

BIOGRAPHICAL SKETCH

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NAME: Kieburtz, Karl

eRA COMMONS USER NAME (credential, e.g., agency login): KKieburtz

POSITION TITLE: Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Amherst College, Amherst, MA, Magna Cum Laude	BA	05/1980	Neuroscience
Univ of Rochester School of Medicine, Rochester, NY	MD, MPH	05/1985	Medicine, Public Health
Highland Hospital, Rochester, NY	Intern	06/1986	Family Medicine
Strong Memorial Hospital, Rochester, NY	Resident	06/1989	Neurology

A. Personal Statement**Role on T32: Mentor**

My formation as an Experimental Therapeutics Fellow at the University of Rochester was instrumental in launching my career as a neurologist and clinical researcher. Having recognized the invaluable impact of my own mentors on my professional growth during this time, I have remained committed to mentoring various types of trainees throughout nearly 3 decades of research experience. Much of the mentoring has been in the context of large ongoing clinical research projects, such as longitudinal cohorts and controlled clinical trials. I have experience with both physician trainees and other doctoral awardees. An example of the later is work on disease modeling, which has involved mentoring clinical pharmacologists, mathematicians, and emerging data scientists. This work has led to development of a better understanding of the longitudinal course of degenerative diseases, and identification of progression risk factor and predictors. Other mentoring activities have been in the context of large multicenter clinical trials with research topics ranging from mechanisms of disease to applied ethics of clinical trials. My mentoring efforts have been acknowledged by a K24 mentor award, as well as teaching and mentoring awards from the University of Rochester.

1. Holford NHG, Chan PL, Nutt JG, Kieburtz K, Shoulson I and Parkinson Study Group. Disease progression and pharmacodynamics in Parkinson disease – Evidence for functional protection with levodopa and other treatments. *J Pharmacokinet Pharmacodyn* 2006 Jun;33(3):281-311.
2. Venuto CS, Potter NB, Ray Dorsey E, Kieburtz K. A review of disease progression models of Parkinson's disease and applications in clinical trials. *Mov Disord*. 2016 Jul;31(7):947-56.
3. Dorsey E, Venuto C, Venkataraman V, Harris DA, Kieburtz K. Novel Methods and Technologies for 21st-Century Clinical Trials: A Review. *JAMA Neurol*. 2015 May;72(5):582-8
4. Simuni T, Long JD, Caspell-Garcia C, Coffey CS, Lasch S, Tanner CM, Jennings D, Kieburtz KD, Marek K; PPMI Investigators. Predictors of time to initiation of symptomatic therapy in early PD. *Ann Clin Transl Neurol*. 2016 May 17;3(7):482-94. doi: 10.1002/acn3.317. 2016 Jul.PMID:27386498

B. Positions and Honors**Positions and Employment**

1989-91 Fellow, Experimental Therapeutics, Neurology, University of Rochester School of Medicine (URMC)
1991-92 Sr. Instructor & Fellow, Neurology, URM

1992-95	Assistant Professor, Neurology, Community & Preventive Med, URM
1993-08	Director, Clinical Trials Coordination Center, Neurology, URM
1995-00	Associate Professor, Neurology, Community & Preventive Med, URM
2000-	Professor, Dept. of Neurology, Public Health Sciences, Environmental Medicine (2006) URM
2009-2014	Director, Center for Human Experimental Therapeutics
2011-2017	Robert J Joynt Professor in Neurology
2013-2016	Director, Clinical & Translational Science Institute
2013-2016	Senior Associate Dean of Clinical Research

Other Experience and Professional Memberships

2002 - 2004	NSD-K Study Section Member, NINDS
2003 - 2008	Peripheral & Central Nervous System Advisory Committee (Chair 2005-2008), FDA
2007 - 2013	Chair, Cooperative Studies Scientific Evaluation Committee, Department of Veterans Affairs
2013 -	Fellow, American Association for the Advancement of Science

Honors

1980	Frank Dow Award in Chemistry, Amherst College
1980	Phi Beta Kappa, Amherst College
1982	Logan Clendenning Fellowship in the History of Medicine, University of Rochester School of Medicine
1984	The Best Doctors in America, Woodward/White, Inc., 2nd edition
1994-7	Dean's Teaching Scholar, University of Rochester School of Medicine
2007	Junior Faculty Mentoring Award, University of Rochester School of Medicine

