



## TRAVEL GRANTS

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- **American Psychological Association** Student Travel Award: \$300 (2013)
- **Northwestern University** Conference Travel Grant: \$1,150 (2013; 2016)
- **Society for Personality and Social Psychology** Diversity Fund Graduate Travel Award: \$500 (2018)
- **Society for Personality and Social Psychology** Graduate Travel Award: \$500 (2018)
  - I won this award, but had to decline receiving it because I also won the Diversity Fund Graduate Travel Award in the same year and was not allowed to receive both.
- **University of California – Berkeley** Conference Travel Grant: \$500 (2012)

## PUBLICATIONS

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- Atit, K., **Miller, D. I.**, Newcombe, N. S., & Uttal, D. H. (under review). Teachers' spatial skills across disciplines and education levels: Exploring nationally representative data.
- Miller, D. I.**, Nolla, K. M., Eagly, A. H., & Uttal, D. H. (accepted). The development of children's gender-science stereotypes: A meta-analysis of five decades of U.S. Draw-A-Scientist studies. *Child Development*.
- Hsu, K. J., Rosenthal, A. M., **Miller, D. I.**, & Bailey, J. M. (2017). Sexual arousal patterns of autogynephilic male cross-dressers. *Archives of Sexual Behavior*, *46*, 247-253. doi:10.1007/s10508-016-0826-z
- Eagly, A. H., & **Miller, D. I.** (2016). Scientific eminence: Where are the women? *Perspectives in Psychological Science*, *11*, 899-904. doi:10.1177/17456916166663918
- Miller, D. I.** (2016). Sex difference research and cognitive abilities. In N. A. Naples (Ed.), *The Wiley-Blackwell Encyclopedia of Gender and Sexuality Studies*. New York, NY: John Wiley & Sons, Ltd. doi:10.1002/9781118663219.wbegss098
- Hsu, K. J., Rosenthal, A. M., **Miller, D. I.**, & Bailey, J. M. (2016). Who are gynandromorphophilic men? Characterizing men with sexual interest in transgender women. *Psychological Medicine*, *46*, 819–827. doi:10.1017/S0033291715002317
- Miller, D. I.**, Eagly, A. H., & Linn, M. C. (2015). Women's representation in science predicts national gender-science stereotypes: Evidence from 66 nations. *Journal of Educational Psychology*, *107*, 631-644. doi:10.1037/edu0000005
- Miller, D. I.**, & Wai, J. (2015). The bachelor's to Ph.D. STEM pipeline no longer leaks more women than men: A 30-Year analysis. *Frontiers in Psychology*, *6*, 36. doi:10.3389/fpsyg.2015.00037
- Miller, D. I.**, & Halpern, D. F. (2014). The new science of cognitive sex differences. *Trends in Cognitive Sciences*, *18*, 37-45. doi:10.1016/j.tics.2013.10.011
- Miller, D. I.**, & Halpern, D. F. (2013). Can spatial training improve long-term outcomes for gifted STEM undergraduates? *Learning and Individual Differences*, *26*, 141-152. doi:10.1016/j.lindif.2012.03.012
- Uttal, D. H., **Miller, D. I.**, & Newcombe, N. S. (2013). Exploring and enhancing spatial thinking: Links to STEM achievement? *Current Directions in Psychological Science*, *22*, 367-373. doi:10.1177/0963721413484756

## PEER-REVIEWED CONFERENCE PROCEEDINGS

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- Lakkaraju, H., Aguiar, E., Shan, C., **Miller, D. I.**, Bhanpuri, N., Ghani, R., & Addison, K. L. (2015). A machine learning framework to identify students at risk of adverse academic outcomes. In *Proceedings of the 21st ACM SIGKDD Conference on Knowledge Discovery and Data Mining*. Sydney, Australia: Association for Computing Machinery.

