

CURRICULUM VITAE

Leonardo Fernandino PhD

Assistant Professor
Department of Neurology
Division of General

OFFICE ADDRESS:

Medical Education Building
8701 Watertown Plank Rd
Milwaukee, WI 53226

EDUCATION:

02/1997 - 07/2001 B.A., Universidade Federal de Minas Gerais, Brazil
08/2003 - 03/2005 M.A., University of California, Los Angeles, CA
04/2005 - 11/2009 Ph.D., University of California, Los Angeles, CA

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

11/2009 - 11/2010 Postdoctoral Fellow, Department of Neurology, The University of Chicago, Chicago, IL
11/2010 - 08/2015 Postdoctoral Fellow, Department of Neurology, The Medical College of Wisconsin,
Milwaukee, WI

FACULTY APPOINTMENTS:

07/01/2016 - Present Assistant Professor, Department of Neurology, Medical College of Wisconsin
09/01/2019 - Present Assistant Professor, Department of Biomedical Engineering, Medical College of
Wisconsin
12/01/2021 - Present Assistant Professor, Graduate School of Biomedical Sciences, The Medical College of
Wisconsin

CENTER/INSTITUTE AFFILIATIONS:

Member, Neuroscience Research Center, Medical College of Wisconsin

ADMINISTRATIVE APPOINTMENTS:

07/01/2024 - Present Interim Vice Chair, Faculty Affairs & Development, Neurology, Medical College of
Wisconsin

AWARDS AND HONORS:

2000 - 2001 PIBIC Undergraduate Research Fellowship, National Science Council (CNPq), Brazil
08/2001 - 06/2002 International Exchange Fellowship, UFMG, Brazil
08/2003 - 06/2004 Distinguished Achievement Fellowship, UCLA
07/2005 - 08/2005 Excellence in Research Award, Dept. of Psychology, UCLA
07/2006 - 08/2006 Fellow, RIKEN Brain Science Institute, Tokyo, Japan
07/2006 - 08/2006 Psychology Summer Mentorship Research Award, UCLA
08/2006 Fellow, Training Course in fMRI, University of Michigan, Ann Arbor
2007 Fellow, Summer Institute in Cognitive Neuroscience, UC Santa Barbara
08/2008 - 06/2009 Dissertation Year Fellowship, Dept. of Psychology, UCLA
04/02/2012 Postdoctoral Fellow Award, Cognitive Neuroscience Society
06/2015 Fellow, NITP Summer Program in Advanced fMRI, UCLA
09/06/2015 Herder/Jan Wind Prize (£5,000), University of Oxford. (Best paper on embodied language and
neuroscience)
2019 Community of Innovators Award, Medical College of Wisconsin. "In recognition of his outstanding

leadership in community engagement and education through the MCW BrainExpo.”

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

Cognitive Neuroscience Society
Organization for Human Brain Mapping
American Association for the Advancement of Science
Society for the Neurobiology of Language
Association for Psychological Science
Society for Neuroscience

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorship
02/21/2022 - 12/01/2023 Guest editor, Neuropsychologia
Ad-Hoc Reviewer
02/10/2023 Book proposal for Cambridge University Press
Scientific Data
Brain and Language
Behavioral Brain Research
Cortex
Journal of the International Neuropsychological Society
Neuroscience & Biobehavioral Reviews
Scientific Data
Behavior Research Methods
Royal Society Open Science
Brain and Behavior
Cognitive Neuropsychology
Brain Structure and Function
Cerebral Cortex
Cognition
Cognitive Processing
Experimental Brain Research
Frontiers in Human Neuroscience
Journal of Cognitive Neuroscience
Journal of Experimental Psychology: Learning, Memory, and Cognition
Language, Cognition & Neuroscience
Neuroimage
Neuropsychologia
Public Library of Science (PLOS) One
Journal of Experimental Psychology - General
Scientific Reports
Neurobiology of Language

LOCAL/REGIONAL APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

07/01/2021 - Present Department representative, Faculty Council, Medical College of Wisconsin
07/01/2024 - Present Chair, Diversity, Inclusion, and Wellness Committee, Medical College of Wisconsin
07/01/2024 - Present Interim Vice Chair, Faculty Affairs & Development, MCW Department of Neurology
07/01/2024 - Present Chair, Mentoring Committee, Medical College of Wisconsin

INTERNATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

01/01/2016 - 12/31/2018 Member, Communications Committee, Organization for Human Brain Mapping

RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:

Active

Peer Review

Title: Center for Aphasia Research and
Recovery

Source: Advancing a Healthier Wisconsin
Role & Effort: Co-Investigator
PI: J.R. Binder
Dates: 01/01/2023 - 12/31/2024
Direct Funds: \$250,000 (total for all years)

Title: Decoding mental concept identities using electrocorticography
Source: NIH/NIDCD
Role & Effort: Co-Investigator
PI: W. Gross
Dates: 05/01/2023 - 04/30/2026
Direct Funds: \$585,000 (total for all years)

Title: Neural Representation of Lexical Concepts
Source: NIH/NIDCD
Role & Effort: PI
PI: L. Fernandino
Dates: 04/01/2024 - 03/31/2029
Direct Funds: \$1,979,000 (total for all years)

Title: Brain-to-text computer interfaces as a precursor for artificial speech restoration in aphasia
Source: Advancing a Healthier Wisconsin Endowment
Role & Effort: Co-Investigator
PI: Anderson, A.J.
Dates: 07/01/2024 - 06/31/2026
Direct Funds: \$250,000 (total for all years)

Prior

Peer Review

Title: Sensory-Motor Systems and Conceptual Processing in the
Source: NIH Deafness and Other Communication Disorders
Role & Effort: Post-doctoral researcher
PI: Rutvik Desai
Dates: 11/01/2010 - 11/30/2012
Direct Funds: \$1,900,000 (total for all years)

Title: Knowledge Representation as Embodied Abstractions
Source: Intelligence Advanced Research Projects Activity
Role & Effort: Post-doctoral researcher
PI: M. Aguilar
Dates: 09/01/2013 - 08/31/2014
Direct Funds: \$8,400,000 (total for all years)

Title: The Epilepsy Connectome Project
Source: NIH Neurological Disorders and Stroke
Role & Effort: Co-Investigator
PI: Jeffrey R. Binder

Dates:	08/24/2015 - 06/30/2019
Direct Funds:	\$5,100,000 (total for all years)
Title:	MEG of Lexical Concept Representations
Source:	Advancing a Healthier Wisconsin
Role & Effort:	Co-PI
PI:	L. Conant/L. Fernandino
Dates:	01/25/2016 - 02/28/2017
Direct Funds:	\$25,000 (total for all years)
Title:	Decoding semantic representations through neural encoding models
Source:	MCW Research Affairs Committee
Role & Effort:	Principal Investigator
PI:	Leonardo Fernandino
Dates:	01/01/2018 - 12/31/2018
Direct Funds:	\$25,000
Title:	Concept Representation in the Human Brain
Source:	NIH Deafness and Other Communication Disorders
Role & Effort:	Co-Investigator
PI:	Jeffrey R. Binder
Dates:	08/01/2018 - 07/31/2024
Direct Funds:	\$3,000,000 (total for all years)
Title:	Verb Representation in the Human Brain
Source:	Advancing a Healthier Wisconsin Endowment
Role & Effort:	Co-Investigator
PI:	Lisa Conant
Dates:	12/03/2020 - 12/02/2022
Direct Funds:	\$20,000 (total for all years)
Title:	Neural Representation of Animal and Artifact Concepts
Source:	Advancing a Healthier Wisconsin Endowment
Role & Effort:	Principal Investigator
PI:	Leonardo Fernandino
Dates:	12/03/2020 - 12/02/2022
Direct Funds:	\$20,000 (total for all years)
Title:	Localizing critical areas for concept identification with fMRI
Source:	CNRP - Advancing a Healthier Wisconsin
Role & Effort:	Co-Investigator
PI:	William Gross
Dates:	12/03/2021 - 12/02/2023
Direct Funds:	\$20,000 (total for all years)

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

International

ERP Studies of Compositional Semantics, Department of Germanic Linguistics Seminar, University of Marburg, Germany, 06/11/2010

Using ERP and fMRI to Study the Neural Substrates of Compositional Semantics, Research Seminar, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, 06/14/2010

fMRI Investigations Into the Representational Structure of Lexical Concepts, Department of Psychology Seminar, Stockholm University, Sweden, 10/13/2021

On the representational content and neuroanatomic architecture of conceptual knowledge, PICNIC Seminar, Institut du Cerveau – ICM, Paris, France, 03/22/2022

National

Testing and Refining the Embodied Simulation Approach to Semantics, Cognitive Forum, Department of Psychology, University of California, Los Angeles, 11/01/2013

Local

Investigating the Neural Code of Conceptual Representations, Department of Biophysics Graduate Seminar Series, Medical College of Wisconsin, 11/21/2014

Investigating the Neural Code for Conceptual Knowledge, Neurology Grand Rounds, Medical College of Wisconsin, 01/23/2015