C. Contributions to Science

1. **The execution of large, multi-center trials in PD, a common neurodegenerative disease, requires the ability to form and sustain large cooperative groups.** These groups must be able to function over long periods of time, and tolerate internal dissent, yet forge agreement. I worked for decades, within, and led for 5 years, the Parkinson Study Group, as well as forming and leading the NET-PD group, sponsored by NINDS. These cooperative groups were highly successful in conducting complex, novel, and hypothesis testing studies.
 - a. Parkinson Study Group (K Kieburtz, Medical Director, Steering Com). Effects of tocopherol and deprenyl on the progression of disability in early Parkinson's disease. *New Engl J Med* 1993; 328:176-183.
 - b. Shults CW, Oakes D, Kieburtz K, Beal F, Hass R, Plumb S, Juncos JL, Nutt J, Shoulson I, Carter J, Kompoliti K, Perlmuter JS, Reich S, Stern N, Watts RL, Kurlan R, Molho E, Harrison M, Lew M, and the Parkinson Study Group. Effects of Coenzyme Q10 in Early Parkinson Disease. Evidence of Slowing of the Functional Decline. *Arch Neurol* 2002;59:1541-1550.
 - c. The Parkinson Study Group (Fahn S, primary author, Kieburtz K, Steering Com). Levodopa and the progression of Parkinson's disease. *NEJM* 2004;351:2498-508.
 - d. Writing Group for the NINDS Exploratory Trials in Parkinson Disease (NET-PD) Investigators. Effect of Creatine Monohydrate on Clinical Progression in Patients With Parkinson Disease: A Randomized Clinical Trial. *JAMA*. 2015;313(6):584-593. doi:10.1001/jama.2015.120. PMID: PMC4349346
2. **A major focus of research in neurodegenerative disorders is on the identification of interventions that will slow the progression of clinical disability.** Much of this research has been hampered by a less than ideal understanding of disease mechanisms, but clinical trial design has also been sub-optimal. Much of my work has focused on the development of new research methods to speed the identification of effective treatments. These methods include novel trial designs and statistical approaches.
 - a. The NINDS NET-PD Investigators (Kieburtz K, Corresponding author). A randomized, double-blind, futility clinical trial of creatine and minocycline in early Parkinson disease. *Neurol* 2006;66:664-671.
 - b. Tilley BC, Palesch YY, Kieburtz K, et al. Optimizing the ongoing search for new treatments for Parkinson disease. Using futility designs. *Neurol* 2006;66:628-633.
 - c. Elm JJ; NINDS NET-PD Investigators. Design innovations and baseline findings in a long-term Parkinson's trial: the National Institute of Neurological Disorders and Stroke Exploratory Trials in

Parkinson's Disease Long-Term Study-1. *Mov Disord*. 2012 Oct;27(12):1513-21. PMID: PMC3481179

- d. Sheng Luo, Junsheng Ma and Karl D. Kiebertz. Robust Bayesian inference for multivariate longitudinal data by using normal/independent distributions. *Statistics in Medicine* 2013 Feb 7; DOI: 10.1002/sim.5778 PMID: PMC3884581

