NATHAN S. ROSE

Assistant Professor
Department of Psychology
University of Notre Dame
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EMPLOYMENT, TRAINING, & EDUCATION

2016-present: William P. and Hazel B. White Assistant Professor of Psychology, Cognition, Brain & Behavior, University of Notre Dame, USA

2015-2016: Research Fellow, Cognition & Emotion Research Centre, School of Psychology, Australian Catholic University, Melbourne, Australia

2013-2015: Research Associate, Postle Lab, Department of Psychiatry, University of Wisconsin-Madison, USA

2010-2013: Postdoctoral Fellow, Craik & Buchsbaum Labs, Rotman Research Institute of Baycrest Centre for Geriatric Care and the Department of Psychology, University of Toronto, Canada

2010: Ph.D., Psychology, Behavior Brain & Cognition Program, Washington University in St. Louis, USA

2007: M.A., Psychology, Behavior Brain & Cognition Program, Washington University in St. Louis, USA

2003: B.S., Psychology, Aquinas College, Grand Rapids, USA

RESEARCH INTERESTS

- Cognitive psychology/neuropsychology/neuroscience of memory and aging
- Working memory, episodic memory, prospective memory in young adults, older adults, Alzheimer's disease, Parkinson's disease, amnesia, stroke
- TMS, EEG/ERP, fMRI, tDCS
- Ecological validity of cognitive assessments and cognitive training, VR/AR

REFEREED PUBLICATIONS

**Denotes a project I supervised for a student who was working with me
*Denotes a project I supervised for a student who was working in another lab
IF = Impact Factor

H-Index = 25/20, Citations = 2392/1352 (Google Scholar/Scopus)

1. Henry, J.D.; Hering, A.; Haines, S.; Grainger, S.A.; Koleits, N.; McLennan, S.; Pelly, R.; Doyle, C.; **Rose, N.S.;** Kliegel, M.; & Rendell, P.G. (in press). Acting with the future in mind: Testing competing prospective memory intervention approaches with older adults. *Psychology and Aging, IF=2.361*

2. Sheldon, A.D., Saad, E., Sahan, M.I., Meyering, E., Starrett, M.J., LaRocque, J.J., **Rose, N.S.,** & Postle, B.R. (in press). Attention biases competition for visual representation via enhancement of targets and inhibition of nontargets. *Journal of Cognitive Neuroscience*. IF=3.468

3. **Rose, N.S.** (2020). The Dynamic Processing Model of Working Memory. *Current Directions in Psychological Science, IF=4.673*

4. Henry, J., Grainger, S., Rendell, P., Terrett, G., Kliegel, M., Bugge, M., Ryrie, C., **Rose, N.S.,** (2020). Implementation Intentions and Prospective Memory Function in Late Adulthood. *Psychology and Aging, IF=2.361*

5. *Haines, S., *Randall, S.E., Terrett , G., Busija, L., Tatangelo, G., McLennan, S., **Rose, N.S.,** Kliegel, M, Henry, JD, Rendell, PG. (2020). Differences in time-based task characteristics help to explain the age-prospective memory paradox. *Cognition,* IF=3.634

6. **Rose, N.S., *Thomson, H., & Kliegel, M. (2019). No effect of transcranial direct-current stimulation to dorsolateral prefrontal cortex on prospective memory in healthy young and older adults. *Journal of Cognitive Enhancement, IF=1.33.*

7. **Yeh, N. & **Rose, N.S.** (2019). How can transcranial magnetic stimulation be used to affect episodic memory?: A systematic review and meta-analysis. *Frontiers in Psychology: Consciousness Research,* IF=2.129, https://doi.org/10.3389/fpsyg.2019.00993

8. Gosseries, O., Yu, Q., LaRocque, J.J., Starrett, M.J., **Rose, N.S.,** Cowan, N., & Postle, B.R. (2018). Parietal-occipital interactions underlying control- and representation-related processes in working memory for nonspatial visual features. *Journal of Neuroscience,* 2747-17. IF=6.344

9. **Widhalm, M. & **Rose, N.S.** (2018). How can transcranial magnetic stimulation be used to causally manipulate memory representations in the human brain? *Wiley Interdisciplinary Reviews: Cognitive Science,* e1469. IF=2.218

10. *Yue, Q., Martin, R.C., Hamilton, A.C., **Rose, N.S**. (2018). Non-perceptual regions in the left inferior parietal lobe support phonological short-term memory: evidence for a buffer account? *Cerebral Cortex.* IF=8.285

11. *Hering, A., Kliegel, M., Rendell, P.G., Craik, F.I.M., & **Rose, N.S**. (2018). Prospective memory is a key predictor of functional independence in older adults. *Journal of the International Neuropsychological Society, 24,* 1–6. IF=2.181

12. Rogasch, N.C., Sullivan, C., Thomson, R.H., **Rose, N.S.,** Bailey, N.W., Fitzgerald, P.B., Farzan, F., Hernandez-Pavon, J.C. (2017). Analysing concurrent transcranial magnetic stimulation and electroencephalographic data: a review and introduction to the open-source TESA software. *NeuroImage, 47*, 934-951, DOI:10.1016/j.neuroimage.2016.10.031. IF=6.357

13. Agarwal, P.K., Finley, J.R., **Rose, N.S.,** & Roediger, H.L., (2017). Benefits from retrieval practice are greater for students with low working memory than for students with high working memory. *Memory, 25*, 6, 1-8, DOI:https://doi.org/10.1080/09658211.2016.1220579. IF=1.90

14. **Rose, N.S.,** LaRocque, J., Riggall, A., Gosseries, O., Starrett, M.J., Meyering, E.E., & Postle, B.R. (2016). Reactivation of latent working memories with transcranial magnetic stimulation. *Science, 354,* 6316, 1136-1139, DOI:10.1126/science.aah7011. IF=37.205
NPR All Things Considered - 'Zap! Magnet Study Offers Fresh Insights Into How Memory Works'

