

CURRICULUM VITAE

Josh Neudorf

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Canada

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CITIZENSHIP: Canadian

EMPLOYMENT

2025 - Present	Assistant Professor Centre for Psychology Athabasca University
2026- Present	Faculty Member Neuroscience and Mental Health Institute University of Alberta
2026 - Present	Adjunct Professor Department of Communication Sciences and Disorders University of Alberta
2025 - Present	Adjunct Professor Department of Psychology University of Alberta
2024 - 2025	Canadian Neuroanalytics Scholars Program Postdoctoral Fellow Institute for Neuroscience & Neurotechnology, Simon Fraser University Supervisor: Randy McIntosh
2022 - 2024	NSERC Postdoctoral Fellow Institute for Neuroscience & Neurotechnology, Simon Fraser University Supervisor: Randy McIntosh

EDUCATION

ACADEMIC HISTORY

2022	Ph.D., Cognition and Neuroscience University of Saskatchewan Thesis: <i>Relating structural connectivity to brain function using deep learning, graph theory, complexity, and disease</i> Supervisor: Ron Borowsky
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- 2019 Master's Degree, Cognition and Neuroscience
University of Saskatchewan
Thesis: *Preferential access to object semantics via lexical processing in the ventral stream of the brain*
Supervisor: Ron Borowsky
- 2017 Bachelor's Honours of Science with High Honours, Psychology
University of Saskatchewan
Thesis: *Interactions of reading and semantics along the ventral and dorsal visual processing streams*
Supervisor: Ron Borowsky

GRADUATE COURSEWORK

- 2020 GPS 989 Introduction to University Teaching
2020 PSY 807 Multivariate Statistics
2020 CMPT 898 Deep Learning and Applications
2019 PSY 838 Advanced Seminar in Language Processing
2018 BIOE 805 Magnetic Resonance Imaging Physics
2018 PSY 846 Advanced Seminar in Human Neuropsychology
2017 CMPT 858 Topics in Modeling and Operations Research
2017 PSY 805 Univariate General Linear Models

TRAINING WORKSHOPS

- 2017 FMRI Software Library (FSL) Training Course
Analysis Group, FMRI, Oxford

RESEARCH GRANTS/FUNDS

- 2026-2029 **New Investigator Award Supplement**
Saskatchewan Health Research Foundation (\$15,000; Co-Investigator)
- 2026-2029 **New Investigator Award**
Parkinson Canada (\$135,000; Co-Investigator)
- 2025-2028 **Research Incentive Grant**
Athabasca University (\$45,000)
- 2024 - 2025 **Canadian Neuroanalytics Scholars Program Postdoctoral Fellowship**
Hilary & Galen Weston Foundation (\$140,000; second year declined after accepting Assistant Professor position)
- 2023 **INN Travel Award**
Institute for Neuroscience and Neurotechnology, Simon Fraser University (\$1000)
- 2022 - 2024 **NSERC Postdoctoral Fellowships Program**
Natural Sciences and Engineering Research Council of Canada (\$90,000)
- 2019 **University of Saskatchewan Student Travel Award**
University of Saskatchewan (\$550)

ACADEMIC AWARDS, HONOURS, AND SCHOLARSHIPS

2023	CPA Certificate of Academic Excellence Award (Doctoral Thesis) Canadian Psychological Association
2023	Governor General's Gold Medal University of Saskatchewan (\$500)
2019 - 2022	NSERC Alexander Graham Bell Canada Graduate Scholarship – Doctoral Natural Sciences and Engineering Research Council of Canada (\$105,000) Top-ranked applicant in Selection Committee 196 (Psychology)
2019 - 2022	University of Saskatchewan College of Graduate Studies and Research Dean's Scholarship University of Saskatchewan (\$66,000; declined)
2021	CNS Graduate Student Award Cognitive Neuroscience Society (\$100)
2017-2019	University of Saskatchewan College of Graduate Studies and Research Dean's Scholarship University of Saskatchewan (\$36,000; first year declined)
2017-2018	NSERC Alexander Graham Bell Canada Graduate Scholarship – Master's Natural Sciences and Engineering Research Council of Canada (\$17,500)
2017	CPA Certificate of Academic Excellence Award (Undergraduate Degree) Canadian Psychological Association
2016	NSERC Undergraduate Student Research Award Natural Sciences and Engineering Research Council of Canada (\$4,500)
2015	NSERC Undergraduate Student Research Award Natural Sciences and Engineering Research Council of Canada (\$4,500)
2012-2013	University of Saskatchewan Jennette Gertrude Traynor Award in Engineering University of Saskatchewan (\$500)
2011-2012	University of Saskatchewan Guaranteed Entrance Scholarship University of Saskatchewan (\$3000)

TEACHING AND MENTORSHIP

RECOGNITIONS

2020	CCDP Certificate of Teaching Excellence – Teaching Assistantship Award Canadian Council of Departments of Psychology (\$50)
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GUEST LECTURES

2023	<i>Neurotransmission</i> , Introduction to Biological Psychology (Psy 266), Brandon University.
2023	<i>Semantic memory: Our brains understand the world through a network of representations</i> , Cognition (PSYC 332), University of Northern British Columbia
2023	<i>Semantic memory: Our brains understand the world through a network of representations</i> , Cognitive Psychology (PSYC 258), Grant MacEwan University.
2020	<i>Visual object recognition</i> , Perceptual Processes (PSY 252), University of Saskatchewan.