3. Much of my investigative career has focused on the **new development of treatments for Parkinson disease, via well designed, controlled clinical trials**. This research work has brought several new treatments to patients with this disease, primarily to better manage symptoms. The trial designs and outcome measures differ from studies designed to show an impact on the long-term progression of illness.
 - a. Parkinson Study Group (Kiebertz K, primary author). Safety and efficacy of pramipexole in early Parkinson disease. A randomized dose-ranging study. *JAMA* 1997;278:125-130.
 - b. Parkinson Study Group (Kiebertz K, primary author). Entacapone improves motor fluctuations in levodopa-treated Parkinson's disease patients. *Ann Neurol* 1997;42:747-755.
 - c. Parkinson Study Group (Siderowf A, primary author, Kiebertz K, Coordination Ctr Dir). A controlled trial of Rasagiline in early Parkinson disease. The TEMPO study. *Arch Neurol* 2002;59:1937-1943
 - d. Kiebertz K; The Parkinson Study Group PramiBID Investigators. Twice-daily, low-dose pramipexole in early Parkinson's disease: A randomized, placebo-controlled trial. *Mov Disord*. 2011 Jan;26(1):37-44
4. I was very active early in the HIV epidemic **identifying the risk factors for and characteristics of HIV related neurologic syndromes**. I also participated in some of the first clinical trials for HIV dementia, and then designed and ran trials for both HIV dementia and neuropathy. I led two consortia dedicated to HIV Neurology clinical trials, funded by the Charles A Dana Foundation and the NINDS.
 - a. Sidtis J, Gatsonis C, Price R, Singer E, Collier A, Richman D, Hirsch M, Schaerf FW, Fischl M, Kiebertz K, Simpson D, Koch M, Feinberg J, Danfni O. Zidovudine Treatment of the AIDS dementia complex: results of a placebo controlled trial. *Ann Neurol* 1993; 33:343-349.
 - b. Kiebertz K, Simpson D, Yiannoutsos C, Max MB, Hall CD, Ellis RJ, Marra CM, McKendall R, Singer E, Dal Pan GJ, Clifford DB, Tucker T, Cohen B, and the AIDS Clinical Trial Group 242 Protocol Team. A randomized trial of amitriptyline and mexiletine for painful neuropathy in HIV infection. *Neurology* 1998;51:1682-1688.
 - c. Schifitto G, McDermott MP, McArthur JC, Marder K, Sacktor N, Epstein L, Kiebertz K, and the Dana Consortium on the Therapy of HIV Dementia and Related Cognitive Disorders. Incidence of and risk factors for HIV-associated distal sensory polyneuropathy. *Neurology* 2002;58:1764-1768.
 - d. Sacktor, McDermott MP, Marder K, Schifitto G, Selnes OA, McArthur JC, Stern Y, Albert S, Palumbo D, Kiebertz K, DeMarcaida JA, Cohen B, Epstein L. HIV-associated cognitive impairment before and after the advent of combination therapy. *J Neurovirol* 2002;8(2):136-42.
5. **Applied research ethics are rarely studied empirically and quantitatively**. Along with colleagues at the University of Michigan and the NIH, I have studied the informed consent process especially focusing on research participant comprehension in chronic disorders considering high risk research studies.
 - a. Kim SY, Wilson R, De Vries R, Kim HM, Holloway RG, Kiebertz K. It is not guaranteed that you will benefit: True but misleading? *Clin Trials*. 2015 Aug;12(4):424-31. doi: 10.1177/1740774515585120. Epub 2015 May 11. PMID:25963311
 - b. Kim SY, De Vries R, Parnami S, Wilson R, Kim HM, Frank S, Holloway RG, Kiebertz K. Are therapeutic motivation and having one's own doctor as researcher sources of therapeutic misconception? *J Med Ethics*. 2015 May;41(5):391-7. doi: 10.1136/medethics-2013-101987. Epub 2014 May 22. PMID: 24855070
 - c. Kim SY, De Vries R, Holloway RG, Wilson R, Parnami S, Kim HM, Frank S, Kiebertz K. Sham surgery controls in Parkinson's disease clinical trials: views of participants. *Mov Disord*. 2012 Sep 15;27(11):1461-5. doi: 10.1002/mds.25155. Epub 2012 Aug 23. PMID: 22927064
 - d. Galpern WR, Corrigan-Curay J, Lang AE, Kahn J, Tagle D, Barker RA, Freeman TB, Goetz CG, Kiebertz K, Kim SY, Piantadosi S, Comstock Rick A, Federoff HJ. Sham neurosurgical procedures in clinical trials for neurodegenerative diseases: scientific and ethical considerations. *Lancet Neurol*. 2012 Jul;11(7):643-50. doi: 10.1016/S1474-4422(12)70064-9. PMID: 22710757

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

P50NS108676 Dorsey (PI) 09/30/2018-07/31/2023
NIH/ National Institute of Neurological Disorders and Stroke
Morris K. Udall Center at the University of Rochester (UR-Udall Center)
Research Project 1: Parkinson disease Modeling and Simulation
Role: Project Lead

UL1TR000042 Bennett/Zand (PI) 08/01/2016-05/31/2020
NIH/ National Center for Advancing Translational Sciences
The University of Rochester's Clinical and Translational Science Institute
The major goal of this project is to develop, demonstrate and disseminate methods and approaches to advance translational research, by providing education and training, supporting transdisciplinary teams, improving quality and efficiency, and engaging community stakeholders.
Role: Co-Investigator

Parkinson's Progression Markers Initiative (PPMI) Kieburtz (PI) 05/01/2013-04/30/2020
Michael J. Fox Foundation, Inc.
An observational, multi-center study to assess progression of clinical features and imaging as well as biologic biomarkers in Parkinson Disease patients compared to healthy controls. The primary objective of this study is to collect and examine clinical and biologic measures to track disease progression in early stage PD subjects for use in clinical trials of disease modifying therapies.
Role: Principal Investigator

Completed Research Support

U01NS43128 Kieburtz (PI) 12/01/2006-11/30/2016
NIH, NINDS
Neuroprotection Studies in PD: A Coordinating Center
This project establishes an academically based clinical trials coordination center to handle all aspects of performing trials in experimental treatments in PD.
Role: Principal Investigator