

DAVID BRANG

CURRICULUM VITAE

July 2024

ADDRESS

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Associate Professor, Department of Psychology, University of Michigan
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ACADEMIC POSITIONS

2022-Present Associate Professor (with tenure), Department of Psychology, University of Michigan

2016-2022 Assistant Professor, Department of Psychology, University of Michigan

2012-2016 Postdoctoral Scholar, Department of Psychology, Northwestern University
Advisors: Satoru Suzuki and Marcia Grabowecky

2012-2016 Postdoctoral Scholar, Department of Neurology, University of Chicago
Advisor: Vernon Leo Towle

EDUCATION

2007-2012 Ph.D. in Psychology, University of California San Diego
Dissertation: *When does 2 turn blue? The timing of and mechanisms underlying synesthesia and learned associations*
Advisor: Vilayanur S. Ramachandran

2002-2007 B.A. in Cognitive Science with Distinction, University of California San Diego
Honors Thesis: *Contextual priming in grapheme-color synesthesia*
Advisor: Seana Coulson

RESEARCH SUMMARY

My lab examines how the human brain integrates sensory information to generate computationally efficient estimates of the external world, following four specific research lines: How does visual speech information improve speech perception fluency? How do sounds modulate visual perception? What is the relationship between synesthesia and more common forms of multisensory integration? And how does the presence of an intrinsic brain tumor alter sensory processes relative to impairments due to stroke and aging. My research addresses these questions using intracranial recordings (iEEG/sEEG/ECoG) acquired from patients with epilepsy or brain tumors, supplemented by psychophysics, EEG, TMS, and fMRI from typically developing individuals.

The clinical arm of my research program examines how brain tumors alter human neurophysiological processes and seeks to improve targeted treatments for brain tumor patients in the operating room and post-resection. This research line was started eight years ago in collaboration with Dr. Shawn Hervey-Jumper, a neurosurgeon at UCSF, and has yielded papers in *Nature*, *PNAS*, *Journal of Neurosurgery*, among others; notably, Dr. Hervey-Jumper and I share senior authorship in our collaborative research publications. Our work together examines tumor-neuron interactions to understand how this disease changes behaviors and cognition compared to other lesion models such as stroke. As part of this research, we are improving the efficiency of intraoperative testing, including changes to standard behavioral paradigms, improved tools for localizing implanted electrodes relative to neuroanatomy, and by providing real-time feedback of task-evoked neural responses in the operating room to improve patient-specific functional outcomes. This program yields valuable clinical data and a wealth of high density ECoG recordings (50+ annually) available to inform basic understanding of cognitive and perceptual processes.

GRANT SUPPORT

Active Support

NIH NIDCD R01 DC020717, Brang (PI) Characterizing the recovery of spectral, temporal, and phonemic speech information from visual cues	02/14/2023 – 01/31/2028 \$2,663,327
NIH NINDS R01, NS137950 Hervey-Jumper (PI), Brang (Sub-Contract PI) Cortical information loss in diffuse low-grade glioma infiltrated cortex	07/09/2024 – 06/30/2029 \$405,600 (Sub-Contract)
NSF CRCNS 2112773, Liu and Brang (Co-PI) Predictive coding network for human vision	10/01/2021 – 09/30/2026 \$1,046,000

Pending Support

NIH NIBIB R01, Noll (Co-I) Silent Functional MRI Using Looping Star	10/01/2024 – 09/30/2029 \$1,613,654
NIH NEI R01, Brang (PI) Characterizing how sounds alter visual processing in humans via intracranial recordings	04/01/2025 – 03/31/2030 \$3,313,275

Past Support

NIH NIBIB U01 EB026977, Noll (Co-I) High SNR functional brain imaging using oscillating steady state MRI	09/30/2018 – 06/30/2023 \$2,799,709
NIH NIDCD K99/R00 DC013828, Brang (PI) Networks underlying visual modulation of speech perception	12/01/2014 – 08/31/2021 \$1,021,647

MANUSCRIPTS IN REVIEW & UNDER REVISION

*Underlined names indicate co-authors who were under my supervision while the research was conducted.

