

John D. Patterson, Ph.D.

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References

Dr. Elisabeth Karuza (postdoctoral advisor) – ekaruza@psu.edu
Dr. Kenneth Kurtz (graduate advisor) - kkurtz@binghamton.edu
Dr. Peter Gerhardstein (dissertation committee member) - gerhard@binghamton.edu
Dr. Vladimir Miskovic (dissertation committee) - miskovic@binghamton.edu

Education

Binghamton University — Ph.D. State University of New York Binghamton Summer 2019
Cognitive Psychology
3.87 GPA

Binghamton University — M.S. State University of New York Binghamton November 2016
Cognitive Psychology
3.87 GPA

Colorado State University — B.S. State University of New York Binghamton May 2012
Psychology, Mind, Brain, & Behavior Concentration
Honors program
3.86 GPA

Research Experience

Postdoctoral Scholar — Pennsylvania State University September 2019-Present
Karuza Lab
Dr. Elisabeth Karuza

Graduate Research Assistant — Binghamton University
Learning and Representation in Cognition (LaRC) Lab
Dr. Kenneth Kurtz

Undergraduate Research Assistant — Colorado State University August 2010-May 2012
Seger Lab – Category Learning and Corticostriatal Systems
Dr. Carol Seger

Undergraduate Research Assistant — Colorado State University August 2009-May 2010
Gibbons Lab – Industrial/Organizational
Dr. Alyssa Gibbons

Technical Skills

Languages & Libraries

Python (Machine learning, analysis, plotting) – 6 years of experience

- PsychoPy

- NumPy
- Pandas
- Matplotlib
- Scikit-learn
- Tensorflow
- Many more...

R (Analysis, plotting) – 4 years of experience

- Base R
- ggplot2
- lme4/lmerTest
- WesAnderson – to make your color palette dreams come true
- Many more...

Matlab/Octave – 1 year of experience

SQL – 1 year of experience

Professional Experience

Research Associate I – Colorado State University
Clegg Lab – Human Factors & Decision Making
Dr. Benjamin Clegg

August 2012-July 2013

Research Advisor — Colorado State University
Hayne Lab – Decision Making & Collaborative Cognition
Dr. Stephen Hayne

May 2012-August 2012

Grants & Fellowships

Psychology Dissertation Assistantship – Binghamton University
Merit-based award for dissertation work - \$9119

Fall 2018

Psychology Departmental Grant – Binghamton University
Awarded research proposal - \$5824

January 2017

Provost Doctoral Summer Fellowship – Binghamton University
Merit-based summer stipend - \$4000/yr

2014 – 2017

Teaching

Instructor of Record (Binghamton University)

Similarity & Concept Learning (4 credit, 5 week summer seminar)
General Psychology (4 credit, 5 week summer class)

Summer 2018
Summer 2015

Graduate Teaching Assistant (Binghamton University)

Perception Lab
Graduate Statistics
Cognition Lab
General Psychology
Cognition

Spring 2019
Fall 2017-Spring 2018
Spring 2015 & 2016
Spring 2014
Fall 2013

Undergraduate Teaching Assistant (Colorado State University)

Cognition

Fall 2011-Spring 2012

Memberships

Cognitive Science Society

Fall 2013-Present

Psychonomic Society

Fall 2015-Present

Psi Chi Honor Society

Fall 2011-Present

Leadership/Service

Reviewer, Cognitive Science Society
Binghamton University

Spring 2017-Present

Senior Advisor, Psychology Graduate Student Organization
Binghamton University

Fall 2017-Spring 2018

Student Volunteer, Cognitive Science Society
London, UK

Summer 2017

Graduate Committee Head – Psychology Faculty Review Panel
Binghamton University

Fall 2016-Spring 2017

President, Psychology Graduate Student Organization
Binghamton University

Fall 2016-Spring 2017

President, Psychology Student Alliance
Colorado State University

Fall 2011-May 2012

Secretary, Psi Chi Honor Society
Colorado State University

Fall 2011-May 2012

Papers

In press

Patterson, J. D., & Kurtz, K. J. (2018). Comparison-based learning of relational categories (you'll never guess). To appear in *Journal of Experimental Psychology: Learning, Memory, & Cognition*.

In preparation

Kurtz, K. J., Cavagnetto, A.R., Honke, G., Patterson, J. D., Snoddy, S., Premo, J., Silliman, D., & Conaway, N. (author names in no particular order). Improving science concept learning via category construction.