- Aguiar, E., Lakkaraju, H., Bhanpuri, N., **Miller, D. I.**, Yuhas, B., Addison, K., ... , Ghani, R. (2015). Who, when, why: A machine learning approach to prioritizing students at risk of not graduating high school on time. In *Proceedings of the 5<sup>th</sup> International Conference on Learning Analytics and Knowledge*. Poughkeepsie, NY: Society for Learning Analytics Research.
- Matuk, C. F., McElhaney, K. W., **Miller, D. I.**, Chen, J. K., Lim-Breitbart, J., Terashima, H., ... , Linn, M. C. (2013). Reflectively prototyping a tool for exchanging ideas. In *Proceedings of the 10<sup>th</sup> International Conference on Computer Supported Collaborative Learning* (pp. 101-104). Madison, WI: International Society of the Learning Sciences.
- McElhaney, K. W., Matuk, C. F., **Miller, D. I.**, & Linn, M. C. (2012). Using the Idea Manager to promote coherent understanding of inquiry investigations. In *Proceedings of the 11<sup>th</sup> International Conference of the Learning Sciences*. Sydney, Australia: International Society of the Learning Sciences.
- Matuk, C. F., McElhaney, K. W., Chen, J. K., **Miller, D. I.**, Lim-Breitbart, J., & Linn, M. C. (2012). The Idea Manager: A tool to scaffold students in documenting, sorting, and distinguishing ideas during science inquiry. In *Proceedings of the 11<sup>th</sup> International Conference of the Learning Sciences*. Sydney, Australia: International Society of the Learning Sciences.
- Miller, D. I.**, & Halpern, D. F. (2011). Spatial thinking in physics: Longitudinal impacts of 3-D spatial training. In L. Carlson, C. Hoelscher, & T. Shipley (Eds.), *Proceedings of the 33<sup>rd</sup> Annual Conference of the Cognitive Science Society* (pp. 3465-3470). Austin, TX: Cognitive Science Society. [This research was turned into a full-length journal article in *Learning and Individual Differences* – see publications]

#### POPULAR PRESS ARTICLES

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- Miller, D. I.** (2017, February 1). Stereotypes can hold boys back in school, too. *The Conversation*. Retrieved from <https://theconversation.com/stereotypes-can-hold-boys-back-in-school-too-72035>
- Miller, D. I.** (2016, June 15). LGBT equality doesn't exist – but here's how to fight for it. *The Conversation*. Retrieved from <https://theconversation.com/lgbt-equality-doesnt-exist-but-heres-how-to-fight-for-it-60977>
- Miller, D. I.** (2016, February 4). Intersectionality: how gender interacts with other social identities to shape bias. *The Conversation*. Retrieved from <https://theconversation.com/intersectionality-how-gender-interacts-with-other-social-identities-to-shape-bias-53724>
- Wai, J., & **Miller, D. I.** (2015, December 1). Here's why academics should write for the public. *The Conversation*. Retrieved from <https://theconversation.com/heres-why-academics-should-write-for-the-public-50874>
- Miller, D. I.** (2015, October 13). Men and women biased about studies of STEM gender bias – in opposite directions. *The Conversation*. Retrieved from <https://theconversation.com/men-and-women-biased-about-studies-of-stem-gender-bias-in-opposite-directions-48924>
- Miller, D. I.** (2015, July 10). Tech companies spend big money on bias training—but it hasn't improved diversity numbers. *The Conversation*. Retrieved from <https://theconversation.com/tech-companies-spend-big-money-on-bias-training-but-it-hasnt-improved-diversity-numbers-44411>
- Miller, D. I.** (2015, June 9). Beliefs about innate talent may dissuade students from STEM. *The Conversation*. Retrieved from <https://theconversation.com/beliefs-about-innate-talent-may-dissuade-students-from-stem-42967>
- Miller, D. I.** (2015, May 28). Most people think 'man' when they think 'scientist' – how can we kill the stereotype? *The Conversation*. Retrieved from <https://theconversation.com/most-people-think-man-when-they-think-scientist-how-can-we-kill-the-stereotype-42393>

**Miller, D. I.** (2015, April 16). Some good news about hiring women in STEM doesn't erase sex bias issue. *The Conversation*. Retrieved from <https://theconversation.com/some-good-news-about-hiring-women-in-stem-doesnt-erase-sex-bias-issue-40212>

**Miller, D. I.** (2015, March 3). A metaphor to retire. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/views/2015/03/03/essay-calls-ending-leaky-pipeline-metaphor-when-discussing-women-science>

