

DREW KERN, MD, MS, FAAN
drew.kern@cuanschutz.edu

Curriculum Vitae

Academic Address

Academic Office 1
12631 East 17th Avenue, MS-B185
Aurora, CO 80045
phone: 303-724-9542
fax: 303-724-2212

Clinic Address

Anschutz Outpatient Pavilion
1635 Aurora Court, MS-F727
Aurora, CO 80045
phone: 720-848-2080
fax: 720-848-2106

EDUCATION

1999 B.A. in Kinesiology (Cum Laude), University of Colorado, Boulder, CO
2001 M.S. in Kinesiology with an emphasis in Neuroscience, University of Colorado, Boulder, CO
2004 Summer Medical Student Fellow, Mentored by Felix Eckenstein, Ph.D., University of Vermont College of Medicine, Burlington, VT
2006 Translational Research Fellowship, Mentored by John Sladek, Jr., University of Colorado, Denver, CO
2009 M.D., University of Vermont, Burlington, VT
2009-2010 Internal Medicine Internship, University of Colorado, Denver, CO
2010-2013 Neurology Residency, University of Colorado, Denver, CO
2013-2015 Movement Disorders Fellowship, Mentored by Anthony Lang, MD and Alfonso Fasano, MD, PhD. University of Toronto, Toronto, ON
2016 NINDS Clinical Trials Methodology Course, National Institute of Neurological Disorders and Stroke

ACADEMIC APPOINTMENTS

1999 Research Assistant, Neural Control of Movement Laboratory, University of Colorado, Boulder, CO
2000-2001 Teaching Assistant, Biomechanics, University of Colorado, Boulder, CO
2001 Lead Teaching Assistant, Sensory Motor Neuroscience, University of Colorado, Boulder, CO
2015-2021 Assistant Professor of Neurology, University of Colorado School of Medicine
2018-2021 Adjunct Assistant Professor of Department of Neurosurgery, University of Colorado School of Medicine
2021-present Associate Professor of Department of Neurology, University of Colorado School of Medicine
2021-present Adjunct Associate Professor of Department of Neurosurgery, University of Colorado School of Medicine

HOSPITAL and PROFESSIONAL POSITIONS

1997	Intern, Cardiac Catheterization Laboratory, University of California, Los Angeles, Santa Monica, CA
2001-2002	Medical Assistant, Provider: Joseph Craig, MD, Rocky Mountain Youth Medical Providers, PC (non-profit pediatric clinic), Denver, CO
2002-2003	Research Associate, Director: Rajeev Kumar, MD, "Movement disorder studies: Long-term outcomes of STN DBS," Colorado Neurological Institute, Englewood, CO
2011-2013	Resident Education Director, University of Colorado
2012-2013	Chief Neurology Resident, University of Colorado
2016-2019	Movement Disorders Resident Block Director
2017-2021	Assistant Director Outpatient Neurology Clinics, University of Colorado Hospital and University of Colorado SOM, Department of Neurology
2017-2021	Co-Director, Colorado Neurological Society
2021-2022	Interim Movement Disorders Section Head, Department of Neurology, University of Colorado SOM
2019-present	Co-Director, Deep Brain Stimulation Program, Departments of Neurosurgery and Neurology, University of Colorado School of Medicine
2021-present	Co-Director, Advanced Therapies in Movement Disorders Program, Departments of Neurosurgery and Neurology, University of Colorado School of Medicine

HONORS, SPECIAL REGOGNITIONS, and AWARDS

1996-1998	Alpha Epsilon Delta (pre-honors health society), University of Colorado, Boulder, CO
1996-1999	General Honors Program (pre-requirement of 3.3 GPA), University of Colorado, Boulder, CO
2000	Travel Grant Award, University of Colorado, Boulder, CO
2004	Medical Student Summer Research Fellowship, University of Vermont College of Medicine, Burlington, VT
2007	ASNTR Student Travel Grant Award, American Society for Neural Transplant and Repair
2008	AFAR Research Grant Award, American Foundation for Aging Research
2009	The Herbert Martin Sr. Award for Excellence in Neurology, University of Vermont College of Medicine
2011	The Arnold P. Gold Foundation Award for Humanism and Excellence in Teaching, University of Colorado, Aurora, CO
2013	Resident Research Award, University of Colorado, Department of Neurology
2013-2014	Clinical Movement Disorders Fellowship Award, Parkinson Society of Canada
2014	International Parkinson and Movement Disorder Society Travel Award, University of Toronto
2016	Student Loan Repayment Program, National Institutes of Health Loan Repayment Program (funding \$70,000)
2017-2018	Faculty Development Award, Adamas Pharmaceuticals, Inc. (funded \$ 9000)
2019	Parkinson Study Group Visiting Mentor Program Award (funded \$ 7450)

2022 Fellow of the American Academy of Neurology
 2023 Delphi Study Participant (expert DBS panel)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

2003-present American Academy of Neurology
 2003-2006 Student Interest Group of Neurology
 2006-2008 Front Range Neuroscience Group
 2007-2008 Society for Neurosciences
 2007-2008 American Association for the Advancement of Science
 2015-present American Academy of Neurology
 2013-present International Parkinson and Movement Disorders Society
 2015-present Parkinson Study Group
 2015-present Colorado Neurological Society
 2016-present American Neurological Association
 2022-present Deep Brain Stimulation Society
 2024-present Congress of Neurological Surgeons

MAJOR COMMITTEE and SERVICE RESPONSIBILITIES

2007 Judge of Denver Metro High School Students' Poster Presentations, Denver Metro Regional Science and Engineering Fair
 2013-2015 Biomarkers in Parkinson's Disease, Michael J. Fox Foundation
 2015-present Functional Neurosurgical Working Group, Parkinson Study Group
 2016-2022 Data Safety Monitoring Board, Colorado Clinical and Translational Sciences Institute (CCTSI)
 2016-present AbbVie Pharmaceuticals – Marketing and Medical Board
 2018-2019 Denali Therapeutics – Medical Board
 2019-2020 Quality Case Review Committee – University of Colorado SOM, Department of Neurology
 2018-present Medtronic – Medical Board
 2018-present Boston Scientific – Medical Advisor
 2023-present Insightec – Medical Advisor
 2024-present Alpha Omega Engineering
 2024-present Promotion and Tenure Departmental Review Committee, University of Colorado SOM, Department of Neurology

LICENSURE and BOARD CERTIFICATION

1998 Emergency Medical Technician Certification
 2000 National Institute of Health Research Certification
 2009-2013 State of Colorado Training License
 2013 Board-Certified in Neurology, American Board of Psychiatry and Neurology
 2013-2015 Postgraduate License, College of Physicians and Surgeons in Ontario
 2013-present State of Colorado Medical License
 2022-present State of Wyoming Medical License
 2022-present State of New Mexico Medical License

REVIEW and REFEREE WORK*Publications*

2015	Movement Disorders Journal
2016	The Clinical Neuropsychologist
2016	The Journal of Neuropsychiatry and Clinical Neurosciences.
2020	Brain Sciences
2020 & 21	American Academy of Neurology Annual Meeting of 2020, Abstract Review
2021	Neurology Clinical Practice
2022 & 23	Frontiers in Neurology, section Experimental Therapeutics
2022 & 23	Brain Communications
2022	Sensors
2022	Journal of the Neurological Sciences
2016, 21-25	Parkinsonism and Related Disorders
2023	NPJ Parkinson's Disease
2023	Neurotherapeutics
2023	Biomedicines
2023 & 24	Frontiers in Aging Neuroscience
2023 & 24	Annals of Neurology
2024	Bioengineering
2023-25	Movement Disorders Clinical Practice
2023 & 24	Movement Disorders
2025	Computer Methods and Program in Biomedicine
2025	Science Advances
2025	Brain Sciences
2025	BMC Neurology

Grants

2016	Knoebel Institute for Health Aging, University of Denver
2015-present	Movement Disorders Center Pilot Grant, University of Colorado SOM, Department of Neurology
2017	Parkinsonism Biomarker Review Committee – ZNS1 SRB-T (29) National Institute of Health/National Institute of Neurological Disorders and Stroke (NIH/NINDS)
2019	Neurological Foundation of New Zealand
2022	Virginia Commonwealth University, Parkinson's & Movement Disorders Center, pilot grant reviewer
2025	Department of Neurosurgery Research Innovation and Career Development, University of Colorado SOM, Department of Neurosurgery

Promotions

2022-present	Department Promotion Mid-Course Review Committee, Department of Neurology, University of Colorado SOM. Review consideration of faculty promotion in tenure track.
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INVITED EXTRAMURAL LECTURES, PRESENTATIONS, and VISITING PROFESSORSHIPS**Oral Presentations/Lectures - Institutional**

- Neuroscience Conference at Swedish Medical Center. *Sustained long-term benefit and adverse effects of bilateral subthalamic nucleus (STN) deep brain stimulation (DBS) in Parkinson's disease (PD)*. December 11, 2002 Englewood, CO
- University of Colorado Denver, Grand Rounds. *Alpha-synuclein in skin: the need for a methodological approach*. May 22, 2013 Aurora, CO
- University of Toronto, Movement Disorders Journal Club. *A pilot study of focused ultrasound thalamotomy for essential tremor*. August 21, 2013 Toronto, ON
- University of Toronto, Movement Disorders Video Rounds. *NBIAs*. October 7, 2013 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *A two-year randomized controlled trial of progressive resistance exercise for Parkinson's disease*. October 16, 2013 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *Alpha-synuclein in cutaneous autonomic nerves*. November 13, 2013 Toronto, ON
- University of Toronto, Movement Disorders Video Rounds. *AOAs*. December 9, 2013 Toronto, ON
- University of Toronto, Movement Disorders Video Rounds. *DBS cases*. December 9, 2014 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *Long-term safety and tolerability of ProSavin, a lentiviral vector-based gene therapy for Parkinson's disease: a dose escalation, open-label, phase 1/2 trial*. January 29, 2014 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *Comparison of pregabalin with pramipexole for restless legs syndrome*. February 19, 2014 Toronto, ON
- University of Toronto, Movement Disorders Video Rounds. *MSA*. February 24, 2014 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *Randomized trial of safinamide add-on to levodopa in Parkinson's disease with motor fluctuations*. March 26, 2014 Toronto, ON
- University of Toronto, Movement Disorders Video Rounds. *PLMT*. May 18, 2014 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *Peripheral hypoxia in restless legs syndrome (Willis-Ekbom disease)*. June 4, 2014 Toronto, ON
- University of Toronto, Movement Disorders Video Rounds. *Tics*. June 30, 2014 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *Randomized, controlled trial of rasagiline as an add-on to dopamine agonists in Parkinson's disease*. August 6, 2014 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *Droxidopa for neurogenic orthostatic hypotension*. August 20, 2014 Toronto, ON
- University of Toronto, Movement Disorders Journal Club. *The modern pre-levodopa era of Parkinson's disease: insights into motor complications from sub-Saharan Africa*. September 24, 2014 Toronto, ON

