

# Jonathan G. Tullis

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## Professional Positions

- Associate Professor**, University of Arizona 2021-present  
*Department of Educational Psychology*  
*Affiliated with Psychology and Cognitive Science*
- Assistant Professor**, University of Arizona 2015-2021  
*Department of Educational Psychology*  
*Affiliated with Psychology and Cognitive Science*
- Post-doctoral Research Fellow**, Indiana University (adviser: Rob Goldstone) 2013-2015  
*Department of Psychological and Brain Sciences*

## Education

- University of Illinois at Urbana-Champaign** May 2013  
*Ph.D.*, Department of Psychology, Cognitive Division (advisers: Aaron Benjamin & Brian Ross)
- University of Notre Dame**, Notre Dame, IN July 2007  
*M.Ed.*, Specialization: high school science
- Dartmouth College**, Hanover, NH June 2005  
*B.A.*, Psychology and Physics, Cum Laude

## Awards

- 2016 Michael Pressley Award for a Promising Scholar in an Education Field, University of Notre Dame
- 2015 Faculty Travel Grant
- 2009-2013 National Science Foundation Graduate Research Fellowship
- 2013 Graduate College Travel Award
- Summer 2012 List of Teachers Ranked as Excellent
- Fall 2011 Rated as an “outstanding” instructor (top 10% of instructors across the university)
- Summer 2009 List of Teachers Ranked as Excellent
- Fall 2008 List of Teachers Ranked as Excellent

### **Funded Grants**

- 2019-2024 CAREER: That Reminds Me: The Causes and Consequences of Reminders, National Science Foundation, Perception, Action, and Cognition, **PI, \$580,000.**
- 2016-2017 Social Metacognition: How we predict other's memories, UA Faculty Seed Grant, **PI, \$10,000**

### **Non-Funded Grants**

- Spring 2019 Modeling and Augmenting Workers' Learning Efficiency of New Operational Technologies at Workplaces via Augmented Reality [Resubmission], National Science Foundation, Future of Work at the Human-Technology Frontier, Changxu Wu (Systems Engineering) PI.
- Fall 2018 Using Retrieval Practice to Enhance Self-Regulated Learning, Spencer Foundation.
- Summer 2018 Modeling and Augmenting Workers' Learning Efficiency of New Operational Technologies at Workplaces via Augmented Reality, National Science Foundation, Future of Work at the Human-Technology Frontier, Changxu Wu (Systems Engineering) PI.
- Fall 2017 Individual Differences in the Use of Testing to Support Learning, Spencer Foundation.
- Fall 2017 Response to Intervention for College Students Post- Concussion, UA Start for Success, Jessie Brown (Speech, Language, Hearing Sciences) PI.
- Summer 2017 Student-generated memory cues: How students support their own learning, Institute of Education Sciences, Cognition and Student Learning.
- Spring 2017 Cognitive Factors Associated with Differential Responses to Mathematics Teacher Professional Development, McDonnell Foundation, Rebecca McGraw (Math Education) PI.
- Summer 2016 Student-generated memory cues: How students support their own learning, Institute of Education Sciences, Cognition and Student Learning.
- Summer 2016 Predicting the difficulty of material for students: How and how well teachers anticipate student performance, Institute of Education Sciences, Effective Teachers and Effective Teaching.
- Fall 2015 Environmental Science Studios: Open Access, Web-Based Technology for Education in Microbial Growth and Substrate Utilization, National Science Foundation, Improving Undergraduate STEM Education, Raina Maier (Soil, Water, and Environmental Science) PI.