Patterson, J. D., Snoddy, S., & Kurtz, K. J. Forming categories out of sort: Family resemblance is preferred over unidimensional category organizations in an unsupervised choice task.

Patterson, J. D., & Kurtz, K. J. (in preparation) How does categorical encoding affect collaborative filtering? An extension of the DIVERgent Autoencoder to the problem of item recommendation.

Patterson, J. D., & Kurtz, K. J. (in preparation) Comparison mitigates negative effects of pressure to perform during relational category learning.

Submitted (* in revision)

*Kurtz, K. J., **Patterson, J. D.**, Mintz, M., & Zwosta, J. (2018). Relational encoding promotes creative insight for problem solving. Manuscript submitted for publication.

Peer-reviewed Conference Papers

Patterson, J.D., Snoddy, S., & Kurtz, K.J. (2019). Family resemblance in unsupervised categorization: A dissociation between production and evaluation. In A.Goel, C. Seifert, C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society* (pp. 2537 - 2543). Austin, TX: Cognitive Science Society.

Patterson, J.D., & Kurtz, K.J. (2018). Semi-supervised learning: A role for similarity in generalization-based learning of relational categories. In C. Kalish, M. Rau, J. Zhu, T. Rogers (Eds.), *Proceedings of the 40th Annual Conference of the Cognitive Science Society* (pp. 2211 - 2217). Austin, TX: Cognitive Science Society.

Patterson, J. D., Landy, D., & Kurtz, K. J. (2017). Relational concept learning via guided interactive discovery. In G. Gunzelmann, A. Howes, T. Tenbrink & E. Davelaar (Eds.) *Proceedings of the 39th Annual Meeting of the Cognitive Science Society* (pp 907 - 912). Austin, TX: Cognitive Science Society.

Patterson, J.D., & Kurtz, K.J. (2016). Performance pressure and comparison in relational category learning. In D. Grodner, D. Mirman, A. Papafragou, J. Trueswell, J. Novick, S. Arunachalam, S. Christie, & C. Norris (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 2333-2338). Austin, TX: Cognitive Science Society.

Honke, G., Cavagnetto, A. R., Kurtz, K., **Patterson, J. D.**, Conaway, N., Tao, Y., & Marr, J. C. (2015). Promoting Transfer and Mastery of Evolution Concepts with Category Construction. *Paper presented at the American Educational Research Association annual meeting*, Chicago, IL.

- Patterson, J. D.**, & Kurtz, K. J. (2015). Learning mode and comparison in relational category learning. In D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, T. Matlock, C. D. Jennings, & P. P. Maglio (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society* (pp. 1841 – 1846). Austin, TX: Cognitive Science Society.
- Clegg, B. A., Martey, R. M., Stromer-Galley, J., Kenski, K., Saulnier, T., Folkestad, J. E., McLaren, E., Shaw, A., Lewis†, J. E., **Patterson†, J. D.**, & Strzalkowski, T. (2014). Game-based training to mitigate three forms of cognitive bias. *Proceedings of Interservice/Industry Training, Simulation and Education Conference (IITSEC)*, 14180, 1-12.
- Gutzwiller†, R. S., Clegg, B. A., Smith, C. A. P., Lewis†, J. E., & **Patterson, J. D.** (2013). Predicted failure alerting in a supervisory control task does not always enhance performance. *Proceedings of 57th Annual Meeting of the Human Factors and Ergonomics Society*.

Presentations

Talks

- Graduate Learning Science Class – Pennsylvania State University (2019)–Current topics in category learning.
- Data Science Salon – Binghamton University (2018)–Class-based item recommendation: An extension of the DIVA architecture.
- Psychonomic Society (2017)–A good family resemblance sort is hard to find.
- Cognitive Science Society (2017)–Relational concept learning via guided interactive discovery.
- Cognitive Science Society (2016)–Performance pressure and comparison in relational category learning.
- Cognitive Science Society (2015)–Learning mode and comparison in relational category learning.

Posters

- Cognitive Science Society (2019) – Family Resemblance in Unsupervised Categorization: A Dissociation Between Production and Evaluation
- Cognitive Science Society (2019) – Semi-supervised learning with 2D categories.
- Psychonomic Society (2018) – Three-case comparison: The roles of learning mode and comparison type in the acquisition of relational and feature-based categories.

Cognitive Science Society (2018) – Semi-supervised learning: A role for similarity in generalization-based learning of relational categories.

Cognitive Science Society (2014) – Engaging the comparison engine: implications for relational category learning and transfer.