

Curriculum Vitae
Alexander Baumgartner

Current Position

Assistant Professor
Department of Neurology, Movement Disorders Section
Department of Neurosurgery
University of Colorado School of Medicine

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Education

2011 Bachelor of Arts in Mathematics, Biology, Gonzaga University, *magna cum laude*
2016 Doctor of Medicine, The Warren Alpert Medical School of Brown University

Postdoctoral Training

2016 – 2017 Intern, Internal Medicine, Beth Israel Deaconess Medical Center / Harvard Medical School
2017 – 2020 Resident, Neurology, Beth Israel Deaconess Medical Center / Harvard Medical School
2020 – 2022 Fellow, Movement Disorders, University of Colorado School of Medicine

Academic Appointments

2022 – present Assistant Professor of Neurology, University of Colorado School of Medicine
2022 – present Assistant Professor of Neurosurgery, University of Colorado School of Medicine

Hospital, Government, or Other Professional Positions

2022 – present Attending Neurologist, UCHHealth Hospital, Aurora, Colorado

Major Administrative Leadership Positions

Local

2019 – 2020 Administrative Chief Resident in Neurology, Beth Israel Deaconess Medical Center / Harvard Medical School

Honors, Special Recognitions, and Awards

2007 – 2011 Honors Program, Gonzaga University
2012 Student Ambassador, Alpert Medical School, Brown University
2014 Excellence in Science Award, American Association for the Advancement of Science
2016 Dr. Stanley M. Aronson Prize for excellence in neuroscience, Alpert Medical School, Brown University
2016 Alpha Omega Alpha Medical Honor Society, Alpert Medical School, Brown University
2024 Best Preceptor Award, Advanced Neurosciences curriculum, University of Colorado School of Medicine
2025 American Academy of Sleep Medicine (AASM) Young Investigators Research Forum
2025 – 2027 Clinical Faculty Scholars Program, Colorado Clinical & Translational Sciences Institute

Membership in Professional Organizations

2013 – 2016	Physicians for a National Health Program
2014 – 2016	American Association for the Advancement of Science, Excellence in Science Program
2015 – present	American Academy of Neurology
2020 – present	International Parkinson and Movement Disorder Society
2021 – present	Society for Neuroscience
2023 – present	Deep Brain Stimulation Society
2023 – present	American Academy of Sleep Medicine
2023 – present	International Neuromodulation Society

Committee and Service Responsibilities

Regional

2025 – present Board Member, Parkinson Foundation Rocky Mountain Chapter

Education of Patients and Service to the Community

Activities

2013	Organized sports physicals at a local high school, where students who were unable to see a physician received physical exams to allow them to participate in sports
2013 – 2014	Certified HIV and Hepatitis C testing and counseling official in the state of Rhode Island
February 2021	“Alternative Therapies in Parkinson Disease” presented at the Parkinson Association of the Rockies, online support group
March 2021	“Sleep and Fatigue in Parkinson Disease” presented at the Parkinson Association of the Rockies, online support group
September 2021	“Psychosis and Cognition in Parkinson Disease” presented at the Parkinson Association of the Rockies, Glenwood Springs support group
March 2022	“Deep Brain Stimulation for Parkinson Disease” presented at the Parkinson Association of the Rockies, Castle Rock support group
August 2023	“Medication Overview and Research Update” presented at the Parkinson Association of the Rockies, Durango support group
September 2023	“Psychosis and Cognition in Parkinson Disease” presented at the Parkinson Association of the Rockies, Steamboat Springs support group
October 2023	“Sleep and Fatigue in Parkinson Disease” presented at the Parkinson Association of the Rockies, Summit County support group
October 2023	“Medication Overview and Research Update” presented at the Parkinson Association of the Rockies, online support group
August 2024	“Sleep and Fatigue in Parkinson Disease” presented at the Parkinson Association of the Rockies, online support group
November 2024	“PD 101: Medication and Therapies Overview” presented at the Parkinson’s Foundation Community Care Expo
February 2025	“Deep Brain Stimulation: Am I a Candidate?” presented as part of the University of Colorado DBS Webinar

Licensure

2016 – 2020	Massachusetts
2020 – present	Colorado
2023 – present	Wyoming

Board Certification

2020	Neurology; American Board of Psychiatry and Neurology
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Review and Referee Work

Grant Review Activities

2022 – present	Movement Disorders Center Pilot Grant Program grant reviewer, University of Colorado School of Medicine
May 2023	Colorado Clinical and Translational Sciences Institute, PreK Mock Study Section, University of Colorado School of Medicine
October 2024	Scientist Reviewer, Congressionally Directed Medical Research Program, Parkinson's Research Program, Department of Defense
February 2025	Peer Reviewer, Project Grant Program, Parkinson's UK