1. **Brang D**, Plass J, Kakaizada S, Hervey-Jumper SL (in review). Auditory-visual speech behaviors are resilient to left pSTS damage. Available at <https://www.biorxiv.org/content/10.1101/2020.09.26.314799v1>
2. Dada A, Aabedi A, Kaur J, Daniel A, **Brang D***, Hervey-Jumper SL* (in review). A machine learning predictive model of aphasia in patients with diffuse glioma using radiomic, molecular, and clinical features. **Authors contributed equally to this work.*
3. Dada A, Umbach G, Majumdar A, Kaur J, Oten S, Berger MS, **Brang D***, Hervey-Jumper SL* (in review). Somatosensory mapping using a novel sensory discrimination task: technical note. **Authors contributed equally to this work.*

PEER-REVIEWED ARTICLES (GOOGLE SCHOLAR CITATION COUNT = 4120, H-INDEX = 29)

1. Karthik G, Cao CZ, Demidenko MI, Jahn A, Stacey WC, Wasade VS, **Brang D** (in press). Auditory cortex encodes lipreading information through spatially distributed activity. *Current Biology*.
2. Ahn E, Majumdar A, Lee TG, **Brang D** (in press). Evidence for a Causal Dissociation of the McGurk Effect and Congruent Audiovisual Speech Perception via TMS. *Multisensory Research*.
3. Krishna S, Choudhury A, Seo K, Ni L, Kakaizada S, Lee A, Aabedi A, Cao C, Sudharshan R, Egladyous A, Almeida N, Venkatesh HS, Findlay A, Nagarajan S, Raleigh D, **Brang D**, Monje M, Hervey-Jumper SL (2023). Glioblastoma remodeling of neural circuits in the human brain decreases survival. *Nature*. 617, 599–607.
4. Creery JD, **Brang D**, Arndt JD, Bassard A, Towle VL, Tao JX, Wu S, Rose S, Warnke P, Issa NP, Paller KA (2022). Electrical Markers of Memory Consolidation in the Human Brain when Memories are Reactivated during Sleep. *Proceedings of the National Academy of Sciences*. 119(44), e2123430119.
5. **Brang D**, Plass J, Sherman A, Stacey WC, Wasade VS, Grabowecky M, Ahn E, Towle VL, Tao JX, Wu S, Issa NP, Suzuki S (2022). Visual cortex responds to sound onset and offset during passive listening. *Journal of Neurophysiology*, 127(6), 1547-1563.

