

David E. Vaillancourt, PhD

Chair and Professor of Applied Physiology and Kinesiology
University of Florida

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EDUCATION

Post Doctoral Training in Neurophysiology and Neuroimaging University of Illinois at Chicago Mentors: Daniel Corcos and Keith Thulborn	2001-2004 Chicago, IL
Ph.D., Kinesiology/ Minor: Gerontology The Pennsylvania State University Dissertation: Tremor and Force Output Variability in Parkinson's Disease Advisor: Karl Newell	1999-2001 State College, PA
M.S., Kinesiology The Pennsylvania State University Thesis: Neural and Mechanical Components of Finger Tremor	1997-1999 State College, PA
B.S., Kinesiology/ Minor: Mathematics Texas A&M University	1994-1997 College Station, TX
Cedar Valley Junior College Basketball scholarship	1992-1994 Lancaster, TX

PROFESSIONAL EXPERIENCE

Chair, Applied Physiology and Kinesiology	2019-present
UF Research Foundation Professorship, Applied Physiology and Kinesiology	2017-2020
Vice-Chair, Applied Physiology and Kinesiology Director, Center for Exercise Science	2015-2019 Gainesville, FL
Professor with Tenure Department of Applied Physiology and Kinesiology Department of Neurology Department of Biomedical Engineering University of Florida	2013-present Gainesville, FL
Associate Professor with Tenure Department of Applied Physiology and Kinesiology Department of Neurology	2011-2013 Gainesville, FL

Department of Biomedical Engineering
University of Florida

Associate Professor with Tenure (early promotion in 4 years)

2009-2011

Primary Appointment: Department of Kinesiology and Nutrition
Secondary Appointment: Department of Bioengineering
Secondary Appointment: Department of Neurology
Faculty member in the Neuroscience Training Program
University of Illinois at Chicago

Chicago, IL

Assistant Professor on Tenure Track

2005-2009

Primary Appointment: Department of Kinesiology and Nutrition
Secondary Appointment: Department of Bioengineering
Secondary Appointment: Department of Neurology
University of Illinois at Chicago

Chicago, IL

Research Assistant Professor

2004-2005

Department of Movement Sciences, University of Illinois at Chicago
Center for MR Research, University of Illinois at Chicago

Chicago, IL

NIH Postdoctoral Fellow – Functional Brain Imaging

2003-2005

Center for MR Research, University of Illinois at Chicago
Mentors: Keith Thulborn, M.D., Ph.D and Daniel Corcos, Ph.D.

Chicago, IL

Postdoctoral Research Associate – Clinical Neurophysiology

2001-2003

Neural Control of Movement Laboratory, University of Illinois at Chicago
Mentor: Daniel Corcos, Ph.D.

Chicago, IL

NIA Predoctoral Fellow

1999-2001

Department of Kinesiology, The Pennsylvania State University
Advisor: Karl Newell, Ph.D.

State College, PA

Graduate Research Assistant

1997-1999

Department of Kinesiology, The Pennsylvania State University
Advisor: Karl Newell, Ph.D.

State College, PA

Undergraduate Research Assistant

1996-1997

Human Performance Laboratory, Texas A&M University

College Station, TX

ORCID

<https://orcid.org/0000-0002-5663-6476>

LEADERSHIP EXPERIENCE

- Chair of Applied Physiology and Kinesiology, 2019 – present; oversee 27 faculty, 8 staff, > 3million annual budget, 850 undergraduate students, 300 graduate students across MS and PhD.
- Direct a laboratory that has a direct cost budget > \$1,000,000 annually
- National Academy of Kinesiology Elected Member, 2021

- Chaired NIH Study Section – 2 year term (Motor Function, Speech and Rehabilitation)
- Served on R35 and Udall Study Sections for NIH
- Director, Center for Exercise Science 2019 – present
- Chair of NIH Parkinson's Disease Biomarker Program 2015-2016
- Keynote lectures for the Michael J. Fox Foundation, National Parkinson Foundation, and World Parkinson Congress
- MPI of new NIH T32 Training Grant in Movement Disorders
- Primary mentor and/or co-mentor of 3 NIH K-awards
- PI of three concurrent R01s from NIH
- Primary mentor of NIH F32, K23, KL2 awards
- Selected as one of three representatives for the University of Florida at the Southeastern Conference Academic Leadership Development Program in 2016
- Search Committee member for HEB Chair and APK Chair

RESEARCH INTERESTS

The research in the Laboratory for Rehabilitation Neuroscience (Irnlab.org) focuses on the neural basis of motor control and motor disorders in humans.

My specific research aims are to determine:

- Rehabilitative, surgical, and pharmacological interventions for neurological disorders
- Longitudinal changes in brain structure and function in PD and atypical Parkinsonism
- Imaging in mouse and rodent models of Parkinson's disease and dystonia
- Functional circuits that underlie tremor
- Neural mechanisms for how visual input affects motor performance
- Electrophysiology studies for how the human brain regulates parameters of movement

This research combines quantitative time series analysis techniques with systems level data collection methods including behavioral measures of force control, electromyography (EMG), magnetic resonance imaging (MRI), diffusion MRI (dMRI), functional MRI (fMRI), and high-density electroencephalography (EEG).

DISCLOSURES

David Vaillancourt has received grant support from NIH, NSF, and Tyler's Hope Foundation. He is co-founder and manager of Automated Imaging Diagnostics, and Neuroimaging Solutions, LLC.

DIVERSITY STATEMENT FOR LAB

My lab is committed to diversity and hiring people who have a diverse background. We have had undergraduate, graduate, and postdocs participate that include females and males, and we have had African American, Asian, Caucasian, Gay/Lesbian, and Hispanic postdocs and students.

RESEARCH PUBLICATIONS

Peer-reviewed Journal Publications (189):

1. Chu, W. T., Hall, J., Gurralla, A., Becsey, A., Raman, S., Okun, M. S., Flores, C. T., Giasson, B. I., Vaillancourt, D. E., & Vedam-Mai, V. (2023). Evaluation of an Adoptive Cellular Therapy-Based Vaccine in a Transgenic Mouse Model of α -synucleinopathy. *ACS chemical neuroscience*, 14(2), 235–245. <https://doi.org/10.1021/acscchemneuro.2c00539>
2. Wang, W., Chen, R., Mayrand R.P., Adjouadi, M., Fang, R., DeKosky, D.T., Duara, R., Coombes, S.A., Vaillancourt, D.E. (2023). Association of longitudinal cognitive decline with diffusion MRI in gray matter, amyloid, and tau deposition. *Neurobiology of Aging*, 121: 166-178.
3. Tabarestani, T., Eslami, M., Cabrerizo, M., Curiel, R.E., Barreto, A., Rishe, N., Vaillancourt, D., DeKosky, S.T., Loewenstein, D.A., Duara, R., Adjouadi, M. (2022). A Tensorized Multitask Deep Learning Network for Progression Prediction of Alzheimer's Disease. *Frontiers in Aging Neuroscience*, 14, 810873, DOI: 10.3389/fnagi.2022.810873, PMID: 35601611.
4. Shojaie, M., Cabrerizo, M., DeKosky, S. T., Vaillancourt, D. E., Loewenstein, D., Duara, R., & Adjouadi, M. (2022). A transfer learning approach based on gradient boosting machine for diagnosis of Alzheimer's disease. *Frontiers in aging neuroscience*, 14, 966883. <https://doi.org/10.3389/fnagi.2022.966883>
5. Patterson, C. G., Joslin, E., Gil, A. B., Spigle, W., Nemet, T., Chahine, L., Christiansen, C. L., Melanson, E., Kohrt, W. M., Mancini, M., Josbeno, D., Balfany, K., Griffith, G., Dunlap, M. K., Lamotte, G., Suttman, E., Larson, D., Branson, C., McKee, K. E., Goelz, L., ... SPARX3-PSG Investigators (2022). Study in Parkinson's disease of exercise phase 3 (SPARX3): study protocol for a randomized controlled trial. *Trials*, 23(1), 855. <https://doi.org/10.1186/s13063-022-06703-0>
6. Choi, Y. J., Yacoubi, B., Casamento-Moran, A., Delmas, S., Wilkes, B. J., Hess, C. W., Shukla, A. W., Foote, K. D., Vaillancourt, D. E., Okun, M. S., & Christou, E. A. (2022). Suppression of Axial Tremor by Deep Brain Stimulation in Patients with Essential Tremor: Effects on Gait and Balance Measures. *Tremor and other hyperkinetic movements (New York, N.Y.)*, 12, 23. <https://doi.org/10.5334/tohm.698>
7. Mitchell, T., Wilkes, B. J., Archer, D. B., Chu, W. T., Coombes, S. A., Lai, S., McFarland, N. R., Okun, M. S., Black, M. L., Herschel, E., Simuni, T., Comella, C., Afshari, M., Xie, T., Li, H., Parrish, T. B., Kurani, A. S., Corcos, D. M., & Vaillancourt, D. E. (2022). Advanced diffusion imaging to track progression in Parkinson's disease, multiple system atrophy, and progressive supranuclear palsy. *NeuroImage. Clinical*, 34, 103022. <https://doi.org/10.1016/j.nicl.2022.103022>
8. Quattrone, A., Bianco, M. G., Antonini, A., Vaillancourt, D. E., Seppi, K., Ceravolo, R., Strafella, A. P., Tedeschi, G., Tessitore, A., Cilia, R., Morelli, M., Nigro, S., Vescio, B., Arcuri, P. P., De Micco, R., Cirillo, M., Weis, L., Fiorenzato, E., Biundo, R., Burciu, R. G., ... Quattrone, A. (2022). Development and Validation of Automated Magnetic Resonance Parkinsonism Index 2.0 to Distinguish Progressive Supranuclear Palsy-

Parkinsonism From Parkinson's Disease. Movement disorders : official journal of the Movement Disorder Society, 37(6), 1272–1281. <https://doi.org/10.1002/mds.28992>

9. Morar, U., Izquierdo, W., Martin, H., Forouzaneshad, P., Zarafshan, E., Unger, E., Bursac, Z., Cabrerizo, M., Barreto, A., Vaillancourt, D. E., DeKosky, S. T., Loewenstein, D., Duara, R., & Adjouadi, M. (2022). A study of the longitudinal changes in multiple cerebrospinal fluid and volumetric magnetic resonance imaging biomarkers on converter and non-converter Alzheimer's disease subjects with consideration for their amyloid beta status. Alzheimer's & dementia (Amsterdam, Netherlands), 14(1), e12258. <https://doi.org/10.1002/dad2.12258>
10. McCarthy, D.M., Zhang, L., Wilkes, B.J., Vaillancourt, D.E., Biederman, J., Bhide, P.G. Nicotine and the developing brain: Insights from preclinical models. (2022). Pharmacology, Biochemistry, and Behavior 214:173355. PMID: 35176350.
11. Chu, W.T., Wang, W., Zaborszky, L., Golde, T.E., DeKosky, S.T., Duara, R., Loewenstein, D.A., Adjouadi, M., Coombes, S.A., Vaillancourt, D.E. (2022). Association of cognitive impairment with free water in the nucleus basalis of Meynert and locus coeruleus to transentorhinal cortex tract. Neurology 98(7):e700-e710. PMID: 34906980.
12. See, K.B., Arpin, D.J., Vaillancourt, D.E., Fang, R., Coombes, S.A. (2021). Unraveling somatotopic organization in the human brain using machine learning and adaptive super-voxel based parcellations. Neuroimage 245:118710. PMID: 34780917.
13. Arpin, D., Mitchell, T., Archer, D., Burciu, R., Chu, W.T., Gao, H., Guttuso, T., Hess, C., Lai, S., Malaty, I., McFarland, N., Pasternak, O., Price, C., Wagle Shukla, A., Wu, S., Okun, M.S., Vaillancourt, D.E. (2022). Diffusion MRI detects progression in Parkinson's Disease: A randomized placebo-controlled trial of rasagiline. Movement Disorders 37(2):325-333. PMID: 34724257.
14. Shojaie, M., Tabarestani, S., Cabrerizo, M., DeKosky, S.T., Vaillancourt, D.E., Loewenstein, D., Duara, R., Adjouadi, M. (2021). PET imaging of tau pathology and Amyloid-B, and MRI for Alzheimer's Disease Feature Fusion and Multimodal Classification. J Alzheimer's Disease. PMID: 34719488.
15. Lepping, R. J., McKinney, W. S., Magnon, G. C., Keedy, S., Wang, Z., Coombes, S. A., Vaillancourt, D. E., & Sweeney, J. A., Mosconi, M. W. (2021). Visuomotor brain network activation and functional connectivity among individuals with autism spectrum disorder. Human Brain Mapping 245:118710. PMID: 3470917.
16. Quattrone, A., Antonini, A., Vaillancourt, D.E., Seppi, K., Ceravolo, R., Strafella, A.P., Quattrone, A. (2021). Reply to: "Experience with a new index to differentiate Parkinson's disease and progressive supranuclear palsy". Movement Disorders 36(9):2208-2209. PMID: 34543468.
17. Mitchell, T., Lehericy, S., Chiu, S.Y., Strafella, A.P., Stoessl, A.J., Vaillancourt, D.E. (2021). Emerging Neuroimaging Biomarkers Across Disease-Stage in Parkinson's disease: A Review. JAMA Neurology 78(10):1262-1272. PMID: 34459865.
18. Caffall, Z.F., Wilkes, B.J., Hernandez-Martinez, R., Rittiner, J.E., Fox, J.T., Wan, K.K., Shipman, M.K., Titus, S.A., Zhang, Y., Patnaik, S., Hall, M.D., Boxer, M.B., Shen, M., Li,

- Z., Vaillancourt, D.E., Calakos, N. (2021) The HIV protease inhibitor, ritonavir, corrects diverse brain phenotypes across development in mouse model of DYT-TOR1A dystonia. Science Translational Medicine 13(607). PMID: 3440878.
19. Wilkes, B.J., DeSimone, J.C., Liu, Y., Chu, W.T., Coombes, S.A., Li, Y., Vaillancourt, D.E. (2021). Cell-specific effects of Dyt1 knock-out on sensory processing, network-level connectivity, and motor deficits. Experimental Neurology 343:113783. PMID: 34119482.
 20. Liu, Y., Xing, H., Sheng, W., Singh, K.N., Korkmaz, A.G., Comeau, C., Anika, M., Ernst, A., Yokoi, F., Vaillancourt, D.E., Frazier, C.J., Li, Y. (2021). Alteration of the cholinergic system and motor deficits in cholinergic neuron-specific Dyt1 knockout mice. Neurobiology of Disease 154: 105342. PMID: 33757902.
 21. Liu, Y., Xing, H., Yokoi, F., Vaillancourt, D.E., Li, Y. (2021). Investigating the role of striatal dopamine receptor 2 in motor coordination and balance: Insights into the pathogenesis of DYT1 dystonia. Behavioral Brain Research 403:113137. PMID: 33476687.
 22. Bouza, J., Yang, C.H., Vaillancourt, D, Vemuri, B.C. (2021) Higher Order Manifold-valued Convolutional Neural Network with Applications in Diffusion MRI Processing. IPMI. Need reference.
 23. Chu, W., Mitchell, T., Foote, K.D., Coombes, S.A., Vaillancourt, D.E. (2021). Functional imaging of the brainstem during visually-guided motor control reveals visuomotor regions in pons and midbrain. Neuroimage 226:117627. PMID: 33301937.
 24. Quattrone, A., Antonini, A., Vaillancourt, D.E., Seppi, K., Ceravolo, R., Strafella, A.P., Morelli, M., Nigro, S., Vescio, B., Bianco, M.G., Vasta, R., Arcuri, P.P., Weis, L., Fiorenzato, E., Biundo, R., Burciu, R.G., Krismer, FI, McFarland, N.R., Mueller, C., Gizewski, E.R., Cosottini, M., Del Prete, E., Mazzucchi, S., Quattrone, A. (2021). A New MRI Measure to Early Differentiate Progressive Supranuclear Palsy from De Novo Parkinson's Disease in Clinical Practice: An International Study. Automated MRI classification in progressive supranuclear palsy: a large international cohort study. Movement Disorders 36(3): 681-689. PMID: 33151015.
 25. Barker, W., Quinonez, C., Greig, M.T., Behar, R., Chirinos, C., Rodriguez, R., Rosselli, M., Rodriguez, M., Curiel Cid, R., Rundek, T., McFarland, K., Hanson, K., Smith, G., DeKosky, S., Vaillancourt, D. (2021). Utility of Plasma Neurofilament Light in the 1Florida Alzheimer's Disease Research Center (ADRC). Journal of Alzheimer's Disease 79:59-70.
 26. Liu, Y., Xing, H., Wilkes, B.J., Yokoi, F., Chen, H., Vaillancourt, D.E., Li, Y. (2020). The abnormal firing of Purkinje cells in the knockin mouse model of DYT1 dystonia. Brain Research Bulletin 165:14-22. PMID: 32976982.
 27. Hess, C.W., Gatto, B., Chung, J.W., Ho, R.L.M., Wang, W., Wagle Shukla, A. Vaillancourt, D.E. (2020) Cortical oscillations in cervical dystonia and dystonic tremor. Cerebral Cortex Communications 1(1):tgaa048. PMID: 32984818.

28. Vaillancourt, D.E., Mitchell, T. (2020). Parkinson's disease progression in the substantia nigra: Location, location, location. Brain. PMID: 32947614.
29. Chu, W.T., DeSimone, J.C., Riffe, C.J., Liu, H., Chakrabarty, P., Giasson, B.I., Vedam-Mai, V., Vaillancourt, D.E. (2020). Alpha-synuclein induces progressive changes in brain microstructure and sensory-evoked brain function that precedes locomotor decline. Journal of Neuroscience 40(34):6649-6659. PMID: 32669353.
30. Casamento Moran, A., Yacoubi, B., Wilkes, B.J., Hess, C.W., Foote, K.D., Okun, M.S., Shukla, A., Vaillancourt, D.E., Christou, E.A. (2020). Quantitative separation of tremor and ataxia in essential tremor. Annals of Neurology 88(2):375-387 PMID: 32418250.
31. Archer, D.B., Burciu, R.G., Yang, J., Mitchell, T., Nigro, S., Quattrone, A., Quattrone, A., Jermin, A., McFarland, N.R., Okun, M.S., Vaillancourt, D.E. (2020). Magnetic resonance imaging and neurofilament light in the differentiation of Parkinsonism. Movement Disorders 35(8):1388-1395. PMID: 32357259.
32. Nigro, S., Antonini, A., Vaillancourt, D.E., Seppi, K., Ceravolo, R., Strafella, A., Augimeri, A., Quattrone, A., Morelli, M., Weis, L., Fiorenzato, E., Biundo, R., Burciu, R., Krismer, F., McFarland, N., Mueller, C., Cizewski, E., Cosottini, M., Del Prete, E., Mazzucchi, S., Quattrone, A. (2020). Automated MRI classification in progressive supranuclear palsy: a large international cohort study. Movement Disorders 35(6):976-983. PMID: 32092195.
33. Yokoi, F., Oleas, J., Xing, H., Liu, Y., Dexter, K.M., Misztal, C., Gerard, M., Efimenko, I., Lynch, P., Villanueva, M., Alsina, R., Krishnaswamy, S., Vaillancourt, D.E., Li, Y. (2019). Decreased number of striatal cholinergic interneurons and motor deficits in dopamine receptor 2-expressing-cell-specific Dyt1 conditional knockout mice. Neurobiology of Disease 134:104638. PMID: 3168684.
34. Yacoubi, B., Casamento-Moran, A., Burciu, R.G., Subramony, S.H., Vaillancourt, D.E., Christou, E.A. (2020). Temporal invariance in SCA6 reflects smaller cerebellar lobule VI and greater disease severity. Journal of Neuroscience 40(8):1722-1731. PMID: 31941666.
35. Wilkes, B.J., Wagle Shukla, A., Casamento-Moran, A., Hess, C.W., Christou, E.A., Okun, M.S., Vaillancourt, D.E. (2020). Effects of ventral intermediate nucleus deep brain stimulation across multiple effectors in essential tremor. Clinical Neurophysiology. 131(1):167-176. PMID: 31794958.
36. DeSimone, J.C., Archer, D.B., Vaillancourt, D.E., Wagle Shukla, A. (2019). Reply: Thalamotomy for tremor normalizes aberrant pre-therapeutic visual cortex functional connectivity. Brain 142(11):e58. PMID: 31603506
37. Febo, M., Perez, P.D., Ceballos-Diaz, C., Colon-Perez, L.M., Ofori, E., Golde, T.E., Vaillancourt, D.E., Chakrabarty, P. (2020) Diffusion magnetic resonance derived free water measures neurodegenerative patterns induced by interferon- γ . Brain Structure and Function 225(1):427-439. PMID: 31894407.
38. Colon-Perez, L., Ibanez, K.R., Suarez, M., Torroella, K., Acuna, K., Ofori, E., Levites, Y., Vaillancourt, D.E., Golde, T.E., Chakrabarty, P., Febo, M. (2019). Neurite orientation

dispersion and density imaging reveals white matter and hippocampal microstructure changes produced by Interleukin-6 in the TgCRND8 mouse model of amyloidosis. Neuroimage. 202:116138. PMID: 31472250