15. Shelton, J.T., Lee, J.H., Scullin, M.K., **Rose, N.S.,** Rendell, P.G., McDaniel, M.A. (2016). Improving prospective memory in healthy older adults and very mild Alzheimer's disease patients. *Journal of the American Geriatric Society, 64(6),* 1307-1312, DOI:10.1111/jgs.14134. IF=4.388

16. **Rose, N.S.**, Rendell, P.G., Hering, A, Bidelman, G.M., Kliegel, M & Craik, F.I.M. (2015). Cognitive and neural plasticity in older adults' prospective memory following training on the virtual week computer game. *Frontiers in Human Neuroscience, 9*. DOI:http://dx.doi.org/10.3389/fnhum.2015.00592. IF=3.634
Motherboard (Vice) - 'This Virtual Board Game Could Help Your Grandpa Remember to Take His Pills '

17. **Rose, N.S.,** Craik, F.I.M. & Buchsbaum, B. (2015). Levels of processing in working memory: Differential involvement of frontotemporal networks. *Journal of Cognitive Neuroscience, 27,* 3, 522–532. DOI:10.1162/jocn_a_00738. IF=5.357

18. Craik, F.I.M., **Rose, N.S.,** & Gopie, N. (2015). Recognition without awareness: Encoding and retrieval factors. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 41(5),* 1271-1281, DOI:10.1037/xlm0000137. IF=2.776
APA Journals Article Spotlight

19. Meltzer, J.A., **Rose, N.S.,** Deschamps, T., Leigh, R.C., Panamsky, L., Silberberg, A., Madani, N., Links, K.A. (2015). Semantic and phonological contributions to immediate and delayed cued sentence recall. *Memory & Cognition, 44(2),* 307-329, DOI:10.3758/s13421-015-0554-y. IF=2.457

20. LaRocque, J.J., Eichenbaum, N.S., Starrett, M.J., **Rose, N.S.,** Emrich, S.M., & Postle, B.R. (2015). The short- and long-term fate of memory items retained outside the focus of attention. *Memory & Cognition*, 43(3): 453-468, DOI:10.3758/s13421-014-0486-y. IF=2.457

21. Terrett, G., **Rose, N.S.,** Henry, J.D., Bailey, P.E., Altgassen, M., Phillips, L.H., Kliegel, M., & Rendell, P.G. (2015). The relationship between prospective memory and episodic future thinking in younger and older adulthood. *Quarterly Journal of Experimental Psychology, 69(2),* 310-323, DOI:10.1080/17470218.2015.1054294. IF=2.129

22. Cameron, J., Rendell, P.G., Ski, C.F., Kure, C.E., McLennan, S.S., **Rose, N.S.,** Prior, D.L., & Thompson, D.R. (2015). PROspective MEmory Training to improve HEart failUre Self-care (PROMETHEUS): study protocol for a randomised controlled trial. *Trials, 16(1),* 196, DOI:10.1186/s13063-015-0721-2. IF=1.969

23. **Rose, N.S.,** Luo, L., Bialystok, E., Hering, A., Lau, K., & Craik, F.I.M. (2015). Cognitive processes in the breakfast task: Planning and Monitoring. *Canadian Journal of Experimental Psychology*, *69(3),* 252-263, DOI:10.1037/cep0000054. IF=1.218

24. Lilienthal, L., **Rose, N.S.,** Tamez, E., Myerson, J., & Hale, S. (2015). Individuals with low working memory spans show greater interference from irrelevant information because of poor source monitoring, not greater activation. *Memory & Cognition*, *43(3),* 357-366. DOI:10.3758/s13421-014-0465-3. IF=2.457

25. **Rose, N.S.,** Buchsbaum, B.R.**,** & Craik, F.I.M. (2014). Short-term retention of a single word relies on retrieval from long-term memory when both rehearsal and refreshing are disrupted. *Memory & Cognition*, 42, 689-700, DOI:10.3758/s13421-014-0398-x. IF=2.457

26. *Hering, A. Rendell, P., **Rose, N.S.,** Schnitzspahn, K. & Kliegel, M. (2014). Prospective memory training in older adults and its relevance for successful aging. *Psychological Research, 6, 892-904,* DOI:10.1007/s00426-014-0566-4. IF=2.681

27. **Rose, N.S.** (2014). Individual differences in working memory, secondary memory, and fluid intelligence: Evidence from the levels-of-processing span task. *Canadian Journal of Experimental Psychology*, 67, 260-270, DOI:10.1037/a0034351. IF=1.218

28. Foster, E., **Rose, N.S.,** Rendell, P., & McDaniel, M. (2013). Prospective memory in Parkinson disease during a Virtual Week: Effects of both prospective and retrospective

demands. *Neuropsychology, 27, 2*, 170-181, DOI:http://dx.doi.org/10.1037/a0031946. IF=3.269

29. Zinke, K., Zeintl, M., **Rose, N.S.,** Putzmann, J., Pydde, A., & Kliegel, M. (2013). Working memory training and transfer in older adults: Effects of age, baseline performance, and training gains. *Developmental Psychology*, *50, 304-315*, DOI:http://dx.doi.org/10.1037/a0032982. IF=3.116

30. **Rose, N.S.** & Craik, F.I.M. (2012). A processing approach to the working memory/long-term memory distinction: Evidence from a levels-of-processing span task. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 38, 4, 1019-1029, DOI:http://dx.doi.org/10.1037/a0026976. IF=2.776

31. **Rose, N.S.,** Olsen, R.K., Craik, F.I.M., & Rosenbaum, R.S. (2012). Working memory and amnesia: The role of stimulus novelty. *Neuropsychologia*, 50, 1, 11-18, DOI:10.1016/j.neuropsychologia.2011.10.016. IF=3.302
Fox News - ' Paris Hilton's Face Helpful in Study of Memory'.