How is Conceptual Knowledge Organized in the Brain?, Neurology Grand Rounds, Medical College of Wisconsin, 06/05/2020

Exploring the Neural Information Structure of Word Meaning, Neurology Grand Rounds, Medical College of Wisconsin, 01/20/2023

Exploring the Neural Representation of Conceptual Knowledge, Psychiatry Grand Rounds, Medical College of Wisconsin, 06/12/2024

PEER REVIEWED WORKSHOPS/PRESENTATIONS:

International

Fernandino, L., Conant, L., Binder, J.R., Blindauer, K., Hiner, B., Spangler, K., Desai, R.H., Parkinson's Disease Selectively Disrupts Processing of Action Verbs, 3rd Neurobiology of Language Conference, Annapolis, MD, 11/11/2011

Fernandino, L., Conant, L., Binder, J.R., Blindauer, K., Hiner, B., Spangler, K., Desai, R.H., Where Is the Action? Action Sentence Processing in Parkinson's Disease, Cognitive Neuroscience Society Meeting, Chicago, IL, 04/02/2012

Fernandino, L., Humphries, C., Seidenberg, M.S., Conant, L., Binder, J.R., Decoding Conceptual Information from Heteromodal Cortex, 45th Annual Meeting of the Society for Neuroscience, Chicago, IL, 10/19/2015

Fernandino L, Humphries C, Conant L, Binder JR, A Brain-Based Componential Model of Semantic Representation Predicts Semantic Priming, Roveretto Workshop on Concepts, Actions and Objects, Roveretto, Italy, 05/06/2016

Anderson A, Binder JR, Fernandino L, Humphries CJ, Conant L, Aguilar M, Wang X, Doko D, Raizada R, Predicting Neural Activity Patterns Associated With Sentences Using a Neurobiologically Motivated Model of Semantic Representation, 8th Annual Meeting of the Society for the Neurobiology of Language, London, England, 08/18/2016

Binder JR, Pillay SB, Fernandino L, Humphries CJ, Book DS, Desai RH, Selective Action Verb Processing Deficits: Voxel-Based Lesion-Symptom Mapping, 8th Annual Meeting of the Society for the Neurobiology of Language, London, England, 08/18/2016

Fernandino, L., Humphries, C., Conant, L., Binder, J.R., An Experiential Attribute Model of Semantic Representation Predicts Semantic Priming, 8th Annual Meeting of the Society for the Neurobiology of Language, London, England, 08/19/2016

Binder, JR, Meyerand M, Birn R, Conant LL, ..., Fernandino L, et al., Cortical Thickness Correlates of Social Cognition Abilities in Temporal Lobe Epilepsy, American Academy of Neurology 69th Annual Meeting, Boston, MA, 04/24/2017

Anderson AJ, Lalor E, Fernandino L, Li V, Raizada RDS, Wang X, Commonalities in the neural encoding of sentence meaning across multiple modalities and widely distributed brain regions, 9th Annual Meeting of the Society for the Neurobiology of Language, Baltimore, MD, 11/08/2017

Fernandino L, Humphries C, Conant LL, Binder JR, Using fMRI to evaluate embodied, taxonomic and