39. Ofori, E., DeKosky, S.T., Febo, M., Colon-Perez, L., Chakrabarty, P., Duara, R., Adjouadi, M., Golde, T.E., Vaillancourt, D.E. for the Alzheimer's Disease Neuroimaging Initiative. (2019). Free-water imaging in hippocampal subregions is a sensitive marker of Alzheimer's disease. Neuroimage: Clinical 24: 101985 PMID: 31470214.
40. Archer, D.B., Bricker, J.T., Chu, W.T., Burciu R., McCracken J.L., Lai, S., Coombes, S.A., Fang, R., Barmpoutis, A., Corcos, D.M., Kurani, A.S., Mitchell, T., Black, M.L., Herschel, El., Simuni, T., Parrish, T.B., Comella, C., Xie, T., Seppi, K., Bohnen, N.I., Muller, M.L.T.M., Albin, R.L., Krismer, F., Du, G., Lewis, M.M., Huang, X., Li, H., Pasternak, O., McFarland, N.R., Okun, M.S., Vaillancourt, D.E. (2019). Development and Validation of the Automated Imaging Differentiation in Parkinsonism (AID-P): A Machine Learning Study. The Lancet Digital Health 1(5):PE222-E231. PMID: 32259098.
41. Mitchell, T., Archer, D.B., Chu, W.T., Coombes, S.A., Lai, S., Wilkes, B., McFarland, N.R., Okun, M.S., Black, M.L., Herschel, E., Simuni, T., Comella, C., Xie, T., Parrish, T.B., Kurani, A.S., Corcos, D.M., Vaillancourt, D.E. (2019). Neurite orientation dispersion and density imaging (NODDI) and free-water imaging in Parkinsonism. Human Brain Mapping 40(17):5094-5107. PMID: 31403737.
42. Unruh, K., Martin, L., Magnon, G., Vaillancourt, D., Sweeney, J., Mosconi, M. (2019). Cortical and subcortical alterations associated with precision visuomotor behavior in individuals with autism spectrum disorder. Journal of Neurophysiology 122(4):1330-1341. PMID: 31314644.
43. Archer, D.B., Coombes, S.A., McFarland, N., DeKosky, S., Vaillancourt, D.E. (2019). Development of a Transcallosal Tractography Template and its Application to Dementia. Neuroimage 200:302-312. PMID: 31260838.
44. Torres, V.L., Rosselli, M., Loewenstein, D.A., Curiel, R.E., Valez Uribe, I., Lang, M., Arruda, F., Penate, A., Vaillancourt, D.E., Greig, M.T., Barker, W.W., Bauer, R.M., Duara, R. (2019). Types of errors on a semantic interference task in mild cognitive impairment and dementia. Neuropsychology 33(5):670-684. PMID: 31070384.
45. Tanner, J.J., Amin, M., Hardcastle, C., Parvataneni, H., Vaillancourt, D.E., Mareci, T.H., Price, C.E. (2019). Better Brain and Cognition Prior to Surgery is Associated with Elevated Postoperative Brain Extracellular Free-water in Older Adults. Frontiers in Aging Neuroscience 11:117. PMID: 31156423.
46. Duara, R., Loewenstein, D.A.; Lizarraga, G., Adjouadi, M., Barker, W.W.; Greig-Custo, M.T.; Rosselli, M., Penate, A., Shea, Y.F., Behar, R. Ollarves, A., Robayo, C.; Hanson, K.; Marsiske, M.; Burke, S; Ertekin-Taner, N., Vaillancourt, D.E., De Santi, S.; Golde, T., DeKosky, S.T. (2019). Effect of age, ethnicity, sex, cognitive status, and APOE genotype on amyloid load and threshold for amyloid positivity. Neuroimaging Clinical 22:101800. PMID: 30991618.

47. DeSimone, J., Archer, D.B., Vaillancourt, D.E., Wagle Shukla, A. (2019). Network-Level Connectivity is a Critical Feature Distinguishing Dystonic Tremor and Essential Tremor. Brain 142(6):1644-1659. **Editor Choice Award. PMID: 30957839.
48. Roy, A., Shukla, A.W., Archer, D.B., Chung, J.W., Okun, M.S., Coombes, S.A., Vaillancourt, D.E. (2019). Cortical dynamics within and between parietal and motor cortex in essential tremor. Movement Disorders 34(1):95-104. PMID: 30345712.
49. Yang, J., Archer, D.B., Burciu, R.G., Muller, M.L.T.M., Roy, A., Ofori, E., Bohnen, N.I., Albin, R.L., Vaillancourt, D.E. (2019). Dopaminergic and free-water imaging relate to Parkinson's disease severity. Parkinsonism and Related Disorders 62:10-15. PMID: 30639168.
50. Helmich, R.C., Vaillancourt, D.E., Brooks, D.J. (2018). The future of brain imaging in Parkinson's disease. Journal of Parkinson's Disease 8(s1):S47-S51. PMID: 30584163.
51. Strafella, A.P., Bohnen, N.I., Pavese N., Vaillancourt, D.E., van Eimeren, T., Politis, M., Tessitore, A., Ghadery, C., Lewis, S., and IPMDS-Neuroimaging Study Group. (2018). Imaging Markers of Progression in Parkinson's Disease. Movement Disorders Clinical Practice 5(6):586-596. PMID: 30637278.
52. Yang, J., Burciu, R.G., Vaillancourt, D.E. (2018). Longitudinal Progression Markers of Parkinson's Disease: Current View on Structural Imaging. Current Neurology and Neuroscience Reports 18(12):83. PMID: 30280267.
53. Burciu, R., Vaillancourt, D.E. (2018). Imaging motor cortex physiology in Parkinson's disease. Movement Disorders 33(11):1688-1699. PMID: 30280416.
54. Vaillancourt, D.E., Lehericy, S. (2018). Illuminating basal ganglia and beyond in Parkinson's disease. Movement Disorders 33(9):1373-1375. PMID: 30311976.
55. Chen-Plotkin, A., Albin, R., Alcalay, R., Babcock, D., Bajaj, V., Bowman, D., Buko, A., Cedarbaum, J., Chelsky, D., Cookson, M., Dawson, T., Dewey, R., Foroud, T., Frasier, M., German, D., Gwinn, K., Huang, X., Kopil, C., Kremer, T., Lasch, S., Marek, K., Marto, J., Merchant, K., Mollenhauer, B., Naito, A., Potashkin, J., Reimer, A., Rosenthal, L., Saunders-Pullman, R., Scherzer, C.R., Sherer, T., Singleton, A., Sutherland, M., Thiele, I., van der Burg, M., Van Keuren-Jensen, K., Vaillancourt, D., Walt, D., West, A., Zhang, J. (2018). Finding useful biomarkers for Parkinson's disease. Science Translational Medicine 10(454):1-8. PMID: 30111645.
56. Chung, J.W., Burciu, R., Ofori, E., Coombes, S.A., Christou, E.A., Okun, M.S., Hess, C.W., Vaillancourt, D.E. (2018). Beta-band oscillations in the supplementary motor cortex are modulated by levodopa and associated with functional activity in the basal ganglia. Neuroimage: Clinical 19:559-571. PMID: 29984164.
57. Hupfeld, K.E., Vaillancourt, D.E., Seidler, R.D. (2018). Genetic markers of dopaminergic transmission predict successful aging for older males but not females Neurobiology of Aging 66: 180.e11-180.e21. PMID: 29525179.
58. Burciu, R.G., Shukla, P., Nalls, M.A., Singleton, A.B., Okun, M.S., Seidler, R.D., Vaillancourt, D.E. (2018). Multimodal neuroimaging and behavioral assessment of SNCA

- polymorphism rs356219 in Older Adults. Neurobiology of Aging 66:32-39. PMID: 29505953.
59. Wagle Shukla, A., Ostrem, J., Vaillancourt, D.E., Chen, R., Foote, K., Okun, M.S. (2018). Physiological effects of subthalamic nucleus deep brain stimulation in cervical dystonia. Journal of Neurology, Neurosurgery, and Psychiatry 89(12):1296-1300. PMID: 29326293.
 60. Archer, D.B, Vaillancourt, D.E., Coombes, S.A. (2018). A template and probabilistic atlas of the sensorimotor tracts using diffusion MRI. Cerebral Cortex 28:1685-1699. PMID: 28334314.
 61. Archer, D.B., Coombes, S.A., Chu, W.T., Chung, J.W., Burciu, R.G., Okun, M.S., Shukla, A.W., Vaillancourt, D.E. (2018). Reply: Visually-sensitive networks in essential tremor: evidence from structural and functional imaging. Brain 141:e48. PMID: 29659746.
 62. Archer, D.B., Coombes, S.A., Chu, W.T., Chung, J.W., Burciu, R.G., Okun, M.S., Shukla, A.W., Vaillancourt, D.E. (2018). Widespread visually-sensitive functional network relates to symptoms of essential tremor. Brain 141(2):472-485. PMID: 29293948. **Editor Choice Award
 63. Shukla, A., Okun, M.S., Vaillancourt, D.E., Warren, L. (2017). The ice test to differentiate essential tremor from Parkinson's disease tremor. Clinical Neurophysiology 128(11):2181-2183. PMID: 28946133.
 64. Almeida, L., Ahmed, B., Walz, R., De Jesus, S., Patterson, A., Martinez-Ramirez, D., Vaillancourt, D.E., Bowers, D., Ward, H., Okun, M.S., McFarland, N. (2017). Depressive symptoms are frequent in atypical parkinsonian disorders. Movement Disorders Clinical Practice 4(2):191-197. PMID: 28944256.
 65. Burciu, R.G., Ofori, E., Archer, D.B., Wu, S.S., Pasternak, O., Okun, M.S., Vaillancourt, D.E. (2017). Progression marker of Parkinson's disease: A 4-year multisite imaging study. Brain 140:2183-2192. PMID: 28899020.
 66. Liu, G., Locascio, J.J., Corvol, J.C., Boot, B., Liao, Z., Page, K., et al. (2017). Prediction of cognition in Parkinson's disease with a clinical-genetic score: A longitudinal analysis of nine cohorts. Lancet Neurology, 16(8):620-629. PMID: 28629879.
 67. DeSimone J.C., Pappas, S.S., Febo, M., Burciu, R.G., Shukla, P., Colon-Perez, L.M., Dauer, W.T., Vaillancourt, D.E. (2017) Forebrain knock-out of torsinA reduces striatal free-water and impairs whole-brain functional connectivity in a symptomatic mouse model of DYT1 dystonia. Neurobiology of Disease 106:124-132. PMID: 28673740.
 68. Ofori, E., Krismer, F., Burciu, R., Pasternak, O., McCracken, J., Lewis, M., Du, G., McFarland, N., Okun, M.S., Poewe, W., Mueller, C., Gizewski, E., Schocke, M., Kresmer, C., Huang, X., Seppi, K., Vaillancourt D.E. (2017). Free-water improves detection of changes in the substantia nigra of Parkinsonism: A multi-site study. Movement Disorders 32(4):510-525. PMID: 28714593.

69. Burciu, R.G., Hess, C.W., Coombes, S.A., Ofori, E., Shukla, P., Chung J.W., McFarland, N.R., Wagle Shukla, A., Okun, M.S., Vaillancourt, D.E. (2017). Functional imaging of the sensorimotor cortex and cerebellum predicts cervical dystonia symptoms. Human Brain Mapping 38(9):4563-4573. PMID: 28594097.
70. Vaillancourt, D.E. (2017). What would Dr. Parkinson think today? Tau and other imaging possibilities in Parkinson's disease. Movement Disorders 32(6):805-806. PMID: 28597559.
71. Gwinn, K., David, K., Swanson-Fischer, C., Albin, R., Hillaire-Clarke, C., Sieber, B.A., Lungu, C., Bowman, F.D., Alcalay, R.N., Babcock, D., Dawson, T.M., Dewey, R.B., Foroud, T., German, D., Huang, X., Petyuk, V., Potashkin, J.A., Saunders-Pullman, R., Sutherland, M., Walt, D., West, A.B., Zhang, J., Chen-Plotkin, A., Xcherzer, C.R., Vaillancourt, D.E., Rosenthal, L.S., (2017). Parkinson's Disease Biomarkers: Perspective From the NINDS Parkinson's Disease Biomarkers Program. Biomarkers in Medicine 11(6):451-473. PMID: 28644039.
72. Yue, G.H., Clark, B.C., Li, S., Vaillancourt, D.E. (2017). Understanding neuromuscular system plasticity in health, disease, and injury. Neural Plasticity 2425180. PMID: 28352477.
73. Chung, J.W., Burciu, R.G., Ofori, E., Shukla, P., Okun, M.S., Hess, C.W., Vaillancourt, D.E. (2017). Parkinson's disease diffusion MRI is not affected by acute dopaminergic medication. Neuroimage: Clinical 14:417-421. PMID: 28275542.
74. Lehericy, S., Vaillancourt, D.E., Seppi, K., Monchi, O., Rektorova, I., Antonini, A., McKeown, M., Masellis, M., Berg, D., Rowe, J., Lewis, S.J.G., Williams-Gray, C.H., Tessitore, A., Siebner, H., International Parkinson and Movement Disorder Society (IPMDS) Neuroimaging Study Group (2017). The role of high-field magnetic resonance imaging in parkinsonian disorders: pushing forward the boundaries. Movement Disorders 32(4):510-525. PMID: 28370449.
75. Rafferty, M.R., Prodoehl, J., Robichaud, J.A., David, F.J., Poon, C., Goelz, L.C., Vaillancourt, D.E., Kohrt, W.M., Comella, C.L., Corcos, D.M. (2017). Effects of 2 years of exercise on gait impairment in people with Parkinson's disease: The PRET-PD Randomized Trial. J Neurol Phys Ther 41(1):21-30. PMID: 27977518.
76. Goelz, L.C., David, F.J., Sweeney, J.A., Vaillancourt, D.E., Poizner, H., Verhagen-Metman, L., Corcos, D.M. (2017). The effects of unilateral vs. bilateral subthalamic nucleus deep brain stimulation on prosaccades and antisaccades in Parkinson's disease. Experimental Brain Research 235(2):615-626. PMID: 27844097.
77. Hopfner, F., Haubenberger, D., Galpren, W.R., Gwinn, K., Van't Veer A., White, S., Bhatia, K., Adler, C., Eidelberg, D., Ondo, W., Stebbins, G.T., Tanner, C.M., Helmich, R.C., Lenz, F.A., Sillitoe, R.V., Vaillancourt, D.E., Vitek, J.L., Louis, E., Shill, H.A., Frosch, M.P., Foroud, T., Kehlenbaumer, G., Singleton, A., Testa, C., Hallett, M., Elble, R., Deuschl, G. (2016). Knowledge gaps and research recommendations for essential tremor. Parkinsonism and Related Disorders 33:27-35. PMID: 27769649.

78. Chung, J.W., Ofori, E., Misra, G., Hess, C., Vaillancourt D.E. (2017). Beta-band activity and connectivity in sensorimotor and parietal cortex are important for accurate motor performance. Neuroimage 144:164-173. PMID: 27746389.
79. Vaillancourt, D.E. (2016). Aducanumab reduces A β plaques in Alzheimer's disease. Movement Disorders 31(11): 1631. PMID: 27739124.
80. Kang, N., Christou, E.A., Burciu, R.G., Chung, J.W., DeSimone, J., Ofori, E., Ashizawa, T., Subramony, S.H., Vaillancourt, D.E. (2017). Sensory and motor cortex function contribute to symptom severity in spinocerebellar ataxia type 6. Brain Structure and Function 222:1039-1052. PMID: 27352359.
81. DeSimone, J., Febo, M., Shukla, P., Ofori, E., Colon-Perez, L.M., Li, Y., Vaillancourt, D.E. (2016). In-vivo imaging reveals impaired connectivity across cortical and subcortical networks in a mouse model of DYT1 dystonia. Neurobiology of Disease. 95:35-45. PMID: 27404940.
82. Burciu, R., Chung, J.W., Shukla, P., Ofori, E., Li, H., McFarland, N.R., Okun, M.S., Vaillancourt, D.E. (2016). Functional MRI of disease progression in Parkinson's disease and atypical parkinsonian syndromes. Neurology. 87:709-717. PMID: 27421545. Impact Factor: 8.3.
83. Banerjee, M., Okun, M.S., Vaillancourt, D.E., Vemuri, B.C. (2016). A method for automated classification of Parkinson's disease diagnosis using an ensemble average propagator template brain map estimated from diffusion MRI. Public Library of Science One. 11(6):e0155764. PMID: 27280486. Impact Factor: 3.2.
84. David, F.J., Robichaud, J.A., Vaillancourt, D.E., Poon, C., Kohrt, W.M., Comella, C.L., Corcos, D.M. (2016). Progressive resistance exercise restores some properties of the triphasic EMG pattern and improves bradykinesia: The PRET-PD randomized clinical trial. Journal of Neurophysiology 116(5):2298-2311. PMID: 27582297. Impact Factor: 3.0.
85. Alibiglou, L., Videnovic, A., Planetta, P.J., Vaillancourt, D.E., Mackinnon, C.D. (2016). Subliminal gait initiation deficits in rapid eye movement sleep behavior disorder: A harbinger of freezing of gait. Movement Disorders 31(11):1711-1719. PMID: 27250871.
86. Banerjee, M., Chakraborty, R., Ofori, E., Okun, M.S., Vaillancourt, D.E., Vemuri, B.C. (2015). A nonlinear regression technique for manifold valued data with applications to medical image analysis. Computer Vision and Pattern Recognition. 9349:719-727. PMID: 27110601.
87. Burciu, R., Ofori, E., Shukla, P., Pasternak, O., Chung, J.W., McFarland, N.R., Okun, M.S., Vaillancourt D.E. (2016). Free-water and BOLD imaging changes in Parkinson's disease patients chronically treated with a MAO-B inhibitor. Human Brain Mapping. 37(8):2894-903. PMID: 27089850.
88. Rosenthal, L.S., Drake, D., Alcalay, R., Bowman, D., Chen-Plotkin, A., Dawson, T.M., Dewey, R.B., German, D., Huang, X., Landin, B., McAuliffe, M., Petyuk, V., Scherzer, C.R., Hillaire-Clarke C., Sutherland, M., Tern, C., West, A., Vaillancourt, D.E., Zhang, J.,

- Gwinn, K., on behalf of the PDBP consortium. (2016). The NINDS Parkinson's Disease Biomarker Program. Movement Disorders. 31(6):915-23. PMID: 26442452.
89. Nalls, M.A., McLean, C.Y., Rick, J., Eberly, S., Hutten, S.J., Gwinn, K., Sutherland, M., Martinez, M., Heutink, P., Williams, N.M., Hardy, J., Gasser, T., Brice, A., Price, T.R., Nicolas, A., Keller, M.F., Molony, C., Gibbs, J.R., Chen-Plotkin, A., Suh, E., Letson, C., Fiandaca, M.S., Mapstone, M., Federoff, H.J., Noyce, A.J., Morris, H., Van Deerlin, V.M., Weintraub, D., Zabetian, C., Hernandez, D.G., Lesage, S., Mullins, M., Conley, E.D., Northover, C.A., Frasier, M., Marek, K., Day-Williams, A.G., Stone, D.J., Ioannidis, J.P., Singleton, A.B.; Parkinson's Disease Biomarkers Program and Parkinson's Progression Marker Initiative investigators. (2015). Diagnosis of Parkinson's disease on the basis of clinical and genetic classification: a population-based modeling study. Lancet Neurology. 14(10): 1002-1009.
 90. Planetta, P.J., Ofori, E., Pasternak, O., Burciu, R., Shukla, P., DeSimone, J.C., Okun, M.S., McFarland, N., Vaillancourt D.E. (2016). Free water imaging in Parkinson's disease and atypical Parkinsonism. Brain. 139(Pt2): 495-508. PMID: 26705348.
 91. Wagle Shukla, A., Shuster, J.J., Chung, J.W., Vaillancourt, D.E., Patten, C., Ostrem, J., and Okun, M.S. (2016). Repetitive Transcranial Magnetic Stimulation (rTMS) Therapy in Parkinson's Disease: A Meta Analysis. PM&R 8(4):356-366. PMID: 26314233.
 92. Ofori, E., Du, G., Babcock, D., Huang, X., Vaillancourt, D.E. (2016). Parkinson's Disease Biomarkers Program Brain Imaging Repository. Neuroimage 124(PtB):1120-1124. PMID: 25976927.
 93. Shinichi, A., Skinner, J.W., Lee, H.K., Stegemoller, E.L., Hack, N., Akbar, U., Vaillancourt, D.E., McFarland, N., Hass, C.J. (2015). Discriminating features of gait performance in progressive supranuclear palsy. Parkinsonism and Related Disorders 21: 888-893.
 94. Ofori, E., Coombes, S.A., Vaillancourt, D.E. (2015) 3D cortical electrophysiology of ballistic upper limb movement in humans. Neuroimage 115:30-41. PMC4461491.
 95. David, F.J., Robichaud, J.A., Leurgans, S.E., Poon, C., Kohrt, W.M., Goldman, J.G., Comella, C.L., Vaillancourt, D.E., Corcos, D.M. (2015). Exercise improves cognition in Parkinson's disease: the PRET-PD randomized clinical trial. Movement Disorders 30(12):1657-1663. PMID: 26148003.
 96. Burciu, R., Ofori, E., Shukla, P., Snyder, A., Planetta, P.J., Hass, C.J., Okun, M.S., McFarland, N., Vaillancourt, D.E. (2015) Distinct patterns of cortical and cerebellar fMRI activity in progressive supranuclear palsy and Parkinson's disease. Movement Disorders 30(9): 1248-1258. PMID: 26148135.
 97. Ofori, E., Pasternak, O., Planetta, P.J., Li, H., Burciu, R., Snyder, A., Lai, S., Okun, M.S., Vaillancourt D.E. (2015). Longitudinal changes in free-water within the substantia nigra of Parkinson's disease. Brain 138(Pt 8)2322-2331. PMID: 25981960. **Editors Choice Award.

