ARI E. KAHN

(925) · 285 · 9061 ◇ arikahn@seas.upenn.edu
210 S. 33rd St. ◇ Philadelphia, PA 19104
github: ariekahn ◇ linkedin: ari-kahn ◇ website: www.aekahn.com
prepared: July 9, 2019

EDUCATION

University of Pennsylvania *2013–Current*
Ph.D. Candidate, Neuroscience Philadelphia, PA
Advisor: Danielle S. Bassett, Ph.D.
Expected Date of Completion: Spring 2020

Washington University in St. Louis *2007–2011*
B.S. in Computer Science & Chinese St. Louis, MO
Minor in Physics
Graduated with Engineering Honors, Cum Laude

RESEARCH EXPERIENCE

Tel Aviv University *2012*
Research Assistant Tel Aviv, Israel
Advisor: Matti Mintz, Ph.D.
Computational modeling of the cerebellar microcircuit for sequential learning

Tel Aviv University *Winter 2011*
Research Assistant Tel Aviv, Israel
Advisor: Ehud Gazit, Ph.D.
Implemented and refined a protocol for self-assembling nanospheres

Technion University *Summer 2010*
Research Assistant Haifa, Israel
Advisor: Nahum Shimkin, Ph.D.
Implemented a machine learning based multilayer flight simulator framework

Washington University in St. Louis *2008–2009*
Research Assistant St. Louis, MO
Advisor: William Smart, Ph.D.
Designed framework for BCI-based control of simulated robotic prostheses

PUBLICATIONS

Richard F. Betzel, John D. Medaglia, **Ari E. Kahn**, Jonathan Soffer, Daniel R. Schonhaut, and Danielle S. Bassett (2019). "Inter-Regional ECoG Correlations Predicted by Communication Dynamics, Geometry, and Correlated Gene Expression". In: *Nature Biomedical Engineering*, In Press.

Elisabeth A. Karuza, **Ari E. Kahn**, and Danielle S. Bassett (2019). "Human Sensitivity to Community Structure Is Robust to Topological Variation". In: *Complexity* 2019, pp. 1–8.

Ankit N. Khambhati, **Ari E. Kahn**, Julia Costantini, Youssef Ezzyat, Ethan A. Solomon, Robert E. Gross, Barbara C. Jobst, Sameer A. Sheth, Kareem A. Zaghloul, Gregory Worrell, Sarah Seger, Bradley C. Lega, Shennan Weiss, Michael R. Sperling, Richard Gorniak, Sandhitsu R. Das, Joel M. Stein, Daniel S. Rizzuto, Michael J. Kahana, Timothy H. Lucas, Kathryn A. Davis, Joseph I. Tracy, and Danielle S. Bassett (2019). "Functional Control of Electrophysiological Network Architecture Using Direct Neurostimulation in Humans". In: *Network Neuroscience*, pp. 1–30.

Christopher W. Lynn, Lia Papadopoulos, **Ari E. Kahn**, and Danielle S. Bassett (2019). "Human Information Processing in Complex Networks". In: arXiv: 1906.00926 [physics, q-bio].

Steven H. Tompson, **Ari E. Kahn**, Emily B. Falk, Jean M. Vettel, and Danielle S. Bassett (2019). "Functional Brain Network Architecture Supporting the Learning of Social Networks in Humans". In: arXiv: 1904.09504 [q-bio].

Ari E. Kahn, Elisabeth A. Karuza, Jean M. Vettel, and Danielle S. Bassett (2018). "Network Constraints on Learnability of Probabilistic Motor Sequences". In: *Nature Human Behaviour* 2.12, pp. 936–947. arXiv: 1709.03000.

Jason Z. Kim, Jonathan M. Soffer, **Ari E. Kahn**, Jean M. Vettel, Fabio Pasqualetti, and Danielle S. Bassett (2018). "Role of Graph Architecture in Controlling Dynamical Networks with Applications to Neural Systems". In: *Nature Physics* 14.1, pp. 91–98.

Christopher W. Lynn, **Ari E. Kahn**, and Danielle S. Bassett (2018). "Structure from Noise: Mental Errors Yield Abstract Representations of Events". In: *arXiv*. arXiv: 1805.12491.

Ann E. Sizemore, Chad Giusti, **Ari Kahn**, Jean M. Vettel, Richard F. Betzel, and Danielle S. Bassett (2018). "Cliques and Cavities in the Human Connectome". In: *Journal of Computational Neuroscience* 44.1, pp. 115–145.

Jennifer Stiso, Ankit N. Khambhati, Tommaso Menara, **Ari E. Kahn**, Joel M. Stein, Sandihitsu R. Das, Richard Gorniak, Joseph Tracy, Brian Litt, Kathryn A. Davis, Fabio Pasqualetti, Timothy Lucas, and Danielle S. Bassett (2018). "White Matter Network Architecture Guides Direct Electrical Stimulation Through Optimal State Transitions". In: arXiv: 1805.01260 [q-bio].

Steven H. Tompson, **Ari E. Kahn**, Emily B. Falk, Jean M. Vettel, and Danielle S. Bassett (2018). "Individual Differences in Learning Social and Nonsocial Network Structures". In: *Journal of Experimental Psychology. Learning, Memory, and Cognition*. pmid: 30024255.

