

Ezra Winter-Nelson

+1 (217) 390-8493 | ezra@utdallas.edu

EDUCATION**University of Texas at Dallas (UTD)**

Center for Vital Longevity, School of Brain and Behavioral Sciences

- Ph.D. Candidate, Cognition and Neuroscience 2019-
Advisor: Gagan Wig, Ph.D.
Dissertation title: *Patterns of age-related functional brain network reorganization across humans, macaques, marmosets, and mice*

University of Illinois at Urbana-Champaign (UIUC)

- B.S. Molecular and Cellular Biology 2018
◦ Minor in Computer Science | Certificate in Neuroscience
- Chancellor's Scholar/Campus Honors Program 2013-2018

RESEARCH INTERESTS

Linking individual differences in brain organization to cognition and behavior
Multivariate and graph theoretical approaches to brain network analysis
Evolutionary and ecological influences on cortical organization and behavior
Arealization and specialization of association cortex

RESEARCH EXPERIENCE**Wig Neuroimaging Lab, UTD***Principal Investigator: Gagan Wig, Ph. D.*

Graduate Research Assistant 2019-

Control & Network Connectivity Team (CONNECT Lab), UIUC*Principal Investigator: Sepideh Sadaghiani, Ph. D.*

Lab Manager 2018-2019

Undergraduate Research Assistant 2016-2018

Memory Systems Lab, UIUC*Principal Investigator: Neal Cohen, Ph. D.; Supervisor: Hillary Schwarb, Ph.D.*

Lab Coordinator 2017-2018

Undergraduate Research Assistant 2013-2017

AWARDS & HONORS

Bruce McEwen Career Development Fellowship on Social Determinants of Health 2024

University of Texas at Dallas Department of Brain and Behavioral Sciences Travel Award 2022,2024,2025

University of Illinois Chancellor's Scholarship 2013-2018

PUBLICATIONS AND ARTICLES UNDER REVIEW

1. **Winter-Nelson, E.**, Bergmann, E., Chan, M. Y., Han, L., Zhang, Z., Kavushansky, A., Dolgopyat, I., Asleh, J., Whitesell, J. D., Kahn, I., Wig, G. S. *Correspondence of large-scale functional brain network decline across aging mice and humans.* (in revision).
2. Han, L., Chan, M. Y., Agres, P. F., **Winter-Nelson, E.**, Zhang, Z., & Wig, G. S. (2024). *Measures of resting-state brain network segregation and integration vary in relation to data quantity: implications for within and*

between subject comparisons of functional brain network organization. Cerebral Cortex, 34(2). doi: 10.1093/cercor/bhad506

3. Zhang, Z., Chan, M. Y., Han, L., Carreno, C. A., **Winter-Nelson, E.**, Wig, G. S., ADNI. (2023). *Dissociable effects of Alzheimer's Disease-related cognitive dysfunction and aging on functional brain network segregation. Journal of Neuroscience.* doi: 10.1523/JNEUROSCI.0579-23.2023

POSTERS

1. **Winter-Nelson, E.**, Liguore, W., Grigorian, A., Chan, M.Y., Bergmann, E., Vill, G., Han, L., Zhang, Z., Kahn, I., Russ, B.R., Weiss, A.R., Wig, G.S. (2025). Age-related functional brain network decline in anesthetized rhesus macaques. Society for Neuroscience Annual Meeting, San Diego, CA.
2. **Winter-Nelson, E.**, Bergmann, E., Chan, M.Y., Han, L., Zhang, Z., Russ, B.E., Weiss, A.R., Kahn, I., Wig, G.S. (2025). Cross-species comparison of large-scale functional brain network alterations in aging humans, marmosets, and mice. Dallas Aging and Cognition Conference, Dallas, TX.
3. Pipoly, M., Chan, M.Y., Zhang, Z., **Winter-Nelson, E.**, Wig, G. S. (2025). Task-related alterations in large-scale brain network organization vary across adulthood. Dallas Aging and Cognition Conference, Dallas, TX.
4. Zhang, Z., Chan, M.Y., Massett, R.J., **Winter-Nelson, E.**, Wig, G.S., Alzheimer's Disease Neuroimaging Initiative (ADNI). (2025). Functional brain network organization supports cognitive function in patients with Alzheimer's disease-related pathological burden and brain atrophy. Dallas Aging and Cognition Conference, Dallas, TX.
5. **Winter-Nelson, E.**, Bergmann, E., Chan, M.Y., Han, L., Klausner, S., Zhang, Z., Kavushansky, A., Asleh, J., Kahn, I., Wig, G.S. (2024). Cross-species comparison of large-scale functional brain network alterations in aging humans, marmosets, and mice. Society for Neuroscience Annual Meeting, Chicago, IL.
6. Zhang, Z., Chan, M.Y., **Winter-Nelson, E.**, Wig, G.S. (2024). Functional brain network organization supports cognitive function in patients with Alzheimer's Disease-related pathological burden and brain atrophy. Alzheimer's Imaging Consortium Pre-conference, Philadelphia, PA.
7. **Winter-Nelson, E.**, Bergmann, E., Chan, M.Y., Han, L., Klausner, S., Zhang, Z., Kavushansky, A., Asleh, J., Algoo, J., Kahn, I., Wig, G.S. (2023). Patterns of large-scale functional brain network decline are conserved across aging mice and humans. Society for Neuroscience Annual Meeting, Washington, DC.
8. Zhang, Z., Chan, M.Y., Han, L., Carreno, C.A., **Winter-Nelson, E.**, Alzheimer's Disease Neuroimaging Initiative (ADNI), Wig, G.S. (2023). Independent effects of Alzheimer's disease dementia severity and aging on functional brain network organization at rest. Resting-state Brain Connectivity Annual Conference. Dallas, TX.
9. Chan, M.Y., Nelson, R., Han, L., **Winter-Nelson, E.**, Wig, G.S. (2023). Reliability of network measure from resting-state fMRI events and sub-sampled timeseries. Resting-state Brain Connectivity Annual Conference. Dallas, TX.
10. **Winter-Nelson, E.**, Bergmann, E., Chan, M.Y., Han, L., Klausner, S., Zhang, Z., Kavushansky, A., Asleh, J., Algoo, J., Kahn, I., Wig, G.S. (2023). Patterns of large-scale functional brain network decline are conserved across aging mice and humans. Resting-state Brain Connectivity Annual Conference. Dallas, TX.
11. **Winter-Nelson, E.**, Bergmann, E., Chan, M.Y., Han, L., Klausner, S., Kavushansky, A., Asleh, J., Li, Y., Murdy, T., Zhang, S., Harris, J.A., Febo, M., Kaczorowski, C., Kahn, I., Wig, G.S. (2023). Cross-species homologies in patterns of large-scale functional brain network decline across aging mice and humans. Dallas Aging & Cognition Conference, Dallas, TX.
12. Zhang, Z., Chan, M.Y., Han, L., Carreno, C.A., **Winter-Nelson, E.**, Alzheimer's Disease Neuroimaging Initiative (ADNI), Wig, G.S. (2023). Independent effects of Alzheimer's disease dementia severity and aging on functional brain network organization at rest. Dallas Aging & Cognition Conference, Dallas, TX.
13. Klausner, S., Seale, M.A., Sullins, C., Rayanki, A., Nguyen, L.T., **Winter-Nelson, E.**, Zhang, Z., Chan, M., Carreno, C.A., Munson, M., Lakhanpal, S., Jaiswal, S., Reingle-Gonzalez, J.M., Park, D.C., Brown, E.S., Wig, G.S. (2023). The Midlife Brain and Environment Study (MBES): A longitudinal brain imaging study investigating the health,