98. Moran, A.C., Chen, Y-T., Kwon, M., Snyder, A., Subramony, S.H., Vaillancourt, D.E., Christou, E.A. (2015). Force dysmetria in spinocerebellar ataxia 6 correlates with functional capacity. Frontiers of Human Neuroscience. doi: 10.3389/fnhum.2015.00184.
99. Wang, Z., Magnon, G., White, S.P., Greene, R., Vaillancourt, D.E., and Mosconi, M. (2015). Individuals with autism spectrum disorder (ASD) show abnormalities during initial and subsequent phases of precision gripping. Journal of Neurophysiology 113(7):1989-2001. PMID: 25552638.
100. Neely, K.A., Kurani, A., Shukla, P., Shukla, A.W., Planetta, P.J., Goldman, J.G., Corcos, D.M., Okun, M.S., Vaillancourt, D.E. (2015) Functional brain activity related to 0-3 Hz and 3-8 Hz force oscillations in essential tremor. Cerebral Cortex 25(11): 4191-4202. PMID: 24962992.
101. Mosconi, M.W., Mohanty, S., Greene, R., Cook, E., Vaillancourt, D.E., and Sweeney, J.S. (2015). Feedforward and feedback motor control abnormalities implicate cerebellar dysfunctions in autism spectrum disorder. Journal of Neuroscience 35(5):2015-2025. PMID: 25653359.
102. Planetta, P.J., Kurani, A., Shukla, P., Prodoehl, J., Corcos, D.M., Comella, C.L., McFarland, N.R., Okun, M.S., Vaillancourt, D.E. (2015) Distinct functional and macrostructural changes in multiple system atrophy and Parkinson's disease. Human Brain Mapping 36(3): 1165-1179. PMID: 25413603.
103. Ofori, E., Pasternak, O., Planetta, P.J., Burciu, R., Snyder, A., Febo, M., Golde, T.E., Okun, M.S., Vaillancourt D.E. (2015). Increased extracellular free-water in the substantia nigra of Parkinson's disease: a single-site and multi-site study. Neurobiology of Aging. 36(2): 1097-1104. PMID: 25467638.
104. Kurani, A., Seidler, R.D., Burcu, R.G., Comella, C.L., Corcos, D.M., Okun, M.S., Mackinnon, C.D., Vaillancourt, D.E. (2015) Subthalamic nucleus – sensorimotor cortex functional connectivity in de novo and moderate Parkinson's disease. Neurobiology of Aging 36(1): 462-469. PMID: 25095723.
105. Prodoehl, J., Rafferty, M., David, F.J., Poon, C., Vaillancourt, D.E., Comella, C.L., Leurgans, S., Kohrt, W.M., Corcos, D.M., Robichaud, J.A. (2015) Two year exercise program improves physical function in Parkinson's disease: the PRET-PD Study. Neurorehabilitation and Neural Repair 29(2): 112-122. PMID: 24961994.
106. Salehian, H., Vaillancourt D.E., Vemuri, B.C. (2014) iPGA: incremental principal geodesic analysis with applications to movement disorder classification. Med Image Comput Comput Assit Interv. 17: 765-772. PMID: 25513581.
107. Morishita, T., Foote, K.D., Archer, D.B., Coombes, S.A., Vaillancourt, D.E., Hassan, A., Haq, I.U., Wolf, J., Okun, M.S. (2014). Smile without euphoria induced by deep brain stimulation: a case report. Neurocase 31: 1-5. PMID: 25360766.
108. Prodoehl, J., Burciu, R.G., Vaillancourt, D.E. Resting state functional magnetic resonance imaging in Parkinson's disease. (2014). Current Neurology and Neuroscience Reports. 14(6) 448. PMID: 24744021.

109. Shukla, A., Vaillancourt, D.E. Treatment and physiology in Parkinson's disease and dystonia: Using TMS to uncover the mechanisms of action. (2014). Current Neurology and Neuroscience Reports 14(6): 449. PMID: 24771105.
110. Planetta, P.J., McFarland, N., Okun, M.S., Vaillancourt, D.E. MRI reveals brain abnormalities in drug naïve Parkinson's disease. (2014). Exercise and Sports Sciences Reviews 42(1): 12-22. PMID: 24188978.
111. Chen, Z.P., Morishita, T., Vaillancourt, D.E., Favilla, C., Foote, K., Okun, M.S., Shukla, A.W. (2013). Unilateral thalamic deep brain stimulation in essential tremor demonstrates long-term ipsilateral effects. Parkinsonism and Related Disorders. PMID: 24021661.
112. Pulliam, C.L., Eichenhofer, S.R., Goetz, C.G., Waln O., Hunter, C.B., Jankovic, J., Vaillancourt, D.E., Giuffrida, J.P., Heldman, D.A. (2013). Continuous in-home monitoring of essential tremor. Parkinsonism and Related Disorders 20(1): 37-40. PMID: 24126021.
113. Hess, C., Ofori, E., Okun, M.S., Vaillancourt, D.E. The evolving role of diffusion magnetic resonance imaging in movement disorders. (2013). Current Neurology and Neuroscience Reports 13(11):400 doi:10.1007/s11910-013-0400-1. PMCID: PMC3824956.
114. Roemmich, R., Zeilman, P.R., Vaillancourt, D.E., Okun, M.O., Hass, C.J. Gait variability magnitude but not structure is altered in essential tremor. (2013). Journal of Biomechanics. PMCID: PMC3832140.
115. Vaillancourt, D.E., Schonfeld, D., Kwak, Y. Bohnen, N.I., Seidler, R.D. Dopamine overdose hypothesis: Evidence and clinical implications. (2013) Movement Disorders 28(14): 1920-1929. PMID: 24123087.
116. Videnovic, A., Marlin, C., Alibiglou, L., Planetta, P.J., Vaillancourt, D.E., Mackinnon, C.D. (2013). Increased REM sleep without atonia in Parkinson's disease patients with freezing of gait. Neurology 81(12):1030-1035. PMCID: PMC3795590.
117. Prodoehl, J., Li, H., Planetta, P.J., Goetz, C.G., Shannon, K.M., Tandon, R., Comella, C.L., Simuni, T., Zhou, X.J., Leurgans, S., Corcos, D.M., Vaillancourt, D.E. (2013). Diffusion tensor imaging of Parkinson's disease, atypical parkinsonism, and essential tremor. Movement Disorders 28(13): 1816-1822. PMCID: PMC3748146.
118. Neely K.A., Planetta P.J., Prodoehl J., Corcos, D.M., Comella C.L., Goetz C.G., Shannon K.L., Vaillancourt DE. (2013). Force control deficits in individuals with Parkinson's disease, multiple systems atrophy, and progressive supranuclear palsy. Public Library of Science One 8(3):e58403. PMCID: PMC3594313.
119. Poon, C., Coombes, S.A., Corcos, D.M., Christou, E.A., Vaillancourt, D.E. (2013). Transient shifts in frontal and parietal circuits scale with enhanced visual feedback and changes in force variability and error. Journal of Neurophysiology 109(8):2205-2215. PMCID: PMC3628029.

120. Vaillancourt, D.E., Christou, E.A. (2013). Slowed reaction time during exercise: What is the mechanism? Exercise and Sport Science Reviews 41(2): 75-76. PMCID: PMC3661292.
121. Corcos, D.M., Robichaud, J.A., David, F.J., Leurgans, S.E., Vaillancourt, D.E., Poon, C., Rafferty, M.R., Robichaud, J.A., Kohrt, W.M., Comella, C. (2013). A two-year randomized controlled trial of progressive resistance exercise for Parkinson's disease. Movement Disorders. PMCID: PMC3701730.
122. Hess, C.W., Vaillancourt, D.E., Okun, M.S. (2013). The temporal pattern of stimulation may be important to the mechanism of deep brain stimulation. Experimental Neurology 247: 296-302. PMCID: PMC3742615.
123. Portnow, L.H., Vaillancourt, D.E., Okun, M.S. (2013). The story of cerebral PET scanning: From physiology to blood flow science to radiotracer and technology development: Neurology 80(10) 952-956. PMCID: PMC3653214.
124. Fox, E.J., Baweja, H.S., Kim, C., Kennedy, D.M., Vaillancourt, D.E., Christou, E.A. (2013). Modulation of force within 0-1Hz: Age-associated differences and the effect of magnified visual feedback. Public Library of Science One 8(2): e55970.
125. Neely, K., Coombes, S.A., Planetta, P.J., Vaillancourt, D.E. (2013) Segregated and overlapping neural circuits exist for the production of static and dynamic precision grip force. Human Brain Mapping 34(3): 698-712. PMCID: PMC3292669.
126. Planetta, J., Schulz, E.T., Geary, E.K., Corcos, D.M., Goldman, J.P., Little, D.M., Vaillancourt, D.E. (2013). Thalamic projection fiber integrity in de novo Parkinson's disease. American Journal of Neuroradiology 34(1):74-79.
127. Prodoehl, J., Planetta, P.J., Kurani, A., Comella, C.L., Corcos, D.M., Vaillancourt, D.E. (2013). Differences in brain activation between tremor- and non-tremor dominant Parkinson's disease. JAMA Neurology 70(1): 100-106. PMCID: PMC3645004.
128. Poon, C., Chin-Cottongim, L., Coombes, S.A., Corcos, D.M., Vaillancourt, D.E. (2012). Spatiotemporal dynamics of brain activity during the transition from visually guided to memory guided force control. Journal of Neurophysiology 108(5): 1335-1348. PMCID: PMC3544967.
129. Vaillancourt, D.E., Spraker, M.B, Prodoehl, J., Zhou, X.J., Little, D.M. (2012). Effects of aging on the ventral and dorsal substantia nigra using diffusion tensor imaging. Neurobiology of Aging 33:35-42. PMCID: PMC2908724.
130. Spraker, M.B., Corcos, D.M., Kurani, A., Prodoehl, J., Swinnen, S.P., Vaillancourt, D.E. (2012). Specific cerebellar regions are related to force amplitude and rate of force development. Neuroimage 59: 1647-1656. PMCID: PMC3230677.
131. David, F.J., Rafferty, M.R., Robichaud, J.A., Prodoehl, J., Kohrt, W.M., Vaillancourt, D.E., and Corcos, D.M. (2012). Progressive resistance training and Parkinson's disease: A review. Parkinson's Disease 2012:124527 PMCID: PMC3236435.

132. Coombes, S.A, Corcos, D.M., Pavuluri, M., Vaillancourt, D.E. (2012). Maintaining force control despite changes in emotional context engages dorsomedial prefrontal and premotor cortex. Cerebral Cortex 22(3): 616-627. PMCID: PMC3278319.
133. Poon, C., Robichaud, J., Corcos, D.M., Goldman, J., Vaillancourt, D.E. (2011). Combined measures of movement and force variability distinguish patients with ET from PD. Clinical Neurophysiology 122(11): 2268-2275. PMCID: PMC3183282.
134. Heldman, D.A., Jankovic, J., Vaillancourt, D.E., Prodoehl, J., Elble, R.J., Giuffrida, J.P. (2011). Essential tremor quantification during activities of daily living. Parkinsonism and Related Disorders 17(7): 537-542. PMCID: PMC3137659.
135. Planetta, J., Prodoehl, J., Corcos, D.M., Vaillancourt, D.E. (2011). Use of magnetic resonance imaging to monitor Parkinson's disease. Neurodegenerative Disease Management 1(1): 67-77.
136. Coombes, S.A., Corcos, D.M., Vaillancourt, D.E. (2011). Spatial and temporal tuning of brain activity and force performance. NeuroImage 54(3): 2226-2236. PMCID: PMC3008211.
137. Sturman, M.M., Vaillancourt, D.E., Verhagen Metman, L., Bakay, R., Corcos, D.M. (2010). Effects of five years of chronic STN stimulation on muscle strength and movement speed. Experimental Brain Research 205(4): 435-443. PMID: 20697699.
138. Prodoehl, J., Spraker, M.B., Corcos, D.M., Comella, C.L., Vaillancourt, D.E. (2010) Blood oxygenation level dependent activation in basal ganglia nuclei relates to specific symptoms in de novo Parkinson's disease. Movement Disorders 25(13): 2035-2043. PMCID: PMC2952037.
139. Coombes, S.A., Corcos, D.M., Sprute, L., Vaillancourt, D.E. (2010). Selective regions of the visuomotor system change with force error. Journal of Neurophysiology 103(4): 2114-2123. PMCID: PMC2853269.
140. Spraker, M.B. Prodoehl, J., Corcos, D.M., Comella, C.L., Vaillancourt, D.E. (2010). Basal ganglia hypoactivity during grip force in drug naïve Parkinson's disease. Human Brain Mapping 31(12):1928-1941. PMID: 20225221.
141. Wasson, P., Prodoehl, J., Coombes, S.A., Corcos, D.M., Vaillancourt, D.E. (2010). Predicting grip force amplitude involves circuits in the anterior basal ganglia. NeuroImage 49(4): 3230-3238. PMCID: PMC2818558.
142. Baweja, H.S., Kennedy, D.M., Vu, J., Vaillancourt, D.E., Christou, E.A. (2010). Greater amount of visual feedback decreases force variability by reducing force oscillations from 0-1 and 3-7 Hz. European Journal of Applied Physiology 108(5): 935-943. PMCID: PMC2863099.
143. Prodoehl, J., Vaillancourt, D.E. (2010) Effects of spatial visual gain on force control at the elbow and ankle. Experimental Brain Research 200(1): 67-79. PMCID: PMC2842579.

144. Prodoehl, J., Corcos, D.M., Vaillancourt, D.E. (2009) Basal ganglia mechanisms of precision grip. Neuroscience and Biobehavioral Reviews 33: 900-908. PMCID: PMC2684813.
145. Spraker M.B., Corcos, D.M., Vaillancourt, D.E. (2009) Cortical and subcortical mechanisms for precisely controlled force generation and relaxation. Cerebral Cortex 19: 2640-2650. PMCID: PMC2758679.
146. Vaillancourt, D.E., Spraker, M.B., Prodoehl, J., Abraham, I., Corcos, D.M., Zhou, X.J., Comella, C.L., Little, D.M. (2009) High resolution diffusion tensor imaging in the substantia nigra of de novo Parkinson's disease. Neurology 72(16): 1378-1384. PMCID: PMC2677508.
147. Robichaud, J.A., Pfann, K.D., Leurgans, S., Vaillancourt, D.E., Comella, C.L., Corcos, D.M. (2009) EMG patterns: a neurophysiological marker of Parkinson's disease. Clinical Neurophysiology 120(2): 390-397. PMCID: PMC2679966.
148. Prodoehl, J., Yu, H., Wasson, P., Corcos, D.M., Vaillancourt, D.E. (2008). Effects of visual and auditory feedback on sensorimotor circuits in the basal ganglia. Journal of Neurophysiology 99: 3042-3051. PMID: 18287549.
149. Sturman, M.M., Vaillancourt, D.E., Shapiro, M.B., Verhagen, L., Bakay, R.A.E., Corcos, D.M. (2008). Effect of short and long term STN stimulation periods on Parkinsonian signs. Movement Disorders 23(6): 866-874. PMID: 18311827.
150. Prodoehl, J., Yu, H., Abraham, I., Little, D.M., Vaillancourt, D.E. (2008). Region of interest template for the human basal ganglia: Comparing EPI and Standardized Space Approaches. NeuroImage 39(3): 956-965. PMCID: PMC2253186.
151. Yulmetyev, R.M., Vaillancourt, D.E., Gafarov, F.M., Hanggi, P. (2008). Relaxation singularities of human motor system at aging due to short-range and long-range time correlations. Nonlinear Phenomena in Complex Systems, 11(1): 40-52.
152. Spraker, M.B., Yu, H., Corcos, D.M., Vaillancourt, D.E. (2007) Role of individual basal ganglia nuclei in force amplitude generation. Journal of Neurophysiology 98(2): 821-834. PMCID: PMC2367092.
153. Sturman, M.M., Vaillancourt, D.E., Verhagen Metman, L., Bakay, R.A.E., Corcos, D.M. (2007). Effects of motor and cognitive secondary tasks on tremor following deep brain stimulation in Parkinson's disease. Movement Disorders 22(8): 1157-1163. PMCID: PMC2366974.
154. Vaillancourt, D.E., Yu, H., Mayka, M.A., Corcos, D.M. (2007). Role of the basal ganglia and frontal cortex in selecting and producing internally-guided force pulses. NeuroImage 36(3): 793-803. PMCID: PMC1950146.
155. Shapiro, M.B., Vaillancourt, D.E., Sturman, M.M., Verhagen Metman, L., Bakay, R.A.E., Corcos, D.M. (2007) Effects of STN DBS on rigidity in Parkinson's disease. IEEE Transactions on Neural Systems & Rehabilitation Engineering 15(2): 173-181. PMCID: PMC2365513.

156. Prodoehl, J., Verhagen Metman, L., Rothwell, J.C., Corcos, D.M, Bakay, R.A.E., Vaillancourt, D.E. (2007) Effects of STN DBS on memory guided force control in Parkinson's disease. IEEE Transactions on Neural Systems & Rehabilitation Engineering 15(2): 155-165. PMCID: PMC2361426.
157. Yu, H., Sternad, D., Corcos, D.M., Vaillancourt, D.E. (2007). Role of hyperactive cerebellum and motor cortex in Parkinson's disease. NeuroImage 35(1): 222-233. PMCID: PMC1853309.
158. Elble, R.J. and the Tremor Research Group and Conference Attendees. (2006). Report from a US Consensus Conference on Essential Tremor. Movement Disorders 21(12): 2052-61. PMID: 17078051.
159. Prodoehl, J., Corcos, D.M., Vaillancourt, D.E. (2006). Effects of focal hand dystonia on force variability. Journal of Neurology, Neurosurgery, and Psychiatry 77(8): 909-914. PMCID: PMC2077615.
160. Vaillancourt, D.E., Hailbach P., Newell, K.M. (2006). Visual angle is the critical variable mediating gain-related effects in manual control. Experimental Brain Research 173(4): 909-914. PMCID: PMC2366211.
161. Mayka, M., Corcos, D.M., Leurgans, S.E., Vaillancourt, D.E. (2006). Locations and boundaries of the motor and premotor regions in functional brain imaging: A meta-analysis. NeuroImage 31(4): 1453-1474. PMCID: PMC2034289.
162. Vaillancourt, D.E., Mayka, M., Corcos, D.M. (2006). Intermittent visuomotor processing in the human cerebellum, parietal cortex, and premotor cortex. Journal of Neurophysiology 95: 922-931. PMCID: PMC2366036.
163. Vaillancourt, D.E., Prodoehl, J., Sturman, M.M., Verhagen Metman, L., Bakay, R., Corcos, D.M. (2006). Effects of deep brain stimulation and medication on strength, bradykinesia, and muscle activation of the ankle in Parkinson's disease. Movement Disorders 21: 50-58. PMCID: PMC2373255.
164. Sturman, M.M., Vaillancourt, D.E., Corcos, D.M. (2005). Effects of aging on the regularity of physiological tremor. Journal of Neurophysiology 93: 3064-3074. PMID: 15716367.
165. Sosnoff, J.J., Vaillancourt, D.E., Larson, L., Newell, K.M. (2005). Coherence of EMG activity and single motor unit discharge patterns in human rhythmical force production. Behavioural Brain Research 158: 301-310. PMID: 15698897.
166. Robichaud, J.A., Pfann, K.A., Vaillancourt, D.E., Comella, C.N., Corcos, D.M. (2005). Force control and disease severity in Parkinson's disease. Movement Disorders 20: 441-450. PMID: 15593316.
167. Vaillancourt, D.E., Mayka, M., Corcos, D.M. (2004). The control process is represented in both the inferior and superior parietal lobules. Behavioral and Brain Sciences 27: 51.

