UNIVERSITY OF COLORADO SCHOOL OF MEDICINE

FORMAT FOR CURRICULUM VITAE

1. Personal history or biographical sketch

John A. Thompson, PhD
Associate Professor
Departments of Neurosurgery and Neurology
University of Colorado Denver, School of Medicine
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2. Education

- 1998-2000 Lee University | Associate of Arts
- 2000-2003 Florida State University | Bachelor of Science – Psychology
- 2003-2008 Florida State University | PhD – Neuroscience
- 2008-2010 University of Washington | Post-Doc – Systems Neuroscience
- 2010-2014 UC Denver School of Medicine | Post-Doc – Systems Neuroscience

3. Academic appointments

- 2014-2020 Assistant Professor in the Department of Neurosurgery
- 2015-Present Faculty instructor American Society for Stereotactic and Functional Neurosurgery
- 2016-Present Affiliated Faculty – Department of Bioengineering
- 2016-Present Faculty member in the Modern Human Anatomy Program
- 2018-Present Secondary Faculty Appointment in the Department of Neurology
- 2018-Present Faculty member in the Neuroscience Program
- 2018-Present Faculty member in Medical Scientist Training Program
- 2020-Present Associate Professor in the Departments of Neurosurgery and Neurology
- 2021-Present Core Faculty - Department of Bioengineering
- 2021-Present Faculty member in the CU Anschutz Center for Medical AI

4. Hospital, government or other professional positions

- 2014-Present Intraoperative neurophysiologist for the deep brain stimulation program at the University of Colorado Hospital

5. Honors, special recognitions and awards

- 2006 Berkley Fellow Award: Innovation in Research: FSU Program in Neuroscience
- 2006 Best Poster Presentation: Southeast Nerve Net
- 2006-2009 Ruth L. Kirschstein NRSA pre-doctoral Award (NINDS)
- 2007 Best Oral Presentation: Southeast Nerve Net
- 2009-2010 Senior Fellow Research Training in Otolaryngology (University of Washington, NIH)

- 2012 Best Poster Presentation: Rocky Mountain Regional Neuroscience Group
- 2012 Best Poster Presentation: Front Range Neuroscience Group
- 2016 Society for Neuroscience Chapter Grant
- 2017 Boettcher-Webb-Waring Early-Career Investigator
- 2020 Boettcher Collaboration Scholar Award - $5000 – Sunderland Baker
- 2021 Boettcher Collaboration Scholar Award - $5000 – Sydnei Lewis

6. Membership in professional organizations

- 2003-Present Society for Neuroscience
- 2003-Present Member, Society for Neuroscience
- 2010-2014 Member, American Physiological Society
- 2014-Present American Association of Stereotactic and Functional Neurosurgery
- 2015-Present Certified Mathworks Matlab Associate

7. Major Committee and Service Responsibilities

- 2014-2018 President of the Rocky Mountain Regional Neuroscience Group (SfN regional chapter)
- 2015-2019 Co-organizer of the 'Brain and Skull Exploration' during the annual CDB Research Day
- 2016-2019 Chair, Capstone Steering Committee, Modern Human Anatomy Program
- 2014-2018 Steering Committee, Front Range Neuroscience Group
- 2019-Present Chair, Admissions Committee, Modern Human Anatomy
- 2020-Present Member, Curriculum Committee, Modern Human Anatomy
- 2020-Present Research Director for Advanced Therapies in Movement Disorders, Dept. of Neurology
- 2020-Present OpenMind – NIH supported neural communications consortium related development of tools for the RC+S Summit DBS system
- 2020-Present Member, Dept. of Neurosurgery Speaker Committee
- 2021-2023 Member, Admissions Committee, Medical Scientist Training Program
- 2021-Present Expert member, UCHealth Behavioral Health Neuromodulation and Advanced Therapeutics Subcommittee (BH-COGG)

8. Professional Development

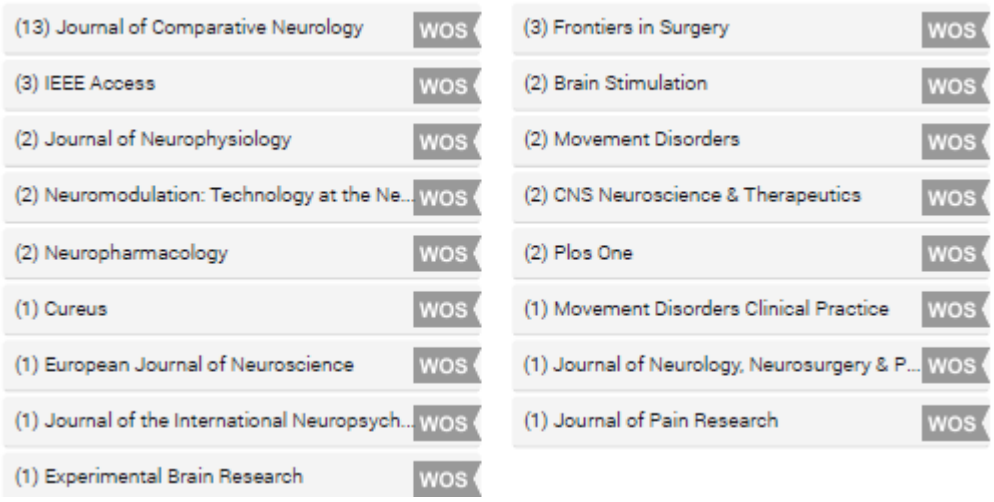
- 2017 Project Management Workshop -1-week intensive course offered for new faculty by the Graduate School
- 2017 Machine Learning Specialization – 4 courses provided by the University of Washington via Coursera
- 2016-Present 18 courses in Python, R, and Machine Learning completed on DataCamp
- 2020 4-Session Equity Certificate Program – hosted by UCH- Office of Diversity, Equity, Inclusion and Community Engagement.

