

## **E. Ray Dorsey, MD, MBA**

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### **EDUCATION AND TRAINING**

- 1994 BS, Stanford University, Stanford, CA; Biological sciences
- 1999 MD, University of Pennsylvania School of Medicine, Philadelphia, PA
- 1999 MBA, The Wharton School, University of Pennsylvania, Philadelphia, PA; Health care management

### **PROFESSIONAL EXPERIENCE**

- 1993 Intern, U.S. Health Care Financing Administration (now the Centers for Medicare & Medicaid Services), Washington, DC
- 1995 Intern, Robert Wood Johnson Foundation, Princeton, NJ
- 1998 Investment banking summer associate, Health Care Group, Credit Suisse First Boston (now UBS), Chicago, IL
- 1999 – 2001 Associate, McKinsey & Company, Chicago, IL
- 2001 – 2002 Medicine intern, Evanston Hospital, Evanston, IL
- 2002 – 2005 Neurology resident, University of Pennsylvania Medical Center, Philadelphia, PA
- 2005 – 2007 Fellow in movement disorders and experimental therapeutics, University of Rochester, Rochester, NY
- 2005 – 2006 Instructor, Department of Neurology, University of Rochester, Rochester, NY
- 2006 – 2007 Senior Instructor, Department of Neurology, University of Rochester, Rochester, NY
- 2007 – 2010 Assistant Professor, Department of Neurology, University of Rochester, Rochester, NY
- 2010 – 2013 Associate Professor, Department of Neurology, Johns Hopkins School of Medicine, Baltimore, MD
- 2010 – 2013 Director of movement disorders division, Johns Hopkins School of Medicine, Baltimore, MD
- 2010 – 2013 Director of neurology telemedicine, Johns Hopkins School of Medicine, Baltimore, MD
- 2011 – 2013 Associate Professor, Carey Business School, Johns Hopkins University, Baltimore, MD
- 2013 – present Professor of Neurology, University of Rochester Medical Center, Rochester, NY
- 2013 – 2014 Co-director, Center for Health + Technology, University of Rochester Medical Center, Rochester, NY
- 2014 – 2018 Chair, Huntington Study Group

2017 – 2020 Medical director of telemedicine, University of Rochester Medical Faculty Group,  
University of Rochester Medical Center, Rochester, NY

2014 – 2021 Director, Center for Health + Technology, University of Rochester Medical Center,  
Rochester, NY

2014 – present David M. Levy Professor in Neurology, University of Rochester Medical Center,  
Rochester, NY

2016 – present Professor of Neurology with tenure, University of Rochester Medical Center,  
Rochester, NY

## RESEARCH ACTIVITIES

*Authored landmark papers in leading journals on medical education, health care financing, genetic risk, Parkinson's disease, and digital health. Serve(d) as principal investigator on 40 research studies and clinical trials funded by NIH, PCORI, Michael J. Fox Foundation, Pfizer, Google, and others*

### Books

**Dorsey R**, Sherer T, Okun MS, Bloem BR. Ending Parkinson's Disease. Public Affairs: New York, 2020.

### Select Peer-Reviewed Publications

*Out of 230 indexed in PubMed; 150,000 citations, h-index 84, and i10-index 201 per Google Scholar.*

Available at: <https://scholar.google.com/citations?user=ZUUSVGkAAAJ&hl=en&oi=ao>

1. **Dorsey ER**, Jarjoura D, Rutecki GW. Influence of controllable lifestyle on recent trends in specialty choice by US medical students. JAMA 2003;290:1173-8. Erratum in JAMA 2003;290:2666. [PMID: 12952999]
2. Moses H, **Dorsey ER**, Matheson DH, Thier SO. Financial anatomy of biomedical research. JAMA 2005;294:1333-42. [PMID: 16174691]
3. **Dorsey ER**, Nincic D, Schwartz JS. Costs of medical education: an evaluation of four approaches to reduce the financial burden of medical education. Acad Med 2006;81:245-51. [PMID: 16501266]
4. **Dorsey ER**, Constantinescu R, Thompson JP, Biglan KM, Holloway RG, Kiebertz K, Marshall FJ, Ravina BM, Schifitto G, Siderowf A, Tanner CM. Projected number of people with Parkinson's disease in the most populous nations, 2005 – 2030. Neurology 2007;68:384-6. [PMID: 17082464]
5. **Dorsey ER**, Van Wuyckhuse BC, Beck CA, Passalacqua WP, Guzick DS. Economics of new faculty hires in basic science. Acad Med 2009;84:26-31. [PMCID: PMC2746364]
6. **Dorsey ER**, de Roulet J, Thompson JP, ... Moses H. Funding of US biomedical research, 2003 – 2008. JAMA 2010;303:137-43. [PMCID: PMC3118092]
7. **Dorsey ER**, Deuel LM, Voss TS, ... Biglan KM. Increasing access to specialty care: a pilot, randomized controlled trial of telemedicine for Parkinson disease. Movement Disorders 2010;25:1652-9.
8. **Dorsey ER**, Nicholson S, Frist WH. Improving the supply and distribution of primary care physicians. Acad Med 2011;86:541-3. doi: 10.1097/ACM.0b013e318212ea15
9. Moses H III, **Dorsey ER**. Biomedical research in an age of austerity. JAMA 2012;308:2341-2.
10. Lozano R, Naghavi M, Foreman K ... **Dorsey ER** ... Murray CJL. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis of the Global Burden of Disease Study 2010. Lancet 2013;380:2095-2128.
11. Oster E, Shoulson I, **Dorsey ER**. Optimal expectations and limited medical testing: evidence from Huntington disease. American Economic Review 2013;103:804-30.
12. **Dorsey ER**, Venkataraman V, Grana MJ, ... Seidmann A, Biglan KM. Randomized, controlled trial of "virtual housecalls" for Parkinson disease. JAMA Neurology 2013;70:565-70. [PMCID:PMC3791511]
13. **Dorsey ER**, George BP, Leff B, Willis AW. The coming crisis: obtaining care for the growing burden of neurodegenerative conditions. Neurology 2013;80:1989-96. [PMCID: PMC3716348]
14. Oster E, Shoulson I, **Dorsey ER**. Limited life expectancy, human capital and health investments. American Economic Review 2013;103:1977-2002.
15. Moses III H, Matheson DHM, **Dorsey ER**, George BP, Sadoff D, Yoshimura S. The anatomy of health care in the United States. JAMA 2013;310:1947-63.

