

ALEXANDER P. BURGOYNE

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EMPLOYMENT

2020 - Present Post-Doctoral Researcher
Attention & Working Memory Lab
Georgia Institute of Technology, School of Psychology
Principal Investigator: Randy Engle, Ph.D.

EDUCATION

2019 Doctor of Philosophy
Cognition and Cognitive Neuroscience
Michigan State University, Department of Psychology
Advisor: D. Zach Hambrick, Ph.D.

2018 Master's Degree
Cognition and Cognitive Neuroscience
Michigan State University, Department of Psychology
Advisor: D. Zach Hambrick, Ph.D.

2014 Bachelor of Arts in Psychology
Michigan State University, College of Social Science

SUBMITTED ARTICLES

Burgoyne, A. P. & Engle, R. W. (under review). Attention Control: A Cornerstone of Higher-Order Cognition.

Burgoyne, A. P., Carroll, S., Clark, D. A., Hambrick, D. Z., Plaisance K. S., Klump, K. K., & Burt, S. A. (under review). To What Extent Does a Mindset Intervention Alter Genetic and Environmental Influences on Mindset and Other Motivational Constructs? An Experimental Behavioral Genetics Approach.

Burgoyne, A. P., Sadiya, S., Harris, L. J., Becker, M. W., Brascamp, J. W., & Hambrick, D. Z. (under review). Revisiting the Self-Generation Effect in Proofreading.

Hambrick, D. Z., **Burgoyne, A. P.**, Stec, K., Fenn, K. M. (under review). The ACT Predicts Academic Performance, but Why? The Mystery Remains.

Burgoyne, A. P. & Macnamara, B. N. (under review). The Reliability and Validity of the Mindset Assessment Profile Tool.

Hambrick, D. Z., **Burgoyne, A. P.**, & Katsumata, D. S. (under review). Accelerating the Acquisition of Expertise.

JOURNAL ARTICLES

Burgoyne, A. P., Hambrick, D. Z., & Altmann, E. M. (in press). Incremental Validity of Placekeeping as a Predictor of Multitasking. *Psychological Research*.

Burgoyne, A. P., & Engle, R. M. (2020). Mitochondrial Functioning and Its Relation to Higher-Order Cognitive Processes. *Journal of Intelligence*, 8, 14.

Burgoyne, A. P., Hambrick, D. Z., & Macnamara, B. N. (2020). How Firm Are the Foundations of Mindset Theory? *Psychological Science*, 31, 258-267.

Burgoyne, A. P., Hambrick, D. Z., & Altmann, E. M. (2019). Placekeeping Ability as a Component of Fluid Intelligence: Not Just Working Memory Capacity. *American Journal of Psychology*, 132, 439-449.

Burgoyne, A. P., Harris, L. J., & Hambrick, D. Z. (2019). Predicting Skill Acquisition in Music: The Role of General Intelligence, Music Aptitude, and Mindset. *Intelligence*, 76.

Burgoyne, A. P., Hambrick, D. Z., & Altmann, E. M. (2019). Is Working Memory a Causal Factor in Fluid Intelligence? *Psychonomic Bulletin & Review*, 26, 1333-1339.

Burgoyne, A. P., Nye, C. D., Macnamara, B. N., Charness, N., & Hambrick, D. Z. (2019). The Impact of Domain-Specific Experience on Chess Skill: Re-Analysis of a Key Study. *American Journal of Psychology*, 132, 27-38.

