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PROFESSIONAL EXPERIENCE

2021 – Present	**Professor of Psychology, Linguistics, & Neuroscience Penn State**
2014 – 2024	Director of Human Imaging, Social, Life, & Engineering Sciences Imaging Center (SLEIC), Pennsylvania State University
2014 – 2021	Associate Professor of Psychology, Linguistics, & Neuroscience Penn State
2010 – 2014	Assistant Professor of Psychiatry, Duke University
2010 – 2014	Associate Director - Brain Imaging & Analysis Center, Duke University
2007 - 2010	Instructor of Radiology, Duke University
2005 - 2010	Assistant Director - Brain Imaging & Analysis Center, Duke University

EDUCATION

Ph.D.	Duke University, May 2005 Department of Psychology Certificate in Cognitive Neuroscience Advisor: Gregory McCarthy, Ph.D.
M.A.	Duke University, May 2002 Department of Psychology Advisor: Tamara Swaab, Ph.D.
B.A	Pennsylvania State University, May 1999 Psychology, Student Marshal Advisor: Judith Kroll, Ph.D.

PUBLICATIONS

* indicates student or trainee

1. Reilly, J., Shain, C., Borghesani, V., Kuhnke, P., Vigliocco, G., Peelle, J. E., … Vinson, D. (In Press). What we mean when we say semantic: A Consensus statement on the nomenclature of semantic memory. *Psychnomic Bulletin & Review.* Retrieved from osf.io/preprints/psyarxiv/xrnb2

2. Wolna, A.*, Szewczyk, J., Diaz, M.T., Domagalik, A., Szwed, M., & Wodniecka, Z. (2024). Tracking components of bilingual language control in speech production: an fMRI study using functional localizers. *Neurobiology of Language.* doi: https://doi.org/10.1162/nol_a_00128

3. Wolna, A.*, Szewczyk, J., Diaz, M.T., Domagalik, A., Szwed, M., & Wodniecka, Z. (2024). Domain-general and language-specific contributions to speech production in L2: an fMRI study using functional localizers. *Scientific Reports,* 14, 57. https://doi.org/10.1038/s41598-023-49375-9

4. Kang, K., Xiao, Y., Yu, H., Diaz, M.T., Zhang, H. (2023). Multilingual language diversity protects native language production under different control demands. *Brain Sciences,* 13(11), 1587. https://doi.org/10.3390/brainsci13111587

5. Karimi, H.*, **Diaz, M.T**., & Wittenberg, E. (2023). Delayed onset facilitates subsequent retrieval of words during language comprehension. *Memory & Cognition.* https://doi.org/10.3758/s13421-023-01479-3

6. Lebkeuker, A.*, Cosgrove, A.L.*, Strober, L.B., Chiaravalloti, N.D., & **Diaz, M.T.** (2023). Multiple Sclerosis is associated with differences in semantic memory structure. *Neuropsychology, 38(1), 42-57.* NIHMS: 1919653. https://doi.org/10.1037/neu0000924

7. Zhang, H.* & **Diaz, M.T.** (2023). Resting state network segregation modulates age-related differences in language production. *Neurobiology of Language,* 4(2), 382–403. PMCID: PMC10403275. https://doi.org/10.1162/nol_a_00106

8. Zhang, H.* & **Diaz, M.T.** (2023). Task difficulty modulates age-related differences in functional connectivity during language production. *Brain and Language,* 240(105263). PMCID: PMC10164070 https://doi.org/10.1016/j.bandl.2023.105263

9. Cosgrove, A.L.*, Beaty, R.E., **Diaz, M.T.,** Kenett, Y.N. (2023). Age differences in semantic network structure: Acquiring knowledge shapes semantic memory. *Psychology & Aging,* 38(2), 87-102. PMCID: PMC10033378. https://doi.org/10.1037/pag0000721

10. **Diaz, M.T.,** Zhang, H.*, Cosgrove, A.L.*, Gertel, V.H.*, Troutman, S.B.W.*, & Karimi, H.* (2022). Neural sensitivity to semantic neighbors is stable across the adult lifespan. *Neuropsychologia, 171, 1-11.* PMCID: PMC10022434. https://doi.org/10.1016/j.neuropsychologia.2022.108237

11. **Diaz, M.T.** & Hernandez, A. (2022). The multifaceted nature of language across adulthood. *Brain and Language,* 230, 1-3. PMCID: PMC10249041. https://doi.org/10.1016/j.bandl.2022.105125

12. Troutman, S.B.W.*, Madden, D.J., & **Diaz, M.T.** (2022). Cerebral white matter mediation of age-related differences in picture naming across adulthood. *Neurobiology of Language,* 3(2), 272-286. PMCID: PMC9169883 https://doi.org/10.1162/nol_a_00065

13. Kałamała, P., Walther, J., Zhang, H.*, **Diaz, M.T.**, Senderecka, M., & Wodniecka, Z. (2022). Use of a second language enhances the neural efficiency of inhibitory control: an ERP study. *Bilingualism: Language and Cognition,* 25(1), *163-180*. https://doi.org/10.1017/S1366728921000389

14. Zhang, H.*, **Diaz, M.T.,** Guo, T., & Kroll, J.F. (2021). Language immersion and language training: Two paths to enhanced language regulation and cognitive control. *Brain & Language,* 223*, 1-12.* https://doi.org/10.1016/j.bandl.2021.105043

15. Karimi, H.* & **Diaz, M.T.** (2021). Age-related differences in the retrieval of phonologically similar words during sentence processing: Evidence from ERPs. *Brain & Language,* 220, 1-17. PMCID: PMC8564888 https://doi.org/10.1016/j.bandl.2021.104982

16. Cosgrove, A.L.*, Kenett, Y.N., Beaty, R.E., & **Diaz, M.T.** (2021). Quantifying flexibility in thought: The resiliency of semantic networks differs across the lifespan. *Cognition,* 211, 104631. PMCID: PMC8058279 https://doi.org/10.1016/j.cognition.2021.104631

17. Zhang, H.*, Bai, X., & **Diaz, M.T.** (2021). The intensity and connectivity of spontaneous brain activity in a language network relate to aging and language. *Neuropsychologia,* 154, 107784. PMCID: PMC7957965. https://doi.org/10.1016/j.neuropsychologia.2021.107784

18. Zhuang, J.*, Madden, D.J., Cunha, P., Badea, A., Davis, S.W., Potter, G.G., Lad, E.M., Cousins, S.W., Chen, N.K., Allen, K., Maciejewski, A.J., Fernandez, X.D., **Diaz, M.T.,** & Whitson, H.E. (2021). Cerebral white matter connectivity, cognition, and age-related macular degeneration. *Neuroimage: Clinical,* 30,102594. PMCID: PMC7930609 https://doi.org/10.1016/j.nicl.2021.102594

19. **Diaz, M.T.**, Karimi, H.*, Troutman, S.B.W.*, Gertel, V.H.*, Cosgrove, A.L.*, & Zhang, H.* (2021). Neural sensitivity to phonological characteristics is stable across the lifespan. *Neuroimage,* 225, PMCID: PMC7812596. https://doi.org/10.1016/j.neuroimage.2020.117511

20. Zhang, H.*, Gertel, V.H.*, Cosgrove, A.L.*, & **Diaz, M.T.** (2021). Age-related differences in resting-state and task-based network measures and cognition. *Neurobiology of Aging,*101, 262-272*.* PMCID: PMC8122017. https://doi.org/10.1016/j.neurobiolaging.2020.10.025

21. **Diaz, M.T.** & Yalcinbas, E.* (2021). The neural bases of multimodal sensory integration in older adults. *International Journal of Behavioral Development,* 1-9. NIHMSID: 1648399. https://doi.org/10.1177/0165025420979362

22. Rossi, E., Dussias, P.E., **Diaz, M.T.**, van Hell, J.G., & Newman, S. (2021). Neural signatures of inhibitory control in intra-sentential code-switching: Evidence from fMRI. *Journal of Neurolinguistics,* 57. PMCID: PMC7861471. https://doi.org/10.1016/j.jneuroling.2020.100938

