

Education

2016 – Current	Doctor of Philosophy – Psychology Brown University in Providence, USA PhD Supervisors: Amitai Shenhav & Michael J. Frank PhD Committee: Amitai Shenhav, Michael J. Frank, & Jörn Diedrichsen Thesis: <i>Multivariate Cognitive Control</i> .
2014 – 2016	Master of Science – Psychology (Cognitive and Behavioral Neuroscience) University of Western Ontario in London, CA MSc. Supervisor: Ingrid Johnsrude Thesis: <i>The effects of concurrent cognitive load on the processing of clear and degraded speech</i> .
2010 – 2014	Bachelor of Science (Honors, Distinction) - Psychology Queen's University in Kingston, CA Honors Thesis Supervisor: Ingrid Johnsrude Thesis: <i>Attention enhances phase-locking in the brainstem frequency-following response</i> .

Accolades & Funding

Starting 2022	C.V. Starr Foundation Postdoctoral Fellowship , Princeton University
2019 – 2020	Carney Graduate Award in Brain Science , Brown University (\$55,000 USD)
2019	Cognitive Science Society Travel Award (\$500 USD)
2018 – 2019	Eimas Graduate Research Award , Brown University (\$1,000 USD)
2014	Certificate of Academic Excellence for top honors thesis in graduating class, Canadian Psychological Association
2011	Summer Work Experience Program , Queen's University (\$2,500 CAD)
2010 – 2014	Dean's Honor List , Queen's University
2010 – 2014	Foresters Competitive Scholarship (\$8,000 CAD)
2010	Queen's University Excellence Scholarship (\$2,000 CAD)

Peer-Reviewed Publications

- Ritz, H.**, Wild, C., & Johnsrude, I. (In Press) Parametric cognitive load reveals hidden costs in the neural processing of perfectly intelligible degraded speech. *Journal of Neuroscience*.
- Rmus, M., **Ritz, H.**, Hunter, L. E., Bornstein, A. M., & Shenhav, A. (2022). Humans can navigate complex graph structures acquired during latent learning. *Cognition*, 225, 105103.
- Ritz, H.**, Leng, X., & Shenhav, A. (2022). Cognitive Control as a Multivariate Optimization Problem. *Journal of Cognitive Neuroscience*, 1–23.
- Leng, X., Yee, D., Ritz, H., & Shenhav, A. (2021). Dissociable influences of reward and punishment on adaptive cognitive control. *PLoS Computational Biology*, 17(12), e1009737.
- Ritz, H.**, Frömer, R., & Shenhav, A. (2020). Bridging motor and cognitive control: It's about time! (Spotlight). *Trends in Cognitive Sciences*. 24(1), 6–8.

Nassar, M.R., McGuire, J.T., **Ritz, H.**, & Kable, J. (2019). Dissociable forms of uncertainty-driven representational change across the human brain. *Journal of Neuroscience*, 39(9), 1688-1698.

Ritz, H., Nassar, M.R., Frank, M.J., & Shenhav, A. (2018). A control theoretic model of adaptive behavior in dynamic environments. *Journal of Cognitive Neuroscience*, 30(10), 1405-1421.

Manuscripts Under Review or In Revision

Ritz, H., & Shenhav, A. Humans reconfigure target and distractor processing to address distinct task demands. Preprint: <https://doi.org/10.1101/2021.09.08.459546>

Peer-Reviewed Conference Proceedings

Ritz, H., DeGutis, J., Frank M.J., Esterman, M., & Shenhav, A. (2020). An evidence accumulation model of motivational and developmental influences over sustained attention. *In Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*. Toronto, CA. [Poster].

Leng, X., **Ritz, H.**, Yee, D., & Shenhav, A. (2020). Dissociable influences of reward and punishment on adaptive cognitive control. *In Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*. Toronto, CA. [Poster]

Ritz, H. & Shenhav, A. (2019). Parametric control of distractor-oriented attention. *In Proceedings of the 41st Annual Meeting of the Cognitive Science Society*. Montreal, CA. [Talk].