### Peer Reviewed Publications

- Tullis, J. G., & Benjamin, A. S. (in press). The negative reminding effect: Reminding impairs memory for contextual information. *Journal of Memory and Language*.
- Peng, Y.\*, & Tullis, J. G. (in press). Dividing attention impacts metacognitive control more than monitoring. *Psychonomic Bulletin & Review*.
- Tullis, J. G., & Qui, J.\* (in press). Generating mnemonics boosts recall of chemistry content. *Journal of Experimental Psychology: Applied*.
- Zhang, D.\*, & Tullis, J. G. (in press). Personal reminders: Self-generated reminders boost memory more than normatively related ones. *Memory & Cognition*.
- Tullis, J. G., & Goldstone, R. (2020). Why does peer instruction benefit student learning? *Cognitive Research: Principles and Implications*, 5:15.
- Tullis, J. G. & Maddox, G. (2020). The use of self-testing varies by grade and domain. *Metacognition and Learning*, 15, 129-154.
- Tullis, J. G. (2020). E-learning: The opportunities and challenges of online instruction. Routledge Encyclopedia of Education. [INVITED SUBMISSION]
- Peng, Y.\*, & Tullis, J. G. (2020). Theories of intelligence influence self-regulated study choices and learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 46 (3), 487-496.
- Tullis, J. G., & Finley, J. R. (2018). Self-generated memory cues: Effective tools for learning, training, and remembering. *Policy Insights from the Behavioral and Brain Sciences*, 5(2), 179-186. [INVITED SUBMISSION]
- Tullis, J. G. (2018). Predicting others' knowledge: Knowledge estimation as cue-utilization. *Memory & Cognition*, 46, 1360-1375.
- Tullis, J. G., Fiechter, J. L. & Benjamin, A. S. (2018). The efficacy of learners' testing choices. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 44, 540-552.
- Tullis, J. G., & Fraundorf, S. H. (2017). Predicting others' memory performance: The accuracy and bases of social metacognition. *Journal of Memory and Language*, 95, 124-137.
- Tullis, J. G., & Goldstone, R. (2017). Instruction in computer modeling can support broad application of complex systems knowledge. *Frontiers in Education*, 2, 1-18.
- Tullis, J. G., & Goldstone, R. (2016). Comparison versus reminding. *Cognitive Research: Principles and Implications*, 1:20.

- Ryskin, R., Benjamin, A. S., Tullis, J. G., & Brown-Schmidt, S. (2015). Perspective-taking in comprehension, production, and memory: An individual differences approach. *Journal of Experimental Psychology: General*, 144, 898-915.
- Tullis, J. G., & Benjamin, A. S. (2015). Cue Generation: How learners flexibly support future retrieval. *Memory & Cognition*, 43, 922-938.
- Hourihan, K. L., & Tullis, J. G. (2015). When will bigger be (recalled) better? The influence of category size on JOLs depends on test format. *Memory & Cognition*, 43, 910-921.
- Tullis, J. G., Goldstone, R., & Hanson, A. (2015). Scheduling scaffolding: The extent and arrangement of assistance during training impacts test performance. *The Journal of Motor Behavior*, 47, 442-452.
- Tullis, J. G., & Benjamin, A. S. (2015). Cuing others' memories. *Memory & Cognition*, 43, 634-646.
- Tullis, J. G., Benjamin, A. S., & Ross, B. H. (2014). The reminding effect: Presentation of associates enhances memory for related words in a list. *Journal of Experimental Psychology: General*, 143, 1526-1540.
- Tullis, J. G., Benjamin, A. S., & Liu, X. (2014). Self-pacing study of faces of different races: Metacognitive control over study does not eliminate the cross-race recognition effect. *Memory & Cognition*, 42, 863-875.
- Tullis, J. G., Braverman, M., Ross, B. H., & Benjamin, A. S. (2014). Reminders influence the interpretation of ambiguous stimuli. *Psychonomic Bulletin & Review*, 21, 107-113.
- Benjamin, A. S., Tullis, J. G., & Lee, J. H. (2013). Criterion noise in ratings-based recognition: Evidence from the effects of response scale length on recognition accuracy. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 39, 1601-1608.
- Tullis, J. G., Finley, J. R., & Benjamin, A. S. (2013). Metacognition of the testing effect: Guiding learners to predict the benefits of retrieval. *Memory & Cognition*, 41, 492-442.
- Tullis, J. G. & Benjamin, A. S. (2012). Consequences of restudy choices in younger and older learners. *Psychonomic Bulletin & Review*, 19, 743-749.
- Tullis, J. G. & Benjamin, A. S. (2012). The effectiveness of updating metacognitive knowledge in the elderly: Evidence from metamnemonic judgments of word frequency. *Psychology and Aging*, 27, 683-690.
- Tullis, J. G., & Benjamin, A. S. (2011). On the effectiveness of self-paced learning. *Journal of Memory and Language*, 64, 109-118.
- Benjamin, A. S., & Tullis, J. G. (2010). What makes distributed practice effective? *Cognitive Psychology*, 61, 228-247.