23. Karimi, H.*, **Diaz, M.T**., & Ferreira, F. (2021). Misspoken words complicate the subsequent retrieval of intended words: Evidence from referential processing. *Language, Cognition, & Neuroscience. 36(2),135-151,* https://doi.org/10.1080/23273798.2020.1802052

24. Karimi, H.*, **Diaz, M.T**., & Wittenberg, E. (2020). Sheer time spent expecting or maintaining a representation facilitates subsequent retrieval during sentence processing. In S. Denison., M. Mack, Y. Xu, & B.C. Armstrong (Eds.), *Proceedings of the 42nd Annual Conference of the Cognitive Science Society* (pp. 2728-2734). Cognitive Science Society. NIHMSID: 1898120. https://cognitivesciencesociety.org/wp-content/uploads/2020/07/cogsci20_proceedings_final.pdf

25. Karimi, H.* & **Diaz, M.T.** (2020). When phonological neighborhood density both facilitates and impedes: Age of acquisition and name agreement interact with phonological neighborhood during word production. *Memory & Cognition*, 48, 1061-1072. PMCID: PMC7787263. https://doi.org/10.3758/s13421-020-01042-4

26. Gertel, V.H.*, Zhang, H.*, & **Diaz, M.T.** (2020). Stronger right hemisphere functional connectivity supports executive aspects of language in older adults. *Brain & Language,* 206*.* PMCID: PMC7754257. https://doi.org/10.1016/j.bandl.2020.104771

27. Gertel, V.H.*, Karimi, H.*, Dennis, N.A., Neely, K.A., & **Diaz, M.T.** (2020). Lexical frequency affects functional activation and accuracy in word naming among older and younger adults. *Psychology & Aging,* 35(4), 536–552. PMCID: PMC7805087. https://doi.org/10.1037/pag0000454

28. Troutman, S.B.W.* & **Diaz, M.T.** (2020). White matter disconnection is related to age-related phonological deficits. *Brain Imaging & Behavior, 14(5), 1555-1565.* PMCID: PMC7034773. https://doi.org/10.1007/s11682-019-00086-8

29. Gerver, C.R.*, Neely, K.A., Kurkela, K.A.*, **Diaz, M.T.**, Goodman, J.T.*, Blouch, S.*, Samimy, S.*, & Dennis, N.A. (2019). Shared neural recruitment across working memory and motor control tasks as a function of task difficulty and age. *Aging, Neuropsychology, and Cognition.* PMCID: PMC7316585. https://doi.org/10.1080/13825585.2019.1700898

30. Zhang, H.*, Carlson, M.T., & **Diaz, M.T.** (2019). Investigating the effects of phonological neighbours on word retrieval and phonetic variation in word naming and picture naming paradigms. *Language, Cognition, & Neuroscience*. PMCID: PMC7540183. https://www.tandfonline.com/doi/full/10.1080/23273798.2019.1686529

31. Karimi, H.*, **Diaz, M.T**., & Ferreira, F. (2019). "A cruel king" is not the same as "a king who is cruel": Modifier position affects how words are encoded and retrieved from memory. *Journal of Experimental Psychology: Language, Memory, and Cognition,* 45(11), 2010–2035. PMCID: PMC7034774. https://doi.org/10.1037/xlm0000694

32. Zhang, H.*, Eppes, A.*, & **Diaz, M.T.** (2019). Task difficulty modulates age-related differences in the behavioral and neural bases of language production. *Neuropsychologia,* 124, 254-273. PMCID: PMC6392062. https://doi.org/10.1016/j.neuropsychologia.2018.11.017

33. **Diaz, M.T**., Johnson, M.A.*, Burke, D.M., Truong, T., & Madden, D.M. (2019). Age-related differences in the influence of task-irrelevant information on the neural bases of phonological and semantic processes. *Cognitive, Affective, and Behavioral Neuroscience,* 19(4) 829-844. PMCID: PMC6538491. https://doi.org/10.3758/s13415-018-00671-2

34. Rossi, E., Prystauka*, Y., & **Diaz, M.T.** (2019). Investigating L1 attrition and language change: neuroimaging perspectives. In M. Keijzer & B. Köpke (Eds.), Handbook of Language Attrition. Oxford: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780198793595.013.14

35. Zhang, H.*, Eppes, A.*, Beatty-Martinez, A.*, Navarro-Torres, C.*, & **Diaz, M.T.** (2018). Task difficulty modulates brain-behavior correlations in language production and cognitive control: Behavioral and fMRI evidence from a phonological Go – No-Go picture naming paradigm. *Cognitive, Affective, and Behavioral Neuroscience,* 18 (5), 964–981. PMCID: PMC6301137. https://doi.org/10.3758/s13415-018-0616-2

36. Rossi, E., Newman, S., Kroll, J.F., & **Diaz, M.T.** (2018). Neural signatures of inhibitory control in bilingual spoken production. *Cortex,* 108, 50-66. PMCID: PMC6375513. https://doi.org/10.1016/j.cortex.2018.07.009

37. **Diaz, M.T.,** & Eppes, A.* (2018). Factors influencing right hemisphere engagement during metaphor comprehension. *Frontiers in Psychology,* 9:414. PMCID: PMC5883147. https://doi.org/10.3389/fpsyg.2018.00414

38. Zhuang*, J., Madden, D.J., Duong-Fernandez*, X., Chen, N., Cousins, S.W., Potter, G.G., **Diaz, M.T.,** Whitson, H.E. (2018). Language processing in age-related macular degeneration associated with unique functional connectivity signatures in the right hemisphere. *Neurobiology of Aging,* 63, 65-74. PMCID: PMC5801145. https://doi.org/10.1016/j.neurobiolaging.2017.11.003

39. Ferri, J., Ford, J.M., Roach, B.J., Turner, J.A., Van Erp, T.G., Voyvodic, J., Preda, A., Belger, A., Bustillo, J., O'Leary, D., Mueller, B.A., Lim, K.O., McEwen, S.C., Calhoun, V.D., **Diaz, M.T.**, Glover, G., Greve, D., Wible, C.G., Vaidya, J.G., Potkin, S.G., & Mathalon D.H. (2018). Resting-state thalamic dysconnectivity in schizophrenia and relationships with symptoms. *Psychological Medicine,* 48, 15, 2492-2499. PMID: 29444726 https://doi.org/10.1017/S003329171800003X

40. Rossi, E., Cheng, H., Kroll, J.F., **Diaz, M.T.,** & Newman, S.D. (2017). Changes in white-matter connectivity in late second language learners: Evidence from diffusion tensor imaging. *Frontiers in Psychology,* 8:2040. PMCID: PMC5702476. https://doi.org/10.3389/fpsyg.2017.02040

41. Neely, K.A., Samimy, S.*, Blouch, S.*, Wang, P.*, Chennavasin, A.*, **Diaz, M.T**., & Dennis, N.A. (2017). Memory-guided force control in healthy younger and older adults. *Experimental Brain Research,* 235(8), 2473-2482. PMCID: PMC5518468. https://doi.org/10.1007/s00221-017-4987-3

42. Gilmore, R.O., **Diaz, M.T.**, Wyble, B.A., & Yarkoni, T. (2017). Progress toward openness, transparency, and reproducibility in cognitive neuroscience. *Annals of the New York Academy of Sciences, 1396(1), 5–18.* PMCID: PMC5545750. https://doi.org/10.1111/nyas.13325

43. Rizio, A.A.*, Moyer, K.J.*, & **Diaz, M. T.** (2017). Neural evidence for phonologically-based language production deficits in older adults: An fMRI investigation of age-related differences in picture-word interference. *Brain and Behavior,* 15:7(4), 1-19. PMCID: PMC5390840. https://doi.org/10.1002/brb3.660

44. Rossi, E., **Diaz, M.T.**, Kroll, J.F., & Dussias, P.E. (2017). Late bilinguals are sensitive to unique aspects of second language processing: Evidence from clitic pronoun word order. *Frontiers in Psychology: Cognitive Science. 8:342, 1-13.* PMCID: PMC5355469. https://doi.org/10.3389/fpsyg.2017.00342