- distributional models of word meaning, 24th Annual Meeting of the Organization of Human Brain Mapping, Singapore, 06/18/2018
- Kalmus T, Conant L, Humphries C, Binder JR, Fernandino L, Do experiential semantic features predict automatic semantic priming in verbs?, 10th Annual Meeting of the Society for the Neurobiology of Language, Quebec City, Canada, 08/16/2018
- Fernandino L, Conant LL, Humphries C, Binder JR, Evaluating experiential models of word semantics relative to distributional and taxonomic models, 10th Annual Meeting of the Society for the Neurobiology of Language, Quebec City, Canada, 08/17/2018
- Anderson AJ, Binder JR, Fernandino L, Humphries C, Conant LL, Kiela D, Raizada R, Lin F, Lalor E, An integrated neural decoder of experiential and linguistic meaning, 10th Annual Meeting of the Society for the Neurobiology of Language, Quebec City, Canada, 08/17/2018
- Pillay, S.B., Tong, J, Gross, W.L., Mueller, W.M., Raghavan, M., Swanson, S.J., Conant, L.L., Allen, L., Anderson, C.T., Carlson, C., Fernandino, L., Humphries, C.J., Schwartz, L., Busch, R.M., Lowe, M., Langfitt, J.T., Trivarus, M., Drane, D.L., Loring, D.W., Jacobs, M., Morgan, V., Szaflarski, J.P., Bonilha, L., Binder, J.R., Anterior temporal lobe regions critical for picture naming: Voxel-based lesion-symptom mapping in patients undergoing left temporal lobe resections, 11th Annual Meeting of the Society for the Neurobiology of Language, Helsinki, Finland, 08/20/2019
- Tong JQ, Fernandino L, Humphries C, Conant LL, Heffernan J, Binder JR, Mapping Multimodal Convergence Zones Using Representational Similarity Analysis and a High-Dimensional Grounded Model of Conceptual Content, 11th Annual Meeting of the Society for the Neurobiology of Language, Helsinki, Finland, 08/20/2019
- Binder, J.R., Pillay, S.B., Tong, J, Gross, W.L., Mueller, W.M., Raghavan, M., Conant, L.L., Allen, L., Anderson, C.T., Carlson, C., Humphries, C.J., Fernandino, L., Schwartz, L., Busch, R.M., Lowe, M., Langfitt, J.T., Tivarus, M., Drane, D.L., Loring, D.W., Jacobs, M., Morgan, V., Szaflarski, J.P., Bonilha, L., Swanson, S.J, Anterior temporal lobe regions necessary for naming individuals: Voxel-based lesion-symptom mapping in patients undergoing left temporal lobe resections, 11th Annual Meeting of the Society for the Neurobiology of Language, Helsinki, Finland, 08/20/2019
- Fernandino L, Tong JQ, Humphries C, Conant LL, Binder JR, fMRI Representational Similarity Analysis Reveals the Information Structure Underlying Word Semantics, 11th Annual Meeting of the Society for the Neurobiology of Language, Helsinki, Finland, 08/21/2019
- Tong JQ, Mazurchuk S, Fernandino L, Humphries C, Conant, LL, Binder JR, Temporoparietal Specialization for Event Knowledge Demonstrated by Multivoxel Pattern Classification and Representational Similarity Analysis, 12th Annual Meeting of the Society for the Neurobiology of Language, Virtual conference, 10/22/2020
- Mazurchuk S, Fernandino L, Tong JQ, Humphries C, Conant L, Binder JR, The cortical representation of body part concepts, 13th Annual Meeting of the Society for the Neurobiology of Language, Virtual conference, 10/05/2021
- Tong JQ, Binder JR, Mazurchuk S, Humphries C, Conant LL, Fernandino L, Event-associated experiential features are involved in event representation at brain regions preferentially representing event concepts, 13th Annual Meeting of the Society for the Neurobiology of Language, Virtual conference, 10/05/2021
- Fernandino L, Tong JQ, Humphries C, Conant LL, Binder JR, Searchlight RSA using multiple representational models reveals the detailed structure of the semantic system, 13th Annual Meeting of the Society for the Neurobiology of Language, Virtual conference, 10/05/2021
- Fernandino L, Tong JQ, Conant LL, Binder JR, The angular gyrus is definitely involved in semantic word processing, Max Planck Institute for Psycholinguistics “Neurobiology of Language: Key Issues and Ways Forward II”, Virtual conference, 03/16/2022
- Fernandino L, Tong JQ, Mazurchuk S, Conant LL, Binder JR, Experiential features outperform taxonomic and distributional models in predicting neuroimaging and behavioral data, 29th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA, 04/24/2022
- Mazurchuk S, Fernandino L, Tong JQ, Conant LL, Binder JR, An Experiential Basis for Posterior Middle Temporal Gyrus Body Part Concept Representation, 29th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA, 04/26/2022
- Tong JQ, Fernandino L, Mazurchuk S, Conant LL, Binder JR, A Common Neural Mechanism Underlying Object and Event Concept Representation, 29th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA, 04/26/2022
- Gross, W.L., Fernandino, L., Conant, L.L., Krucoff, M.O., Mueller, W.M., Raghavan, M., Binder, J.R.,