16. Moses III H, Matheson DHM, Cairns-Smith S, George BP, Palisch C, **Dorsey ER**. The anatomy of medical research. *JAMA* 2015;313:174-89.
17. **Dorsey ER**, Venuto C, Harris D, Venkataraman V, Kieburtz K. Novel methods & technologies for 21<sup>st</sup> century clinical trials. *JAMA Neurology* 2015;72:582-8. [PMCID: PMC4708881]
18. Daschle T, **Dorsey ER**. The return of the house call. *Ann Int Med* 2015;162:587-8. doi: 10.7326/M14-2769
19. Arora S, Venkataraman V, Zhan A, Donohue S, Biglan KM, **Dorsey ER**, Little MA. Detecting and monitoring the symptoms of Parkinson's disease using smartphones: a pilot study. *Parkinsonism and Related Disorders* 2015;21:650-3.
20. Huntington Study Group Reach2HD Investigators (corresponding author – **Dorsey ER**). Safety, tolerability, and efficacy of PBT2 in Huntington's disease: a phase 2, randomised, double-blind, placebo-controlled trial. *Lancet Neurology* 2015;14:39-47. doi: 10.1016/S1474-4422(14)70262-5.
21. **Dorsey ER**, Darwin KC, Mohammed S, ... Ravina B. Virtual research visits and direct-to-consumer genetic testing in Parkinson's disease. *Digital Health* Jun 2015, doi: 10.1177/2055207615592998.
22. **Dorsey ER**, Ritzer G. The McDonaldization of medicine. *JAMA Neurology* 2016;73:15-6. PMID: 26569617.
23. **Dorsey ER**, Topol EJ. The state of telehealth. *NEJM* 2016;375:154-61.
24. **Dorsey ER**, Vlaanderen FP, Engelen LJLP, ... Bloem BR. Moving Parkinson care to the home. *Movement Disorders* 2016;31:1258-62.
25. **Dorsey ER**, Chan YY, McConnell MV, Shaw SY, Trister AD, Friend SH. The use of smartphones for health research. *Academic Medicine* 2017;92:157-60.
26. Beck CA, Beran DB, Biglan KM, Boyd CM, **Dorsey ER** (corresponding author) ... Zhu W. National randomized controlled trial of virtual house calls for Parkinson disease. *Neurology* 2017;89:1152-61. doi: 10.1212/WNL.0000000000004357.
27. Grischkan J, George BP, Chaiyachati K, Friedman AB, **Dorsey ER**, Asch DA. Distribution of medical education debt by specialty, 2010-2016. *JAMA Int Med* 2017;177:1532-5. doi:10.1001/jamainternmed.2017.4023.
28. GBD 2015 Neurological Disorders Collaborator Group (**Dorsey ER** – co-author). Global, regional, and national burden of neurological disorders during 1990-2015: a systematic analysis for the Global Burden of Disease Study. *Lancet Neurol* 2017;16:877-897. doi: 10.1016/S1474-4422(17)30299-5.
29. **Dorsey ER**, Bloem BR. The Parkinson pandemic: a call to action. *JAMA Neurol* 2018;75:9-10. doi: 10.1001/jamaneurol.2017.3299. PMID: 29131880.
30. **Dorsey ER**, Glidden A, Holloway M, Birbeck G, Schwamm L. Teleneurology and mobile technologies: the future of neurological care. *Nature Review Neurology* 2018;14:285-97. doi: 10.1038/nrneurol.2018.31. PMID 29623949.
31. Zhan A, Mohan S, Tarolli C, Schneider RB, ... **Dorsey ER**, Saria S. Using smartphones and machine learning to quantify Parkinson disease severity: the mobile Parkinson disease score. *JAMA Neurol* 2018;75:876-880. doi:10.1001/jamaneurol.2018.0809 PMID 29582075.
32. GBD 2016 Parkinson's Disease Collaborators (**Dorsey ER** – corresponding and co-lead author with Elbaz A). Global, regional, and national burden of Parkinson's disease in 1990-2016: a systematic analysis of the Global Burden of Disease Study 2016. *Lancet Neurology* 2018;17:939-953. doi: 10.1016/S1474-4422(18)30295-3. PMCID: PMC6191528
33. **Dorsey ER**, Sherer T, Okun MS, Bloem BR. The emerging evidence of the Parkinson pandemic. *J Parkinsons Dis*. 2018;8(s1):S3-S8. doi: 10.3233/JPD-181474. [PMCID: PMC6311367]. PMID 30584159.chap
34. **Dorsey ER**, Topol EJ. Telemedicine 2020 and the next decade. *Lancet* 2020;395:859. doi: 10.1016/S0140-6736(20)30424-4. PMID: 32171399.
35. **Dorsey ER**, Omberg L, Waddell E, ... McDermott MP. Deep phenotyping of Parkinson's disease. *J Parkinsons Dis* 2020;10:855-73. doi: 10.3233/JPD-202006. PMID: 32444562

36. **Dorsey ER**, Okun MS, Bloem BR. Care, convenience, comfort, confidentiality, and contagion: the 5 C's that will shape the future of telemedicine. *J Parkinson Dis* 2020;10:893-7. doi: 10.3233/JPD-202109. PMID: 32538870
37. **Dorsey ER**, Kluger B, Lipset CH. The new normal in clinical trials: decentralized studies. *Ann Neurol* 2020;88:863-6. doi: 10.1002/ana.25892. PMID: 32869367
38. **Dorsey ER**. The new platforms of health care. *npj Digit Med* 2021;4:112. doi: 10.1038/s41746-021-00478-5. PMID 34267312.
39. De Miranda BR, Goldman SM, Miller GW, Greenamyre JT, **Dorsey ER**. Preventing Parkinson's disease: an environmental agenda. *J Parkinsons Dis* 2022;12:45-68. doi: 10.3233/JPD-212922. PMID: 34719434
40. Schiess N, Cataldi R, Okun MR, Fothergill-Misbash N, **Dorsey ER** ... Dua T. Six action steps to address global disparities in Parkinson's disease: a World Health Organization priority. *JAMA Neurol* 2022;79:929-36. doi: 10.1001/jamaneurol.2022.1783.
41. Yang Y, Yuan Y, Zhang G, ... **Dorsey R**, Katabi D. Artificial intelligence detects Parkinson's disease and its severity from nocturnal breathing. *Nature Medicine* 2022;28:2207-15. doi: 10.1038/s41591-022-01932-x.
42. Liu Y, Zhang G, Tarolli CG, ... **Dorsey ER**, Katabi D. Monitoring gait at home with radio waves in Parkinson's disease: a marker of severity, progression, and medication response. *Science Translational Medicine* 2022;14. doi: 10.1126/scitranslmed.adc9669.
43. **Dorsey ER**, Ray A. Paraquat, Parkinson's disease, and agnotology. *Mov Disorder* 2023;38:949-52. doi: 10.1002/mds.29371.
44. **Dorsey ER\***, Zafar M\* (co-first author), Lettenberger SE, ... Bloem B. Trichloroethylene: an invisible cause of Parkinson's disease? *J Parkinsons Dis* 2023;13:203-18. doi: 10.3233/JPD-225047
45. Adams JL, Kangarloo T, Tracey B, ... **Dorsey ER** and the Parkinson Study Group Watch-PD Study Investigators and Collaborators. Using a smartwatch and smartphone to assess early Parkinson's disease in the Watch-PD study. *npj Parkinson's Disease* 2023;9:64. doi: 10.1038/s41531-023-00497-x
46. **Dorsey ER**, Greenamyre JT, Willis AW. The water, the air, the Marines – Camp Lejeune, trichloroethylene, and Parkinson disease. *JAMA Neurol* 2023. doi: 10.1001/jamaneurol.2023.1174
47. **Dorsey ER**, Bloem BR. Parkinson's disease is predominantly an environmental disease. *J Parkinsons Dis* 2024. doi: 10.3233/JPD-230357
48. **Dorsey ER**, Kinel D, Pawlik ME ... Goldman SM. Dry-cleaning chemicals and a cluster of Parkinson's disease and cancer: a retrospective investigation. *Mov Disord* 2024. doi: 10.1002/mds.29723
49. **Dorsey ER**, De Miranda BR, Horsager J, Borghammer P. The body, the brain, the environment, and Parkinson's disease. *J Parkinsons Dis* 2024;pre-press:1-19. doi: 10.3233/JPD-240019

## Additional Publications

### In memoriam

1. **Dorsey ER**, Shoulson I. Congresswoman Louise M. Slaughter (1929-2018). In memoriam. *Neurology* 2018;91:19-20. doi: 10.1212/WNL.0000000000005723.

