

# JAN R. WESSEL, Ph.D. (January 2023)

Associate Professor

Dept. of Psychological and Brain Sciences & Dept. of Neurology, University of Iowa

Born June 14<sup>th</sup>, 1984 in Heinsberg, Germany

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## PROFESSIONAL CAREER

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July 2020 -	<b>Associate Professor (tenured)</b> Department of Psychological & Brain Sciences, University of Iowa Department of Neurology, University of Iowa Hospitals & Clinics <i>Secondary Appt.:</i> Department of Biomedical Engineering, University of Iowa
Oct. 2015 - June 2020	<b>Assistant Professor</b> Department of Psychological & Brain Sciences, University of Iowa Department of Neurology, University of Iowa Hospitals & Clinics
Oct. 2011 - Sept. 2015	<b>Postdoctoral Research Employee, Assistant Project Scientist</b> Psychology Department, University of California, San Diego
May 2011 - Aug. 2011	<b>Postdoctoral Research Scholar</b> Max Planck Institute for Neurological Research, Cologne
Oct. 2010 - Dec. 2010	<b>Visiting Scholar</b> Swartz Center for Computational Neuroscience, UC San Diego
Oct. 2008 - Sept. 2010	<b>Adjunct Lecturer</b> Psychology Department, University of Cologne
Oct. 2008 - May 2011	<b>Doctoral Student</b> Max Planck Institute for Neurological Research, Cologne
July 2007 - Sept. 2008	<b>Undergraduate Research Assistant</b> Max Planck Institute for Neurological Research, Cologne
Feb. 2007 - April 2007	<b>Undergraduate Research Assistant</b> Institute for Systems Neuroscience, UMC Hamburg-Eppendorf
Oct. 2006 - Sept. 2007	<b>Supplementary Lecturer &amp; Undergraduate Research Assistant</b> Psychology Department, University of Cologne

## OTHER PROFESSIONAL AFFILIATIONS

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2017 -	Principal Investigator, Iowa Neuroscience Institute, University of Iowa
2016 -	Faculty, Interdisciplinary Graduate Program in Neuroscience, University of Iowa

## UNIVERSITY EDUCATION

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Oct. 2008 - May 2011	<b>Ph.D. (Dr. phil.), Psychology, <i>summa cum laude</i></b> Max Planck Institute for Neurological Research
Oct. 2004 - Sept. 2008	<b>B.Sc. &amp; M.Sc. (Diplom), Psychology, <i>with distinction</i></b> University of Cologne

## CIVILIAN SERVICE

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July 2003 - April 2004	<b>Emergency Medical Technician, German Red Cross</b>
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**GRANT SUPPORT**

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## ONGOING

**NIH/NINDS, R01 NS117753**

Role: *PI* 2020-2025 \$1,517,786 (direct)  
 The role of cortical and subcortical  $\beta$ -bursts in the cognitive control of human movement

**NIH/NINDS, R01 NS102201**

Role: *PI* 2018-2023 \$1,612,853 (direct)  
 The role of a neural mechanism for inhibitory control in cognitive flexibility

**NSF CAREER 1752355**

Role: *PI* 2018-2023 \$508,196 (direct)  
 Human motor inhibition: a neural race between motor emission and cognitive control

## PENDING

**NIH/NINDS, R01 NS102201** (*submitted renewal, SEP meeting Feb 2023, awaiting score*)

Role: *PI* 2023-2028  
 The role of a neural mechanism for inhibitory control in cognitive flexibility

**NIH NINDS, U01** (*first submission, Impact score 31, awaiting funding decision*)

Role: *Co-I* (w/ Pouratian UTSW; Christopoulos UCR; Rutishauser, Cedars-Sinai)  
 Modeling and Mapping Human Action Regulation Networks

## OTHER

**NIH/NIMH, R01 MH122613**

Role: *Consultant* (PI: Hwang) 2019-2024  
 Cognitive control functions of the human thalamus

**NIH/NCCIH, R21AT011577 (University of Washington)**

Role: *Consultant* (PI: Jensen) 2022-2024  
 Music-based treatments and pain: Underlying mechanisms

## COMPLETED

**NIH/NINDS, R01 NS100849**

Role: *Co-I* (PI: Narayanan) 2017-2022 \$1,830,116 (direct)  
 Mid-frontal delta/theta rhythms and cognitive control in Parkinson's Disease

**Roy J. Carver Trust, Research Program of Excellence**

Role: *Co-PI* (with 5 others) 2017-2022 \$750,000 (direct)  
 Neuromodulation of fronto-basal ganglia circuits in Parkinson's disease

**Ageing Mind & Brain Initiative, Pilot Grant**

Role: *PI* 2018-2019 \$15,000 (direct)  
 The role of (nor)adrenergic neurotransmission in age-related error detection deficits

**Roy J. Carver Trust, Junior Research Program of Excellence 17-4885**

Role: *PI* 2017-2019 \$300,000 (direct)  
Cognitive control in healthy and abnormal aging

**Aging Mind & Brain Initiative, Pilot Grant**

Role: *PI* 2016-2017 \$25,000 (direct)  
The influence of conscious error detection on impaired cognitive control in older age

**NIH/NIDA, R03 DA035874**

Role: *PI* 2014-2016 \$75,000 (direct)  
Motoric stopping as an intervention to reduce the value of rewarding stimuli