32. Craik, F.I.M. & **Rose, N.S.** (2012). Memory encoding and aging: A neurocognitive perspective. *Neuroscience & Biobehavioral Reviews*, 36, 1729–1739, DOI:10.1016/j.neubiorev.2011.11.007. IF=9.440

33. Craik, F.I.M. & **Rose, N.S.** (2012). Training cognition: Parallels with physical fitness? *Journal of Applied Research in Memory and Cognition*, 1, 1, 51-52. DOI:10.1016/j.jarmac.2011.12.001. IF=2.457

34. Reichman, W. & **Rose, N.S.** (2012). History and experience: The direction of Alzheimer's disease. *Menopause*, 19, 7, 724-734, DOI:10.1097/gme.0b013e31825a28f2. IF=3.361

35. Kliegel, M., Altgassen, M., Hering, A., & **Rose, N.S.** (2011). A process-model based approach to prospective memory impairment in Parkinson's disease. *Neuropsychologia*, 49, 8, 2166-77, DOI:10.1016/j.neuropsychologia.2011.01.024. IF=3.302

36. Loaiza, V., McCabe, D., Youngblood, J., **Rose, N.S.,** & Myerson, J. (2011). The influence of levels of processing on recall from working memory and delayed recall tasks. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 37, 5, 1258-63, DOI:10.1037/a0023923. IF=2.776

37. Hale, S., **Rose, N.S.,** Myerson, J., Strube, M. J., Sommers, M., Tye-Murray, N., & Spehar, B. (2011). The structure of working memory abilities across the adult lifespan. *Psychology and Aging*, 26, 1, 92-110. doi:10.1037/a0021483. IF=2.646

38. Sommers, M., Hale, S., Myerson, J., **Rose, N.S.,** Tye-Murray, N., & Spehar, B. (2011). Spoken discourse comprehension across the adult lifespan. *Ear and Hearing*, 32, 6, 775-81, DOI:10.1097/AUD.0b013e3182234cf6. IF=2.842

39. Aberle, I., Rendell, P., **Rose, N.S.,** McDaniel, M., & Kliegel, M. (2010). The age-prospective memory paradox: Young adults may not give their best outside of the lab. *Developmental Psychology*, 46, 6, 1444–1453, DOI:http://dx.doi.org/10.1037/a0020718. IF=3.116

40. **Rose, N.S.,** Myerson, J., Roediger, III., H.L., & Hale, S. (2010). Similarities and differences between working memory and long-term memory: Evidence from the levels-of-processing span task. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 36, 2, 471-483, DOI:10.1037/a0026976. IF=2.776

41. **Rose, N.S.,** Rendell, P. G., McDaniel, M. A., Aberle, I., & Kliegel, M. (2010). Age and individual differences in prospective memory during a "Virtual Week": The role of working memory, vigilance, task-regularity, and cue-focality. *Psychology and Aging*, 25, 3, 595-605, DOI:10.1037/a0019771. IF=2.646

42. Reichman, W., Fiocco, A., & **Rose, N.S.** (2010). Exercising the brain to avoid cognitive decline: Examining the evidence. *Future Medicine: Aging Health*, 6, 5, 565-584, DOI:10.2217/ahe.10.54. IF=0.42

43. **Rose, N.S.,** Myerson, J., Sommers, M., & Hale, S. (2009). Are there age differences in the executive component of working memory? Evidence from domain-general interference effects. *Aging, Neuropsychology, and Cognition*, 16, 6, 633-653. DOI: 10.1080/13825580902825238. IF=1.59

44. Tye-Murray, N., Sommers, M., Spehar, B., Myerson, J., Hale, S., & **Rose, N.S.** (2008). Auditory-visual discourse comprehension by older and young adults in favorable and unfavorable conditions. *International Journal of Audiology*, 47, S103-S109, DOI:10.1080/14992020802301662. IF=1.396

CHAPTERS

45. Craik, F.I.M. & **Rose, N.S.** (2014). Familiarity and Recollections: Interactions with Larry Jacoby. In (Eds.) D. Stephen Lindsay, Colleen M. Kelley, Andrew P. Yonelinas, Henry L. Roediger, III. *Remembering: Attributions, Processes, and Control in Human Memory*. Psychology Press, pp. 233-251.

MANUSCRIPTS UNDER REVIEW

Saito, J. & **Rose, N.S. (submitted). Age differences in naturalistic prospective memory in real life and in immersive virtual reality gameplay. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences.* IF=3.502

Weiler, Joseph, **Alexander, Claire, & **Rose, Nathan. (submitted). How reliable and valid is the "Cognigram" for detecting sports-related concussion? *Journal of the International Neuropsychological Society.* IF=3.098

Yeh, N., *Kim, S., Payne, J., Koen, J., Kensinger, E., & **Rose, N.S. (invited for revision and resubmission). Flipping the emotional switch: The role of the mPFC in the emotional memory trade-off effect. *Journal of Neuroscience.* IF=5.673

MANUSCRIPTS IN PREPARATION

Rose, N.S., *Csik, A.M. & *O'Rear, A.E. (in prep.). They forgot their "baby"!: Poor prospective memory encoding causes students to forget their cell phone.

Rose, N.S., **Widhalm, M., & Samaha, J. (in prep.). Stimulating Visual Cortex Reactivates Latent Visual Working Memories

Miller, J.A., Scimeca, J., **Rose, N.S.**, & D'Esposito, M. (in prep.). Attentional effects on working memory representations: comparing information-detection techniques and metrics

Hames, J., Villano, M., *Lam, J., & **Rose, N.S.** (in prep.). A single-session of virtual reality therapy for acrophobia is as effective as in vivo treatment

Koleits, N., **Rose, N.S.,** Goodin, P., & Rendell, P. (in prep.). "Is tDCS even doing anything?": No effects on working memory performance or brain activity simultaneously recorded with optical neuroimaging.

Sztybel, P., Gibson, B., & **Rose, N.S.** (in prep.). Decoding polar angle and eccentricity information from perceptual activity in early visual cortex using pattern classification of EEG signals.