### Book Chapters

1. **Dorsey ER**, Holloway RG, Ravina BM. Status of biological markers. In *Parkinson's disease: clinical diagnosis and management*. Second edition. Factor SA, Weiner WJ (eds). Demos: New York. 2008.

2. **Dorsey ER**, Siderowf A, Holloway RG. Economics of Parkinson's disease. In Parkinson's disease: clinical diagnosis and management. Second edition. Factor SA, Weiner WJ (eds). Demos: New York. 2008.
3. **Dorsey ER**, Vitticore P, Moses H. Risks and rewards of biologics for the brain. In the Dana's Foundation Cerebrum 2008: emerging ideas in brain science. Read CA (editor). Dana Press: New York. 2008.
4. **Dorsey ER**. Perspective from a neurologist. In Professionalism in medicine: the case-based guide for medical students. Spandorfer J, Pohl C, Nasca T, and Rattner SL (eds). Cambridge University Press: Cambridge, MA. 2010.
5. Voss T, **Dorsey ER**. Vascular parkinsonism. In: Kompoliti K, Verhagen L, editors. Encyclopedia of Movement Disorders. Oxford: Elsevier Press. 2010.
6. **Dorsey ER**, Shoulson I. Huntington disease: clinical experimental therapeutics. In Frontiers in Neuroscience. Lo DC, Hughes RE (eds). Taylor and Francis Group: Boca Raton, FL. 2011.
7. **Dorsey ER**, Johnston C. Impact of clinical trials in neurology. In Clinical Trials in Neurology. Ravina B, McDermott M, Poole M, Cummings J (eds). Cambridge University Press: Cambridge, UK. 2011.
8. Harris DA, **Dorsey ER**. Telemedicine and Parkinson's disease. In Teleneurology in Practice. Tsao JW, Demaerschalk BM (eds). Springer: New York. 2015.

#### **National Academy of Medicine Reports**

1. Institute of Medicine 2011. (Shoulson I – chair, **Dorsey R** – committee member) Cognitive Rehabilitation Therapy for Traumatic Brain Injury: Evaluating the Evidence. Washington, DC: The National Academies Press.
2. National Academies of Sciences, Engineering, and Medicine 2020 (Cory-Slechta D, Koroshetz W – co-chairs; **Dorsey R** – planning committee member) Environmental Neuroscience: Advancing the Understanding of How Chemical Exposures Impact Brain Health and Disease: Proceedings of a Workshop. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25937>.
3. National Academies of Sciences, Engineering, and Medicine 2020 (Goldsack J, Menetski J – co-chairs; **Dorsey R** – planning committee member). The Role of Digital Health Technologies in Drug Development: Proceedings of a Workshop. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25850>.
4. National Academies of Sciences, Engineering, and Medicine 2022 (Heinemann AW – chair; **Dorsey R** – speaker). The use of telehealth for disability evaluation in medicine and allied health: proceedings of a workshop. Washington, DC: The National Academies Press. <https://nap.nationalacademies.org/download/26650>.

#### **Working Papers**

1. Oster E, Shoulson I, Quaid K, **Dorsey ER** on behalf of the Huntington Study Group PHAROS Investigators. Genetic adverse selection: evidence from long-term care insurance and Huntington disease. National Bureau of Economic Research Working Paper No.15326. September 2009. Available at [www.nber.org/papers/w15326](http://www.nber.org/papers/w15326). Featured in NBER Bulletin on Aging and Health 2009;3:6 and The NBER Digest February 2010 available at <http://www.nber.org/digest/feb10/feb10.pdf>.
2. Oster E, Shoulson I, **Dorsey ER**. Optimal expectations and limited medical testing: evidence from Huntington disease. National Bureau of Economic Research Working Paper Number

17629. December 2011. Available at [www.nber.org/papers/w17629](http://www.nber.org/papers/w17629). Featured in The NBER Digest March 2012 available at <http://www.nber.org/digest/mar12/mar12.pdf>.

3. Oster E, Shoulson I, **Dorsey ER**. Limited life expectancy, human capital and health investments: evidence from Huntington disease. National Bureau of Economic Research Working Paper Number 17931. March 2012. Available at <http://www.nber.org/papers/w17931>.

### Conference Proceedings

1. Rajan B, Seidmann A, **Dorsey ER**, Biglan KM, Reminick J. Analyzing the clinical and competitive impact of telemedicine – experience with treating Parkinson disease patients via telemedicine. Proceedings of the 44<sup>th</sup> Annual Hawaii International Conference on System Sciences, January 11, 2011.
2. Langevin R, Ali MR, Sen T, Snyder C, Myers T, **Dorsey ER**, Hoque ME. The PARK framework for automated analysis of Parkinson’s disease characteristics. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies. Volume 3, Issue 2. June 2019 Article No.: 54, pp 1–22. <https://doi.org/10.1145/3328925>
3. Li W, Zhu W, **Dorsey ER**, Luo J. Predicting Parkinson's disease with multimodal irregularly collected longitudinal smartphone data. 2020 IEEE International Conference on Data Mining (ICDM), 2020, pp. 1106-1111, doi: 10.1109/ICDM50108.2020.00133.
4. Ali MR, Hernandez J, **Dorsey ER**, Hoque E, McDuff D. Spatio-Temporal Attention and Magnification for Classification of Parkinson’s Disease from Videos Collected via the Internet. 2020 15th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2020), 2020, pp. 207-214, doi: 10.1109/FG47880.2020.00008.

### Pre-prints

1. Rahman W, Lee S, Islam S, Anthony VN, Ratnu H, Ali MR, Al Mamum A, Wagner E, Jensen-Roberts S, Little MA, **Dorsey R**, Hoque E. Detecting Parkinson’s from an online speech-task. <https://arxiv.org/abs/2009.01231>
2. Li W, Zhu W, **Dorsey R**, Luo J. Remote medication status prediction for individuals with Parkinson’s disease using time-series data from smartphones. arXiv preprint arXiv:2207.13700. 2022.