**NIH/NINDS, R21 NS085543**

Role: *Co-I* (PI: Aron) 2013-2015 \$352,940 (total)  
How stopping movement affects working memory

**Kavli Institute for Mind and Brain, Innovative Research Grant 2012-022**

Role: *PI* 2012-2013 \$30,000 (direct)  
Parsing brain networks for self-control using simultaneous EEG-fMRI

**Gertrud Reemtsma Foundation, Scholarship**

Role: *PI* 2008-2011 ~\$80,000 (direct)  
Cognitive and somatic components of conscious error perception

**Gustav Lienert Foundation, Award Fellowship**

Role: *PI* 2010 €3,200 (~\$4,400, direct)  
Automatic identification of independent components underlying event-related brain potentials

**JOURNAL PUBLICATIONS (\* Senior-authored trainee project), h-index: 31**

- \* 59. Choo Y, Matzke D, Bowren M, Tranel D, **Wessel JR** (2023). Right inferior frontal gyrus damage is associated with impaired initiation of inhibitory control, but not its implementation. *eLife* 11:e79667
- \* 58. Rangel BO, Hazeltine E, **Wessel JR** (2023). Lingering neural representations of past task features adversely affect future behavior. *The Journal of Neuroscience* 43 (2), 282-292
- \* 57. Tatz JR, Maher A, **Wessel JR** (in press). Beta bursts over frontal cortex track the surprise of unexpected events in auditory, visual, and tactile modalities. *Journal of Cognitive Neuroscience*.
- 56. Cole RC, Espinoza AI, Singh A, Berger JI, Cavanagh JF, **Wessel JR**, Greenlee JDW, Narayanan NS (2023). Novelty-induced frontal-STN networks in Parkinson's disease. *Cerebral Cortex* 33 (2), 469-485
- \* 55. Guan Y & **Wessel JR** (2022). Two types of motor inhibition after action errors. *The Journal of Neuroscience* 42 (38):7267-7275
- 54. **Wessel JR**, Diesburg DA, Chalkley NH, & Greenlee JD (2022). A Causal Role for the Human Subthalamic Nucleus in Non-Selective Cortico-Motor Inhibition. *Current Biology* 32(17):3785-3791
- 53. **Wessel JR**, Jiang J, Stolley JJ (2022). Action errors impair active working memory maintenance. *Journal of Experimental Psychology: General* 51(6):1325-1340

- \* 52. Diesburg DA, Greenlee JDW, **Wessel JR** (2021). Cortico-subcortical  $\beta$  burst dynamics underlying movement cancellation in humans. *eLife* 10:e70270
- \* 51. Tatz JR, Soh S, **Wessel JR** (2021). Common and unique inhibitory control signatures of action-stopping and attentional capture suggest that actions are stopped in two stages. *Journal of Neuroscience* 41(42):8826-8838
- 50. Kang K, Alexander N, **Wessel JR**, Wimberger P, Nitzsche K, Kirschbaum C, Li S (2021). Neurocognitive development of novelty and error monitoring in children and adolescents. *Scientific Reports* 11(1):19844
- \* 49. Guan Y, **Wessel JR** (2021). Timing-dependent Differential Effects of Unexpected Events on Error Processing Reveal the Interactive Dynamics of Surprise and Error Processing. *Psychophysiology* 58(12):e13922
- \* 48. Diesburg DA, **Wessel JR** (2021). The Pause-then-Cancel model of human action-stopping: theoretical considerations and empirical evidence. *Neuroscience and Biobehavioral Reviews* 129:17-34
- 47. Pavlov YG, { **Wessel JR** +54 more,}, Mushtaq, F. (2021). #eegmanylabs: Investigating the Replicability of Influential EEG Experiments. *Cortex* 144:213-229
- \* 46. Soh C, Hynd M, Rangel BO, **Wessel JR** (2021). Adjustments to proactive motor inhibition without effector-specific foreknowledge are reflected in a bilateral upregulation of sensorimotor  $\beta$ -burst rates. *Journal of Cognitive Neuroscience* 33(5):784-798
- \* 45. Hynd M, Soh C, Rangel BO, **Wessel JR** (2021). Paired-pulse TMS & scalp EEG reveal systematic relationship between inhibitory GABA<sub>A</sub> signaling in M1 and fronto-central cortical activity during action-stopping. *Journal of Neurophysiology* 125(2):648-660
- \* 44. Soh C, **Wessel JR** (2021). Unexpected sounds non-selectively inhibit active visual stimulus representations. *Cerebral Cortex* 31(3):1632-1646
- \* 43. Iacullo C, Diesburg DA, **Wessel JR** (2020). Non-selective inhibition of the motor system following unexpected and expected infrequent events. *Experimental Brain Research* 238(12):2701-2710
- 42. Narayanan NS, **Wessel JR**, Greenlee JDW (2020). The Fastest Way to Stop: Inhibitory Control and IFG-STN Hyperdirect Connectivity. *Neuron* 106(4): 549-551
- 41. **Wessel JR** (2020).  $\beta$ -bursts reveal the trial-to-trial dynamics of movement initiation and cancellation. *The Journal of Neuroscience* 40(2):411-423
- \* 40. Dykstra T, Waller DA, Hazeltine E, **Wessel JR** (2020). Leveling the field for a fairer race between going and stopping: Neural evidence for the race model of motor inhibition from a new version of the stop-signal task. *Journal of Cognitive Neuroscience*, 32(4):590-602
- 39. **Wessel JR**, Huber DE (2019). Frontal cortex tracks surprise separately for different sensory modalities but engages a common inhibitory control mechanism. *PLoS Computational Biology* 15(7): e1006927
- 38. **Wessel JR**, Waller DA, Greenlee JDW (2019). Non-selective suppression of inappropriate motor-tendencies during response-conflict by a fronto-subthalamic mechanism for inhibitory control. *eLife* 8:e42959
- 37. Verbruggen F, Aron AR, Band GP, Beste C, Bissett PG, Brockett AT, Brown J, Chamberlain SR, Chambers C, Colonius H, Colzato L, Corneil BD, Coxon JP, Dupuis A, Eagle D, Garavan H, Greenhouse I, Heathcote A, Huster R, Jahfari S, Kenemans JL, Leunissen I, Logan G, Matzke D, Morein-Zamir S, Murthy A, Li CR, Paré M, Poldrack R, Ridderinkhof KR, Robbins TW, Roesch M, Rubia K, Schachar R, Schall JD, Stock AK, Swann NC, Thakkar K, van der Molen M, Vermeylen L, Vink M, **Wessel JR**, Whelan R,