6. Kaur J, Egladyous A, Valdivia C, Daniel AGS, Krishna S, Aabedi A, **Brang D**, Hervey-Jumper SL (2022). Neuro-Oncology Patients as Human Research Subjects: Ethical Considerations for Cognitive and Behavioral Testing for Research Purposes. *Cancers*, 14(3), 692.
7. Aabedi AA⁺, Lipkin B⁺, Kaur J, Kakaizada S, Reihl SJ, Young JS, Lee AT, Krishna S, Chang EF, **Brang D**^{*}, Hervey-Jumper SL^{*} (2021). Functional alterations in cortical processing of speech in glioma-infiltrated cortex. *Proceedings of the National Academy of Sciences*, 18(46), e2108959118. ^{**}*Authors contributed equally to this work.*
8. Plass J, **Brang D** (2021). Multisensory stimuli shift perceptual priors to facilitate rapid behavior. *Scientific Reports*, 11, 23052.
9. Karthik G, Plass J, Beltz AM, Liu Z, Grabowecky M, Suzuki S, Stacey WC, Wasade VS, Towle VL, Tao JX, Wu S, Issa NP, **Brang D** (2021). Visual speech differentially modulates beta, theta, and high gamma bands in auditory cortex. *European Journal of Neuroscience*, 54(9), 7301-7317.
10. Morshed RA, Young JS, Kroliczek AA, Berger MS, **Brang D**, Hervey-Jumper SL (2021). A neurosurgeon's guide to cognitive dysfunction in adult glioma. *Neurosurgery*, 89(1), 1-10.
11. Aabedi AA, Kakaizada S, Young JS, Wiese O, Valdivia C, Krishna S, Berger MS, Weissman DH, **Brang D**^{*}, Hervey-Jumper SL^{*} (2021). Convergence of heteromodal lexical retrieval in the lateral prefrontal cortex. *Scientific Reports*, 11(1), 1-11. ^{*}*Authors contributed equally to this work.*
12. Zhang Y, Kim JH, **Brang D**, Liu Z (2021). Naturalistic stimuli: a paradigm for multi-scale functional characterization of the human brain. *Current Opinion in Biomedical Engineering*, 100298.
13. Krishna S, Kakaizada S, **Brang D**, Hervey-Jumper SL (2021). Central nervous system plasticity influences language and cognitive recovery in adult glioma. *Neurosurgery*, 89(4), 539–548.
14. Aabedi AA, Kakaizada S, Young JS, Ahn E, Weissman DH, Berger MS, **Brang D**, Hervey-Jumper SL (2021). Balancing task sensitivity with reliability for multimodal language assessments. *Journal of Neurosurgery*, 135(6), 1817-1824.
15. Zheng W, Reddy GKM, Dai F, Chandramani A, **Brang D**, Hunter S, Kohrman MH, Rose S, Rossi M, Tao JX, Wu S, Byrne R, Frim DM, Warnke P, Towle VL (2021). Chasing language through the brain: Successive parallel networks. *Clinical Neurophysiology*, 132(1), 80-93.
16. Kao H, Hu S, Mihaylova T, Ziobro J, Ahn E, Fine C, **Brang D**, Watson B, Wang Y (2021). Defining the latent period of epileptogenesis and epileptogenic zone in a focal cortical dysplasia type II (FCDII) rat model. *Epilepsia*, 62, 1268–1279.
17. Plass J, **Brang D**, Suzuki S, Grabowecky M (2020). Vision perceptually restores auditory spectral dynamics in speech. *Proceedings of the National Academy of Sciences*, 117(29), 16920-16927.
18. Aabedi AA, Ahn E, Kakaizada S, Young JS, Zhang E, Sagher O, Weissman DH, **Brang D**^{*}, Hervey-Jumper SL^{*} (2020). Assessment of wakefulness during awake craniotomy to predict intraoperative language performance. *Journal of Neurosurgery*, 132, 1930-1937. ^{*}*Authors contributed equally to this work.*
19. Venkatesh HS, Morishita W, Geraghty AC, Silverbush D, Gillespie SM, Arzt M, Tam LT, Espenel C, Ponnuswami A, Ni L, Woo PJ, Taylor KR, Agarwal A, Regev A, **Brang D**, Vogel H, Hervey-Jumper S, Bergles D, Suvà ML, Malenka RC, Monje M (2019). Electrical and synaptic integration of glioma into neural circuits. *Nature*, 573, 539–545.
20. Lalwani P, **Brang D** (2019). Stochastic resonance model of synesthesia. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 374, 20190029.
21. **Brang D** (2019). The stolen voice illusion. *Perception*, 48(8) 649–667.
22. Plass J, Ahn E, Towle VL, Stacey WC, Wasade VS, Tao JX, Wu S, Issa NP, **Brang D** (2019). Joint encoding of auditory timing and location in visual cortex. *Journal of Cognitive Neuroscience*, 31(7), 1002-1017.
23. **Brang D**, Ahn E (2019). Double-blind study of visual imagery in grapheme-color synesthesia. *Cortex*, 117, 89-95.
24. Nair A, **Brang D** (2019). Inducing synesthesia in non-synesthetes: short-term visual deprivation facilitates auditory-evoked visual percepts. *Consciousness and Cognition*, 70, 70-79.
25. Dotterer HL, Waller R, Shaw DS, Plass J, **Brang D**, Forbes EE, Hyde LW (2019). Antisocial behavior with callous-unemotional traits is associated with widespread disruptions to white matter structural connectivity among low-income, urban males. *NeuroImage: Clinical*, 23, 101836.