### Other Publications

1. Tanner CM, Brandabur M, **Dorsey ER**. Parkinson’s disease: a global view. Parkinson Report. April 2008.
2. **Dorsey ER**, Dorsey JA, Dorsey ER. Higher pay. Virtual Mentor 2009;11:406-9. Available at: <http://virtualmentor.ama-assn.org/2009/05/oped1-0905.html>.
3. **Dorsey ER**. Equal pay for equal work? The New Physician 2010;59. Available at <http://www.amsa.org/AMSA/Homepage/Publications/TheNewPhysician/2010/0110Perspectives.aspx>.
4. **Dorsey R**, Topol E. Here’s what your future doctor visits could look like. Fortune. May 2, 2017. Available at: <http://fortune.com/2017/05/02/brainstorm-health-2017/>.

## Select Extramural Funding

*Part of 70 grants (\$65 million direct funding) awarded; a principal investigator on 42 (\$30 million)*

### CURRENT

- 9/15/23 – 3/30/25 **PhotoPharmics**  
Direct costs: \$2,600,000  
This study is a decentralized, phase 3 randomized controlled trial of light therapy for individuals with Parkinson's disease.  
Role: Principal investigator
- 9/1/23 – 8/31/24 **Thomas Golisano Foundation**  
Direct costs: \$519,000  
The goal is to map sites in Rochester contaminated with dry cleaning chemicals (trichloroethylene and perchloroethylene) linked to Parkinson's.  
Role: Principal investigator
- 5/1/23 – 4/30/27 **NINDS (PI – Schneider)**  
Direct costs: \$3,700,000  
This effort extends evaluation of a cohort of individuals with mid-stage Parkinson's with remote research visits and a smartphone.  
Role: Co-investigator
- 1/1/23 – 4/30/25 **Michael J. Fox Foundation (PI – Adams)**  
Direct cost: \$1,200,000  
This grant extends the observation of individuals with early Parkinson's disease with a smartwatch and smartphone.  
Role: Co-investigator
- 12/31/22 – 5/31/25 **Michael J. Fox Foundation (PI – Adams)**  
Direct costs: \$600,000  
In this study, we conduct interviews with research participants to determine which digital measures of Parkinson's disease are most meaningful to them.  
Role: Co-investigator
- 12/1/22 – 11/30/25 **Michael J. Fox Foundation (PI – Heatwole)**  
Direct costs: \$300,000  
This study aims to develop, validate, and optimize a patient-reported outcome for Parkinson's disease.  
Role: Co-investigator
- 8/1/22 – 7/31/26 **Department of Defense (PI-Heatwole)**  
Direct costs: \$2,000,000  
This effort will develop, validate, and optimize disease-specific patient-reported outcome measures for medical and neurological conditions.



Role: Co-investigator

6/24/21 – 11/30/23 **Averitas Pharma, Inc** (PI – Markman)  
Direct cost: \$918,000  
In a randomized controlled trial of a topical agent for post-surgical neuropathic pain, we are helping ensure the enrollment of appropriate research participants.  
Role: Co-investigator

9/30/18 – 7/31/24 **NINDS (P50 NS108676)**  
Direct cost: \$6,000,000  
This grant creates one of nine Morris K. Udall Parkinson Disease Centers of Excellence in the country. The center is developing tools and technologies to accelerate the development of therapies for Parkinson's disease.  
Role: Principal investigator

9/1/16 – 12/31/24 **Burroughs Wellcome Fund – Innovation in Regulatory Science**  
Direct cost: \$500,000  
This Innovation in Regulatory Science Award supports the implementation of a smartphone research application in a phase 3 Parkinson's clinical trial.  
Role: Principal investigator

COMPLETED

10/10/21 – 10/9/23 **Michael J. Fox Foundation** (PI – Katabi)  
Direct cost: \$143,000  
We are assessing individuals at genetic risk for Parkinson's disease for early objective features of prodromal Parkinson's using a home monitoring device.  
Role: Co-investigator

8/15/20 – 7/31/23 **National Institute of Neurological Disorders and Stroke (NINDS)** (PI – Venuto)  
Direct cost: \$1,155,000  
The aim is to utilize existing research data on Parkinson's disease to develop predictive models of cognitive decline in the disease.  
Role: Co-investigator

7/1/18 – 4/30/23 **NINDS (1U01NS107009)** (PI – Schwarzschild, Simuni, Mangravite, Dorsey)  
Direct cost: \$3,500,000  
This grant creates a platform that allows longitudinal follow-up of participants from two Parkinson disease phase 3 clinical trials entirely remotely through virtual visits, smartphone assessments, and engagement in Fox Insight.  
Role: Co-principal investigator

1/1/21 – 4/30/23 **Photopharmics**  
Direct cost: \$100,000  
To plan an entirely decentralized phase 3 clinical trial of bright light therapy for Parkinson's disease.  
Role: Principal investigator

12/1/18 – 6/30/22 **Biogen**

Direct cost: \$6,000,000  
As part of an industry and multi-stakeholder consortium including the FDA, this study evaluated the use of a smartwatch and smartphone application to measure outcomes in early, untreated Parkinson disease.  
Role: Principal investigator

1/1/21 – 6/30/22 **Roche**  
Direct cost: \$195,000  
This educational grant supported developing content about and profiles of individuals with Parkinson’s disease.  
Role: Principal investigator

7/1/16 – 10/31/20 **Safra Foundation**  
Direct cost: \$400,000  
This grant helped us provide care remotely to ~500 individuals with Parkinson disease throughout New York state for free.  
Role: Principal investigator

5/1/18 – 5/1/20 **Pfizer** (PI – Dorsey, Beck)  
Direct cost: \$1,500,000  
This study evaluated the ability of novel objective wearable and room sensors to quantify itching in individuals with atopic dermatitis.  
Role: Co-principal investigator

5/1/17 – 5/1/19 **Patient-Centered Outcomes Research Institute**  
Direct cost: \$300,000  
This contract supported refinement, implementation, and dissemination of telemedicine care model for individuals with Parkinson’s.  
Role: Principal investigator

9/1/15 – 9/1/18 **NINDS (1 P20 NS092529-01)**  
Direct cost: \$500,000 (with no cost extension)  
This P20 grant evaluated new methodologies and tools including disease modelling, virtual research visits, and smartphones for conducting clinical research as a planning grant for a future Udall Center for Parkinson’s research.  
Role: Principal investigator

10/1/16 – 10/1/17 **AbbVie**  
Direct cost: \$100,000  
This support enabled us to deliver educational content as part of our Parkinson Disease Care, New York initiative.  
Role: Principal investigator

1/1/15 – 12/31/16 **Roche**  
Direct cost: \$90,000  
This study examined the changes in outcome measures in Huntington disease to inform the formation of a possible composite outcome for use in clinical trials.  
Role: Principal investigator

8/1/13 – 3/1/17 **Patient-Centered Outcomes Research Institute**  
Direct cost: \$1,300,000

This contract supported a national randomized controlled trial of telemedicine for individuals with Parkinson's and limited access to care.  
 Role: Principal investigator

7/1/15 – 12/31/16 **Teva Pharmaceuticals**  
 Direct cost: \$100,000  
 This research examined the natural history of the change in total motor score in Huntington disease.  
 Role: Principal investigator

