

Sean W. Kelley, PhD

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Education

- 2023 Trinity College Dublin, University of Dublin
PhD. Psychology
- 2018 Charité-Universitätsmedizin Berlin
International Graduate Program Medical Neurosciences
Joint Medical Faculty of Humboldt-Universität zu Berlin and Freie Universität Berlin
M.Sc. Medical Neurosciences
- 2016 Emory University
B.S. Neuroscience and Behavioral Biology (Highest Honors)
Minor Mathematics

Professional Experience

- September 2024 – Present Postdoctoral Research Fellow in Human-AI Interaction
Northeastern University, Network Science Institute
- Designed and evaluated a personalized AI assistant to augment human creativity, finding that personalization significantly increases creative output
 - Investigated how personalization affects sycophancy and epistemic independence across 9 LLMs, developing GoalPref-Bench, a novel benchmark for assessing how LLMs balance user goals versus immediate desires
 - Building an LLM-assisted forecasting pipeline to evaluate how multi-agent systems update causal reasoning when presented with new information
- December 2022 – Present Co-founder at Myndgard
Myndgard is a digital mental health company that provides waitlist management, psychoeducation, and AI safety monitoring for universities
- Developed Guardian, a safety monitoring agent that analyzes AI companion app conversations for clinical risk indicators, emotional dependency patterns, and problematic AI behaviors such as sycophancy and boundary violations
 - Built Discover, a 12-day psychoeducation platform with 38 modules, using an AI-generated content pipeline with persona-based diversity, automated script quality assessment, and production of clinically validated daily exercises; deployed via partnerships with multiple Ohio-based colleges
 - Designed a waitlist management system to support university counseling services by continuously monitoring student mental health, prioritizing those at risk for possible deterioration, and providing summaries to therapists before their first session to reduce treatment planning time; successfully adopted by a large Irish university
 - Secured €729,000 in grant funding from Enterprise Ireland to clinically validate and scale the platform, leading a team of 5
- October 2018 – December 2022 PhD Candidate
Trinity College Dublin
- Designed a novel study using Twitter as a proxy for ecological momentary assessments to identify changes in depression-relevant language use during depressive episodes
 - Predicted mental health conditions using language on Twitter using machine learning algorithms
 - Identified elevated personalized affect network connectivity as a marker for depression variability using Neureka, a non-profit brain health app
 - Established a collaboration with SciStarter, one of the world's largest citizen science initiatives, recruited 3,000 users, and increased sign-ups to Neureka by 50%.

Publications

Kelley, S. W., & Riedl, C. (in preparation). Causal Network Topology Predicts How LLM Forecasters Revise Probabilities When Presented with New Information.

Kelley, S. W., & Riedl, C. (2026). Personalization Increases Affective Alignment but Has Role-Dependent Effects on Epistemic Independence in LLMs. *arXiv preprint arXiv:2603.00024*. (under review)

Mirea, D.-M., Chen, S., Ding, J., Palacio-Soto, K., Mildner, J. N., **Kelley, S. W.**, Gillan, C. M., Nook, E. C., & Niv, Y. (2026). The reinforcement effect of social media likes in depression. *JAMA Psychiatry*, 83(9), 930–938.

Kelley, S.W., De Cremer, D., & Riedl, C. (2025). Scaffolding Human-AI Collaboration Through Enhanced Collective Intelligence. *arXiv preprint arXiv:2510.27681*. (under review)

Fittipaldi, S., Teckentrup, V., **Kelley, S. W.**, Fox, C. A., Kelly, J. R., Rosická, A. M., Fisher, A. J., O'Sullivan, R., Leavey, G., Lawlor, B., & Gillan, C. M. (2025). Daily life fluctuations in affect predict within-person changes in a real-world measure of cognitive processing speed. *eLife*, 14.

Cusack, C. E., Vanzhula, I. A., Sandoval-Araujo, L. E., Pennesi, J. L., **Kelley, S. W.**, & Levinson, C. A. (2024). Are central eating disorder network symptoms sensitive to item selection and sample? Implications for conceptualization of eating disorder psychopathology from a network perspective. *Journal of Psychopathology and Clinical Science*, 133(1), 48.

Kelley, S. W., Fisher, A. J., Lee, C. T., Gallagher, E., Hanlon, A. K., Robertson, I. H., & Gillan, C. M. (2023). Elevated emotion network connectivity is associated with fluctuations in depression. *Proceedings of the National Academy of Sciences*, 120(45).

Lee, C. T., **Kelley, S.W.**, Palacios, J., Richards, D., & Gillan, C. M. (2023). Estimating the prognostic value of cross-sectional network connectivity for treatment response in depression. *Psychological Medicine*, 1-10.

Kelley, S. W., Mhaonaigh, C. N., Burke, L., Whelan, R., & Gillan, C. M. (2022). Machine learning of language use on Twitter reveals weak and non-specific predictions. *NPJ digital medicine*, 5(1), 1-13.

Kelley, S. W., & Gillan, C. M. (2022). Using language in social media posts to study the network dynamics of depression longitudinally. *Nature communications*, 13(1), 1-11.