Electrocortical activity during semantic retrieval is modulated by feature modality, 28th Annual Meeting of the Organization for Human Brain Mapping, Glasgow, Scotland, 06/19/2022
Mazurchuk S, Fernandino L, Tong JQ, Conant LL, Binder JR, Activation of Speech, Taste, and Visual Scene Experiential Content During Concept Retrieval, 14th Annual Meeting of the Society for Neurobiology of Language, Philadelphia, PA, 10/07/2022
Tong JQ, Fernandino L, Mazurchuk S, Conant LL, Binder JR, Category-specific representation of animal, food, tool, and vehicle concepts in the brain, 14th Annual Meeting of the Society for Neurobiology of Language, Philadelphia, PA, 10/07/2022
Mazurchuk, S., Conant, L.L., Binder, J.R., Fernandino, L., Artifact concepts are more reliably represented than animal concepts across the cortex., 15th Annual Meeting of the Society for Neurobiology of Language, Marseille, France, 10/2023
Gross, W., Krucoff, M., Fernandino, L., Binder, J.R., Toward an implanted language neuroprosthesis for severe aphasia, 15th Annual Meeting of the Society for Neurobiology of Language, Marseille, France, 10/2023
Anderson AJ, Binder JR, Fernandino L, Gross W, Rey H, Decoding personal mental images with an fMRI model of general semantic features, Organization for Human Brain Mapping, Seoul, South Korea, 06/24/2024
Tong JQ, Fernandino L, Experiential information drives the neural decoding of word meaning in models based on word association, Highlights in the Language Sciences, Nijmegen, Netherlands, 07/11/2024
Anderson, AJ, Binder JR, Fernandino L, Gross W, Rey H, Decoding personal mental images with an fMRI model of general semantic features, Highlights in the Language Sciences Conference, Nijmegen, Netherlands, 07/12/2024
Fernandino L, Revealing the Information Content of Conceptual Representation Using Neuroimaging and Behavior, Psychonomic Society 65th Annual Meeting, New York, NY, 11/23/2024

Regional

Gupta A, Fernandino L, Developing functional localizer tasks for specific sensory-motor features, Midwest Regional Undergraduate Research Symposium in Neuroscience, Green Bay, WI, 10/21/2023
Fernandino, L, Unraveling the neural representation of word meaning using high-resolution functional neuroimaging, WiSER Conference, Milwaukee, WI, 10/05/2024
Mahajan A, Tong JQ, Fernandino L, Evaluating the effects of orthographic and phonological features on representational similarity analyses of word meanings and fMRI data, WiSER Conference, Milwaukee, WI, 10/11/2024

Local

Tong JQ, Mazurchuk S, Binder JR, Fernandino L, Explicit experiential features outperform association norms in semantic decoding of brain activation, Milwaukee Neuroscience Research Retreat, Milwaukee, WI, 04/11/2024
Fernandino L, Investigating the Neural Representation of Concepts, Milwaukee Neuroscience Research Retreat, Milwaukee, WI, 04/11/2024

COMMITTEE SERVICE:

Medical College of Wisconsin

08/01/2017 - Present Member, Departmental Website Committee, Neurology, MCW
08/07/2022 - Present Member, Curriculum & Programs Committee, Graduate School of Biomedical Sciences, MCW
07/01/2024 - Present Chair, Diversity, Equity, Inclusion, and Wellness Committee, Neurology, MCW
07/01/2024 - Present Chair, Mentoring Committee, Neurology, MCW

MCW TEACHING ACTIVITIES:

Medical Student Education

10/18/2022 - Present Instructor - Patient-Based Discussion (0.15 FTE)

Graduate Student Education

03/30/2021 - 05/30/2021 Co-instructor - INBS 16277 Cognitive Neuroscience

03/28/2023 - 05/04/2023 Co-instructor - INBS 16277 Cognitive Neuroscience
01/09/2024 - 04/30/2024 Course Director, Biophysics MRI Journal Club
02/18/2025 - 05/08/2025 Course Director - INBS 16277 Cognitive Neuroscience

Resident and Fellow Education

11/18/2016 Lecture on principles of functional MRI

MCW STUDENTS, FACULTY, RESIDENTS AND CLINICAL/RESEARCH FELLOWS MENTORED:

Medical Students

05/15/2019 - 08/15/2019 Shana Snarrenberg, Summer research project, Medical College of Wisconsin,
Data analysis pipeline in Python
12/20/2023 - 05/21/2024 Arantxa Sanchez, Scholarly pathway advisor, Medical College of Wisconsin

Graduate Students

PhD Students Advised

06/01/2017 - 09/27/2022 Jia-Qing (Tony) Tong, An Embodiment Account of Event Concept
Representation in the Brain, Medical College of Wisconsin, PhD dissertation
07/01/2019 - 05/24/2024 Stephen Mazurchuk, An Experiential Account of Semantic Category
Organization in the Brain, Medical College of Wisconsin, PhD dissertation

Clinical/Research Fellows

01/2023 - Present Jia-Qing Tong, Postdoctoral research advisor, Medical College of Wisconsin

EXTRAMURAL STUDENTS, FACULTY, RESIDENTS, AND CLINICAL/RESEARCH FELLOWS MENTORED:

High School Students

06/2013 - 08/2013 A. Murali, Research internship, Shorewood High School
05/01/2023 - 08/14/2024 A. Gupta, Research internship, Arrowhead High School, Gupta, A., Fernandino,
L. (2023). Developing functional localizer tasks for specific sensory-motor features. Midwest Regional
Undergraduate Research Symposium in Neuroscience, Green Bay, WI.