9/1/13 – 7/31/16 **Davis Phinney Foundation**  
 Direct cost: \$100,000  
 This grant evaluated the feasibility and benefits of conducting 250 virtual visits for individuals with Parkinson disease in five states.  
 Role: Principal investigator

7/1/14 – 9/30/15 **Great Lakes Neurotechnologies**  
 Direct cost: \$50,000  
 This study investigated the feasibility and value of in-home objective motor assessments in Parkinson disease.  
 Role: Principal investigator

7/1/14 – 6/30/15 **Sage Bionetworks**  
 Direct cost: \$100,000  
 This study supported the development of a smartphone application for Parkinson disease.  
 Role: Principal investigator

11/1/11 – 9/30/14 **Prana Biotechnology**  
 Direct costs: \$3,800,000  
 This phase II clinical trial evaluated the safety and tolerability, clinical outcomes, and effects of biomarkers of PBT2 in individuals with Huntington disease.  
 Role: Principal investigator

3/1/13 – 6/30/14 **Biogen**  
 Direct cost: \$59,000  
 This grant supported the remote evaluation and assessment of individuals with Parkinson's who have previously undergone genetic testing with 23andMe.  
 Role: Principal investigator

11/1/12 – 11/1/13 **Verizon Foundation**  
 Direct costs: \$50,000  
 This funding supported a global telemedicine clinic that provides free one-time consultations via web-based video conferencing to individuals with Parkinson's.  
 Role: Principal Investigator

1/1/12 – 8/1/13 **Macklin Foundation**  
 Direct costs: \$600,000  
 The philanthropic funding supported the Ataxia Center at Johns Hopkins aimed at caring for patients with and advancing understanding of ataxia.  
 Role: Interim director (principal investigator) of the Ataxia Center

12/1/11 – 8/1/12 **Lundbeck**

- Direct costs: \$200,000  
The research investigated the natural history of Huntington disease, the treatment of chorea, and the safety of tetrabenazine.  
Role: Principal investigator
- 10/1/10 – 12/31/12 **Google**  
Direct costs: \$57,000  
The research compared the effectiveness of providing care to patients with Parkinson’s disease in clinic to care in their homes via video conferencing.  
Role: Principal investigator
- 10/1/10 – 12/31/12 **Excellus BlueCross BlueShield**  
Direct costs: \$20,000  
The research compared the effectiveness of providing care to patients with Parkinson’s disease in clinic to care in their homes via video conferencing.  
Role: Principal investigator
- 7/1/08 – 6/30/11 **Robert Wood Johnson Foundation**  
Direct costs: \$300,000  
As part of the Physician Faculty Scholars Program, the research examined the influence of the genetic risk of Huntington disease on important life decisions.  
Role: Principal Investigator
- 5/1/08 – 10/31/10 **Presbyterian Home for Central New York**  
Direct costs: \$80,000  
This study evaluated the feasibility of telemedicine for nursing home residents with Parkinson’s disease residing far from an academic medical center.  
Role: Principal investigator
- 9/1/07 – 8/31/11 **American Parkinson Disease Association Research Grant**  
Direct costs: \$50,000  
The aim was to estimate the current and to project the future number of people with Parkinson disease worldwide.  
Role: Principal investigator
- 6/30/07 – 8/9/10 **National Institutes of Health  
University of Rochester Clinical and Translational Science Award  
KL2 Mentored Career Development Award**  
Direct costs: \$380,000  
Quantified biomedical research investment, identified the resulting therapeutic advances, and evaluated means to improve the productivity of research.  
Role: Principal investigator
- 7/1/06 – 6/30/10 **National Parkinson Foundation Center of Excellence – Research Grant**  
Direct costs: \$230,000  
The goal of the research was to conduct a pilot, randomized controlled trial of group visits for individuals with Parkinson’s disease.  
Role: Principal investigator
- 7/1/07 – 6/30/08 **Dean’s Teaching Fellow Program, University of Rochester**  
Direct costs: \$15,000 (declined financial support)

The purpose was to improve the communication skills of fellows and create metrics to measure their development.

Role: Fellow/principal investigator

7/1/06 – 6/30/08

**American Academy of Neurology Clinical Research Training Fellowship**

Direct costs: \$130,000

The goal was to quantify neuroscience research funding and to determine the scientific and therapeutic advances that have resulted from that investment.

Role: Principal investigator

## **EDUCATIONAL ACTIVITIES**

*Lecture frequently (25-50 annually to students, patients, professionals, and the public), mentor extensively across the University, and develop global educational programs that have reached over one million individuals*

### **Teaching**

- 2005 Small group leader, Neuroanatomy Course, first year medical students, University of Pennsylvania School of Medicine (two month course for ~15 students)
- 2006 – 2008 Small group co-leader, Ambulatory Clerkship Journal Club, second year medical students, University of Rochester School of Medicine (one month course with ~12 lectures for ~12 students)
- 2008 Lecturer, Academic Career Development Course, geriatric fellows, University of Rochester School of Medicine (2 lectures for ~10 fellows)
- 2008 – 2010 Lecturer, Process of Discovery Course, second and fourth year medical students, University of Rochester School of Medicine (2 lectures per year for ~100 medical students per lecture)
- 2008 – 2010 Lecturer, Academic Research Track, first year medical students, University of Rochester School of Medicine (1 lecture per year for ~20 students)
- 2010 – 2013 Lecturer, Diseases and disorders of the nervous system, undergraduate neuroscience majors, Johns Hopkins University (1 lecture per year for ~50 students)
- 2010 – 2012 Lecturer, Discovery to Market, Johns Hopkins Carey Business School (2 lectures per year for ~80 students)
- 2014 – 2016 Lecturer, Practical Skills in Grant Writing, University of Rochester School of Medicine (1 lecture per year for ~15 students)
- 2014 – 2021 Lecturer, Process of Discovery Course, second and fourth year medical students, University of Rochester School of Medicine (1 lecture per year for ~100 medical students per lecture)
- 2014 – 2018 Lecturer, Simon School of Business in medical management and related courses (2 lectures per year, ~50 students per lecture)
- 2015 Policy panelist, public health sciences course, University of Rochester Medical Center (1 panel, ~50 students)

### **Congressional Testimony**

- 2016 U.S. House Committee on Energy & Commerce's Subcommittee on Commerce, Manufacturing, and Trade on telemedicine and digital health
- 2022 U.S. House Committee on Ways and Means' Health Subcommittee on telemedicine and health equity

### **Mentoring**

- 2006 – present Mentor(ed) dozens of undergraduate students, research assistants, public health students, medical students, residents, doctoral students, post-doctoral fellows, and faculty. Over 20 have gone onto medical and graduate school, including multiple to Harvard, Hopkins, University of Pennsylvania, and the University of Rochester. Several are faculty at Harvard, Hopkins, and the University of Rochester. The vast

majority have published at least one paper with me (as indicated by \*) and in many cases, their first paper.