168. Sturman, M.M., Vaillancourt, D.E., Verhagen Metman, L., Bakay, R., Corcos, D.M. (2004). Effects of STN stimulation and medication on resting and postural tremor in Parkinson's disease. Brain 127: 2131-2143. PMID: 15240437.
169. Vaillancourt, D.E., Mayka, M., Thulborn, K.R., Corcos, D.M. (2004). Subthalamic nucleus and internal globus pallidus scale with the rate of change of force production in humans. NeuroImage 23: 177-188. PMID: 15325364.
170. Vaillancourt, D.E., Sosnoff J.J., Newell, K.M. (2004). Age-related changes in complexity depend on task dynamics. Journal of Applied Physiology 97: 454-455. PMID: 15220326.
171. Sosnoff, J., Vaillancourt, D.E., Newell, K.M. (2004). Aging and rhythmical force output: Loss of adaptive control of multiple neural oscillators. Journal of Neurophysiology 91: 172-181. PMID: 14507987.
172. Vaillancourt, D.E., Prodoehl, J., Verhagen Metman, L., Bakay, R., Corcos, D.M. (2004). Effects of deep brain stimulation and medication on bradykinesia and muscle activation in Parkinson's disease. Brain 127: 491-504. PMID: 14662520.
173. Flament, D., Vaillancourt, D.E., Shannon K., Corcos, D.M. (2003). EMG remains fractionated in Parkinson's disease, despite practice-related improvements in performance. Clinical Neurophysiology 114: 2385-2396. PMID: 14652099.
174. Vaillancourt, D.E., Thulborn, K.R., Corcos, D.M. (2003). Neural basis for the processes that underlie visually-guided and internally-guided force control in humans. Journal of Neurophysiology 90: 3330-3340. PMID: 12840082.
175. Vaillancourt, D.E., Sturman, M.M., Verhagen Metman, L., Bakay, R., Corcos, D.M. (2003). Deep brain stimulation of the VIM thalamic nucleus modifies several features of essential tremor. Neurology 61(7): 919-925. PMID: 14557560.
176. Vaillancourt, D.E., Newell, K.M. (2003). Aging and the time and frequency structure of force output variability. Journal of Applied Physiology 94: 903-912. PMID: 12571125.
177. Vaillancourt, D.E., Larsson, L., Newell, K.M. (2003). Effects of aging on force variability, motor unit discharge patterns, and the structure of 10, 20, and 40 Hz EMG activity. Neurobiology of Aging 24: 25-35. PMID: 12493548.
178. Vaillancourt, D.E., Larsson, L., Newell, K.M. (2002). Time-dependent structure in the discharge rate of human motor units. Clinical Neurophysiology 113: 1325-1338. PMID: 12140014.
179. Vaillancourt, D.E., Russell, D.M. (2002). Temporal capacity of short-term visuomotor memory in continuous force production. Experimental Brain Research 145: 275-285. PMID: 12136377.
180. Vaillancourt, D.E., Slifkin, A.B., Newell, K.M. (2002). Inter-digit individuation and force variability in precision grip of young, elderly, and Parkinson's disease. Motor Control 6, 113-128. PMID: 12122222.

181. Vaillancourt, D.E. Newell, K.M. (2002). Complexity in aging and disease: Response to commentaries. Neurobiology of Aging 23, 27-29. PMID: 11755015.
182. Vaillancourt, D.E. Newell, K.M. (2002). Changing complexity in human behavior and physiology through aging and disease. Neurobiology of Aging 23, 1-11. PMID: 11755010.
183. Newell, K.M., Vaillancourt, D.E. (2001). Dimensional change in motor learning. Human Movement Science 20, 695-715. PMID: 11750683.
184. Vaillancourt, D.E., Slifkin A.B., Newell, K.M. (2001). Visual control of isometric force in Parkinson's disease. Neuropsychologia 39, 1409-1417. PMID: 11585609.
185. Vaillancourt, D.E., Slifkin, A.B., Newell, K. M. (2001). Intermittency in the visual control of force in Parkinson's disease. Experimental Brain Research 138, 118-127. PMID: 11374078.
186. Vaillancourt, D.E., Slifkin, A.B., Newell, K.M. (2001). Regularity of force tremor in Parkinson's disease. Clinical Neurophysiology 112, 1594-1603. PMID: 11514241.
187. Vaillancourt, D.E., Newell, K.M. (2000). The dynamics of resting and postural tremor in Parkinson's disease. Clinical Neurophysiology 111(11), 2046-2056. PMID: 11068241.
188. Vaillancourt, D.E., Newell, K.M. (2000). Amplitude changes in the 8-12 Hz, 20-25 Hz and 40 Hz oscillations of finger tremor. Clinical Neurophysiology 111(10), 1792-1801. PMID: 11018494.
189. Slifkin, A.B., Vaillancourt, D.E., Newell, K.M. (2000). Intermittency in the control of continuous force production. Journal of Neurophysiology 84, 1708-1718. PMID: 11024063.

Book Chapters (8):

- Vaillancourt, D.E. (2010). Approximate Entropy. In: Kompoliti K, and Verhagen Metman L (eds.) Encyclopedia of Movement Disorders. Oxford: Academic Press.
- Vaillancourt, D.E. (2010). Blood Oxygen Level Dependent. In: Kompoliti K, and Verhagen Metman L (eds.) Encyclopedia of Movement Disorders. Oxford: Academic Press.
- Cristea, A., Vaillancourt, D.E., & Larsson, L. (2011). Aging-related Changes in Motor Unit Structure and Function. In G.S. Lynch, Sarcopenia - Age-Related Muscle Wasting and Weakness: Mechanisms and Treatments. Springer, pp. 55-74.
- Vaillancourt, D.E. & Prodoehl, J. (2010). Brain and Behavior Deficits in De Novo Parkinson's Disease. In M. Latash, F. Danion, Motor Control: Theories, Experiments, and Applications. Oxford University Press, pp. 347-369.

- Spraker M.B., Corcos D.M., Vaillancourt, D.E. (2009). Basal Ganglia and Precision Grip Force Production. In J. Hermsdorfer & D.A. Nowak, Sensorimotor Control of Grasping: Physiology and Pathophysiology. Cambridge University Press, pp. 99-109.
- Corcos, D.M., Shemmell, J., Vaillancourt, D.E. (2008). Mechanisms underlying short-term motor learning, long-term motor learning, and transfer. In A. Benjamin, B. Etnyre, T.A. Polk, Advances in Psychology Vol. 139, Human Learning: Biology, Brain, and Neuroscience. Elsevier Ltd., pp. 177-187.
- Newell, K.M., Vaillancourt, D.E., Sosnoff, J.J. (2006). Aging, complexity, and motor performance. In J.E. Birren & K.W. Schaie, Handbook of the Psychology of Aging, 6th Edition. Boston: Elsevier, pp. 163-182.
- Newell, K.M., Vaillancourt, D.E. (2001). Woodworth (1899): A centennial view with notes and comments. In V.M. Zatsiorsky & M.L. Latash, Classic papers in movement sciences. Urbana Champaign: Human Kinetics, pp. 409-435.

Manuscripts under Review:

- Nandakumar, N., Wang, W., Duara, R., Golde, T.E., DeKosky, S., Vaillancourt, D.E. (Submitted). MRI brain atrophy in cerebral amyloid angiopathy in pathologically confirmed patients with Alzheimer's disease. Journal of Alzheimer's Disease.
- Savoie, F.A., Arpin, D., Vaillancourt, D.E. (submitted). Magnetic resonance imaging and nuclear imaging of Parkinsonian disorders: Where do we go from here? Clinical Neuropharmacology.
- Wilkes, B.J., Tobin, E.R., Arpin, D.J., Okun, M.S., Jaffee, M.S., McFarland, N.R., Corcos, D.M., Vaillancourt, D.E. (Submitted). Tracking fine motor progression in Parkinson's disease and atypical parkinsonian syndromes using Purdue Pegboard test performance. Nature Parkinson's Disease.

Manuscripts in Progress:

- Rob – DLB and AD
- Rob – CBD vs. PSP; FTD vs. AD
- DLB Kentarci Data – Shannon
- Dyt1 models and fMRI - Wilkes/Adury
- Dyt1 calakos and ex vivo dti – Wilkes/Adury
- Connectivity and BOLD progression across PD severity – Arpin
- AD Quest Ab42/40 and Free-water – Jesse/Wei-en
- RBD – motor physiology and fMRI – 2 papers – Emily

Ongoing Projects:

- DYT knock-in and knock-out studies in mice Brad, Luis, Adury
- Task-fMRI and Ritonivir - Adury
- DLB EEG - Shannon
- U01 multisite Marissa, Dave, Wei-en; Rob;
- RBD/PD Marissa, Dave, Emily; Felix

- ADRC Wei-en; Steve; Jesse

COMMENTARIES

Vaillancourt DE. Multimodal MRI Assessment of Nigro-Striatal Pathway in Multiple System Atrophy and Parkinson Disease. Practice Update website. Available at: <http://www.practiceupdate.com/content/multimodal-mri-in-multiple-system-atrophy-and-parkinsons-disease/36372/65/7/1>. Accessed March 30, 2016

Vaillancourt DE, Arpin DJ. Fast 3 T Nigral Hyperintensity Magnetic Resonance Imaging in Parkinson's Disease. PracticeUpdate website. Available at: <https://www.practiceupdate.com/content/fast-3t-nigral-hyperintensity-mri-in-parkinson-disease/113427/65/7/1>. Accessed March 04, 2021

RESEARCH FUNDING

Ongoing:

- PI. Preclinical Markers of Parkinsonism. NINDS (R01NS058487; years 12-17). \$3,214,1647. Effort: 20%. 2021-2026.
- PI. Web-based Automated Imaging Differentiation of Parkinsonism. NINDS (U01 NS119562). \$4,777,251. Effort: 20%. 2021-2026.
- Biomarker Core Leader. 1Florida Alzheimer's Disease Research Center. NIA P30 AG066506. My budget is \$924,762 direct costs over 5 years. Total budget is \$15,242,006 over 5 years. PI is Todd Golde. Effort 10%. 2020-2025.
- PI. Non-invasive Markers of Neurodegeneration in Movement Disorders. NINDS (R01 NS075012). \$2,613,412. Effort: 20%. 2012-2023. MPI: Yuqing Li.
- PI. Scaling and Sequencing Motor Output in Humans: An fMRI Study. NINDS (R01 NS052318; years 14-19) \$3,035,990. Effort: 20%. 2016-2021.
- MPI. Interdisciplinary Training in Movement Disorders and Neurorestoration. NINDS T32 NS082169-05. Effort 10%. \$1,964,808. 2020-2025.
- Co-Inv. SCH: Enabling Data Outsourcing and Sharing for AI-powered Parkinson's Research. R01 LM014027. \$1,500,000. Effort: 10%. 2021-2026.
- Co-Inv. Higher Order Convolutional Neural Network for Classification of Lewy-Body Diseases. R01 NS121099. \$1,404,530. Effort: 10% 2022-2026.
- Co-Inv. Progressive resistance exercise and dystonia pathophysiology. R01 NS122943. Effort: 5% 2022-2027.
- Co-Inv. Dual Lead Thalamic DBR-DBS Interface for Closed Loop Control of Severe Essential Tremor. NINDS U Grant. Effort 5%. \$4,997,727. 2019-2023.

- Mentor. University of Florida T32 Training Grant. Interdisciplinary Training in Rehabilitation and Neuromuscular Plasticity. (T32HD043730-09). PI: Krista Vandenborne. Effort: 0%. 2014-2019.
- Mentor. University of Florida T32 Training Grant. Breathing Research and Therapeutics (BREATHE). T32HL13421. PI: Gordon Mitchell. Effort: 0%. 2017-2022.
- Mentor. Neurodegeneration and Neuronal Fluctuations in DLB and AD. K23. \$773,416. Effort: 0%. 2022-2027. PI: Shannon Chiu.

Funding under Review:

- PI. Parkinsonian Markers of Brain Function, Motor Physiology, and Synuclein Pathology in Inflammatory Bowel Disease. NINDS (R01 NS052318; years 20-24). \$3,562,440. Effort: 20%. 2023-2028. Scored 58, 55% on first submission.
- STTR grant with Angelos Barmpoutis from Automated Imaging Diagnostics and UF.

Grants in Progress:

- R01 Dystonia Renewal

Submitted Grants Not Funded:

- MPI. Adoptive Cell Therapies and Translational Neuroimaging in Synucleinopathy. R01 NS128542. \$1,501,451. Effort: 15%. 2022-2027. 42%, IF = 56.
- MPI. E-cigarettes, brain development, and concussions. R01 DA056477. \$2,138,380. Effort: 10%. 2022-2027.
- MPI. 7T MRI/S Scanner. NIH. Effort: 0%. 2021-2022.
- MPI. Heritable Effects of Developmental E-Cigarette Exposure. (R01 DA055682). Bhide R01. (\$3,382,108). Effort 10%. 2022-2027.
- MPI. Brain and Motor Pathophysiology in Essential Tremor and Essential Tremor Plus. (R01 NS112809). \$2,303,106. Effort 10%. 2022-2027.
- Col. P20 NS123150-01. UF P20 Central and Peripheral Pathogenesis of Parkinson's. (Tansey/LaVoie, MPI). \$600,000. Effort: 3%. 2021-2023.
- Col. Higher Order Convolutional Neural Network for Classification of Cognitive and Motor Disorders. (R01 NS121099-01). \$1,020,071. Effort: 10%. 2021-2026.
- Col. Interrogating the Impact of Alcohol Use Patterns in Brain, Cognition, and Dementia Risk in Older Men and Women. (R01). Effort: 2%. 2021-2026.
- Col. SCAN Harmonization for 1Florida ADRC. Effort: 0%. 2021-2022.

- MPI. Role of the Cerebellum and Brainstem in Essential Tremor and Essential Tremor Plus. (R01 NS119448). \$3,099,399. Effort: 10%. 2020-2025.
- Co-Investigator. Adoptive Cell Therapies and Translational Neuroimaging in Synucleinopathy. R01 at NINDS. \$1,823,255. Effort: 5%. 2019-2024. 9.6 months from post doc for this proposal. 35% on first submission. PI is Vinata Medam-Mai.
- Co-Investigator. Exercise and dystonia pathophysiology. R01 at NIH. \$1,932,982. Effort: 10%. 2019-2024. PI is Aparna Shukla.
- MPI. Non-invasive and multi-modal functional brain imaging in awake behaving humans. R01 NS115773. Effort 10%. UF portion: 1,182,689. Total: 3,470,671. 2020-2025. PI: Huabei Jiang.
- MPI. Essential Tremor Subtypes: Motor Control and Pathophysiology. R01 NS115765. Effort 15%. Total budget \$3,015,412. Vaillancourt gets 50% coordinator, and 15% salary. 2020-2025.
- MPI. Non-invasive Functional Brain Imaging in Awake Behaving Humans. R01 NS103976. \$3,329,467. Effort: 15%. 2017-2022.
- Co-Inv. NIH R01MH114216 Age and sex differences in optimal settings for and neural consequences of tDCS. \$1,208,560. 10%. 2017-2021.
- Co-Inv. NIH R01. Progressive Resistance Exercise and Brain Adaptation in Parkinson's Disease. \$3,798,978. 10%. 2017-2022.
- MPI. Early-stage Natural History of SCA6 with MRI Biomarkers. R01FD006061-01. \$1,999,995. 8%. 2017-2022.
- Associate Director and Project 1 Leader. University of Florida Parkinson's Brain Imaging Center (UF-PBiC). NINDS (P50). \$10,249,467. Effort: 30%.
- PI. Functional Connectomes for Parkinson's Disease and Atypical Parkinsonism. U01 NS093578-01A1. \$3,051,393. Effort: 20%. 2016-2020.
- Co-Inv. Subcortical Bidirectional DBS Interface for Tremor and Sensorimotor Restoration. PI: Karim Oweiss. Effort: 5%.
- Co-PI. Structural Imaging and Depression in Atypical Parkinsonism and Parkinson's Disease. Effort: 5%. \$100,000. PI Nick McFarland. 2015-2017.
- MPI. Prospective Validation of Multimodal MRI Markers for Parkinsonian Syndromes. NINDS (R01 NS097002) \$3,885,590. Effort: 20%. 2016-2021.
- Co-Inv. Parkinson's Disease: Comparison of Progressive Resistance and Endurance Exercise. NINDS. PI: Daniel Corcos. Effort 10%. 2015-2020. \$49,407 direct costs per year to UF. Scored 45 on first submission.
- Co-Inv. Targeting the Motor Cortex for Pain Relief. R21 submitted to NIH. Effort 2.5%.

- Co-PI. Compressed Sensing of Multishell Diffusion MRI as a Practical Biomarker for PD. NSF. Effort 5%. 2015-2019.
- Co-PI. Deep brain stimulation therapy in primary generalized dystonia: A novel multimodal approach to predict outcomes and understand DBS mechanisms. Department of Defense. Effort: 20%. Co-PI Aparna Shukla. 2015-2018.
- Co-Inv. Motor Deficits and Experimental Correlates. NINDS. PI: Daniel Corcos. Effort 10%. 2014-2019. \$49,407 direct costs per year to UF.
- Co-Inv. Fast MS-HARDI Acquisition and Analysis for Movement Disorders. NIH. Vaillancourt budget \$377,653 over four years. Effort 10%. 2015-2019.
- Co-Inv. Dystonia Medical Research Foundation. Grant with Yuqing Li and Marcelo Febo. \$33,000 to Vaillancourt Lab in direct costs. 2014-2016.
- Co-PI. Brain and Neuromuscular Physiology of Walking and Balance in SCA-6. Effort: 10%. 2014-2016. R21. Co-PI Evangelos Christou.
- Co-PI. Compressed Sensing of Multishell Diffusion MRI as a practical biomarker for PD. NSF. Vaillancourt budget \$377,653 over four years. Effort 10%. 2014-2018.
- Mentor. Entropy of resting brain activity in Parkinson's disease and atypical parkinsonism. NIH F32. PI: Ofori. Dr. Vaillancourt is primary mentor. Effort 0%. 2014-2016.
- Mentor. Physiological Effects of Unilateral and Bilateral STN DBS in Parkinson's Disease. NIH K23. PI: Shukla. Dr. Vaillancourt is primary mentor. \$696,580. Effort 5%. 2014-2019.
- Co-Inv. Motor Deficits and Experimental Correlates. NINDS (R01 NS028127). PI: Daniel Corcos. Effort 5%. 2014-2019. \$33,000 direct costs per year.
- Project 1 Leader. UF – Mount Sinai Medical Center Alzheimer's Disease Research Center. 2014-2019. \$100,000 direct costs per year for Project 1.
- Mentor. Cortical Physiology of Unilateral and Bilateral STN Stimulation. Parkinson Study Group, Parkinson's Disease Foundation. Dr. Aparna Shukla is trainee.
- Project Leader. University of Florida Udall Center of Excellence for Parkinson's Disease. NINDS. 10-12 million. Effort: 20%. 2013-2018. Scored 59.
- Project III Leader. Inflammation, Progression of Pathology, and Imaging in Parkinson's Disease. University of Florida Udall Center of Excellence for Parkinson's Disease. NINDS. \$9,411,979. Project III \$1,275,166. Effort: 30%. 2013-2018. Score 58.
- Co-Inv. Neural Basis for Motor Analgesia. Effort: 10%. 09/01/2013-08/31/2017. NIH/NICHD (R01HD078291) PI: Stephen Coombes. \$250,000.

- Co-Inv. Aging and learning of novel fine motor tasks. Effort: 12%. 09/01/2013-08/31/2018. NIH/NIA (R01 AG031769) PI: Evangelos Christou. \$225,000

Past Funding:

- Co-Investigator. Adoptive Cell Therapies and Translational Neuroimaging in Synucleinopathy. R56 at NINDS. \$533,750. Effort: 5%. 2019-2020. 9.6 months from post doc for this proposal. PI is Vinata Medam-Mai.
- Col. Mangurian Application of Free-water Imaging. \$25,000. Effort: 0%. 2020-2021.
- Col. Mangurian Rapid Eye Movement Behavior Disorder. \$25,000. Effort: 0%. 2020-2021.
- Co-Inv. Automated Analysis of Movement Disorders from Diffusion and Functional MRI. NSF grant. Effort: 5%. \$1,060,000.00. 2017-2021.
- SitePI. Neuroimaging, and Sensitive Novel Cognitive Measures. State of Florida. \$115,397. Effort: 5%. 2019-2021.
- Mentor. Connectivity in Essential Tremor and Dystonic Tremor. NIH K23. PI: Shukla. Dr. Vaillancourt is primary mentor. \$696,580. 2016-2020.
- Tyler's Hope Alignment Grant. Gift supporting Vaillancourt lab over 5 years for dystonia research. \$625,000.
- Co-Investigator. Cerebellar and basal ganglia contributions to neuromotor issues in adults with autism spectrum disorder (ASD). \$228,500. Effort: 2%. 2020-2021. PI is Zheng Wang.
- PI. Neuroimaging Biomarkers in Parkinsonism: Differentiating Subtypes and Tracking Disease Progression. U01 NS102038. \$2,400,000. Effort: 20%. 2017-2020.
- PI. Role of the Cortex and Cerebellum in Visually-Guided Motor Behavior. NINDS (R01NS058487; years 6-11). \$1,875,000. Effort: 30%. 2015-2020.
- Co-Inv. University of Florida - Mt. Sinai Medical Center AD Research Center. P50 AG047266-01A1. Effort 5%. Total grant cost = 7,362,233. Vaillancourt portion = \$55,000 direct costs per year. 2015-2020.
- MPI. Interdisciplinary Training in Movement Disorders and Neurorestoration. NINDS T32 NS082169-01A1. Effort 10%. \$988,990. 2015-2020.
- Mentor. 4D Cortical Electrophysiology of Head Turning Movements in Cervical Dystonia and Healthy Controls. \$218,000. KL2 from UF CTSI. 2016-2018.
- Co-Inv. Consortium for Diagnostic Algorithm with Novel Markers in Early Alzheimer's Disease. State of Florida. Effort 5%. 2016-2017. \$57,119.