Editorial Activities

- **Ad hoc Reviewer**

PLoS ONE (2021 – 2023)
 Neurosurgical Review (2021)
 Journal of Integrative Neuroscience (2022)
 Military Medical Research (2022)
 Brain and Behavior (2022)
 Journal of the Neurological Sciences (2023)
 Nature Communications (2023)
 Movement Disorders (2023)
 Sleep (2024 – 2025)
 Sleep Advances (2024)
 Movement Disorders Clinical Practice (2024 – 2025)
 Developmental Neuropsychology (2025)
 Journal of Sleep Research (2025)

- **Other Editorial Roles**

Review Editor, Frontiers in Human Neuroscience, Brain Imaging and Stimulation section (2022 – present)

Local Invited Presentations

May 2021	“Novel modalities and techniques in the diagnosis of Parkinson disease and atypical Parkinsonian syndromes”, Department of Neurology Grand Rounds, University of Colorado School of Medicine
September 2021	“Medications and Therapies Overview” presented at University of Colorado's Annual Parkinson's Disease Symposium
October 2022	“Deep Brain Stimulation and Advanced Therapies for Parkinson Disease” presented at University of Colorado's Annual Parkinson's Disease Symposium
May 2024	“Overview of Movement Disorders” presented at the Brain 101 Course, sponsored by the University of Colorado Department of Neurosurgery and the Neuroscience Innovation Initiative
August 2024	“Advanced Therapies for Parkinson Disease” presented at University of Colorado's Annual Parkinson's Disease Symposium
January 2025	“Deep Brain Stimulation and Non-Motor Parkinson Disease Symptoms”, Department of Neurology Grand Rounds, University of Colorado School of Medicine
May 2025	“Sleep Dysfunction in Parkinson Disease Patients Undergoing Deep Brain Stimulation” presented University of Colorado's Movement Disorder Center annual research retreat
June 2025	“Sleep Dysfunction in Parkinson Disease Patients Undergoing Deep Brain Stimulation” presented University of Colorado's Department of Neurology annual research retreat

Regional, National and International Invited Presentations

Regional

May 2025	“Parkinson Disease Overview and Basic Management” presented at the Laramie, WY Parkinson Disease Symposium
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Teaching Record

Teaching of Students in Courses

2013 – 2014	Doctoring (first year clinical skills course), Alpert Medical School, Brown University
2018 – 2019	Mind, Brain, and Behavior (first year neuroanatomy course), Harvard Medical School
2022 – present	Advanced Neurosciences (third year neuroscience rotation), University of Colorado School of Medicine
2023 – present	Developing Our Clinical Skills (DOCS, first year clinical skills course), University of Colorado School of Medicine

Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)

Local and Regional

2013	Content tutor for first and second-year medical students, Alpert Medical School, Brown University
2019 – 2020	Gait Disturbances and Falls; Basic Concepts of Plasma Exchange; Introduction to the Neurologic Exam Lectures given to Neurology residents, Beth Israel Deaconess Medical Center Approximately 4 lectures per year
2019 – 2020	Clinical Evaluation Exercise Supervisor, a structured patient encounter as part of the Neurology clerkship, Beth Israel Deaconess Medical Center, Harvard Medical School Approximately 8 per year
2021 – 2022	Myoclonus; Dystonia; Wilson's Disease Lectures given to Neurology residents, University of Colorado School of Medicine Approximately 3 lectures per year
August 2022	Basics of Deep Brain Stimulation Lecture given to Movement Disorders fellows, University of Colorado School of Medicine
January 2023	Botulinum toxin injection workshop for Neurology residents, University of Colorado School of Medicine
February 2023	Sensing with DBS: LFPs and BrainSense Lecture given to Movement Disorders fellows, University of Colorado School of Medicine
July 2023	Basics of Deep Brain Stimulation Lecture given to Movement Disorders fellows, University of Colorado School of Medicine
October 2023	Introduction to DBS programming; Sensing with DBS: LFPs and BrainSense Lecture given to Movement Disorders fellows, University of Colorado School of Medicine
November 2023	Ask the Expert Neurology Resident Case Conference University of Colorado School of Medicine
November 2023	DBS Intraoperative Electrophysiology Lecture given to Movement Disorders fellows, University of Colorado School of Medicine
July 2024	Basics of Deep Brain Stimulation Lecture given to Movement Disorders fellows, University of Colorado School of Medicine
February 2025	Deep Brain Stimulation and Focused Ultrasound Lecture given to Neurology residents, University of Colorado School of Medicine
March 2025	Botulinum toxin injection workshop for Neurology residents, University of Colorado School of Medicine
July 2025	Basics of Deep Brain Stimulation Lecture given to Movement Disorders fellows, University of Colorado School of Medicine