- Burgoyne, A. P.**, Hambrick, D. Z., Moser, J. S., & Burt, S. A. (2018). Analysis of a Mindset Intervention. *Journal of Research in Personality, 77*, 21-30.
- Mix, K., Hambrick, D. Z., Satyam, V. R., **Burgoyne, A. P.**, & Levine, S. C. (2018). The Latent Structure of Spatial Skill: A Test of the 2 x 2 Typology. *Cognition, 180*, 268-278.
- Hambrick, D. Z., Altmann, E., & **Burgoyne, A. P.** (2018). A Knowledge-Activation Approach to Testing the Circumvention-of-Limits Hypothesis. *American Journal of Psychology, 131*, 307-321.
- Sisk, V., **Burgoyne, A. P.**, Sun, J., Butler, J. L., & Macnamara, B. N. (2018). To What Extent and Under Which Circumstances Are Growth Mindsets Important to Academic Achievement? Two Meta-analyses. *Psychological Science, 29*, 549-571.
- Hambrick, D. Z., **Burgoyne, A. P.**, Macnamara, B. N., & Ullén, F. (2018). Toward a Multifactorial Model of Expertise: Beyond Born Versus Made. *The New York Academy of Sciences, 1423*, 284-295.
- Sala, G., **Burgoyne, A. P.**, Macnamara, B. N., Hambrick, D. Z., Campitelli, G., & Gobet, F. (2017). Checking the “Academic Selection” Argument. Chess Players Outperform Non-Chess Players in Cognitive Skills Related to Intelligence: A Meta-Analysis. *Intelligence, 61*, 130-139.
- Burgoyne, A. P.**, Sala, G., Gobet, F., Macnamara, B. N., Campitelli, G., & Hambrick, D. Z. (2016). The Relationship Between Cognitive Ability and Chess Skill: A Comprehensive Meta-Analysis. *Intelligence, 59*, 72-83.

REVIEWS AND COMMENTARIES

- Hambrick, D. Z., & **Burgoyne, A. P.** (2019). Beyond nature vs. nurture in expertise research – comment on J. Baker and N. Wattie. *Current Issues in Sport Science, 4*, 104.

CHAPTERS

- Burgoyne, A. P.**, Harris, L. J., & Hambrick, D. Z. (in press). “The Origins of Musical Expertise.” In G. McPherson (Ed.), *The Oxford Handbook of Music Performance*. Oxford, UK: Oxford University Press.

- Hambrick, D. Z., **Burgoyne, A. P.**, & Araujo, D. (in press). "Working Memory and Expertise: An Ecological Perspective." In R. Logie, V. Camos, & N. Cowan (Eds.), *Working Memory: State of the Science (The Oxford Handbook of Working Memory)*. Oxford, UK: Oxford University Press.
- Hambrick, D. Z., **Burgoyne, A. P.**, & Altmann, E. M. (2020) "Problem Solving and Intelligence." In R. J. Sternberg (Ed.), *Thinking and Problem Solving (Handbook of Perception and Cognition), Volume 3*. Academic Press.
- Hambrick, D. Z., **Burgoyne, A. P.**, & Oswald, F. L. (2019) "The Role of Interests in the Development of Expertise: A Multifactorial Perspective." In C. D. Nye & J. Rounds (Eds.), *Vocational Interests in the Workplace: Rethinking Behavior at Work*. Routledge.
- Hambrick, D. Z., **Burgoyne, A. P.**, & Oswald, F. L. (2019). Domain-General Models of Expertise: The Role of Cognitive Ability. In P. Ward, J. M. Schraagen, J. Gore, & E. Roth (Eds.), *The Oxford Handbook of Expertise*. Oxford, UK: Oxford University Press.
- Hambrick, D. Z., **Burgoyne, A. P.**, Campitelli, G., & Macnamara, B. N. (2018). "Working Memory, Thinking, and Expertise." In L. J. Ball & V. A. Thompson (Eds.), *International Handbook of Thinking and Reasoning*. Psychology Press.
- Macnamara, B. N., Hambrick, D. Z., Frank, D. J., King, M. J., **Burgoyne, A. P.**, & Meinz, E. J. (2018). "The Deliberate Practice View: An Evaluation of Definitions, Claims, and Empirical Evidence." In D. Z. Hambrick, G. Campitelli, & B. N. Macnamara (Eds.), *The Science of Expertise*. Psychology Press.

POPULAR WRITING

- Hambrick, D. Z. & **Burgoyne, A. P.** (2019, May 29). Looks Matter, but So Do Smarts, *Scientific American*. Retrieved from <https://www.scientificamerican.com/article/looks-matters-but-so-does-smarts/>
- Burgoyne, A. P.** & Hambrick, D. Z. (2017, January 12). Intelligence and the DNA Revolution, *Scientific American*. Retrieved from <https://www.scientificamerican.com/article/intelligence-and-the-dna-revolution/>

Burgoyne, A. P. & Hambrick, D. Z. (2017, August 22). Flagging Fake News or Bad Sources Won't Work, *Slate*. Retrieved from http://www.slate.com/articles/health_and_science/science/2017/01/educating_people_about_sources_won_t_stop_fake_news.html

Hambrick, D. Z. & **Burgoyne, A. P.** (2016, September 18). The Difference Between Rationality and Intelligence, *New York Times*, p. SR12.