- Co-PI. Dysmetria and Motor Function in SCA: Mechanisms and Rehabilitation. R21 NS094946-01. Effort: 10%. \$412,500. Co-PI Evangelos Christou. 2015-2017.
- Co-PI. Pathophysiology of Upper and Lower Limb Motor Control in Spinocerebellar Ataxia. R21 NS093695-01. Effort: 10%. \$412,500. Co-PI Evangelos Christou. 2015-2017.
- Co-Inv. Advanced 3T for Structural and Functional Imaging at University of Florida. \$2,000,000. NIH. 0% effort.
- PI. Role of the Cortex and Cerebellum in Visually-Guided Motor Behavior. NINDS (R01NS058487; years 1-5). \$1,875,000. Effort: 30%. 2008-2013.
- PI. Scaling and Sequencing Motor Output in Humans: An fMRI Study. NINDS (R01 NS052318; years 8-13) \$2,000,000. Effort: 20%. 2011-2016.
- Co-Inv. UF Center of Excellence in Dystonia Research. Bachmann Straus Foundation & Tyler's Hope. PI: Michael Okun. Effort: 5%. \$800,000. 2013-2016.
- PI. Bachmann Strauss Supplemental Funding. Effort: 0%. \$75,000. 2015-2016.
- Co-Inv. Consortium for Early Alzheimer's Disease. State of Florida. Effort 1%. 2015-2016. \$12,000.
- Co-Mentor. Motor control and cerebellar maturation in autism. NIH K23MH092692. PI: Mosconi. Dr. Sweeney is primary mentor. \$770,715. Effort 0%. 2010-2015.
- Co-Inv. Cortical and subcortical brain function in chronic stroke. James and Esther King Biomedical Research Program, Florida Department of Health (3KN01). \$384,205. PI: Stephen A. Coombes. Effort 5%. 2012-2015.
- Co-Mentor. Diffusion Imaging Predicting Deep Brain Stimulation. Dystonia Medical Research Foundation. PI: Akbar. Drs. Vaillancourt and Okun co-mentor Umer Akbar. \$75,000. Effort 0%. 2013-2014.
- Consultant. ET Sense Device in Phase II Trial for Essential Tremor. NIH SBIR grant. 2012-2014. \$7,000 per year over two years.
- Co-Mentor. Cortical Physiology of Unilateral and Bilateral STN Stimulation. CTSI KL2N Scholar at University of Florida. PI: Shukla. Drs. Okun, Foote and I are mentoring Dr. Shukla through this K award. \$167,000. Effort 5%. 2012-2014.
- Mentor. The Neurobehavioral Processes of Action Inhibition. NINDS (F32 NS078874-A1). Effort 5%. 2012-2014. \$100,000.
- Consultant. STN Stimulation: Neural Control of Movement and Posture. NINDS (R56 NS040902). PI: Daniel Corcos. \$364,000. Effort 5%. 2011-2012.

- Consultant. Family Studies of Sensorimotor and Neurocognitive Heterogeneity in Autism Spectrum Disorders. DoD AR100276. PI: Sweeney. \$374,869. 0%. 2011-2013.
- Co-Inv. Motor Deficits and Experimental Correlates. NINDS (R01 NS028127). PI: Daniel Corcos. \$2,892,268. Effort 2%. 2007-2012.
- Co-PI. Relationship between REM Behavior Disorder and Freezing of Gait in Parkinson's Disease. Michael J Fox Foundation. \$508,075. Effort 15%, UIC portion \$81,472. 2010-2012.
- PI. High resolution diffusion tensor imaging in Parkinson's disease and Parkinson plus syndromes. Michael J Fox Foundation. \$383,771. Effort 10%. 2010-2012.
- Co-Inv. A High-End 3 Tesla Human MRI Scanner Dedicated to Research. NIH/NCRR. \$2,931,085. Effort 5%. 2010-2012.
- Co-PI. MRI: Acquisition of a High Field Magnetic Resonance Imaging System for Science and Engineering Research. NSF. \$1,995,000. Effort 5%. 2010-2012.
- PI. Scaling and Sequencing Motor Output in Humans: An fMRI Study. NINDS (R01 NS052318; year 5-6). \$854,000. Effort 20%. 2009-2011.
- Co-Inv. STN Stimulation: Neural Control of Movement and Posture. NINDS (R01 NS040902). PI: Daniel Corcos. \$1,781,411. Effort: 10%. 2005-2010.
- Mentor. fMRI Studies of Emotion and Movement. NIMH (F32 MH083424). Effort 5%. 2009-2011
- Co-Mentor. Postdoctoral Research Fellowship Mosconi (PI). fMRI Studies of Cerebellar Functioning in Autism. Autism Speaks Foundation, Grant #4853, \$95,000. 2009-2011.
- PI. Scaling and Sequencing Motor Output in Humans: An fMRI Study. NINDS (R01 NS052318). \$1,200,000. Effort 20%. 2005-2009.
- Mentor. Training Grant in the Neuroscience of Mental Health. NIH (T32MH067631). Training of Dr. Stephen Coombes.
- PI. Effects of Aging on Sensory-Motor Integration and Force Steadiness. Campus Research Board, University of Illinois at Chicago. 2005-2006. \$8,340. Scored 1.26 and 1st of 13 grants submitted to the Clinical Science division.
- PI. Ruth L. Kirschstein National Research Service Award. NINDS (F32 NS044727). fMRI Activity During the Visual Control of Force (2003-2005). \$92,840.
- Trainee. Predoctoral Fellowship at NIA (T32 AG00048). Tremor and Force Output in Parkinson's Disease (1999-2001). \$34,000.

- PI. Sigma Xi Grants-in-Aid Research. Motor Unit Recruitment in Force Production (2001-2002). \$750.
- PI. Sigma Xi Grants-in-Aid Research. Time Regularity of Tremor in Parkinson's Disease (2000-2001). \$750.
- Co-PI. The Gerontology Center, Pennsylvania State University (423-141001GERO). Aging and the Complexity of Motor Output (1999-2000). \$3,200.
- PI. College of Health and Human Development Research Award. The Pennsylvania State University (2000-2001). \$550.

PATENTS

Non-Invasive Biomarker
Application No. 62/486,580; Filed April 18, 2017
UF# 16672
A&B 049648/496873

RESEARCH AWARDS

- Early Career Distinguished Scholar Award. NASPSPA, 2009.

GRANT REVIEWER

- Reviewer for NIH Study Section. ZRG1 BBBP-H-03 Special Emphasis Panel, November 2005.
- Reviewer for NIH Study Section. Motor Function and Speech Rehabilitation Study Section, February 13-14, 2006.
- Reviewer for NIH Study Section. Motor Function and Speech Rehabilitation Study Section, February 12, 2007.
- Reviewer for NIH Study Section. MESH – Behavioral Mechanisms of Emotion, Stress, and Health Study Section. June 25, 2007.
- Reviewer for NIH Study Section. BBBP-E Special Emphasis Panel, October 17, 2007.
- Reviewer for Katie Kompiliti, MD. Movement Disorders Section at Rush University Medical Center. January 5, 2008.
- Reviewer for NIH Study Section. MESH – Behavioral Mechanisms of Emotion, Stress, and Health Study Section. February 4, 2008.
- Reviewer for NIH Study Section. BBBP Special Emphasis Panel. June 12, 2008.

- Reviewer for the ALS Society of Canada. August 1, 2008.
- Reviewer for the Joint Research Action Project of the French Community of Belgium. February 13, 2009.
- Reviewer for NIH Challenge Grants in BBBP. June 5, 2009.
- Reviewer for NIH Challenge Grants in BDCN. June 12, 2009.
- Reviewer for Michael J. Fox Biomarker Initiative, Feb. 18, 2011.
- Special Emphasis Panel/Scientific Review Group 2011/10 ZRG1 IFCN-L, June 28-29, 2011.
- Reviewer for NIH Study Section. SMI – Sensorimotor Integration Study Section. Oct. 4, 2011.
- Reviewer for NIH Study Section Special Emphasis Panel. BBBP, Nov. 30, 2011.
- Reviewer for NIH Study Section. MFSR – Motor Function, Speech and Rehabilitation Study Section. June 22, 2012.
- Reviewer for NIH Study Section. Predict HD – Ancillary Studies G(58). August 29, 2012.
- Reviewer for NIH Study Section. Predict HD – Ancillary Studies G(58). December 17, 2012.
- Reviewer for NIH Study Section, Motor and Sensory Neuroscience, Cognition, and Perception Fellowships F02B, June 20, 2013.
- Member, Motor Function Speech and Rehabilitation (MFRS) Study Section, 2013-2017.
- Reviewer, NSF Panel for Major Research Instrumentation, 2013.
- Reviewer, VA Career Development Award Review Panel, 2013.
- Parkinson's Disease Foundation Grant Reviews, (5 total), 2014
- Michael J. Fox Foundation, MRI reviews (1 grant), 2014
- Michael J. Fox Foundation, MRI reviews (8 grants), 2014
- Ataxia Foundation (4 grants), 2014
- Udall NIH Grant Reviews (5 grants), 2014
- Parkinson's Disease Foundation Grant Reviews (5 total), 2015

- Chair, Motor Function Speech and Rehabilitation (MFRS) Study Section, 2015-2017
- Reviewer for the NINDS R35 Grants (5 grants), 2016
- Congressionally Directed Medical Research Programs, Neuroplasticity and Compensation Panel (1 grant), 2017
- NIA K76 Beeson Review Panel, January 2018
- Reviewer for NINDS Panel on K99, K01, and F32, June 2018
- Reviewer for NINDS NST-2 Panel on K99, K01, and F32, Oct 2018
- Reviewer for NINDS Parkinsonism Review Panel Dec 2018
- NIA K76 Beeson Review Panel, January 2019
- CNN Panel Feb. 2020
- NICHD R03 Panel, July 2021
- CIDH R01/R21/K Panel Feb. 9 – 10, 2022
- Special Emphasis Panel to Review LBD Program Project, Feb 23, 2023

TEACHING EXPERIENCE

Certificate:

- Certified teacher in the State of Texas.

Guest Lectures:

- *Higher Brain Function.* Lecture on research advances in Parkinson's disease and other disorders. February 21, 2014.
- *Higher Brain Function.* Lecture on research advances in Parkinson's disease and other disorders. February 21, 2012.
- *Molecular and Cellular Mechanisms of Neurodegenerative Diseases. ANAT/NEUS 525.* Lecture on Parkinson's disease for graduate course. April 23, 2009
- *Molecular and Cellular Mechanisms of Neurodegenerative Diseases. ANAT/NEUS 525.* Lecture on Parkinson's disease for graduate course. April 16, 2008
- *Techniques in Neuroimaging.* Guest lecture for a graduate class in the Department of Physical Therapy. University of Illinois at Chicago, November 16, 2004.

- *FMRI Analysis Methodology*. Guest lecture of a graduate course in the Department of Bioengineering entitled Advanced Topics in MRI. University of Illinois at Chicago, March 5, 2003.
- *Amount and Structure of Variability in Biological Systems*. School of Kinesiology Seminar Lecture, University of Illinois at Chicago, January 16, 2002.
- *The Aging Sensori-motor System: Simple and Complex Actions*. Guest lecture for an undergraduate course entitled 'Physiology of Aging'. The Pennsylvania State University, November 29, 2000.
- *Methodology in Motor Control and Learning*. Two guest lectures for an undergraduate course entitled 'Motor Control and Learning'. The Pennsylvania State University, October 18, 2000.
- *Characteristics of Parkinson's Disease*. Guest lecture for an undergraduate course on 'Behavioral Aging and Disease'. The Pennsylvania State University, April 6, 2000.

Course Teaching:

Movement Disorders. Teach the 3 hour course to graduate students in APK and other programs. Spring 2020.

Biomechanical Instrumentation. I have co-taught 25% of this course for 2017, 2018, 2019 and the other 75% was taught by the following including either Chris Hass, Evangelos Christou, Stephen Coombes, Chris Janelle, Garrett Beatty, or Matt Terza.

Movement Neuroscience. Teach the 3 hour course to a combined class of undergraduate students in the APK program. Spring 2019.

Movement Neuroscience. Teach the 3 hour course to a combined class of undergraduate students in the APK program. Fall 2018.

Movement Disorders. Teach 3 hour course to graduate students in the APK program. Spring 2018.

Movement Neuroscience. Teach the 3 hour course to a combined class of undergraduate students in the APK program. Fall 2017.

Movement Neuroscience. Teach the 3 hour course to a combined class of undergraduate students in the APK program. Spring 2017.

Movement Neuroscience. Teach the 3 hour course to a combined class of undergraduate students in the APK program. Fall 2016.

Movement Disorders. Teach 3 hour course to graduate students in the APK program. Spring 2016.

Movement Neuroscience. Teach the 3 hour course to a combined class of undergraduate students in the APK program. Fall 2015.

Movement Disorders. Teach 3 hour course to graduate students in the APK program. Spring 2015.

Nature and Basis of Motor Performance. Teach 3 hour graduate course in the APK program. Fall 2014.

Movement Disorders. Teach 3 hour course to graduate students in the APK program. Spring 2014.

Movement Neuroscience. Teach the 3 hour course to a combined class of undergraduate and graduate students in the APK program. Fall 2013.

Movement Neuroscience. Teach the 3 hour course to a combined class of undergraduate and graduate students in the APK program. Fall 2012.

Motor Disorders KN 475. Teach the 3 hour course to students in kinesiology and neuroscience program at UIC. Spring 2011. Students rating 4.63 out of 5.0.

Movement Neuroscience KN 472. Teach the 3 hour course to students in the kinesiology program. This course is cross-listed under the Training program in Neuroscience at UIC. Spring 2010. Students rating 4.72 out of 5.0.

Movement Neuroscience KN 472. Teach the 3 hour course to students in the kinesiology program. This course is cross-listed under the Training program in Neuroscience at UIC. Fall 2009. Students rating 4.84 out of 5.0.

Current Topics in Motor Control. Coordinate a journal club forum for graduate students in the Department of Movement Sciences. The topic is motor unit recordings during gait in cerebral palsy, 2009.

Motor Disorders KN 475. Teach the 3 hour course to students in kinesiology and neuroscience program at UIC. Spring 2009. Students rating 4.65 out of 5.0.

Movement Neuroscience KN 472. Teach the 3 hour course to students in the movement science department. This course is cross-listed under the Training program in Neuroscience at UIC. Fall 2008. Students rating 4.65 out of 5.0.

Motor Disorders MVSC 481. Teach the 3 hour course to students in kinesiology and neuroscience program at UIC. Spring 2008. Students rating 4.68 out of 5.0

Current Topics in Motor Control. Coordinate a journal club forum for graduate students in the Department of Movement Sciences. The topic is using eeg to study motor behavior, 2008.

HN 595. Organize seminar series in Kinesiology and Nutrition. This is a 1 hour credit to PhD students in the program.

fMRI: Sensory and Motor Systems NEUS 589. Teach section on using fMRI to study the physiology of the motor system in Dr. Keith Thulborn's graduate course. Fall 2007. This is a 3 hour credit course.

Movement Neuroscience MVSC 472. Teach the 3 hour course to students in the movement science department. This course is cross-listed under the Training program in Neuroscience at UIC. Fall 2007. Students rating 4.75 out of 5.0.

Movement Neuroscience MVSC 472. Teach the 3 hour course to students in the movement science department. This course is cross-listed under the Training program in Neuroscience at UIC. Fall 2006. Students rating 4.63 out of 5.0.

Functional MR Imaging NEUS 588. Teach section on imaging of the motor system in Dr. Keith Thulborn's graduate course of MRI and fMRI. Fall 2006. This is a 3 hour credit course.

Current Topics in Motor Control. Coordinate a journal club forum for graduate students in the Department of Movement Sciences. The topic is reflex and sensory-motor integration, 2007.

Current Topics in Motor Control. Coordinate a journal club forum for graduate students in the Department of Movement Sciences. The topic is locomotion and postural control, 2006.

Current Topics in Motor Control. Coordinate a journal club forum for graduate students in the Department of Movement Sciences. The topic is locomotion and postural control, 2005.

Current Topics in Motor Control. Coordinate a journal club forum for graduate students in the Department of Movement Sciences. The topic is sensorimotor behavior in humans and animals, 2004.

Tools for fMRI. Team taught a course with Drs. Keith Thulborn, Deborah Little, and Joe Zou in the Department of Physiology and Biophysics, University of Illinois at Chicago, 2003.

Mentoring:

Junior Faculty:

Chris Hess, MD University of Florida Neurology
Dr. Hess received a KL2 award from the UF CTSI and I am a co-mentor on the award.

Aparna Shukla, MD University of Florida Neurology
Dr. Shukla received a KL2 award from the CTSI at UF in which I am a co-mentor on the award. The focus of her work is on the effects of paired pulse TMS in patients with dystonia who have had DBS. Dr. Shukla then received a K23 and I am the primary mentor of the award.

Matthew Mosconi, PhD UT Southwestern Medical Center
Dr. Mosconi had a K award to study motor development and motor control in autism.

Yenisel Cruz-Almeida, PhD University of Florida
Co-mentor her K award to study fMRI and pain regulation in older adults.

Current Postdoctoral Fellows:

Bradley Wilkes, PhD University of Florida

Brad completed his PhD in 2018 with Mark Lewis in Psychiatry. He was hired to work on the essential tremor projects. He has submitted a F32 to NIH and will learn in the summer how this is score. Brad is also working on the mouse imaging studies in dystonia.

Dave Arpin, PhD University of Nebraska

Dave completed his PhD in 2014 with Max Kurz. Dave is an expert in using MEG and neurostimulation to study motor control. He is working on projects related to functional MRI in Parkinson's disease.

Wei-en Wang, PhD University of Florida

Wei-en is a postdoc working in the area of neuroimaging and biomarkers for Alzheimer's Disease. Dr. Wang completed a PhD using EEG to study acute pain. Wei-en is now the lead analysis person for the 1Florida Alzheimer's Disease Research Center.

Previous Postdoctoral Fellows:

Derek Archer, PhD University of Florida

Derek began his post-doc in August 2016 and is working on diffusion tractography. He is applying these methods to studies in essential tremor and Parkinson's disease. He is performing studies of fMRI in essential tremor. Derek is a research assistant professor at Vanderbilt.

Edward Ofori, PhD University of Illinois

Edward joined the lab in Fall 2012. He is performing studies using EEG, fMRI, and DTI in healthy people and movement disorders. He was promoted to Research Assistant Professor in 2016. He is on the faculty at Arizona State University.

Roxana Burciu, PhD University of Duisburg

Roxana joined the lab in Fall 2013. Roxana works on pharmacological studies of dystonia and Parkinson's disease. She was promoted to Research Assistant Professor in 2016. She is on the faculty at University of Delaware.

Arnab Roy, PhD University of Binghamton

Arnab began in July 2016 and is working on EEG data processing methods. He is involved in numerous projects that revolve around EEG including pain and movement disorders. He is currently a staff scientist at Geisinger.

Nyeonju Kang, PhD University of Florida

NJ has been with the lab since October 2015. He was hired to work on projects related to ataxia. He is performing motor unit physiology, fMRI, and structural imaging studies in spinocerebellar ataxia type 6. His work is also examining cervical dystonia in a collaboration with Dr. Chris Hess. Nyeonju has taken a faculty position at Incheon National University in Korea.

Peggy Joni Planetta, PhD Wildried Laurier University

Joni began her postdoctoral training in October 2009. She is currently focused on understanding how Parkinson's disease affects the selection of force. She is using fMRI in early stage, drug naïve Parkinson's disease, multiple systems atrophy, and control subjects. Joni is working as a research assistant with Toronto Medical Center.

Priyank Shukla, PhD University of Florida

Priyank joined the lab in Summer 2012. He performs data analysis for neuroimaging data. Priyank is completing his MBA.

Kristina Neely, PhD University of Western Ontario

Kristina joined the lab in April 2010. She focused on studies using fMRI to examine visually-guided control of grip force in healthy individuals and essential tremor. She received an F32 from NIH and took a faculty position at Pennsylvania State University.

Stephen Coombes, PhD University of Florida

Steve began his postdoctoral training in July 2008. He is currently focused on understanding how visual stimuli alter force variability, and linking this behavioral change to understand how different brain circuits process error information. He took a faculty position at the University of Florida.

Janey Prodoehl, PT, PhD University of Illinois at Chicago

Janey completed her PhD in 2005 on motor behavior deficits in dystonia. Since this time she has been a postdoctoral fellow working with in my laboratory. She is focused on the role of the basal ganglia in grasping, and how the basal ganglia are impaired in Parkinson's disease. She is now associate professor at Midwestern University in Chicago.

Hong Yu, PhD University of Illinois at Chicago

Dr. Yu was in the laboratory as a postdoctoral fellow from August 2005 – February 2008. She is was then Neurologist at University of Texas Southwestern Medical School in Austin, TX. She is now completing an electroencephalography fellowship.

Molly Sturman, PT, PhD University of Illinois at Chicago

Co-mentor to Dr. Sturman when she was a PhD student from 2001-2006. Dr. Sturman is currently a post-doc in the laboratory and I co-mentor her with Dr. Corcos. She is currently examining the long-term effects of DBS of the subthalamic nucleus on motor control in Parkinson's disease, 2001-2009. Molly is a lecturer at Indiana University/Purdue University Department of Physical Therapy.

Matthew Mosconi, PhD University of North Carolina

Matthew is co-mentored by myself and Dr. John Sweeney. From 2009-2011 he is supported by a post doc fellowship from the Autism Speaks Foundation. Matthew is currently an Assistant Professor who obtained an NIH K-award in which Dr. Vaillancourt was a co-mentor. He has taken a faculty position at University of Texas Southwestern Medical Center and since then moved to Kansas Univ.

Current PhD Students:

Rob Chen, BS. PhD student in Biomedical Engineering

Adury Rabaya, MS. PhD student in Applied Physiology and Kinesiology.

Emily Tobin, BS. PhD student in Applied Physiology and Kinesiology.

Previous PhD Students:

Winston Chu, BS. PhD student in Biomedical Engineering. Mr. Chu is an engineer from Florida State University, and is interested in diffusion imaging and other imaging modalities.

