

John D. (JD) 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-
Karuza Lab Present
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
Seeger Lab – Category Learning and Corticostriatal Systems
Dr. Carol Seeger

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) Summer 2018
General Psychology (4 credit, 5 week summer class) Summer 2015

Graduate Teaching Assistant (Binghamton University)

Perception Lab Spring 2019
Graduate Statistics Fall 2017-Spring 2018
Cognition Lab Spring 2015 & 2016
General Psychology Spring 2014
Cognition 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 Spring 2017-Present
Binghamton University

Senior Advisor, Psychology Graduate Student Organization Fall 2017-Spring 2018
Binghamton University

Student Volunteer, Cognitive Science Society Summer 2017
London, UK

Graduate Committee Head – Psychology Faculty Review Panel Fall 2016-Spring 2017
Binghamton University

President, Psychology Graduate Student Organization Fall 2016-Spring 2017
Binghamton University

President, Psychology Student Alliance Fall 2011-May 2012
Colorado State University

Secretary, Psi Chi Honor Society Fall 2011-May 2012

Papers

In press

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.

Accepted

Patterson, J.D., & Karuza, E.A. (2020). Schrödinger's category: Active learning in the face of label ambiguity. To appear in *Proceedings of the 42nd Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Patterson, J. D., & Kurtz, K. J. (2020). Comparison-based learning of relational categories (you'll never guess). *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 46(5), 851–871.

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

Invited Talks

- Center for Brain, Behavior, and Cognition Speaker Series—Pennsylvania State University (2020)—To hide or to seek: Learning goals modulate ambiguity avoidance in active category learning—*cancelled due to COVID-19*
- Cognitive Speaker Series—Binghamton University (2020)—Schrödinger’s category: Active Learning in the face of label ambiguity.
- 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.