### **Book Chapters**

Finley, J. R., Tullis, J. G., & Benjamin, A. S. (2009). Metacognitive control of learning and remembering. In M. S. Khine & I. M. Saleh (Eds.) *New Science of Learning: Cognition, Computers and Collaboration in Education*. New York: Springer Science & Business Media.

### **Manuscripts in Preparation**

Tullis, J. G., & Feder, B.<sup>1</sup> (submitted). Estimates of normative difficulty change with one's experience.

Tullis, J. G., & Finley, J. R. (submitted). Characteristics of effective cues persist across long retention intervals.

Tullis, J. G., & Fraundorf, S. H. (submitted). Selective effective mnemonic cues underlies the benefits of self-generation.

### **Presentations**

Castro, S., & Tullis, J. G. (2021, June). Learning from examples: Generating or comparing. Poster presentation at McMaster Conference on Education & Cognition, Online due to COVID-19.

Tullis, J. G. (2021, February). Estimating what others know: How we predict others' knowledge and the factors that influence those predictions. Brownbag Presentation, Vanderbilt.

Milburn, H., Diehl, T., Maddox, G., & Tullis, J. G. (2020, November). Student and teacher sensitivity to the benefits of retrieval practice. Poster presentation at the 61<sup>st</sup> Annual Meeting of the Psychonomic Society, Online due to COVID-19.

Tullis, J. G., & Qui, J.\* (2020, November). Generating mnemonics boosts recall of chemistry content. Spoken presentation at the 61<sup>st</sup> Annual Meeting of the Psychonomic Society, Online due to COVID-19.

Tullis, J. G. (2020, October). Blasts from the past: Encoding novel stimuli can prompt retrievals of prior episodes. Brownbag Presentation, University of Pittsburgh.

Tullis, J. G. (2020, June). Learning from examples. Spoken presentation at McMaster Conference on Education & Cognition, Online due to COVID-19.

Tullis, J. G., & Goldstone, R. (2020, April). How peer instruction changes student learning. Spoken presentation at AERA, San Francisco. [Conference canceled due to COVID-19]

Tullis, J. G., & Goldstone, R. (2019, November). Why does peer instruction benefit student learning? Spoken presentation at the 60<sup>th</sup> Annual Meeting of the Psychonomic Society, Montreal.

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\*indicates graduate student