University of Toronto, Movement Disorders Video Rounds. *Tremor and DBS*. October 6, 2014 Toronto, ON

University of Toronto, Movement Disorders Journal Club. *Deferiprone in Friedreich ataxia: a 6-month randomized controlled trial*. November 19, 2014 Toronto, ON

University of Toronto, Movement Disorders Journal Club. *Should genetic testing for SCAs be included in the diagnostic workup for MSA?*. December 17, 2014 Toronto, ON

University of Toronto, Movement Disorders Journal Club. *Mendelian randomization of serum urate and Parkinson disease progression*. January 7, 2015 Toronto, ON

University of Toronto, Movement Disorders Video Rounds. *Myoclonus*. February 9, 2015 Toronto, ON

University of Toronto, Movement Disorders Journal Club. *Parkinson risk in idiopathic REM sleep behavior disorder*. March 18, 2015 Toronto, ON

University of Toronto, Movement Disorders Journal Club. *Rytary*. April 29, 2015 Toronto, ON

University of Toronto, Movement Disorders Journal Club. *Causes of withdrawal of duodenal levodopa infusion in advanced Parkinson disease*. May 27, 2015 Toronto, ON

University of Toronto, Movement Disorders Video Rounds. *Chorea*. June 1, 2015 Toronto, ON

Department of Neurology Grand Rounds. *Ironing out neurodegeneration with brain iron accumulation*. November 4, 2015, Aurora, CO

Neurosurgery Morning Research Rounds. *Deep brain stimulation (DBS) of the zona incerta (Zi): stereotactic targeting an assessment of clinical outcomes compared with traditional targets*. March 22, 2016 Aurora, CO

Behavioral Neurology and Neuropsychiatry. *Cognition in deep brain stimulation (DBS) for movement disorders: evaluation and outcomes*. November 1, 2016 Aurora, CO

Neurosurgery Morning Research Rounds. *Deep brain stimulation (DBS) of the rostral zona incerta (rZi) for treatment of Parkinson's disease: stereotactic targeting and clinical efficacy*. November 22, 2016 Aurora, CO

University of Colorado Denver, Neurorehabilitation Rounds. *Functional movement disorders*. September 27, 2017 Aurora, CO

Department of Neurology Grand Rounds. *Many roads lead to Parkinson's disease: understanding the causes and progression*. December 6, 2017 Aurora, CO

Department of Neurology Grand Rounds. *Practice transformation*. February 21, 2018 Aurora, CO

Department of Neurology Grand Rounds. *Surgical targets less talked about in deep brain stimulation for movement disorders*. August 29, 2018 Aurora, CO

Department of Neurology Grand Rounds. *Current and future research in deep brain stimulation at the University of Colorado*. August 29, 2020 Aurora, CO

Department of Neurology Grand Rounds. *MRI Guided Focused Ultrasound at the University of Colorado: Review, Unknown, and Experience*. February 16, 2022 Aurora, CO

Department of Neurology. *Neurology Research Retreat*. May 21, 2023 Aurora, CO

Oral Presentations/Lectures – National

Northern New England Neurological Society. *Not all that shakes is narcolepsy*. October 29, 2005 Portsmouth, NH

Michael J. Fox Foundation. *Alpha-synuclein in skin: the need for a methodological approach*. June 6, 2013 New York, NY

International Parkinson and Movement Disorders Society. *Video Challenge* June 17, 2015 San Diego, CA

Parkinson Study Group Surgical Study Group. *Interleaved stimulation: where are we and where should we go?* September 17, 2016 Portland OR

John R. Sladek Jr. Symposium *Application of lessons learned during my research fellowship: Skin as a potential biomarker in Parkinson's disease*. October 22, 2015 Aurora, CO

Neuroscience Summit. *Movement disorders and surgical interventions*. September 11, 2018 Aurora, CO

Neurosurgery in the Rockies Conference. *Deep Brain Stimulation for Movement Disorders: Simplified to Complex Programming* February 24, 2020. Beaver Creek, CO

Neurosurgery in the Rockies Conference. *MRI Guided Focused Ultrasound – Gaps*. February 28, 2022. Beaver Creek, CO

ASSFN Hands-On Course. *DBS Programming*. November 13, 2022. Aurora, CO

ASSFN Hands-On Course. *Advanced Therapies in Movement Disorders*. November 5, 2023. Aurora, CO

Medtronic Advisory Leaders Forum. *Monopolar Sensing of the Subthalamic Nucleus in Parkinson's disease*. April 10, 2024. Minneapolis, MN.

ASSFN Hands-On Course. *Advanced Therapies (DBS Programming)*. October 27, 2024. Aurora, CO

Virginia Commonwealth University Movement Disorders Section. *Adaptive Deep brain Stimulation: Our Experience*. August 22, 2025. Richmond, VA.

Focus Forward: Neuro Innovations Summit. *Tremor Outcomes in Essential Tremor and Tremor Dominant Parkinson Disease*. September 13, 2025. Dallas, TX.

American Society Functional Neuroradiologists Annual Meeting. *The role of the Neurologist in MRigFUS*. September 20, 2025. Austin, TX.

Oral Presentations/Lectures – International

University of Calgary Movement Disorder Rounds. *Deep brain stimulation: Current and future directions*. June 18, 2020 Calgary, AB

American Academy of Neurology. *Safety of Foslevodopa/Foscarbidopa During Optimization and Maintenance Treatment: Post Hoc Analysis of a Phase 3 Trial*. April 25, 2023. Seattle, WA

American Academy of Neurology. *"Improvement of "On" and "Off" Times in Patients With Advanced Parkinson's Disease Treated With Foslevodopa/Foscarbidopa: Subgroup Analyses From a Phase 3 Randomized Study*. April 17, 2024. Denver, CO

10th Annual Symposium on "Shaping the Management of Parkinson's Disease" *Skin biopsy for synuclein inclusions should now be used in the clinical setting*. June 8, 2024. Bonita Springs, FL

International Parkinson and Movement Society. *"Essential of Device Assisted Therapies in Parkinson's Disease: Programming a patient with DBS-Conventional STN and GPI, Neurophysiology guided and Imaging guided programming"* On-Line Modules in the Course Catalog under "Device-Assisted Therapies"

Poster Presentations

- American College of Sports Medicine. *Chronic surface EMG during normal daily use*. June 2, 2000. Indianapolis, IN
- American Academy of Neurology. *Effective subthalamic nucleus (STN) deep brain stimulation (DBS) in levodopa-unresponsive parkinsonism*. April 1, 2003. Honolulu, HI
- American Academy of Neurology. *Sustained long-term benefit and adverse effects of bilateral subthalamic nucleus (STN) deep brain stimulation (DBS) in Parkinson's disease (PD)*. April 1, 2003. Honolulu, HI
- Society for Neuroscience. *Effects of neural stem cell transplantation on total tau in an aged animal model of Down syndrome, Ts65Dn*. October 14, 2006. Atlanta, GA
- Front Range Neuroscience Group. *Effects of neural stem cell transplantation on total tau in an aged animal model of Down syndrome, Ts65Dn*. November 13, 2006. Fort Collins, CO
- American Society for Neural Therapy and Repair. *Short-term neural stem cell treatment in the Ts65Dn mouse model of Down syndrome did not significantly affect total tau in the hippocampus and olfactory bulbs*. May 3, 2007. Clearwater, FL
- Society for Neuroscience. *Biocompatibility of poly(ethylene) glycol-based hydrogel in healthy brain tissue*. November 4, 2007. San Diego, CA
- American Foundation for Aging Research. *Tau analysis within the Ts65Dn mouse, a model of Down syndrome*. November 8, 2008. Raleigh, NC
- University of Toronto Research Retreat. *Methodological approaches for evaluating alpha-synuclein in skin as a potential biomarker in Parkinson's disease*. January 23, 2014. Toronto, ON
- International Congress of Parkinson's Disease and Movement Disorders. *Methodological approaches for evaluating alpha-synuclein in skin as a potential biomarker in Parkinson's disease*. June 9, 2014. Stockholm, Sweden
- International Congress of Parkinson's Disease and Movement Disorders. *Optimized Imaging at 3.0 T of the Rostral Zona Incerta (rZI) for Deep Brain Stimulation (DBS) in Parkinson's Disease (PD)*. October 6, 2018. Hong Kong, China
- American Academy of Neurology. *Enhancing Care Teams with Medical Assistants: A Novel Clinic Model*. May 5, 2019. Philadelphia, PA
- International Congress of Parkinson's Disease and Movement Disorders. *Rapid improvement in dystonia after pallidal deep brain stimulation in a patient with myoclonus-dystonia syndrome: A case report*. September 25, 2019. Nice, FR
- International Congress of Parkinson's Disease and Movement Disorders. *Correlation of local field potentials (LFPs) to electromyography (EMG) of the rostral zona incerta (rZI) and subthalamic nucleus (STN) in Parkinson's Disease (PD)*. September 25, 2019. Nice, France
- International Congress of Parkinson's Disease and Movement Disorders. *Characteristics of patients with essential tremor evaluated for deep brain stimulation surgery at a tertiary center*. September 24, 2019. Nice, FR
- American Academy of Neurology Annual Meeting. *Neuro-anatomical volumetric changes in deep brain stimulation of Parkinson's disease patients*. Virtual 2020

International Congress of Parkinson's Disease and Movement Disorders. *Pilot study to investigate the use of in-clinic sensing to identify optimal stimulation parameters for deep brain stimulation therapy in Parkinson's disease.* September 17, 2022. Philadelphia, PA

International Congress of Parkinson's Disease and Movement Disorders. *Safety of Foslevodopa/foscarbidopa during optimization and maintenance treatment: post hoc analysis of a phase 3, single-arm trial.* August 28, 2023. Copenhagen, DK

International Congress of Parkinson's Disease and Movement Disorders. *Pilot study to investigate the use of monopolar sensing to improve the efficiency of DBS programming in Parkinson's disease.* August 29, 2023. Copenhagen, DK

International Congress of Parkinson's Disease and Movement Disorders. *Comparison of monopolar and bipolar sensing of beta frequency in Parkinson's disease of the subthalamic nucleus for deep brain stimulation.* September 27, 2024. Philadelphia, PA

TEACHING RECORD

Movement Disorders Resident Block Director

2017- 2019

Responsible for the core resident education on movement disorders

Medical Student and resident rotations in Movement disorders Clinics

2015-present

Bedside teaching of movement disorders including examination, diagnosis, work-up and treatment at UCHHealth and Denver Health.