- Zandbelt B, Boehler CN (2019). Capturing the ability to inhibit actions and impulsive behaviors: A consensus guide to the stop-signal task. *eLife* 8:e46323
36. **Wessel JR**, Gorgolewski KJ, Bellec P (2019). Switching software in science: motivations, challenges and solutions. *Trends in Cognitive Sciences* 23(4):265-267
- \* 35. Waller DA, Hazeltine E, **Wessel JR** (2019). Common and independent neural processes during action-stopping and infrequent stimulus detection: the P3a as an index of generic motor inhibition. *International Journal of Psychophysiology* (18)30347-7.
34. **Wessel JR** (2018). Surprise: A more realistic framework for studying action-stopping? *Trends in Cognitive Sciences* 22(9):741-744
33. **Wessel JR**, Dolan KA, Hollingworth A (2018). A blunted phasic autonomic response to errors indexes age-related deficits in error awareness. *Neurobiology of Aging* 71:13-20
- \* 32. Dutra IC, Waller DA, **Wessel JR** (2018). Perceptual surprise improves action stopping by non-selectively suppressing motor activity via a neural mechanism for motor inhibition. *The Journal of Neuroscience* 38 (6) 1482-1492
31. **Wessel JR** (2018). Prepotent motor activity and inhibitory control demands in different variants of the Go/Nogo paradigm. *Psychophysiology* 55(3) doi: 10.1111/psyp.12871
30. Ghahremani A, **Wessel JR**, Udupa K, Neagu B, Zhuang P, Saha U, Kalia SK, Hodaie M, Lozano AM, Aron AR, Chen R (2018). Stopping and slowing manual and spoken responses: Similar oscillatory signatures recorded from the subthalamic nucleus. *Brain and Language* 176:1-10
29. **Wessel JR** (2018). An adaptive orienting theory of error processing. *Psychophysiology* 55(3) doi: 10.1111/psyp.13041
28. Kelley R, Flouty O, Emmons EB, Kim Youngcho, Kingyon J, **Wessel JR**, Oya H, Greenlee JD, Narayanan NS (2018). A human prefrontal-subthalamic circuit for cognitive control. *Brain* 141(1):205-216
27. Wagner J, **Wessel JR**, Ghahremani A, Aron AR (2018). Establishing a right frontal beta signature for stopping action in scalp EEG: implications for testing inhibitory control in other task contexts. *Journal of Cognitive Neuroscience* 30(1):107-118
26. **Wessel JR** (2018). A neural mechanism for surprise-related interruptions of visuospatial working memory. *Cerebral Cortex* 28(1):199-212
25. **Wessel JR** (2018). Testing multiple psychological processes for common neural mechanisms using EEG and independent component analysis. *Brain Topography* 31(1):90-100.
24. **Wessel JR** (2017). Perceptual surprise aides inhibitory motor control. *Journal of Experimental Psychology: Human Perception and Performance* 43(9):1585-1593
23. **Wessel JR**, Aron AR (2017). On the globality of motor suppression: unexpected events and their influence on behavior and cognition. *Neuron* 93(2): 259–280
22. **Wessel JR**, Ghahremani A, Udupa K, Saha U, Kalia SK, Hodaie M, Lozano AM, Aron AR, Chen R (2016). Stop-related subthalamic beta activity indexes global motor suppression in Parkinson's Disease. *Movement Disorders* 31(12):1846-1853
21. **Wessel JR**, Jenkinson N, Brittain JS, Voets SE, Aziz T, Aron AR (2016). Surprise disrupts cognition via a fronto-basal ganglia suppressive mechanism. *Nature Communications* 7:11195
20. **Wessel JR**, Ullsperger M, Obrig H, Villringer A, Quinque E, Schroeter ML, Bretschneider KL, Arelin K, Roggenhofer E, Frisch S, Klein TA (2016). Neural synchrony indexes impaired motor slowing after errors and novelty following white-matter damage. *Neurobiology of Aging* 38:205-13