45. Madden, D.J., Parks, E.L.*, Tallman, C.W.*, Boylan, M.A.*, Hoagey, D.A.*, Cocjin, S.B.*, Packard, L.E., Johnson, M.A.*, Chou, Y., Potter, G.G., Chen, N., Siciliano, R.E., Monge, Z.A.*, Honig, J.A.*, **Diaz, M.T.** (2017). Sources of disconnection in neurocognitive aging: Cerebral white matter integrity, resting-state functional connectivity, and white matter hyperintensity volume. *Neurobiology of Aging,* 54, 199–213. PMCID: PMC5401777. https://doi.org/10.1016/j.neurobiolaging.2017.01.027

46. Chou, Y., Sunderman, M.*, Whitson, H.E., Gaur, P.*, Chu, M., Weingarten, C.P., Madden, D.J., Wang, L., Kirste, I.*, Joliot, M., **Diaz, M.T.,** Li, Y-J., Song, A.W., and Chen, N. (2017). Regulation and representation of mind wandering during resting-State fMRI. *Nature: Scientific Reports, 7(40722), 1-11.* PMCID: PMC5227708. https://doi.org/10.1038/srep40722

47. Madden, D.J., Parks, E.L.*, Tallman, C.*, Boylan, M.*, Hoagey, D.A.*, Cocjin, S.B.*, Johnson, M.A.*, Chou, Y., Potter, G.G., Chen, N.K., Packard, L., Siciliano, R., Monge, Z.*, & **Diaz, M.T.** (2017). Frontoparietal activation during visual conjunction search: Effects of bottom-up guidance and adult age. *Human Brain Mapping,* 38(4), 2128-2149. PMCID: PMC5342935. https://doi.org/10.1002/hbm.23509

48. Zhuang, J.*, Johnson, M.A.*, Madden, D.J., Burke, D.M., & **Diaz, M.T.** (2016). Age-related differences in resolving semantic and phonological competition during receptive language tasks. *Neuropsychologia,* 93(A), 189-199. PMCID: PMC5362309. http://dx.doi.org/10.1016/j.neuropsychologia.2016.10.016

49. **Diaz, M.T.,** Rizio, A.A.*, & Zhuang, J.* (2016). The neural language systems that support healthy aging: Integrating function, structure, and behavior. *Language & Linguistic Compass,* 10(7), 314-334. PMCID: PMC4955947. https://doi.org/10.1111/lnc3.12199

50. Rizio, A.A.* & **Diaz, M.T.** (2016). Language, aging, and cognition: Frontal aslant tract and superior longitudinal fasciculus contribute toward working memory performance in older adults. *Neuroreport,* 27(9), 689-93. PMCID: PMC4955947. https://doi.org/10.1097/WNR.0000000000000597

51. Rossi, E. & **Diaz, M.T.** (2016). How aging and bilingualism influence language production: theoretical and neural models. *Linguistic Approaches to Bilingualism,* 6(1), 9-42. PMCID: PMC5600288. https://doi.org/10.1075/lab.14029.ros

52. Keator, D.B., van Erp, T.G.M., Turner, J.A., Glover, G.H., Mueller, B.A., Liu, T.T., Voyvodic, J.T., Rasmussen, J., Calhoun, V.D., Lee, J.D., Toga, A.W., McEwen, S, Ford, J.M., Mathalon, D.H., **Diaz, M.T.**, O'Leary, D.S., Bockholt, J., Gadde, S., Preda, A., Wible, C.G., Stern, H.S., Belger, A., McCarthy, G., Lim, K.O., Ozyurt, B., Brown, G.G., Potkin, S.G., & Function BIRN. (2016). The Function Biomedical Informatics Research Network Data Repository. *Neuroimage,* 124, Part B, 1074–1079. PMCID: PMC4651841. https://doi.org/10.1016/j.neuroimage.2015.09.003

53. Whitson, H.E., Chou, Y., Potter, G., **Diaz, M.T.,** Chen, N., Lad, E., Johnson, M.A.*, Cousins, S., & Madden, D.J. (2015). Phonemic fluency and resting state brain connectivity in age-related macular degeneration: A pilot study. Brain Connectivity, 5(2), 126-135. PMCID: PMC3674832. https://doi.org/10.1089/brain.2014.0277

54. Liu, T.T., Glover, G.H., Mueller, B.A., Greve, D.N., Rasmussen, J., Voyvodic, J.T., Turner, J.A., van Erp, T.G.M., Lu, K., Brown, G.G., Keator, D.B., Calhoun, V.D., Lee, H.J., Ford, J.M., Mathalon, D.H., Jorgensen, K., **Diaz, M.T.**, O'Leary, D.S., Gadde, S, Preda, A, Lim, K.O., Wible, C.G., Stern, H.S., Belger, A., McCarthy, G., Ozyurt, B., Potkin, S.G., FBIRN. (2015). Quality assurance in functional MRI. In K. Uludag, K. Ugurbil, & L.J. Berliner (Eds.), *fMRI: From Nuclear Spins to Brain Functions* (pp. 245-270). New York: Springer Publishing. https://doi.org/10.1007/978-1-4899-7591-1_10

55. Fryer, S., Roach, B., Ford, J., Turner, J., Van Erp, T., Voyvodic, J., Preda, A., Belger, A., Bustillo, J., O'Leary, D., Mueller, B., Lim, K., McEwen, S., Calhoun, V., **Diaz, M.T.,** Glover, G.H., Greve, D., Wible, C., Vaidya, J., Potkin, S.G., and Mathalon, D. (2015). Relating intrinsic low frequency bold cortical oscillations to cognition in schizophrenia. *Neuropsychopharmacology,* 40, 2705–2714; PMCID: PMC4864646. https://doi.org/10.1038/npp.2015.119

56. **Diaz, M.T.,** Johnson, M.A.*, Burke, D.M., & Madden, D. J. (2014). Age-related differences in the neural bases of phonological and semantic processes. *Journal of Cognitive Neuroscience, 26(12),* 2798-2811. PMCID: PMC4216243. https://doi.org/10.1162/jocn_a_00665

57. Johnson, M.A.*, **Diaz, M.T.**, & Madden, D.J. (2014). Global versus tract-specific components of cerebral white matter integrity: Relation to adult age and perceptual-motor speed. *Brain Structure & Function.* PMCID: PMC4277942. https://doi.org/10.1007/s00429-014-0822-9

58. Madden, D.J., Parks, E.L.*, Davis, S.W., **Diaz, M.T.,** Potter, G.G., Chou, Y.H., Chen, N.K., & Cabeza, R. (2014). Age mediation of fronto-parietal activation during visual feature search. *Neuroimage,* 102(2), 262-274. PMCID: PMC4253678. https://doi.org/10.1016/j.neuroimage.2014.07.053

59. **Diaz, M.T.,** Hogstrom, L.J.*, Zhuang, J.*, Voyvodic, J.T., Johnson, M.J.* & Camblin, C.C.*. (2014). The influence of written distractor words on brain activity during overt picture naming. *Frontiers in Human Neuroscience. 8:167,* 1-11. PMCID: PMC3970014. https://doi.org/10.3389/fnhum.2014.00167

60. Greve, D.N., Duntley, S.P., Larson-Prior, L., Krystal, A.D., **Diaz, M.T.**, Drummond, S.P., Thein, S.G., Kushida, C.A., Yang, R., & Thomas, R.J. (2014). Effect of armodafinil on cortical activity and working memory in patients with residual excessive sleepiness associated with CPAP-Treated OSA: a multicenter fMRI study. *Journal of Clinical Sleep Medicine*, 10(2), 143-53. PMCID: PMC3899316. https://doi.org/10.5664/jcsm.3440

61. Van Erp, T.G.M., Guella, I., Vawter, M.P. Turner, J., Brown, G.G., McCarthy, G., Greve, D.N., Glover, G.H., Calhoun, V.D., Lim, K.O., Bustillo, J.R., Belger , A., Ford, J.M., Mathalon, D.H., **Diaz, M.T.,**