9. Inventions, intellectual property and patents held or pending

- Christensen E, Abosch A, Thomson JA, Zylberberg J. Deep brain stimulation using artificial neural networks. 2018 Invention Disclosure, Patent pending CU4851H | 303.0050P.
- Research support (Alpha Omega) and publication ("Semi-automated application for estimating subthalamic nucleus boundaries and optimal target selection for deep brain stimulation implantation surgery" Thompson et al., JNS 2018) contributed to the successful approval of an FDA application: 21 CFR 882.1330: Clinical Trial ID: NCT03363724
- Provisional patent with Anand Tekriwal: CU5474H – Thompson – Markerless tracking and kinematic quantification of intraoperative movements in parallel with neurophysiologic monitoring.

10. Review and referee work

- 2010-Present Ad-hoc Reviewer for Journal of Comparative Neurology
- 2014-Present Ad-hoc Reviewer for Neurosurgery
- 2014-Present Ad-hoc Reviewer for Journal of Neurology, Neurosurgery and Psychiatry
- 2015 NREF Research Grant Fellowships & Young Clinician Investigator Awards Reviewer
- 2015 University of Minnesota Neuromodulation Innovation Grants Reviewer
- 2016 DU Knoebel Institute for Aging Pilot Grant program Reviewer
- 2018-present Reviewer Journal of Neurology, Neurosurgery, Psychiatry
- 2018-present Reviewer Journal of Neurosurgery
- 2018-present Reviewer Operative Neurosurgery
- 2018 Reviewer BRAIN Initiative Study Section (RFA-NS-18-008) – NIH/NINDS
- 2018 Reviewer BRAIN Initiative Study Section (RFA-NS-18-010) – NIH/NINDS
- 2016-2018 Abstract Reviewer for American Society of Stereotactic Functional Neurosurgery Bi-Annual meeting
- 2018 Judge for Poster Session: American Society of Stereotactic Functional Neurosurgery Bi-Annual meeting
- 2021 Reviewer NIH Rehabilitation Research and Development (RR&D) service's Small Projects in Rehabilitation Research (SPiRE)
- 2021 – present Associate Review Editor – Frontiers in Surgery
- 2014-2020 Ad-hoc Journal reviews



11. Invited extramural lectures, presentations and visiting professorships

- 2005 Guest Lecture: Course in Developmental Neurobiology
- 2006 FSU Psychology Department Graduate Research Day
- 2008 Biomathematics Advanced Seminar
- 2008 Fifth Acoustical Society of America: Florida Chapter
- 2008 Duke University: Birdsong Neurobiology Labs
- 2008 B.W. Robinson Award Ceremony
- 2009 University of Washington Regional Neuroscience Group
- 2011 Rocky Mountain Regional Neuroscience Group
- 2012 University of Colorado Denver Postdoctoral Association Seminar Series
- 2015 Modern Human Anatomy Program Seminar Series
- 2015 Mental Health Center of Denver – Presentation to OCD specialists on DBS for OCD
- 2016 Canadian Neuroscience Meeting – Mini-Symposia

12. Teaching record

Undergraduate

2005-2006 Instructor for Physiological Psychology Lab (Florida State University)
- Designed lectures and teaching aids

2006 Instructor for Animal Sensory Processing Lab (Florida State University)
- Designed lectures, teaching aids and novel demonstrations using various animal models (e.g., cockroaches, pigeons and zebra finches).

Graduate

2014 & 2016 Co-Instructor for Special Topics in Neuroscience: Neuroethology (UC-AMC) NRSC 7670
- Developed 4 lectures of material

2014-2020 **Course Director** for Matlab for Neuroscientists (UC-AMC) NRSC 7657
- Re-structured the course to include a focus on individual projects
- Created the course schedule and syllabus
- Created lecture and teaching module materials

2020-Present Co-director (Dr. Dan Denman – Director) - (UC-AMC) NRSC 7657
- Re-structured to focus on Python and Matlab

2016-Present **Course Director (as of 2019)** for Experimental Research Design (UC-AMC) ANAT 6600
- Co-developed the syllabus
- Developed novel assignments that required students to recreate published results, by reading the original article and using the published raw data
- Created novel lecture material
- Under innovations introduced in the course, the student evaluations increased to **4.7**

Medical Student

2013-2020 Co-Instructor for Synaptic Physiology Lab (UC-AMC) Nervous System Block (NS SG)
- Created physiological preparations necessary to generate the course
- Setup the lab
- Optimized and updated the code necessary to run the software for the lab
- Taught 3-4 4-hour modules per year

Resident/Fellow

2015-Present Faculty Instructor – American Society for Stereotactic and Functional Neurosurgery Sponsored Stereotactic and Functional National Resident and Fellow Hands-on Workshop

2015-Present Supervision and instruction of Neurology residents during intraoperative neurophysiological monitoring for deep brain stimulation surgery (Movement Disorders Fellowship Grant)

13. Grant support

- **Current**
  - 2020-2025 NIH BRAIN UO1 NINDS Adaptive Neurostimulation to Restore Sleep in Parkinson's Disease: An Investigation of STN LFP Biomarkers in Sleep Dysregulation and Repair (**Principal Investigator** on MPI proposal: $202,402 (Y1: direct = $132,303)
  - 2020-2025 NIH BRAIN UO1 NIMH Neuronal mechanisms of human episodic memory: Lead site (Cedar Sinai – Dr. Ueli Rutishauser). (**Site Investigator**): $178,702 (Y1: direct = $114,921)
  - 2021-2022 Mentored Movement Disorders Center Pilot Award – Alex Baumgartner, MD, ($10,000) Sleep assessed by actigraphy and direct recordings of the subthalamic nucleus in Parkinson's disease (**Mentor**)
  - 2021-2022 Boston Scientific – Investigator Initiated study: "Improving efficiency of initial deep brain stimulation programming for directional electrodes" (**Co-**

Investigator): $135,211 (direct = $135,211)

- 2021 – 2022 Kavli Foundation – "Use of Neuro Data Without Borders format for three unique intracranial human datasets" (**Principal Investigator**): $10,000