- 2019 *Shared-stream activation of lexical identification and object semantics along the ventral visual processing stream*, Psychology of Language (PSY 256), University of Saskatchewan.

TEACHING EXPERIENCE

- 2025-present Instructor, *Sensation and Perception* (PSYC 333), Athabasca University
 2025-present Instructor, *Cognitive Psychology* (PSYC 355), Athabasca University
 2021 Instructor, *Research in Advanced Cognitive Science* (PSY 355), University of Saskatchewan
 2018 Co-instructor, *Functional Neuroimaging of Cognitive Processes* (PSY 456), University of Saskatchewan
 2019 Teaching Assistant, *Univariate General Linear Models* (PSY 805), University of Saskatchewan
 Role: developed parallel code examples in *R* to go along with *SPSS* examples, **presented weekly on appropriate strategies for assignments**, graded assignments and exams
 2019 Teaching Assistant, *Psychology of Language* (PSY 256), University of Saskatchewan
 Role: **presented lecture** on research in our lab regarding the interaction of reading and semantics in the ventral stream of the brain, grading assignments and exams
 2018 Teaching Assistant, *Introduction to Health Studies* (HLST 110), University of Saskatchewan
 Role: graded exams and papers, organized online platform

SUPERVISION & MENTORSHIP

- 2017-present I have demonstrated communication, interpersonal, and leadership abilities by helping to supervise five Undergraduate students, two Master's student, and one PhD student since 2017 in the Cognitive Neuroscience Lab with Ron Borowsky. I mentored one undergraduate student, one Master's student, and one PhD student in Randy McIntosh's Neuroscience Research Lab. At Athabasca University I have supervised two undergraduate research assistants so far. At the University of Alberta I have co-supervised 2 undergraduate research assistants with Dr. Jacqueline Cummine. I am also supervising 4 International Graduate students through the Neuromatch Academy Impact Scholars Program. In total I have mentored/supervised 17 students (one of whom I mentored through ungraduated and graduate levels). I have used hands-on participatory learning with these students to teach skills including statistical analysis techniques using SPSS and R, computer programming in Python, MATLAB, and Linux Bash, experimental design considerations for thesis projects, and neuroimaging analysis methods.
- 2026-present Co-supervisor to Undergraduate Research Assistant Armaan Saini
 2026-present Co-supervisor to Undergraduate Research Assistant Sofiia Zolotarova
 2025-present Supervisor to 4 International Graduate students in the Neuromatch Academy Impact Scholars Program
 2025-present Supervisor to Undergraduate Research Assistant Isha Singh
 2025-present Supervisor to Undergraduate Research Assistant Melissa Fontaine
 2024-2025 Mentor to Master's student Justin Wang
 2024 Mentor to undergraduate directed studies student Kashish Mehta

2023-2025	Mentor to PhD student Leanne Rokos
2021-2022	Co-supervisor to PhD student Shaylyn Kress
2019-2021	Co-supervisor to Master's student Shaylyn Kress
2019-2020	Mentor to Master's student Katherine Gibb
2021-2022	Co-supervisor to Honours student Alice Li
2021	Co-supervisor to NSERC Undergraduate Student Research Award (USRA) recipient Alice Li
2020-2021	Co-supervisor to Honours student Chantal Chabot
2020	Co-supervisor to NSERC USRA recipient Chantal Chabot
2019-2020	Co-supervisor to Honours student Phaedra Berger
2018-2019	Co-supervisor to Honours student Shaylyn Kress
2018-2019	Co-supervisor to Honours student Alexandra Neufeldt
2017-2019	Co-supervisor to NSERC USRA recipient Shaylyn Kress
2017-2018	Co-supervisor to University of Saskatchewan Arts & Science USRA recipient Alexandra Neufeldt

TRAINING

2022	<i>4 Seasons of Reconciliation</i> , First Nations University of Canada
2021	<i>Gender-Based Analysis Plus (GBA+) Certificate of Completion</i> , Women and Gender Equality Canada
2021	<i>Balance & Belonging Speaker Series</i> , University of Saskatchewan Topics: equity, diversity, and inclusivity (EDI) in academia including laboratory environments and the classroom
2020	<i>Introduction to University Teaching</i> (GPS 989), University of Saskatchewan Topics: instructional approaches including the BOPPPS model (Bridge-in, Objectives, Pre-assessment, Participatory learning, Post-assessment, and Summary), and EDI in the classroom

RESEARCH EXPERIENCE

REFEREED JOURNAL PUBLICATIONS (* indicates HQP authorship)

1. Neudorf, J., Rokos, L. *, Shen, K., Kent, B., & McIntosh, A. R. (2026). Young and old adult brains experience opposite effects of acute sleep restriction on the functional connectivity network. *Imaging Neuroscience*. <https://doi.org/10.1162/IMAG.a.1278>
2. Kress, S. *, Neudorf, J., Ekstrand, C., & Borowsky, R. (2025). Exploring the interaction of reading and attention through connectivity with the frontal-eye-field. *Neuroscience*, 585, 249–261. <https://doi.org/10.1016/j.neuroscience.2025.09.007>
3. Rokos, L. *, Bray, S. L., Neudorf, J., Samson, A. D., Shen, K., & McIntosh, A. R. (2025). Examining relationships between functional and structural brain network architecture, age, and attention skills in early childhood. *eNeuro*, 12(7). <https://doi.org/10.1523/ENEURO.0430-24.2025>
4. Neudorf, J., Shen, K., & McIntosh, A. R. (2025). Dynamic network features of functional and structural brain networks support visual working memory in aging adults. *Imaging Neuroscience*, 3. <https://doi.org/10.1162/IMAG.a.5>