Nelson, N. A., Bergeman, C. S., & Rose, N. S. (in preparation). Cognitive enrichment through emotion regulation (CENTER): A theoretical framework of successful cognitive aging

FUNDED GRANTS & AWARDS

- 2019-2024 National Science Foundation CAREER, "Targeted Memory Reactivation with Transcranial Magnetic Stimulation"
  USD$750,883

- 2019-2021 Science of Wellness Initiative Seed Grant, University of Notre Dame, Co-PI (PI: Josh Koen), "Linking longitudinal stress exposure and resilience with Alzheimer's disease biomarkers"
  USD$100,000

- 2018-2022 National Institutes of Health - National Institute on Aging UG3/UH3, Co-PI (PI: Cindi Bergeman), "An Integrative Science Approach to Resilience: The Notre Dame Study of Health & Well-being"
  USD$2,500,000

- 2017-2019 Discovery Grant, Advanced Diagnostics & Therapeutics, University of Notre Dame, Co-PI (PI: Jennifer Hames), "Comparing the Efficacy of a Single-Session Virtual Reality Treatment for Acrophobia to a Gold Standard Treatment or No Treatment"
  USD$43,354

- 2017-2018 Digital Learning Initiatives, Notre Dame Provost's Office, PI (CIs: Mike Villano, Jeffrey Bain-Conkin, Paul Turner, GA Radvansky), "Creation of a Virtual Reality Lab for Experiential Learning and Software Development"
  USD$20,000

- 2017-2018 - FRSP Initiation Grant Program, Notre Dame Research PI (Co-PI GA Radvansky), "Using Interactive Virtual Environments to Explore Memory and Cognition"
  USD$9,640

- 2015-2018 Australian Research Council Linkage Grant, LP150100140, Co-Investigator (PI: Prof Peter Rendell), "Acting with the Future in Mind"
  AUD$360,900

- 2016 Research Project Funding, ACU Research Office, Chief Investigator (CI Prof Gill Terrett), "Can Neuroimaging be Used for Mind Reading in Younger and Older Adults?"
  AUD$50,000

- 2015 Early Career Researcher Award, ACU Faculty of Health Sciences, Chief Investigator, "Neural Evidence for Prospective Memory Monitoring in Younger and Older Adults"
  AUD$10,000

- 2012-2013 Canadian Heart and Stroke Foundation, Centre for Stroke Recovery, Principal Investigator (CIs: Prof Fergus Craik, Prof Gordon Winocur, Prof Brian Levine), "Prospective Memory Functioning in Stroke Survivors"
  CAD$45,000

- 2011 Kick Start Grant, Centre for Brain Fitness, Baycrest Centre for Geriatric Care, Co-Investigator (PI: Prof Fergus Craik), "Training Prospective Memory with the Virtual Week Video Game"
  CAD$10,000

- 2012 Canadian Institutes of Health Research – Institute of Aging, Travel Award for the Cognitive Aging Conference
  CAD$1,000

- 2011 Jack and Rita Catherall Funds for Aging Research
  CAD$400

- 2011 Age+Prize Award Recognizing Excellence in Aging Research, Canadian Institutes of Health Research – Institute of Aging
  CAD$500

- 2007 Early Career Researcher Award, Cognitive Aging Conference – Down Under, Adelaide, Australia
  AUD$500

- 2003 Outstanding Student Award, Department of Psychology, Aquinas College

- 2001-2003 Academic All-American, Men's Varsity Soccer, Aquinas College

GRANTS PENDING OR IN PREPARATION

- 2020-20222 NIH-NIA R21, PI, (co-PI, Cindy Bergeman), "Reactivation of working memories in older adults with transcranial magnetic stimulation." (revision in preparation)
  USD$237,216

- 2021-2025 NIH-NIMH R01, PI (co-PI, Mark D'Esposito, UC-Berkeley), "Reactivating working memories with transcranial magnetic stimulation." (in preparation)
  USD$1,255,632

INVITED TALKS

- Iowa State University-Ames, Department of Psychology, March 2020

- Apple, Sunnyvale, CA, February 2020
- Exponent (Scientific Research Consulting Firm), Bellevue, WA, January 2020
- University of Michigan, Department of Psychology, December 2019
- Northwestern University, Mesulam Center for Cognitive Neurology and Alzheimer's Disease, August 2019
- University of Texas-Austin, Department of Psychology, March 2019
- Rice University, Department of Psychology, Houston, January 2019
- Indiana University-Bloomington, Department of Psychology, October 2018
- University of Nevada-Reno, Core Outreach Workshop for EPSCoR grant (U. Nevada-Reno, U. Delaware, and U. Nebraska-Lincoln), July 2018
- University of Colorado-Boulder, Institute of Cognitive Science, March 2018
- Midwestern Psychological Association Meeting (Chicago), Invited Paper, May 2018
- University of Illinois-Chicago, Department of Psychology, December 2017
- Michigan State University, Department of Psychology, East Lansing, September 2017
- University of Wyoming, Laramie, Wyoming, Neuroscience Center, March 2017
- Purdue University, Department of Psychological Sciences, September 2016
- University of Geneva, Switzerland, Keynote Address at the July 2016 International Workshop on Prospective Memory
- Georgia Tech University, Atlanta, Georgia, Department of Psychology, March 2016
- University of North Carolina, Greensboro, Department of Psychology, February 2016
- University of Notre Dame, Department of Psychology, November 2015
- Monash University, Biomedical Imaging and Neuroscience Centre, Melbourne, Australia, June 2015
- Baycrest Hospital Research Rounds, Toronto, Canada, 2013
- Rotman Research Institute, fMRI Rounds, Toronto, Canada, 2013
- Lumos Labs, Inc., San Francisco, USA, 2013: "Cognitive training: A theory, a review, and the future."
- University of California – Davis, USA, 2011
- Royal Canadian Legion, Toronto, Canada, 2011: "Memory and Aging"
- University of Toronto, Canada, Ebbinghaus Lecture Series, 2010
- University of British Columbia, International Conference on Prospective Memory, Vancouver, Canada, 2010
- University of Michigan, USA, Psychology Department Forum, 2009