19. **Wessel JR**, Tonnesen A, Aron AR (2015). Stimulus devaluation induced by action-stopping is greater for explicit value representations. *Frontiers in Psychology* 6:1640
18. **Wessel JR**, Aron AR (2015). It's not too late: The onset of the fronto-central P3 indexes successful response inhibition in the stop-signal paradigm. *Psychophysiology* 52(4):472-80
17. **Wessel JR**, O'Doherty JP, Berkebile M, Linderman D, Aron AR (2014). Stimulus devaluation caused by stopping action. *Journal of Experimental Psychology: General* 143(6):2316-29
16. **Wessel JR**, Aron AR (2014). Inhibitory motor control based on complex stopping goals relies on the same brain network as simple stopping. *NeuroImage* 103C:225-234
15. **Wessel JR** (2014). Performance-monitoring in realistic environments: can translating neuroscientific insights augment real-world behavioral adaptation? *The Journal of Neuroscience* 34(27):8934-6
14. **Wessel JR**, Klein TA, Ott DV, Ullsperger M (2014). Lesions to the prefrontal performance-monitoring network disrupt neuronal processing and adaptive behaviors after both errors and novelty. *Cortex* 50, 45-54
13. **Wessel JR**, Conner CR, Aron AR, Tandon N (2013). Chronometric electrical stimulation of right inferior frontal cortex increases motor braking. *The Journal of Neuroscience* 33(50):19611-19619
12. **Wessel JR**, Aron AR (2013). Unexpected events induce motor slowing via a brain mechanism for action-stopping with global suppressive effects. *The Journal of Neuroscience* 33(47): 18481-18491
11. Greenhouse I, **Wessel JR** (2013). EEG signatures associated with stopping are sensitive to preparation. *Psychophysiology* 50(9):900-8
10. **Wessel JR**, Reynoso HS, Aron AR (2013). Saccade suppression exerts global effects on the motor system. *Journal of Neurophysiology* 110(4):883-90
9. Itthipuripat S, **Wessel JR**, Aron AR (2013). Frontal theta is a signature of successful working memory manipulation. *Experimental Brain Research* 224(2): 255-62
8. **Wessel JR**, Danielmeier C, Morton JB, Ullsperger M (2012). Surprise and error: Common neuronal architecture for processing errors and novelty. *The Journal of Neuroscience* 32(22):7528-7537 [Featured Article in "This Week in the Journal"]
7. **Wessel JR** (2012). From "Neural correlates of consciousness" to "Neural causes of consciousness": A commentary on "Consciousness, biology and quantum hypotheses", by Bernard J. Baars and David E. Edelman. *Phys Life Rev.* (3):299-300
6. **Wessel JR** (2012). Error awareness and the error-related negativity: Evaluating the first decade of evidence. *Front. Hum. Neurosci.* 6: 88
5. **Wessel JR**, Haider H, Rose M (2012). The transition from implicit to explicit rule representations in incidental learning situations: More evidence from high-frequency EEG coupling. *Experimental Brain Research* 217 (1): 153 - 162
4. **Wessel JR**, Danielmeier C, Ullsperger M (2011). Error Awareness revisited: Accumulation of multi-modal evidence from central and autonomic nervous systems. *Journal of Cognitive Neuroscience* 23(10):3021-36
3. **Wessel JR**, Ullsperger M (2011). Selection of independent components representing event-related brain potentials: A data-driven approach for greater objectivity. *NeuroImage* 54(3):2105-15
2. Ullsperger M, Harsay H, **Wessel JR**, Ridderinkhof KR (2010). Conscious perception of errors and its relation to the anterior insula. *Brain Structure and Function.* 214 (5-6): 623-643

1. Danielmeier C, Wessel JR, Steinhauser M & Ullsperger M (2009). Modulation of the error-related negativity by response conflict. *Psychophysiology*. 46: 1288-1298

### HONORS AND AWARDS

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2022	<b>Outstanding First-Generation Student Advocacy Award</b> University of Iowa
2018	<b>CAREER Award</b> National Science Foundation
2016	<b>Distinguished Early Career Contributions to Psychophysiology Award</b> Society for Psychophysiological Research
2012	<b>Trainee Abstract Travel Award</b> Organization for Human Brain Mapping
2010	<b>Young Researcher Award</b> Gustav A. Lienert Foundation for Biopsychological Methods
2008	<b>Doctoral Fellowship (One awarded each year, nationwide)</b> Geertrud Reemtsma Foundation
2008	<b>Diploma Thesis of the Year</b> Faculty of Life Sciences, University of Cologne, Dept. Psychology
2008 & 2009	<b>Travel Grant</b> German Society for Computer Science

### COVERAGE IN POPULAR PRESS (selection)

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- Science News:** Hamers, Laurel (2017, March 14). Making a mistake can put your brain on 'pause'. *Science News*. Retrieved March 14, 2017, from [www.sciencenews.org](http://www.sciencenews.org)
- The Dana Foundation:** Sukel, Kayt (2016, Sept. 12). A biophysical theory of beta waves. *Dana Foundation Top Stories*. Retrieved Sept. 12, 2016, from [www.dana.org](http://www.dana.org)
- CBS Radio:** The Osgood File (2016, June 9). Losing our train of thoughts. *Radio interview*. Retrieved June 9, 2016, from [www.theosgoodfile.com](http://www.theosgoodfile.com)
- NBC News:** Fox, Maggie (2016, April 18). Study Finds Where You Lost Your Train of Thought. *NBC News*. Retrieved April 19, 2016, from [www.nbcnews.com](http://www.nbcnews.com)
- Forbes:** DiSalvo, David (2013, December 15). Study shows that electrical stimulation can boost the brain's brakes. *Forbes*. Retrieved January 7, 2014, from [www.forbes.com](http://www.forbes.com)
- Yahoo News:** IANS (2013, December 16). Apply brain brakes to earn social respect. *Yahoo News*. Retrieved January 7, 2014, from <http://in.news.yahoo.com>
- Forbes:** DiSalvo, David (2013, December 29). The top ten brain science and psychology studies of 2013. *Forbes*. Retrieved January 7, 2014, from [www.forbes.com](http://www.forbes.com)

