

Ivan L. Simpson-Kent

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Research Interests

I use statistical models to understand how the brain and behavior interact during childhood and adolescence to produce intelligence. I hope to apply insights from my research to help guide education policy, especially for disadvantaged youth struggling to learn in school.

Education

- 2017-present University of Cambridge
PhD candidate in Medical Science at MRC Cognition and Brain Sciences Unit
Primary supervisor: [Rogier Kievit, PhD](#)
- 2012-2016 University of Scranton
BS in Neuroscience with secondary major in Philosophy, *magna cum laude*
Primary supervisor: [Marc Seid, PhD](#)

Peer-Reviewed Publications († indicates equal authorship)

1. Kievit R, **Simpson-Kent I. L.**, Fuhrmann D (2020). [Why Your Mind Is Like a Shark: Testing the Idea of Mutualism](#). *Frontiers for Young Minds* (part of collection 'Everything you and your teachers need to know about the learning brain'). 8:60. doi: 10.3389/frym.2020.00060
2. **Simpson-Kent I. L.** (2020). [Implementing the Mutualism Theory of Intelligence in the Classroom](#)., *Cambridge Journal of Science and Policy*. doi: 10.17863/CAM.51874
3. **Simpson-Kent I. L.**, Fuhrmann D., Bathelt J., Achterberg J. †, Borgeest G. Sophia †, the CALM Team, Kievit R. A. (2020). [Neurocognitive reorganization between crystallized intelligence, fluid intelligence and white matter microstructure in two age-heterogeneous developmental cohorts](#). *Developmental Cognitive Neuroscience, Special Issue: Flux 2018: Mechanisms of Learning & Plasticity*. doi: 10.1016/j.dcn.2019.100743
4. Fuhrmann D., **Simpson-Kent I. L.**, Bathelt J., the CALM Team, Kievit R. A. (2020). [A hierarchical watershed model of fluid intelligence in childhood and adolescence](#). *Cerebral Cortex*. doi: 10.1093/cercor/bhz091
5. Kievit R. A., Fuhrmann D., Borgeest G. Sophia †, **Simpson-Kent I. L.** †, Henson R. (2018). [The neural determinants of age-related changes in fluid intelligence: a pre-registered, longitudinal analysis in UK Biobank](#). *Wellcome Open Research*. doi: 10.12688/wellcomeopenres.14241.2
6. Graham, J. M., **Simpson-Kent I. L.**, Seid, M. A. (2016). [A Mathematical Framework Exhibiting the Emergence of Dynamic Expansion of Task Repertoire in *Pheidole dentata*](#). *Journal of Biological Systems*. doi: 10.1142/S021833901650011X

Book Chapters

1. Kievit R. A., **Simpson-Kent I. L.** (2020). [It's about time: towards a longitudinal cognitive neuroscience of intelligence](#). (Accepted and awaiting publication by Cambridge University Press).

Poster Presentations

1. **Simpson-Kent I. L.**, Kievit R. A. It's About Time: Towards a Longitudinal Cognitive Neuroscience of Intelligence. *British Association for Cognitive Neuroscience*, September 2, 2019.
2. **Simpson-Kent I. L.**, the CALM Team, Kievit R. A. Using Network Science to Map Brain-Behaviour Correlates of Intelligence in a Developmental Sample of Struggling Learners. *International Convention of*

Psychological Science, March 9, 2019.

3. **Simpson-Kent I.L.**, Fuhrmann D., Bathelt J., the CALM Team, Kievit R.A. The Neural Determinants of Crystallized and Fluid Intelligence during Early Development: Analyses in Two Pre-adulthood Samples. *Oxford Autumn School in Neuroscience*, University of Oxford, September 27, 2018.
4. **Simpson-Kent I.L.**, Fuhrmann D., Bathelt J., the CALM Team, Kievit R.A. An examination of the relationship between crystallized and fluid intelligence: A pre-registered analysis in 551 children and adolescents. *2018 Oxford Neuroscience Symposium*, Mathematical Institute, University of Oxford, March 21, 2018.
5. **Simpson-Kent I.L.**, Fuhrmann D., Bathelt J., the CALM team, Kievit R.A. An examination of the relationship between crystallized and fluid intelligence: A pre-registered analysis in 551 children and adolescents. *Cambridge Neuroscience Seminar 2018: Mental Plasticity and Development*, Robinson College, University of Cambridge, March 12, 2018.
6. Fuhrmann D., **Simpson-Kent I.L.**, Bathelt J., the CALM team, Kievit R.A. The Neurocognitive Architecture of Fluid Ability in Children and Adolescents. *Cambridge Neuroscience Seminar 2018: Mental Plasticity and Development*, Robinson College, University of Cambridge, March 12, 2018.