- 2021 – 2022 Medtronic – Investigator Initiated study: "Predicting the optimal therapeutic contact of a deep brain stimulation electrode in Parkinson's disease based upon measurement of beta activity" (**Co-Investigator**): $22,720

- 2019 – 2023 NIH BRAIN R01 NIMH (1RF1MH121362-01): **PI Judy Gault**. Leveraging ethical dissension among capacity, beneficence and justice in clinical trials of neurotherapeutics in the severely disabled: lessons from schizophrenia. (**Co-Investigator**) $1,640,485

- **Completed**
  - 2015-2016 Colorado Clinical and Translational Sciences Institute (CCTSI) – TL1 (T32) Pre-doctoral Fellowship – (**Principal Investigator - Clinical**) July/2015-July/2016: $30,682 (direct $30,682)

  - 2014-2016 Center for NeuroScience – "Neurophysiology of Parkinson's disease: From mouse to man (**Consultant**): $54,000 (direct $54,000)

  - 2018-2019 Synaptive Biomedical Industry Sponsored Fellowship – (**Co-Principal Investigator**) $70,000 (direct $70,000)

  - 2018-2019 Cancer League of Colorado – "Diffusion tensor image tractography in surgical resection of glioblastoma improving resection and surgical safety" (**Co-Principal Investigator**): $30,000 (direct $30,000)

  - 2017-2019 Alpha Omega Industry Sponsored Grant – "Semi-automated application for estimating subthalamic nucleus boundaries and optimal target selection for deep brain stimulation implantation surgery" (**Principal Investigator**) $33,000 (direct $33,000)

  - 2017-2021 Boettcher Foundation Webb-Waring Biomedical Early-Career Investigator Award – "Neurobiology of sensory-motor driven decision-making processes" (**Principal Investigator**) July/2017: $235,000 (direct $235,000)

  - 2019-2021 American Cancer Society and University of Colorado Cancer Center – "Use of diffusion neuroimaging for cerebral metastases to optimize treatment and improve prognosis" (**Co -Principal Investigator**): $30,000 (direct

$30,000)

- 2018-2021 Colorado Department of Public Health and Environment (CDPHE) "A Study of the Tolerability and Efficacy of Cannabidiol on Motor Symptoms in Parkinson's Disease" (**Consultant**): (FTE: 5%; direct $3736).

- Spring 2020 Boettcher Collaboration Grant – "Real-time computer vision analysis for improving outcomes in the operating room during deep brain stimulation implantation for the treatment of Parkinson's disease" (**Mentor**) – Trainee: Sunderland Baker: $5000

- Spring 2021 Boettcher Collaboration Grant – "Identifying neurophysiological biomarkers of motor impairment of Parkinson's disease" (**Mentor**) – Trainee: Sydnei Lewis: $5000

- 2020 – 2021 Department of Neurosurgery Innovation grant – " Developing a tool for visualization of patient specific and pooled temporal lobe anatomic and connectomic data to simulate the effects of focal ablations on network connectivity" (**Co-Investigator**: PI Ojemann): $20,000

- 2020-2021 Mentored Movement Disorders Center Pilot Award – Humphrey Petersen-Jones ($5000) "Optimizing deep brain stimulation settings in real-time using forearm electromyography and accelerometry" (**Mentor**)

14. Bibliography

*Peer-Reviewed articles (***** **Co-first author , ¥ Co-senior author)**

1. **Thompson JA**, Wu W, Bertram R, Johnson F (**2007**) Auditory dependent vocal recovery in adult male zebra finches is facilitated by lesion of a forebrain pathway that includes the basal ganglia. *Journal of Neuroscience* 27:12308-12320
2. **Thompson JA** & Johnson F (**2007**) HVC microlesions do not destabilize the vocal patterns of adult male zebra finches with prior ablation of LMAN. *Developmental Neurobiology* 67:205-218
3. Wu W, **Thompson JA**, Bertram R, Johnson F (**2008**) A Statistical Method for Quantifying Songbird Phonology and Syntax. *Journal of Neuroscience Methods* 174: 147-154
4. **Thompson JA**, Perkel DJ. (**2011**) Endocannabinoids mediate synaptic plasticity at glutamatergic synapses on spiny neurons within a basal ganglia nucleus necessary for song learning. *Journal of Neurophysiology*. 105: 115969
5. **Thompson JA**, Basista MJ, Wu W, Bertram R, Johnson F. (**2011**) Dual pre-motor contribution to songbird syllable variation. *Journal of Neuroscience* 31:322-330
6. **Thompson JA**, Salcedo E, Restrepo D, Finger TE. (**2012**) Second order input to the medial amygdala from olfactory sensory neurons expressing the transduction channel TRPM5. *Journal of Comparative Neurology*. 520:1819-1830