### INVITED TALKS (extramural)

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March 2023	<i>Invited Symposium (chair, speaker)</i> , Cognitive Neuroscience Society Annual Meeting, San Francisco (CA)
March 2023	<i>Symposium</i> , Cognitive Neuroscience Society Annual Meeting, San Francisco (CA)
November 2022	University of Illinois, Urbana-Champaign (IL)
November 2022	St. Ambrose University, Davenport (IA)
September 2022	Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig (Germany)

October 2021	Vrije Universiteit (VU), Amsterdam (The Netherlands)
October 2021	<i>Symposium</i> , Society for Psychophysiological Research, Online
July 2021	Medical University of South Carolina, Charleston (SC)
June 2021	University of Amsterdam (UvA), Amsterdam (The Netherlands)
October 2020	<i>Symposium</i> , Society for Psychophysiological Research, Vancouver (Canada, cancelled due to COVID-19 pandemic)
September 2020	<i>Symposium</i> , German Society for Psychology Annual Meeting, Vienna (Austria, cancelled due to COVID-19 pandemic)
May 2020	University of Oslo (Norway, cancelled due to COVID-19 pandemic)
October 2019	<i>Nanosymposium</i> , Society for Neuroscience, Chicago (IL)
September 2019	Motivation and Cognitive Control (MCC) meeting, Berlin (Germany)
May 2019	Control Processes Meeting, Brown University, Providence (RI)
December 2018	University of Tuebingen (Germany)
October 2018	<i>Symposium</i> , Society for Psychophysiological Research, Quebec City (Canada)
November 2017	<i>Keynote</i> , Tri-State Psychology Research Conference, Cedar Rapids (IA)
October 2017	<i>Symposium</i> , Society for Psychophysiological Research, Vienna (Austria)
August 2017	<i>Symposium</i> , International Conference for Cognitive Neuroscience (ICON), Amsterdam (Netherlands)
November 2016	<i>Nanosymposium</i> , Society for Neuroscience, San Diego (CA)
September 2016	<i>Symposium (also chair)</i> , Society for Psychophysiological Research, Minneapolis (MN)
September 2016	<i>Award Address</i> , Society for Psychophys. Research, Minneapolis (MN)
June 2016	<i>Symposium</i> , European Society for Cognitive and Affective Neuroscience (ESCAN), Porto (Portugal)
February 2016	<i>Symposium</i> , Computational and Systems Neuroscience (CoSyNe) Workshops, Snowbird (UT)
October 2015	<i>Nanosymposium</i> , Society for Neuroscience, Chicago (IL)
March 2015	Scripps Neuroconference, La Jolla (CA)
September 2014	<i>Symposium</i> , Society for Psychophysiological Research, Atlanta (GA)
June 2014	Institute for Neural Computation, La Jolla (CA)
March 2014	University of California Medical School, La Jolla (CA)
May 2013	Kavli Institute for Mind and Brain, La Jolla (CA)
January 2013	San Diego Neurological Society, San Diego (CA)
June 2012	<i>iTalk</i> , Human Brain Mapping Conference, Beijing (China)
July 2011	Teacher Training College, Kleve (Germany)
September 2010	University of Western Ontario, London (Canada)
October 2009	Opinions and Discussions in Cognitive Neuroscience, Amsterdam (Netherlands)
September 2008	<i>Symposium</i> , International Organization for Psychophysiology, St. Petersburg (Russia)

## **PROFESSIONAL SERVICE**

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*Ad-hoc Journal Reviewing*

Multidisciplinary

Proceedings of the National Academy of Sciences; Trends in Cognitive Sciences; Nature



Communications; Science Advances; eLife; Philosophical Transactions of the Royal Society B; Scientific Reports; iScience; PLoS One

Neuroscience & Neurobiology

Journal of Neuroscience; PLoS Biology; Cell Reports; Progress in Neurobiology; Neuroscience and Biobehavioral Reviews; Cerebral Cortex; NeuroImage; Human Brain Mapping; Communications Biology; Neurobiology of Aging; Journal of Cognitive Neuroscience; PLoS Computational Biology; eNeuro; Cortex; Psychophysiology; Social Cognitive and Affective Neuroscience; Frontiers in Neuroscience; Journal of Neurophysiology; Biological Psychology; Brain Topography; Neuropharmacology; Brain Structure and Function; Cognitive, Affective & Behavioral Neuroscience; European Journal of Neuroscience; Neuroscience; Experimental Brain Research; Neurobiology of Learning and Memory; Journal of Psychophysiology; Brain and Cognition; Frontiers in Behavioral Neuroscience; Frontiers in Human Neuroscience; Neuroscience Letters; BMC Neuroscience