5. Kress, S.*, Caron, S., **Neudorf, J.**, Borowsky, B., & Borowsky, R. (2025). Effects of central vs. peripheral attentional-oculomotor exercise on lexical processing. *Quarterly Journal of Experimental Psychology*, 78(10). <https://doi.org/10.1177/17470218241310440>
6. **Neudorf, J.**, Shen, K., & McIntosh, A. R. (2024). Reorganization of structural connectivity in the brain supports preservation of cognitive ability in healthy aging. *Network Neuroscience*, 8(3), 837–859. https://doi.org/10.1162/netn_a_00377
7. **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2023). Comparing models of information transfer in the structural brain network and their relationship to functional connectivity: Diffusion versus shortest path routing. *Brain Structure and Function*, 228(2), 651–662. <https://doi.org/10.1007/s00429-023-02613-2>
8. Kress, S.*, **Neudorf, J.**, Borowsky, B., & Borowsky, R. (2023). What's in a game: Video game visual-spatial demand location exhibits a double dissociation with reading speed. *Acta Psychologica*, 232, 103822. <https://doi.org/10.1016/j.actpsy.2022.103822>
9. **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2022). Structure can predict function in the human brain: A graph neural network deep learning model of functional connectivity and centrality based on structural connectivity. *Brain Structure and Function*, 227(1), 331–343. <https://doi.org/10.1007/s00429-021-02403-8>
10. **Neudorf, J.**, Gould, L., Mickleborough, M. J. S., Ekstrand, C., & Borowsky, R. (2022). Unique, shared, and dominant brain activation in Visual Word Form Area and Lateral Occipital Complex during reading and picture naming. *Neuroscience*, 481, 178–196. <https://doi.org/10.1016/j.neuroscience.2021.11.022>
11. Kress, S.*, **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2021). Unmasking the effects of orthography, semantics, and phonology on 2AFC visual word perceptual identification. *Visual Cognition*, 29(10), 657–678. <https://doi.org/10.1080/13506285.2021.1989099>
12. Gould, L., Kress, S.*, **Neudorf, J.**, Gibb, K.*, Persad, A., Meguro, K., Norton, J., & Borowsky, R. (2021). An fMRI, DTI and neurophysiological examination of atypical organization of motor cortex in ipsilesional hemisphere following post-stroke recovery. *Journal of Stroke and Cerebrovascular Diseases*, 30(3), 105593. <https://doi.org/10.1016/j.jstrokecerebrovasdis.2020.105593>
13. **Neudorf, J.**, Ekstrand, C., Kress, S.*, & Borowsky, R. (2020). Brain structural connectivity predicts brain functional complexity: Diffusion tensor imaging derived centrality accounts for variance in fractal properties of functional magnetic resonance imaging signal. *Neuroscience*, 438, 1–8. <https://doi.org/10.1016/j.neuroscience.2020.04.048>
14. **Neudorf, J.**, Kress, S.*, Gould, L., Gibb, K.*, Mickleborough, M., & Borowsky, R. (2020). Language lateralization differences between left and right temporal lobe epilepsy as measured by overt word reading fMRI activation and DTI structural connectivity. *Epilepsy & Behavior*, 112, 107467. <https://doi.org/10.1016/j.yebeh.2020.107467>
15. Gould, L., Wu, A., Tellez-Zenteno, J. F., **Neudorf, J.**, Kress, S.*, Gibb, K.*, Ekstrand, C., Dabirzadeh, H., Ahmed, S. U., & Borowsky, R. (2020). Atypical language localization in right temporal lobe epilepsy: An fMRI case report. *Epilepsy & Behavior Reports*, 14, 100364. <https://doi.org/10.1016/j.ebr.2020.100364>