National and International

November 2022	Stereotactic and Functional Neurosurgery Hands-On Workshop Faculty Instructor – DBS Programming, Troubleshooting American Society for Stereotactic and Functional Neurosurgery
November 2023	Stereotactic and Functional Neurosurgery Hands-On Workshop Faculty Instructor – DBS Programming, Troubleshooting

October 2024 American Society for Stereotactic and Functional Neurosurgery
Stereotactic and Functional Neurosurgery Hands-On Workshop
Faculty Instructor – DBS Programming, Troubleshooting
American Society for Stereotactic and Functional Neurosurgery

Clinical Supervisory and Training Responsibilities

2021 – present Neurology resident continuity clinic preceptor, UCHHealth Hospital, Aurora, CO;
Approximately 4 clinics per year
2022 – present Clinical teaching and supervision of movement disorders fellows, UCHHealth Hospital,
Aurora, CO; Three half-day clinics per month
2022 – present Clinical teaching and supervision of neurology residents during movement disorders
elective, UCHHealth Hospital, Aurora, CO; One half-day clinic per month

Formally Mentored Medical and Graduate Students

2022 – present Lisa Hirt, PhD student, University of Colorado Anschutz Medical Campus; recipient of
travel grant to attend 3rd Joint Congress of the INS European Chapters (e-INS 2023)
2022 – 2024 Woro George, medical student, University of Colorado Anschutz Medical Campus
2022 – 2024 Matt Kennis, medical student, University of Colorado Anschutz Medical Campus

Other Mentored Trainees and Faculty

2024 – present Blake Beehler, MD, Movement Disorders fellow
2024 – present Vinaykumar Tallavahjala, MD, Movement Disorders fellow
2023 – 2025 Bridget Ollesch, MD, Movement Disorders fellow
2023 – 2025 Ondrea Timmerman, DO, Movement Disorders fellow
2022 – 2024 Brooke Heffernan, MD, Movement Disorders fellow
2022 – 2024 Matt Woodward, MD, Movement Disorders fellow
2022 – 2023 Heather Heiser, MD, Movement Disorders fellow
2022 – 2023 Antonia Pusso, MD, Movement Disorders fellow

Formal Teaching of Peers (e.g., CME and other continuing education courses)

March 2025 Vanderbilt University Junior Faculty Forum on Movement Disorders
Faculty Instructor

Teaching and Education Innovations

2013 Alpert Medical School, Brown University; I designed and implemented a new learning module for
incorporation into the medical school's cardiology curriculum.

Grant Support

Current

01/2024 – 06/2025 Assessing the impact of subthalamic nucleus deep brain stimulation on naturalistic sleep
in Parkinson disease
University of Colorado Department of Neurology Intradepartmental Grant
Role: Principal Investigator (total funding \$40,000)
Major Goals: To assess the impact of subthalamic nucleus deep brain stimulation on
naturalistic sleep in Parkinson disease
12/2022 – 11/2025 A Multi-center, Noninterventional Study Evaluating Variability, Reliability, and
Compliance for the Parkinson's Disease Diary
BlueRock Therapeutics, BRT-DA01-NIS-001
Role: Site Principal Investigator (total funding \$30,000)
09/2022 – 08/2025 Electrophysiological biomarkers of parkinsonian symptoms progression
Mowry Family Philanthropic Fund
Role: Principal Investigator (total funding \$59,000)

This project will examine the utility electrophysiological parameters recorded from surface electroencephalogram, called event-related potentials, as potential biomarkers of cognitive impairment and freezing of gait in patients with Parkinson disease

09/2023 – 03/2026 Double-blind, Randomized Controlled Trial to Assess Efficacy of Celeste Specialized Phototherapy in Treating Symptoms of Parkinson’s Disease
PhotoPharmics, Inc.

Role: Site Principal Investigator (total funding 80,500)

This study seeks to evaluate the efficacy of Celeste by examining the difference between active and control treatment groups on the Parkinson’s Disease Questionnaire-39 (PDQ-39) total score.