Cognitive Psychology

Psychological Review; Nature Human Behavior; Psychological Science; Journal of Experimental Psychology {General; Human Perception & Performance; Learning, Memory & Cognition}; Current Directions in Psychological Science; Cognition; Cognitive Psychology; Consciousness & Cognition; Attention, Perception & Psychophysics; Psychonomic Bulletin and Review; Behavior Research Methods; Psychological Research; Quarterly Journal of Experimental Psychology; Acta Psychologica; Journal of Cognitive Psychology; Advances in Cognitive Psychology; Scandinavian Journal of Psychology

Neurology, Psychiatry & Neuropsychology

Brain; Biological Psychiatry; Schizophrenia Bulletin; Brain Stimulation; NeuroImage: Clinical; Neuropsychologia; Parkinsonism & Related Disorders; Journal of Neuropsychology; Gait & Posture; Aging, Neuropsychology & Cognition

Others

Developmental Science; IEEE Transactions on Multimedia; The Journal of Pain; Psychology of Sport & Exercise

*Journal Editing*

Neurobiology of Learning and Memory (Special Issue Co-Editor, 2021 - 2023)  
eLife (Guest Editor, 2020)

*Grant Reviewing*

National Institutes of Health, Human Complex Mental Function (HCMF) Study Section (*standing member, 2022 - 2026*)  
National Institutes of Health, Cognition and Perception Study Section (*ad-hoc & panel*)  
National Institutes of Health, Cognition, Perception, & Motor Function Special Emphasis Panel  
National Science Foundation, Neural and Cognitive Systems program (*panel*)  
National Science Foundation, Cognitive Neuroscience program (*ad-hoc & panel*)  
Wellcome Trust (United Kingdom, *ad-hoc*)  
Research Foundation - Flanders (Fonds Wetenschappelijk Onderzoek, FWO, Belgium, *ad-hoc*)  
Netherlands Organisation for Scientific Research (NWO, Netherlands, *ad-hoc*)  
Deutsche Forschungsgemeinschaft (DFG, Germany, *ad-hoc*)  
Fund for Scientific Research (FNRS, Belgium, *ad-hoc*)  
National Science Centre (Narodowe Centrum Nauki, NCN, Poland, *ad-hoc*)

*Service to Scientific Societies*

Invited Symposium Chair, Cognitive Neuroscience Society Annual Meeting, San Francisco 2023  
 Program Chair, Society for Psychophysiological Research Annual Meeting, Vancouver 2022  
 Program Committee Member, Society for Psychophysiological Research, Online 2020  
 Nanosymposium Chair, Society for Neuroscience Annual Meeting, Chicago 2019  
 Program Committee Member, Society for Psychophysiological Research Meeting, Vienna 2017

**COLLEGIATE, DEPARTMENTAL, AND OTHER SERVICE**

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*Research Supervision & Training**Graduate students*

Darcy A. Diesburg (née Waller, Psychological & Brain Sciences, 2016 – 2022, *graduated*)

- D.C. Spriesterbach Dissertation Prize, University of Iowa, 2022
  - Spence-Lewis Award, Department of Psychological & Brain Sciences, 2022
  - Gormezano Award for Best Neuroscience Paper (Diesburg et al., *eLife* 2021)
  - Faces of the Future, Society for Psychophysiological Research Meeting, 2021
  - Trainee Professional Development Award, Society for Neuroscience, 2020
  - First-authored articles in *eLife*, *JNeuro*, *Neuroscience & Biobehav. Reviews & others*
- Post-PhD*: Postdoctoral Fellow, Brown University (Stephanie Jones' Lab)

Tobin Dykstra (Psych. & Brain Sciences, 2016 – 2022, *graduated*), Co-Advisor

- First-authored article in *JoCN*

Cheol Soh (Psychological & Brain Sciences, 2017 – current, *passed comps*)

- First-authored articles in *JNeuro*, *Cerebral Cortex*, and *JoCN*

Yoojeong Choo (Psychological & Brain Sciences, 2018 – current, *passed comps*)

- First-authored article in *eLife*

Benjamin O. Rangel (Neuroscience, 2018 – current, *passed comps*)

- First-authored article in *JNeuro*
- Symposium talk at *CNS Annual Meeting*, San Francisco 2023

Ossama Abu-Halawa (Biomedical Engineering, MSTP, 2020 – current)

*Postdoctoral Scholars*

Yao Guan (August 2018 – current)

- First-authored articles in *JNeuro and Psychophysiology*

Qiyang Nie (July 2018 – February 2019)

Joshua Tatz (August 2020 – current)

- First-authored articles in *JNeuro and JoCN*

Mario Hervault (September 2021 – current)

- Faces of the Future, Society for Psychophysiological Research Meeting, 2022

*Rotating graduate students*

Julian A. Scheffer (Behavioral-Biomedical Interface Program, Summer 2016)

Jenna Kelly (Neuroscience Graduate Program, Fall 2017)

Benjamin O. Rangel (Neuroscience Graduate Program, Spring 2018)

Ossama Abu-Halawa (Medical Scientist Training Program, Summer 2020)

*Iowa Center for Research by Undergraduates (ICRU) scholars (competitive award)*

Kylie Dolan (Junior, Summer 2016)  
 Isabella Dutra (Sophomore, Summer 2017)  
 Alec Mather (Junior, Summer 2018)  
 Carly Iacullo (Senior, Summer 2019)  
 Megan Hynd (Senior, Fall 2019)  
 Anna Kalan (Junior, Summer 2020)