American Society for Stereotactic and Functional Neurosurgery (ASSFN)

2018, 2019, 2022-2024

Hands-on teaching to residents and fellows of neurology and neurosurgery in stereotactic and functional neurology in deep brain stimulation programming

DBS Fellows Course

2022-2025

Hands-on teaching course for movement disorders neurology fellows in Austin, TX

DBS Workshop

2025

Hands-on teaching workshop at the International Association of Parkinsonism and Related Disorders Conference in New York, NY

DBS Programming Video Library

2025

International Congress of Parkinson's Disease and Movement Disorders

Mentoring Record

Advanced Therapies in Movement Disorders Neurology Fellows

- Bridget Ollesch, MD (2024)
- Ondrea Timmermann, DO (2025)
- Blake Beehler, MD (2025)

Movement Disorder Neurology Fellows

- Kristin King, MD (2017-2018)
- Kristin Mitrovich, MD (2017-2018)
- Trevor Hawkins, MD (2016-2018)
- Christopher Groth, MD (2016-2018)
- Lisa Deuel, MD (2018-2019)
- Jeanne Feuerstein, MD (2018-2019)
- Caroline Goldin, MD (2019-2020)
- Theresa Lee, MD (2019-2020)
- Alexander Baumgartner, MD (2020-2022)
- Michael Korsmo, MD (2020-2022)
- Antonia Pusso, MD (2021-2023)
- Heather Heiser, MD (2021-2023)
- Matthew Woodward, MD (2022-2024)
- Brooke Heffernan, MD (2022-2024)
- Stereotactic and Functional Neurosurgery Hands-On Workshop, Annual Course. 2018, 2019, 2022-24. Aurora, Colorado. Lecture and workshop on deep brain stimulation taught to nationally invited neurosurgery fellows and residents throughout North America.

Residents

- Ian McGuinness, MD (2018-2019). Review goals of education and career development
- John “Kyle” Jenkins, MD (2019-2023). Review goals of education and career development

Medical Students

- Mashal Talat (2018), visiting international student, supervisor for extended observership
- Yaswanth Chintaluru (2020-present), medical student at University of Colorado pursuing a research track, co-mentor

Graduate Students

- Nathan Davis (2018-2019), Master’s candidate, Modern Human Anatomy, University of Colorado SOM. Advisor for capstone project.
- Gary Cahill (2022-2023), Master’s candidate, Modern Human Anatomy, University of Colorado SOM. Advisor for capstone project.
- Erin Radcliffe (2022-present), PhD candidate, Biomedical Engineering, University of Colorado SOM. Co-mentor.

Faculty

- Alexander Baumgartner (2022-present), Assistant Professor, University of Colorado SOM
- Jessica Barr (2023-present), Instructor, University of Colorado SOM

COMMUNITY SERVICE

Volunteer in Classroom with 3rd Grade Developmental Delayed Children, Bal Swan
 Children's Center, 1998 Broomfield, CO
 Aurora Central High School. *Nervous System*. November 9, 2017 Aurora CO

Patient Education

E3 Conference Parkinson Association of the Rockies. *Sleep and Fatigue in Parkinson's Disease*. October 9, 2015 Denver CO
 Parkinson Association of the Rockies. *Fatigue and sleep disorders in Parkinson's disease and resources at the University of Colorado, Movement Disorders Center*. May 14, 2016 Grand Junction, CO
 Bionic Brigade DBS Support Group. *DBS in Movement Disorders*. November 11, 2016. Englewood CO
 Parkinson Support Group. *Carbidopa Levodopa Enteral Suspension*. April 7, 2017 Aurora CO
 Parkinson Support Group. *Sleep and Fatigue*. June 16, 2017 Westminster CO
 Colorado Neurological Institute. *Pathogenesis of Parkinson Disease*. November 11, 2017 Englewood CO
 Boulder Support Group. *Parkinson Disease*. October 23, 2018 Boulder CO
 Tri Lakes Support Group. *Advanced Parkinson's Disease Treatments*. June 16, 2018 Englewood CO
 Parkinson Association of the Rockies *PD 101: Medications* May 15, 2019
 Longmont Parkinson Disease Support Group *Advanced Treatments for Parkinson's Disease* June 12, 2019
 Davis Phinney Foundation Webinar *Parkinson's Research & Clinical Trials* October 16, 2019
 Parkinson Association of the Rockies *Deep Brain Stimulation for Parkinson's Disease and Essential Tremor* May 21, 2020
 Parkinson Association of the Rockies *Advanced PD Treatments* June 11, 2020
 Parkinson and Movement Disorders Alliance *Collaboration of Neuro-palliative care and Advanced Treatments in Movement Disorders* July 29, 2020
 Movement Disorders Foundation 2nd Annual Seminar. *Treatment of complex motor problems in Parkinson's disease* August 29, 2020
 INSIGHT Into Parkinson's 2023. *What is Advanced PD?* April 2023.
 INSIGHTEC. *From Dependent to Independent: Treatment Options for Essential Tremor* July 23, 2023, September 24, 2023, November 12, 2023, and January 14, 2024.
 FUS Patient Education. May 10, 2024; July 26, 2024.
 DBS Virtual Series, *What's Next?* May 15, 2025. Virtual
 University of Colorado Parkinson's Disease Symposium, *Adaptive Deep Brain Stimulation* August 16, 2025.
 INSIGHTEC. *Treatment Options for Essential Tremor and Tremor Dominant Parkinson's Disease* June 26, 2025, September 19, 2025.

Graduate Education Lectures

Sensory Motor Neuroscience Course *Locomotion*. University of Colorado Boulder. April, 4, 2001 Boulder, CO

Sensory Motor Neuroscience Course *Basal ganglia disorders*. University of Colorado Boulder. April 27, 2001 Boulder, CO

Neurology Resident Education *Phenomenology of movement disorders*. University of Colorado School of Medicine. August 19, 2015 Aurora, CO

Neurology Resident Education. *Filling the gaps: treatments for advanced Parkinson's disease*. June 16, 2016 Aurora, CO

Neurology Resident Education *Movement disorders emergencies*. University of Colorado School of Medicine. July 14, 2016 and July 27, 2017 Aurora, CO

Neurology Resident Education *Phenomenology and anatomy of movement disorders*. University of Colorado School of Medicine. September 28, 2016 and October 11, 2017 Aurora, CO

Neurology Resident Education *Functional movement disorders*. University of Colorado School of Medicine. October 11, 2017 Aurora, CO

Neurology Resident Education. *Phenomenology*. University of Colorado School of Medicine. December 5, 2018 Aurora, CO

Neurology Resident Education. *Functional Movement Disorders*. University of Colorado School of Medicine. February 27, 2019 Aurora, CO

Neuropsychology Fellowship Lecture Series, Department of Neurosurgery. *Approach to functional movement disorders*. University of Colorado School of Medicine. March 13, 2018 Aurora, CO

Neuropsychology Seminar. *Diagnosis of Parkinson's Disease and other Movement Disorders*. University of Colorado School of Medicine. March 13, 2019 Aurora, CO

Neurology Resident Education. *Advanced Parkinson Disease*. University of Colorado School of Medicine. October 23, 2019 Aurora, CO

Neurology Resident Education. *Botulinum Toxin and Deep Brain Stimulation Introduction and Workshop*. University of Colorado School of Medicine. October 30, 2019 Aurora, CO

Clinician Education Lectures

Colorado Neurological Society *Droxidopa for the treatment of neurogenic orthostatic hypotension*. September 21, 2015 Denver, CO

Colorado Neurological Society *When to initiate levodopa*, February 17, 2016 Denver, CO

Good Samaritan. *Advanced Treatments in Parkinson Disease*. July 20, 2017 Lafayette CO

Boulder General Clinicians. *DBS Therapy*. August 25, 2017 Boulder CO

UC Health Neurology Clinics and Banner Health. *Advanced Treatments*. March 21, 2018 Fort Collins CO

Miramont Family Practice. *Tremor: Diagnosis and treatment*. April 5, 2018 Fort Collins CO

Colorado Springs Educational Dinner (Colorado Springs Neurology Associates, UCHealth Neurology, and DaVita Internal and Family Medicine) *Advanced Treatments for Movement Disorders* May 22, 2019 Colorado Springs, CO

Colorado Neurological Society. *Deep Brain Stimulation Interesting Cases* March 9, 2020. Denver, CO

PD Foundation COE. *Advanced Therapies in Parkinson's Disease* March 1, 2021; March 8, 2021; April 26, 2021; May 6, 2021; May 24, 2021; June 14, 2021. Denver, CO

Media

AARP Webinar and Parkinson Association of the Rockies. *Parkinson Disease and Non-motor symptoms: Sleep Disorders and Fatigue*. November 4, 2016 Denver CO

No Copay Radio Interview. *Parkinson Disease*. February 15, 2018 Denver CO

CU Anschutz Today. Advances in Deep Brain Stimulatin May Reduce Parkinson's Disease Symptoms. December 16, 2024.

UCHealth Today. *Vyalev Pump Eases "off" Periods for Advanced Parkinson's Patients*. January 22, 2025.

Medscape. FDA Ok's *First Adaptive DBS System for Parkinson's disease*. February 24, 2025

9News, Denver7, Colorado Public Radio & CU Anschutz Newsroom. *First Adaptive DBS Programming*. March 21, 2025.

GRANT SUPPORT**Current Independent Investigator Studies**

Beta Utilization For Field Shaping (BUFFS): proof-of-concept study to determine whether fractionated amplitude defined by beta outperforms single contact therapy.

Funding: Medtronic

Role: Principal Investigator

Total Costs (Direct and Indirect): \$15,744

Implementation of adaptive deep brain stimulation to offset subthalamic dysregulation during exercise and reduce exertion in Parkinson's disease.

Funding: Medtronic

Role: Principal Investigator

Total Costs (Direct and Indirect): \$138,940

LFP sensing from directional leads and associated clinical outcomes in the acute clinical setting

Funding: Medtronic

Role: Principal Investigator

Total Costs (Direct and Indirect): \$136,919

DBS for Severe treatment refractory Methamphetamine Use Disorder.