7. **Thompson JA**, Felsen G. (**2013**) Activity in the mouse pedunculopontine tegmental nucleus reflects action and outcome in a decision-making task. *Journal of Neurophysiology*. 110:2817-29
8. **Thompson JA**, Lanctin D, Ince NF, Abosch A (**2014**) Clinical implications of local field potentials for understanding and treating movement disorders. *Stereotactic and Functional Neurosurgery*. 92(4):251-263
9. Stratford JM, **Thompson JA** (**2014**) Beta-Galactosidase staining in the nucleus of the solitary tract of Fos-TauLacZ mice is unaffected by monosodium glutamate taste stimulation. *PLOS ONE* 9(9):e107238
10. Albrecht O, Dondzillo A, Mayer F, **Thompson JA**, Klug A (**2014**) Inhibitory projections from the ventral nucleus of the trapezoid body to the medial nucleus of the trapezoid body in mouse. *Frontiers in Neural Circuits*. July 29; 8:83
11. Wolf AB, Lintz MJ, Costabile J, **Thompson JA**, Stubblefield EA, Felsen G (**2015**) Optogenetic cholinergic modulation of the mouse superior colliculus in vivo. *Journal of Neurophysiology*. 114(4):2118-2131
12. Stubblefield EA, **Thompson JA**, Felsen G (**2015**) Optogenetic cholinergic modulation of the mouse superior colliculus in vivo. *Journal of Neurophysiology*. 114(2):978-88
13. **Thompson JA**, Costabile J, Felsen F (**2016**) Mescencephalic representations of recent experience influence decision making. *eLife* e16572
14. Dondzillo A, **Thompson JA**, Klug A (**2016**) Recurrent inhibition to the medial nucleus of the trapezoid body In the Mongolian gerbil (meriones unguiculatus). *PLOS ONE* e0160241
15. Stratford JM, **Thompson JA** (**2016**) MSG-evoked c-Fos activity in the nucleus of the solitary tract is dependent upon fluid delivery and stimulation parameters. *Chemical Senses*. 41(3):211-20
16. Ormond DR, D'Souza S, **Thompson JA** (**2017**) Global and targeted pathway impact of gliomas on white matter integrity based on lobar localization, *Cureus* 9 (9)
17. Tekriwal A, Kern D, Tsai J, Ince NF, Wu J, **Thompson JA**, Abosch A (**2017**) REM sleep behavior disorder: prodromal and mechanistic insights for Parkinson's disease. *Journal of Neurology, Neurosurgery and Psychiatry* 88:445-451
18. **Thompson JA***, Yin D, Ojemann S, Abosch A (**2017**) Use of the putamen as a surrogate anatomical marker for the internal segment of globus pallidus in deep brain stimulation surgery. *Stereotactic and Functional Neurosurgery*, 95 (2), 229-235
19. Kolb R, Felsen G, Abosch A, **Thompson JA** (**2017**) Use of intraoperative local field potential spectral analysis to differentiate basal ganglia structures in Parkinson's disease patients. *Physiological Reports*, 5 (12), e13322
20. Yin D, **Thompson JA**, Ojemann S, Pelak V, Drees C, Nagae L, Abosch A (**2017**) Optic radiation tractography and visual field deficits in laser interstitial thermal therapy for amygdalo-hippocampectomy in patients with mesial temporal lobe epilepsy. *Stereotactic and Functional Neurosurgery* 95:107-113
21. Stratford JM, **Thompson JA**, Finger TE (**2017**) Immunocytochemical organization and sour taste activation in the rostral nuc. Solitary tract of mice. *Journal of Comparative Neurology* 525: 271-290
22. Liedtke EI, Zhang S, **Thompson JA**, Sillau S, Gault J. (**2017**) Correlated expression analysis of genes implicated in schizophrenia: identification of putative disease related pathways. New Horizons in Translational Medicine, 3 (5) 224-232
23. Winter MK, Costabile JD, Abosch A, **Thompson JA** (**2018**) Method for localizing intraoperative recordings from deep brain stimulation surgery using post-operative MRI. *NeuroImage Clinical* 20: 1123-1128
24. **Thompson JA***, Oukal S, Hanrahan S, Hebb A, Israel Z, Bergman H, Ojemann S, Abosch A (**2018**) Semi-automated application for estimating subthalamic nucleus boundaries and

optimal target selection for deep brain stimulation implantation surgery, *Journal of Neurosurgery*. May 18:1-10

25. **Thompson JA***, Tekriwal A, Ince NF, Felsen G, Wu J, Otzark M, Telkes I, Abosch A (**2018**) Sleep patterns in Parkinson's disease: Direct recordings from the subthalamic nucleus. *Journal of Neurology, Neurosurgery and Psychiatry*, 89(1) 95-104
26. Gault, JM, Davis R, Cascella NG, Saks ER, Corripio-Collado I, Anderson WS, Olincy A, **Thompson JA**, Pomarol-Clotet E, Sawa A, Daskalakis Z, Lipsman N, Abosch A (**2018**) Approaches to neuromodulation in schizophrenia, *Journal of Neurology, Neurosurgery and Psychiatry*, 89(7):777-787
27. Brown M, Drees C, Nagae LN, **Thompson JA**, Ojemann S, Abosch A (**2018**) Curative and palliative MRI-guided laser ablation for drug-resistant epilepsy, *Journal of Neurology, Neurosurgery and Psychiatry*. 89(4):425-433
28. Vasquez CA, **Thompson JA**, Youssef AS (**2018**) The tentorial bridge to deep skull base exposure: anatomic morphometric study. *World Neurosurgery* 114 e588-e596
29. Tekriwal A, Felsen G, **Thompson JA** (**2018**) Modular auditory decision-making behavioral task designed for intraoperative use in humans. Journal of Neuroscience Methods. 304, 162-167
30. Weinkle LJ*, Hoyt B*, **Thompson JA***, Sillau S, Tanabe J, Honce J, Klepitskaya O (**2018**) Association of MRI measurements with cognitive outcomes after STN-DBS in Parkinson's disease. Movement Disorders clinical practice 5(4) 417-426
31. Kern DS, Picillo M, **Thompson JA**, Sammartino F, di Biase L, Munhoz RP, Fasano A. Interleaving stimulation in Parkinson's disease, tremor and dystonia (**2019**). *Stereotactic and Functional Neurosurgery*, 96 (6) 379-391
32. Christensen E, Abosch A, **Thompson JA¥,** Zylberberg J (**2019**) Inferring sleep stage from local field potentials recorded in the subthalamic nucleus of Parkinson's patients. Journal of Sleep Research 28 (4), e12806
33. Costabile JD, **Thompson JA**, Alaswad E, Ormond DR (**2019**) Biopsy confirmed glioma recurrence predicted by multi-modal neuroimaging metrics. Journal of clinical medicine 8(9), 1287
34. D'Souza S, Ormond DR, Costabile J, **Thompson JA** (**2019**) Fiber-tract localized diffusion coefficients highlight patterns of white matter disruption induced by proximity to glioma. Plos ONE 14 (11), e0225323
35. Pang Y, Christenson J, Jiang F, Lei T, Rhoades R, Kern D, **Thompson JA¥**, Liu C (**2020**) Automatic detection and quantification of hand movements toward development of an objective assessment of tremor and bradykinesia in Parkinson's disease. Journal of neuroscience methods. 333, 108576.
36. George DD, Ojemann SG, Drees C, **Thompson JA** (**2020**) Stimulation mapping using stereoelectroencephalography: current and future directions. Frontiers in Neurology 11, 320.
37. Gault JM, **Thompson JA**, Maharajh K, Hosokawa P, Stevens KE, Olincy A, Ojemann SG, Abosch A (**2020**) Striatal and Thalamic Auditory Response During Deep Brain Stimulation for Essential Tremor: Implications for Psychosis. Neuromodulation 23 (4), 478-488
38. Kern DS, Uy D, Rhoades R, Ojemann S, Abosch A, **Thompson JA** (**2020**) Discrete changes in brain volume after deep brain stimulation in patients with Parkinson's disease. Journal of Neurology, Neurosurgery, and Psychiatry 91 (9), 928-937
39. Youssef AS, Arnone GD, Farell NF, **Thompson JA**, Ramakrishnan VR, Labib MA (**2020**) The Combined Endoscopic Endonasal Far Medial and Open Postauricular Transtemporal Approaches As a Lesser Invasive Approach to the Jugular Foramen: Anatomic Morphometric Study With Case Illustration. Operative Neurosurgery 19 (4), 471-479