TEACHING EXPERIENCE

Advanced Cognitive Neuroscience (Graduate Seminar), Professor, University of Notre Dame, Fall 2019 (median composite rating of 4.8/5)

Introduction to Cognitive Neuroscience, Professor, University of Notre Dame, Fall 2018, Spring 2019 (median composite rating of 4.7/5)

Cognitive Psychology, Professor, University of Notre Dame, Fall 2016, Spring 2017, Fall 2017, Spring 2018, (median composite rating of 4.3/5)

Cognitive Psychology, Guest Lecturer, University of Wisconsin-Madison, 2014

Psychological Statistics, Adjunct Professor, Washington University in St. Louis, 2009

Psychology of Aging, Guest Lecturer, Washington University in St. Louis, 2009, 2008

Experimental Psychology, Teaching Assistant, Washington University in St. Louis, 2008

Social Gerontology, Teaching Assistant, Washington University in St. Louis, 2007

SUPERVISION

2020-2021 – College of Science Senior Thesis Advisor, Josh Rhilinger, University of Notre Dame

2018-2019 – Glynn Family Honors Thesis Advisor, Joseph Weiler, University of Notre Dame

2018 – Postdoctoral Co-Advisor, Pedro Sztybel, now a Postdoctoral Fellow in the Snow Lab at U. Nevada, Reno.

2017-2019 – 1st Year and Masters Graduate Advisor, Morgan Widhalm, University of Notre Dame

2017-2019 – 1st Year and Masters Graduate Advisor, Nicholas Yeh, University of Notre Dame

2017-2018 – Glynn Family Honors Thesis Advisor, Claire Alexander, University of Notre Dame, now in a Masters program in Neuropsychology, Ohio U.

2020-2021, Rose Lab Research Assistants: 6 undergraduate students

2019-2020, Rose Lab Research Assistants: 3 undergraduate students

2018-2019, Rose Lab Research Assistants: 12 undergraduate students

2017-2018, Rose Lab Research Assistants: 10 undergraduate students

2016-2017, Rose Lab Research Assistants: 10 undergraduate students

2015-2016, Post-baccalaureate Research Advisor, Nick Koleits, *"Is tDCS even doing anything?": Effects on working memory performance and brain activity simultaneously recorded with optical neuroimaging,* Australian Catholic University.

2015-2016, PhD Dissertation Co-Advisor, Susan Randall, "*Age Differences in Prospective Memory: Laboratory versus Naturalistic Settings,"* Australian Catholic University

2015-2016, Masters Thesis Advisor, Sarah Gatt, Australian Catholic University

2015-2016, Honours Thesis Advisor, James Shadrach, Renee Vella, Australian Catholic University.

2013-2014, Biology 152 Independent Research Project Advisor, Emma Meyering, "*Are items in working memory, but outside focal attention, stored via long-term memory mechanisms*?" University of Wisconsin-Madison

2013-2014, Post-baccalaureate Research Project, Michael Starrett, "*Behavioral and EEG effects of rTMS on recall of items inside versus outside the focus of attention,*" University of Wisconsin-Madison.

2011-2012, Visiting Ph.D. Student Project Advisor, Alexandra Hering, "*Ecological validity: The Assessment of Prospective Memory In and Outside the Lab,*" University of Geneva / University of Toronto. Now Assistant Professor of Psychology, Tilburg University, Netherlands

2011-2013, Buchsbaum Lab, University of Toronto Research Assistants: Sabrina Lemire-Rodger, Ashley Bondad

2010 – 2013, Craik Lab University of Toronto Research Assistants: Karen Lau, Jenna Ware, Julia Czyzo, Darya Gaydukevych

2006 – 2010, Hale/Myerson Lab, Washington University in St. Louis Research Assistants: Kalin Guebert, Danielle Alvarez, Denise Rose, Matt Robbins

2005 – 2007, Sommers Lab, Washington University in St. Louis Research Assistants: Linden Weiswerda, Molly Ruben, Diana Smith

RESEARCH EXPERIENCE

2016-present: Director of the *Cognitive Neuroscience of Memory & Aging Laboratory*, University of Notre Dame

2017-present: Co-Director of the *Virtual Reality Laboratory*, Department of Psychology, University of Notre Dame

2015-2016: Associate Investigator, Australian Research Council Centre of Excellence in Cognition and Its Disorders, Macquarie University, Australia

2013-2015: Research Associate, Postle Lab, Department of Psychiatry, University of Wisconsin-Madison

2013: ERP Bootcamp with Dr. Steven Luck, University of California–Davis

2010-2013: Postdoctoral Fellow ,Craik Lab and Buchsbaum Lab, Rotman Research Institute of Baycrest Centre for Geriatric Care and University of Toronto, Toronto, Ontario

2005-2010: Research Assistant, Sommers Lab, Hale/Myerson Lab, McDaniel Lab, Roedier Lab

2005-2006: Project Director, NIA grant AG022448, Principal Investigator: Sandra Hale, "*Listening Comprehension across the Adult Lifespan*"

2003-2004: Research Assistant, Sommers Speech and Hearing Lab, Psychology Department, Washington University in St. Louis

2003-2004: Research Assistant, Balota, Cognitive Lab, Psychology Department, Washington University in St. Louis

2003-2004: Research Assistant, Stern, Psychophysiology Lab, Psychology Department, Washington University in St. Louis

REVIEWERSHIP

Panel Review:

National Science Foundation (NSF) BCS Division, CogNeuro Program

NSF Graduate Research Fellowship Program Review Panel

Consulting Editor:

Journal of Experimental Psychology: Learning, Memory, & Cognition

Frontiers in Human Neuroscience - Brain Imaging and Stimulation

Ad-hoc Reviewer:

-Funding Agencies

Australian Research Council (ARC)

Canadian National Science and Engineering Research Council (NSERC)

National Science Foundation (NSF)

Swiss National Science Foundation (SNSF)