Past

09/2020 – 08/2021 Sleep assessed by actigraphy and direct recordings of the subthalamic nucleus in Parkinson’s Disease

University of Colorado Movement Disorders Center Pilot Grant

Role: Principal Investigator (total funding \$10,000)

This project sought to obtain a robust assessment of sleep in patients with Parkinson’s Disease using patient-worn actigraphy monitors in combination with recordings of local field potentials from subthalamic nucleus deep brain stimulators.

05/2022 – 04/2023 Naturalistic sleep assessed by wearable devices and direct recordings of the subthalamic nucleus in Parkinson's Disease

Colorado Clinical and Translational Sciences Institute CO-Pilot Grant, CO-M-22-90

Role: Principal Investigator (total funding \$30,000)

This project seeks to provide a robust evaluation of the effect of subthalamic nucleus deep brain stimulation on sleep dysfunction in patients with Parkinson disease, by using a combination of wearable devices to obtain in-home assessments of sleep both before and after DBS implantation.

01/2024 – 12/2024 The impact of deep brain stimulation on naturalistic sleep electrophysiology in Parkinson disease

NIH 1U24NS133991-01 (Bennett, Piquet, Benke PIs)

Role: NeuroNEXT Research Grant recipient (total funding \$50,000)

This project is a continuation of the above work (CO-M-22-90) evaluating the effect of deep brain stimulation on sleep dysfunction in Parkinson disease using wearable devices in the home environment both before and after DBS implantation.

Bibliography

Papers Published in Peer-Reviewed Journals

1. **Baumgartner A**, Coleman S, Swanson B. The cost of the sword: escape performance in male Swordtails. *PLoS ONE*. 2011; 6(1):e15837. doi:10.1371/journal.pone.0015837
2. **Baumgartner A**, Anthony D. The decline of the autopsy in Rhode Island and nationwide: Past trends and future directions. *R I Med J*. 2016; 99(10):36-38.
3. **Baumgartner A**, Quesenberry PJ. A unique neuropsychiatric syndrome in variant Hereditary Coproporphyrria: Case report and review of the literature. *J Hematol*. 2017; 6(1):21-24. doi:10.14740/jh315w
4. **Baumgartner AJ**, Ahrendsen JT, Varma H, Ward A, Frank S. Cardiac angiosarcoma presenting as a solitary brain metastasis. *Neurol Clin Neurosci*. 2020; 8(6):426–427. doi:10.1111/ncn3.12439
5. Rossi KC, **Baumgartner AJ**, Goldenholz SR, Goldenholz DM. Recognizing and refuting the myth of tongue swallowing during a seizure. *Seizure*. 2020; 83:32–37. doi:10.1016/j.seizure.2020.09.023
6. **Baumgartner AJ**, Press DZ, Simon DK. The relationship between olfactory dysfunction and constipation in early Parkinson’s disease. *Mov Disord*. 2021;36(3):781-782. doi:10.1002/mds.28483

7. **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. *Front Neurol*. 2021; 12:765203. doi:10.3389/fneur.2021.765203
8. Kern D, 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. doi: 10.1016/j.brs.2022.04.019.
9. **Baumgartner AJ**, Thompson JA, Kern DS, Ojemann SG. Novel targets in deep brain stimulation for movement disorders. *Neurosurg Rev*. 2022; 45(4):2593-2613. doi: 10.1007/s10143-022-01770-y.
10. **Baumgartner AJ**, Adkins M, Bainbridge J, Leehey MA. Acute akathisia following initiation of opicapone: A case report. *Clin Parkinsonism Relat Disord*. 2022; 7:100154, doi: 10.1016/j.prdoa.2022.100154.
11. 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;129(6):1492-1504. doi: 10.1152/jn.00055.2023.
12. Memon AA, Edney BS, **Baumgartner AJ**, Gardner AJ, Catiul C, Irwin ZT, Joop A, Miocinovic S, Amara AW. Effects of deep brain stimulation on quantitative sleep electroencephalogram during non-rapid eye movement in Parkinson's disease. *Front Hum Neurosci*. 2023; 17, doi: 10.3389/fnhum.2023.1269864.
13. Baker S, Fenstermacher E, Davis RA, Kern DS, Thompson JA, Felsen F, **Baumgartner AJ**. Ethical considerations in closed loop deep brain stimulation. *Deep Brain Stimulation*. 2023; 3:8-15. doi: 10.1016/j.jdbs.2023.11.001.
14. 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;10(150). doi:10.1038/s41531-024-00762-7.
15. **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;48(6): zsaf005. doi:10.1093/sleep/zsaf005.
16. **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; doi:10.1016/j.brs.2025.05.005.
17. **Baumgartner AJ**, Amara AW. The role of tissue-based biomarkers in isolated REM sleep behavior disorder: Implications for early detection and prognostication. *Sleep*. 2025; zsaf203. doi:10.1093/sleep/zsaf203.