40. Kern DS, Fasano A, **Thompson JA**, Abosch A, Ojemann SG, Munhoz RP (**2021**) Constant Current versus Constant Voltage: Clinical Evidence Supporting a Fundamental Difference in the Modalities. Stereotactic and Functional Neurosurgery, 99 (2), 171-175
41. Arnone GD, Kunigelis KE, Gurau A, Coulter I, **Thompson JA**, Youssef AS (**2021**) Acute Sigmoid Sinus Compromise Following Skull Base Procedures: Is a "Laissez-Faire" Approach Best? Journal of Neurological Surgery Part B: Skull Base 82 (06), 652-658
42. D'Souza S, Hirt L, Ormond DR, **Thompson JA** (2021) Retrospective analysis of hemispheric structural network change as a function of location and size of glioma, Brain Communications 3 (1) fcaa216
43. Belanger K, Grassia F, Kortz MW, **Thompson JA**, DeStefano S, Ojemann S (2021) Management of post-operative delirium following stereoelectroencephalography electrode placement for drug resistant epilepsy: Lessons learned from two case reports, Epilepsy & Behavior Reports 16, 100438
44. Fringuello A, Tatman PD, Wroblewski T, **Thompson JA,** Yu X, Lillehei K, Graner M (2021) Cytokine-Laden Extracellular Vesicles Predict Patient Prognosis after Cerebrovascular Accident, International Journal of Molecular Sciences 22 (15), 7847
45. Baumgartner AJ, Kushida CA, Summers MO, Kern DS, Abosch A, **Thompson JA** (2021) Basal Ganglia Local Field Potentials as a Potential Biomarker for Sleep Disturbance in Parkinson's Disease, Frontiers in Neurology, 1957
46. Hirt L, Grassia F, Feuerstein J, **Thompson JA**, Ojemann S, Kern DS (2021) Deep Brain Stimulation of the Ventral Intermediate Nucleus of the Thalamus in Writer's Cramp: A Case Report, Tremor and Other Hyperkinetic Movements 11
47. Kahn L, Sutton B, Winston HR, Abosch A, **Thompson JA**[¥], Davis RA[¥] (2021) Deep Brain Stimulation for Obsessive-Compulsive Disorder: Real World Experience Post-FDA-Humanitarian Use Device Approval, Frontiers in Psychiatry 12, 238 [selected for inclusion in the Women in Psychiatry 2021: Neuroimaging and Stimulation [frontiersin.org] Article Collection]
48. Thaker AA, Reddy KM, **Thompson JA**, Gerecht PD, Brown MS, Abosch A, Kern DS (2021) Coronal Gradient Echo MRI to Visualize the Zona Incerta for Deep Brain Stimulation Targeting in Parkinson's Disease, Stereotactic and Functional Neurosurgery, 1-8
49. Tekriwal A, Lintz MJ, **Thompson JA**, Felsen G (2021) Disrupted basal ganglia output during movement preparation in hemiparkinsonian mice is consistent with behavioral deficits, Journal of Neurophysiology 126 (4), 1248-1264
50. Ung T, Kahn L, Hirt L, Chatain G, Humes E, David-Gerecht P, Drees C, **Thompson JA**, Ojemann SG, Abosch A (2022) Using a Robotic-Assisted Approach for Stereotactic Laser Ablation Corpus Callosotomy: A Technical Report, Stereotactic and Functional Neurosurgery 100 (1), 61-66
51. Murcia D, D'Souza S, Abozeid M, **Thompson JA**, Djoyum TD, Ormond DR (2022) Investigation of Asleep versus Awake Motor Mapping in Resective Brain Surgery, World Neurosurgery 157, e129-e136

Book Chapters

1. Kahn L, Abosch A, Kern DS, Kushida CA, Halpern CH, **Thompson JA**, (**2019**) Rapid eye movement sleep behavior disorder: pathological neural circuits and association with Parkinson's disease. *Handbook of Sleep Research*. Volume 30: 723-730
2. **Thompson JA**, Kern DS, Ojemann S. (**2019**) *Novel targets in deep brain stimulation for movement disorders. In: Schmidek and Sweet Operative Neurosurgical Techniques* (IN PRESS)

3. Kundu B, **Thompson JA**, Rolston J. (**2020**) *Stereotactic and Functional Neurosurgery: Principles and Applications*, edited by Drs. Nader Pouratian and Sameer Sheth. Published by Springer. 93-106

Scientific Abstracts – since Assistant Professor Appointment (***Mentored-student Abstracts)**