Funding: NIH BRAIN R01 NIDA

Role: Co-Investigator (PIs: Joe Sakai and Jody Tanabe)

Total Costs (Direct and Indirect): \$6,616,804

Current Industry and Foundation Funded Studies

A Multi-Center, Controlled Study to Evaluate Use of CereGate Therapy to Reduce Freezing of Gait in Participants Diagnosed with Parkinson's Disease

Funding: Ceregate Inc.

Role: Principal Investigator

Total Costs (Direct and Indirect): \$10,209 Directs \$12,761 w/ Indirects per enrolled subject

Registry of deep Brain stimulation with the VERCISE™ System: Vercise™ DBS registry

Sponsor: Boston Scientific

Role: Site Principal Investigator

Total Costs (Direct and Indirect): \$168,044.92 Directs \$215,097.50 w/ Indirects
(estimating 25 patients)

Parkinson's Disease: An extension of Study M15-741 evaluating the safety and tolerability of ABBV-951 in subjects with Parkinson's disease

Sponsor: AbbVie, Inc

Role: Site Principal Investigator

Total Costs (Direct and Indirect): \$378,153.79 Directs \$525,213.60 w/ Indirects

Advanced Parkinson's disease: An open-label extension of studies M15-736 and M20-339 evaluating the safety and tolerability of ABBV-951 (M20-098)

Sponsor: AbbVie, Inc

Role: Site Principal Investigator

Total Costs (Direct and Indirect): \$536,081.65 Directs \$744,557.84 w/ Indirects

Completed Independent Investigator Studies

Predicting the optimal therapeutic contact of a deep brain stimulation electrode in Parkinson's disease based upon measurement of beta activity

Funding: Medtronic

Role: Principal Investigator

Total Costs (Direct and Indirect): \$205,000

Narrowing the knowledge gap between primary care providers (PCPs) and movement disorders neurologists in the treatment of advanced PD

Funding: Parkinson's Foundation Center of Excellence Core Grant

Role: Principal Investigator

Total Costs (Direct and Indirect): \$25,000 Directs (Indirects not allowed)

Improving efficiency of initial DBS programming for electrodes with multiple independent constant current

Funding: Boston Scientific

Role: Principal Investigator

Total Costs (Direct and Indirect): \$87,907.00 Directs \$112,520.96 w/ Indirects

Sex disparities in patients with essential tremor

Funding: University of Colorado, Movement Disorders Center Grant

Role: Co-Investigator, Co-mentor

Evaluating the impact of adding 3D printed brains to pre-surgical patient education meetings

Funding: Investigator research account (John Thompson) and Gerhard Family Gift

Role: Co-Investigator

Patient preference in deep brain stimulation products

Funding: Investigator research account (Drew Kern)

Role: Co-Investigator, Co-mentor

Deep brain stimulation (DBS) of the rostral zona incerta (rZI) for Parkinson's disease (PD)

Funding: Department of Neurology Intradepartmental Grant

Role: Principal Investigator

Total Costs (Direct and Indirect): \$40,000 Directs (Indirects not allowed)

Alpha-synuclein deposition in skin of patients with Parkinson's disease, multiple systems atrophy, and progressive supranuclear palsy

Funding: Skin Disease Research Center, University of Colorado Grant

Role: Principal Investigator

Cutaneous alpha-synuclein staining as a diagnostic marker for Parkinson's disease and related disorders.

University Health Network, REB #12-0447-AE

Role: Co-Investigator

Synuclein staining in the rectosigmoid mucosa as a diagnostic biomarker for Parkinson's disease

University Health Network, REB #12-0374-A

Role: Co-Investigator

Completed Industry and Foundation Funded Studies

Parkinson's disease: safety and tolerability of 24-hour daily exposure to ABBV-951 by continuous subcutaneous infusion (M15-741)

Sponsor: AbbVie, Inc

Role: Site Principal Investigator

Total Costs (Direct and Indirect): \$270,470.00 Directs \$346,201.60 w/ Indirects

Advanced Parkinson's disease: double-blind, double-dummy, active-controlled, efficacy and safety of ABBV-951 versus oral carbidopa-levodopa (M15-736)

Sponsor: AbbVie, Inc

Role: Site Principal Investigator

Total Costs (Direct and Indirect): \$274,980 Directs \$351,974.40 w/ Indirects

Parkinson's Disease: A comparative study of levodopa and carbidopa bioavailability following foslevodopa/foscarbidopa infusion at different subcutaneous sites in Parkinson's disease patients (M20-339)

Sponsor: AbbVie, Inc

Role: Site Principal Investigator

Total Costs (Direct and Indirect): \$428,692.72 Directs \$595,406.56 w/ Indirects

A randomized, placebo surgery controlled, double-blinded, multi-center, phase 2 clinical trial, evaluating the efficacy and safety of VY-AADC02 in advanced Parkinson's disease with motor fluctuations

Sponsor: Voyager Therapeutics

Role: Site Sub-Investigator

A post-market study evaluating the safety of Infinity DBS system with MR conditional labeling

Sponsor: Abbott

Role: Site Sub-Investigator

Registry for the advancement of DBS for Parkinson's disease (RAD-PD)

Sponsor: Parkinson Study Group and Michael J. Fox Foundation

Role: Site Principal Investigator

Total Costs (Direct and Indirect): \$26,000 Directs \$30,375 w/ Indirects (25% paid on patient care only per contract)

A phase 3, open-label study of the safety, efficacy, and tolerability of apomorphine administered by continuous subcutaneous infusion in advanced Parkinson's disease patients with unsatisfactory control on available therapy

Sponsor: USWM

Role: Site Sub-Investigator

A multicenter, international, open-label, safety study of ND0612, a solution of levodopa/carbidopa delivered via a pump system as a continuous subcutaneous infusion in subjects with advanced Parkinson's Disease

Sponsor: Neuroderm, Ltd.

Role: Site Sub-Investigator

A phase 1B, multicenter, randomized, placebo-controlled, double-blind study to determine the safety, tolerability, pharmacokinetics, and pharmacodynamics of DNL201 in subjects with Parkinson's disease

Sponsor: Denali Therapeutics Inc

Role: Site Principal Investigator

Total Costs (Direct and Indirect): \$300,725 Directs \$384,928 w/ Indirects

A phase 3, long-term, open-label and single-arm study of MYOBLOC® in the treatment of troublesome sialorrhea in adult subjects

Sponsor: Solstice

Role: Sub-Investigator

BIBLIOGRAPHY

Original full-length manuscripts

2001

1. **Kern DS**, Semmler JG, and Enoka RM. Long-term activity in upper- and lower-limb muscles of humans. *J Appl Physiol* 91: 2224-2232, 2001.

2006

2. Eckenstein FP, McGovern TK, **Kern DS**, and Deignan J. Neuronal vulnerability in transgenic mice expressing an inducible dominant negative FGF receptor. *Exp Neurol* 198:338-349, 2006.

2007

3. **Kern DS** and Kumar R. Deep brain stimulation. *Neurologist* 13:237-252, 2007.

2008

4. **Kern DS** and Kumar R. Deep brain stimulation for movement disorders. *CNI Review* 2008.
5. Bjugstad KB, Redmond Jr. DE, Lampe KJ, **Kern DS**, Sladek Jr. JR, Mahoney MJ. Biocompatibility of PEG-based hydrogels in primate brain. *Cell Transplantation* 17:409-415, 2008.

2010

6. Bjugstad KB, Lampe K, **Kern DS**, Mahoney M. Biocompatibility of poly(ethylene glycol)-based hydrogels in the brain: an analysis of the glial response across space and time. *J Biomed Mater Res A*. 2010;95(1):79-91.

2011

7. **Kern DS**, Maclean KN, Jiang H, Snyder EY, Jr JR, Bjugstad KB. Neural stem cells reduce hippocampal tau and reelin accumulation in aged Ts65Dn Down syndrome mice. *Cell Transplantation*. 2011;20(3):371-379.
8. Lampe K, **Kern DS**, Bjugstad KB, Mahoney M. The administration of BDNF and GDNF to the brain via PLGA microparticles patterned within a degradable PEG-based hydrogel: protein distribution and the glial response. *Journal of Biomedical Materials Research: Part A*. 2011;96(3):595-607.

2013

9. **Kern DS**, Fox SH. Review of 'Elias WJ, Huss D, Voss T et al. A pilot study of focused ultrasound thalamotomy for essential tremor. *N Engl J Med*. 2013': *Neurodegen Dis Manage*. 2013;3(6):1.

2015

10. Visanji NP, Marras, C, **Kern DS**, AlDakheel A, Gao A, Liu LWC, Lang AE, Hazrati LN. Colonic mucosal alpha-synuclein lacks specificity as a biomarker for Parkinson's disease. *Neurology*. 2015 Feb 10;84(6):609-16.
11. **Kern DS**, Lang AE. Successful treatment of functional palatal tremor: Insights into pathogenesis and management. *Mov Disord*. 2015 May;30(6):875-6.
12. Picillo M, Vincos GB, **Kern DS**, Lang AE, Fasano A. Learning more from finger tapping in Parkinson's disease: up and down from dyskinesia to bradykinesia. *Mov Disord Clin Pract*. 2015 Oct 27.

2017

13. Tekriwal A, **Kern DS**, Tsai J, Ince NF, Thompson J, Abosch A. REM Sleep Behavior Disorder: Prodromal and Mechanistic Insights for Parkinson's Disease. *JNNP*. 2017 May;88(5):445-451.
14. Visanji NP, Bhudhikanok GS, Mestre TA, Ghate T, Udupa KU, Kowgier M, Al Dakheel A, Connolly BS, Gasca-Salas C, **Kern DS**, Singerman J, Slow EJ, Socher A, Kim S, Valappil RA, Kausar F, Rogaeva E, Langston JW, Tanner CM, Schüle B, Lang AE, Goldman SM, Marras C. Heart rate variability in LRRK2-associated Parkinson's Disease. *Mov Disord*. 2017 Apr;32(4):610-614.
15. Fullard M, Thibault D, Hill A, Fox J, Bhatti D, Burack MA, Dahodwala N, Haberkfeld E, **Kern DS**, Klepitskaya OS, Urrea-Mendoza E, Myers P, Nutt JG, Rafferty M, Schwalb JM, Shulman LM, Willis AW. Utilization of Rehabilitation Therapy Services in Parkinson's disease in the United States. *Neurology*. 2017 Sep 12;89(11):1162-1169.