16. Ekstrand, C., **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2020). Structural connectivity predicts functional activation during lexical and sublexical reading. *NeuroImage*, 218, 117008. <https://doi.org/10.1016/j.neuroimage.2020.117008>
17. **Neudorf, J.**, Ekstrand, C., Kress, S.*, & Borowsky, R. (2019). fMRI of shared-stream priming of lexical identification by object semantics along the ventral visual processing stream. *Neuropsychologia*, 133, 107185. <https://doi.org/10.1016/j.neuropsychologia.2019.107185>
18. **Neudorf, J.**, Ekstrand, C., Kress, S.*, Neufeldt, A.*, & Borowsky, R. (2019). Interactions of reading and semantics along the ventral visual processing stream. *Visual Cognition*, 27(1), 21–37. <https://doi.org/10.1080/13506285.2019.1577319>
19. Ekstrand, C., **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2019). How words and space collide: Lexical and sublexical reading are reliant on separable reflexive and voluntary attention regions in hybrid tasks. *Cortex*, 121, 104–116. <https://doi.org/10.1016/j.cortex.2019.08.006>
20. Ekstrand, C., **Neudorf, J.**, Gould, L., Mickleborough, M., & Borowsky, R. (2019). Where words and space collide: The overlapping neural activation of lexical and sublexical reading with voluntary and reflexive spatial attention. *Brain Research*, 1706, 1–12. <https://doi.org/10.1016/j.brainres.2018.10.022>
21. Fuller, D., **Neudorf, J.**, Lockhart, S., Plante, C., Roberts, H., Bandara, T., & Neudorf, C. (2019). Individual- and area-level socioeconomic inequalities in diabetes mellitus in Saskatchewan between 2007 and 2012: A cross-sectional analysis. *CMAJ Open*, 7(1), E33–E39. <https://doi.org/10.9778/cmajo.20180042>
22. **Neudorf, J.**, Chen, Y., & Campbell, J. I. D. (2018). Retrieval priming in product verification: Evidence from retrieval-induced forgetting. *Journal of Numerical Cognition*, 4(3), 572–589. <https://doi.org/10.5964/jnc.v4i3.156>
23. Wingerak, S., **Neudorf, J. (co-lead author)**, Gould, L., & Borowsky, R. (2017). On the dissociation between reaction time and response duration as a function of lexical and sublexical reading: An examination of phonetic decoding and computational models. *Visual Cognition*, 25(9–10), 913–927. <https://doi.org/10.1080/13506285.2017.1352640>
24. Ekstrand, C., **Neudorf, J.**, Lorentz, E., Gould, L., Mickleborough, M., & Borowsky, R. (2017). More than a feeling: The bidirectional convergence of semantic visual object and somatosensory processing. *Acta Psychologica*, 181, 1–9. <https://doi.org/10.1016/j.actpsy.2017.09.016>
25. Fuller, D., **Neudorf, J.**, Bermedo-Carrasco, S., & Neudorf, C. (2016). Classifying the population by socioeconomic factors associated with support for policies to reduce social inequalities in health. *Journal of Public Health*, 38(4), 635–643. <https://doi.org/10.1093/pubmed/fdv201>
26. Dosman, J., Hagel, L., King, N., Koehncke, N., Kirychuk, S., Trask, C., **Neudorf, J.**, Day, L., Voaklander, D., & Pickett, W. (2015). The hierarchy of control in the epidemic of farm injury. *Journal of Agromedicine*, 20(3), 360–369. <https://doi.org/10.1080/1059924X.2015.1048401>

PREPRINTS/SUBMITTED

1. **Neudorf, J.** (submitted). Physical activity promotes longitudinal white matter brain adaptations that support fluid intelligence with age. *Scientific Reports*. <https://doi.org/10.64898/2026.05.27.728295>

2. Beggs, K., **Neudorf, J.**, Coote, N., Kress, S.*, Vitali, A., Waterhouse, K., Borowsky, R., & Gould, L. (submitted) The use of fMRI imagery tasks in determining the eligibility of deep brain stimulation in a minimally conscious patient. *NeuroImage*.
3. Kress, S.*, **Neudorf, J.**, & Borowsky, R. (2023). Cognitive cooperation: Video game experience interacts with reading processes and accounts for interactive attentional cueing effects. *PsyArXiv*. <https://doi.org/10.31234/osf.io/r7dc8>

PUBLISHED REPORTS

1. Neudorf, C., Fuller, D., Lockhart, S., **Neudorf, J.**, Plante, C., Williams-Roberts, H., Bandara, T., & Thurairasu, L. (2016). *Changes in social inequalities in health over time in Saskatchewan*. 35. https://healthinequalitiesinsaskatchewan.files.wordpress.com/2016/03/ses_report_final.pdf
2. Hagel, L., Koehncke, N., & **Neudorf, J.** (2016). *Fatal farm injuries in Saskatchewan 1990 to 2013*. University of Saskatchewan Canadian Centre for Health and Safety in Agriculture. 29. https://cchsa-ccssma.usask.ca/documents/FatalFarmInjuriesSK1990_2013.pdf

ORAL CONFERENCE PRESENTATIONS (* indicates mentee authorship)

1. **Neudorf, J.**, Rokos, L.*, Shen, K., Kent, B., & McIntosh, A. R. (2026). Young and old adult brains experience opposite effects of acute sleep restriction on the functional connectivity network. *Joseph R. Royce Research Conference*, University of Alberta, Edmonton, Canada.
2. **Neudorf, J.** (2025; *keynote*). Brain network features supporting cognitive ability in older adults. *International Workshop: Mapping interdisciplinary perspectives on network neuroscience-based brain-behaviour modelling*, Hong Kong Baptist University, Hong Kong.
3. **Neudorf, J.**, Shen, K., & McIntosh, A. R. (2024). Structural brain network configurations unique to older adults help to spare cognitive function. *Canadian Neuroscience Seminars: Postdoctoral Series*, Virtual.
4. **Neudorf, J.**, Shen, K., & McIntosh, A. R. (2024). Reorganization of structural brain networks and functional dynamics preserve cognitive ability across the lifespan. *Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)*, Edmonton, Canada.
5. Kress, S.*, **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2024). A structural and functional examination of the frontal-eye-fields in reading and attention. *Canadian Action and Perception Network (CAP-Net)*, Edmonton, Canada.
6. Kress, S.*, **Neudorf, J.**, & Borowsky, R. (2023). Effects of central vs. peripheral attentional 'exercise' on reading and graphical tasks. *Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)*, Guelph, Canada.
7. **Neudorf, J.** (2023). Predicting spared cognitive function from brain connectivity in healthy aging. *Brain Resilience Workshop*, Simon Fraser University, Vancouver, Canada. (Invited Talk)
8. **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2021). Structure can predict function in the human brain: A graph neural network deep learning model of functional connectivity and centrality based on structural connectivity. *Canadian Society for Brain, Behaviour and Cognitive Science (CSBBCS)*, Virtual.
9. Kress, S.*, **Neudorf, J.**, & Borowsky, R. (2021). The relationship between video games and reading performance is related to visual-spatial attentional demands. *Canadian Society for Brain, Behaviour and Cognitive Science (CSBBCS)*, Virtual.