Ritz, H., Nassar, M.R., Frank, M.J., & Shenhav, A. (2019). Decisions about reward and effort for the learning and control of dynamical systems. *In 4th Multidisciplinary Conference on Reinforcement Learning and Decision Making*. Montreal, CA. [Poster].

Ritz, H., Nassar, M.R., Frank, M.J., & Shenhav, A. (2017). Behavioral evidence for PID-like feedback control. *In 3rd Multidisciplinary Conference on Reinforcement Learning and Decision Making*. Ann Arbor, USA. [Poster and Poster Spotlight Talk].

External Seminar Series Talks

Oct. 2021	Ghent Effort Group , Ghent University. Ghent, BE.
Feb. 2020	ConCat Series , New York University. New York, USA.
May 2018	CBC Series , Universitat Pompeu Fabra. Barcelona, ES.

External Lab Meeting Talks

Feb 2022	Woolgar Lab , University of Cambridge.
Feb 2022	Egner Lab , Duke University.
Nov 2021	Otto Lab , McGill University.
July 2021	Mars Lab , Oxford University.
June 2021	CoCoA Lab (Taraz Lee) , University of Michigan.
May 2021	Verguts Lab , Ghent University.
Apr. 2021	Western Sensorimotor SuperLab , Western University.
Mar. 2021	Daw Lab , Princeton University.
Feb. 2021	Summerfield Lab , Oxford University.
Nov. 2020	Jazayeri Lab , Massachusetts Institute of Technology.
Oct. 2020	Schultz Lab , Max Planck Institute for Biological Cybernetics.
Sept. 2020	Kool Lab , University of Washington in St. Louis.

Aug. 2020	Collins Lab , University of California Berkeley.
May 2020	McGuire Lab , Boston University.
Apr. 2020	Hayden Lab , University of Minnesota.
Mar. 2020	Donner Lab , Hamburg University.

Conference Presentations

Ritz, H., Frömer, R. & Shenhav, A. Disentangling stimulus-driven and controlled processes during value-based decision making.

- *Society for Neuroscience* (2021). Online. [Poster].
- *Society for Neuroeconomics* (2021). Online. [Poster].

Ritz, H., Hayden, B., Shenhav, A., Yoo, S.B., Optimal control of approach-avoidance dynamics.

- *Neuromatch 3.0* (2020). Online. [Talk].

Ritz, H., Nassar, M.R., Frank, M.J., & Shenhav, A., Optimal decision-making in metric space.

- *Society for Neuroeconomics* (2020). Online. [Poster and [Poster Spotlight Talk](#)].

Ritz, H., & Shenhav, A. Humans reconfigure target and distractor processing to address distinct task demands

- *Workshop on Mental Effort* (2021). Online. [Poster].
- *Motivational and Cognitive Control* (2019). Berlin, DE. [Poster].
- *Control Processes* (2019). Providence, USA. [Poster].
- *Cognitive Neuroscience Society* (2018). Boston, USA. [Poster].

Rmus, M., **Ritz, H.**, Hunter, L., Bornstein, A., & Shenhav, A. Humans can navigate complex graph structures acquired during latent learning.

- *Reinforcement Learning and Decision Making* (2019). Montreal, CA. [[Workshop Talk](#)].
- *Society for Neuroeconomics* (2018). Philadelphia, USA. [Talk by M.R.].

Ritz, H., DeGutis, J., Frank M.J., Esterman, M., & Shenhav, A. Modeling motivational influences on sustained attention.

- *Winter Conference on Brain Research* (2019). Snowmass, USA. [Poster].
- *Society for Neuroeconomics* (2018). Philadelphia, USA. [Poster].

Ritz, H., Dean Wolf, C., Frömer, R., & Shenhav, A. Quantifying the demands of value-based decision-making with short-term memory interference.

- *Cognitive Neuroscience Society* (2019). San Francisco, USA. [Poster].