2018

16. **Kern DS**, Forbes E, Shah BB. Surgical Interventions for Parkinson's Disease. *Practical Neurology*. 2018 May 2018
17. Fullard ME, Thibault DP, Todaro V, Foster S, Katz L, Morgan R, **Kern DS**, Schwalb JM, Urrea Mendoza E, Dahodwala N, Shulman L, Willis AW. Sex disparities in health and health care utilization after Parkinson diagnosis: Rethinking PD associated disability. *Parkinsonism Relat Disord*. 2018 Mar;48:45-50.
18. van den Heuvel L, Lim AS, Visanji NP, Huang J, Ghate T, Mestre TA, AlDakheel A, Connolly BS, Gasca-Salas C, **Kern DS**, Jain J, Slow EJ, Pondal M, Faust-Socher A, Rogaeva E, Tomlinson G, Lang AE, Marras C. Actigraphy Detects Greater Intra-Individual Variability During Gait in Non-Manifesting LRRK2 Mutation Carriers. *J Parkinsons Dis*. 2018;8(1):131-139.
19. Arora S, Visanji NP, Mestre TA, Tsanas A, AlDakheel A, Connolly BS, Gasca-Salas C, **Kern DS**, Jain J, Slow EJ, Faust-Socher A, Lang AE, Little MA, Marras C. Investigating Voice as a Biomarker for Leucine-Rich Repeat Kinase 2-Associated Parkinson's Disease. *J Parkinsons Dis*. 2018;8(4):503-510.
19. Mestre TA, Pont-Sunyer C, Kausar F, Visanji NP, Ghate T, Connolly BS, Gasca-Salas C, **Kern DS**, Jain J, Slow EJ, Faust-Socher A, Kasten M, Wadia PM, Zadikoff C, Kumar P, de Bie RM, Thomsen T, Lang AE, Schüle B, Klein C, Tolosa E, Marras C. Clustering of motor and nonmotor traits in leucine-rich repeat kinase 2 G2019S Parkinson's disease nonparkinsonian relatives: A multicenter family study. *Mov Disord*. 2018 Jul;33(6):960-965.
20. **Kern DS**, Picillo M, Thompson JA, Sammartino F, di Biase L, Munhoz RP, Fasano A. Interleaving stimulation in Parkinson's disease, tremor and dystonia. *Stereo Funct Neurosurg*. 2018;96:379-391.

2019

21. Deuel L, Collins AE, Maa EH, Barr JP, **Kern DS**. Dravet syndrome and parkinsonism: A case report investigating the dopaminergic system. *Neurology*. 2019 Sep 24;93(13):595-596
22. Tekriwal A, Afshar NM, Santiago-Moreno J, Kuijper FM, **Kern DS**, Halpern CH, Felsen G, Thompson JA. Neural Circuit and Clinical Insights from Intraoperative Recordings During Deep Brain Stimulation Surgery. *Brain Sci*. 2019 Jul 20;9(7)

2020

23. Pang Y, Christenson J, Jiang F, Lei T, Rhoades R, **Kern DS**, Thompson JA, Liu C. Automatic detection and quantification of hand movements toward development of an objective assessment of tremor and bradykinesia in Parkinson's disease. *J Neurosci Methods*. 2020 Mar 1;333:108576.
24. **Kern DS**, Uy D, Rhoades R, Ojemann SG, Abosch A, Thompson JA. Discrete changes in brain volume after Deep Brain Stimulation in Parkinson patients. *JNNP*. 2020 Sep;91(9):928-937.

2021

25. **Kern DS**, Fasano A, Thompson JA, Abosch A, Ojemann S, Munhoz RP. Constant current versus constant voltage: clinical evidence supporting the fundamental difference in the modalities. *Stereotactic and Functional Neurosurgery*. 2021 99(2);171-5.
26. Bally JF, Camargos ST, Santos C, **Kern DS**, Lee T, Pereira da Silva-Júnior F, Renato Puga, Cardoso F, Barbosa E, Yadav R, Ozelius L, Aguiar P, Lang AE. DYT-TUBB4A (DYT4 dystonia): New clinical and genetic observations. *Neurology*. 2021 Apr 6;96(14):e1887-e1897.
27. Davis RA, Winston H, Gault JM, **Kern DS**, Mikulich-Gilbertson SK, Abosch A. Deep Brain Stimulation for OCD in a Patient With Comorbidities: Epilepsy, Tics, Autism, and Major Depressive Disorder. *The Journal of Neuropsychiatry and Clinical Neurosciences*. 2021 Spring;33(2):167-171.
28. Thaker AA, Reddy KM, Thompson JA, Gerecht PD, Brown MS, Abosch A, Ojemann SG, **Kern DS**. Coronal Gradient Echo MRI to Visualize the Zona Incerta for Deep Brain Stimulation Targeting in Parkinson's Disease. *Stereotactic and Functional Neurosurgery*. 2021;99(5):443-450.
29. Baumgartner AJ, Kushida CA, Summers MO, **Kern DS***, Abosch A, Thompson JA. Basal ganglia local field potentials as a potential biomarker for sleep disturbance in Parkinson's disease. *Frontiers in Neurology*. (2021):1957. *Co-senior author.
30. Hirt L, Grassia F, Feuerstein J, Thompson JA, Ojemann S, **Kern DS**. Deep Brain Stimulation of the Ventral Intermediate Nucleus of the Thalamus in Writer's Cramp: A Case Report, *Tremor and Other Hyperkinetic Movements*, 2021; 11(1): 46, pp. 1–7

2022

31. Hirt L, **Kern DS**, Ojemann S, Grassia F, Kramer D, Thompson JA. Use of three-dimensional printed brain models during deep brain stimulation surgery consultation for patient health literacy: a randomized controlled investigation. *World Neurosurgery*. 2022 Mar 17.

32. Hirt L, Thies KA, Ojemann S, Abosch A, Darwin ML, Thompson JA, **Kern DS**. Case series investigating the differences between stimulation of rostral zona incerta region in isolation or in conjunction with the subthalamic nucleus on acute clinical effects for Parkinson's disease. *Interdisciplinary Neurosurgery*. 2022 Apr 4:101553.
33. Fearon C, Rawal S, Olszewska D, Alcaide-Leon P, **Kern DS**, Sharma S, Jaiswal SK, Murthy JM, Ha AD, Schwartz RS, Fung VS. Neuroimaging Pearls from the MDS Congress Video Challenge. Part 2: Acquired Disorders. *Mov Disord Clin Pract*. 2022 Feb 3;9(3):311-325.
34. **Kern DS**, Korsmo M, Baumgartner AJ, Kramer D, Ojemann S, Case M, Holt-Becker AB, Raike R, Thompson JA. Methylphenidate effects on a clinically informative oscillatory signal within the subthalamic nucleus in Parkinson's disease during deep brain stimulation programming. *Brain Stimul*. 2022; 15(3):747-749.
35. Bally JF, **Kern DS**, Fearon C, Camargos S, da Silva-Junior FP, Barbosa ER, Ozelius LJ, de Carvalho Aguiar P, Lang AE. DYT-TUBB4A (DYT4 dystonia): clinical anthology of 11 cases and systematized review. *Movement Disorders Clinical Practice*. 2022 Apr 28;9(5):659-675.
36. Lee T, Fullard M, Rogers T, Ojemann S, Kern D. Patient Preferences for Deep Brain Stimulation Products in Parkinson's Disease: What Really Matters to Them? *Neurology*. May 03, 2022; 98 (18 Supplement).
37. Jennings D, Huntwork-Rodriguez S, Henry AG, Sasaki JC, Meisner R, Diaz D, Solanoy H, Wang X, Negrou E, Bondar VV, Ghosh R, Maloney MT, Propson NE, Zhu Y, Maciucă R, Harris L, Kay A, LeWitt P, King TA, Kern D, Ellenbogen A, Goodman I, Siderowf A, Aldred J, Omidvar O, Masoud ST, Davis SS, Arguello A, Estrada AA, de Vicente J, Sweeney ZK, Astarita G, Borin MT, Wong BK, Wong H, Nguyen H, Searce-Levie K, Ho C, Troyer MD. Safety, tolerability, and pharmacodynamics of LRRK2 inhibitor DNL201: from preclinical studies to Parkinson's clinical trials. *Sci Transl Med*. 2022; 14 (648): eabj2658.
38. Jennings D, Huntwork-Rodriguez S, Henry AG, Sasaki JC, Meisner R, Diaz D, Solanoy H, Wang X, Negrou E, Bondar VV, Ghosh R, **Kern DS**, et al. Preclinical and clinical evaluation of the LRRK2 inhibitor DNL201 for Parkinson's disease. *Science Translational Medicine*. 2022 Jun 8;14(648):eabj2658.
39. Baumgartner A, Thompson JA, **Kern DS**, Ojemann SG. Novel targets in deep brain stimulation for movement disorders. *Neurosurgical Review*. 2022. Aug;45(4):2593-2613.
40. Serva SN, Thompson JA, **Kern DS**, Ojemann SG. An update on advanced therapies in movement disorders: from gene therapy to neuromodulation. *Frontiers*. 2022 Sep 23;9:863921.
41. Tien RN, Tekriwal A, Calame DJ, Platt JP, Baker S, Seeberger LC, **Kern DS**, Person AL, Ojemann SG, Thompson JA, Kramer DR. Deep learning based markerless motion tracking as a clinical tool for movement disorders: utility, feasibility and early experience. *Frontiers in Signal Processing*. 2022 Sep 29;2:884384.
42. McQueen RB, Gritz M, **Kern DS**, Bemski JL, Shelton I, Meyer M, Kluger B. Cost and return on investment of a team-based palliative care program for Parkinson's disease. *Neurol Clin Pract*. 2022 Dec;12(6):429-437.
43. Marsili L, Keeling EG, Maciel R, Contarino MF, Zutt R, Okun MS, Almeida L, Deeb W, **Kern DS**, Macias-Garcia D, Carrillo F, Mir P, Merola A, Espay AJ, Fasano A. Functional

Movement Disorders and Deep Brain Stimulation: A Multi-center Study. *Mov Disord Clin Pract.* 2022 Nov 14;10(1):94-100.

44. Baker S, Tekriwal A, Felsen G, Christensen E, Hirt L, Ojemann SG, Kramer DR, **Kern DS**, Thompson JA. Automatic extraction of upper-limb kinematic activity using deep learning-based markerless tracking during deep brain stimulation implantation for Parkinson's disease: A proof of concept study. *PLoS One.* 2022 Oct 20;17(10):e0275490.
45. Tekriwal A, Baker S, Christensen E, Petersen-Jones H, Tien RN, Ojemann SG, **Kern DS**, Kramer DR, Felsen G, Thompson JA. Quantifying neuro-motor correlations during awake deep brain stimulation surgery using markerless tracking. *Sci Rep.* 2022 Oct 27;12(1):18120.