2015

1. *Winter M, Abosch A, **Thompson JA** (2015). Electrophysiological topography of subthalamic nucleus in Parkinson's disease. American Association of Clinical Anatomists, Annual Meeting. Salt Lake City, UT. *Competitive; poster*
2. *Kolb R, Abosch A, Felsen G, **Thompson JA** (2015) Using local field potentials to differentiate brain regions and optimize target localization for deep brain stimulation surgery. UCD Neuroscience Retreat. Estes Park, CO. *Non-competitive; poster*

2016

3. **Thompson JA**, Felsen G (2016). Mescencephalic representations of recent experience influence decision making Canadian Neuroscience, 10th Annual Meeting. Toronto, CA. *Competitive; oral*
4. *Yin D, **Thompson JA**, Ojemann S, Abosch A (2016). Use of putamen as surrogate anatomical marker for the GPi in DBS surgery. American Association for Stereotactic and Functional Neurosurgery, 2016 Annual Meeting. Chicago, IL. *Competitive; poster*
5. *Yin D, **Thompson JA**, Ojemann S, Drees C, Nagae L, Abosch A (2016). The rate of visual field deficits following laser-ablation amygdalo-hippocampectomy in patients with mesial temporal lobe epilepsy. American Association for Stereotactic and Functional Neurosurgery, 2016 Annual Meeting. Chicago, IL. *Competitive; poster*
6. **Thompson JA**, Bergman H, Ojemann S, Hebb A, Oukal S, Abosch A (2016). A semi-automated software for estimating subthalamic nucleus boundaries and assisting optimal target selection for deep brain stimulation implantation surgery. American Association for Stereotactic and Functional Neurosurgery, 2016 Annual Meeting. Chicago, IL. *Competitive; poster*
7. **Thompson JA**, Felsen G, Abosch A (2016). Activity in human substantia nigra during sensorimotor decision-making task reflects motor planning. American Association for Stereotactic and Functional Neurosurgery, 2016 Annual Meeting. Chicago, IL. *Competitive; poster*
8. *Winter M, Abosch A, **Thompson JA** (2016). Electrophysiological topography of subthalamic nucleus in Parkinson's disease. Cognitive Neuroscience, 22nd Annual Meeting. New York City, NY. *Competitive; poster*
9. *Harland T, Abosch A, **Thompson JA** (2016) Characterizing tremor cell networks in the motor thalamus of patients with Essential Tremor. DREAM poster session. Aurora, CO *Non-competitive; poster*
10. *France J, **Thompson JA** (2016) Analysis of cortical and subcortical white and gray matter volume in patients with movement disorders prior to deep brain stimulation treatment. Society for Neuroscience Meeting, San Diego, CA *Competitive; poster*
11. *France J, **Thompson JA** (2016) Analysis of cortical and subcortical white and gray matter volume in patients with movement disorders prior to deep brain stimulation treatment. Front Range Neuroscience Group, Fort Collins, CO *Non-competitive; poster*
12. *France J, **Thompson JA** (2016) Analysis of cortical and subcortical white and gray matter volume in patients with movement disorders prior to deep brain stimulation treatment. Neuroscience Retreat, Estes Park, CO *Non-competitive; poster*
13. *France J, **Thompson JA** (2016) Analysis of cortical and subcortical white and gray matter volume in patients with movement disorders prior to deep brain stimulation treatment. BRAiN poster session, Aurora, CO *Non-competitive; poster*

14. *Weinkle LJ, Klepitskaya O, Sillau S, Tanabe J, Honce J, **Thompson JA**, Hoyt B (2016) Use of quantitative measures of brain MRI to predict cognitive outcomes after Subthalamic Nucleus Deep Brain Stimulation for Parkinson's disease. Front Range Neuroscience Group, Fort Collins, CO *Non-competitive; poster*

2017

15. *Weinkle LJ, Klepitskaya O, Sillau S, Tanabe J, Honce J, **Thompson JA**, Hoyt B (2017) Use of quantitative measures of brain MRI to predict cognitive outcomes after Subthalamic Nucleus Deep Brain Stimulation for Parkinson's disease. Rocky Mountain Regional Neuroscience Group, Aurora, CO *Non-competitive; poster*
16. *Weinkle LJ, Klepitskaya O, Sillau S, Tanabe J, Honce J, **Thompson JA**, Hoyt B (2017) Use of quantitative measures of brain MRI to predict cognitive outcomes after Subthalamic Nucleus Deep Brain Stimulation for Parkinson's disease. Movement Disorders Conference, Vancouver, Canada *Competitive; poster*
17. *Tekriwal A, **Thompson JA**, Felsen G, Abosch A (2017) Shifts in subthalamic nucleus local field potential activity during the sleep-wake cycle. Rocky Mountain Regional Neuroscience Group, Aurora, CO *Non-competitive; poster*
18. *Tekriwal A, **Thompson JA**, Felsen G, Abosch A (2017) Shifts in subthalamic nucleus local field potential activity during the sleep-wake cycle. Movement Disorders Conference, Vancouver, Canada *Competitive; poster*
19. *Blanco-Prado R, Drees C, **Thompson JA** (2017) Use of systematic stimulation mapping and functional/structural imaging to improve localization of seizure onset in patients with drug-resistant epilepsy, Front Range Neuroscience Group, Fort Collins, CO *Non-competitive; poster*
20. *Uy D, Abosch A, **Thompson JA** (2017) Inter-hemispheric analysis of compensatory neural activity and volumetric changes in deep brain stimulation patients, Front Range Neuroscience Group, Fort Collins, CO *Non-competitive; poster*
21. *Uy D, Abosch A, **Thompson JA** (2017) Inter-hemispheric analysis of compensatory neural activity and volumetric changes in deep brain stimulation patients, American Association of Anatomists, San Diego, CA *Competitive; poster*
22. *Kindel W, Kern D, Zylberberg J, **Thompson JA** (2017) Precision deep stimulation (DBS): defining the tractographic profile for maximal therapeutic benefit. Society for Neuroscience Meeting, Washington DC. *Competitive; poster*
23. *D'Souza S, **Thompson JA**, Ormond DR (2017) Global and targeted pathway impact of gliomas on white matter integrity based on lobar localization, Cancer League of Colorado Conference, Denver, CO *Competitive; poster*
24. *D'Souza S, Ormond DR, **Thompson JA**(2017) Global and targeted pathway impact of gliomas on white matter integrity based on lobar localization, Front Range Neuroscience Group, Fort Collins, CO *Non-competitive; poster*