*Iowa Neuroscience Institute Undergraduate Summer scholars (competitive award)*

Megan Hynd (Senior, Summer 2019)

*Undergraduate Research Practicum*

Kylie Dolan, Hailey Billings, Cailey Parker, Isabella Dutra, Carly Rider, Conor Bryant, Brynne Dochterman, Alec Mather, Carly Iacullo, Megan Hynd, Amy Castonguay, Aarushi Dervesh, Meg Kester, Anna Kalan, Sarah Eliason, Steve Grugan, Maddie Carlson, Madigan Crowley, Kathy Zhou, Josephine Amick, Tarush Bhatia, Nikhita Reddibathuni, Britt Mariman, Carson Lovig

Collegiate, Intercollegiate, and Interdepartmental Service*Collegiate, Intercollegiate, and Interdepartmental Committees*

Executive Committee, iDREAM R25 Research and Education Program (2022 - current)  
 Faculty member, Student-led DEI Committee (*selected by students*), Neuroscience Graduate Program (2022 - current)  
 Director, Undergraduate Major Program in Neuroscience, College of Liberal Arts and Sciences (2021 - current)  
 Undergraduate Educational Policy and Curriculum Committee (*elected*), College of Liberal Arts and Sciences (2021 - current)  
 Panelist, Top Scholar Visit Day, Office of Admissions (2021, 2022)  
 First-generation Student Task Force, University of Iowa (2020 - current)  
 Curriculum & Evaluation Committee, Behavioral-Biomedical Interface Program (2017 - current)  
 Steering Committee, Undergraduate Major Program in Neuroscience, College of Liberal Arts and Sciences (2017 - current)  
 Admissions Committee, Neuroscience Graduate Program (2018 - 2021)  
 Recruitment & Admissions Committee, Behavioral-Biomedical Interface Program (2019 - 2021)  
 Awards Committee, Neuroscience Graduate Program (2016 - 2021; Chair in 2019)  
 - Chair: Young Investigator Award (2016, 2017)  
 - Chair: Publication Award (2017)  
 - Chair: Service Award (2018)  
 20/20 Committee Charrette, College of Liberal Arts and Sciences (2017)

*Other significant activities*

Originator & Organizer, First-generation Undergraduate Brain Research Workshop  
 Annual NSF-sponsored four-day workshop aimed at involving first-generation undergraduate students in academic research (2019 - )

Workshop website: <https://brainworkshop.sites.uiowa.edu/>

Departmental Service

*Departmental Committees*

Faculty Advisory Committee (*elected*, Psychological & Brain Sciences, 2021 – current)  
 Technical Support Services Committee (Psychological & Brain Sciences, 2016 – current)  
 Clinical Science Faculty Search Committee (Psychological & Brain Sciences, 2019 - 2020)

*Ph.D. Thesis Committees*

Kayleen Schreiber (Neuroscience; Advisor: McMurray, graduated 2017)  
 Rachel Cole (née Clark) (Neuroscience; Advisor: Voss, graduated 2018)  
 Carlos del Rio Bermudez (P&BS; Advisor: Blumberg, graduated 2018)  
 Justin Reber (Psychological and Brain Sciences; Advisor: Tranel, graduated 2019)  
 Ryan Kelley (Neuroscience; Advisor: Greenlee, graduated 2019)  
 James D. Kent (Neuroscience; Advisor: Voss, graduated 2020)  
 McCall Sarrett (Neuroscience; Advisor: McMurray, graduated 2020)  
 Jonathan Schacherer (P&BS; Advisor: Hazeltine, graduated 2021)  
 Carolina Deifelt Streese (Neuroscience; Advisor, graduated 2021)  
 Mark D. Bowren Jr. (Neuroscience, Advisor: Tranel, graduated 2021)  
 Matthew Broschard (P&BS, Advisor: Freeman, graduated 2022)

*Comprehensive Exam / Prospectus Committees*

Kayleen Schreiber (Neuroscience; Advisor: McMurray, 2016 – 2017, graduated)  
 Rachel Cole (née Clark) (Neuroscience; Advisor: Voss, 2016 – 2018, graduated)  
 Carlos del Rio Bermudez (P&BS; Advisor: Blumberg, 2016 – 2018, graduated)  
 Justin Reber (Psychological and Brain Sciences; Advisor: Tranel, 2016 – 2019, graduated)  
 Ryan Kelley (Neuroscience; Advisor: Greenlee, 2016 – 2019, graduated)  
 James D. Kent (Neuroscience; Advisor: Voss, 2016 – 2020, graduated)  
 Jonathan Schacherer (P&BS; Advisor: Hazeltine, 2017 - 2021, graduated)  
 McCall Sarrett (Neuroscience; Advisor: McMurray, 2017 – 2020, graduated)  
 Brad Stilwell (Psychological & Brain Sciences; Advisor: Vecera, 2017 - 2020, graduated)  
 Carolina Deifelt Streese (Neuroscience; Advisor: Tranel, 2017 - 2021, graduated)  
 Tobin Dykstra (Psych & Brain Sciences; Advisor: Hazeltine, 2018 - 2022, graduated)  
 Mark D. Bowren Jr. (Neuroscience, Advisor: Tranel, 2019 – 2021, graduated)  
 Alexandra Alario (Neuroscience, Advisor: Niciu, 2020 - )  
 Jax Skye (Neuroscience, Advisor: Boes/Tranel, 2020 - )  
 Jina Kim (Communication Sciences & Disorders, Advisor: Hendrickson, 2021 - )  
 Xitong Chen (Psychological and Brain Sciences; Advisor: Hwang, 2021 - )