<sup>1</sup>indicates undergraduate student

- Tullis, J. G. (2018, December). Choosing Retrieval Practice: When and How Effectively Do Students Choose Testing. Spoken presentation at the 9<sup>th</sup> Arizona Cognitive Science Conclave, Phoenix.
- Tullis, J. G. (2018, November). Predicting Others' Knowledge: Expertise and experience change what cues are used. Spoken presentation at the 59<sup>th</sup> Annual Meeting of the Psychonomic Society, New Orleans.
- Tullis, J. G., Peng, Y. (2018, November). Theories of intelligence influence restudy choices. Spoken presentation at the International Association for Metacognition conference, New Orleans.
- Zhang, D.\*, & Tullis, J. G. (2018, November). Personal reminders: Idiosyncratic associations boost memory more than normative ones. Poster presentation at the 59<sup>th</sup> Annual Meeting of the Psychonomic Society, New Orleans.
- Tullis, J. G. (2018, September). The schedule of scaffolding affects math learning and metacognition. Poster presentation at the Center for Integrative Research on Cognition, Learning, and Education Conference, St. Louis.
- Peng, Y.\*, & Tullis, J. G. (2018, April). Theories of intelligence influence restudy choices. Spoken presentation at AERA, New York.
- Tullis, J. G., & Goldstone, R. (2017, November). Reminding vs. Comparison. Spoken presentation at the 58<sup>th</sup> Annual Meeting of the Psychonomic Society, Vancouver.
- Tullis, J. G. (2017, April). Predicting others' knowledge: Judgment conditions affect the accuracy of estimates of difficulty for others. Roundtable session at AERA.
- Tullis, J. G. (2016, December). Predicting others' understanding: Perspective-taking in knowledge estimation. Presentation at the 7<sup>th</sup> Arizona Cognitive Science Conclave, Phoenix.
- Tullis, J. G., (2016, November). Estimating others' knowledge: Judgment conditions affect the accuracy and bases of estimates of difficulty for others. Poster presentation at the 57<sup>th</sup> Annual Meeting of the Psychonomic Society, Boston.
- Tullis, J. G. (2016, November). The influence of others' study choices on metacognitive monitoring and control. Presentation at the conference of the International Association for Metacognition, Boston.
- Fraundorf, S. H., & Tullis, J. G. (2016, November). Predicting the memory performance of others. Presentation at the conference of the International Association for Metacognition, Boston.
- Tullis, J. G. & Fraundorf, S. H. (2015, December). Predicting others' memories. Poster presented at the Arizona Cognitive Science Conclave, Tucson.
- Tullis, J. G., (2015, November). Reminders influence source memory. Poster presentation at the 56<sup>th</sup> Annual Meeting of the Psychonomic Society, Chicago.

- Tullis, J. G. & Fraundorf, S. H. (2015, November). Predicting others' memories. Poster presented at the 56<sup>th</sup> Annual Meeting of the Psychonomic Society, Chicago.
- Tullis, J. G. (2015, September). Reminders: The influence of prior episodes on present behavior. Presentation to the Cognitive Science Group at University of Arizona.
- Tullis, J. G., Goldstone, R., & Hanson, A. (2014, November). Scheduling scaffolding: The extent and arrangement of assistance during training impacts test performance. Poster presentation at the 55<sup>th</sup> annual meeting of the Psychonomics Society, Long Beach, CA.
- Tullis, J. G. (2014, November). The wonders and woes of self-paced learning. Presentation at the conference of the International Association for Metacognition, Long Beach, CA.
- Hourihan, K. L., & Tullis, J. G. (2014, November). When will bigger be (recalled) better? The influence of category size on JOLs depends upon test format. Presentation at the conference of the International Association for Metacognition, Long Beach, CA.
- Tullis, J. G. (2014, October). Reminders: The influence of unplanned retrievals on memory and interpretation. Presentation to the Cognitive Psychology Department at Indiana University.
- Tullis, J. G., & Goldstone, R. L. (2014, September). The mnemonic and metamnemonic consequences of predictions in science learning. Presentation at the Memory and Cognition Laboratory, Champaign, IL.
- Tullis, J. G., & Goldstone, R. L., & Hanson, A. J. (2014, September). Schedule of scaffolding impacts what and how well skills are learned. Poster presentation at the Center for Integrative Research on Cognition, Learning, and Education Conference, St. Louis, MO.
- Hanson, A. J., Goldstone, R. L., & Tullis, J. G. (2014, June). The bugcatcher. Presentation at the Thirteenth Annual Summer Interdisciplinary Conference, Moab, UT.
- Tullis, J. G., & Benjamin, A. S. (2013, November). Generating memory cues for others. Poster presentation at the 54<sup>th</sup> Annual Meeting of the Psychonomic Society, Toronto, Canada.
- Tullis, J. G. (2013, March). That reminds me: The influence of unplanned retrievals on memory and understanding. Presentation to the Cognitive Psychology Department at University of Illinois, Urbana-Champaign.
- Tullis, J. G. (2012, December). Promises and Pitfalls of Self-Regulated Learning: Evidence from study time allocation, item selection, and activity selection. Presentation to Psychological and Brain Sciences Department. Indiana University.
- Tullis, J. G., & Benjamin, A. S. (2012, November). Metacognitive control of encoding same- and other-race faces. Poster presentation at the 53<sup>th</sup> Annual Meeting of the Psychonomic Society, Minneapolis.