PRESENTATIONS AND SYMPOSIA

Hambrick, D. Z., **Burgoyne, A. P.**, & Altmann, E. M. (2019, June). *Placekeeping Ability as a Cognitive Control Construct: Validity and Malleability*. Presentation at the annual Office of Naval Research Program Review (Hawkins ONR 341), Arlington, D.C.

Burgoyne, A. P., Hambrick, D. Z., & Macnamara, B. N. (2019, April). *How Firm Are the Foundations of Mindset Theory?* Presentation at the annual conference of the Midwestern Psychological Association, Chicago, IL.

Burgoyne, A. P., & Hambrick, D. Z. (2018, November). *Placekeeping Ability, Working Memory, and Fluid Intelligence*. Presentation at Rice University's Industrial/Organizational Psychology Department's Brown Bag Series. Houston, TX.

Burgoyne, A. P., Altmann, E. M., & Hambrick, D. Z. (2018, November). *Placekeeping Ability as a Component of Fluid Intelligence*. Poster presented at the annual Psychonomics convention, New Orleans, LA.

Macnamara, B. N. & **Burgoyne, A. P.** (2018, May). *How Important Are Growth Mindsets for Learning and Achievement?* Symposium at the annual convention of the Association for Psychological Science, San Francisco, CA.

Burgoyne, A. P., Hambrick, D. Z., & Harris, L. J. (2018, May). *The Role of Cognitive Ability, Music Aptitude, and Mindset in Acquiring Musical Skill*. Presentation at the annual convention of the Association for Psychological Science, San Francisco, CA.

Burgoyne, A. P., Burt, S. A., Moser, J., Yeager, D., Plaisance, K., & Hambrick, D. Z. (2018, April). *Altering Mindsets with a Brief Online Intervention*. Presentation at the annual conference of the Midwestern Psychological Association, Chicago, IL.

Burgoyne, A. P., Altmann, E. M., & Hambrick, D. Z. (2017, May). *Cognitive Determinants of Multitasking Ability*. Poster presented at the annual convention of the Association for Psychological Science, Boston, MA.

Burgoyne, A. P., Nye, C. D., Macnamara, B. N., Charness, N., Hambrick, D. Z. (2017, April). *The Impact of Domain-Specific Experience on Chess Skill: Re-Analysis of a Key Study*. Presentation at the annual conference of the Midwestern Psychological Association, Chicago, IL.

Burgoyne, A. P., Harris, L. J., & Hambrick, D. Z. (2016, May). *Acquiring Skill in Music*. Poster presented at the annual conference of the Midwestern Psychological Association, Chicago, IL.

Burgoyne, A. P., Sala, G., Gobet, F., Macnamara, B. N., Campitelli, G., Hambrick, D. Z. (2016, May). *The Relationship Between Intelligence and Expertise in Chess: A Meta-Analysis*. Presentation at the annual conference of the Midwestern Psychological Association, Chicago, IL.

HONORS AND AWARDS

2018 Research Scholars Award: \$3,500

The Nature and Nurture of Skilled Performance: Understanding the Role of Basic Abilities and Training on Complex Task Performance.

2018 Thompson Endowment Fellowship: \$1,000

The Nature and Nurture of Skilled Performance: Understanding the Role of Basic Abilities and Training on Complex Task Performance.

2018 Future Academic Scholars in Teaching Fellowship: \$2,000

Cognitive Processes Underlying Undergraduate Writing and Proofreading.

2018 Research Enhancement Award: \$1,000

Circumvention of Limits in Chess.

2018 Travel Award: \$1,100

Funding for APS and MPA annual conventions.