2023

46. Lewis S, Radcliffe E, Ojemann S, Kramer DR, Hirt L, Case M, Holt-Becker AB, Raike R, **Kern DS**, Thompson JA. Pilot Study to Investigate the Use of In-Clinic Sensing to Identify Optimal Stimulation Parameters for Deep Brain Stimulation Therapy in Parkinson's Disease. *Neuromodulation: Technology at the Neural Interface.* 2023 Feb 14.
47. Gibbons C, Wang N, Rajan S, **Kern DS**, Palma JA, Kaufmann H, Freeman R. Cutaneous alpha-synuclein signatures differ between patients with multiple system atrophy and Parkinson's disease. *Neurology.* 2023 Apr 11;100(15):e1529-e1539.
48. Fullard M, Morris M, Dafoe A, Shelton E, Kern D, Matlock D. Improving Shared Decision-Making for Women with Parkinson's Disease. *Neurology.* April 25, 2023; 100 (17 Supplement 2).
50. Okun M, Foote K, Zesiewicz T, Bezchlibnyk Y, Papanastassiou A, Carlson J, Aldred J, Krishna V, Merola A, Luca C, Jagid J, **Kern DS**, et al. Real-World Outcomes in USA using DBS Systems with Directionality and Multiple Independent Current Control. *Neurology.* April 25, 2023; 100 (17 Supplement 2).
51. **Kern D**, Dashtipour K, Aldred J, Kimber T, Iansek R, Kukreja P, Bergmann L, Fisseha N, Gupta R, Talapala S, Jeong A. Safety of Foslevodopa/Foscarbidopa During Optimization and Maintenance Treatment: Post Hoc Analysis of a Phase 3 Trial. *Neurology.* April 25, 2023; 100 (17 Supplement 2).
52. Radcliffe EM, Baumgartner AJ, **Kern DS**, Al Borno M, Ojemann S, Kramer DR, Thompson JA. Oscillatory beta dynamics inform biomarker-driven treatment optimization for Parkinson's disease. *J Neurophysiol.* 2023 Jun 1;129(6):1492-1504.
52. Lewis S, Radcliffe E, Ojemann S, Kramer DR, Hirt L, Case M, Holt-Becker AB, Raike R, **Kern DS***, Thompson JA. Pilot Study to Investigate the Use of In-Clinic Sensing to Identify Optimal Stimulation Parameters for Deep Brain Stimulation Therapy in Parkinson's Disease. *Neuromodulation.* 2023 Feb 14:S1094-7159(23)00011-9. *Co-senior author.
53. Baumgartner A, Hirt L, **Kern D**, Thompson J. Diurnal fluctuations of local field potentials follow sleep-wake behavior in Parkinson's disease. *Research Square.* 2023 Jan 20.
54. Thompson JA, Hirt L, David-Gerecht P, Fasano A, Kramer DR, Ojemann SG, **Kern DS**. Comparison of Monopolar Review to Fixed Parameter Fractionation in Deep Brain Stimulation. *Mov Disord Clin Pract.* 2023 May 5;10(6):987-991.

55. Deuel LM, Peterson R, Sillau S, Willis AW, Yu C, **Kern DS**, Fullard M. Gender disparities in deep brain stimulation surgery for Parkinson disease and essential tremor. *Deep Brain Stimulation*. 2023 June 1: 26-33.
56. Radcliffe E, Lewis S, Ojemann S, Kramer D, Hirt L, Case M, Holt-Becker A, Raike R, Thompson J, **Kern D**. ID: 209661 Pilot Study Investigating Sensing Utility to Optimize Deep Brain Stimulation Parameters in Parkinson's Disease. *Neuromodulation*. 2023 Jun 1;26(4):S143.
57. Frassica M, **Kern DS**, Afshari M, Connolly AT, Wu C, Rowland N, Ramirez-Castaneda J, Ushe M, Salazar C, Mason X. Racial disparities in access to DBS: results of a real-world U.S. claims data analysis. *Front Neurol*. 2023 Aug 1;14:1233684.
58. Baker S, Fenstermacher B, Davis RA, **Kern DS**, Thompson JA, Felsend G, Baumgartner AJ. Ethical considerations in closed loop deep brain stimulation. *Deep Brain Stimulation*. 2023 3: 8-15.

2024

59. Goldin CT, Vaughan CL, Hoyt B, **Kern DS**. Neuropalliative care in deep brain stimulation for Parkinson's disease: Potential impactful areas of care. *Deep Brain Stimulation*. 2024 5: 1-3.
60. Baker SK, Radcliffe EM, Kramer DR, Ojemann S, Case M, Zarns C, Holt-Becker A, Raike RS, Baumgartner AJ, **Kern DS***, Thompson JA*. Comparison of beta peak detection algorithms for data-driven deep brain stimulation programming strategies in Parkinson's disease. *NPJ Parkinsons Dis*. 2024 Aug 9;10(1):150. * contributed equal of work
61. Sakai JT, Tanabe J, Battula S, Zipperly M, Mikulich-Gilbertson SK, **Kern DS**, Thompson JA, Raymond K, Gerecht PD, Foster K, Abosch A. Deep brain stimulation for the treatment of substance use disorders: a promising approach requiring caution. *Front Psychiatry*. 2024 Jul 12;15:1435109.
62. Fullard ME, Dafoe A, Shelton E, **Kern DS**, Matlock DD, Morris MA. How Women and Men with Parkinson's Disease Approach Decision Making for Deep Brain Stimulation Surgery. *Mov Disord Clin Pract*. 2024 Dec 18.

2025

63. Shah BR, Tanabe J, Jordan JE, **Kern D**, Harward SC, Feltrin FS, O'Suilliebhain P, Sharma VD, Maldjian JA, Boutet A, Mattay R, Sugrue LP, Narsinh K, Hetts S, Shah LM, Druzgal J, Lehman VT, Lee K, Khanpara S, Lad S, Kaufmann TJ. State of Practice on Transcranial MR-Guided Focused Ultrasound: A Report from the ASNR Standards and Guidelines Committee and ACR Commission on Neuroradiology Workgroup. *AJNR Am J Neuroradiol*. 2025 Jan 8;46(1)2-10.
64. **Kern DS**, Kramer DR. Neurohistological findings in deep brain stimulation: Current knowledge and gaps. *Parkinsonism Relat Disord*. 2025 Jan 22:107297.
65. Baumgartner AJ, Hirt L, Amara AW, **Kern DS**, Thompson JA. Diurnal fluctuations of subthalamic nucleus local field potentials follow naturalistic sleep-wake behavior in Parkinson's disease. *Sleep*. 2025 Jan 11:zsaf005.

66. Timmermann O, Ojemann SG, Thompson JA, Treat L, **Kern DS**. Case report of bilateral subthalamic nucleus deep brain stimulation in an adolescent TUBB4A patient: She can sit on a horse. *Mov Disord Clin Pract*. 2025.
67. **Kern DS**, Kundrick A, Rosenthal L. Convention vs. Innovation I: Skin biopsy for synuclein inclusions should now be used in the clinical setting (PSG Debate 2024). *Parkinsonism Relat Disord*. 2025.
68. Baumgartner AJ, Hirt L, **Kern DS**, Thompson JA. Anodic stimulation of the subthalamic nucleus rescues cathodic stimulation-induced mood symptoms in Parkinson disease. *Brain Stimul*. 2025.
69. Tien R, Platt J, Mendlen M, **Kern D**, Ojemann S, Thompson J, Kramer D. Neurons in human motor thalamus encode reach kinematics and positional errors related to braking. *Res Sq* [Preprint]. 2025 Mar 26.
70. Han YR, Jeong A, Ayub K, Gupta SV, Bergmann L, **Kern DS**, Pagan F, Rosebraugh M. Bioequivalence of Foslevodopa/Foscarbidopa continuous subcutaneous infusion to arm, thigh, or flank versus abdomen in healthy and advanced Parkinson's disease individuals. *Clin Park Relat Disord*. 13, 2025, 100359
71. Dang NH, **Kern DS**, Honce JM, Ojemann SG, Tanabe JL. Skull Lesions Following MR-Guided High-Intensity Focused Ultrasound: A Case Series. *AJNR Am J Neuroradiol*. 2025 Aug 8:ajnr.A8957.
72. Sakai JT, Tanabe J, Battula S, Zipperly M, Mikulich-Gilbertson SK, **Kern DS**, Thompson JA, Ojemann S, Raymond K, Gerecht PD, Foster K, Abosch A. Corrigendum: Deep brain stimulation for the treatment of substance use disorders: a promising approach requiring caution. *Front Psychiatry*. 2025 May 22;16:1559114.
73. Fullard, ME, Dafoe, A, Shelton, E, **Kern, DS**, Matlock DD, Morris, MA. How Women and Men with Parkinson's Disease Approach Decision Making for Deep Brain Stimulation Surgery. *Mov Disord Clin Pract*. (In Press) 2025.

Book chapters

1. **Kern DS** and Kumar R. Surgical treatment of Parkinson's disease. In: Samuels MA, and Feske SK, *Office Practice of Neurology*, 2nd edition 2003.
2. **Kern DS** and Kumar R. Subthalamic deep brain stimulation. In: Pahwa R, Lyons KE, and Koller W, *Handbook of Parkinson's Disease*, 3rd edition 2004.
3. **Kern DS** and Lang AE. Medication-induced acute akathisia. In: Friedman J, *Medication-Induced Movement Disorders*, 2015.
4. Kahn L, Abosch A, **Kern DS**, Kushida C, Halpern C, and Thompson J. Rapid eye movement sleep behavior disorder: pathological neural circuits and association with Parkinson's disease. In: *Handbook of Sleep Research*. Volume 30: 723-730
5. Thompson J, **Kern DS**, Ojemann S. Novel targets in deep brain stimulation for movement disorders. In: *Schmidek and Sweet Operative Neurosurgical Techniques 7th Edition* Ed. Quinones-Hinojosa A. Elsevier, 2021.

Peer-Reviewed Abstracts

2000

1. **Kern DS**, Semmler JG, and Enoka RM. Electromyographic activity differs across limbs during normal daily use. *Med Sci Sports Exercise* 132: S28, 2000.

2001

2. Tracy BL, **Kern DS**, Mehoudar PD, Sehnert SM, Byrnes WC, Enoka RM. Strength training does not improve the steadiness of muscle contractions in the knee extensors of older adults. *Med Sci Sports Exercise*, 33: S5, 2001.
3. Semmler JG, Kornatz KW, **Kern DS**, and Enoka RM. Motor unit synchronization reduces the steadiness of anisometric contractions by a hand muscle. *Society of Neuroscience* 27, 2001.