Preda, A., Nguyen, D., Macciardi, F., & Potkin, S.G.. (2014). Schizophrenia miR-137 Locus Risk Genotype is Associated with DLPFC Hyperactivation. *Biological Psychiatry,* 75(5), 398-405. PMCID: PMC4428556. https://doi.org/10.1016/j.biopsych.2013.06.016

62. Glover, G.H., Mueller, B., Van Erp, T., Liu, T.T., Greve, D., Voyvodic, J., Rasmussen, J., Turner, J., Brown, G.G., Keator, D.B., Calhoun, V.D., Lee, H.J., Ford, J., **Diaz, M.T.**, O'Leary, D.S., Potkin, S.G., FBIRN. (2012). Function biomedical informatics research network recommendations for prospective multi-center functional neuroimaging studies. *Journal of Magnetic Resonance Imaging,* 36 (1), 39-54. PMCID: PMC3349791. https://doi.org/10.1002/jmri.23572

63. **Diaz, M.T. &** Hogstrom, L.J.* (2011). The influence of context on hemispheric recruitment during metaphor processing. *Journal of Cognitive Neuroscience,* 23(11), 3586-3597. PMCID: PMC3175018. https://doi.org/10.1162/jocn_a_00053

64. **Diaz, M.T.**, He, G., Gadde, S., Bellion, C., Belger, A., Voyvodic, J.T., & McCarthy, G. (2011). The influence of emotional distraction on verbal working memory: An fMRI investigation comparing individuals with schizophrenia and healthy adults. *Journal of Psychiatric Research,* 45 (9), 1184-1193. PMCID: PMC3131474. https://doi.org/10.1016/j.jpsychires.2011.02.008

65. **Diaz, M.T.**, Barrett, K.T.*, & Hogstrom, L.J.* (2011). The influence of sentence novelty and figurativeness on brain activity. *Neuropsychologia*, 49 (3), 320-330. PMCID: PMC3034783. https://doi.org/10.1016/j.neuropsychologia.2010.12.004

66. Greve, D.N., Mueller, B.A., Liu, T., Turner, J.A., Potkin, S.G., Voyvodic, J.T., **Diaz, M.T.**, Wallace, S., Yetter, E., Roach, B.J., Ford, J.M., Mathalon, D.H., Wible, C.G., & Glover, G. (2011). A novel method for quantifying scanner instability in fMRI. *Magnetic Resonance in Medicine*, 65(4), 1053-61. PMCID: PMC3117086. https://doi.org/10.1002/mrm.22691

67. Brown, G.G., Mathalon, D., Stern, H., Ford, J., Mueller, B., Greve, D., McCarthy, G., Voyvodic J., Glover, G., **Diaz, M.T.,** Yetter, E., Ozyurt, B., Jorgensen, K.W., Wible, C., Turner, J., Thompson, W.K., Potkin, S., and the FBIRN. (2011). Multisite reliability of cognitive BOLD data. *Neuroimage*, 54(3), 2163-75. PMCID: PMC3009557. https://doi.org/10.1016/j.neuroimage.2010.09.076

68. Wible, C.G., Lee, K., Molina, I., Hashimoto, R., Preus, A.P., Roach, B.J., Ford, J.M., Mathalon, D.H., McCarthy, G., Turner, J.A., Potkin, S.G., O'Leary, D., Belger, A., **Diaz, M.**, Voyvodic, J., Brown, G.G., Notestine, R., Greve, D., Lauriello, J., FBIRN (2009). FMRI activity correlated with auditory hallucinations during performance of a working memory task: Data from the FBIRN consortium study. *Schizophrenia Bulletin*, 35, 1, 47-57. PMCID: PMC2643958. https://doi.org/10.1093/schbul/sbn142

69. Segall, J.M., Turner, J.A., van Erp, T.G.M., White, T., Bockholt, H.J., Gollub, R.L., Ho, B.C., Magnotta, V., Jung, R.E., McCarley, R.W., Schulz, S.C., Lauriello, J., Clark, V.P., Voyvodic, J.T., **Diaz, M.T.**, Calhoun, V.D. (2009). Voxel-based morphometric multi-site collaborative study on schizophrenia. *Schizophrenia Bulletin*, 35, 1, 82-95. PMCID: PMC2643956. https://doi.org/10.1093/schbul/sbn150

70. Potkin, S. G., Turner, J. A., Brown, G. G., McCarthy, G., Greve, D. N., Glover, G. H., Manoach, D. S, Belger, A, **Diaz, M.T.**, Wible, C. G, Ford, J. M, Mathalon, D. H, Gollub, R, Lauriello, J, O'Leary, D, van Erp, T. G. M, Toga, A. W, Preda, A, and Lim, K. O. (2009). Working memory and DLPFC inefficiency in schizophrenia: The FBIRN study. *Schizophrenia Bulletin*, 35(1), 19-31. PMCID: PMC2643959. https://doi.org/10.1093/schbul/sbn162

71. **Diaz, M.T**. & McCarthy, G. (2009). A comparison of brain activity evoked by single content and function words: An fMRI investigation of implicit word processing. *Brain Research*, 1282, 38-49. PMCID: PMC2755079. https://doi.org/10.1016/j.brainres.2009.05.043

72. **Diaz, M.T**. & Swaab, T.Y. (2007). Electrophysiological differentiation of phonological and semantic integration in word and sentence contexts. *Brain Research,* 1146, 85-100. PMCID: PMC1853329. https://doi.org/10.1016/j.brainres.2006.07.034

73. Schwartz, A.I, Kroll, J.F., & **Diaz, M.T.** (2007). Reading words in Spanish and English: Mapping orthography to phonology in two languages. *Language and Cognitive Processes,* 22:1, 106 - 129. https://doi.org/10.1080/01690960500463920

74. **Diaz, M.T.** & McCarthy, G. (2007). Unconscious word processing engages a distributed network of brain regions. *Journal of Cognitive Neuroscience, 19(11)*, 1768-1775. PMID: 17958480. https://doi.org/10.1162/jocn.2007.19.11.1768

75. Robertson, B., Wang, L., **Diaz, M.T**., Aiello, M., Gersing, K., Beyer, J., Mukundan, S., McCarthy, G., & Doraiswamy, P.M. (2007). Effect of Bupropion XL on negative emotion processing in major depression: A pilot functional MRI study. *The Journal of Clinical Psychiatry*, 68(2), 261-267. PMID: 17335325. https://doi.org/10.4088/jcp.v68n0212

CURRENT RESEARCH SUPPORT

NSF (Kroll/Diaz) 5/01/2024- 4/30/25

"Two Hypotheses about the Source of Bilingualism Resilience and Reserve"

Bilingualism creates a range of cognitive and neural consequences across the lifespan. But we know almost nothing about which aspects of using two languages produce these consequences. One of the most provocative findings about the consequences of bilingualism are for older adults for whom life as a bilingual appears to protect against cognitive and neural decline. We take a developmental approach, using behavioral, computational, and neuroscience tools, comparing younger and older monolingual and bilingual adults to investigate the stability of language processes across the lifespan. The goal is to understand how language itself and its regulation in bilingual speakers might come to create resilience over the lifespan.

Role: Consultant

R01 AG034138 (Diaz) 5/01/2010- 5/30/24

NIH/NIA

"Neuroimaging of Age-Related Changes in Language"

Adult development is often associated with physical and cognitive decline. However, semantic processing is an area of cognition in which many abilities are largely preserved. In contrast, specific deficits in phonological retrieval have been observed. This pattern of age-related changes in semantic and phonological processes suggests a fundamental difference in the cognitive organization of these two abilities. The goal of this project is to use behavioral measures, diffusion tensor imaging (DTI), and functional magnetic resonance imaging (fMRI) to investigate phonological and semantic processes in older and younger adults to elucidate patterns of sparing and decline that are associated with healthy aging.

