Mechatronics
IEEE Transactions on Neural Systems and Rehabilitation Engineering
Current Biology
PloS Computational Biology
Experimental Brain Research
PeerJ
BioMedical Engineering OnLine
Royal Society for Open Science

GRANT REVIEWER

2022 NSF Adhoc Panelist
2021 NSF Member of CMMI Game Changers Academy
2022 NSF Adhoc Panelist
2021 NSF Adhoc Panelist
2020 NSF Adhoc Panelist

OTHER

2021 Mentor, Future Leaders in Mechanical and Aerospace Engineering Webinar Series

OUTREACH SERVICE

UNIVERSITY OF MASSACHUSETTS AT AMHERST

2020 – Present	Faculty participant (lab tours, presentations) for annual UMass Summer Engineering Institute
2021 – Present	Panelist in annual Women in STEM Career Panel for Association for Women in Science
2021	Activity Organizer for Women in Engineering and Computing Career Day

OTHER

2015 – 2016	Researcher at the Living Laboratory Exhibit in Museum of Science, Boston
2012	Volunteer at Robotics Workshop for John Hopkins Center for Talented Youth