10. Ekstrand, C., **Neudorf, J.**, Gould, L., Mickleborough, M., & Borowsky, R. (2018). The relationship between lexical and sublexical reading with reflexive and voluntary attention: An fMRI investigation. *University of Saskatchewan Neuroscience Research Symposium*, Saskatoon, Canada.
11. **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2017). Reading with action or perception in mind. *Canadian Action and Perception Network (CAPnet)*, Montreal, Canada.

INVITED COLLOQUIA

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| 2026 | <i>Brain network features supporting cognitive ability with age</i> , Invited Colloquium, Neuroscience and Mental Health Institute (NMHI), University of Alberta, Canada. |
| 2025 | <i>Brain network changes supporting cognitive ability with age</i> , Invited Colloquium, Faculty of Humanities and Social Sciences Research Talks, Athabasca University, Canada. |
| 2025 | <i>Brain connectivity changes supporting cognitive ability with age</i> , Invited Colloquium, Science Outreach – Athabasca, Athabasca University, Canada. |
| 2025 | <i>Networks in cognitive neuroscience: Graph theory, deep learning, and simulation approaches to brain connectivity, semantic memory, and aging research</i> , Invited Colloquium, Athabasca University, Canada. |
| 2024 | <i>Graph theory, deep learning, and complexity approaches to network neuroscience research in healthy, diseased, and aging populations</i> , Invited Colloquium, University of Oldenberg, Germany. |
| 2023 | <i>Networks in Cognitive Neuroscience: Graph Theory, Deep Learning, and Simulation Approaches to Brain Connectivity and Semantic Memory Research</i> , Invited Colloquium, University of Alberta, Canada. |
| 2023 | <i>Networks in Cognitive Neuroscience: Graph Theory and Deep Learning Approaches to Brain Connectivity, Language, and Semantic Memory Research</i> , Invited Colloquium, Brandon University, Canada. |
| 2023 | <i>Networks in Cognitive Neuroscience: Graph Theory and Deep Learning Approaches to Brain Connectivity and Semantic Memory Research</i> , Invited Colloquium, University of Northern British Columbia, Canada. |
| 2023 | <i>Networks in Cognitive Neuroscience: Graph Theory and Deep Learning Approaches to Brain Connectivity and Semantic Memory Research</i> , Invited Colloquium, Grant MacEwan University, Canada. |
| 2023 | <i>Brain Structure Predicts Function: Investigations Using Graph Theory, Complexity, Deep Learning, and Disorder</i> , Invited Colloquium, University of Saskatchewan, Canada. |

POSTER CONFERENCE PRESENTATIONS (* indicates mentee authorship)

1. **Neudorf, J.**, Rokos, L. *, Shen, K., Kent, B., & McIntosh, A. R. (2026). Young and old adult brains experience opposite effects of acute sleep restriction on the functional connectivity network. *Banff Annual Seminar In Cognitive Science (BASICS)*, Canmore, Canada.
2. **Neudorf, J.**, Rokos, L. *, Shen, K., Kent, B., & McIntosh, A. R. (2026). Young and old adult brains experience opposite effects of acute sleep restriction on the functional connectivity network. *Cognitive Neuroscience Society (CNS)*, Vancouver, Canada.