2003

4. **Kern DS**, McVicker JH, Martin K, and Kumar R. Effective Subthalamic Nucleus (STN) Deep Brain Stimulation (DBS) in Levodopa-unresponsive parkinsonism. *American Academy of Neurology*, 2003.
5. **Kern DS**, McVicker JH, Martin K, and Kumar R. Sustained long-term benefit and adverse effects of bilateral subthalamic nucleus (STN) deep brain stimulation (DBS) in Parkinson disease (PD). *American Academy of Neurology*, 2003.
6. McRae C, Murata A, **Kern DS**, McVicker JH, Martin K, and Kumar R. Longitudinal assessment of quality of life among persons receiving deep brain stimulation for the treatment of Parkinson's disease. *Seventeenth Annual Symposium on Etiology, Pathogenesis, and Treatment of Parkinson's Disease*, 2003.

2006

7. **Kern DS**, Bjugstad KB, Blanchard BC, Cornelius SK, Maclean KN, Greiner LS, Snyder EY, Sladek Jr. JR. Effects of neural stem cell transplantation on total tau in an aged animal model of Down syndrome, Ts65Dn. *Society for Neuroscience*, 2006.
8. **Kern DS**, Bjugstad KB, Blanchard BC, Cornelius SK, Maclean KN, Greiner LS, Snyder EY, Sladek Jr. JR. Effects of neural stem cell transplantation on total tau in an aged animal model of Down's syndrome, Ts65Dn. *Front Range Neuroscience Group*, 2006.

2007

9. Rachubinski A, Evans J, Johnston K, **Kern DS**, Maclean KN, Bjugstad KB. Effects of neural progenitor cells in a model of Down syndrome. *Society for Neuroscience*, 2007.
10. **Kern DS**, Blanchard BC, Cornelius SK, Maclean KN, Jiang H, Greiner LS, Snyder EY, Sladek Jr. JR, Bjugstad KB. Short-term neural stem cell treatment in the Ts65Dn mouse model of Down syndrome did not significantly affect total tau in the hippocampus and olfactory bulbs. *American Society for Neural Therapy and Repair*, 2007.
11. **Kern DS**, Lampe K, Mahoney M, Redmond Jr. DE, Sladek Jr. JR, Bjugstad KB. Biocompatibility of poly(ethylene) glycol (PEG)-based hydrogel in healthy brain tissue. *Society for Neuroscience*, 2007.

2008

12. **Kern DS**, Maclean KN, Snyder EY, Sladek Jr. JR, Bjugstad KB. Tau positive clusters in the hippocampus are found in greater numbers in the aged Ts65Dn mouse: implanted neural stem cells reduce those numbers. *Society for Neuroscience*, 2008.

2013

13. Birlea M, Braun C, **Kern DS**, Jones W, Ringel SP, Tyler KL. Improved timeliness of neurology consults in the emergency department. *American Neurological Association*. 2013.

2014

14. **Kern DS**, Smith EE, Boyer PJ, High WA, Langenberg S, Visanji NP, Hazrati L, Dakheel AA, Marras C, Lang, AE, Kumar R. Methodological approaches for evaluating alpha-synuclein in skin as a potential biomarker in Parkinson's disease. *The International Parkinson and Movement Disorder Society*. 2014.

2016

15. **Kern DS**, Picillo M, Di Biase L, Munhoz RP, Fasano A. Interleaving deep brain stimulation (DBS) in Parkinson's disease (PD): a retrospective review on rational, management, and outcomes. *American Academy of Neurology*. 2016.

2017

16. Kindel W, **Kern D**, Zylberberg J, Thompson JA. Precision deep stimulation (DBS): defining the tractographic profile for maximal therapeutic benefit. *Society for Neuroscience Meeting*, Washington DC.

2018

17. Reddy K, Thaker A, **Kern DS**. Optimized Imaging at 3.0 T of the Rostral Zona Incerta (rZI) for Deep Brain Stimulation (DBS) in Parkinson's Disease (PD). *American Society of Neuroradiology*. 2018.
18. Thaker A, Reddy K, Thompson JA, David-Gerecht D, Abosch A, **Kern DS**. Optimized Imaging at 3.0 T of the Rostral Zona Incerta (rZI) for Deep Brain Stimulation (DBS) in Parkinson's Disease (PD). *International Congress of Parkinson's Disease and Movement Disorders*. 2018.
19. Fullard ME, Thibault DP, Todaro V, Foster S, Katz L, Morgan R, **Kern DS**, Schwalb JM, Urrea Mendoza E, Dahodwala N, Shulman L, Willis AW. Sex disparities in health and health care utilization after Parkinson diagnosis: Rethinking PD associated disability. *American Academy of Neurology*. Los Angeles, CA. 2018.

2019

20. Deuel L, Feuerstein J, Berman B, Hoyt B, **Kern DS**. Characteristics of patients with essential tremor evaluated for deep brain stimulation surgery at a tertiary center. *International Congress of Parkinson's Disease and Movement Disorders*. 2019.
21. **Kern DS**, Kahn L, Ojemann S, Abosch A, Thompson JA. Correlation of local field potentials (LFPs) to electromyography (EMG) of the rostral zona incerta (rZI) and

subthalamic nucleus (STN) in Parkinson's Disease (PD). *International Congress of Parkinson's Disease and Movement Disorders*. 2019.

22. Deuel L, Thompson JA, Kahn L, Barr J, Abosch A, **Kern DS**. Rapid improvement in dystonia after pallidal deep brain stimulation in a patient with myoclonus-dystonia syndrome: A case report. *International Congress of Parkinson's Disease and Movement Disorders*. 2019.
23. Davis N, **Kern DS**, Thompson JA. Correlation between local field potential activity and myelin changes in the lenticular fasciculus and subthalamic nucleus using diffusion tensor imaging in Parkinson's disease patients, *Modern Human Anatomy Program Seminar*, CU Anschutz, Aurora, CO. 2019.
24. Petersen-Jones H, **Kern DS**, Kahn L, Ojemann S, Abosch A, Thompson JA. Correlation of local field potentials (LFPs) to electromyography (EMG) of the rostral zona incerta (rZI) and subthalamic nucleus (STN) in Parkinson's Disease (PD), *Front Range Neuroscience Group*, Fort Collins, CO. 2019

2020

25. **Kern DS**, Uy D, Rhoades R, Ojemann S, Abosch A, Thompson JA. Neuro-anatomical volumetric changes in deep brain stimulation of Parkinson's disease patients. *American Academy of Neurology Annual Meeting*. Virtual conference. 2020.
26. Gibbons C, Wang N, Sharika R, **Kern DS**, Jose-Albero P, Horacio K, Roy F. Cutaneous alpha-synuclein deposition across synucleinopathies. *American Academy of Neurology Annual Meeting*. Virtual conference 2020.
27. Petersen-Jones H, **Kern DS**, Kahn L, Ojemann S, Abosch A, Thompson JA. Correlation of local field potentials to electromyography of the rostral zona incerta and subthalamic nucleus in Parkinson's disease. *American Society for Stereotactic and Functional Neurosurgery*. 2020.
28. Deuel, LM, **Kern, DS**, Fullard, ME. Sex Disparities in Patients with Essential Tremor Referred for Deep Brain Stimulation. *American Academy of Neurology* virtual meeting. 2020.

2021

29. Lewis S, Hirt L, Case M, Pulliam C, Eubanks, J, Goetz S, Raike RS, Ojemann S, Kramer D, **Kern D**, Thompson JA. Acute localization of maximum beta power within the subthalamic nucleus using clinic local field potential recordings reveals minimal variability in the peak frequency. *Society for Neuroscience*. 2021.
30. Baker S, Ojemann S, Kramer D, **Kern DS**, Thompson JA. Automatic extraction of kinematic motifs captured with markerless tracking during deep brain stimulation implantation. *Society for Neuroscience*. 2021.
31. Baumgartner AJ, Hirt L, **Kern DS**, Thompson JA. Naturalistic sleep in Parkinson's disease assessed by actigraphy and direct recordings of the subthalamic nucleus. *Society for Neuroscience*. 2021.
32. Crane RC, Ojemann SG, Abosch A, **Kern DS**, Thompson JA. Electrophysiological changes in basal ganglia structures following deep brain stimulation in Parkinson's disease

patients, *Central Michigan University College of Medicine Student Conference*, Mount Pleasant, MI. 2021.

33. Major M, Crane RC, Ojemann SG, Abosch A, **Kern DS**, Thompson JA. Electrophysiological changes in deep brain structures following deep brain stimulation in Parkinson's disease, *BRAiN poster session*, Aurora, CO. 2021.
34. Major M, Crane RC, Ojemann SG, Abosch A, **Kern DS**, Thompson JA. Electrophysiological changes in deep brain structures following deep brain stimulation in Parkinson's disease, *Annual Society for Neuroscience conference*, Virtual meeting. 2021.
35. Hirt L, Grassia F, Feuerstein J, Thompson JA, Ojemann SG, **Kern DS**. Deep brain stimulation surgery to treat focal hand dystonia – a case report, *North American Neuromodulation Society Annual Meeting – Virtual conference*. 2021.
36. Thies K, **Kern DS**, Thompson JA. Targeting effects of rZI vs. STN in deep brain stimulation for Parkinson's disease, *Modern Human Anatomy Program Seminar*, CU Anschutz, Aurora, CO. 2021.
37. Chintaluru Y, Kortz M, **Kern DS**, Thompson JA, Kramer D, Ojemann S. Using an augmented reality neurological case study to expand access to neurosurgical education for medical students, *CU Student Research Forum*, Aurora CO. 2021
38. Chintaluru Y, Thompson JA, Gerecht-David P, Ojemann S, **Kern DS**. GAD Gene Therapy and Subsequent Deep Brain Stimulation for Parkinson's Disease, *Movement Disorders Society International Congress*, Virtual conference. 2021.
39. Deuel L, Yu C, Sillau S, Hoyt B, **Kern D**, Fullard M. Sex Disparities in the Utilization of Deep Brain Stimulation for Essential Tremor and Parkinson Disease. *American Academy of Neurology Virtual conference*. 2021.