Role: Principal Investigator

T32 T32-AG049676 (PI: Almeida/Martire) 05/01/2016 – 04/30/2026

NIH/NIA

"Psychosocial Determinants and Biological Pathways to Healthy Aging" (PATHWAYS)

We propose to build on our established track record of successful pre-doctoral and post-doctoral training that focuses on "Psychosocial Determinants and Biological Pathways to Healthy Aging" (PATHWAYS). The PATHWAYS training program will fill a unique niche in the NIA portfolio by providing cutting-edge training to graduate students and post-doctoral scholars who are focused on understanding the linkages among behavioral, psychosocial and biological mechanisms that underlie healthy aging. Examples of these types of research topics include understanding the role daily stress plays in shaping long-term health trajectories; tracking the enduring effects of early childhood adversity and chronic stress on momentary self-regulation; elucidating the endocrine and inflammatory processes underlying cognitive aging; and linking chronic sleep deficiency to cardiometabolic outcomes. These examples illustrate that aging science is multidisciplinary and complex, requiring analytic skills that link variables measured at multiple levels of analysis (e.g., biology, behavior, social context) and across multiple timescales (e.g., moments, days, years). For these reasons, it is essential that the next generation of aging scientists be able to integrate research that spans from basic biology to complex social phenomena as well as be skilled in the application of advanced data acquisition and analytic methods.

Role: Investigator/Mentor, Member Executive Board

NSF PIRE (PIs: Kroll, Dusias, Lipski, Van Hell) 05/01/16 – 03/31/25

"Translating cognitive and brain science in the laboratory and field to language learning environments"

Research on the language and learning sciences has grown at a remarkable pace in the past decade, in part due to the contributions of cross-disciplinary approaches that merge the power of behavioral, neuroscience, and computational methods. The award of a PIRE grant in 2010 facilitated the development of a broad and sustainable international research network. That network enabled new discoveries about the consequences of bilingual and multilingual experience for learning and for the brain. The current proposal harnesses the excitement about these discoveries to ask how the basic science might be translated, to transform educational practice and policy, and to serve a changing population whose language experience is linguistically broad, culturally more diverse, and international. We will bring brain science to the classroom for children and older learners, investigate diverse language learning environments, and examine the consequences of bilingualism across the lifespan for education and health.

Role: Investigator

CONFERENCE PRESENTATIONS

* indicates student collaborators

1. **Diaz, M.T.**, Cosgrove, A.L., Zhang, H., Gertel, V.H. (2023). How aging affects the neural basis of phonological neighborhood density and frequency. Poster presented at the 15th Annual meeting of the Society for the Neurobiology of Language, Marseille France.
2. Wolna, A., Szewczyk, J., **Diaz, M.T.,** Domagalik, A., Szwed, M., Wodniecka, Z., & Fedorenko, E. (2023). Broca is alive and well: an articulation-selective area in the left inferior frontal gyrus, distinct from nearby language and Multiple Demand areas. Poster presented at the 15th Annual meeting of the Society for the Neurobiology of Language, Marseille France.
3. Zeitlan, D., Beaty, R.E., Gasper, K., & **Diaz, M.T.** (2023). Investigating Links Between Brain Networks and Everyday Experiences of Emotion and Creativity. Poster presented at the 2023 APA Conference, Washington D.C.
4. Zhang, H. & **Diaz, M.T.** (2022). Resting State Network Segregation Modulates Age-Related Differences in Language Production: A Lifespan Sample. Poster presented at the 63rd meeting of the Psychonomics Society, Boston, MA.
5. Cosgrove, A.L. & **Diaz, M.T.** (2022). How Aging Shapes Semantic Memory: Exploring the Relationships between Language Abilities, Network Construction, and Word Characteristics on Semantic Network Structure in Younger and Older Adults. Poster presented at the 14th meeting of the Society for the Neurobiology of Language.
6. Cosgrove, A.L. Beaty, R. E., **Diaz, M. T.,** & Kenett, Y. N. (2022). Acquiring knowledge with aging shapes semantic network structure. Poster presented at the International Workshop on Language Production.

7. Cosgrove, A.L.* & **Diaz, M.T.** (2021). Semantic networks across the lifespan: examining local network sensitivity and individual differences. Presentation at the 13th meeting of the Society for the Neurobiology of Language (virtual).
8. Zhang, H.*, Cosgrove, A.L.*, & **Diaz, M.T.** (2021). Resting-state functional connectivity relates to aging and language production. Presentation at the 13th meeting of the Society for the Neurobiology of Language (virtual).
9. Heller, N.J.*, Troutman, S.B.W.*, & **Diaz, M.T.** (2021). Measuring Neural Grey Matter Correlations with Semantic Ability in Younger and Older Adults. Presentation at the 13th meeting of the Society for the Neurobiology of Language (virtual).
10. Karimi, H., **Diaz, M.T**., & Wittenberg, E. (2021). Longer encoding times facilitate subsequent retrieval during sentence processing. Poster presented at the 34th CUNY Conference on Human Sentence Processing (virtual).
11. Cosgrove, A.L.*, Zhang, H., & **Diaz, M.T.** (2020). Do Our Storytelling Abilities Differ Across the Lifespan? Exploring the Underlying Neural Mechanisms Related to Discourse Production. Poster presented at the 61st meeting of the Psychonomics Society, Austin, TX (virtual).
12. **Diaz, M.T.,** Zhang, H.*, Cosgrove, A.L.*, Gertel, V.H.*, Karimi, H.*, Troutman, S.B.W.*, Barnum, O., Eads, A., Henderson, M., & Lebkeucher, A.* (2020). Neural sensitivity to close phonological neighbors is consistent across the lifespan. Poster presented at the 12th meeting of the Society for the Neurobiology of Language, Philadelphia, PA (virtual).
13. Troutman, S.B.W.*, Henderson, M., & **Diaz, M.T.** (2020). White matter independently mediates age-related production deficits. Poster presented at the 12th meeting of the Society for the Neurobiology of Language, Philadelphia, PA (virtual).
14. Cosgrove, A.L*, Kenett, Y., Beatty, R., & **Diaz, M.T.** (2020). Quantifying flexibility in thought: The resiliency of semantic networks differs across the lifespan. Poster presented at the 12th meeting of the Society for the Neurobiology of Language, Philadelphia, PA (virtual).
15. Zhang, H.*, Bai, X.X., & **Diaz, M.T.** (2020). The intensity and connectivity of spontaneous brain activity in a language network relate to aging and language. Poster presented at the 12th meeting of the Society for the Neurobiology of Language, Philadelphia, PA (virtual).
16. Karimi, H.*, **Diaz, M.T.**, Wittenberg, E. (2020). Sheer Time Spent Expecting or Maintaining a Representation Facilitates Subsequent Retrieval during Sentence Processing. Poster presented at the 42nd Meeting of the Cognitive Science Society, Toronto, Canada (virtual).
17. Karimi, H.*, **Diaz, M.T.**, & Wittenberg, E (2020). Explaining away the ease of retrieving “alleged Venezuelan communists”: Attention and time spent, not semantic complexity alone, predict reading times. Poster to be presented at the 33rd CUNY Human Sentence Processing Conference, Amherst, MA (virtual).
18. Troutman, S.B.W.*, Sandberg, C.W., & **Diaz, M.T.** (2019). Priming Overt Production: The Role of Relationship Type and Selection Demands. Poster presented at the 60th meeting of the Psychonomics Society, Montreal, Canada.
19. Karimi, H.* & **Diaz, M.T.** (2019). Encoding and Retrieval of Phonologically Similar Words across Young and Old Adults during Sentence Processing. Poster presented at the 60th meeting of the Psychonomics Society, Montreal, Canada.
20. Carlson, M.T., Gertel, V.H.*, DiMercurio, D.*, **Diaz, M.T.**, & Sandberg, C.W. (2019). How Do You Measure a Neighborhood? Exploring How Multiple Measures of Phonological Network Structure Jointly Relate to Lexical Processing. Poster presented at the 60th meeting of the Psychonomics Society, Montreal, Canada.
21. Zhang, H.* & **Diaz, M.T.** (2019). Contribution of Executive Functions to Language Production in Older Adults. Poster presented at the 60th meeting of the Psychonomics Society, Montreal, Canada.
22. Cosgrove, A.L.* & **Diaz, M.T.** (2019). Do Our Storytelling Abilities Change as We Age? Exploring the Underlying Semantic Mechanisms Related to Discourse Production. Poster presented at the 60th meeting of the Psychonomics Society, Montreal, Canada.
23. **Diaz, M.T.**, Gertel, V.H.*, Karimi, H.*, Troutman, S.B.W.*, Cosgrove, A.*, Zhang, H.*, & Fernandez, C.F.* (2019). How aging affects the neural basis of phonological and semantic neighborhood density.