-Peer Reviewed Journals

Acta Psychologica
Advances in Cognitive Psychology
Aging, Neuropsychology and Cognition
Annals of the New York Academy of Sciences
Applied Memory Research
Behavioral Neuroscience
Brain & Behavior
Brain Topography
British Journal of Clinical Psychology
British Journal of Educational Psychology
Canadian Journal of Experimental Psychology
Cerebral Cortex
Child Neuropsychology
Cognition
Cognitive Neuroscience
Cognitive Psychology
Cortex
Experimental Brain Research
Frontiers in Human Neuroscience
Gerontology
International Journal of Psychophysiology
Journal of Applied Research on Memory and Cognition
Journal of Clinical and Experimental Neuropsychology
Journal of Cognitive Enhancement
Journal of Cognitive Neuroscience
Journal of Cognitive Psychology
Journal of Experimental Child Psychology
Journal of Experimental Psychology: General
Journal of Experimental Psychology: Human Perception and Performance
Journal of Experimental Psychology: Learning, Memory, and Cognition

Journal of Gerontology: Psychological Sciences
Journal of the International Neuropsychological Society
Journal of Memory and Language
Journal of Neuroscience
Memory
Memory & Cognition
Neurobiology of Aging
NeuroImage
Neuropsychologia
Neuropsychological Rehabilitation
Perspectives on Psychological Science
PLoS One
Psychological Science
Psychology and Aging
Psychonomic Bulletin and Review
Psychophysiology
Quarterly Journal of Experimental Psychology
Science
The European Journal of Cognitive Psychology
Trends in Cognitive Science

PROFESSIONAL MEMBERSHIPS

Psychonomic Society, 2006-2011 (Student Member), 2011-2013 (Associate member), 2013-present (Full Member)

Cognitive Neuroscience Society, 2009-present

Society for Neuroscience, 2013-present

Association for Psychological Science, 2009-present

Society for Applied Research on Memory and Cognition, 2019-present

PRESENTATIONS AT NATIONAL & INTERNATIONAL MEETINGS

Rose, N.S. (2020, December). "My brain made me do it!": The consequences and culpability of prospective memory errors. Invited Paper presented at the Annual Meeting of the Southern Society for Philosophy and Psychology; 2020 December 19; Online.

Rhilinger, J.P., Waner, J.L., & Rose, N.S. (2020, November). Revealing the causal roles of visual and frontal cortex in recovering latent visual working memories with non-invasive brain stimulation. Paper presented at the 61st Annual Meeting of the Psychonomic Society; 2020 November 19; Online.

Rose, N.S. (2020, September). "Using brain stimulation to enhance prospective memory". 1 of 3 International Experts invited to present for the Virtual Workshop on Prospective Memory and Brain Stimulation sponsored by the University of Geneva; 2020 September 30; Online.

Waner, J.L., Rhilinger, J.P., Metcalf, I.J., & Rose, N.S. (2020, June). Trigger My Memory: How rTMS to visual and frontal cortex impacts latent visual working memory representations. Paper presented at the Virtual Working Memory Symposium; 2020 June 4; Online.

Rose, N.S., Yeh, N., & Widhalm, M. (2019). How to use transcranial magnetic stimulation to modulate and measure memories in humans? Co-Organizer and Chair of Nanosymposium for the Annual Meeting of the Society for Neuroscience, Chicago, IL.

Widhalm, M., Samaha, J., & Rose, N.S. (2019). TMS to Visual Cortex Reactivates Unattended Representations Held in Visual Working Memory. Poster presented at the Annual Meeting of the Society for Neuroscience, Chicago, IL.

Yeh, N., Rose, N.S., Koen, J., Kim, S., Kensinger, E., & Payne, J. & (2018). Flipping the emotional switch: The role of the mPFC in the emotional memory trade-off effect. Poster presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA.

Rose, N.S. (2019). The association between age and individual differences in prospective memory and working memory depends on task context: evidence from performance in real and virtual environments. Invited paper to be presented at the annual meeting of the European Society for Cognitive Psychology, Tenerife, Spain.

Rose, N.S. (2019). Twenty years of the "Age - Prospective Memory Paradox": Still unsolved? Invited paper presented at the biennial meeting of the Society for Applied Research on Memory and Cognition, Cape Cod, MA.

Weiler, J. & Rose, N.S. (2019). Test-Retest and Construct Validity of the Cognigram Computerized Concussion Assessment Tool in Amateur Women's Boxing. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.

Miller, Jacob A., Scimeca, Jason, Rose, Nathan S., & D'Esposito, Mark. (2018). Attentional effects on working memory representations: comparing information-detection techniques and metrics. Poster presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA.

Widhalm, M. & Rose, N.S. (2018). Can TMS to Visual Cortex Reactivates Unattended Representations Held in Visual Working Memory? Paper presented in a Nanosymposium at the Annual Meeting of the Society for Neuroscience, San Diego, CA.

Yeh, N., Kim, S., Payne, J. & Rose, N.S. (2018). Medial PFC has a causal role in selectively enhanced consolidation of emotional memories: a TMS-EEG study. Poster presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA.

Saito, J. & Rose, N.S. (2018). Validation of Virtual Reality for Measuring Prospective Memory in Young and Older Adults. Poster presented at the Annual Meeting of the Association for Psychological Science, San Francisco, CA.

Widhalm, M. & Rose, N.S. (2018). Can TMS to Visual Cortex Reactivate Unattended Representations Held in Visual Working Memory? Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

Rose, N.S., Meserve, M., Alexander, C., Kehoe, K., & Brockmole, J.R. (2018). Effects of concussion on Cognigram and experimental measures of neurocognition. Midwestern Psychological Association, Chicago, IL.

Rose, N.S., Csik, A.M. & O'Rear, A.E. (2018). They forgot their "baby"!: Incidental encoding causes students to forget their mobile phones. International Conference on Prospective Memory, Melbourne, Australia.

Rose, N.S., Szpunar, K.K., Goodin, P., Rendell, P.G., & Schacter, D.L. (2018). Discriminating between the past and future: Evidence from multi-voxel pattern analysis in younger and older adults. International Conference on Prospective Memory, Melbourne, Australia.