Ritz, H., Nassar, M.R., Frank, M.J., & Shenhav, A. Behavioral evidence for PID-like feedback control.

- *Society for Neuroscience* (2017). Washington, USA. [[Nanosymposium Talk](#)].
- *New England Research in Decision-Making* (2017). Providence, USA. [[Talk](#)].
- *Brown Mind Brain Research Day* (2017). Providence, USA. [Poster].

Ritz, H., Wild, C., & Johnsrude, I.J. The effects of concurrent cognitive load on the processing of clear and degraded speech.

- *Organization for Human Brain Mapping* (2016). Geneva, CH. [Poster].

Ritz, H., Arbuckle, S., Wild, C., & Johnsrude, I.J. Enhanced recognition memory for acoustically degraded sentences.

- *Association for Research in Otolaryngology* (2015). San Diego, USA. [Podium Talk by I.J.].
- *Brain and Mind Institute Symposium* (2015). London, CA. [Poster].

- Ritz, H. & Johnsrude, I.J.** Attention enhances phase-locking in the frequency following response.
- *Canadian Society of Brain, Behaviour, and Cognitive Science*. (2014). Toronto, CA. [Poster].
 - *McMaster University NeuroXchange Conference* (2014). Hamilton, CA. [Poster].

Competitive Research Courses

- Summer 2019 **Kavli Summer Institute in Cognitive Neuroscience**, Santa Barbara, USA.
 Summer 2017 **Methods in Neuroscience at Dartmouth**, Hanover, USA.

Service Roles

- 2021 **FYRE Teaching Assistant**, The Leadership Alliance & Brown University
 2020 – 2021 **Departmental Colloquium Committee**, Brown University
 2018 – 2019 **Cognition Seminar Series Organiser**, Brown University
 2017 – 2018 **Psychology Graduate Student Representative**, Brown University
 2017 – 2022 **Optimism Walk Participant**, American Parkinson Disease Association
 2017 – 2020 **Brown Brain Week Participant**, Brown University
 2015 – 2016 **Psychology Graduate Student Representative**, Western University
 2015 – 2016 **Psychology Colloquium Committee**, Western University
 2013 – 2014 **Psychology Undergraduate Student Council**, Queen's University

Teaching

- Spring 2019 **fMRI: Theory and Practice**, Brown University, TA
 Spring 2018 **Cognitive Neuropsychology**, Brown University, TA
 Fall 2017 **Social Psychology**, Brown University, TA
 2015 – 2016 **Statistics using Computers (full year)**, Western University, TA
 2014 – 2015 **Sensation and Perception (full year)**, Western University, TA
 2012 – 2013 **Introduction to Psychology (full year)**, Queen's University, TA

Mentorship

- 2019 – 2022 Christopher Bravo (RA)
 2021 Kyle Chen (RA)
 2019 – 2020 Jennifer Dzul (honors thesis: *Are Distractors really that Distracting? A Closer Look into Target vs Distractor Sensitivity in Older Adults*)
 2019 – 2020 Natalie Knowles (RA)
 2019 Savannah Doelfel (RA)
 2017 – 2019 Allison Loynd (RA)
 2017 – 2018 Milena Rmus (honors thesis: *Model-based decision-making is associated with structure inference ability*)
 2017 William McNelis (RA)
 2016 – 2017 Kia Sadahiro (RA)
 2015 – 2016 Jessica Uthayakumar (honors thesis: *Consequences of acoustic degradation and semantic context on recognition memory*)

Pre-Graduate Research Experience

- 2013 – 2014 Research Assistant, Queen's University. PI: Dr. Ingrid Johnsrude

2011 – 2012 Research Assistant, Queen's University. PI: Dr. Monica Castelhana
Summer 2010 Research Assistant, Juravinski Cancer Centre. PI: Dr. Jehonathan Pinthus

Ad Hoc Reviewer

Journal of Neuroscience, Computational Brain & Behavior, eLife