Trina Mitchell, MS. PhD student working on diffusion and functional imaging in Applied Physiology and Kinesiology.

Jesse Desimone, BS, MS. PhD Student in Applied Physiology and Kinesiology. Jesse is working on animal models and imaging in PD and dystonia. Jesse is in a post-doc at UT Southwestern Medical Center.

Jae Woo Chung, BS, MS. PhD student in Applied Physiology and Kinesiology
Mr. Chung is focused EEG studies of upper limb motor control. Jae completed his PhD in 2017 and accepted a post doc at University of Minnesota.

Ajay Kurani, BS. PhD student in Bioengineering
Mr. Kurani is worked on resting state fMRI and diffusion tensor imaging in Parkinson's disease. He accepted a position at the University of Pittsburg working on the 7T and 3T systems for epilepsy. Ajay is now at Northwestern University as a Staff Research Scientist in functional neuroimaging.

Cynthia Poon, B.S, PhD student in Kinesiology
Ms. Poon used high resolution EEG to study the transition in the brain from using visual information to control force to when the brain no longer uses visual information to control force. She went to conduct a post doc on studies of strength training and tremor in Parkinson's disease.

Suman Mohanty, B.S. PhD student in Bioengineering
Ms. Moharty is working on projects in collaboration with John Sweeney and Matthew Mosconi to examine force variability in individuals with autism, 2007-2011. She is now a postdoc at UT Southwestern Medical Center in Dallas, TX.

Mary Mayka, PhD, Bioengineering, University of Illinois at Chicago
Co-advisor to Dr. Mayka. Mentored her on projects related to fMRI and cortical anatomy. She completed her dissertation work in bioengineering, 2001-2006. She is a MR Specialist at GE Healthcare.

Matthew Spraker, PhD, Bioengineering, University of Illinois at Chicago
Matthew joined the laboratory in the Fall of 2005. His thesis research project used fMRI to determine how each basal ganglia nucleus scales with the level of force production in health and Parkinson's disease. He completed Medical School at UIC is a completed a residency in radiation oncology.

Current Masters Students:
None.

Previous Masters Students:
Ajay Kurani, PhD, Bioengineering, University of Illinois at Chicago
Ajay joined the laboratory in Fall 2009. His thesis research used voxel-based statistics of T1 weighted and DTI datasets to compare patients with Parkinson's disease with control subjects.

Previous Undergraduate Students:
Daniel Lai, Applied Physiology and Kinesiology, UF
Matthew Fillingim, Psychology UF

Abigail Hatcher, Psychology UF
Morgan Andreoni, Applied Physiology and Kinesiology, UF
Soo Ha, Applied Physiology and Kinesiology, UF
Roccio Brito, Applied Physiology and Kinesiology, UF
Marina Magalhaes, Nursing UF
Katherine Batecholor, Rehabilitation Sciences UF
Johanna McCracken, Applied Physiology and Kinesiology, UF
Kelsey Deidrick, Molecular Biology UF
Carol Marie Fraley, Molecular Biology UF
Jaime Luskin, Applied Physiology and Kinesiology UF
Brandon Stillword, Chemical Engineering UF
Daniel Schonfeld, Psychology UF
Jae Gatchalian, Kinesiology UIC, attended pharmacy school at UIC
Jessie Kappel, Bioengineering UIC,
Calvin Young, Kinesiology UIC, medical school at UIC
Ivy Abraham, Illinois Math and Science Academy, attended medical school at UIC
Abe Lee, Illinois Math and Science Academy.
Jhoti Shenai, Bioengineering UIC.
Jim Gibson, Kinesiology UIC
Amanda Corcos, High School Student from Oak Park, IL. Chemistry PhD at Wisconsin

EDITORIAL BOARD

- Journal of Motor Behavior – Consulting Editor, January 2005 – present
- Movement Disorders – Associate Editor (1 of 8); Editorial Board member since January 2015 - present

REVIEWER AD HOC (2001-present)

- Brain
- Journal of Neuroscience
- Lancet Neurology
- Neurology
- Journal of Neurophysiology
- Cerebral Cortex
- Neurobiology of Aging
- Journal of Cognitive Neuroscience
- European Journal of Neuroscience
- Experimental Neurology
- Movement Disorders
- NeuroImage
- Journal of Neurology, Neurosurgery, and Psychiatry
- Journal of Applied Physiology
- Human Brain Mapping
- Public Library of Science
- Frontiers of Neuroscience
- Experimental Brain Research

- European Journal of Applied Physiology
- Journal of Motor Behavior
- Neuroscience Letters
- Motor Control
- Clinical Neurophysiology
- Human Movement Science
- Neuroscience Research
- Journal of Psychophysiology
- Brain Research

INVITED PRESENTATIONS

- Why Do We Need a Standardized MRI Protocol for Movement Disorders? Movement Disorders Society, September 19, 2021.
- A Journey from a Voxel to a Clinical Application for Parkinsonism. Grand Rounds, University of Chicago. March 11, 2021.
- A Journey from a Voxel to a Clinical Application for Parkinsonism. AI Initiative Lecture University of Florida. March 10, 2021.
- Neuroimaging Applications for Dystonia. Neurology at Duke University. December 11, 2020.
- A Journey from a Voxel to a Clinical Application for Parkinsonism. Duke University Neurology Grand Rounds. September 23, 2020.
- Free-water Imaging in Parkinsonism: From a Voxel to a Clinical Application. Brigham Young University. February 19, 2020.
- AID-P: Automated Imaging Differentiation of Parkinsonism. PSP/Lewy Body Disease Think Tank VII, University of Florida, April 26, 2019.
- Free-Water Imaging in Parkinsonism: From a Voxel to Clinical Application. University of Delaware, April 19, 2019.
- Feedback and Essential Tremor Physiology. University College of London with John Rothwell, June 27, 2018.
- Feedback and Essential Tremor Physiology. European Sport Science Congress, Dublin Ireland. July 7, 2018.
- Neuroimaging Biomarker for Parkinson's Disease. Progress in Motor Control Conference at Pennsylvania State University, July 24, 2018.
- A Paradigm Shift for Clinical Trials in Parkinson's Disease. Ohio University, March 20, 2018.

- Neuroimaging in Parkinson's Disease and Parkinsonism. Sanofi, Boston, February 15, 2018.
- Neuroimaging in Parkinson's Disease and Parkinsonism. Movement Disorders Society Neuroimaging Meeting in Calgary, Canada, June 9, 2017.
- *A paradigm shift for disease-modifying therapies using imaging.* World Without Parkinson's 200th Anniversary Conference for the Parkinson's Foundation. New York NY. June 1, 2017.
- *Neuroimaging in Parkinsonism: Moving Toward Use in Clinical Trials.* Connecting Structure and Chemistry to Brain Function with MRI/S. McKnight Brain Institute, Gainesville, FL. March 7, 2017.
- *How Spatial Visual Information Exacerbates Tremor: From Brain to Motor Unit to Behavior.* University of Florida, Physiology and Functional Genomics, April 10, 2017.
- *How Spatial Visual Information Exacerbates Tremor: From Brain to Motor Unit to Behavior.* Northeastern University, March 2017.
- *Progression Markers of Parkinsonism.* University of Kansas Medical School, Kansas City, November, 2016. 30 people attended.
- *Biomarkers of Progression in Parkinsonism.* World PD Congress, Portland, Oregon, September, 2016.
- *An Insider View: The Future of Neuroimaging in Parkinson's.* Webinar for the National Parkinson's Foundation. > 1350 people tuned in.
- *Free-water accumulation in Parkinson's disease and Parkinsonism.* University of Buffalo. Buffalo, NY, February 2016.
- *Free-water accumulation in Parkinson's disease and Parkinsonism.* National Parkinson Foundation. Charlotte, NC, February 2016.
- *Free-water accumulation in Parkinson's disease and Parkinsonism.* Department of Neuroscience, University of Florida. Gainesville, FL January 2016.
- *Progression Markers of Parkinson's Disease.* Baton Rouge Neuromedical Center and Pennington Biomedical Research Center. July, 2015.
- *Corticostriatal and Corticocerebellar Function and Connectivity in Parkinson's Disease.* Society for the Neural Control of Movement, Panel Presentation. April, 2015.
- *Novel Imaging Markers for PSP and PD.* UF PSP ThinkTank 2014. Gainesville, FL.
- *fMRI in Parkinson's Disease as a Biomarker.* University of Pittsburgh, Pittsburgh, PA, November 21, 2013.

- *Advanced MRI Methods to Assess Parkinson's Disease.* University of Colorado, Boulder, CO, April 8, 2013.
- *Advanced MRI Techniques in Parkinson's Disease, Atypical Parkinsonism, and Essential Tremor.* NINDS meeting focused on moving functional imaging into the clinic. February 25, 2013.
- *Novel MRI Methods to Assess Parkinson's Disease.* TEVA Canada Innovations, Chicago, IL, February 23, 2013.
- *Role of the Cortex in Visually-Guided Motor Control.* UT Southwestern Autism Center. University of Texas Southwestern Medical Center at Dallas, Dallas, TX, July 2, 2012.
- *Structural and Functional Neuroimaging in Movement Disorders.* Center for Brain Health. University of Texas at Dallas, Dallas, TX, May 9, 2012.
- *Structural and Functional Neuroimaging in Movement Disorders.* Department of Physical Therapy. University of Florida, Gainesville, FL, April 25, 2012.
- *Distinguishing PSP from other Parkinsonisms using Imaging Biomarkers.* PSP Symposium/ThinkTank. University of Florida, Gainesville, FL, February 17, 2012.
- *Neuroimaging Biomarkers for Parkinson's Disease and Parkinsonism.* Department of Biomedical Engineering, University of Florida. Gainesville, FA, February 6, 2012.
- *Diffusion Tensor Imaging in PD and Atypical Parkinsonism.* Michael J. Fox Foundation, New York, NY, Jan. 12, 2012.
- *Role of the Basal Ganglia and Cerebellum in Grip Force Control.* 8th Annual Motor Control Summer School. June 2011.
- *Diffusion Tensor Imaging in Parkinson's Disease and Atypical Parkinsonism.* Diffusion Imaging Workshop, VA/UCSF, June 2011.
- *Neuroimaging Biomarkers for Parkinson's Disease.* Applied Physiology and Kinesiology, University of Florida. Gainesville, FA, February 24, 2011.
- *Diffusion Tensor Imaging in PD and Atypical Parkinsonism.* Michael J. Fox Foundation, New York, NY, Jan. 20, 2011.
- *Dynamics of tremor in Parkinson's Disease.* 29th International Congress of Clinical Neurophysiology, Kobe, Japan, October 28, 2010.
- *Long-term effects of deep brain stimulation for Parkinson's disease.* 29th International Congress of Clinical Neurophysiology, Kobe, Japan, November 1, 2010.
- *MRI Techniques for Parkinson's Disease and Parkinsonism.* Michael J. Fox Foundation Therapeutics Conference. New York City, NY, October 6, 2010.

- *New Imaging Modalities to Monitor PD.* 2nd World Parkinson Congress, Glasgow, Scotland, UK, September 29, 2010.
- *Role of the Cortex and Cerebellum in Visually-Guided Motor Behavior.* Pennsylvania State University. State College, PA, September 17, 2010.
- *MRI Techniques for Parkinson's Disease and Parkinsonism.* Pennsylvania State University. State College, PA, September 16, 2010.
- *Diffusion Tensor Imaging in Parkinson's Disease.* 14th International Congress of Parkinson's disease and Movement Disorders. Buenos Aires, Argentina, June 13, 2010.
- *Role of the Cortex and Cerebellum in Visually-Guided Motor Behavior.* Department of Ophthalmology, University of Illinois at Chicago, June 11, 2010.
- *MRI Techniques for Parkinson's Disease and Parkinsonism.* NINDS Parkinson's Disease Biomarker Strategic Planning Workshop. Washington, DC, May 17, 2010.
- *Structural and Functional Neuroimaging in Parkinson's Disease.* Nebraska Medical Center. University of Nebraska, Omaha, Nebraska, Jan. 29, 2010.
- *Structural and Functional Neuroimaging in Parkinson's Disease.* 7th Annual Meeting of Progress in Motor Control, Marseille, France, July 23, 2009.
- *Role of the Basal Ganglia in Grasping.* Dept. of Human Physiology, University of Oregon, April 17, 2009.
- *Broetz Lecture: Diffusion Tensor Imaging and Functional Brain Imaging in Parkinson's Disease.* Department of Biomedical Engineering, April 4, 2009.
- *Basal Ganglia and Motor Control: Linking Nucleus, Networks, and Behavior.* School of Kinesiology, University of Michigan, January 8, 2009.
- *Structural and Functional Neuroimaging.* Tutorial presented at the meeting of the North American Congress on Biomechanics. Ann Arbor, Michigan. Aug. 5, 2008.
- *Grasping the Basal Ganglia.* Dept. of Health and Kinesiology, Texas A&M University. April 4, 2008.
- *Grasping the Basal Ganglia.* Dept. of Kinesiology and Nutrition, University of Illinois at Chicago. March 7, 2008.
- *Dynamics of Physiological and Pathological Tremor.* Dept. of Health and Human Performance, University of Houston, August 6, 2007.
- *Basal Ganglia and Human Motor Control: Linking Nucleus, Networks, and Behavior.* Dept. of Psychology, University of Illinois at Chicago, April 30, 2007.
- *Basal Ganglia and Human Motor Control: Linking Nucleus, Networks, and Behavior.* Behavioral Neuroscience Seminar, University of Illinois at Chicago, March 23, 2007.

- *Physiological and Pathological Tremor: Effects of medication and deep brain stimulation.* Department of Neurology and Rehabilitation, University of Illinois at Chicago, September 28, 2006.
- *Scaling and Sequencing in the Human Basal Ganglia.* Department of Psychiatry, University of Texas Southwestern Medical Center, January 9, 2006.
- *Anecdotes of Survival and Success.* Medical Rehabilitation Training Workshop, Sponsored by NICHD and NINDS, Washington, DC, December 5, 2005.
- *From Visual Information to Motor Cortex: Behavioral and Brain Imaging Studies.* Chicago Land PTHMS Research Seminar Series, Northwestern University, October 18, 2004.
- *fMRI Isometrics in Parkinson's Disease.* Center for Magnetic Resonance Research, University of Illinois at Chicago, September 21, 2004.
- *Movement Speed and the Basal Ganglia.* Department of Movement Sciences, University of Illinois at Chicago, September 17, 2004.
- *Basal Ganglia and Movement Speed.* Department of Neurobiology, University of Alabama at Birmingham, July 8, 2004.
- *Basal Ganglia and Movement Speed.* Department of Physical Therapy, University of Alabama at Birmingham, May 10, 2004.
- *Physiology and Pathophysiology of Human Motor Control.* Department of Physical Therapy, University of Texas Southwestern Medical Center at Dallas, October 2, 2003.
- *Functional Processes Engaged in the Visual and Non-Visual Control of Force.* Chicagoland Symposium: Functional MRI of the Brain in Health and Disease, University of Illinois at Chicago, April 4, 2003.
- *Time and Frequency Structure of Tremor in Aging and Parkinson's Disease.* Department of Physical Therapy, University of Illinois at Chicago, December 6, 2001.
- *A Paradigm to Study the Neuroanatomical Pathways Related to Force Control.* Symposium on the 'Neural Control of Movement in Stroke', University of Illinois at Chicago, September 26, 2001.
- *Force Tremor Regularity in Parkinson's Disease.* The Gerontology Center, The Pennsylvania State University, November 15, 2000.
- *Time and Frequency Structure of Tremor in Parkinson's Disease.* Action Club, The Pennsylvania State University, April 21, 2000.

PROFESSIONAL DEVELOPMENT

- MDS Neuroimaging Study Group, 2015 – present
- Essential Tremor Meeting, Washington, DC NINDS Sponsored, 2015
- UF Science Academy, University of Florida Summer 2013.
- NINDS Sponsored Parkinson's Disease Biomarker Strategic Planning Workshop, Washington, DC, May 16-18, 2010. Invited Panelist.
- NIH Sponsored Workshop on Essential Tremor. Washington DC, October 20-21, 2005.
- Reprogramming the Human Brain. Symposium and workshop focused on translating brain plasticity research into clinical practice. University of Texas Southwestern Medical Center at Dallas, April 7-8, 2005, Dallas, TX
- Frontiers in Biomedical Imaging Symposium: The MRI Nobel Celebration and Future Directions, University of Illinois, November 8-9, 2004, Urbana, IL.
- NICHD/NINDS Grant Writing Workshop. Supported by NIH to attend the two day meeting in Washington, DC, November, 2003.
- Functional Magnetic Resonance Imaging: An Introductory Course. Medical College of Wisconsin, May 9-11, 2002, Milwaukee, Wisconsin.
- Nonlinear Dynamics in Medicine. Society for Chaos Theory in Psychology and Life Sciences, July 20-23, 2000, Philadelphia, Pennsylvania.
- Graduate Student Representative for The Awards Committee at Pennsylvania State University, 2000-2001.

CONFERENCE PRESENTATIONS

- Wang, Z., Coombes, S.A., Vaillancourt, D.E., Shirley, D.J., Valcante, G., Orlando, A-M., Romero, R.A., Karmakar, B., Wagle Shukla, A. A., Mosconi, M.W. Atypical cortical and subcortical brain activation associated with precision visuomotor control in autistic adults. Society for Neuroscience (SfN) annual conference (November 2021). Chicago, IL.
- Unruh, K., Martin, L., Magnon, G., Vaillancourt, D., Sweeney, J., & Mosconi, M. (May 2019) Functional Brain Mechanisms of Sensorimotor Control in Individuals with Autism Spectrum Disorder. 2019 International Meeting for Autism Research. Montreal, QC, Canada.
- Chu, W. T., Desimone, J.C., Riffe, C.J., Liu, H., Chakrabarty, P., Giasson, B.I., Vedam-Mai, V., Vaillancourt, D.E. (2019). Longitudinal magnetic resonance imaging of an alpha-synuclein pathology mouse model. Poster presented at the Society for Neuroscience Annual Meeting, Chicago, IL.

- J. C. DeSimone, H. Liu, Y. Liu, Y. Li, D. E. Vaillancourt. Loss of D2R-Expressing Torsin-A Impairs Sensory-Evoked Brain Activation and Connectivity in a Mouse Model of Dystonia. Society for Neuroscience, Chicago, IL, USA, October 19-23, 2019. (Poster)
- T. Mitchell, E. Herschel, D. B. Archer, W. T. Chu, S. A. Coombes, S. Lai, B. J. Wilkes, N. R. McFarland, M. S. Okun, M. L. Black, T. Simuni, C. Comella, T. Xie, H. Li, T. B. Parrish, A. Kurani, D. M. Corcos, D. E. Vaillancourt. Neurite Orientation Dispersion and Density Imaging (NODDI) and Free-water Imaging in Parkinsonism. Society for Neuroscience, Chicago, IL, USA, October 19-23, 2019. (Poster)
- Chu, W. T., Desimone, J.C., Liu, H., Febo, M., Vedam-Mai, V., Chakrabarty, P., Giasson, B.I., Vaillancourt, D.E. (2018). Neurite orientation dispersion and density imaging of an alpha-synuclein pathology mouse model. Poster presented at the NSF MagLab Site Visit, Tallahassee, FL.
- Chu, W. T., Archer, D. B., Burcui, R. G., Lai, S., Wu, S., Okun, M. S., McFarland, N. R., Vaillancourt, D. E. (2018). Reproducibility of free water imaging in Parkinson's disease. Poster presented at the Society for Neuroscience Annual Meeting, San Diego, Ca.
- Chu, W. T., Archer, D. B., Burcui, R. G., Lai, S., Wu, S., Okun, M. S., McFarland, N. R., Vaillancourt, D. E. (2018). Test-retest reproducibility of free-water in Parkinson's disease. Poster presented at the Biomedical Engineering Society Annual Meeting, Atlanta, Ga.
- Chu, W. T., Archer, D. B., Burcui, R. G., Lai, S., Wu, S., Okun, M. S., McFarland, N. R., Vaillancourt, D. E. (2018). Test-retest reproducibility of free-water in Parkinson's disease. Poster presented at the Southeastern Neurodegenerative Conference, Orlando, FL.
- Chu, W. T., Archer, D. B., McFarland, N. R., Okun, M. S., Lai, S., and Vaillancourt, D. E. Changes in free-water along motor tracts in Parkinson's disease and atypical parkinsonian syndromes. The PSP/Lewy Body Think Tank (2017), Gainesville, Florida.
- Chu, W. T., Archer, D. B., McFarland, N. R., Okun, M. S., Lai, S., and Vaillancourt, D. E. Changes in free-water along motor tracts in Parkinson's disease and atypical parkinsonian syndromes. The Annual Meeting of the Society for Neuroscience (2017), Washington, District of Columbia.
- Chu, W. T., Archer, D. B., McFarland, N. R., Okun, M. S., Lai, S., and Vaillancourt, D. E. Changes in free-water along motor tracts in Parkinson's disease and atypical parkinsonian syndromes. The 11th Annual Meeting of the Progress in Motor Control (2017), Miami, Florida.
- Chu, W. T., Archer, D. B., McFarland, N. R., Okun, M. S., Lai, S., and Vaillancourt, D. E. Changes in free-water along motor tracts in Parkinson's disease and atypical parkinsonian syndromes. The 6th Annual Pruitt Research Day (2017), Gainesville, Florida.
- Archer, D.B., Chu, W.T., Chung, J.W., Burciu, R.G., Coombes, S.A., Shukla A.W., Vaillancourt, D.E. Functional activity within the visuomotor system predicts severity of

essential tremor. Annual Meeting of the Society for Neuroscience (2017), Washington DC, USA.