2022

40. Lee T, Fullard M, Rogers T, Ojemann S, **Kern DS**. Patient preferences for deep brain stimulation products in Parkinson's disease: What really matters to them?. *American Academy of Neurology*. 2022.
41. Isaacson SH, Di Lorenzo G, Facheris MF, Fung V, Henriksen T, Ikenaka K, Jia J, **Kern DS**, Kukreja P, Garcia DS, Spiegel A, Zhang Z, Bergmann L, Carroll C. Subcutaneous Foslevodopa/Foscarbidopa in Parkinson's Disease: Results by Age, Disease Duration, and Baseline "Off" Time. *European Academy of Neurology*. 2022.
42. Lewis S, Hirt L, Case, M, Holt-Becker A, Raike R, Ojemann S, Kramer D, **Kern DS**, Thompson JA. Pilot study to investigate the use of in-clinic sensing to identify optimal stimulation parameters for deep brain stimulation therapy in Parkinson's disease. *International Congress of Parkinson's Disease and Movement Disorders*. Spain, Madrid. 2022.
43. Crane RC, Ojemann SG, Abosch A, **Kern DS**, Thompson JA. Electrophysiological changes in basal ganglia structures following deep brain stimulation in Parkinson's disease patients. *Central Michigan University College of Medicine Student Conference*, Mount Pleasant, MI. 2022.
44. Baker S, Tekriwal A, Ojemann S, Kramer D, **Kern D**, Felsen G, Thompson JA. Computer vision aided kinematic testing during deep brain stimulation surgery: from motif

extraction to neural correlation, *American Association of Stereotactic and Functional Neurosurgery Bi-annual meeting*, Atlanta, GA. 2022.

45. Tien R, Platt J, Mendlen M, Gutierrez L, **Kern DS**, Ojemann S, Thompson JA, Kramer DR. Encoding of hand position in single units of the ventral intermediate nucleus of the thalamus during an intraoperative reaching task in essential tremor patients. *American Association of Stereotactic and Functional Neurosurgery Bi-annual meeting*, Atlanta, GA. 2022.
46. Hirt L, **Kern D**, Ojemann S, Thompson JA. Volume of Tissue Activation in Essential Tremor Deep Brain Stimulation Surgery. *Neurosurgery in the Rockies*, Beaver Creek, CO. 2022.
47. Tien R, Platt J, Ojemann S, **Kern D**, Thompson JA, Kramer DR. Modulation of single units in the motor thalamus of essential tremor patients is temporally aligned to the braking phase of reaching movements. *Neurosurgery in the Rockies*, Beaver Creek, CO. 2022.
48. Tien R, Platt J, Ojemann S, **Kern D**, Thompson JA, Kramer DR. Modulation of single units in the motor thalamus of essential tremor patients is temporally aligned to the braking phase of reaching movements. *Society for Neuroscience*, San Diego, CA. 2022.

2023

49. Thompson JA, Hirt L, **Kern DS**, Baumgartner AJ. Characterization of at-home sleep macrostructure in Parkinson disease using a wearable sleep monitoring device. *International Congress of Parkinson's Disease and Movement Disorders*. Copenhagen, DK. 2023.
50. Thompson JA, Ojemann SG, Kramer DR, Hirt L, Radcliffe E, Case M, Zarns C, Holt-Becker A, Raike R, Baumgartner AJ, **Kern DS**. Pilot study to investigate the use of monopolar sensing to improve the efficiency of DBS programming in Parkinson's disease. *International Congress of Parkinson's Disease and Movement Disorders*. Copenhagen, DK. 2023.
51. Mendlen M, Tien R, Chee K, Gutierrez L, Platt J, **Kern DS**, Ojemann S, Thompson JA, Kramer DR. The VIM's Role in Movement Control Dysfunction in Essential Tremor. *Congress of Neurological Surgeons (CNS)*. Washington DC. 2023.
52. Radcliffe E, Lewis S, Ojemann S, Kramer DR, Hirt L, Case M, Holt-Becker A, Raike R, Thompson JA [Co-Senior], **Kern DS**. Pilot study investigating sensing utility to optimize deep brain stimulation parameters in PD. 26th *North American Neuromodulation Society (NANS)*, Las Vegas, NV. 2023.
53. Hirt L, **Kern DS**, Thompson JA [Co-Senior], Baumgartner A. The Association Between Sleep Quality and Subthalamic Nucleus Volume of Tissue Activation in Parkinson's Disease. *European International Neuromodulation Society (eINS)*. Hamburg, Germany. 2023.
54. Case M, Zarns C, Holt-Becker A, Raike R, Radcliffe E, Thompson JA [Co-Senior], **Kern DS**. Combined use of beta-frequency peak magnitude and patient-specific anatomy to identify optimal stimulation parameters for deep brain stimulation in the subthalamic nucleus. *European International Neuromodulation Society (eINS)*. Hamburg, Germany. 2023.

55. Fullard M, Morris M, Dafoe A, Shelton E, **Kern D**, Matlock D. Improving Shared Decision-Making for Women with Parkinson's Disease. *American Academy of Neurology*. Boston, MA. 2023.

2024

56. Case M, Zarns C, Holt-Becker A, Raike RS, Radcliffe E, Baumgartner A, Thompson JA, **Kern DS**. Correlating monopolar sensed local field potential power with therapeutic window to stratify contact selection. *North American Neuromodulation Society*. Las Vegas, NV. 2024.
57. **Kern DS**, Radcliffe E, Ojemann S, Kramer D, Case M, Zarns C, Holt-Becker A, Raike RS, Baumgartner A, Thompson JA. Comparison of Monopolar and Bipolar Sensing of Beta Frequency in Parkinson's Disease of the Subthalamic Nucleus for Deep Brain Stimulation. *International Congress of Parkinson's Disease and Movement Disorders*. Philadelphia, PA. 2024.
58. Thompson JA, Ojemann S, Kramer D, Hirt L, Radcliffe E, Case M, Zarns C, Holt-Becker A, Raike RS, Baumgartner A, **Kern DS**. Monopolar sensing improves the efficiency of DBS programming in Parkinson's disease. *International Congress of Parkinson's Disease and Movement Disorders*. Philadelphia, PA. 2024
59. Case M, Zarns C, Holt-Becker A, Raike RS, Radcliffe E, Thompson JA, **Kern DS**. Correlation of Neural Sensing with the Volume of Neural Activation within the Desired Patient-Specific Anatomical Target in Deep Brain Stimulation for Parkinson's Disease. *International Congress of Parkinson's Disease and Movement Disorders*. Philadelphia, PA. 2024.
60. Baker S, Radcliffe EM, Kramer DR, Ojemann S, Case M, Zarns C, Holt-Becker A, Raike RS, Baumgartner AJ, **Kern DS**, Thompson JA. Towards an objective, standardized beta frequency peak detection algorithm to inform deep brain stimulation programming in Parkinson's disease. *North American Neuromodulation Society (NANS)*. Las Vegas, NV. 2024.
61. Radcliffe EM, Kramer DR, Case M, Zarns C, Raike RS, Holt-Becker A, **Kern DS**, Thompson JA. Deep brain stimulation modulates oscillatory beta dynamics and quantified movement kinematics in Parkinson's disease: A Case Study. *International Neuromodulation Society (INS)*, Vancouver, Canada. 2024.
62. Thompson JA, Radcliffe E, Case M, Holt-Becker A, Zarns C, Raike RS, Ojemann SG, Kramer DR, **Kern DS**. Efficacy of monopolar sensing-defined optimal contacts for Parkinson's disease DBS programming: LFP and Kinematics, *International Neuromodulation Society (INS)*, Vancouver, Canada. 2024.
63. Radcliffe EM, **Kern DS**, Kramer DR, Thompson JA. Deep Brain Stimulation Modulates Oscillatory Beta Dynamics and Quantified Movement Kinematics in Parkinson's Disease: A Case Study. *American Society for Stereotactic and Functional Neurosurgery*, Nashville, TN. 2024.
64. Tien R, Platt J, Mendlen M, **Kern D**, Ojemann S, Thompson JA, Kramer DR. Timing of spiking activity suggests a role in reach braking control and error monitoring for the ventral intermediate nucleus of the thalamus in essential tremor. *American Society for Stereotactic and Functional Neurosurgery*, Nashville, TN. 2024.

65. Fullard, ME, Dafoe, A, Shelton, E, **Kern, DS**, Matlock, DD, Morris, MA. How Women and Men with Parkinson's Disease Approach Decision-Making for Deep Brain Stimulation Surgery. *American Academy of Neurology*, Denver, CO. 2024.

2025

66. Case M, Zarns C, Holt-Becker A, Raike RS, Radcliffe E, Baumgartner AJ, Thompson JA [Co-Senior], **Kern DS**. Correlating monopolar sensed local field potential power with therapeutic window to stratify contact selection. *North American Neuromodulation Society (NANS)*. Las Vegas, NV. 2025.
67. Zarns C, Radcliffe E, Molina R, Case M, Holt-Becker A, Raike RS, Thompson JA [co-senior], **Kern DS**. In-Clinic Streaming of Local Field Potentials During Titration of Stimulation Therapy. *UMN Neuromod Symposium*. Minneapolis, MN. 2025.
68. Standaert D, Ory-Magne F, **Kern DS**, de Fabregues O, Defebvre L, Oeda T, Safarpour D, Parab A, Yan CH, Wang S, Onuk K, Kukreja P, Bergmann L, Fung VSC. Long-Term Effectiveness of Foslevodopa/Foscarbidopa vs Real-World Standard of Care in Advanced Parkinson's Disease. *European Academy of Neurology*. Helsinki, FI. 2025.
69. Malaty I, Odin P, **Kern D**, Bergmann L, Shah M, Gupta R, AntoniniA, Chaudhuri KR. The Effect of Foslevodopa/Foscarbidopa Treatment on Nonmotor Symptom Burden in Advanced Parkinson's Disease. *International Congress of Parkinson's Disease and Movement Disorders*. Honolulu. 2025.
70. Case M, Zarns C, Holt-Becker A, Raike RS, Radcliffe EM, Baumgartner AJ, Thompson JA, **Kern DS**. Mapping aggregate monopolar sensing data of beta power local field potentials onto a common subthalamic nucleus in Parkinson's disease patients. *International Congress of Parkinson's Disease and Movement Disorders*. Honolulu. 2025.
71. Beehler B, Kelley M, Bristol L, Kramer D, Ojemann S, **Kern D**. Outcomes of Focused Ultrasound Referrals at a Movement Disorders Center. *International Congress of Parkinson's Disease and Movement Disorders*. Honolulu. 2025.
72. Bouchard M, Hauser RA, Odin P, **Kern DS**, Isaacson SH, Bergmann L, Harmer L, Homola J, Gupta R, Yan CH, Carroll C. Foscarbidopa/Foslevodopa Therapy Improves Continuous Duration of Good ON Time and Correlated with Quality of Life in People with Parkinson's Disease. *International Congress of Parkinson's Disease and Movement Disorders*. Honolulu. 2025.