- Tullis, J. G., Benjamin, A. S., & Ross, B. H. (2011, November). A metacognitive illusion in category learning. Poster presented at the 52<sup>th</sup> Annual Meeting of the Psychonomic Society, Seattle.
- Tullis, J. G., & Benjamin, A. S. (2009, November). On the effectiveness of self-paced learning. Poster presented at the 50<sup>th</sup> Annual Meeting of the Psychonomic Society, Boston.
- Tullis, J. G., Benjamin, A. S., & Ross, B. H. (2008, November). What makes distributed practice effective? Poster presented at the 49<sup>th</sup> Annual Meeting of the Psychonomic Society, Chicago.

### **Community Presentations**

- Tullis, J. G. (2020, January). Making decisions: How simple biases shape how we act. Presentation at Arizona State Prison through the Prison Education Project, Tucson, Az.
- Tullis, J. G. (2019, June). How can teachers use cognitive psychology to support student learning. Presentation at Envision High School, Tucson, Az.
- Tullis, J. G. (2018, June). Brain-based instruction: Using cognitive psychology to bolster student learning. Presentation at Arizona Teachers' Institute, Tucson, Az.
- Tullis, J. G. (2017, March). Applying Cognitive Psychology to Education: Benefits and Boundary Conditions. Presentation at Arizona Psychology Undergraduate Research Conference, Arizona State University.
- Tullis, J. G. (2017, January). 4 Cognitive principles to easily improve student learning. Presentation to Patagonia School District Teachers, Patagonia, AZ.
- Tullis, J. G. (2017, January). Making sense of mathematics: Using the brain to enhance math instruction. Presentation at the Mathematics Educator Appreciation Day Conference, Tucson.
- Tullis, J. G. (2016, September). Improving Physics Learning Through Cognitive-Based Pedagogy. Presentation to the Tucson Area Physics Teachers (TAPT) group, Tucson.

### **College Teaching Experience**

#### **University of Arizona**

Decision Making Across the Lifespan	EdP 410	Fall 2016-2020
Dec. Making Across the Lifespan (Online)	EdP 410i	Fall 2020, 2019, 2018, 2017
Learning Theories	EdP 510	Spring 2016-2020
Advanced Research Methods	EdP 667	Spring 2019, 2017
Self-Regulated Learning	EdP 615b	Spring 2019, 2018, 2016
Social Cognition in Education	EdP 615a	Spring 2018
Cognitive Approaches to Education	EDP 696	Fall 2015
Independent Study	EDP 699	Fall 2019

#### **University of Illinois**



Cognitive Psychology	Psych 224	Fall 2012, Summer 2009, Spring 2009
Learning and Memory	Psych 248	Spring 2012
Introduction to Psychology	Psych 100	Fall 2011
Research Methods in Cognitive Psychology	Psych 331	Fall 2008