3. Borowsky, R., Kress, S.*, **Neudorf, J.**, & Ekstrand, C. (2026). Frontal eye field in the interaction of reading and attention: Exploring functional activation and structural connectivity. *Cognitive Neuroscience Society (CNS)*, Vancouver, Canada.
4. Kress, S.*, **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2025). Characterizing frontal-eye-field connectivity in reading and attention. *Cognitive Neuroscience Society (CNS)*, Boston, U.S.A.
5. Kress, S.*, **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2024). Frontal-eye-field connectivity in reading and attention: A structural and functional analysis. *Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)*, Edmonton, Canada.
6. **Neudorf, J.**, Shen, K., & McIntosh, A. R. (2023). Cognitive sparing in healthy aging: A structural connectivity perspective. *Neuroscience*, Washington, D.C., U.S.A.
7. **Neudorf, J.**, Shen, K., & McIntosh, A. R. (2023). Structural connectivity can support preservation of cognitive function in healthy aging. *Organization for Human Brain Mapping (OHBM)*, Montreal, Canada.
8. Kress, S.*, **Neudorf, J.**, & Borowsky, R. (2023). Bridging reading and attention through connectivity with the frontal-eye-fields. *Organization for Human Brain Mapping (OHBM)*, Montreal, Canada.
9. **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2022). Deep learning predicts functional connectivity from structural connectivity. *Organization for Human Brain Mapping (OHBM)*, Belfast, Ireland.
10. **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2021). Graph net deep learning predicts functional connectivity centrality from structural connectivity centrality in the human brain. *Organization for Human Brain Mapping (OHBM)*, Virtual.
11. Gould, L., Kress, S.*, **Neudorf, J.**, Gibb, K.*, Persad, A., Meguro, K., Norton, J., & Borowsky, R. (2021) Atypical organization of motor cortex in ipsilesional hemisphere following post-stroke motor recovery. *Organization for Human Brain Mapping (OHBM)*, Virtual.
12. **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2021). Structural connectivity centrality predicts fractal properties of functional magnetic resonance imaging signal. *Cognitive Neuroscience Society (CNS)*, Virtual. **[Received CNS Graduate Student Award for this work.]**
13. Kress, S.*, **Neudorf, J.**, Borowsky, B., Chabot, C.*, & Borowsky, R. (2021). Discovering the link between video gaming and reading: Peripheral demands are associated with attentional cuing and lexical reading. *University of Saskatchewan Life and Health Science Research Expo*, Virtual.
14. **Neudorf, J.**, Kress, S.*, Gould, L., Gibb, K.*, Mickleborough, M., & Borowsky, R. (2020). Overt exception word reading lateralization differences between left and right temporal lobe epilepsy: An fMRI activation and DTI structural connectivity comparison. *Society for the Neurobiology of Language (SNL)*, Virtual.
15. Kress, S.*, **Neudorf, J.**, Borowsky, B., Chabot, C.*, & Borowsky, R. (2020). What's in a game: Visual-spatial changes in video games are associated with endogenous attentional cuing and phonetic decoding. *Society for the Neurobiology of Language (SNL)*, Virtual.
16. **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2020). Relating shortest path, greedy routing, and diffusion theories of DTI networks to fMRI activation. *Organization for Human Brain Mapping (OHBM)*, Virtual.

17. Kress, S.*, **Neudorf, J.**, Gould, L., Mickleborough, M., Gibb, K.*, & Borowsky, R. (2020). Language lateralization in temporal lobe epilepsy as measured by lexical reading of exception words. *Organization for Human Brain Mapping (OHBM)*, Virtual.
18. **Neudorf, J.**, Kress, S.*, Gould, L., Gibb, K.*, Mickleborough, M., & Borowsky, R. (2020). Lateralization of word reading fMRI activation and DTI structural connectivity: Implications for temporal lobe epilepsy. *Cognitive Neuroscience Society (CNS)*, Virtual.
19. **Neudorf, J.**, Kress, S.*, & Borowsky, R. (2020). Assessing shortest path, greedy routing, and diffusion theories of DTI networks using fMRI functional connectivity. *University of Saskatchewan Neuroscience Research Symposium*, Saskatoon, Canada.
20. Kress, S.*, **Neudorf, J.**, Gould, L., Mickleborough, M., Gibb, K.*, & Borowsky, R. (2020). Language lateralization differences between right and left temporal lobe epilepsy as measured by exception word reading fMRI activation. *University of Saskatchewan Neuroscience Research Symposium*, Saskatoon, Canada.
21. Kress, S.*, **Neudorf, J.**, & Borowsky, R. (2019). Level up your reading: Video game experience is related to reading performance. *USRA Poster Competition*, Saskatoon, Canada.
22. **Neudorf, J.**, Ekstrand, C., Kress, S.*, Borowsky, R. (2019). DTI derived centrality predicts fMRI complexity measured with fractal analysis. *Organization for Human Brain Mapping (OHBM)*, Rome, Italy.
23. **Neudorf, J.**, Gould, L., Mickleborough, M., Ekstrand, C., & Borowsky, R. (2019). The extent of shared activation from word reading and picture identification in the VWFA and LOC. *Banff Annual Seminar In Cognitive Science (BASICS)*, Banff, Canada.
24. Kress, S.*, **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2019). In a flash: Investigating the role of orthography, semantics, phonology and attentional skill in the encoding of briefly presented words. *Banff Annual Seminar In Cognitive Science (BASICS)*, Banff, Canada.
25. **Neudorf, J.**, Gould, L., Mickleborough, M., Ekstrand, C., & Borowsky, R. (2019). Shared activation in the VWFA and LOC from word reading and picture identification. *University of Saskatchewan Life and Health Science Research Expo*, Saskatoon, Canada.
26. Kress, S.*, **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2019). The role of orthography, semantics, and phonology in the encoding of briefly presented words. *University of Saskatchewan Life and Health Science Research Expo*, Saskatoon, Canada.
27. **Neudorf, J.**, Ekstrand, C., Kress, S.*, Neufeldt, A.*, & Borowsky, R. (2018). Semantic priming of lexical decision by visual processing stream: Exploring semantic engagement through foil manipulation. *Banff Annual Seminar In Cognitive Science (BASICS)*, Banff, Canada.
28. Ekstrand, C., **Neudorf, J.**, Gould, L., Mickleborough, M., & Borowsky, R. (2018). Unravelling words and space: The relationships of lexical and sublexical reading with voluntary and reflexive attention. *Banff Annual Seminar In Cognitive Science (BASICS)*, Banff, Canada.
29. Kress, S.*, **Neudorf, J.**, Neufeldt, A.*, Ekstrand, C., & Borowsky, R. (2018). Under the mask: Do word characteristics aid subconscious identification?. *USRA Poster Competition*, Saskatoon, Canada.
30. **Neudorf, J.**, Ekstrand, C., Kress, S.*, Neufeldt, A.*, & Borowsky, R. (2018). Visual stream semantic priming of reading aloud and lexical decision. *Society for the Neurobiology of Language (SNL)*, Quebec City, Canada.