*Research Advisory Committees*

Tobin Dykstra (Advisor: Hazeltine)  
 Marcie King (Advisor: Tranel)  
 Alyssa Sullivan (Advisor: Petersen)  
 Stephanie Leach (Advisor: Hwang)  
 Bettina Bustos (Advisor: Jiang)

Non-University service & Outreach*External Ph.D. thesis examiner*

Danesh Shahnazian, University of Victoria (Advisor: Clay Holroyd, 2017, graduated)  
 Jacki Janowich, University of New Mexico (Advisor: James Cavanagh, 2018, graduated)  
 Nahian Chowdhury, University of Sydney (Advisor: Justin Harris, 2020, graduated)  
 Corey Wadsley, University of Auckland (Advisor: Winston Byblow, 2023)

*Outreach*

Poster judge, Eastern Iowa Science & Engineering Fair, Cedar Rapids, IA (2017, 2018)  
 Iowa Neuroscience Institute TMS demo, CCOM Science Thursday, Iowa City, IA (2017)

**ACTIVITIES TO PROMOTE DIVERSITY, EQUITY, AND INCLUSION**

- Executive Committee, iDREAM R25 Research and Education Program (2022 – current). *The purpose of this program is to provide research experience to pre-graduate URM scholars from non-R1 Universities.*
- Faculty member, Student-led DEI Committee, Neuroscience Graduate Program (2022 – current). *Since 2022, the DEI committee for the NGP is constituted and led by graduate students, who select two faculty members to participate, formally chair, and advocate on their behalf.*
- Member, First-generation Student Task Force, University of Iowa (2020 – current). *This faculty and staff task force coordinates activities and opportunities for first-generation undergraduates on the UI campus.*
- Originator & Organizer, Annual First-generation Undergraduate Brain Research Workshop, NSF-funded (2018 – current). *This four-day workshop is designed to provide a free multi-day opportunity for first-gen students to obtain insights into academic (neuro)science.*

**MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS**

Society for Neuroscience, Organization for Human Brain Mapping, Society for Psychophysiological Research, German Society for Cognitive Science, Psychonomic Society, Sigma Xi (Elected)

**TEACHING****UNIVERSITY OF IOWA**

Semester	Advisees		Courses taught	
	<i>Unerg.</i>	<i>Grad.</i>	<i>Number / Title</i>	<i>#</i>
Sp. 2016	3	0	PSY4020: Laboratory in Psychology	14
Fa. 2016	6	1	N/A (Course Release)	
Sp. 2017	5	1	PSY2701: Intro to Behavioral Neuroscience	230
Fa. 2017	3	3	PSY7150: Analyzing Neural Field Potentials	11
Sp. 2018	5	3	PSY4020: Laboratory in Psychology	20
Fa. 2018	5	5	N/A (Flex Load)	
Sp. 2019	9	5	PSY2701: Intro to Behavioral Neuroscience	230
Fa. 2019	7	5	PSY4025: Lab in Cognitive Neuroscience	15
Sp. 2020	6	5	N/A	

Fa. 2020	3	6	PSY4025: Lab in Cognitive Neuroscience	15
Sp. 2021	3	6	PSY7150: Analyzing Neural Field Potentials	15
Fa. 2021	4	6	PSY4025: Lab in Cognitive Neuroscience	20
Fa. 2021	4	6	PSY5080: Foundations in Cognitive Neurosc.	10
Sp. 2022	9	6	PSY2701: Intro to Behavioral Neuroscience	230
Fa. 2022	9	5	PSY4025: Lab in Cognitive Neuroscience	20
Fa. 2022	9	5	PSY5080: Foundations in Cognitive Neurosc.	10

#### ADJUNCT LECTURER (University of Cologne)

SS 2010	Statistics using SPSS
WS 2009	Research Methods and Statistics for Diploma Students
SS 2009	Laboratory in Experimental Psychology (2 courses)
WS 2008 / 2009	Methods of Cognitive Neuroscience
WS 2008 / 2009	Research Methods and Statistics for Diploma Students

#### UNDERGRADUATE SUPPLEMENTARY INSTRUCTOR (University of Cologne)

SS 2007	Inferential Statistics
WS 2006 / 2007	Experimental Methods and SPSS

#### OTHER PROFESSIONAL TEACHING

September 2019	Co-Organizer & Instructor, "Single-trial EEG analysis", One-day workshop, Freie Universität Berlin (Germany), with Adrian G. Fischer
October 2017	Co-Organizer & Instructor, "Advancements in EEG: How new analysis methods enable insights in cognitive neuroscience", Society for Psychophysiological Research Pre-Conference Workshop, Vienna (Austria), with Adrian G. Fischer
November 2013	Instructor, 17 <sup>th</sup> EEGLAB Workshop, San Diego (USA)
January 2011	Organizer & Instructor, 2-day workshop: "EEG analysis using MATLAB", Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig (Germany)
November 2010	Instructor, 12 <sup>th</sup> EEGLAB Workshop, San Diego (USA)
September 2010	Organizer & Instructor, 3-hour workshop: "Independent Component Analysis: Theory and Practice", University of Western Ontario (Canada)