#### Undergraduate students

E.J. Dayoub, University of Rochester, 2007-2009. Current position: Fellow, Cardiovascular Medicine, University of Pennsylvania\*

Ben George, University of Rochester, 2007-2009. Current position: Assistant Professor, University of Rochester\*

Olivia Brumfield, University of Rochester, 2017 – 2021. Current position: Medical student, Harvard Medical School

Gerardo Torres Davila, University of Rochester, 2018 – 2019. Current position: Graphic designer, New York City

Danae Alexandrou, University of Rochester, 2018 – 2021. Current position: Medical student, Loyola University Chicago Stritch School of Medicine

Alexandra Kaplan, University of Rochester, 2020 – 2022. Current position: Medical student, University of Rochester

Mussounda Nkhoma, University of Rochester, 2020 – 2022. Current position: Global neurology research assistant, University of Rochester

Grace Nkrumah, University of Rochester, 2022 – present

Deeksha Chinta, University of Rochester, 2023 – present

Sophia Nguyen, University of Rochester, 2023 – present

#### Research assistants, clinical research coordinators

Lisa Deuel, University of Rochester, 2007-2010. Current position: Assistant Professor, University of Vermont\*

Alexandra Gangler Wright, Johns Hopkins, 2010-2011. Current position: Breast and body imaging fellow, MD Anderson Cancer Center\*

Kristin Darwin, Johns Hopkins, 2011-2013. Current position: Maternal-fetal medicine fellow, Johns Hopkins\*

Vinayak Venkataraman, Johns Hopkins, 2011-2013. Current position: Instructor in Medicine, Harvard Medical School and Dana-Farber Cancer Institute\*

Paige Nichols, Johns Hopkins, 2011-2013. Current position: Urology resident, Mayo Clinic\*

Merideth Achey, University of Rochester, 2013-2015. Current position: General surgery resident, Vanderbilt University\*

Denzil Harris, University of Rochester, 2013-2015. Current position: Assistant Professor of Medicine, University of Rochester\*

Ryan Korn, University of Rochester, 2014-2016. Current position: Emergency medicine resident, University of California San Diego\*

William Zhu, University of Rochester, 2015-2016. Current position: Neurology resident, Stanford University\*

Henry “Tait” Keenan, University of Rochester, 2015-2016. Current position: Pediatrics resident, Naval Medical Center, Portsmouth, VA\*

Steven Goldenthal, University of Rochester, 2016-2017. Current position: Urology resident, Ohio State University\*

Molly Elson, University of Rochester, 2016-2017. Current position: Ophthalmology resident, University Hospitals\*

Mulin Xiong, University of Rochester, 2016-2017. Current position: General surgery resident, Saint Joseph Mercy Health System\*

Kelsey Spear, MPH, University of Rochester, 2017-2018. Current position: Obstetrics and gynecology resident, Cooperman Barnabas Medical Center\*

Alistair Glidden, University of Rochester, 2016 – 2021. Current position: Consultant, McKinsey & Company\*

Melissa Holloway, University of Rochester, 2017. Current position: Medical student, University of Rochester\*

Christopher Snyder, University of Rochester, 2017 – 2019. Current position: Adjunct Faculty, College of Science, Rochester Institute of Technology\*

Emma Waddell, University of Rochester, 2018 – 2020. Current position: Medical student, Brown University\*

Taylor Myers, University of Rochester, 2018 – 2020. Current position: Psychology graduate student, Boston University\*

Ellen Wagner (user design expert), University of Rochester, 2018 – 2023. Public health student, Harvard University.

Abigail Arky, University of Rochester, 2019 – 2020. Current position: Medical student, University of Iowa Osteopathic Medicine\*

Madeleine Coffey, University of Rochester, 2019 – 2021. Current position: Medical student, Zucker School of Medicine at Hofstra/Northwell

Stella Roberts, University of Rochester, 2019 – 2021. Current position: Dental student, University of Pennsylvania

Aayush Sarkar, University of Rochester, 2020 – 2021. Current position: Analyst, Boston Consulting Group

Ekene Nnadika, University of Rochester, 2021 – 2022. Current position: Dental student, University of Connecticut

Julia Soto, University of Rochester, 2020 – 2022. Current position: Project manager, PPD contract research organization\*

Maryam Zafar, University of Rochester, 2021 – 2022. Current position: Public health student, Harvard University\*

Emily Hartman, University of Rochester, 2020 – 2022. Current position: Peace Corps volunteer, Madagascar

Samantha Lettenberger, University of Rochester, 2021 – 2023. Current position: Physician assistant student, University of Colorado\*

Phil Yang, University of Rochester, 2021 – 2023. Current position: Medical student, University of Rochester\*

Elizabeth Banda, University of Rochester, 2023 – 2024. Current position: Graduate student, George Washington University

Meghan Pawlik, University of Rochester, 2020 – 2024. Current position: Data scientist, Red Ventures

Sarrah Hussein, University of Rochester, 2023 – present

### Public health students



Joel Thompson, University of Rochester, 2006-2009. Current position: Radiologist, Rochester Regional Health\*

Ben George, Bloomberg School of Public Health at Johns Hopkins, 2011-2012. Current position: Assistant Professor, University of Rochester\*

#### Medical students

Melisa Carrasco, University of Rochester School of Medicine and Dentistry, 2006-2007. Current position: Assistant Professor of Neurology, University of Wisconsin-Madison\*

Jason de Roulet, University of Rochester School of Medicine and Dentistry, 2006-2009. Current position: Gastroenterologist, University Hospitals\*

Jun Mitsumoto, Columbia University College of Physician and Surgeons, 2008. Current position: Family practitioner, New York City\*

Ben George, University of Rochester School of Medicine and Dentistry, 2009-2014. Current position: Assistant Professor, University of Rochester\*

Justin Grischkan, University of Rochester School of Medicine and Dentistry, 2015-2018. Current position: Assistant Professor of Medicine (part-time), University of Rochester\*

Denzil Harris, University of Rochester School of Medicine and Dentistry, 2017. Current position: Assistant Professor of Medicine, University of Rochester\*

Ryan Korn, University of Rochester School of Medicine and Dentistry, 2017. Current position: Emergency medicine specialist, University of California San Diego\*

Christine Dziwis, University of Rochester School of Medicine and Dentistry, 2017. Current position: Neurology resident, Duke University

#### Neurology residents

Phil Vitticore, MD, University of Rochester, 2006-2007. Current position: Neurologist, upstate New York\*

John Probasco, MD, Johns Hopkins Medicine, 2010-2011. Current position: Associate Professor of Neurology, Johns Hopkins Medicine\*

Ben George, MD, University of Rochester, 2015-2018. Current position: Assistant Professor, University of Rochester\*

William Barbosa, MD, University of Rochester, 2020. Current position: Neurology resident, University of Rochester\*

#### Doctoral students

Balaraman Rajan, Simon School of Business, Operations Management, 2010-2014. Current position: Associate Professor, Department of Management, Cal State East Bay\*

Solomon Abiola, University of Rochester, 2015-2017, Translational Biomedical Science.