26. Ren S, Gliske SV, **Brang D**, Stacey WC (2019). Redaction of false high frequency oscillations due to muscle artifact improves specificity to epileptic tissue. *Clinical Neurophysiology*, 130(6), 976-985.
27. Case L, **Brang D**, Landazuri R, Ramachandran VS (2017). Altered white matter and sensory response to bodily sensation in FTM transsexual individuals. *Archives of Sexual Behavior*, 46(5), 1223-1237.
28. **Brang D**, Dai Z, Zheng W, Towle VL (2016). Registering imaged ECoG electrodes to human cortex: A geometry-based technique. *Journal of Neuroscience Methods*, 273, 64-73.
29. Honma M, Plass J, **Brang D**, Florczak SM, Paller KA (2016). Sleeping on the rubber-hand illusion: Memory reactivation during sleep facilitates multisensory recalibration. *Neuroscience of Consciousness*. 2016(1).
30. **Brang D**, Towle VL, Suzuki S, Hillyard SA, Di Tusa S, Dai Z, Tao J, Wu S, Grabowecky M (2015). Peripheral sounds rapidly activate visual cortex: Evidence from electrocorticography. *Journal of Neurophysiology*, 114(5), 3023-3028.
31. McGeoch PD*, **Brang D***, Huang M, Ramachandran VS (2015). Primary somatosensory cortex hand representation dynamically modulated by motor output. *Neurocase*, 21(1), 103-105. *Authors contributed equally to this work.
32. **Brang D**, Taich ZJ, Hillyard SA, Grabowecky M, Ramachandran VS (2013). Parietal connectivity mediates multisensory facilitation. *NeuroImage*, 78, 396-401.
33. **Brang D**, Ghiam M, Ramachandran VS (2013). Impaired acquisition of novel grapheme-color correspondences in synesthesia. *Frontiers in Human Neuroscience*, 7, 717.
34. **Brang D**, Miller LE, McQuire M, Ramachandran VS, Coulson S (2013). Enhanced mental rotation ability in time-space synesthesia. *Cognitive Processing*, 14(4), 429-434.
35. Edelstein M, **Brang D**, Rouw R, Ramachandran VS (2013). Misophonia: Physiological investigations and case descriptions. *Frontiers in Human Neuroscience*, 7, 296.
36. **Brang D**, Williams LE, Ramachandran VS (2012). Grapheme-color synesthetes show enhanced crossmodal processing between auditory and visual modalities. *Cortex*, 48(5), 630-637.
37. Ramachandran VS, Miller LE, Livingstone MS, **Brang D** (2012). Colored halos around faces and emotion-evoked colors: A new form of synesthesia. *NeuroCase*, 18(4), 352-358.
38. **Brang D**, Ramachandran VS (2011) Survival of the synesthesia gene: Why do people hear colors and taste words? *PLoS Biology*, 9(11): e1001205.
39. McGeoch PD*, **Brang D***, Song T, Lee R, Huang MX, Ramachandran VS (2011). Xenomelia: A new right parietal lobe syndrome. *Journal of Neurology, Neurosurgery, and Psychiatry*, 82, 1314-1319. *Authors contributed equally to this work.
40. **Brang D**, Teuscher U, Miller LE, Ramachandran VS, Coulson S (2011). Handedness and calendar orientations in time-space synesthesia. *Journal of Neuropsychology*, 5(2), 323-32.
41. **Brang D**, Rouw R, Coulson S, Ramachandran VS (2011). Similarly shaped letters evoke similar colors in grapheme-color synesthesia. *Neuropsychologia*, 49(5), 1355-1358.
42. Hubbard EM, **Brang D**, Ramachandran VS (2011). The cross-activation theory at ten. *Journal of Neuropsychology*, 5(2), 152-77.
43. **Brang D**, Kanai S, Ramachandran VS, Coulson S (2011). Contextual priming in grapheme-color synesthetes and yoked controls: 400 milliseconds in the life of a synesthete. *Journal of Cognitive Neuroscience*, 23(7), 1681-1696.
44. **Brang D**, Hubbard EM, Coulson S, Huang MX, Song T, Ramachandran VS (2010). Magnetoencephalography reveals early activation of V4 in grapheme color synesthesia. *NeuroImage*, 53(1), 268-274.
45. Teuscher U, **Brang D**, Ramachandran VS, Coulson S (2010). Spatial cueing in time-space synesthetes: An event-related brain potential study. *Brain and Cognition*, 74(1), 35-46.
46. Ramachandran VS, **Brang D**, McGeoch PD (2010). Dynamic reorganization of referred sensations caused by volitional movements of phantom limbs. *Neuroreport*, 21(10), 727-730.
47. **Brang D**, Ramachandran VS (2010). Olfactory bulb dysgenesis, mirror neuron system dysfunction, and autonomic dysregulation as the neural basis for autism. *Medical Hypothesis*, 74(5), 919-21.
48. Coulson S, **Brang D** (2010). Sentence context affects processing of masked words: An ERP study. *Brain and Language*, 113, 149-155.