31. **Neudorf, J.**, Ekstrand, C., Kress, S.*, Neufeldt, A.*, & Borowsky, R. (2018). Visual stream semantic priming of reading aloud and lexical decision: Exploring interactions with stimulus quality and foil-type. *University of Saskatchewan Neuroscience Research Symposium*, Saskatoon, Canada.
32. Kress, S.*, **Neudorf, J.**, Ekstrand, C., Neufeldt, A.*, & Borowsky, R. (2018). Language processing streams and subconscious word identification. *University of Saskatchewan Neuroscience Research Symposium*, Saskatoon, Canada.
33. **Neudorf, J.**, Ekstrand, C., Kress, S.*, Neufeldt, A.*, & Borowsky, R. (2018). Semantic priming of reading by visual processing stream: Intact vs. degraded stimuli. *Cognitive Neuroscience Society (CNS)*, Boston, United States.
34. Ekstrand, C., **Neudorf, J.**, Mickleborough, M., Gould, L., & Borowsky, R. (2018). A functional magnetic resonance imaging investigation of the overlap between voluntary and reflexive spatial attention and lexical and sublexical reading. *Cognitive Neuroscience Society (CNS)*, Boston, United States.
35. **Neudorf, J.**, Ekstrand, C., Kress, S.*, Neufeldt, A.*, & Borowsky, R. (2018). Semantic priming of reading and lexical decision by visual processing stream: Exploring semantic engagement through manipulation of stimulus quality and foils. *Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)*, St. John's, Canada.
36. Ekstrand, C., **Neudorf, J.**, Gould, L., Mickleborough, M., & Borowsky, R. (2018). Overlap of lexical and sublexical reading with reflexive and voluntary attention: An fMRI investigation. *Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)*, St. John's, Canada.
37. Ekstrand, C., **Neudorf, J.**, Borowsky, R. (2018). Differential engagement of ventral and dorsal attentional regions for lexical versus sublexical reading. *Canadian Action Perception Network (CAPnet)*, Vancouver, Canada.
38. **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2017). Interactions of reading and semantics along the ventral and dorsal visual processing streams. *Canadian Association for Neuroscience (CAN)*, Montreal, Canada.
39. Ekstrand, C., **Neudorf, J.**, Borowsky, R. (2017). The reciprocal relationship between somatosensory and object processing. *Canadian Association for Neuroscience (CAN)*, Montreal, Canada.
40. Ekstrand, C., **Neudorf, J.**, & Borowsky, R. (2017). The reciprocal relationship between somatosensory and object processing. *Canadian Action Perception Network (CAPnet)*, Montreal, Canada.
41. Chen, Y., Campbell, J. I. D., **Neudorf, J.**, & Loehr, J. (2017). No automatic min counting for adults' simple addition: A behavioural and ERP study of size congruency effect. *Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)*, Regina, Canada.
42. Campbell, J. I. D., **Neudorf, J.**, & Chen, Y. (2017). Retrieval-induced forgetting of simple addition by verification of multiplication counterparts. *Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)*, Regina, Canada.
43. **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2017). Semantic priming of reading. *USRA Poster Competition*, Saskatoon, Canada.

44. Ekstrand, C., **Neudorf, J.**, & Borowsky, R. (2017). Relationships between behaviour and brain using resting state fMRI. *University of Saskatchewan Neuroscience Research Symposium*, Saskatoon, Canada.
45. **Neudorf, J.**, Ekstrand, C., Kress, S., Neufeldt, A., & Borowsky, R. (2017). Semantic priming of reading by visual processing stream: Intact vs. degraded stimuli. *University of Saskatchewan Neuroscience Research Symposium*, Saskatoon, Canada.
46. **Neudorf, J.**, Ekstrand, C., & Borowsky, R. (2017). Semantic priming of reading by visual processing stream. *Banff Annual Seminar In Cognitive Science (BASICS)*, Banff, Canada.
47. Ekstrand, C., **Neudorf, J.**, & Borowsky, R. (2017). Relationships between behaviour and brain using fMRI and structural neuroimaging. *Banff Annual Seminar In Cognitive Science (BASICS)*, Banff, Canada.
48. Ekstrand, C., **Neudorf, J.**, & Borowsky, R. (2017). The overlapping neural mechanisms of lexical and sublexical reading with spatial attention. *Organization for Human Brain Mapping (OHBM)*, Vancouver, Canada.
49. Chen, Y., Campbell, J. I. D., **Neudorf, J.**, & Loehr, J. (2017). Is an automatic min-counting strategy for adults' simple addition possible? A behavioural and ERP study of size congruency effect. *International Convention of Psychological Science (ICPS)*, Vienna, Austria.
50. **Neudorf, J.**, Chen, Y., Campbell, J. I. D. (2016). Retrieval-induced forgetting by verification and production of arithmetic facts. *USRA Poster Competition*, Saskatoon, Canada.
51. Ballantyne, C., Gardner, M., & **Neudorf, J.** (2016). Effects of empathy and moral intensity on reasoning in moral dilemmas. *The 29th Annual Psychology Undergraduate Research Conference*, Saskatoon, Canada.