#### Post-doctoral fellows

Jessica Francis, PhD, University of Rochester, 2018-2019. Postdoctoral research fellow, University of Michigan\*

#### Faculty

Dr. Liana Rosenthal, Assistant Professor of Neurology, Johns Hopkins Medicine, 2012-2013. Current position: Associate Professor of Neurology, Johns Hopkins Medicine\*

Dr. Jamie Adams, Associate Professor of Neurology, University of Rochester School of Medicine and Dentistry, 2017 – present\*

Dr. Christopher Tarolli, Assistant Professor of Neurology, University of Rochester School of Medicine and Dentistry, 2017 – 2020\*

Dr. Ruth Schneider, Associate Professor of Neurology, University of Rochester School of Medicine and Dentistry, 2020 – present\*

Dr. Caroline Silva, Assistant Professor of Psychiatry, University of Rochester School of Medicine and Dentistry, 2020 – present

#### Fellowship director, Experimental Therapeutics Program, University of Rochester, 2007-2010

Dr. David Shprecher, fellow, 2009-2010. Current position: Director of movement disorders, Banner Health\*

Dr. Tiffini Voss, fellow, 2007-2009. Current position, Vice-president, clinical development, Passage Bio\*

#### Movement disorders division director, Johns Hopkins Medicine, 2010-2013

Dr. Liana Rosenthal, fellow, 2010-2012. Current position: Associate Professor of Neurology, Johns Hopkins Medicine\*

Dr. Chizoba Umeh, fellow, 2011-2013. Current position: Neurologist, Beth Israel Lahey Health\*

#### **American Academy of Neurology Diversity Leadership Mentor Program**

2021 Mentor to Dr. Sara Dawit, Assistant Professor of Neurology, Mayo Clinic

#### **Faculty Mentor to Business School Students**

2013 Mentor to six Wharton MBA students for their field application program related to telehealth

2017 Mentor to five Simon School MBA students for a digital health field project

#### **Thesis Committee Member**

2006 Master's degree in public health, thesis committee member for Joel P. Thompson

2008 – 2011 Master's degree in public health, thesis committee member for David Shprecher, DO

#### **Training Grant Participation**

2007 – 2010 Fellowship director, NIH-funded T32 Experimental Therapeutics Fellowship (~2 fellows per year)

#### **Course Creation**

2010 – 2011 Co-founded (with Professor Avi Seidmann) and taught, Medical Entrepreneurship Course, University of Rochester School of Medicine and Simon School of Business. Course was an elective for ~20 medical and business school students who as part of the course created and presented their own business plan for improving health care.

#### **Educational Program Leadership**

- 2017 – present With Dr. Bastiaan Bloem (from Radboud University in the Netherlands), created ParkinsonTV ([www.parkinsontv.org](http://www.parkinsontv.org)) that provides free educational content to individuals with Parkinson’s disease. The show has featured individuals addressed topics from depression to exercise, and reached 1.2 million individuals and generated over 130,000 views and 65,000 engagements from individuals in 40+ countries. Also produced award-winning documentary “[Long Road to Hope](#)” that features 12 individuals with the disease from all over the world.
- 2018 – present As part of our NIH-funded Udall Center, we have cross trained ~50 students from the University of Rochester, MIT, and beyond from undergraduates to fellows in clinical research, computer science, and artificial intelligence. Half are women, and 22% are from underrepresented groups in medicine.
- 2020 – 2021 Created “CHeT Talks” ([www.chettalks.org](http://www.chettalks.org)) in the midst of the COVID-19 pandemic to highlight diverse leaders working at the intersection of health and technology, including the former and current FDA Commissioner (Dr. Robert Califf), the former head of the American Medical Association (Dr. Patrice Harris), and former Editor-in-Chief of *Health Affairs* and head of health policy unit of PBS News Hour (Ms. Susan Dentzer).

## **CLINICAL ACTIVITIES**

*Pioneered use of telemedicine to care for patients with Parkinson's disease in nursing homes, satellite clinics, and homes since 2007. Reached over 2000 patients (many underserved) in five states, 20+ countries, and six continents*

### **Certification**

Licensed Physician, State of Maryland. License# D0070841, expires 9/30/24.  
Licensed Physician, State of New York. License# 237341-1, expires 2/28/25.  
Licensed Physician, State of California. License# A105458, expires 3/31/26.  
Licensed Physician, State of Florida. License# ME 110875, expires 1/31/26.  
Licensed Physician, State of Delaware. License #C1-0009916, expires 3/31/25.  
Certified, Human Subject Protection Program. HSPP# 40260810.  
Diplomate, American Board of Psychiatry and Neurology, Inc., May 14, 2006.

### **Clinical Responsibilities**

2006 – 2010 Neurology inpatient and consult attending, Strong Memorial Hospital (4 weeks/year)  
2006 – 2010 Neurology attending in movement disorder clinic, University of Rochester (1 day/week)  
2010 – 2013 Neurology inpatient and consult attending, Johns Hopkins Hospital (4-6 weeks/year)  
2010 – 2013 Neurology attending in movement disorder clinic, Johns Hopkins (1 day/week)  
2010 – 2013 Neurology specialist for telemedicine consultation, Johns Hopkins (1/2 day/week)  
2013 – 2016 Neurology consult attending, Strong Memorial Hospital (2 weeks/year)  
2021 – 2022 Volunteer neurologist, St. Joseph's Neighborhood Clinic, Rochester, NY (1/2 day per month)  
2013 – present Neurology specialist for telemedicine consultations nationally, University of Rochester (1 day/week)

### **Clinical Program Building/Leadership**

2007 – present Co-founded (with Dr. Kevin Biglan) a telemedicine program to deliver specialty care to individuals with Parkinson disease and other movement disorders in nursing homes, satellite clinics, and in homes ("virtual house call"). Program has provided care to 1000s of patients in five states and 20+ countries on six continents and is one of the first of its kind nationally and globally.  
2016 – 2020 Created with Dr. Kevin Biglan the first statewide telemedicine program ([www.pdcny.org](http://www.pdcny.org)) that provided free care to over 500 New Yorkers from Long Island to Lockport with Parkinson's disease. Over half resided in Health Professional Shortage Areas.

## **ORGANIZATIONAL ACTIVITIES**

*Led three organizations at three different institutions, expanded the scale and scope of their activities, and generated operating surpluses. Chaired global clinical trial network that developed second FDA-approved treatment for Huntington disease. Advised University, FDA, NIH, National Academy of Medicine, World Health Organization, and leading digital health companies on pressing topics*

### **Institutional Administrative Appointments**

2014 – 2017 Member, Medical School Advisory Council (promotions and tenure committee)  
2020 Chair, Project Imagine to develop bold ideas to transform the University of Rochester coming out of the COVID-19 pandemic

### **Search committees**

2017 Member of search committee for leader of Heart Research Follow-up Program, University of Rochester  
2018 – 2020 Member of search committee for Director of Goergen Institute for Data Science, University of Rochester