### **Editorial Board Member**

*Journal of Experimental Psychology: Applied*

*Journal of Experimental Psychology: Learning, Memory, and Cognition*

### **Ad Hoc Reviewer**

*Journal of Research on Personality*

*Science of Learning: Nature*

*NSF: Perception, Action, Cognition*

*Women in Science Fellowship*

*Israel Science Foundation*

*Learning and Instruction*

*Journal of Experimental Psychology: General*

*Journal of Experimental Psychology: Learning,  
Memory, and Cognition*

*Journal of Experimental Psychology: Applied*

*Psychonomic Bulletin & Review*

*Journal of Memory and Language*

*Memory & Cognition*

*Memory*

*Psychology and Aging*

*Journal of Applied Gerontology*

*Journal of Gerontology: Psychological Sciences*

*Quarterly Journal of Experimental Psychology*

*Applied Cognitive Psychology*

*Acta Psychologica*

*PLOS One*

*Anatomical Sciences Education*

*European Journal of Psychology of Education*

*Frontiers in Psychology*

*Mind, Brain, and Education*

*Cognitive Psychology*

*Educational Psychology Review*

*Metacognition and Learning*

*Human Factors*

*AERA Conference Reviewer*

*Aging, Neuropsychology, and Cognition*

*Journal of Applied Research in Memory and  
Cognition*

### **Advising**

#### **2020-2021**

Comps Committee – Shane Thomas (Molecular and Cellular Biology)

#### **2019-2020**

Master's Thesis Chair – Leslie Bosch

Master's Thesis Chair – Jiahui Qiu

Comps Committee – Sarah Grace

Undergraduate Thesis Chair – Brennen Feder

Undergraduate Thesis Chair – Dominique Hughes (Neuroscience)

#### **2018-2019**

Dissertation Chair – Yaopeng Peng

Dissertation Co-chair – Elizabeth Bukoski

Dissertation Committee – Zhongyuan Li

Master's Thesis Chair – Di Zhang

Master's Thesis Committee – Mary Hartman

Master's Thesis Committee – Avery Mickens

Comps Committee – Melissa Akan (Psychology, University of Illinois)

#### **2017-2018**

Comps Committee – Elizabeth Bukoski

Comps Committee – Stella Sakhon (Psychology)  
 Dissertation Committee – Katie Esterline (Psychology)  
 Master's Thesis Committee – Lauren Clough  
 Master's Thesis Committee – Daisy (Shuxin) Di  
 Master's Thesis Committee – Ambareen Baig  
 Master's Thesis Committee – Greg Hughes (Psychology, Boston University)  
 Undergraduate Thesis Chair – Samantha Orwoll (Psychology)

**2016-2017**

Comps Committee – Katie Esterline (Psychology)  
 Master's Project Committee – Ben Caldera  
 Master's Project Committee – Kylan Butler  
 Master's Thesis Committee – Xueyan Li  
 Dissertation Committee – Erica Defrain

**2015-2016**

Master's Project Committee – Charlene Bruce

**Service**

**University Level**

Summer 2021	eIRB Champion, eIRB Product Tester
Spring 2021	NSF CAREER Grant Panel
Fall 2016-ongoing	Committee on Faculty Membership, Faculty Senate
Fall 2017-Spring 2021	Graduate Council Member
Spring 2016-ongoing	Graduate Student Showcase Judge
Spring 2018-ongoing	Grad Slam Judge
Spring 2018-ongoing	UA Research & Development Grant Reviewer
Spring 2016-Spring 2019	Senior Awards Committee Member
Spring 2018	Strategic Planning Committee: Pedagogy & Instruction

**College Level**

Fall 2016-Fall 2018	College of Education Dean's Search Committee
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**Department Level**

Spring 2021-ongoing	EdP Quant & Advanced Search Committees
Spring 2020-ongoing	EdP Annual Review Committee
Spring 2019-ongoing	EdP Social Media Coordinator
Fall 2017-ongoing	EdP Participant Pool Coordinator
Fall 2016-ongoing	EdP IRB Exempt Reviewer
Fall 2019-Spring 2020	EdP Learning Sciences Search Co-Chair
Fall 2015-Spring 2016	EdP Quantitative Search Committee

**Community**

Spring 2019 – Fall 2020	APA – High school science standards committee
Spring 2018, 2021	SARSEF Science Fair Judge
Spring 2017, 2019	APA Intel International Science Fair Judge
Spring 2017	Skype a Scientist

### **Professional Memberships**

American Educational Research Association – Division 15

American Psychological Association – Division C

International Association for Metacognition

Psychonomics Society [Review Committee Member]