- DeSimone J. C., Pappas S. S., Febo M., Burciu R. G., Shukla P., Colon-Perez L. M., Dauer W. T., Vaillancourt D. E. Forebrain knock-out of torsinA reduces striatal free-water and impairs whole-brain functional connectivity in a symptomatic mouse model of DYT1 dystonia. Annual Meeting for the Society of Neuroscience (2017), Washington, DC, USA.
- Burciu R.G., Ofori E, Archer D.B., Wu S.S., Pasternak O, Okun M.S., Vaillancourt D.E. An imaging progression marker for Parkinson's disease: a 4-year multicentre longitudinal study of substantia nigra free-water. Annual Meeting of the International Society for Magnetic Resonance in Medicine (2017), Honolulu, HI, U.S.A.
- Vaillancourt D.E., Burciu R.G., Shukla P, Nalls M, Singleton A, Okun M.S., Seidler R.D. Parkinson's disease risk genetic polymorphisms are associated with imaging markers of the putamen and substantia nigra in healthy adults. Annual Meeting of the Society for Neuroscience (2017), Washington D.C., U.S.A.
- Chung JW, Burciu RG, Ofori E, Shukla P, Okun MS, Hess CW, Vaillancourt DE. Movement-related beta-band desynchronization in supplementary motor area is reduced by anti-parkinsonian medication and relates to the velocity of upper limb movement in Parkinson's disease. Annual Meeting of the Society for Neuroscience (2017), Washington DC, US.
- Chung, J., Burciu, R., Ofori, E., Shukla, P., Okun, M., Hess, C., & Vaillancourt, D. (August 2017) Desynchronization in the supplementary motor area is reduced by dopaminergic medication and relates to the velocity of upper limb movement in Parkinson's disease. 2017 Progress in Motor Control XI, Miami, FL, USA
- Kang, N., Vaillancourt, D. E., Casamento-Moran, A., Subramony, S. H., Christou, E. A. Anterior cerebellar degeneration impairs feedforward control in spinocerebellar ataxia type 6. The 46th Society for Neuroscience Annual Meeting (2016), San Diego, CA
- Kang, N., Subramony, S. H., Christou, E. A., Vaillancourt, D. E. Task-functional MRI and disease severity in individuals with spinocerebellar ataxia 6. The 68th Annual Meeting of American Academy of Neurology (2016), Vancouver, BC, Canada.
- Burciu RG, Ofori E, Shukla P, Pasternak O, Chung JW, DeSimone J, Hess CW, McFarland NR, Wagle Shukla A, Okun MS, Vaillancourt DE. Motor-related brain changes associated with acute administration of trihexyphenidyl in patients with cervical dystonia. 20th International Congress of Parkinson's Disease and Movement Disorders (2016). Berlin, Germany.
- Burciu RG, Shukla P, Ofori E, Chung JW, Hess CW, McFarland NR, Wagle Shukla A, Okun MS, Vaillancourt DE. Functional and free-water diffusion MR imaging following a single low dose of trihexyphenidyl in patients with cervical dystonia. Annual Meeting of the Society for Neuroscience (2016). San Diego, CA.

- Chung JW, Burciu RG, Ofori E, Shukla P, Okun MS, Hess CW, Vaillancourt DE. Free-water diffusion MRI and BOLD imaging in Parkinson's disease patients tested OFF and ON antiparkinsonian medication. Annual Meeting of the Society for Neuroscience (2016) San Diego, CA.
- Christou, E.A., Casamento-Moran, A., Lodha, N., Chen, Y-T., Kwon, M., Snyder, A., Stephenson, J.B., Subramony, S., Vaillancourt, D.E. Motor unit activity and functional ability in spinocerebellar ataxia 6. Combined Sections APTP (2016). Anaheim, CA.
- DeSimone, J.C., Febo, M., Shukla, P., Ofori, E., Colon-Perez, L., Li, Y., Vaillancourt, D.E. (November 2016) In vivo imaging reveals impaired connectivity across cortical and subcortical networks in a mouse model of DYT1 dystonia. Annual Meeting for the Society of Neuroscience. San Diego, CA, USA.
- Chung, JW., Ofori, E., Hess, C., Vaillancourt, D.E.,. Visual Gain Reduces Movement Error by Enhancing Beta-band Desynchronization in the Sensorimotor Cortex. Neural Control of Movement (2015). Charleston, SC
- Burciu R.G., Ofori, E., Shukla, P., Pasternak, O., Chung, J.W., McFarland, N.R., Okun, M.S., Vaillancourt, D.E. In vivo nigrostriatal changes associated with MAO-B inhibitor therapy in Parkinson's disease. Society for Neuroscience (2015). Chicago, IL.
- Burciu R.G., Chung J.W., Shukla, P., Ofori, E., McFarland, N.R., Okun, M.S., Vaillancourt, D.E. Longitudinal changes in basal ganglia and cortex using task-based fMRI in early Parkinson's disease. Society for Neuroscience (2015). Chicago, IL.
- Kurani, A.S., Burciu R.G., Seidler, R.D., Okun, M.S., McFarland, N.R., Vaillancourt, D.E.. Striatal – Motor Cortex Functional Connectivity in Moderate PD and PSP. Society for Neuroscience (2015). Chicago, IL.
- Mosconi, M.W., Coombes, S.A., Schmitt, L., Magnon, G., Vaillancourt, D.E., Sweeney, J.A. Cortico-cerebellar dysfunctions associated with visuomotor abnormalities in autism spectrum disorder vary according to the quality of visual feedback. International Society for Autism Research, (2014), Salt Lake City, Utah.
- Mosconi M.W., Vaillancourt D.E., Sweeney J.A. Cerebellar alterations underlying visuomotor deficits in autism. International Meeting for Autism Research (IMFAR), (2015). Salt Lake City, UT.
- Burciu, R.G., Shukla, P., Ofori, E.O, Snyder, A.F., Planetta, P.J., Hass, C.J., Okun, M.S., McFarland, N.R., Vaillancourt, D.E., Bimanual dexterity and gait relate to functional and structural brain differences between progressive supranuclear palsy and Parkinson's disease. (2014). Society for Neuroscience, Washington, DC.
- Ofori, E., Pasternak, O., Planetta, P.J., Burciu, R.G., Snyder, A.F., Febo, M., Golde, T.E., Okun, M.S., Vaillancourt, D.E. (2014). Increased extracellular free-water in the substantia nigra of Parkinson's disease. Society for Neuroscience, Washington, DC.
- R. G. Burciu, P. Shukla, E. Ofori, A. F. Snyder, P. J. Planetta, C. J. Hass, M. S. Okun, N. R. McFarland, D. E. Vaillancourt. Functional and macrostructural anatomy of

progressive supranuclear palsy and Parkinson's disease. 18th International Congress of Parkinson's Disease and Movement Disorders, (2014), Stockholm, Sweden.

- P. J. Planetta, A. S. Kurani, P. Shukla, R. G. Burciu, J. Prodoehl, D. M. Corcos, C. L. Comella, N. R. McFarland, M. S. Okun, D. E. Vaillancourt. Functional and structural MRI in Parkinson's disease and multiple system atrophy. 18th International Congress of Parkinson's Disease and Movement Disorders, (2014), Stockholm, Sweden.
- K. A. Neely, A. S. Kurani, P. Shukla, R. G. Burciu, A. W. Shukla, J. G. Goldman, D. M. Corcos, M. S. Okun, D. E. Vaillancourt. Increased motor variability in essential tremor and abnormal brain activity in the cerebellar-thalamo-cortical circuit. 18th International Congress of Parkinson's Disease and Movement Disorders, (2014), Stockholm, Sweden.
- Morishita, T., Okun, M.S., Archer, D.B., Coombes, S.A., Hassan, A., Haq, I.U., Foote, K.D., Vaillancourt, D.E.. Smile Without Mirth Induced by Deep Brain Stimulation: A Diffusion Tractography Study. American Academy of Neurology, (2013), Philadelphia, PA.
- Kwon, M., Chen, Y-T., Snyder, A., Alford, A.A., Solis, D.W., Geevarughese, S.S., Vaillancourt, D.E., Subramony, S.H., Christou E.A. Spinocerebellar ataxia patients exhibit altered activation of tibialis anterior motor units and impaired ankle force control. Society for Neuroscience, (2013), San Diego, CA.
- Chen, Y-T., Kwon, M., Zaidi, Z., Alford, A., Synder, A., Subramony, S.H., Vaillancourt D.E., Christou, E.A. Force but not time control is impaired in patients with spinocerebellar ataxia during fast ankle goal-directed contractions. Society for Neuroscience, (2013), San Diego, CA.
- Mosconi, M.W., Vaillancourt, D.E., Mohanty, S., Schmitt, L., Greene, R., Sweeney, J.A. Sensory and motor mechanisms underlying impaired fine motor coordination in autism spectrum disorder (ASD). Society for Neuroscience, (2013), San Diego, CA.
- Planetta, P.J., Shukla, P., Kurani, A.S., Corcos, D.M., Comella, C.L., McFarland N.R., Okun, M.S., Vaillancourt, D.E. Functional and structural neuroimaging of Parkinson's disease and the parkinsonian variant of multiple system atrophy. Society for Neuroscience, (2013), San Diego, CA.
- Kurani, A.S., Seidler, R.D., Comella, C.M., Corcos, D.M., Okun, M.S., McFarland, N.R., Vaillancourt, D.E.. STN-Cortex functional connectivity in de novo and moderate pd. Society for Neuroscience, (2013), San Diego, CA.
- Mohanty, S. Vaillancourt, D.E., Coombes, S.A., Schmitt, L., Sweeney, J.A., Mosconi, M.W. Atypical brain function underlying sensorimotor impairments in autism spectrum disorder (ASD). Society for Neuroscience, (2013), San Diego, CA.
- Mosconi M.W., Mohanty S., Schmitt L., Greene R., Vaillancourt D.E., Sweeney J.A. Feedforward and feedback control abnormalities during precision grasping implicate cerebellar dysfunction in autism spectrum disorder. American College of Neuropsychopharmacology (AsfnCNP), (2013, December). Hollywood, FL.

- Prodoehl, J., Rafferty, M., David, F.J., Poon, C., Vaillancourt, D.E., Comella, C.L., Leurgans, S., Kohrt, W.M., Corcos, D.M., Robichaud, J.A. Long-Term Exercise Improves Physical Function in Parkinson's Disease: A Two-Year Randomized Controlled Trial. Combined Sections Meeting, APTA (2014), Las Vegas, NV.
- Neely, K.A., Shukla, P., Shukla Wagle, A., Comella, C.L., Goldman, J., Corcos, D.M., Okun, M., Vaillancourt, D.E. Specific lobules of the cerebellum relate to slow (0-3 Hz) and tremulous (3-8 Hz) oscillations in force output in essential tremor. Annual Meeting of the Society for the Neural Control of Movement (2013), Puerto Rico.
- Prodoehl, J., Li, H., Planetta, P.J., Goetz, C.G., Shannon, K.M., Comella, C.L., Simuni, T., Zhou, X.J., Leurgans, S., Corcos, D.M., Vaillancourt, D.E. Multi-target diffusion tensor imaging of parkinsonism and essential tremor. Society for Neuroscience (2012), New Orleans.
- Vaillancourt, D.E., Poon, C., Coombes, S.A., Corcos, D.M., Christou, E.A. Acute adaptation to enhanced visual feedback causes transient shifts in brain activity in parietal-frontal circuits that relate to motor performance. Society for Neuroscience (2012), New Orleans.
- Alibiglou, L., Videnovic, A., Planetta, P.J., Vaillancourt, D.E., Marlin, C., & Mackinnon, C.D. Anticipatory postural adjustments in REM sleep behavior disorder and Parkinson's disease with and without freezing of gait. Society for Neuroscience (2012), New Orleans.
- Planetta, P.J., Schulze, E.T., Geary, E.K., Goldman, J.G., Corcos, D.M., Little, D.M., Vaillancourt, D.E. Thalamic projection fiber integrity in de novo Parkinson's disease. American Society of Biomechanics (2012), Gainesville, FL.
- Fox, E.J., Baweja, H.S., Kim, C., Vaillancourt, D.E., Christou, E.A. The effects of visual feedback and aging on force oscillations within 0-1Hz. American Society of Biomechanics (2012), Gainesville, FL.
- Neely, K.A., Planetta, P.J., Prodoehl, J., Corcos, D.M., Comella, C.L., Goetz, C.G., Shannon, K.L., Vaillancourt, D.E. Distinct features of grip force characterize Parkinson's disease and atypical parkinsonian disorders. American Society of Biomechanics (2012), Gainesville, FL.
- Alibiglou, L., Marlin, C., Videnovic, A., Planetta, P.J., Vaillancourt, D.E., & Mackinnon, C.D. Gait initiation in REM sleep behavior disorder and Parkinson's disease with freezing of gait. Movement Disorders Society (2012), Dublin, Ireland.
- Neely, K.A., Planetta, P.J., Prodoehl, J., Corcos, D.M., Comella, C.L., Goetz, C.G., Shannon, K.L., Vaillancourt, D.E. Distinct features of grip force characterize Parkinson's disease and atypical parkinsonian disorders. Movement Disorders Society (2012), Dublin, Ireland.
- Planetta, P.J., Schulze, E.T., Geary, E.K., Goldman, J.G., Corcos, D.M., Little, D.M., Vaillancourt, D.E. Thalamic projection fiber integrity in de novo Parkinson's disease. Movement Disorders Society (2012), Dublin, Ireland.

- Videnovic, A., Marlin, C., Alibiglou, L., Planetta, P.J., Vaillancourt, D.E., & Mackinnon, C.D. Gait initiation in REM sleep behavior disorder and Parkinson's disease with freezing of gait. Movement Disorders Society (2012), Dublin, Ireland.
- Corcos, D.M., Robichaud, J. A., David, F. J., Vaillancourt, D. E., Poon, C., Comella, C. L., Kohrt, W. M., & Leurgans, S. E. (2012). 24 months of exercise improves the motor symptoms of Parkinson's disease. American Academy of Neurology, Movement Disorders Society, New Orleans, LA.
- Robichaud, J. A., David, F. J., Poon, C., Rafferty, M., Vaillancourt, D. E., Comella, C. L., Leurgans, S. E., Kohrt, W. M., & Corcos, D. M. Long-term progressive exercise improves bradykinesia and muscle weakness in Parkinson's disease. Movement Disorders Society (2012), Dublin, Ireland.
- Rafferty, M., Robichaud, J. A., David, F. J., Poon, C., Vaillancourt, D. E., Comella, C. L., Leurgans, S. E., Kohrt, W. M., & Corcos, D. M. Long-term exercise improves and maintains physical function in people with Parkinson's disease. Movement Disorders Society (2012), Dublin, Ireland.
- David, F. J., Robichaud, J. A., Leurgans, S. E., Vaillancourt, D. E., Poon, C., Kohrt, W. M., Comella, C. L., & Corcos, D. M. (2012). Progressive resistance exercise improves bradykinesia and muscle activation patterns in Parkinson's disease. The 22nd Annual Meeting of the Society for Neural Control of Movement, Venice, Italy.
- Mosconi, M.W., Mohanty, S., Schmitt, L., Cook, E.H., Vaillancourt, D.E., & Sweeney, J.A. Motor and sensorimotor functioning in individuals with autism. American College of Neuropsychopharmacology (ACNP), (4, Dec 2011), Hawaii, HA.
- Mosconi, M.W., Coombes, S.A., D'Cruz, A-M., Schmitt, L., Shrestha, S., Vaillancourt, D.E., & Sweeney, J.A. Atypical premotor, parietal, and cerebellar functioning underlies sensorimotor impairment in autism. International Meeting for Autism Research (IMFAR), (2011, May), San Diego, CA.
- Gitelman, D.R., Wu, M., Vaillancourt, D.E., Stell, B., Parrish, T.B., Simuni, T. High resolution diffusion tensor MRI of Parkinson's disease. 15th International Congress of Parkinson's Disease and Movement Disorders. June 5-9, 2011.
- Poon, C., Robichaud, J.A., Corcos, D.M., Goldman, J.G., Vaillancourt, D.E. Combined measures of movement and force variability distinguish patients with Parkinson's disease from essential tremor. 15th International Congress of Parkinson's Disease and Movement Disorders. June 5-9, 2011.
- Planetta, P.J., Kurani, A.S., Prodoehl, J., Corcos, D.M., Comella, C., Vaillancourt, D.E. Prefrontal cortex is hypoactive in left- but not right-side most affected de novo Parkinson's disease. 15th International Congress of Parkinson's Disease and Movement Disorders. June 5-9, 2011.
- Olech, J. R., David, F. J., Robichaud, J. A., Comella, C. L., Vaillancourt, D. E., & Corcos, D. M. Six months of exercise improves cognitive function in Parkinson's disease

patients. Paper Presented at the 63rd American Academy of Neurology Annual Meeting, Hawaii, 2011.

- Mosconi, M.W., Coombes, S.A., Ankeny, L., D'Cruz, A-M., Zhang, Z., Schmitt, L., Khine, T., Vaillancourt, D.E., Sweeney, J.A. Atypical brain function underlying sensorimotor alterations in autism. American College of Neuropsychopharmacology (ACNP), (2010, December). Miami, FL.
- Planetta, P.J., Prodoehl, J., Corcos, D.M., Comella, C., & Vaillancourt, D.E. (Oct 2010). Early-stage de novo Parkinson's disease patients show BOLD fMRI activation deficits related to force production but not force selection. 40th Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Poon, C., Chin-Cottongim, L., Coombes, S.A., Corcos, D.M., & Vaillancourt, D.E. (Oct 2010). Spatiotemporal dynamics during the transition from a visually-guided to a memory-guided force control task: an EEG-ERP study. 40th Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Sturman, M.M., Vaillancourt, D.E., Bakay, R.A., Verhagen-Metman, L., & Corcos, D.M. (Oct 2009). Five years of deep brain stimulation increases muscle strength and increases movement speed in Parkinson's disease. 39th Annual Meeting of the Society for Neuroscience, Chicago, IL.
- Baweja, H.S., Kennedy D.M., Vu, J.L., Vaillancourt, D.E., & Christou, E.A. (Oct 2009). Greater amounts of visual feedback alter muscle activity and reduce force variability during constant isometric contractions. 39th Annual Meeting of the Society for Neuroscience, Chicago, IL.
- Kennedy D.M., Baweja, H.S., Vaillancourt, D.E., & Christou, E.A. (Oct 2009). Time onset and amplitude of force drift varies with force level during low-intensity constant isometric contractions. 39th Annual Meeting of the Society for Neuroscience, Chicago, IL.
- Coombes, S.A., Corcos, D.M., & Vaillancourt, D.E. (Oct 2009). Spatial and temporal properties of visual feedback interact to alter force performance. 39th Annual Meeting of the Society for Neuroscience, Chicago, IL.
- Prodoehl, J., Spraker, M.B., Corcos, D.M., Comella, C.L., & Vaillancourt, D.E. (Oct 2009). Hypoactivity in all nuclei of the basal ganglia of early stage, drug naïve Parkinson's disease depends on visual feedback. 39th Annual Meeting of the Society for Neuroscience, Chicago, IL.
- Coombes, S.A., Corcos, D.M., & Vaillancourt, D.E., (2009). Spatial features of motion stimuli and visually guided force control: Neural activity in the visuomotor system scales with changes in behavior. North American Society for the Psychology of Sport and Physical Activity (NASPSA). Austin, TX
- Coombes, S.A., Corcos, D.M., & Vaillancourt, D.E., (2009). Neural activation in the visuomotor system scales with changes in the spatial features of motion stimuli. Neural Control of Movement, Hawaii, USA

- Prodoehl, J., Spraker, M.B., Corcos, D.M., Comella, C.L., Vaillancourt, D.E. (June 2009) Task specific activation deficits in basal ganglia nuclei are accentuated across time: a study in early stage, drug naive Parkinsons disease. 13th International Congress of Parkinson's Disease and Movement Disorders, Paris, France.
- Prodoehl, J., Spraker, M.B., Corcos, D.M., Comella, C.L., Vaillancourt, D.E. (July 2009) Task specific activation deficits in basal ganglia nuclei are accentuated across time: a study in early stage, drug naive Parkinsons disease. 7th Annual Meeting of Progress in Motor Control, Marseille, France.
- Vaillancourt, D.E., Spraker, M.B., Prodoehl, J., Abraham, I., Corcos, D.M., Zhou, X.J., Comella, C.N., Little, D.M. (June 2008). High resolution diffusion tensor imaging in the caudal portion of the substantia nigra of de novo Parkinson's disease. Movement Disorders Society, Chicago, IL.
- Platform Presentation. Drs. Turner, Mazzoni, Niv, Vaillancourt. (April 2008). How fast? Trajectory control, movement energy, and the basal ganglia. My presentation was one of four invited presentations for the platform session. Society for the Neural Control of Movement, Naples, FL.
- Spraker, M.B. & Vaillancourt, D.E. (April 2008). Role of the basal ganglia and frontal cortex in increasing and decreasing grip force. Society for the Neural Control of Movement, Naples, FL.
- Leurgans, S., Robichaud, J., Vaillancourt, D.E., & Corcos, D.M. (March 2008). Bimodality and Variances: Bump Hunting in Motor Control of Parkinson's Disease. International Biometric Society, Arlington, VA.
- Wasson P., Prodoehl J., Yu H., Corcos D.M., & Vaillancourt D.E. (Oct 2007). Role of the cortex and basal ganglia in predicting of grip force amplitude. 37th Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Prodoehl, J., Yu, H., Abraham, I., Little, D.M., & Vaillancourt, D.E. (July 2007). Region of interest template for the human basal ganglia: Comparing EPI and Talairach Approaches. Organization for Human Brain Mapping, Chicago, IL.
- Wasson, P., Yu, H., Prodoehl, J., Corcos, D.M., & Vaillancourt, D.E. (June 2007). Role of the basal ganglia in predicting pinch grip force. North American Society of Psychology for Sport and Physical Activity, San Diego, CA.
- Yu, H., Mayka, M.A., Corcos, D.M., & Vaillancourt, D.E. (October 2006). Basal ganglia and the rate of force production: Is rate scaling dependent on the sensory modality? 36th Annual Meeting of the Society for Neuroscience, Atlanta, GA.
- Spraker, M.B., Yu, H., Corcos, D.M., & Vaillancourt, D.E. (October 2006). Role of individual basal ganglia nuclei in force amplitude generation. 36th Annual Meeting of the Society for Neuroscience, Atlanta, GA.