### **National/Global Administrative Appointments**

2002 – 2003 Member, Board of Directors, National Depressive and Manic Depressive Association (now Depression and Bipolar Support Alliance)  
2003 – 2004 Member, Finance subcommittee, Depression and Bipolar Support Alliance  
2005 Intern to CEO of University of Pennsylvania Health System (Mr. Ralph Mueller), to improve patient access  
2008 – 2013 Co-lead, Parkinson Disease Expert Group, Global Burden of Disease Study, World Health Organization, to help determine the global burden of Parkinson disease  
2008 – 2012 Executive Committee member, Huntington Study Group  
2008 – 2014 Director, Huntington Study Group Coordination Center  
2009 – 2013 Member, American Academy of Neurology Investment Committee  
2012 – 2014 Chair, Movement Disorders Society Task Force on Telemedicine  
2012 – 2014 Treasurer, Huntington Study Group  
2013 – 2016 Huntington Disease Society of America, Scientific Advisory Board  
2014 – 2018 Chair (elected), Huntington Study Group, a global research network of 400+ investigators at 100+ research sites principally in Australia, Canada, and United States that seeks to find treatments that make a difference in Huntington disease

### **Journals**

#### Founder

Founding editor, *HD Insights*, a Huntington disease research periodical that reaches ~3000 investigators in academia and industry globally, 2012 – 2018

Founding editor, *Digital Biomarkers* (publisher: Karger Publishers: Basel, Switzerland; Impact Factor 6.9), 2017 – 2022

#### Editorial boards

Inaugural member of *Journal of Huntington's Disease*, 2012 – present

### Ad hoc reviewer

Medical journals: *Academic Medicine, Annals of Internal Medicine, BMJ, Health Affairs, JAMA, Journal of Clinical Investigation, Journal of General Internal Medicine, Lancet, New England Journal of Medicine, Pediatrics, PLoS One, and Value in Health*

Neurology journals: *Annals of Neurology, Brain, European Journal of Neurology, JAMA Neurology, Journal of Parkinson's Disease, Lancet Neurology, Movement Disorders, Neuroepidemiology, Neurology, and Parkinsonism & Related Disorders*

### **Grant Peer Review**

2007 Michael J. Fox Foundation for Parkinson's Research, Clinical Discovery Grants  
2008 Michael J. Fox Foundation for Parkinson's Research, Clinical Intervention Awards  
2009 Parkinson's Disease Society of the United Kingdom, Project Grants  
2009 The Wellcome Trust, Post-doctoral fellowships  
2009 Michael J. Fox Foundation for Parkinson's Research, Biomarkers Review  
2009 National Institute for Neurological Disorders and Stroke Clinical Trials Study Section, ad hoc reviewer  
2010 – 2013 American Academy of Neurology Foundation Clinical Research Training Fellowship, member of review committee

### **Federal Service**

2010 Ad hoc panel member, U.S. Food and Drug Administration, Neurological Devices Advisory Panel  
2011 Committee member, Institute of Medicine Committee on Cognitive Rehabilitation Therapy for Traumatic Brain Injury  
2021 – 2022 Member, Clinical Networks Evaluation Working Group, National Institute of Neurological Disorders and Stroke  
2012 – present Member, U.S. Food and Drug Administration, Neurological Devices Panel of the Medical Devices Advisory Committee

### **Professional Society Membership**

2007 – present Member, Movement Disorders Society  
2007 – present Member, American Academy of Neurology  
2011 – present Member, American Neurological Association

### **Conference organizing, select examples**

2008 – 2009 Program committee, Robert Wood Johnson Foundation Physician Faculty Scholars  
2014 – 2019 Co-founder (with Professor Avi Seidmann), d.health Summit ([www.dhealthsummit.org](http://www.dhealthsummit.org)) that convened annually in New York City or Boston ~200 leaders in policy (including U.S. Senators), technology (numerous CEOs), and health (countless academics) to foster disruptive care models for aging Americans

2024 Organizer of symposium on the [Brain and the Environment](#) in Washington, DC, to highlight the role chemicals in our food, water, and air are playing in brain diseases from autism to Alzheimer's

### Consultancies

2004 – 2005 **Avid Radiopharmaceuticals.** Assisted CEO (Dr. Dan Skovronsky, current chief scientific and medical officer of Eli Lilly) with developing strategic plan for first company to develop amyloid imaging compounds for Alzheimer's disease. Eli Lilly later purchased the company for ~\$300 million

2012 **National Institute for Neurological Disorders and Stroke (NINDS).** Conducted an evaluation of a 10-year stroke program called SPOTRIAS for the Deputy Director (Dr. Walter Koroshetz, current director of NINDS)

2014 – 2015 **National Institute for Neurological Disorders and Stroke (NINDS).** Led an evaluation of a 10-year neurological emergency treatment trials network for the Deputy Director (Dr. Walter Koroshetz, current director of NINDS)

2012 – present **Included Health** (previously Grand Rounds). Serve on Medical Advisory Board for a leading second opinion and digital health company with a \$1+ billion valuation

2021 – present **Semcap.** Serve as an operating advisor for the healthcare vertical of an investment firm ([www.semcap.com/seminalhealthcare](http://www.semcap.com/seminalhealthcare)) led by the former CEO of University of Pennsylvania Health System

2021 – present **Mediflix.** Consult and lead team of Parkinson's disease experts for a company ([www.mediflix.com](http://www.mediflix.com)) founded by the former agent for the Rolling Stones and former president of NBC Television that is developing world-class educational content for individuals with chronic conditions

### RECOGNITION

#### Awards

1998 Director's List, The Wharton School

1999 Dr. Eric C. Raps' Memorial Award for Excellence in Clinical Neurology, University of Pennsylvania School of Medicine

2002 Intern of the Year, Evanston Hospital, Evanston Northwest Healthcare

2005 Education Research Award, Department of Neurology, University of Pennsylvania

2006 American Academy of Neurology Clinical Research Training Fellowship

2007 Mentor to Melisa Carrasco, recipient of sanofi-aventis Minority Scholars Program

2007 George Engel/John Romano Dean's Teaching Fellow

2008 Robert Wood Johnson Foundation Physician Faculty Scholar

2009 *Academic Medicine* Excellence in Reviewing Award

2010 American Academy of Neurology's Jon Stolk Award in Movement Disorders for Young Investigators

2011 Elected to American Neurological Association

2015 White House "Champion for Change" for Parkinson's disease

2015 Top 5 most popular papers, *JAMA*

2015 Top 3 most talked about article, *JAMA Neurology*

- 2016 *Rochester Business Journal* Health Care Achievement Award in Health Care Innovation
- 2016 Burroughs Wellcome Fund Innovators in Regulatory Science Award recipient
- 2020 Runner up, Parkinson Prize, *Journal of Parkinson's Disease* for Best Research Paper
- 2022 Top 10 "Notable advances" that moved medicine forward per *Nature Medicine*
- 2022 Tom Isaacs Award for innovation in Parkinson's research and involving people with Parkinson's as participants by the Cure Parkinson's Trust and Van Andel Institute
- 2023 Official selection, California Capital International Documentary Film Festival ("Long Road to Hope")
- 2023 Best Documentary Film Award Finalist, Oregon Documentary Film Festival
- 2023 Selection, Bollywood Hollywood Film Festival
- 2023 Runner up, Best Clinical Research Paper, *Journal of Parkinson's Disease*