Professional Educational Materials or Reports, in Print or Other Media

1. Reznickova N, Buslovich S, Seeberger L, Overstreet N, **Baumgartner A**, Korsmo M, Smith D. Parkinson's Disease & Psychosis in the Post-Acute and Long-Term Care Setting. AMDA – The Society for Post-Acute and Long-Term Care Medicine. Clinical Practice Pocket Guide Series. June 2021.

Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings

Competitive

1. **Baumgartner AJ**, Hirt L, Kern DS, Thompson JA. Naturalistic sleep in Parkinson's disease assessed by actigraphy and direct recordings of the subthalamic nucleus. Poster presented at: Neuroscience 2021. 50th Annual Meeting of the Society for Neuroscience. 2021 November 8-11.
2. 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. Poster presented at: International Congress of Parkinson's Disease and Movement Disorders. 2023 August 29; Copenhagen, DK.

3. Thompson JA, Hirt L, Kern DS, **Baumgartner AJ**. Characterization of at-home sleep macrostructure in Parkinson disease using a wearable sleep monitoring device. Poster presented at: International Congress of Parkinson's Disease and Movement Disorders. 2023 August 28; Copenhagen, DK.
4. Hirt L, Kern DS, Thompson JA, **Baumgartner AJ**. The association between sleep quality and subthalamic nucleus volume of tissue activation in Parkinson's disease. Poster presented at: 3rd Joint Congress of the International Neuromodulation Society European Chapters (e-INS 2023). 2023 September 1; Hamburg, DE.
5. Baker S, Radcliffe EM, Kramer DR, Ojemann S, Case M, Zarns C, Holt-Becker A, Raikes RS, **Baumgartner AJ**, Kern DS, Thompson JA. Towards an objective beta frequency peak detection algorithm to inform DBS programming in Parkinson's disease. Poster presented at: North American Neuromodulation Society Annual Meeting (NANS 2024). 2024 January 19; Las Vegas, NV.
6. Kern D, Radcliffe E, Ojemann S, Kramer D, Case M, Zarns C, Holt-Becker A, Raikes RS, **Baumgartner AJ**, Thompson JA. Comparison of monopolar and bipolar sensing of beta frequency in Parkinson's disease of the subthalamic nucleus for deep brain stimulation. Poster presented at: International Congress of Parkinson's Disease and Movement Disorders. 2024 September 27; Philadelphia, PA.
7. Thompson JA, Radcliffe E, Ojemann S, Kramer D, Case M, Zarns C, Holt-Becker A, Raikes RS, **Baumgartner AJ**, Kern DS. Monopolar sensing improves the efficiency of DBS programming Parkinson's disease. Poster presented at: International Congress of Parkinson's Disease and Movement Disorders. 2024 September 27; Philadelphia, PA.
8. Bayman E, Chee K, Mendlen M, Tien R, Platt J, Anigbogu C, Kern D, **Baumgartner A**, Ojemann S, Thompson JA, Kramer DR. Movement decreases synchronization between beta band local field potential and single-unit activity in Parkinson's disease. Poster presented at: Congress of Neurological Surgeons Annual Meeting. 2024 September 28; Houston, TX.
9. Case M, Zarns C, Holt-Becker A, Raikes RS, Radcliffe EM, **Baumgartner AJ**, Thompson JA, Kern DS. Comparing monopolar sensed local field potential power with therapeutic window to stratify contact selection. Poster presented at: North American Neuromodulation Society (NANS) Annual Meeting. 2025 January 30; Orlando, FL.
10. Case M, Zarns C, Holt-Becker A, Raikes RS, Radcliffe EM, **Baumgartner AJ**, Thompson JA, Kern DS. Mapping aggregate monopolar sensing data of local field potential beta power from Parkinson's disease patients onto a common space subthalamic nucleus. Poster presented at: International Congress of Parkinson's Disease and Movement Disorders. 2025 October 5; Honolulu, HI.

Non-competitive

1. **Baumgartner AJ**, Roberts TJ. Dissecting the determinants of active and passive force enhancement in skeletal muscle. Poster presented at: Brown University Annual Research Symposium; 2013 December 4-5; Providence, RI.
2. Hirt L, **Baumgartner AJ**, Kern DS, Kramer D, Ojemann SG, Thompson JA. Targeted versus actual stimulated areas in deep brain stimulation surgery for essential tremor. Poster presented at: University of Colorado Neurosurgery Research Symposium. 2022 May 3; Aurora, CO.