Poster presented at the 11th meeting of the Society for the Neurobiology of Language, Helsinki, Finland.

24. Gertel, V.H.*, Zhang, H.*, & **Diaz, M.T.** (2019). Resting-state functional connectivity of left posterior STG in older and younger adults. Poster presented at the 6th biannual meeting of the Dallas Aging & Cognition Conference.
25. **Diaz, M.T.,** Eppes, A., Gertel, V., Karimi, H., Winter, S., & Hu, B. (2018). The neural basis of phonological and semantic neighborhood density. Poster presented at the 10th annual Society for the Neurobiology of Language Conference, Quebec City, Quebec.
26. Zhang, H.*, Eppes, A.*, & **Diaz, M.T.** (2018). Task difficulty modulates age-related differences in the behavioral and neural bases of language production. Poster presented at the 59th annual meeting of the Psychonomic Society, New Orleans, LA.
27. Karimi, H., **Diaz, M.T.**, & Ferreira, F. (2018). Encoding semantically rich words: The relative effects of head reactivation and distinctiveness. Poster presented at the 2018 CUNY Human Sentence Processing Conference, Davis, CA.
28. Winter*, S.B., Rizio*, A.A., Dempsey*, J., Oktar*, K., & **Diaz, M.T.** (2017). White Matter Integrity and Language Production in Aging. Poster presentation at the 2017 meeting of the Society for the Neurobiology of Language, Baltimore, M.D.
29. Gertel*, V., Oktar*, K., & **Diaz, M. T.** (2017). Graph Theoretical Approaches Show a Relationship Between Resting State Functional Connectivity in Younger and Older Adults and Phonological Aspects of Language Production. Poster presentation at the 2017 meeting of the Society for the Neurobiology of Language, Baltimore, M.D.
30. Zhang*, H., Eppes*, A., Beatty-Martinez*, A., Navarro-Torres*, C., & **Diaz, M. T.** (2017). Task difficulty affects language production: Behavioral and fMRI evidence. Poster presentation at the 9th annual meeting of the Society for the Neurobiology of Language, Baltimore, MD.
31. Neely, K.A., Kurkela*, K.A., Goodman*, J.T., Samimy*, S., Blouch*, S.L., Chennavasin*, A., **Diaz, M.T.,** & Dennis, N.A. (2017). Common neural substrates support visually guided force control and working memory in healthy older adults. Abstract submitted for the 47th annual meeting of the Society for Neuroscience.
32. Zhang*, H., Eppes*, A., Kubota*, E., Anders*, V., Burke, D.M., **Diaz, M.T.**, & Kroll, J.F. (2016). The Effect of Bilingualism on Age-related Cognitive and Language Declines. Poster presented at the 57th annual meeting of the Psychonomic Society, Boston, MA.
33. Neely, K.A., Blouch*, S.L., Samimy*, S., Chennavasin*, A., Reynolds*, M., Dennis, N.A., & **Diaz, M.T.** (2016). Memory-guided force control in healthy older adults. Poster presentation at the 46th annual meeting of the Society for Neuroscience, San Diego, CA.
34. Rossi, E., Newman, S., & Diaz, **M.T.** (2016). Bilingualism impacts white-matter connectivity: evidence from DTI. Poster presentation at the 8th annual Society for the Neurobiology of Language Conference, London, England.
35. **Diaz, M.T.,** Moyer*, K., & Rizio*. A.A. (2016). Age-related differences in language production: The neural correlates of semantic inference, phonological facilitation, and target picture frequency. Poster presentation at the 8th annual Society for the Neurobiology of Language Conference, London, England.
36. Rizio, A.A.* & **Diaz, M.T.** (2016). Age differences in language production: The neural correlates of semantic inference, phonological facilitation, and target picture frequency. Poster presentation at the 2016 Cognitive Aging Conference, Atlanta, GA.
37. Rizio, A.A.* & **Diaz, M.T.** (2016). The effects of distracting information on language production: The neural correlates of semantic inference, phonological facilitation, and target picture frequency. Poster presentation at the 23rd meeting of the Cognitive Neuroscience Society, New York, NY.
38. Zhang, H.*, **Diaz, M.T.,** & Kroll, J.F. (2015). Effect of 3-day Language Switching Training on Cognitive Control Mechanisms. Poster presentation at the 56th annual meeting of the Psychonomic Society, Chicago, IL.
39. Rossi, E., Newman, S., **Diaz, M.T.,** Dussias, P., Ting*, C., & Van Hell, J. (2015). Inhibitory control during sentential code switching: evidence from fMRI. 10th Annual International Symposium on Bilingualism, New Brunswick, NJ.

40. Rossi, E. & Diaz, M.T. (2015). Bilingual language processing and aging: A proposal for an integrative model. Slide presentation at the Bilingualism and Cognitive Aging Conference, Groningen, the Netherlands.
41. Johnson, M.A.*, Burke, D.M., & **Diaz, M.T.** (2015). White matter integrity relates to word finding failures and resolutions. Poster presentation at the 2015 Dallas Aging and Cognition Conference, Dallas, TX.
42. Zhuang, J.*, Madden, D., Duong-Fernandez, X.*, Chou, Y., Johnson, M.*, **Diaz, M.T.**, Cousins, S., Potter, G., Chen, N., & Whitson, H. (2015). Reduced functional connectivity in neural language systems in persons with age-related macular degeneration. Poster presentation at the 22nd meeting of the Cognitive Neuroscience Society, San Francisco, CA.
43. Yalcinbas, E.A.*, Johnson, M.A.*, Groh, J.M., & **Diaz, M.T.** (2014) Does aging affect multisensory integration processes in the brain? Poster presentation at the 44th annual meeting of the Society for Neuroscience, Washington, D.C.
44. Zhuang, J.* Johnson, M.A.*, Burke, D.M., Madden, D.J., McLaughlin, M.E.*, Danehower, S.*, & **Diaz, M.T.** (2014). Differentiating competition and selection processes in prefrontal cortices. Poster presentation at the 21st meeting of the Cognitive Neuroscience Society, Boston, MA.
45. Carter, R.M., Johnson, M.A.*, Danehower, S.*, & **Diaz, M.T.** (2014). Perceived warmth affects social cognition during game play. Poster presentation at the 7th meeting of the Social & Affective Neuroscience Society (SANS), Denver, Co.
46. Madden, D.J., Parks, E.L., Chou. Y., Cocjin, S.B.*, Hoagey, D.A.*, **Diaz, M.T.,** Potter, G.G., Chen, N.K., Cabeza, R. (2014). Frontoparietal structural and functional connectivity mediates age-related differences in cognition. Poster presentation at the 21st meeting of the Cognitive Neuroscience Society, Boston, MA.
47. Rossi, E., Newman, S., **Diaz, M.T.,** Dussias, P.E., Ting, C., & Van Hell, J.G. (2013). Inhibitory control during sentential code-switching: Evidence from fMRI. Poster presentation at the 5th meeting of the Society for the Neurobiology of Language, San Diego, CA.
48. **Diaz, M.T.,** Johnson, M.A.*, Burke, D.M., & Madden, D.J. (2013). Age-related differences in resting state network connectivity and language. Poster presentation at the 19th meeting of the Organization for Human Brain Mapping, Seattle, WA.
49. **Diaz, M.T.,** Johnson, M.A.*, Pecoraro, A.*, Burke, D.M., & Madden, D.J. (2013). Functional and behavioral age-related changes in phonological and semantic processes under distracting conditions. Poster presentation at the 20th meeting of the Cognitive Neuroscience Society Meeting, San Francisco, CA.
50. Johnson, M.A.*, **Diaz, M.T.,** & Madden, D.J. (2013). Diffusion Tensor Imaging (DTI) of cerebral white matter integrity: Global versus tract-specific effects and mediation of age-related slowing. Poster presentation at the 20th meeting of the Cognitive Neuroscience Society Meeting, San Francisco, CA.
51. **Diaz, M.T.,** Johnson, M.A.*, Burke, D.M., & Madden, D.J. (2012). The role of white matter integrity in explaining age-related differences in phonological and semantic processes. Slide presentation at the 4th meeting of the Society for the Neurobiology of Language, San Sebastian, Spain.
52. Rossi, E., Newman, S., **Diaz, M.T.**, & Kroll, J. F. (2012). There are no mental firewalls: fMRI evidence for global inhibition of the native language in bilingual speech. Poster presentation at the International Workshop on Language Production, New York, NY.
53. **Diaz, M.T.,** Johnson, M.A.*, Camblin, C.C.*, Burke, D.M., & Madden, D.J. (2012). Age-related differences in the neural bases of phonological and semantic processes. Poster presentation at the 19th meeting of the Cognitive Neuroscience Society, Chicago, IL.
54. Camblin, C.C.*, Hogstrom, L.J.*, & **Diaz, M.T.** (2011). The influence of written word distractors on brain activity during overt picture naming. Poster presentation at the 3rd meeting of the Society for the Neurobiology of Language, Annapolis, MD.
55. **Diaz, M.T.** & Hogstrom, L.J.* (2011). The influence of contextual congruence and figurativeness on hemispheric recruitment. Slide presentation at the 18th meeting of the Cognitive Neuroscience Society, San Francisco, CA.