49. **Brang D**, Teuscher U, Ramachandran VS, Coulson S (2010). Temporal sequences, synesthetic mappings, and cultural biases: The geography of time. *Consciousness and Cognition*, 19, 311-320.
50. **Brang D**, Ramachandran VS (2010). Visual field heterogeneity, laterality, and eidetic imagery in synesthesia. *Neurocase*, 16(2), 169-74.
51. Ramachandran VS, **Brang D** (2009). Sensations evoked in patients with amputation from watching an individual whose corresponding intact limb is being touched. *Archives of Neurology*, 66(10), 1281-1284.
52. Ramachandran VS, **Brang D**, McGeoch PD (2009). Size reduction using mirror visual feedback (MVF) reduces phantom pain. *Neurocase*, 15(5), 357–360.
53. Ramachandran VS, **Brang D**, McGeoch P, Rosar W (2009). Sexual and food preference in apotemnophilia and anorexia: Interactions between "beliefs" and "needs" regulated by two-way connections between body image and limbic structures. *Perception*, 38(5), 775-7.
54. **Brang D**, McGeoch P, Ramachandran VS (2008). Apotemnophilia: A neurological disorder. *Neuroreport*, 19(13), 1305-6.
55. **Brang D**, Edwards L, Ramachandran VS, Coulson S (2008). Is the sky 2? Contextual priming in grapheme-color synesthesia. *Psychological Science*, 19(5), 421-9.
56. Ramachandran VS, **Brang D** (2008). Tactile-emotion synesthesia. *Neurocase*. 14(5), 390-9.
57. **Brang D**, Ramachandran VS (2008). Psychopharmacology of synesthesia; the role of serotonin S2a receptor activation. *Medical Hypotheses*, 70(4), 903-4.
58. Pineda JA, **Brang D**, Hecht E, Edwards L, Carey S, Bacon M, Futagaki C, Suk D, Tom J, Birnbaum C, Rork A. (2008). Positive behavioral and electrophysiological changes following neurofeedback training in children with autism. *Research on Autism Spectrum Disorders*, 2(3), 557-81.
59. McGeoch P, **Brang D**, Ramachandran VS (2007). Apraxia, metaphor and mirror neurons. *Medical Hypotheses*, 69(6), 1165-8.