Kinchin, I., **Kelley, S.**, Meshcheriakova, E., Viney, R., Mann, J., Thompson, F., & Strivens, E. (2022). Cost-effectiveness of a community-based integrated care model compared with usual care for older adults with complex needs: a stepped-wedge cluster-randomised trial. *Integrated Healthcare Journal*, 4(1).

Padberg, I., Schneider, A., Rohmann, J. L., **Kelley, S. W.**, Grittner, U., & Siegerink, B. (2020). Impact of COPD and anemia on motor and cognitive performance in the general older population: results from the English longitudinal study of ageing. *Respiratory research*, 21(1), 40.

Wieschowski, S., Riedel, N., Wollmann, K., Kahrass, H., Mueller-Ohlraun, S., Schuermann, C., **Kelley, S.**, Kszuk, U., Siegerink, B., Dirnagl, U. and Meerpohl, J. (2019). Results dissemination from clinical trials conducted at German university medical centres was delayed and incomplete. *Journal of clinical epidemiology*, 115, 37-45.

Mascaro, J. S., **Kelley, S.**, Darcher, A., Negi, L. T., Worthman, C., Miller, A., & Raison, C. (2016). Meditation buffers medical student compassion from the deleterious effects of depression. *The Journal of Positive Psychology*, 1-10.

Talks

Kelley, S.W. (2025, July) CreativityBot: A Personalized AI Assistant to Support Creativity. Academy of Management. Copenhagen, Denmark

Kelley, S.W. (2025, April) Myndgard: A Data-Driven Solution to Clinical Management and Personalised Mental Health Support. Predictive Brain Health Modelling Workshop Group. Trinity College Dublin

Kelley, S.W. (2023, March) Using Social Media as a Novel Approach for Constructing Personalised Depression Networks. International Convention of Psychological Science. Brussels, Belgium

Kelley, S.W. (2023, March) Using Social Media as a Novel Approach for Constructing Personalised Depression Networks. Alan Turing Institute Data Science for Mental Health Interest Group

Kelley, S.W. (2022, March) Is the Connectivity of Personalised Affect Networks Associated with Increased Propensity for Depression? R15 Grant (“Personalized Networks and Sensor Technology Algorithms of Eating Disorder Symptoms Predicting Eating Disorder Outcomes”) Interest Group at University of Louisville

Kelley, S.W. (2021, December) The Network Theory of Depression. Predictive Brain Health Modelling Workshop Group. Trinity College Dublin

Kelley, S.W. (2020, December). Within-Subject Changes in Network Connectivity Occur During an Episode of Depression: Evidence from a Longitudinal Analysis of Social Media Posts. Conference on Complex Systems. Virtual Conference

Public Engagement

“The Intersection of Software and Mental Health” Software Made Human Podcast (June 2025)

“Revolutionising Mental Health with AI” Beyond the Clinic Podcast (September 2024)

“Insights into Mental Health Through Real-Time Tracking” Quantified Self Group Dublin (August 2023)

“Social Media: the good, the bad and the hopeful” Science Rehashed Podcast

Interviewed for the Coffee with Your Therapist Podcast

Presentation about “The Neureka Project” to SciStarter Citizen Scientists

“How people use Twitter may give clues to depression, according to TCD research” *The Sunday Times*

Organized demonstration/10-minute talk of Neureka app at PROBE research festival at Trinity College Dublin (2019, 2020)

Grants

Schmidt Sciences: AI at Work (\$10,000, PI)

Project Title: CreativityBot: A Personalized AI Assistant to Support Creative Work

Enterprise Ireland Commercialisation Fund (€582,000, PI): March 2025 – September 2026

Project Title: Myndgard: AI-Powered Personalised Mental Health Support for Enhanced Therapy Outcomes

Enterprise Ireland Proof of Concept Study (€132,000, PI): May-November 2024

Project Title: Myndgard Proof of Concept Study: Assessing the Value of Personalised Mental Health Insights

Enterprise Ireland Feasibility Study (€15,000, PI): December 2021

Project Title: App for therapists to improve personalisation of therapy and predict changes in mental health

Honors and Awards

September 2023

Resident at Founder’s Programme, Dogpatch Labs
Dublin, Ireland

June 2023

1 of 8 startups from across the EU selected for EIT Health Wild Card Programme

July 2022

Best Clinical Poster Award British Association for Psychopharmacology

January 2021

What If Fellowship (Mental Health Accelerator)

August 2019

Advanced Epidemiology Course Travel Grant (500€)

Fall 2018	Berlin, Germany
June 2018	Trinity College Dublin Provost's PhD Award (122,000€)
	The Neurobiology of Moral Conscience Summer School Travel Grant
	Tubingen, Germany
Fall 2016	NeuroCure Cluster of Excellence Scholarship (2016-2018; 13,000€)
May 2015	Emory University Summer Undergraduate Research Fellowship
May 2014	Integrative Biology of Social Behavior NSF REU at Michigan State University

Technical Skills

Statistical Analysis (R), AI & Machine Learning (Python), Natural Language Processing, Data Cleaning & Visualization, Network Analysis, Multi-Agent Simulation, LLM evaluation