56. **Diaz, M.T.** & Hogstrom, L.J.* (2011). The influence of novelty and context on hemispheric recruitment in processing metaphors. Poster presentation at the 17th meeting of the Organization for Human Brain Mapping, Quebec City, Canada.
57. **Diaz, M.T.**, He, G., Gadde, S., Bellion, C., Belger, A., Voyvodic, J.T., and McCarthy, G. (2009). Brain activity elicited by emotional stimuli during a verbal working memory task: A comparison of healthy adults and patients with chronic schizophrenia, Poster presented at the 15th meeting of the Organization for Human Brain Mapping, San Francisco, CA.
58. **Diaz, M.T.** & McCarthy, G. (2005). Face and object processing in the fusiform gyrus: A comparison of intracranial ERP recordings and functional MRI. Paper presented at the 35th Meeting of the Society for Neuroscience, Washington, D.C.
59. **Diaz, M.T**. & McCarthy, G. (2005). Unconscious word processing: Differential activation based on word category and imageability. Poster presented at the 12th Meeting of the Cognitive Neuroscience Society, New York, NY.
60. **Diaz, M.T.** & McCarthy, G. (2004). Unconscious word processing engages a distributed network of brain regions. Paper presented at the 34th Meeting of the Society for Neuroscience, San Diego, CA.
61. **Diaz, M.T.** & McCarthy, G. (2004). Content and function words differentiated by gray and white matter activations. Poster presented at the 11th Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
62. **Diaz, M.T.** & McCarthy, G. (2003). Different neural representations for content and function words. Poster presented at the 33rd Meeting of the Society for Neuroscience, New Orleans, LA.
63. **Diaz, M.T.** & Swaab, T.Y. (2002). An electrophysiological investigation of semantic and phonological aspects of spoken language. Poster presented at the 32nd Meeting of the Society for Neuroscience, Orlando, FL.
64. **Diaz, M.T.** & Swaab, T.Y. (2002). Electrophysiological differentiation of semantic and phonological processing during spoken language comprehension. Poster presented at the 9th Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
65. Schwartz, A., Kroll, J.F. & **Diaz, M**. (2001). Reading cognates: Mapping orthography to phonology in two languages. Poster presented at the 42nd Annual Meeting of the Psychonomic Society, Orlando, FL.
66. Schwartz, A., Kroll, J.F., & **Diaz, M**. (2000). Reading Spanish words with English word bodies: Activation of spelling-to-sound correspondences across languages. Paper presented at the Second International Conference on the Mental Lexicon, Montreal, Canada.

INVITED EXTERNAL LECTURES

1. **Diaz, M.T.** (2024). Semantic Networks Tutorial: Creating semantic networks from verbal fluency data. Invited lecture at U. California Irvine
2. **Diaz, M.**T. (2023). Age-related differences in semantic memory networks using a graph theory approach. Invited lecture at U. Groningen, Netherlands.
3. **Diaz, M.T.** (2023). How Aging Shapes Semantic Memory: Using Network Science to Explore Semantic Networks in Younger and Older Adults. Invited lecture at U. California Irvine
4. **Diaz, M.T.** (2022). The psychology of language and aging. Invited lecture at Mississippi State University.
5. **Diaz, M.T.** (2022). Maintenance & decline in language production across adulthood. Invited lecture at the University of Massachusetts, Amherst.
6. **Diaz, M.T.** (2021). Age-related similarities and differences in processing phonological information: Neural and behavioral evidence. Invited lecture at the International Workshop on Language Production.
7. **Diaz, M.T.** (2021). Age-related similarities and differences in processing phonological information: Neural and behavioral evidence. Invited lecture at Rice University.
8. **Diaz, M.T.** (2020). Neural and behavioral age-related differences in language production. Invited lecture at the Illinois Language & Linguistics Society Meeting, Urbana-Champaign, Illinois

9. **Diaz, M.T.** (2019). Neural and behavioral age-related differences in language production. Invited lectures at University of Texas – Austin & San Antonio.
10. **Diaz, M.T.** (2019). Evidence of age-related phonological impairments in language production. Invited lecture at University of Connecticut, Storres, CT.
11. **Diaz, M.T.** (2019). Aging & neuroscience research at Penn State. Invited lecture at the Indian Institute of Science, Bengaluru, India.
12. **Diaz, M.T.** (2018). Neural and behavioral bases of age-related differences in language production. Invited lecture for the Center for Cognitive Neuroscience at Duke University, Durham, NC.
13. **Diaz, M.T.** (2018). Healthy aging & the brain. Invited lecture for the FOCUS program at Duke University, Durham, NC.
14. **Diaz, M.T.** (2018). The influence of executive function on language production in older and younger adults. Invited lecture at Jagiellonian University, Krakow, Poland.
15. **Diaz, M.T.** (2018). Effects of task difficulty on semantic and phonological aspects of language comprehension and production in younger and older adults. Invited lecture at the Freiburg Institute for Advanced Studies Language comprehension across the lifespan workshop, Freiburg, Germany.
16. **Diaz, M.T.** (2017). The paradox of language and aging. Invited lecture for Duke University Focus Program. Durham, NC.
17. **Diaz, M.T.** (2014). Uses and best practices for MRI. Invited lecture for Axons, Penn State University, University Park, PA.
18. **Diaz, M.T.** (2014). The neural basis of language in younger and older adults. Invited lecture for the Center for Cognitive Neuroscience, Duke University, Durham, NC.
19. **Diaz, M.T.** (2014). The neural basis of language in younger and older adults. Invited lecture for the psychology department, Penn State University, University Park, PA.
20. **Diaz, M.T.** (2014). Why do we need imaging centers? Invited lecture for the Social, Life, & Engineering Sciences Imaging Center, Penn State University, University Park, PA.

HONORS AND AWARDS

2012	Duke Leadership Academy, participant
2002-05	National Science Foundation Graduate Research Fellowship, recipient
2000-04	James B. Duke Endowment Fellowship, recipient
1999	Student Marshall, PSU Psychology Department-student with the highest GPA in the major
1999	Evan Pugh Scholar, students in the top 0.05% of their class
1995-99	Dean's List, All Semesters

TEACHING EXPERIENCE

I enjoy interacting with students and they bring fresh perspectives to current issues in cognitive neuroscience. Moreover, I find that teaching further develops my own understanding of the material itself. Over the past 15 years, I have had the opportunity to be the primary instructor in a variety of courses. Course evaluations are available upon request.