BOOK CHAPTERS AND ENCYCLOPEDIA ARTICLES

1. **Brang D**, Ramachandran VS (2020). How do crossmodal correspondences and multisensory processes relate to synesthesia? In Sathian K, Ramachandran VS (Eds.). Multisensory Perception: From Laboratory to Clinic (pp. 259-281). *Academic Press*.
2. Ramachandran VS, **Brang D** (2014). From molecules to metaphor: Outlooks on synesthesia research. Handbook of Synesthesia.
3. Hubbard EM, **Brang D**, Ramachandran VS. (2011). "Diez años de la teoría de la interactivación", In "Sinestesia. Los fundamentos teóricos, artísticos y científicos", a cura de M. José De Córdoba y Dina Riccò, Ediciones Fundación Internacional Artécittà, Granada, [ISBN-13: 978-84-939054-1-5].
4. McGeoch PD, **Brang DJ**, Ramachandran VS (2009). A new right parietal lobe syndrome? In Stirn A, Thiel A, Oddo S (Eds.), Body Integrity Identity Disorder: Psychological, Neurobiological, Ethical and Legal Aspects. Lengerrich, Germany: Pabst Science Publishers.
5. **Brang D** (2009). Synesthesia. Corsini Encyclopedia of Psychology.
6. Ramachandran VS, **Brang D** (2009) Phantom touch. Scholarpedia, 4(10), 8244.
7. Ramachandran VS, **Brang D** (2008). Synesthesia; from molecules to metaphor. Scholarpedia, 3(6), 3981.
8. Pineda JA, **Brang D**, Futagaki C, Hecht E, Grichanik M, Wood L, Bacon M, Carey S (2006). Effects of Neurofeedback Training on Action Comprehension and Imitation Learning. In Puckhaber, H.L. (Eds.), New Research on Biofeedback. New York: Nova Science.

TEACHING EXPERIENCE

Department of Psychology, University of Michigan

Perception (Undergraduate): FA 2017

Research methods in human electroencephalography (Undergraduate): FA 2020, WI 2021, WI 2022, WI 2023

Research methods in human electroencephalography (Graduate): FA 2018, WI 2021

The neuroscience of perception (Undergraduate): FA 2016, FA 2018, FA 2019

The neuroscience of perception (Graduate): FA 2016, FA 2017

Teaching Assistant, Department of Psychology, UCSD

Brain damage and mental function: FA 2007, FA 2008, WI 2010, WI 2011, SU 2011, SP 2012

Introduction to clinical neuropsychology: SU 2009, SU 2011

Introduction to statistics: FA 2011, WI 2012

Sensation and perception: WI 2008, SU 2009, SP 2011

TEACHING INTERESTS

Sensation and Perception

Human Electrophysiology

Cognitive Neuroscience

Research Methods and Design

Neuropsychology

Multisensory Processes

Biological Psychology

Neural Circuits

TEACHING PERFORMANCE

Formal metrics demonstrate positive experiences from students in my undergraduate and graduate courses.

Across my courses, students provided median ratings to the prompts "Overall, this was an excellent course" and "Overall, David Brang was an excellent teacher" of 4.85 and 4.90 respectively out of a maximum possible value of 5.0; my scores have consistently exceeded the average score for a course at the University of Michigan.

DISSERTATION COMMITTEES

Zhewei Cao (2025), Department of Psychology, University of Michigan

Mekhala Kumar (2025), Department of Psychology, University of Michigan

Quynh Nguyen (2024), Department of Psychology, University of Michigan

EunSeon Ahn (2023), Department of Psychology, University of Michigan

Justin Craft (2023), Department of Linguistics, University of Michigan

Kuan Han (2023), Departments of Electrical Engineering and Computer Science, University of Michigan

Karthikeyan Ganesan (2022), Department of Psychology, University of Michigan

Poortata Lalwani (2022), Department of Psychology, University of Michigan

Yizhen Zhang (2021), Departments of Electrical Engineering and Computer Science, University of Michigan

Lauren Grant (2021), Department of Psychology, University of Michigan

Ian Calloway (2020), Department of Linguistics, University of Michigan

Fatemeh Noohi (2018), School of Kinesiology, University of Michigan

HONORS AND AWARDS

June 2022. University of Michigan, Provost's Neuroscience Scholar Award

October 2014. NIH NIDCD Pathway to Independence Award (K99/R00)