2018

25. *D'Souza S, Ormond DR, **Thompson JA** (2018) DTI Analysis indicates focal impact of glioma on white matter pathways, BRAiN Conference, Denver, CO *Non-competitive; poster*
26. *Tekriwal A, Felsen G, Abosch A, **Thompson JA** (2018) Human Spike Recordings Acquired via an Open-source, Intraoperative Paradigm, National MD/PhD Conference, Keystone CO *Competitive; poster*
27. *Tekriwal A, Felsen G, Abosch A, **Thompson JA** (2018) Human Spike Recordings Acquired via an Open-source, American Association for Stereotactic and Functional Neurosurgery, Denver CO *Competitive; poster*
28. *Blanco-Prado R, Drees C, **Thompson JA** (2018) Use of systematic stimulation mapping and functional/structural imaging to improve localization of seizure onset in patients with drug-resistant epilepsy, Rocky Mountain Regional Neuroscience Group Meeting, Aurora, CO *Non-competitive; poster*

29. *Blanco-Prado R, Drees C, **Thompson JA** (2018) Use of systematic stimulation mapping and functional/structural imaging to improve localization of seizure onset in patients with drug-resistant epilepsy, American Association of Anatomists, San Diego, CA *Competitive; poster*
30. *Uy D, Abosch A, **Thompson JA** (2018) Inter-hemispheric analysis of compensatory neural activity and volumetric changes in deep brain stimulation patients, Rocky Mountain Regional Neuroscience Group Meeting, Aurora, CO *Non-competitive; poster*
31. *Maskalo G, Klepitskaya O, **Thompson JA**, Pelak V (2018) The relationship between radial optic flow perception and neurodegeneration in Parkinson's disease: a volumetric MRI analysis, American Association of Anatomists, San Diego, CA *Competitive; poster*

2019

32. *Clemens A, **Thompson JA** (2019) Impact of deep brain stimulation of the subthalamic nucleus on neurophysiological outcomes and voxel based morphometric analyses in Parkinson's disease patients, Modern Human Anatomy Program Seminar, CU Anschutz, Aurora, CO *Non-competitive; poster*
33. *Davis N, Kern DS, **Thompson JA** (2019) 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 *Non-competitive; poster*
34. *Petersen-Jones H, Kern DS, *Kahn L, Ojemann S, Abosch A, **Thompson JA** (2019) 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 *Non-competitive; poster*
35. *Kahn L, Kern DS, Ojemann S, Abosch A, **Thompson JA** (2019) Correlation of local field potentials (LFPs) to electromyography (EMG) of the rostral zona incerta (rZI) and subthalamic nucleus (STN) in Parkinson's Disease (PD), Movement Disorders Society International Congress, Nice, France, *Competitive; poster*
36. *Kahn L, *Costabile JD, *Tekriwal A, Abosch A, **Thompson JA**. (2019). Spectral analysis of local field potentials: evaluation of the canonical bands between contacts in DBS during sleep, Neurosurgery in the Rockies, Avon, CO, *Competitive; poster – **Winner Best Poster – Inaugural Glenn Kindt Award for best trainee poster***.
37. *Kahn L, *Costabile JD, *Tekriwal A, Abosch A, **Thompson JA**. (2019). Spectral analysis of local field potentials during sleep in Parkinson disease: evaluation of canonical frequency bands with subthalamic nucleus and adjacent basal ganglia regions. Presented at World Society for Stereotactic and Functional Neurosurgery, New York, *Competitive; poster*
38. *Kahn L, *Belanger K, Drees C, Abosch A, **Thompson JA**[¥], Ojemann S. (2019). Efficacy of stereotactic laser amygdalohippocampectomy for mesial temporal sclerosis: A volumetric analysis. Presented at Swedish Neurosurgery Society, Stockholm. *Competitive; poster*
39. *Kahn L, Ung TH, Chatain G, Humes E, David-Gerecht P, Drees C, **Thompson JA**, Ojemann S, Abosch A. (2019). Using a robotic-assisted approach for stereotactic and laser ablation corpus callosotomy—a technical report. American Association of Neurological Surgeons, San Diego. *Competitive; poster*
40. Hirt L*, Ojemann SG, **Thompson JA** (2019) Modulating motor activity and white matter tracts through deep brain stimulation surgery, Front Range Neuroscience Group, Fort Collins, CO *Non-competitive; poster*
41. Finger L*, **Thompson JA**, Davis R (2019) Modulating motor activity and white matter tracts through deep brain stimulation surgery, Front Range Neuroscience Group, Fort Collins, CO *Non-competitive; poster*