## STATISTICAL TRAINING

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- **Statistical skills:** Factor analysis (confirmatory and exploratory), latent class analysis, logistic and multiple regression, meta-analysis (fixed-effects and random-effects), multilevel modeling, nonparametric inference, structural equation modeling, propensity score matching
- **Statistical packages used regularly:** R, SPSS, Stata
- **Data collection software used regularly:** Amazon Mechanical Turk, Inquisit, Qualtrics
- **Advanced statistical courses taken in graduate school:**
  - Latent variable modeling (instructor: William Revelle)
  - Meta-analysis (instructor: Larry V. Hedges)
  - Multilevel modeling (instructor: Sophia Rabe-Hesketh)
- **Advanced statistical workshops attended at conferences:**
  - Causal inference with quasi-experimental designs (AERA 2012 conference, facilitator: Joseph R. Cimpian)
  - Longitudinal exploratory data mining (APS 2013 conference, facilitator: John J. McArdle)
  - Network modeling (APS 2011 conference, facilitator: Lourens J. Waldorp)
- **Advanced statistical workshops attended at conferences:**
  - Two-day course on causal analysis using international data (AERA 2015 Institute on Statistical Analysis for Education Policy, facilitator: William Schmidt)
  - Week-long course on causal inference using non-experimental data (2015 Northwestern-Duke Causal Inference Workshop, facilitators: Bernie Black, Jens Hainmueller, Stephen Morgan, Don Rubin)

## SYMPOSIUM ORGANIZED

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### **New Research Directions on Gender Stereotypes in Science, Math, and Engineering**

Association for Psychological Science

Washington, DC

May 26<sup>th</sup>, 2013

- **Miller, D. I.** Lead organizer and chair for symposium at the 35<sup>th</sup> Association for Psychology Science (APS) Annual Convention.
- Presenters: **David I. Miller**, Diane F. Halpern (discussant), Frederick L. Smyth, Greg M. Walton, Toni Schmader.

### **Using Visual and Spatial Thinking in Science Education**

American Educational Research Association

San Francisco, CA

May 1<sup>st</sup>, 2013

- **Miller, D. I., & Linn, M. C.** Lead organizer for symposium at the 2013 Meeting of the American Education Research Association (AERA).
- Presenters: David H. Uttal, **David I. Miller**, Edward Pan, Kevin W. McElhaney, Marcia C. Linn (chair), Mary Hegarty, Nora S. Newcombe (discussant).

### **Spatial Thinking and Social Psychology: How Can They Inform Each Other?**

Association for Psychological Science

Chicago, IL

May 27<sup>th</sup>, 2012

- **Miller, D. I.** Lead organizer and chair for symposium at the 34<sup>th</sup> Association for Psychology Science (APS) Annual Convention.
- Presenters: **David I. Miller**, Elizabeth A. Gunderson, Keith B. Maddox, Stephanie A. Gagnon, Susan C. Levine (discussant).

#### INVITED CONFERENCE PRESENTATIONS

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### **How Gender Bias Relates to Career Progression in STEM**

Society for Personality and Social Psychology

San Diego, CA

January 28<sup>th</sup>, 2016

- **Miller, D. I.** Invited oral presentation at the Gender Preconference at the 2016 Society for Personality and Social Psychology Annual Convention.

### **Increasing Women's Access to Training in Science and Technology**

VHTO Gender & STEM Conference

Amsterdam, The Netherlands

November 12<sup>th</sup>, 2015

- **Miller, D. I.** Invited keynote address at the 2015 VHTO Higher Education Gender & STEM Conference.

### **Using Women's Potential for Science and Technology Careers**

Public Policy Exchange

Brussels, Belgium

July 2<sup>nd</sup>, 2015

- **Miller, D. I.** Invited oral presentation at the Public Policy Exchange forum on “Driving Forward Gender Equality in Europe: Combating Discrimination in the Workplace and Beyond.”

#### OTHER CONFERENCE PRESENTATIONS

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### **The Development of Children's Gender-Science Stereotypes: A Meta-Analysis of Five Decades of U.S. Draw-A-Scientist Studies**

Society for Personality and Social Psychology

Atlanta, GA

March 2<sup>nd</sup>, 2018

- **Miller, D. I.**, Nolla, K. M., Eagly, A. H., & Uttal, D. H. Poster presentation at 2018 Society for Personality and Social Psychology Annual Convention.