RESEARCH ASSISTANTSHIPS

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|-------------|---|
| 2015 - 2017 | <i>Community Health & Epidemiology</i> , University of Saskatchewan
Role: data cleaning and statistical analysis of large secure datasets at the Canadian Research Data Centre (CRDC) and Health Quality Council (HQC) of Saskatchewan |
| 2014 | <i>Canadian Centre for Health and Safety in Agriculture (CCHSA)</i> , University of Saskatchewan
Role: data collection of grain dust exposure during transportation of grain from silos in rural Saskatchewan and lung function testing, data entry for Saskatchewan Farm Injury Study |
| 2013 | <i>Canadian Centre for Health and Safety in Agriculture (CCHSA)</i> , University of Saskatchewan
Role: data collection of grain dust exposure during transportation of grain from silos in rural Saskatchewan and lung function testing, lung function testing and questionnaires in First Nations reservation schools |
| 2012 | <i>Canadian Centre for Health and Safety in Agriculture (CCHSA)</i> , University of Saskatchewan
Role: statistical analysis of farm fatality data, data collection of lung function testing and living condition questionnaires in First Nations reservations |

PROFESSIONAL ACTIVITIES AND MEMBERSHIPS

COMMITTEE SERVICE

2025-2028 Academic Research Fund Committee, Athabasca University
 2026 Academic Tutor Hiring Committee, Athabasca University (x2)

EDITOR

2025 Consulting Editor for Cortex

REVIEWER

2026 Brain Structure and Function
 2026 Cortex (x2)
 2025 Brain Research
 2025 European Journal of Neuroscience
 2025 Scientific Reports
 2025 Network Neuroscience
 2025 Neurobiology of Language
 2025 Nature
 2025 Cortex
 2025 Cortex
 2025 Network Neuroscience
 2024 IEEE Transactions on Medical Imaging
 2024 Imaging Neuroscience
 2024 Network Neuroscience
 2023 Brain Imaging and Behavior
 2023 Language, Cognition and Neuroscience
 2023 Heliyon
 2023 Cortex
 2022 Cortex
 2022 PLOS Computational Biology
 2022 NSF CAREER

AD HOC REVIEWER

2018 Canadian Journal of Experimental Psychology
 2017 Canadian Journal of Experimental Psychology

MEMBERSHIPS

Institute for Neuroscience and Neurotechnology (INN), Simon Fraser University
 Neuroimaging and Mental Health Institute (NMHI), University of Alberta
 Organization for Human Brain Mapping (OHBM)
 Society for Neuroscience (SFN)
 Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)
 Society for the Neurobiology of Language (SNL)
 Cognitive Neuroscience Society (CNS)

EVENT ADMINISTRATION

- 2018 Organizational committee member, University of Saskatchewan Neuroscience Research Symposium
- 2017 Organizational committee member, University of Saskatchewan Neuroscience Research Symposium

COMMUNITY AND VOLUNTEER ACTIVITIES

- 2025 – 2026 *Impact Scholars Program*, Neuromatch Academy
Role: Supervisor to team of 4 graduate students based in International Universities working on advanced network neuroscience analyses of Human Connectome Project data.
- 2017 - 2022 *Clinical FMRI Team*, University of Saskatchewan, Neuroimaging Analyst
Role: As a member of Prof. Ron Borowsky's lab, I was part of the clinical magnetic resonance imaging (MRI) team, where I provided localization of language processes and structural connectivity in patients who were about to undergo neurosurgery near eloquent cortex. This not only improved their standard of care, but also provided us with real 'bench-to-bedside' translation of basic research, and the patient results also provided important tests of our models of basic cognitive function.
- 2017 - 2019 *Saskatchewan Neuroscience Network*, Volunteer
Role: I volunteered to help with the Saskatchewan Neuroscience Network's main events including Brain Awareness Week. During the yearly Brain Awareness Week I helped to set up and operate a model MRI where the public including children and adults could experience what it is like to participate in a MRI brain scan and a functional MRI cognitive neuroscience experiment. Unfortunately, this event was not possible since the outbreak of COVID-19.

MEDIA COVERAGE OF RESEARCH

- University professor presents on brain connectivity and aging*, November 3, 2025. [St. Albert Gazette](#).
- Athabasca University professor presents on brain connectivity and aging*, November 2, 2025. [Athabasca Advocate](#).
- Graduate students recognized with Governor General's Gold Medal awards*, May 25, 2023. [USask](#).
- Playing video games may enhance reading skills, according to U of S study*, March 6, 2022. [The Star Phoenix](#) and [USask Young Innovators Series](#); picked up by: [Phys.org Mar 8 2022](#) [Education News Canada Mar 9 2022](#) [Daily Mail Mar 10 2022](#) [Science Times Mar 10 2022](#)
- Computer mapping of brain connections may reduce the number of required MRI scans: U of S research*, January 18, 2022. [The Star Phoenix](#) and [USask Young Innovators Series](#).