Rose, N.S. (2017). "The Dynamic Processing Model of Working Memory". The The 58th Annual meeting of the Psychonomic Society, Vancouver, CA.

Rose, N.S. Szpunar, K.K. Maillet, D. Postle, B.R. & Schacter, D.L. (2017). Multi-Voxel Pattern Analysis Reveals both Similarities and Differences Between Imagining the Future and Remembering the Past. Paper presented at the Pattern Recognition in Neuroimaging Conference, Toronto, ON.

Rose, N.S., Szpunar, K.K., Goodin, P., Rendell, P.G., & Schacter, D.L. (2016). "Decoding the content of thought in younger and older Adults during remembering and imagining". Paper presented at the 6th International Conference on Memory, Budapest, Hungary.

Rose, N.S. (2016). How to Help Older Adults Remember to Remember Better? Paper presented at the Cognitive Aging Conference, Atlanta, GA.

Rose, N.S., LaRocque, J., Riggall, A., Gosseries, O., Starrett, M. & Postle, B.R. (2016) "Can transcranial magnetic stimulation bring passively retained items in short-term memory back into focal attention?" Poster presented at the 23rd Annual Meeting of the Cognitive Neuroscience Society, New York, NY.

Rose, N.S. Szpunar, K.K. Maillet, D. Postle, B.R. & Schacter, D.L. (2015). Similarities and Differences Between Imagining the Future and Remembering the Past: Evidence From Multi-voxel Pattern Analysis. Paper presented at the 56th Annual Meeting Psychonomic Society, Chicago, IL.

Rose, N.S., Meyering, E.E., Baker, S., Rosenbaum, R. S., Dang, C., Buchsbaum, B., & Postle, B.R. (2015). Neuroimaging and Neuropsychological Evidence for Different States of Representation in Working Memory. Poster presented at the 56th Annual Meeting of the Psychonomic Society, Chicago, IL.

Rose, N.S., Meyering, E.E., Baker, S., Rosenbaum, R. S., Dang, C., Buchsbaum, B., & Postle, B.R. (2015). Are items in working memory stored with long-term memory mechanisms? Poster presented at the 22nd Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.

Rose, N.S., LaRocque, J., Riggall, A., Gosseries, O., & Postle, B.R. (2014) Evidence for a synaptic theory of working memory: An fMRI/EEG/TMS study. Paper presented at the 55th Annual Meeting Psychonomic Society, Long Beach, CA.

Rose, N.S., LaRocque, J., Riggall, A., Gosseries, O., & Postle, B.R. (2014) Evidence for a synaptic theory of working memory: An fMRI/EEG/TMS study. Paper presented at the Annual Meeting of the Society for Neuroscience, Washington D. C.

Rose, N.S., LaRocque, J., Riggall, A., Gosseries, O., & Postle, B.R. (2014) How are attended and unattended items in short term memory represented? A fMRI/EEG/TMS study. Poster presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

Rose, N.S., Craik, F. I. M. & Buchsbaum, B. (2013). Levels of Representations in Working Memory. Paper presentation at the Annual Meeting of the Society for Neuroscience, San Diego, CA.

Rose, N.S., Craik, F. I. M. & Buchsbaum, B. (2013). Similarities and Differences in the Cognitive Processes and Neural Substrates that Support Working Memory and Long-Term Memory. Poster presented at the 20th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.

Rose, N.S., Craik, F. I. M. & Buchsbaum, B. (2012). Similarities and Differences in the Cognitive Processes and Neural Substrates that Support Working Memory and Long-Term Memory. Paper presented at the 53rd Annual Meeting of the Psychonomic Society, Minneapolis, MN.

Rose, N.S., Craik, FIM, Hering, A, Rendell, PG, Moreno, S, Bidelman, GM, & Kliegel, M (2012). Cognitive and Neural Plasticity in Older Adults' Prospective Memory Following Training on the Virtual Week Computer Game. Abstract for poster

presented at the 53rd Annual Meeting of the Psychonomic Society, Minneapolis, MN.

Rose, N.S., Butler, A., Nunes, L. & Roediger, H. L. III (2012). Variability and Testing During Learning: Redundant or Additive Effects? Abstract for poster presented at the 53rd Annual Meeting of the Psychonomic Society, Minneapolis, MN.

Rose, N.S., Craik, FIM, Hering, A, Rendell, PG, Moreno, S, Bidelman, GM, & Kliegel, M (2012). Training Older Adults' Prospective Memory with the Virtual Week Video Game. Abstract for poster presented at the 2012 Cognitive Aging Conference, Atlanta, GA.

Hering, A., Rose, N.S., Craik, F.I.M., Rendell, P.G., Moreno, S., Bidelman, G.M., & Kliegel, M. (2012). Differential predictors of prospective memory performance in old age: Laboratory and naturalistic tasks are associated with different cognitive processes. Paper presented at the Cognitive Aging Conference, Atlanta, Georgia.

Shelton, J., Scullin, M., Lee, J., Rose, N.S., Rendell, P., & McDaniel, M. (2012). Implementation intentions boost prospective memory in healthy and very mildly demented older adults. Paper presented at the Cognitive Aging Conference, Atlanta, Georgia.

Rose, N.S., Olsen, R. K., Craik, F. I. M., & Rosenbaum, R. S. (2012). Working Memory and Amnesia: The Role of Stimulus Familiarity. Abstract for poster presentation, Cognitive Neuroscience Society Meeting, Chicaco, IL.

Rose, N.S. (2012). "Prospective Memory during a Virtual Week in Healthy Aging, Parkinson's Disease, and Alzheimer's Disease" for National Alzheimer's Awareness Month, Baycrest Hospital, Toronto, ON

Rose, N.S., Craik, F. I. M. & Buchsbaum, B. (2011). Similarities and Differences between Working Memory and Long-Term Memory: Evidence from Levels-of-Processing Effects on Working Memory. Paper presented at the 52nd Annual Meeting of the Psychonomic Society, Seattle, WA.