March 2014. Postdoc Professional Development Award, Northwestern University

June 2012. T32 Neuroscience of Human Cognition Postdoctoral Training Award, Northwestern University

June 2012. Student Award, International Multisensory Research Forum, Oxford, UK

March 2012. Dean of Social Sciences Travel Fund Award. UC San Diego

January 2012; March 2009; September 2008. Norman Anderson Travel Grants. UC San Diego

July 2011. Early Career Participant Award, Varieties of Cortical Colour Vision Conference, SFU

April 2009. NSF Graduate Research Fellows Program: Honorable Mention.

June 2007. BA awarded with Distinction in Cognitive Science, UC San Diego

SELECTED TALKS

June 2024. Auditory cortex encodes lipreading information through spatially distributed activity. International Multisensory Research Forum, *Reno, NV*.

April 2024. Decoding Cross-Modal Information from the Brain using Intracranial Recordings. BCI & Neurotechnology Spring School (Keynote), *Vienna, Austria*. *Approximately 70,000 online attendees.

April 2024. What information is transmitted between auditory and visual cortices? Center for Applied and Translational Sensory Sciences Spring Research Day (Keynote), *University of Minnesota*.

June 2022. What crossmodal information is shared across the senses? Sight and Sound Workshop, Computer Vision and Pattern Recognition Conference (CVPR), *New Orleans*.

April 2020. Predictive coding of multisensory information using electrocorticography. Center for Cognitive Sciences, *University of Minnesota*.

August 2019. Predictive Coding of Multisensory Information Using Electrocorticography. Department of Neurology, *University of Chicago*.

October 2018. Synesthesia evoked through mild sensory deprivation. Bridging senses: New developments in synaesthesia. *The Royal Society, London, UK*.

August 2017. Visual modulation of auditory processing during speech. European conference on visual perception. *Berlin, Germany*.

June 2017. Visual signals predictively encode information in early auditory areas: Evidence from human electrocorticography. *University of California, San Diego*.

June 2015. Rapid multisensory activation of early sensory areas in non-synesthetes. University of Amsterdam, *Amsterdam, Netherlands*.

March 2015. Decoding the neurobiology of synaesthesia. Royal Netherlands Academy of Arts and Sciences, *Amsterdam, Netherlands*.

July 2014. The Menzies Foundation Symposium: A window into normal cognition: Insights from synaesthesia. International Conference on Cognitive Neuroscience, *Brisbane, Australia*.

May 2014. Electrocorticographic (ECoG) recordings demonstrate that peripherally presented sounds activate extrastriate visual cortex. Vision Sciences Society, *St. Petersburg, FL*.

February 2014. Anatomical and functional networks underlying audio-visual interactions. Synesthesia in Perspective: Development, Networks, and Multisensory Processing, *University Medical Center Hamburg-Eppendorf*.

December 2013. Electrocorticographic (ECoG) examinations of auditory-visual interactions. Interdepartmental Neuroscience Program, *Northwestern University*.

June 2012. Task dependent anatomical connections underlie multisensory processing. International Multisensory Research Forum, *Oxford University*.

April 2012. Enhanced multisensory integration relates to increased parietal white matter connectivity. Cognitive Neuroscience Society: Slide Session, *Chicago, IL*.

July 2011. Cross-Talk among the Senses: Influence of connectivity on synesthesia and typical multisensory processes. Princeton Neuroscience Institute, *Princeton University*.

November 2010. Functional predictions made by the cross-activation theory. Mini-symposium on Synesthesia. Society for Neuroscience, *San Diego, CA*.

October 2010. Novel symbols show implicit associations in synesthesia. American Synesthesia Association, *Vanderbilt University*.

March 2010. The timing of activation in synesthesia: A magnetoencephalography study. UK Synesthesia Association, *Brighton University*.