### **How Have U.S. Children's Stereotypes About Scientists Changed Over Time?**

Am. Assoc. for the Advancement of Science

Washington, D.C.

Feb. 14<sup>th</sup>, 2016

- **Miller, D. I.**, Nolla, K. M., Eagly, A. H., & Uttal, D. H. Oral presentation at 2016 American Association for the Advancement of Science Annual Meeting.

### **Untapped Talent: Can Better Testing and Data Accelerate Creativity in Learning and Societies?**

Salzburg Global Seminar

Salzburg, Austria

December 13<sup>th</sup>, 2015

- **Miller, D. I.** Panel discussant for the “Innovations in North America / Europe” session at the Salzburg Global Seminar on “Untapped Talent: Can better testing and data accelerate creativity in learning and societies?”

### **Who, When, Why: A Machine Learning Approach to Prioritizing Students at Risk of Not Graduating High School on Time**

Learning Analytics and Knowledge

Poughkeepsie, NY

March 18<sup>th</sup>, 2015

- Aguiar, E., Lakkaraju, H., Bhanpuri, N., **Miller, D. I.**, Yuhas, B., Addison, K., ... , Ghani, R. Oral presentation at the 5<sup>th</sup> International Learning Analytics & Knowledge Conference.

### **How Communal Goals Contribute To STEM Employment**

Society for Personality and Social Psychology    Long Beach, CA    February 26<sup>th</sup>, 2015

- **Miller, D. I.**, Uttal, D. H., & Eagly, A. H. Poster presentation at the 16<sup>th</sup> Society of the Personality and Social Psychology (SPSP) Annual Meeting.

### **How Spatial Skills Relate To Movement Into And Out of STEM**

Spatial Cognition    Bremen, Germany    September 18<sup>th</sup>, 2014

- **Miller, D. I.**, Wai, J., & Uttal, D. H. Poster presentation at the 2014 Spatial Cognition conference.

### **Identifying Students At Risk Accurately and Early**

Knowledge Discovery and Data Mining    New York City, NY    August 26<sup>th</sup>, 2014

- Aguiar, E., Lakkaraju, H., Bhanpuri, N., **Miller, D. I.**, & Yuhas, B. Oral and poster presentation at the 20<sup>th</sup> ACM SIGKDD Conference on Knowledge Discovery and Data Mining.

### **Replacing The Leaky Pipeline Metaphor**

Inter-Science of Learning Center Conf.    Pittsburgh, PA    February 3<sup>rd</sup>, 2014

- **Miller, D. I.**, Wai, J., & Uttal, D. H. Oral presentation at the 7<sup>th</sup> Inter-Science of Learning Center Student and Post-Doc Conference.

### **How Have Children's Gender-Science Stereotypes Changed Over Time? A Meta-Analysis**

Society for Personality and Social Psychology    Austin, TX    February 14<sup>th</sup>, 2014

- **Miller, D. I.**, Nolla, K., Eagly, A. H., & Uttal, D. H. Poster presentation at the 15<sup>th</sup> Society of the Personality and Social Psychology (SPSP) Annual Meeting.

### **Women's Representation in Science Predicts National Gender-Science Stereotypes**

American Psychological Association    Honolulu, HI    August 3<sup>rd</sup>, 2013

- **Miller, D. I.**, Eagly, A. H., & Linn, M. C. Poster presentation at the 121<sup>st</sup> American Psychological Association (APA) Annual Convention.

### **Reflectively Prototyping a Tool for Exchanging Ideas**

Computer Supported Collaborative Learning    Madison, WI    June 18<sup>th</sup>, 2013

- Matuk, C. F., McElhaney, K. W., **Miller, D. I.**, Chen, J. K., Lim-Breitbart, J., Terashima, H., ... , Linn, M. C. Oral presentation at the 10<sup>th</sup> International Conference on Computer Supported Collaborative Learning.