Graham L. Baum, Rastko Ciric, David R. Roalf, Richard F. Betzel, Tyler M. Moore, Russell T. Shinohara, **Ari E. Kahn**, Simon N. Vandekar, Petra E. Rupert, Megan Quarmley, Philip A. Cook, Mark A. Elliott, Kosha Ruparel, Raquel E. Gur, Ruben C. Gur, Danielle S. Bassett, and Theodore D. Satterthwaite (2017). "Modular Segregation of Structural Brain Networks Supports the Development of Executive Function in Youth". In: *Current Biology* 27.11, 1561–1572.e8. pmid: 28552358.

Ari E. Kahn, Marcelo G. Mattar, Jean M. Vettel, Nicholas F. Wymbs, Scott T. Grafton, and Danielle S. Bassett (2017). "Structural Pathways Supporting Swift Acquisition of New Visuomotor Skills". In: *Cerebral Cortex* 27.1, pp. 173–184.

Elisabeth A. Karuza, **Ari E. Kahn**, Sharon L. Thompson-Schill, and Danielle S. Bassett (2017). "Process Reveals Structure: How a Network Is Traversed Mediates Expectations about Its Architecture". In: *Scientific Reports* 7.1, p. 12733.

Evelyn Tang, Chad Giusti, Graham L. Baum, Shi Gu, Eli Pollock, **Ari E. Kahn**, David R. Roalf, Tyler M. Moore, Kosha Ruparel, Ruben C. Gur, Raquel E. Gur, Theodore D. Satterthwaite, and Danielle S. Bassett (2017). "Developmental Increases in White Matter Network Controllability Support a Growing Diversity of Brain Dynamics". In: *Nature Communications* 8.1, p. 1252.

Shi Gu, Fabio Pasqualetti, Matthew Cieslak, Qawi K. Telesford, Alfred B. Yu, **Ari E. Kahn**, John D. Medaglia, Jean M. Vettel, Michael B. Miller, Scott T. Grafton, and Danielle S. Bassett (2015). "Controllability of Structural Brain Networks". In: *Nature Communications* 6, p. 8414.

TALKS

Network Constraints on Learnability of Probabilistic Motor Sequences
Ari E. Kahn, Elisabeth A. Karuza, Jean M. Vettel, Danielle S. Bassett. CompleNet. March 4–8, 2018, Boston, Massachusetts, USA.

Network Constraints on Learnability of Probabilistic Motor Sequences
Ari E. Kahn, Elisabeth A. Karuza, Jean M. Vettel, Danielle S. Bassett. SIAM Workshop on Network Science. July 12–13, 2018, Portland, Oregon, USA.

POSTERS

Network Constraints on Learnability of Probabilistic Motor Sequences
Ari E. Kahn, Elisabeth A. Karuza, Jean M. Vettel, Danielle S. Bassett. Interdisciplinary Advances in Statistical Learning. June 27–29, San Sebastian, Spain.

Network Constraints on Learnability of Probabilistic Motor Sequences
Ari E. Kahn, Elisabeth A. Karuza, Jean M. Vettel, Danielle S. Bassett. Sackler Colloquium "Brain Produces Mind by Modeling". May 1–3, 2019, Irvine, California, USA.

Network Constraints on Learnability of Probabilistic Motor Sequences
Ari E. Kahn, Elisabeth A. Karuza, Jean M. Vettel, Danielle S. Bassett. MINS Symposium. April 3, 2019, Philadelphia, Pennsylvania, USA.

Network Constraints on Learnability of Probabilistic Motor Sequences
Ari E. Kahn, Elisabeth A. Karuza, Jean M. Vettel, Danielle S. Bassett. Conference on Computataional Neuroscience. September 5–8, 2018, Philadelphia, Pennsylvania, USA.

Beyond graph topology: Walk structure influences cluster-level surprisal effects in an online learning task
Elisabeth A. Karuza, **Ari E. Kahn**, Sharon L. Thompson-Schill, Danielle S. Bassett. Psychonomics. November 17–20, 2016, Boston, Massachusetts, USA.

Structural Correlates of Individual Differences in Motor Sequence Learning
Ari E. Kahn, Marcelo G. Mattar, Jean M. Vettel, Nicholas F. Wymbs, Scott T. Grafton, Danielle S. Bassett. Society for Neuroscience. November 12–16, 2016, San Deigo, California, USA.

A model of sequential learning in the cerebellum
Ari E. Kahn, Ari Magal, Roni Hogri and Matti Mintz. Society for Neuroscience. October 13–17, 2012, New Orleans, Louisiana, USA.

AWARDS

Sackler Colloquium "Brain Produces Mind by Modeling" Travel Award *Spring 2019*

SIAM Student Travel Award *Spring 2018*

Jameson-Hurvich Travel Award *Fall 2016*

TEACHING AND MENTORING

Teaching Assistant
Introduction to Brain and Behavior *Spring 2016*
Led weekly undergraduate recitation section and wrote testing material

OUTREACH

Upward Bound
Summer Neuroscience Elective
Head Coordinator *2016–2018*
Instructor *2014–2015*

Penn Neuroscience Public Lecture Series
Committee Member *2014–2017*

Neuroscience Elementary School Outreach Program
Instructor *2013–2017*

PROFESSIONAL AFFILIATIONS

Society for Neuroscience

SIAM

SKILLS

Programming	Python, R, Matlab, JavaScript, C, C++, LaTeX
Image Processing	FSL, ANTs, FreeSurfer, DTI Studio