environment, and lifestyle factors that moderate brain and cognitive aging. Dallas Aging & Cognition Conference, Dallas, TX.

14. **Winter-Nelson, E.**, Bergmann, E., Chan, M.Y., Han, L., Kavushansky, A., Asleh, J., Li, Y., Murdy, T., Zhang, S., Harris, J.A., Febo, M., Kaczorowski, C., Kahn, I., Wig, G.S. (2022). Cross-species homologies in patterns of large-scale functional brain network decline across aging mice and humans. Society for Neuroscience Annual Meeting, San Diego, CA.
15. **Winter-Nelson, E.**, Bergmann, E., Chan, M.Y., Han, L., Kavushansky, A., Asleh, J., Li, Y., Murdy, T., Zhang, S., Febo, M., Kaczorowski, C., Kahn, I., Wig, G.S. (2022). Cross-species homologies in patterns of large-scale functional brain network decline across aging mice and humans. Cognitive Neuroscience of Aging Conference, Dallas, TX.
16. Zhang, Z., Chan, M.Y., Han, L., Carreno, C.A., **Winter-Nelson, E.**, Alzheimer's Disease Neuroimaging Initiative (ADNI), Wig, G.S.. (2022). Independent effects of Alzheimer's disease and aging on functional brain network organization at rest. Cognitive Neuroscience of Aging Conference, Dallas, TX.

SCIENTIFIC TALKS

Animal Models for the Social Dimensions of Health and Aging Research Network: 2025 Capstone Catalysis Meeting, Chapel Hill, NC. (January 2025). *Primate models targeting the impact of stress on age-related brain network decline*. (Flash talk)

Psychology Lecture Series, University of Texas at Dallas, Dallas, TX. (February 2023). *Cross-species homologies in patterns of large-scale functional brain network decline across aging mice and humans*.

Dallas & Austin Area Memory Meeting. Waco, TX. (October 2022). *Cross-species homologies in patterns of large-scale functional brain network decline across aging mice and humans*.

Dallas & Austin Area Memory Meeting, Dallas, TX. (October 2021). *The locus coeruleus as a heterogenous modulator of brain network dynamics*.

Invited guest lectures for CGS 3361: Cognitive Psychology, University of Texas at Dallas, Dallas, TX. (November 2020, April 2021, November 2021). *Introduction to Network Neuroscience*.

TEACHING EXPERIENCE

Graduate Teaching Assistant (University of Texas at Dallas):

Cognitive Psychology	2020-2021
Research Design and Analysis	2021
Experimental Projects in Psychology	2019-2020

PROFESSIONAL MEMBERSHIPS

Society for Neuroscience	2022-
--------------------------	-------

TECHNICAL SKILLS

Programming: MATLAB, Bash, Python, R

Imaging Software: FSL, MRICron, FreeSurfer, SPM, AFNI, Connectome Workbench

AD-HOC REVIEWING

Neuron	Neuroimage	Network Neuroscience	Nature Neuroscience
--------	------------	----------------------	---------------------

OTHER INTERESTS

Spending time in nature, playing basketball, and collecting used books faster than I can read them