Undergraduate Students

03/2006 - 06/2006 N. Okamoto, Research internship, UCLA, Data collection
03/2007 - 12/2007 T. Abaryan, Research internship, UCLA, EEG data collection
01/2008 - 10/2009 A. Cho, Research internship, UCLA, Poster presentation
03/2008 - 06/2008 T. Shevavesh, Research internship, UCLA, Poster presentation
03/2008 - 06/2008 F. Rahmani, Research internship, UCLA, EEG data collection
03/2008 - 06/2008 R. Veliz, Research internship, UCLA, Data collection
03/2008 - 06/2008 F. Basson, Research internship, UCLA, EEG data collection
04/2008 - 06/2009 H. Schwimmer, Research internship, UCLA, Poster presentation
06/2008 - 08/2008 E. Garcia, Research internship, UCLA, Poster presentation
09/2008 - 11/2008 Y. R. Kang, Research internship, UCLA, Data collection
09/2008 - 06/2009 M. Frias, Research internship, UCLA, Poster presentation
10/2008 - 06/2009 M. Lyseight, Research internship, UCLA, Poster presentation
11/2008 - 01/2009 E. Tong, Research internship, UCLA, Poster presentation
01/2009 - 08/2009 E. Huang, Research internship, UCLA, Poster presentation
03/2009 - 06/2009 J. Dickenson, Research internship, UCLA, Poster presentation
03/2009 - 06/2009 A. Robin, Research internship, UCLA, Poster presentation
06/2009 - 08/2009 D. Garcia, Research internship, UCLA, Poster presentation
08/2016 - 07/2018 Taylor Kalmus, Research internship, Carrol University, Kalmus, T., Conant, L.,
Humphries, C., Binder, J., and Fernandino, L. (2018). Do experiential semantic features predict
automatic semantic priming in verbs? Presented at the 10th Annual Meeting of the Society for the
Neurobiology of Language. Quebec City, Canada.
02/2017 - 08/2017 D. Ramirez, Research internship, Marquette University, Final report
02/2017 - 08/2017 Kaitlyn Weber, Research internship, Marquette University, Final report

06/2017 - 08/2017 T. Chang, Research mentor, Marquette University, Final report
06/24/2024 - 08/15/2024 Arnav Mahajan, Summer research project, UW Madison, Mahajan A, Tong JQ, Fernandino L (2024) Evaluating the effects of orthographic and phonological features on representational similarity analyses of word meanings and fMRI data. Selected for presentation at the WiSER Conference, Milwaukee, WI.

COMMUNITY SERVICE ACTIVITIES:

10/2012 - 01/2013 Science fair mentor to students at St. Matthias Parish School
11/2013 - 01/2014 Science fair mentor to students at St. Matthias Parish School
12/2015 - 04/2016 Science fair mentor to students at Wauwatosa STEM School
08/2016 - 05/2017 Lead organizer, Silver Spring Neighborhood Center Science Club
01/2017 - 04/2017 Science fair mentor to students at Wauwatosa STEM School
12/2017 - 03/2018 Creator and Lead organizer, MCW BrainExpo 2018
09/2018 - 03/2019 Lead organizer, MCW BrainExpo 2019
01/2023 - 03/2023 Lead organizer, MCW BrainExpo 2023
02/13/2023 Presentation on the neuroscience of language, Sugar Maple (Bayview), Underground Science Society
03/10/2023 Lecture on the principles of neuroscience at MCW BrainExpo 2023
05/18/2023 Presentation on brain development and memory, Poreal Ministries (2122 N Halyard St), CTSI Science Café
09/2023 - 10/2023 Lead organizer, Wisconsin Science Festival event at the Medical College of Wisconsin
10/16/2023 Presentation "The Brain's Default Network Why is it such a hot topic in neuroscience?", Wisconsin Science Festival, Medical College of Wisconsin
10/2023 - 04/2024 Lead organizer, MCW BrainExpo 2024
04/06/2024 Presentation on the principles of neuroscience, MCW BrainExpo 2024

GRANT/FELLOWSHIP REVIEWS:

10/2017 - 10/29/17 Reviewer, Traditional Pilot Awards, Clinical and Translational Science Institute (CTSI)
02/2018 Ad hoc reviewer, research grant application, Israel Science Foundation
05/08/2023 Ad hoc reviewer, Graduate Women in Science (GWIS) National Fellowship Program (<https://www.gwis.org>).
04/18/2024 - 06/24/2024 Reviewer (temporary member), Language and Communication (LCOM) study section, National Institutes of Health (NIH)

INVITED MEDIA APPEARANCES:

Regional

Leonardo Fernandino, Exploring how the mind processes language, objects and sensory information, The Morning Show, Wisconsin Public Radio, 03/17/2022

Local

Leonardo Fernandino, BrainExpo, Wakeup News, Fox 6 Channel, 04/06/2024

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. **Fernandino L**, Iaconi M, Zaidel E. The effects of bilateral presentations on lateralized lexical decision. *Brain Cogn.* 2007 Jun;64(1):60-7.
2. **Fernandino L**, Iaconi M. Are cortical motor maps based on body parts or coordinated actions? Implications for embodied semantics. *Brain Lang.* 2010 Jan;112(1):44-53.
3. Cho S, Moody TD, **Fernandino L**, Mumford JA, Poldrack RA, Cannon TD, Knowlton BJ, Holyoak KJ. Common and dissociable prefrontal loci associated with component mechanisms of analogical reasoning. *Cereb Cortex.* 2010 Mar;20(3):524-33.
4. **Fernandino L**, Conant LL, Binder JR, Blindauer K, Hiner B, Spangler K, Desai RH. Parkinson's disease disrupts both automatic and controlled processing of action verbs. *Brain Lang.* 2013 Oct;127(1):65-74.

PMCID: PMC3574625

5. **Fernandino L**, Conant LL, Binder JR, Blindauer K, Hiner B, Spangler K, Desai RH. Where is the action? Action sentence processing in Parkinson's disease. *Neuropsychologia*. 2013 Jul;51(8):1510-7. PMCID: PMC3731159
6. **Fernandino L**, Humphries CJ, Seidenberg MS, Gross WL, Conant LL, Binder JR. Predicting brain activation patterns associated with individual lexical concepts based on five sensory-motor attributes. *Neuropsychologia*. 2015 Sep;76:17-26. PMCID: PMC4638171
7. **Fernandino L**, Binder JR, Desai RH, Pendl SL, Humphries CJ, Gross WL, Conant LL, Seidenberg MS. Concept Representation Reflects Multimodal Abstraction: A Framework for Embodied Semantics. *Cereb Cortex*. 2016 May;26(5):2018-34. PMCID: PMC4830284
8. **Fernandino L**, Humphries CJ, Conant LL, Seidenberg MS, Binder JR. Heteromodal Cortical Areas Encode Sensory-Motor Features of Word Meaning. *J Neurosci*. 2016 Sep 21;36(38):9763-9. PMCID: PMC5030346
9. Binder JR, Conant LL, Humphries CJ, **Fernandino L**, Simons SB, Aguilar M, Desai RH. Toward a brain-based componential semantic representation. *Cogn Neuropsychol*. 2016;33(3-4):130-74.
10. Anderson AJ, Binder JR, **Fernandino L**, Humphries CJ, Conant LL, Aguilar M, Wang X, Doko D, Raizada RDS. Predicting Neural Activity Patterns Associated with Sentences Using a Neurobiologically Motivated Model of Semantic Representation. *Cereb Cortex*. 2017 Sep 01;27(9):4379-4395.
11. Anderson AJ, Lalor EC, Lin F, Binder JR, **Fernandino L**, Humphries CJ, Conant LL, Raizada RDS, Grimm S, Wang X. Multiple Regions of a Cortical Network Commonly Encode the Meaning of Words in Multiple Grammatical Positions of Read Sentences. *Cereb Cortex*. 2019 Jun 01;29(6):2396-2411.
12. Anderson AJ, Binder JR, **Fernandino L**, Humphries CJ, Conant LL, Raizada RDS, Lin F, Lalor EC. An Integrated Neural Decoder of Linguistic and Experiential Meaning. *J Neurosci*. 2019 Nov 06;39(45):8969-8987. PMCID: PMC6832686
13. Anderson AJ, Kiela D, Binder JR, **Fernandino L**, Humphries CJ, Conant LL, Raizada RDS, Grimm S, Lalor EC. Deep Artificial Neural Networks Reveal a Distributed Cortical Network Encoding Propositional Sentence-Level Meaning. *J Neurosci*. 2021 May 05;41(18):4100-4119. PMCID: PMC8176751
14. **Fernandino L**, Tong JQ, Conant LL, Humphries CJ, Binder JR. Decoding the information structure underlying the neural representation of concepts. *Proc Natl Acad Sci U S A*. 2022 Feb 08;119(6). PMCID: PMC8832989
15. Tong J, Binder JR, Humphries C, Mazurchuk S, Conant LL, **Fernandino L**. A Distributed Network for Multimodal Experiential Representation of Concepts. *J Neurosci*. 2022 Sep 14;42(37):7121-7130. PMCID: PMC9480893
16. Mazurchuk S, Conant LL, Tong JQ, Binder JR, **Fernandino L**. Stimulus repetition and sample size considerations in item-level representational similarity analysis. *Language, Cognition and Neuroscience*. 2023: 1-12.
17. Uddin LQ, **Fernandino L**, Neta M, Greene DJ, Mooshagian E. Hemispheric specialization and interhemispheric interaction - From perception to consciousness: Introduction to a special issue in honor of Eran Zaidel (1944-2021). *Neuropsychologia*. 2023 Dec 15;191:108725.
18. **Fernandino L**, Binder JR. How does the "default mode" network contribute to semantic cognition? *Brain Lang*. 2024 May;252:105405. PMCID: PMC11135161
19. Mazurchuk S, **Fernandino L**, Tong JQ, Conant LL, Binder JR. The neural representation of body part concepts. *Cereb Cortex*. 2024 Jun 04;34(6). PMCID: PMC11166504
20. **Fernandino L**, Conant LL. The primacy of experience in language processing: Semantic priming is driven primarily by experiential similarity. *Neuropsychologia*. 2024 Aug 13;201:108939. PMCID: PMC11326522
21. Tong J, Binder JR, Conant LL, Mazurchuk S, Anderson AJ, **Fernandino L** (submitted). A common representational code for object and event concepts.
22. Reilly J., Shain C., Borghesani V., Kuhnke P., Vigliocco G., Peelle J. E., Mahon B. Z., Buxbaum L. J., Majid A., Brysbaert M., Borghi A. M., Deyne S. D., Dove G., Papeo L., Pexman P. M., Poeppel D., Lupyan G., Boggio P., Hickok G., Gwilliams L, **Fernandino L**, ... Vinson D. (2024). What we mean when we say semantic: Toward a multidisciplinary semantic glossary. *Psychonomic Bulletin & Review*, 1–38. <https://doi.org/10.3758/s13423-024-02556-7>