- Sturman, M.M., Shapiro, M.B., Vaillancourt, D.E., Verhagen Metman, L., Bakay, R., Corcos, D.M. (October 2006). A comparison of chronic versus acute subthalamic nucleus stimulation on bradykinesia, rigidity, and tremor in Parkinson's disease. 36th Annual Meeting of the Society for Neuroscience, Atlanta, GA.
- Shapiro, M.B., Sturman, M.M., Vaillancourt, D.E., Verhagen Metman, L., Bakay, R., & Corcos, D.M. (October 2006). The effects of subthalamic nucleus stimulation on rigidity in Parkinson's disease quantified by limb impedance. 36th Annual Meeting of the Society for Neuroscience, Atlanta, GA.
- Vaillancourt, D.E., Yu, H., Mayka, M.A., & Corcos, D.M. (June 2006). Motor selection and sequencing: Role of the basal ganglia and frontal cortex in humans. AREADNE: Research in Encoding And Decoding of Neural Ensembles, Santorini, Greece.
- Vaillancourt, D.E., Yu, H., Mayka, M.A., & Corcos, D.M. (June 2006). Role of the basal ganglia and motor cortex in motor sequencing and selection. North American Society for Psychology for Sport and Physical Activity (NASPSPA), Denver, CO.
- Shapiro, M.B., Sturman, M.M., Vaillancourt, D.E., Corcos, D.M. (May 2006). Effects of deep brain stimulation of the subthalamic nucleus on parkinsonian rigidity. Society for the Neural Control of Movement, Key Biscayne, FL.
- Sturman, M.M., Corcos, A., & Vaillancourt, D.E. (December 2005). Effects of subthalamic nucleus stimulation and medication on tremor in Parkinson's disease during performance of a cognitive and a motor task. Medical Rehabilitation Training Workshop, Washington, DC.
- Mayka, M.A., Corcos, D.M., & Vaillancourt, D.E. (November 2005). Neural basis for feedback processes related to audiomotor and visuomotor systems. 35th Annual Meeting of the Society for Neuroscience, Washington, DC.
- Yu, H., Sternad, D., Corcos, D.M., & Vaillancourt, D.E. (November 2005). Ipsilateral cerebellum activation is increased in patients with Parkinson's disease during thumb flexion. 35th Annual Meeting of the Society for Neuroscience, Washington, DC.
- Sturman, M.M., Vaillancourt, D.E., Verhagen Metman, L., Bakay, R., & Corcos, D.M. (November 2005). Effects of subthalamic nucleus stimulation and medication on tremor in Parkinson's disease during performance of a cognitive and a motor task. 35th Annual Meeting of the Society for Neuroscience, Washington, DC.
- Prodoehl, J., Corcos, D.M., & Vaillancourt, D.E. (November 2005). Effects of focal hand dystonia on force variability. 35th Annual Meeting of the Society for Neuroscience, Washington, DC.
- Yu, H., Sternad, D., Corcos, D.M., & Vaillancourt, D.E. (August 2005). Hyper- and hypo-activation of cortical and subcortical structures during rhythmic thumb movements in Parkinson's disease. Progress in Motor Control V, State College, PA.

- Corcos, D.M., Sturman, M.M., Shapiro, M.B., Vaillancourt, D.E. (September 2005). Effects of STN Stimulation on Tremor, Rigidity, and Bradykinesia in Parkinson's Disease. Neural Interfaces Workshop, National Institutes of Health, Washington, DC.
- Robichaud JA, Pfann KD, Comella CL, Vaillancourt, DE, Corcos DM. Parkinson's disease: Kinetic, Kinematic and EMG parameters can be used to model changes in disease severity. III Step Conference-Linking Movement Science and Intervention, Salt Lake City, July 15-21, 2005.
- Platform Presentation. Sternad, D., Hogan, N. Vaillancourt, D.E., and Chang, Y-H. (April 2005). The Rhyme and Reason of Reach and Rhythm: Rhythmic and Discrete Movements Unified. My presentation was one of four invited presentations for the platform session. Society for the Neural Control of Movement, Key Biscayne, FL.
- Vaillancourt, D.E., Mayka, M., Corcos, D.M., & Thulborn, K.R. (October 2004). Fast and slow frequency components of the visuomotor processing network during precision grip force production. 34th Annual Meeting of the Society for Neuroscience, San Diego, CA, (Presenter).
- Sturman, M.M., Vaillancourt, D.E., Corcos, D.M. (October 2004). Physiological tremor: Effects of healthy human aging. 34th Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Corcos, D.M., Vaillancourt, D.E., Sturman, M.M., Verhagen Metman, L., & Bakay, R.A.E. (October 2004). Effects of cortical stimulation on bradykinesia in Parkinson's disease. 34th Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Mayka, M., Corcos, D.M., & Vaillancourt, D.E. (October 2004). Locations and boundaries of the motor and premotor regions in functional brain imaging: A meta-analysis. 34th Annual Meeting of the Society for Neuroscience, San Diego, CA.
- Vaillancourt, D.E., Thulborn, K.R., Corcos, D.M. (December 2003). Neural basis of sensorimotor transformations. NICHD/NINDS Trainee Workshop, Washington, DC.
- Vaillancourt, D.E., Prodoehl, J., Sturman, M.M., Verhagen Metman, L., Bakay, R., & Corcos, D.M.. (September 2003). Effects of Subthalamic Nucleus Deep Brain Stimulation on Tremor and Bradykinesia in Parkinson's Disease. NIH Consortium on Deep Brain Stimulation, September 29-30, Washington DC, (Presenter).
- Sturman, M.M., Vaillancourt, D.E., Verhagen Metman, L., Bakay, R., & Corcos, D.M. (November 2003). Effects of Deep Brain Stimulation and Medication on Tremor in Parkinson's Disease. 33rd Annual Meeting of the Society for Neuroscience, New Orleans, LA, (Presenter).
- Vaillancourt, D.E., Mayka, M., Thulborn, K.R., & Corcos, D.M. (November 2003). A Parametric fMRI study of the Basal Ganglia-Thalamo-Cortical Loop Using an Isometric Force Task. 33rd Annual Meeting of the Society for Neuroscience, New Orleans, LA, (Presenter).

- Vaillancourt, D.E., Prodoehl, J., Verhagen Metman, L., Bakay, R., & Corcos, D.M. (April 2003). Basal ganglia contributions to the control of force without visual information. Society for the Neural Control of Movement, Santa Barbara, CA (Presenter).
- Vaillancourt, D.E., Smith, C., Prodoehl, J., Verhagen Metman, L., Bakay, R., & Corcos, D.M.. (February 2003). Upper Limb Bradykinesia and Muscle Strength in Parkinson's Disease: Additive Effects of Levodopa and Deep Brain Stimulation. American Physical Therapy Association Meeting, Tampa, FL. (Presenter).
- Sosnoff JJ, Vaillancourt DE, Larsson L, Newell KM. (November 2002) Aging and the Frequency Structure of Intramuscular EMG and Motor Unit Discharge Patterns. 55th annual meeting of Gerontology Society of America, Boston, MA.
- Newell, K.M., & Vaillancourt, D.E. (October 2002). Screening of Human Movement Disorders: Use of Dynamical Analyses in Distinguishing between Aging and Disease. 39th Annual Technical Meeting of the Society of Engineering Science, University Park, PA.
- Vaillancourt, D.E., Thulborn, K.R., & Corcos, D.M. (November 2002). Effects of visual information on force control: FMRI Activation of Cerebellar and Cortical Structures. 32nd Annual Meeting of the Society for Neuroscience, Orlando, FL, (Presenter).
- Corcos, D.M., Vaillancourt, D.E., Smith, C., Prodoehl, J., Verhagen Metman, L., & Bakay, R. (November 2002). Additive Effects of Levodopa and Deep Brain Stimulation on Upper Limb Bradykinesia in Parkinson's Disease. 32nd Annual Meeting of the Society for Neuroscience, Orlando, FL.
- Sosnoff, J.J., Vaillancourt, D.E., Larson, L., & Newell, K.M. (November 2002). Rhythmic force output and the frequency structure of motor unit discharge patterns and EMG activity. 32nd Annual Meeting of the Society for Neuroscience, Orlando, FL.
- Vaillancourt, D.E., Smith, C., Prodoehl, J., Verhagen Metman, L., Bakay, R., & Corcos, D.M.. (June 2002). Upper Limb Bradykinesia in Parkinson's Disease: Additive Effects of Levodopa and Deep Brain Stimulation. NIH Consortium on Deep Brain Stimulation, June 3-4, Washington DC, (Presenter).
- Russell, D.M. & Vaillancourt, D.E. (June 2002). Temporal Capacity and Nature of Short-Term Visuomotor Memory for Continuous Force Production. North American Society for Psychology for Sport and Physical Activity (NASPSPA). June 6-8, Hunt Valley, MD.
- Sosnoff, J.J., Vaillancourt, D.E., Larson, L., & Newell, K.M. (June 2002). Rhythmic force output and the frequency structure of motor unit discharge patterns and EMG activity. North American Society for Psychology for Sport and Physical Activity (NASPSPA). June 6-8, Hunt Valley, MD.
- Russell, D.M. & Vaillancourt, D.E. (November, 2001). Visual control of isometric force: Estimating the capacity of short-term motor memory. Canadian Society of Psychomotor Learning and Sport Psychology, Montreal, Canada.

- Vaillancourt, D.E., Slifkin, A.B., & Newell, K.M. (November, 2001). Visual control of isometric force output in Parkinson's disease. 31st Annual Meeting of Neuroscience, San Diego, CA, (Presenter).
- Vaillancourt, D.E., Slifkin, A.B., & Newell, K.M. (November, 2000). Force tremor regularity in Parkinson's disease. Gerontological Society of America, Washington, DC (Presenter).
- Vaillancourt, D.E., Slifkin, A.B., & Newell, K.M. (November, 2000). Effects of visual intermittency on continuous force output in Parkinson's disease. 30th Annual Meeting of Neuroscience, New Orleans, LA, (Presenter).
- Slifkin, A.B., Vaillancourt, D.E., & Newell, K.M. (November, 2000). Effects of visual intermittency on continuous force output. 30th Annual Meeting of Neuroscience, New Orleans, LA.
- Vaillancourt, D.E. & Newell, K.M. (July, 2000). Resting and postural tremor in Parkinson's disease: Time and frequency regularity. Society for Chaos in Psychology and Life Sciences, Philadelphia, PA (Presenter).
- Slifkin, A.B., Vaillancourt, D.E., & Newell, K.M. (June, 2000). Variations in the scale of visual information and the control of continuous force production. From Basic Motor Control to Function Recovery II, Varna, Bulgaria.
- Vaillancourt, D.E., Slifkin, A.B., & Newell, K.M. (June, 2000). Force tremor regularity in Parkinson's disease: Relation to UPDRS. 6th International Congress of Parkinson's Disease and Movement Disorders. June 11-15, Barcelona, Spain, (Presenter).
- Vaillancourt, D.E. & Newell, K.M. (June, 2000). Postural and resting tremor regularity in Parkinson's disease. 6th International Congress of Parkinson's Disease and Movement Disorders. June 11-15, Barcelona, Spain, (Presenter).
- Newell, K.M., Vaillancourt, D.E., Bodfish, J.W., Sprague, R.L. (June, 2000). Changes in the dynamic patterns of lip dyskinesia with neuroleptic withdrawal. 6th International Congress of Parkinson's Disease and Movement Disorders. June 11-15, Barcelona, Spain, (Presenter).
- Vaillancourt, D.E., and Newell, K.M. (June, 2000). 8-12 Hz and 20-25 Hz oscillations in human physiological tremor. North American Society for Psychology for Sport and Physical Activity (NASPSPA). June 8-10, San Diego, CA, (Presenter).
- Vaillancourt, D.E., and Newell, K.M. (June, 2000). Dynamics of tremor regularity in Parkinson's Disease. North American Society for Psychology for Sport and Physical Activity (NASPSPA). June 8-10, San Diego, CA, (Presenter).
- Vaillancourt D. E., & Newell, K. M. (November, 1999). Neuromuscular Entrainment and the Mechanical-Reflex Hypothesis. 29th Annual Meeting of Neuroscience, Miami, FL, (Presenter).

- Vaillancourt, D. E. & Newell, K. M. (August 1999). Finger tremor and the mechanical-reflex hypothesis. Progress in Motor Control – II, August 19-22, State College, PA, (Presenter).
- Vaillancourt, D. E., Newell, K. M. & Sprague, R. L. (June, 1999). Complexity of Tremor Variability Differentiates Levels of Tardive Dyskinesia in Individuals with Mental Retardation. North American Society for Psychology for Sport and Physical Activity (NASPSPA). June 10-12, Clearwater Beach, FL, (Presenter).
- Slifkin, A.B., Vaillancourt, D.E., and Newell, K.M. (June, 1999). Intermittency in the Control of Continuous Force Production. North American Society for Psychology for Sport and Physical Activity (NASPSPA). June 10-12, Clearwater Beach, FL.
- Slifkin, A. B., Vaillancourt, D. E., & Newell, K. M. (November, 1998). Variation of display-to-control gain and changes in the dynamics of continuous force production. 28th Annual Meeting of Neuroscience, Los Angeles, CA, (Presenter).

PROFESSIONAL AFFILIATIONS

- Society for the Neural Control of Movement (since 2003)
- Society for Neuroscience, Member (since 2000)
- Sigma Xi, The Scientific Research Society. Associate Member (since 1999)
- NASPSPA, Member (since 1999)
- New York Academy of Sciences (since 2010)

SCHOLARSHIPS

- Sigma Xi Travel Award (2000)
- Tom and Joan Read Endowment Scholarship (1996-1997)
- 12th Man Academic Scholarship (1996-1997)
- Barnes and Noble Bookstore Scholarship (1996)
- McNeil Pharmaceutical Scholarship Award (1992)

RESEARCH SKILLS

Software and Statistical Techniques

- DTI-TK
- EEGLAB
- FSL
- EMSE – EEG analysis software
- AFNI – fMRI analysis software
- Splus
- FIASCO
- Statistica
- Minitab

- SPSS
- Statistical Parametric Mapping (SPM)
- MATLAB
- Visual Basic
- Time series analysis
- Nonlinear dynamics

Hardware and Data Collection Techniques

- Electroencephalography
- Functional Magnetic Resonance Imaging
- Certified to administer Unified Parkinson's Disease Rating Scale (UPDRS)
- Force Plates
- Surface Electromyography
- Intramuscular Electromyography
- Single Motor Unit Recordings
- Electrocardiology
- Load cells
- Pressure sensors
- Kinematic Analysis
- Electrogoniometers
- Accelerometers

SERVICE/COMMUNITY WORK

- Chair of Human Imaging Committee for McKnight Brain Institute, 2018
- Executive Committee, McKnight Brain Institute, 2018-present
- APK Search Committee for Assistant Professor, 2016-2017
- Parkinson's Disease Biomarker Program, Chair, 2015-2016
- Movement Disorders Society Neuroimaging Study Group, 2015-present
- MBI AMRIS 3T Advisory Committee, 2015-2016
- MBI Space Committee, 2015-2016
- Data Safety and Monitoring Board, Bishop R01 2014-2016.
- HHP Council of Investigators, 2014-2015
- Grad Faculty Committee in APK, 2014-2015
- McKnight Brain Institute MRI Advisory Committee, 2014-2015
- HHP APK Chair Search Comm, 2014-2015

- APK Tenure and Promotion Comm 2014-2015
- Graduate Faculty Committee, Chair, Elected, 2013-2014.
- College Council, Elected, 2013-2014
- Search Committee for HEB Chair, 2013-2014.
- Scientific Judge, 9th Annual Neuromuscular Plasticity Symposium, March 17, 2014.
- HHP Tenure and Promotion Committee, Elected 2013-2014.
- APK Graduate Curriculum Committee, 2013-2014.
- APK Tenure and Promotion Committee, 2013-2014
- CTSI / MBI Human Imaging Core Scientific Advisory Committee, 2013-2014.
- HHP Tenure and Promotion Committee, 2012-2013.
- Office of VP for Research Office, Reviewer for HHMI Predoctoral Awards.
- HHP, Council of Principal Investigators, 2012-2014.
- Data Safety and Monitoring Board for Dr. Mark Bishop NIH grant, 2012-2013.
- CTSI/Pepper Roundtable for Junior Scholars, 2012-2013.
- Scientific Judge, 7th Annual Neuromuscular Plasticity Symposium, March 16, 2012.
- Campus Research Board, Clinical Sciences Subcommittee, UIC Vice Chancellor for Research, 2010-2011.
- Program Committee for NASPSPA 2011 Conference 2010-2011.
- Chancellor Grant Reviews Committee, Spring 2010-2011.
- VCR Biomedical Discovery Advisory Council, 2010-2011.
- Program Committee, NASPSPA Conference 2011.
- Faculty Advisor Committee, UIC Kinesiology and Nutrition, 2010-2011.
- Promotion and Tenure Committee, UIC College of Applied Health Sciences. 2009-present.
- Information Technology Committee, UIC College of Applied Health Sciences, 2009-2010.

- PhD Evaluations Committee, UIC Kinesiology and Nutrition, 2009-2011.
- Faculty Advisor Committee, UIC Kinesiology and Nutrition, Fall 2009.
- Reviewer for American Society of Biomechanics, Graduate Student Grant Applications. 2010.
- Reviewer for American Society of Biomechanics, Graduate Student Grant Applications. 2009.
- Reviewer for American Society of Biomechanics, Graduate Student Grant Applications. 2008.
- Faculty Advisory Committee, Kinesiology and Nutrition, University of Illinois at Chicago, 2006-2007.
- Graduate Program in Neuroscience, Graduate Studies Committee, 2006-present.
- MD/PhD Interviewer, University of Illinois at Chicago, 2006-present.
- Presented “How to present a scientific poster: Tips and pitfalls” for the Undergraduate Research Symposium, March 27, 2006.
- Judge for Undergraduate Research Symposium, April 16, 2006.
- Mentor of student from Illinois Math and Science Academy. 2005-2006.
- Reviewed IRB for Movement Sciences departmental review for an IRB submitted by Dr. George Hornby, 2005.
- Organize Seminar Series in Kinesiology and Nutrition, 2005-present.
- Chicago Public Schools Science Fair Judge 2006.
- Boys and Girls Club, Volunteer Tutoring Program, Chicago, IL, 2003-2004. Tutor a student in need from the Chicago school district.
- 601-609 Condominium Association President (2002-present).
- Big Brothers and Big Sisters Volunteer Program, State College, PA. 1998-1999. Serve as a volunteer and act as a role model for an 11 year old boy living in the community.
- Coached recreation boys and girls basketball team (age: 10-12 years), State College, PA, 1999-2000.

DISSERTATION AND PRELIMINARY COMMITTEE

- Dissertation Committee for Changki Kim, APK.

- Dissertation Committee for Kristen Sowalsky, APK.
- Dissertation Committee for Derek Archer, APK.
- Dissertation Committee for Min Kwon, APK.
- Dissertation Committee for Ting Chen, APK.
- Dissertation Committee for Chang Kim, APK.
- Dissertation Committee for Jae Woo Chung, APK.
- Dissertation Committee for Jesse DeSimone, APK.
- Dissertation Committee for Matthew Spraker. Advisor. Bioengineering
- Dissertation Committee for Cynthia Poon. Advisor. Kinesiology
- Dissertation Committee for Ajay Kurani. Advisor. Bioengineering
- Dissertation Committee for Suman Mohanty. Advisor. Bioengineering
- Dissertation Committee for Pooja Wasson. Advisor. Kinesiology
- Qualifying Exam Committee for Yue Zhang. Bioengineering
- Qualifying Exam Committee for Phil Baker. Neuroscience
- Qualifying Exam Committee for Fabian David, Kinesiology
- Dissertation Exam Committee for Fabian David, Kinesiology
- Dissertation Committee for Mary Mayka. Co-advisor. Bioengineering
- Dissertation Committee for Molly Sturman. Co-advisor. Kinesiology
- Masters Defense Committee for Michelle Prior. Kinesiology

David E. Vaillancourt

March 13, 2023