Craik, F. I. M., Rose, N.S., & Gopie, N. (2011). Reducing encoding resources paradoxically boosts memory on an explicit test without awareness. Paper presented at the 52nd Annual Meeting of the Psychonomic Society, Seattle, WA.

Rose, N.S., Olsen, R. K., Rosenbaum, R. S., & Craik, F. I. M. (2011). Working Memory and Amnesia: The Role of Stimulus Familiarity. Abstract for poster presentation, International Conference on Memory, York, UK.

Rose, N.S., Olsen, R. K., Rosenbaum, R. S., & Craik, F. I. M. (2011). Amnesia impairs maintenance of a single face for just one second, unless it's Paris Hilton. Abstract for poster presentation, Cognitive Neuroscience Society Meeting, San Francisco, CA.

Gopie, N., Rose, N.S., & Craik, F. I. M. (2010). Reducing encoding resources paradoxically boosts memory on an explicit test without awareness. Abstract for

poster presentation, 51st Annual Meeting of the Psychonomic Society, St. Louis, MO.

Rose, N.S., Roediger, H. L. III, & Myerson, J. (2010). A processing approach to the working memory/long-term memory distinction: Evidence from a levels-of-processing span task. Abstract for poster presentation, 51st Annual Meeting of the Psychonomic Society, St. Louis, MO.

Agarwal, P., Rose, N.S., & Roediger, H. L. III. (2010). Testing levels the playing field for students with lower working memory capacity. Abstract for poster presentation, 51st Annual Meeting of the Psychonomic Society, St. Louis, MO.

Rose, N.S., Foster, E. T., McDaniel, M. A., & Rendell, P. G. (2010). Prospective memory in Parkinson disease and healthy aging during a Virtual Week. Abstract for poster presentation, Cognitive Aging Conference, Atlanta, GA.

Tamez, E., Hale, S. Myerson, J., Rose, N.S., Sommers, M., Tye-Murray, N., & Spehar, B. (2010). Predicting fluid intelligence and listening comprehension across the adult lifespan. Abstract for poster presentation, Cognitive Aging Conference, Atlanta, GA.

Rose, N.S., Foster, E. T., McDaniel, M. A., & Rendell, P. G. (2010). Prospective memory in Parkinson disease and healthy aging during a Virtual Week. Frontiers in Human Neuroscience. Conference Abstract: The 20th Annual Rotman Research Institute Conference, The Frontal Lobes.

Rose, N.S., McDaniel, M.A., Rendell, P. (2009). Age and individual differences in prospective memory during a "Virtual Week". Abstract for poster presentation, The 21st Annual Convention of the Association for Psychological Science, San Francisco, California.

Rose, N.S., Hale, S. Myerson, J., Sommers, M., Tye-Murray, N., & Spehar, B. (2009). The structure of working memory abilities in younger and older adults: Age invariance regardless of scoring method. Abstract for poster presentation, The 19th Annual Rotman Research Institute Conference, Toronto, Ontario.

Rose, N.S., Myerson, J., Roediger, H.L., III., & Hale, S. (2008). Working memory, secondary memory, and long-term memory: Insights from the levels-of-processing span task. Paper presented at the 49th Annual Meeting of the Psychonomic Society, Chicago, IL.

Hale, S. Myerson, J., Sommers, M., Tye-Murray, N., Spehar, B. & Rose, N.S. (2008). Modeling Spoken Discourse Comprehension across the Adult Lifespan. Abstract for poster presentation, 49th Annual Meeting of the Psychonomic Society, Chicago, IL.

Rose, N.S., Myerson, J., Roediger, H.L., III., & Hale, S. (2008). Working memory, secondary memory, and long-term memory: Insights from the levels-of-processing span task. Paper presented at the Show-Me Mental State Conference. University of Missouri.

Rose, N.S., Myerson, J., Roediger, H.L., III., & Hale, S. (2008). Does Depth of Processing Affect Memory for Items From Working Memory Tasks? Paper presented at the 20th Annual Convention of the Association for Psychological Science, Chicago, Illinois.

Rose, N.S., McDaniel, M.A., Rendell, P. (2008). Age and Individual Differences in Prospective Memory During a "Virtual Week": The Role Working Memory, Vigilance, Task-Habituation, and Cue-Focality. Abstract for poster presentation, Cognitive Aging Conference, Atlanta, Georgia.

Rose, N.S., Hale, S. Myerson, J., Sommers, M., Tye-Murray, N., & Spehar, B. (2008). Working Memory Ability across the Adult Life-Span. Abstract for poster presentation, Cognitive Aging Conference, Atlanta, Georgia.

Hale, S. Myerson, J., Sommers, M., Tye-Murray, N., Spehar, B. & Rose, N.S., (2008). Spoken Discourse Comprehension across the Adult Lifespan. Abstract for poster presentation, Cognitive Aging Conference, Atlanta, Georgia.

Rose, N.S., McDaniel, M.A., Rendell, P. (2007). Prospective Memory in a Virtual Week. Paper presented at the Cognitive Aging Conference, Adelaide, South Australia.

Rose, N.S., Myerson, J., Roediger, H.L., III., & Hale, S. (2007). Depth of Processing Differentially Affects Working Memory and Long-Term Memory. Abstract for poster presentation, 48th Annual Meeting of the Psychonomic Society, Long Beach, California.

Rose, N.S., Hale, S. Myerson, J., Sommers, M., Tye-Murray, N., & Spehar, B. (2006). Development of the LISN Test for Assessing Spoken Discourse Comprehension across the Adult Life-Span. Paper presented at the Auditory Perception and Cognition for Action Meeting, Houston, Texas.

Rose, N.S., Myerson, J., Sommers, M., & Hale, S. (2006). Interference effects in working memory: Differences due to age and task complexity. Abstract for poster presentation, Cognitive Aging Conference, Atlanta, Georgia.

Rose, N.S., Myerson, J., Sommers, M., & Hale, S. (2005). The effects of domain specific rehearsal suppression on working memory. Paper presented at the Show-Me Conference, University of Missouri.