Panels and Talks

1. "How to read, write, and publish research", *Amgen Scholars Program Summer Science Series*, July 27, 2020.
2. "Thinking about Academic Life in Europe", *Amgen Scholars Program Summer Science Series*, July 20, 2020.
3. "'Bridges' between brain and cognition? A multilayer network analysis of intelligence in struggling learners", *Wolfson Research Event 2020*, University of Cambridge, June 26, 2020.
4. "Transhumanism: Philosophies & Outlooks of a Futuristic Movement", *Apotheosis (one of many University of Cambridge philosophical societies)*, University of Cambridge, February 14, 2020.
5. "Intelligence & the Brain: Current Understanding and Future Directions", *William Perkin Church of England High School*, Greenford, England, November 21, 2019.
6. "Straight Outta West Philly: How Amgen helped me get to Cambridge", *Amgen Scholars at the European Symposium*, Clare College Memorial Court, University of Cambridge, September 3, 2019.
7. "Straight Outta West Philly: My Journey to Cambridge", *Target Oxbridge Summer Visit Day*, Student Service Centre, New Museums Site, University of Cambridge, July 30, 2019.
8. "Your Intelligent Brain: What Science Knows about Cognitive Ability". *Target Oxbridge Academic Session*, Mill Lane Lecture Rooms, University of Cambridge, April 16, 2019.
9. "Straight Outta West Philly: From the Hood to Cambridge Cows". *Equality and Diversity Event: Identifying and addressing challenges for (neuro)scientists from diverse backgrounds*, MRC Cognition and Brain Sciences Unit, November 27, 2018.
10. "Brain-behaviour Networks of Intelligence in a Developmental Sample of Struggling Learners". *Symposium for Biological and Life Sciences*, St. John's Old Divinity School, University of Cambridge, November 22, 2018.

Awards

2017-2020	Cambridge International Scholarship, University of Cambridge
2016-2017	Fulbright Scholarship to Regensburg, Germany
2015	Amgen Scholar, MIT, Department of Brain and Cognitive Sciences
2015	Beta Beta Beta National Biological Honor Society
2015	Ellen Miller Casey Award, University of Scranton
2015	Nu Rho Psi National Honor Society in Neuroscience
2015	Phi Sigma Tau International Honor Society in Philosophy
2014	Research Experience for Undergraduates, University of Missouri
2013	Alpha Lambda Delta, US National Honor Society
2012-2016	Arrupe Scholarship, University of Scranton
2012-2016	Dean's List, University of Scranton (except Spring 2014 semester, GPA: 3.47)

Technical Skills

1. Structural equation modelling
2. Network analysis
3. Secondary analysis of magnetic resonance imaging (MRI) data
4. R programming language

Teaching Experience

- 2018-2019 Undergraduate supervisor, *Psychological and Behavioural Sciences 4: Cognitive Neuroscience and Experimental Psychology*
- 2015 Teaching Assistant for Neuroscience Research Methods, University of Scranton, Department of Biology
- 2014 Teaching Assistant for Behavioral Neuroscience, University of Scranton, Department of Biology
- 2013-2016 Peer tutor in Chemistry and Mathematics, University of Scranton

Leadership

- 2019-2020 International Officer, Wolfson College, University of Cambridge
- 2018-present Equality and Diversity Committee, student member, MRC Cognition and Brain Sciences Unit
- 2015-2016 Debate Society Vice President
- 2015-2016 Math Club Treasurer
- 2015-2016 Nu Rho Psi Vice President
- 2015-2016 Phi Sigma Tau President
- 2013-2015 Scranton Mentors Actively Reaching Teens (S.M.A.R.T.)

Policy Experience

- 2020 Cambridgeshire Policy Challenges

Public Engagement and Media

1. Varsity article titled [*Do Black Lives Really Matter to the University of Cambridge?*](#) demanding concrete actions from the University of Cambridge on issues affecting the Black community, June 5, 2020.
2. Bluesci (Cambridge University Science Magazine) article titled [*A Case for Plant Intelligence*](#) making an argument for plant cognition/intelligence, April 28, 2020.
3. Student Minds Cambridge [article](#) in its All Minds: Race/Ethnicity section about the intersection of race and mental illness, February 25, 2020.
4. MRC Cognition and Brain Sciences Unit Open Night, June 15, 2019.
5. Rising Stars public engagement training (presented at the Cambridge Science Festival on March 24, 2019).
6. MRC Cognition and Brain Sciences Unit Science Night, *Cambridge Science Festival*, March 13, 2019.
7. MRC Cognition and Brain Sciences Unit Science Night, *Cambridge Science Festival*, March 14, 2018.
8. Co-founder of [Clever Ramblings Podcast](#).
9. Amgen Scholars Program alumni article titled [*A Journey from West Philadelphia to Cambridge in Pursuit of Understanding the Human Brain*](#).

Professional References

References available upon request.