March 2009. Heightened autonomic responses in body integrity identity disorder. Body Integrity Identity Disorder Congress, *Frankfurt, Germany*.

UNIVERSITY SERVICE

Graduate Certificate Committee, Weinberg Institute for Cognitive Science (2023 – Present)
 Executive Committee, Department of Psychology (2020 – 2021)
 Executive Committee, Michigan Sensory Science Initiative (2020 – Present)
 Student Academic Affairs Committee, Department of Psychology (2019)

GRANT REVIEW SERVICE

NIH, Voice Speech and Language Fellowship Review: February 2024
 NSF, Program in Perception, Action, and Cognition: September 2023

NIH, NIDCD Special Emphasis Panel: July 2023
NIH, Language and Communication Study Section (LCOM): October 2022, February 2023
NIH, Auditory System Study Section (AUD): October 2021
Department of Veterans Affairs, Neurobiology B Review Panel (NURB): May 2018

AD HOC JOURNAL REVIEWER (43 JOURNALS)

<i>Acta Psychologica</i>	<i>Journal of Clinical Psychiatry</i>
<i>American Journal of Psychology</i>	<i>Journal of Cognitive Neuroscience</i>
<i>Annals of Neurology</i>	<i>Journal of Experimental Psychology: HPP</i>
<i>Attention, Perception, & Psychophysics</i>	<i>Journal of Neuropsychology</i>
<i>Brain</i>	<i>Journal of Neuroscience</i>
<i>Brain and Cognition</i>	<i>Journal of Visualized Experiments</i>
<i>Cerebral Cortex</i>	<i>Multisensory Research</i>
<i>Cognition</i>	<i>Nature Communications</i>
<i>Cognitive and Behavioral Neurology</i>	<i>Nature Human Behaviour</i>
<i>Cognitive Neuropsychology</i>	<i>Neurocase</i>
<i>Cognitive Neuroscience</i>	<i>NeuroImage</i>
<i>Cognitive Science</i>	<i>Neuropsychologia</i>
<i>Color Research and Application</i>	<i>Neuroscience of Consciousness</i>
<i>Consciousness and Cognition</i>	<i>PLoS ONE</i>
<i>Cortex</i>	<i>Philosophical Transactions B</i>
<i>Current Biology</i>	<i>Proceedings of the National Academy of Sciences</i>
<i>Current Opinion in Biomedical Engineering</i>	<i>Psychological Science</i>
<i>eNeuro</i>	<i>Scientific Data</i>
<i>European Journal of Neuroscience</i>	<i>Scientific Reports</i>
<i>Frontiers in Cognitive Science</i>	<i>Spanish Journal of Psychology</i>
<i>Human Psychopharmacology</i>	<i>Vision Research</i>
<i>iScience</i>	

SELECTED MEDIA AND PRESS

Summaries of Research

Popular Science, 2020: <https://www.popsci.com/story/science/senses-confused/>
Scientific American, 2019: <https://www.scientificamerican.com/article/cancer-cells-have-unsettling-ability-to-hijack-the-brains-nerves/>
Discover Magazine, 2019: <https://www.discovermagazine.com/mind/we-might-all-have-synesthesia-new-study-suggests>
Psychology Today, 2018: <https://www.psychologytoday.com/us/blog/sleepless-in-america/201809/understanding-misophonia>
KPBS, 2013: <http://www.kpbs.org/news/2013/aug/21/why-does-sound-chewing-make-some-people-panic/>
Lancet Neurology, News in brief, 2011: <https://goo.gl/KgZ3v5>
Discover Magazine, 2010: <https://www.discovermagazine.com/health/the-rare-humans-who-see-time-and-have-amazing-memories>
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Cognitive Neuroscience Society (2006 – Present)
Int'l Multisensory Research Forum (2012 – Present)

Society for Neuroscience (2009 – Present)
UK Synaesthesia Association (2010 – 2011)
Vision Sciences Society (2012 – 2016)