2020

42. Hirt L*, Ojemann SG, **Thompson JA** (2020) Modulating motor activity and white matter tracts through deep brain stimulation surgery, Modern Human Anatomy Program Seminar, CU Anschutz, Aurora, CO *Non-competitive; poster*
43. Finger L*, **Thompson JA**, Davis R (2020) Modulating motor activity and white matter tracts through deep brain stimulation surgery, Modern Human Anatomy Program Seminar, CU Anschutz, Aurora, CO *Non-competitive; poster*
44. *Tekriwal A, Felsen G, Abosch A, **Thompson JA** (2020) Conditions surrounding movements alters peri-movement neural activity in human SNr, American Association for Stereotactic and Functional Neurosurgery, Denver CO *Competitive; poster*
45. *Petersen-Jones H, Kern DS, *Kahn L, Ojemann S, Abosch A, **Thompson JA** (2020) Correlation of local field potentials to electromyography of the rostral zona incerta and subthalamic nucleus in Parkinson's Disease, American Association for Stereotactic and Functional Neurosurgery, Denver CO *Competitive; poster*
46. *Petersen-Jones H, Kern DS, *Kahn L, Ojemann S, Abosch A, **Thompson JA** (2020) Correlation of local field potentials to electromyography of the rostral zona incerta and subthalamic nucleus in Parkinson's Disease, Annual Neuroscience Program Retreat, Copper, CO, *Non-competitive; poster*
47. *Petersen-Jones H, **Thompson JA** (2020) Coherence during forearm movement to predict DBS electrode location, Medical Science Training Program Annual Retreat, Keystone, CO *Competitive; Invited Presentation*
48. *Tekriwal A, **Thompson JA** (2020) Conditions surrounding movements alters peri-movement neural activity in human SNr, Medical Science Training Program Annual Retreat, Keystone, CO *Competitive; Invited Presentation*
49. Hirt L*, Ojemann SG, **Thompson JA** (2020) Modulating motor activity and white matter tracts through deep brain stimulation surgery, Modern Human Anatomy Program Seminar, American Association of Anatomists, *Competitive; poster*
50. *Petersen-Jones H, **Thompson JA** (2020) Coherence during forearm movement to predict DBS electrode location, Movement Disorders Conference, Auora, CO *Competitive; poster*
51. Glasheen P, Kortz M, Ojemann SG, **Thompson JA**, Gault J (2020) Sensory processing deficits in Parkinson's disease: localizing auditory evoked p50 responses during awake deep brain stimulation surgery, Canadian Neuroscience Meeting. *Competitive; poster*

2021

52. Crane RC*, Ojemann SG, Abosch A, Kern DS, **Thompson JA** (2021) 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, *Non-competitive poster*
53. Crane RC*, Ojemann SG, Abosch A, Kern DS, **Thompson JA** (2021) Electrophysiological changes in basal ganglia structures following deep brain stimulation in Parkinson's disease patients, Central Michigan University College of Medicine Partners Symposium, Mount Pleasant, MI, *Non-competitive poster*
54. Major M*, Crane RC*, Ojemann SG, Abosch A, Kern DS, **Thompson JA** (2021) Electrophysiological changes in deep brain structures following deep brain stimulation in Parkinson's disease, BRAiN poster session, Aurora, CO *Non-competitive; poster*
55. Major M*, Crane RC*, Ojemann SG, Abosch A, Kern DS, **Thompson JA** (2021) Electrophysiological changes in deep brain structures following deep brain stimulation in Parkinson's disease, Annual Society for Neuroscience conference, Virtual meeting *competitive; poster*
56. McDermott D, Schwarz S, Ojemann SG, Biesecker K, **Thompson JA** (2021) Sturge Weber Syndrome related epilepsy treated with brain-responsive neuromodulation, American Epilepsy Society Annual meeting, Chicago IL, *Competitive; poster*

57. McDermott D, Fetrow K, Biesecker K, Coulter I, **Thompson JA** (2021) Survey investigation of the impact of cannabinoid compounds on seizures and quality of life in patients with epilepsy, American Academy of Neurology Annual meeting, Virtual conference, *Competitive; poster*
58. Hirt L*, Grassia F, Feuerstein J, **Thompson JA**, Ojemann SG, Kern DS (2021) Deep brain stimulation surgery to treat focal hand dystonia – a case report, North American Neuromodulation Society Annual Meeting – Virtual conference, *Competitive; poster*
59. Fiebig C*, Drees C, **Thompson JA** (2021) We're on the right tract: diffusion tensor imaging assessment of epileptogenic zone using depth electrode locations to investigate white matter networks, Modern Human Anatomy Program Seminar, CU Anschutz, Aurora, CO *Non-competitive; poster*
60. Thies K*, Kern DS, **Thompson JA** (2021) Targeting effects of rZI vs. STN in deep brain stimulation for Parkinson's disease, Modern Human Anatomy Program Seminar, CU Anschutz, Aurora, CO *Non-competitive; poster*
61. Lewis S*, Hirt L, Case M, Pulliam C, Eubanks J, Goetz S, Raike R, Ojemann S, Kramer D, Kern DS, **Thompson JA** (2021) 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 Annual Conference, Virtual conference, *Competitive; poster*
62. Baker S[§*], Tekriwal A[§*], [Co-first authors], Ojemann SO, Hirt L, Kramer D, Kern DS, **Thompson JA** (2021) Development of the automatic extraction of kinematic upper limb movements using markerless tracking in the operating room during deep brain stimulation implantation, Society for Neuroscience Annual Conference, Virtual conference, *Competitive; poster*
63. Baumgartner AJ*, Hirt L, Kern DS, **Thompson JA** (2021) Naturalistic sleep in Parkinson's disease assessed by actigraphy and direct recordings of the subthalamic nucleus, Society for Neuroscience Annual Conference, Virtual conference, *Competitive; poster*
64. Parra M, Tekriwal A, Kramer D[§], **Thompson JA**[§] [Co-senior authors] (2021) Phase-phase coupling network analysis performed on sEEG recordings, Society for Neuroscience Annual Conference, Virtual conference, *Competitive; poster*
65. Tekriwal A, Felsen G, Ojemann SO, Abosch A, **Thompson JA** (2021) Motor context modulates substantia nigra pars reticulata spike activity in patients with Parkinson's disease, Society for Neuroscience Annual Conference, Virtual conference, *Competitive; poster*
66. Chintaluru Y*, Kortz M, Kern DS, **Thompson JA**, Kramer D, Ojemann S (2021) Using an augmented reality neurological case study to expand access to neurosurgical education for medical students, CU Student Research Forum, Aurora CO, *Non-competitive; poster*
67. Chintaluru Y*, **Thompson JA**, Gerecht-David P, Ojemann S, Kern DS (2021) GAD Gene Therapy and Subsequent Deep Brain Stimulation for Parkinson's Disease, Movement Disorders Society International Congress, Virtual conference, *Competitive; poster*