2022-	Cognitive Aging (Psy 490, Primary Instructor, Penn State)
2017-	Cognitive Psychology (Psy 521, Primary Instructor, Penn State)
2015-2020	Cognitive Neuroscience (Psy 497/490, Primary Instructor, Penn State)
2009-2013	functional Magnetic Resonance Imaging (Primary Instructor, Duke University)
2008-2013	Neuroscience & Reading (Primary Instructor, Duke University Focus Program)
2005-2009	Statistical Methods (Primary Instructor, Duke University)
2007	Introductory Psychology (Primary Instructor, Duke University)
2004	Developmental Psychology (Teaching Assistant, Duke University)
2003	Cognitive Science (Teaching Assistant, Duke University)
2003	Introductory Psychology (Teaching Assistant, Duke University)

MENTORING EXPERIENCE

I have had multiple opportunities to mentor students at all levels: undergraduate, post-baccalaureate, graduate, and post-doctoral. While at Duke I supervised the BIAC post-baccalaureate fellowship program at Duke for 7 years, in which post-baccalaureate students met regularly to discuss career development and research topics. I continue to advise students at Penn State in a number of capacities including my own students, the SLEIC student advisory committee, as a mentor on the NSF PIRE training grant, and as a mentor and member of the executive committee of the NIH-NIA PATHWAYS T32 training grant.

Director, BIAC post-baccalaureate fellowship program (2007-2014)

Post-doctoral Researchers

Hossein Karimi (2017 – 2020), currently Assistant Professor at Mississippi State University
Avery Rizio (2014 – 2016), currently research scientist at Optum.com
Jie Zhuang (2013 - 2015), currently Associate Professor at Shanghai University of Sport
C. Christine Camblin (2011 - 2012)

Ph.D. Thesis, Committee Member

Psychology unless otherwise noted
Joseph Harris (2010 - 2012), Marissa Gamble (2010 - 2014), Kinsey Bice (2014 – 2018), Christina Johnson (2014 – 2018), Jordan Chamberlain (2018 – 2019), Carla Fernandez (2014 – 2019), Haoyun Zhang (2014 – 2019), Shlomit (Sam) Gur (Neuroscience, 2016 – 2019), Benjamin Schloss (2015 – 2020), Einat Brenner (2018 – 2020), Erin Guty (2016-2021), Sara Winter (2016 – 2021), Victoria Gertel (2016 – 2021), Abby Cosgrove (2018 – 2023), Emily Grossner (2018 – 2023), Holly Zaharchuk (2019 – present), Catherine Pham (2021 – present), Allison Link (2022 – present), Megan Bradson (2023 – present), Anna Serrichio (2023 – present), Clin Lai (2023 – present), Simone Luchini (2023 – present), Cristal Giorio (2021 – present), Xufu Li (2023 – present), Kyle Stanley (2023 – present)

Master's Thesis Committee Member

Psychology unless otherwise noted
Marissa Gamble (2010 - 2014), Christina Johnson (2014 – 2018), Jordan Chamberlain (2018 – 2019), Carla Fernandez (2014 – 2019), Haoyun Zhang (2014 – 2019), Shlomit (Sam) Gur (Neuroscience, 2016 – 2019), Benjamin Schloss (2015 – 2020), Einat Brenner (2018 – 2020), Erin Guty (2016-present), Sara Winter (2016 – 2021), Victoria Gertel (2016 – 2021), Abby Cosgrove (2018 – 2023), Emily Grossner (2018 – 2023), Holly Zaharchuk (2019 – present), Cristal Giorio (2021 – present), Jie Yan (2022 – present), Kathryn Walters (2023 – present), Ingrid Cheung (2023 – present)

Post-baccalaureate Research Assistants

Erica Solis (2023-2024)
Anna Eppes (2016 – 2018, currently graduate student at UT-Dallas)
Shaadee Samimy (2014 – 2015, currently graduate student at OSU)
Micah Johnson (2010 – 2014, currently graduate student at UCLA; awarded an NSF graduate research fellowship 2016)
Larson Hogstrom (2009 - 2011, awarded Fulbright Fellowship August 2011)

Undergraduate Honors Students

Gabrielle Stokes (2020-2024)
Maria Badanova (2017 – 2020, currently in graduate school in Germany)
Ege Yalcinbas (2013 – 2015, currently in graduate school at UCSD, Neuroscience)
Kyle Barrett (2008 - 2009, University of Southern California law school graduate)
Anu Ganapathy (2003 - 2005, University of Maryland, medical school graduate)

LEADERSHIP EXPERIENCE

My role as Director of Human Imaging at the Social, Life, & Engineering Sciences Imaging Center (SLEIC) at Penn State and my previous experience as Assistant and then Associate Director of the Brain Imaging and Analysis Center (BIAC) at Duke included research, financial, and operational oversight of the centers. In these capacities, I participated in a variety of duties (e.g., budget planning, personnel management, center operations, resource development and allocation, grant development, etc.). I directly supervised 8 individuals and indirectly supervise many more. While at Duke, I had the opportunity to participate in two career development opportunities: the Duke Leadership Academy and the Certified Financial Manager Program. The Duke Leadership Academy focused on broad goals of leadership and work culture, while the Financial Management Program focused on best practices for fiscal and compliance management.

UNIVERSITY SERVICE

Director of Human Imaging, Social, Life, & Engineering Sciences Imaging Center (2014-2024)
SLEIC Faculty Advisory Committee, Director (2014-2024)
SLEIC Student Advisory Committee, Director (2014-2024)
NIH NIA, PATHWAYS to Healthy Aging T32 Training grant, Executive Committee (2016-Present)
Management of Core Instruments & Facilities for Research Steering Committee, Executive Committee (2015-2019)
College of Liberal Arts Research Computing Advisory Committee, Member (2015-2020)
Penn State Institute for Neurosciences (PSIN) Steering Committee, Member (2015-2020)
Penn State Research Computing and Cyberinfrastructure, Executive Committee & Advisory Member (2015-2019)
2015-2016 Linguistics Search Committee, Member

PROFESSIONAL SERVICE

Neurobiology of Language, Associate Editor (2024 – present)
Journal of Experimental Psychology: General, Associate Editor (2022 – present)
Society for the Neurobiology of Language Board of Directors (2020 – 2023)
Cognition, Associate Editor (2021 – 2023)
Neurobiology of Aging, Reviewing Editor (2017 – 2020)
Cognitive Neuroscience Society, Poster Committee (2017 – 2020)
ZRG1 BBBP Special Emphasis Panel (Chair, Nov 2021)
Language and Communication Study Section (LCOM, ad hoc Nov 2014, Dec 2014; Standing Member 7/1/15 – 6/30/19)
ZRG1 ETTN-N Special Emphasis Panel (March 2019)
NIDCD Communication Disorders Review Committee (ad hoc, June 2013, Nov 2014)
NIDCD Special Emphasis Panel – fellowship reviews (Feb 2014, June 2014, Oct 2014, Feb 2015, June 2015, June 2023)

REVIEWER

Applied Psycholinguistics
Brain Imaging & Behavior
Brain Research
Brain Topography
Clinical Neurophysiology
Developmental Science
Human Brain Mapping
Journal of Psychiatric Research
Neurobiology of Aging
Neuropsychologia
Psychology & Aging
Brain & Language
Brain Connectivity
Brain Research Bulletin
Cerebral Cortex
Cognition
Experimental Gerontology
Journal of Cognitive Neuroscience
Language, Cognition, & Neuroscience
Neurobiology of Language
Neuropsychology
Social, Cognitive, Affective Neuroscience

PROFESSIONAL AFFILIATIONS

Cognitive Neuroscience Society
Psychonomic Society
Society for the Neurobiology of Language
Spark Society

DIVERSITY STATEMENT

Diversity is a critical element to the success of every unit and organization at Penn State. Over the past 20 years, I have enjoyed working with staff, faculty, and all levels of students from varied backgrounds. In my lab and center, we embrace the uniqueness that each individual brings. We see different perspectives as a strength that can foster learning, enhance problem solving, and benefit everyone. We strive to be inclusive, as people are most productive and engaged when they feel valued and included.