Books, Chapters, and Reviews

1. Binder, JR, **Fernandino, L**. Semantic processing. In *Brain Mapping: An Encyclopedic Reference*, Toga, AW,

- ed. 2015. Elsevier/Academic Press, Netherlands.
2. Binder, JR, **Fernandino, L**. Neural processing of word meaning. In: *The Cognitive Neurosciences VI*, Poeppel D, Mangun GR, Gazzaniga MS, eds. 2020. MIT Press, Cambridge, MA.
 3. **Fernandino L**, Binder JR. Concept representation. In: *Encyclopedia of the Human Brain, 2nd Edition*, Grafman J, ed. 2024, Sep 16. Elsevier, London.
 4. **Fernandino L**, Binder, JR. Semantic Memory. In: *Learning and Memory: A Comprehensive Reference, 3rd edition*. Wixted J, ed. In press. Elsevier/Academic Press, Amsterdam.
 5. Reilly J, Shain C, Borghesani V, Kuhnke P, Vigliocco G, Peelle JE, Mahon BZ, Buxbaum LJ, Majid A, Brysbaert M, Borghi AM, De Deyne S, Dove G, Papeo L, Pexman PM, Poeppel D, Lupyan G, Boggio P, Hickok G, Gwilliams L, **Fernandino L**, Mirman D, Chrysikou EG, Sandberg CW, Crutch SJ, Pylkkänen L, Yee E, Jackson RL, Rodd JM, Bedny M, Connell L, Kiefer M, Kemmerer D, de Zubicaray G, Jefferies E, Lynott D, Siew CSQ, Desai RH, McRae K, Diaz MT, Bolognesi M, Fedorenko E, Kiran S, Montefinese M, Binder JR, Yap MJ, Hartwigsen G, Cantlon J, Bi Y, Hoffman P, Garcea FE, Vinson D. What we mean when we say semantic: Toward a multidisciplinary semantic glossary. *Psychon Bull Rev*. 2024 Sep 04.
 6. Mazurchuk S, Conant LL, Tong JQ, Binder JR, **Fernandino L**. Stimulus Repetition and Sample Size Considerations in Item-Level Representational Similarity Analysis. *Lang Cogn Neurosci*. 2024;39(9):1161-1172. PMID: PMC11544752