2017 Summer Fellowship Award: \$600

2015 Rasmussen Fellowship Award: \$5,000

COGNITIVE ABILITY TESTING SOFTWARE

2017	Visual Arrays Task (E-Prime v2)
2017	Choose-A-Move Chess Test (E-Prime v2)
2017	Chess Knowledge Test (E-Prime v2)
2017	Typing Speed Test (E-Prime v2)
2016	Reading Comprehension Test (E-Prime v1 and v2)
2016	Pattern Comparison Test (E-Prime v1 and v2)

All programs are free to download at www.scienceofexpertise.com/alex

WEB DESIGN AND MANAGEMENT

www.scienceofexpertise.com – Website for the Expertise Laboratory
www.journalofexpertise.org – Official website for the Journal of Expertise

ACADEMIC POSITIONS

2020 – Present	Post-Doctoral Researcher Attention & Working Memory Lab Georgia Institute of Technology, School of Psychology Principal Investigator: Randy Engle, Ph.D.
2015 – 2019	Graduate Research Assistant/Laboratory Manager Expertise Laboratory Michigan State University, Department of Psychology Supervisor: D. Zach Hambrick, Ph.D.
2016	Teaching Assistant Psychology 402(W): Sensation and Perception Michigan State University, Department of Psychology Professor: Mark Becker, Ph.D.
2015	Teaching Assistant

Psychology 244: Developmental Psychology: Infancy through
Childhood

Michigan State University, Department of Psychology

Professor: Lauren J. Harris, Ph.D.

2014 – 2015

Professional Aide

Michigan Twins Project, Michigan State University

Principal Investigators: Kelly Klump, Ph.D., Alex Burt, Ph.D.

2013

Teaching Assistant

Psychology 200: Introduction to Cognitive Psychology

Michigan State University, Department of Psychology

Professor: Mark Becker, Ph.D.

2012 – 2013

Research Assistant

Michigan Twins Project, Michigan State University

Principal Investigators: Kelly Klump, Ph.D., Alex Burt, Ph.D.

PROFESSIONAL SERVICE

2017 – Present

Reviewer for the following journals: *Journal of Experimental Psychology: General*, *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *Journal of Behavioral Decision Making*, *Clinical Psychological Science*, *Military Psychology*, *Music Perception*, *Journal of Expertise*, *Advances in Cognitive Psychology*, *Organizational Behavior and Human Decision Processes*, *Learning and Individual Differences*, *Frontiers in Psychology*.

2016

Reviewer for the Association for Psychological Science Student Grant Competition

2016

Student Representative, *Quantitative Genetics Faculty Search Committee*, Psychology Department, Michigan State University East Lansing, MI

TECHNICAL SKILLS

Structural equation modeling (*Amos, MPlus*)

Meta-analysis (*R, Comprehensive Meta-Analysis*)

Multi-level modeling, power analysis, etc. (*SPSS, G*Power*)

Experiment program development (*E-Basic*)

Web design (*HTML, CSS*)

Website management and graphic design (*Adobe Dreamweaver, Photoshop, Illustrator*)

PROFESSIONAL DEVELOPMENT

Fall	2018	Future Academic Scholars in Teaching Fellow
Spring	2017	Leadership Academy at Michigan State University
Summer	2016	Certification in College Teaching Institute
Summer	2016	Introductory & Intermediate Structural Equation Modeling Workshop
Summer	2015	Teaching Assistant Institute at Michigan State University

MEDIA COVERAGE

Research featured in the following outlets:

- Vox
- TIME
- Wired
- Scientific American
- Aeon
- The Conversation (x2)
- The Times
- Psychology Today
- American Council on Science and Health (x2)
- Australian Financial Review
- MSU Today (x2)
- Genetic Literacy Project (x2)
- Technology
- Futurity
- EurekAlert
- MedicalXpress
- Mad in America
- Science Newsline
- CWRU's The Daily
- Association for Psychological Science
- The Hechinger Report
- European CEO Magazine
- Huffington Post
- Education Week (x2)
- Reddit (x3)
- Chess.com
- Saint Louis Chess Club
- Chess and Strategy
- Bright Person
- Real Clear Science
- Peak Fitness
- ValueWalk
- New Delhi Television
- Charles Jennings & Associates
- Actualité Houssenia Writing
- Newswise
- Marginal Revolution
- Health Medicine Network
- Newser
- Science Daily
- From Experience to Meaning
- Mensa Côte d'Azur