### **Comparing Gender Stereotypes Across Cognitive Intelligences: Spatial Stereotypes Matter**

Association for Psychological Science    Washington, DC    May 26<sup>th</sup>, 2013

- **Miller, D. I.**, Maloney, E., Beilock, S. L., & Uttal, D. H. Oral symposium presentation at the 35<sup>th</sup> Association for Psychological Science (APS) Annual Convention.

### **How Does Traditional Science Education Assess Visual and Spatial Thinking?**

American Educational Research Association    San Francisco, CA    May 1<sup>st</sup>, 2013

- **Miller, D. I.**, & Linn, M. C. Oral symposium presentation at the 2013 Meeting of the American Educational Research Association (AERA).

### **How Do Gender Stereotypes Impact Spatial Thinking?**

Inter-Science of Learning Center Conf.    Philadelphia, PA    February 22<sup>nd</sup>, 2013

- **Miller, D. I.**, Maloney, E., Beilock, S. L., & Uttal, D. H. Poster presentation at the 6<sup>th</sup> Inter-Science of Learning Center Student and Post-Doc Conference.

### **Broadening Spatial Thinking by Investigating its Role in Scientific Practices**

Spatial Cognition    Bavaria, Germany    September 2<sup>nd</sup>, 2012

- **Miller, D. I.** Oral presentation at the 2012 Spatial Cognition conference.

### **Using the Idea Manager to Promote Coherent Understanding of Inquiry Investigations**

Intl. Conference of the Learning Sciences      Sydney, Australia      July 5<sup>th</sup>, 2012

- McElhane, K. W., Matuk, C. F., **Miller, D. I.**, & Linn, M. C. Oral presentation at the 2012 International Conference of the Learning Science (ICLS).

### **The Idea Manager: A Tool to Scaffold Students Documenting, Sorting, and Distinguishing Ideas in Science Inquiry**

Intl. Conference of the Learning Sciences      Sydney, Australia      July 4<sup>th</sup>, 2012

- Matuk, C. F., McElhane, K. W., Chen, J. K., **Miller, D. I.**, Lim-Breitbart, J., & Linn, M. C. Poster presentation at the 2012 International Conference of the Learning Science (ICLS).

### **Removing Stereotype Threat Substantially Boosts Women's Spatial Performance: A Meta-Analysis**

Association for Psychological Science      Chicago, IL      May 27<sup>th</sup>, 2012

- **Miller, D. I.** Oral symposium presentation at the 34<sup>th</sup> Association for Psychological Science (APS) Annual Convention.

### **Can a Bridging Visualization Help Chemistry Students Integrate Observable and Molecular Views?**

American Educational Research Association      Vancouver, Canada      April 14<sup>th</sup>, 2012

- **Miller, D. I.**, McElhane, K. W., & Linn, M. C. Poster presentation at the 2012 Meeting of the American Educational Research Association (AERA).

### **Spatial Thinking in Physics: Longitudinal Impacts of 3-D Spatial Training**

Cognitive Science Society      Boston, MA      July 23<sup>rd</sup>, 2011

- **Miller, D. I.**, & Halpern, D. F. Poster presentation at the 33<sup>rd</sup> Cognitive Science Society Annual Conference.

### **Longitudinal Impacts of 3-D Spatial Training among Gifted STEM Undergraduates**

Association for Psychological Science      Washington, DC      May 28<sup>th</sup>, 2011

- **Miller, D. I.**, & Halpern, D. F. Oral award address and poster presentation at the 23<sup>rd</sup> Association for Psychological Science (APS) Annual Convention.

### **Spatial Training Improves Mathematical Physics Problem-Solving**

American Psychological Association      San Diego, CA      August 13<sup>th</sup>, 2010

- **Miller, D. I.**, & Halpern, D. F. Poster presentation at the 118<sup>th</sup> American Psychological Association (APA) Annual Convention.

### **Can Spatial Skills Training Improve Students' Understanding of Introductory Physics?**

American Association of Physics Teachers      Portland, OR      July 21<sup>st</sup>, 2010

- **Miller, D. I.**, Halpern, D. F., & Saeta, P.N. Oral presentation at the Summer Meeting of the American Association of Physics Teachers (AAPT).

### **Spatial Training Narrows Gender Differences in Spatial Skills**

Western Psychological Association      Cancun, Mexico      April 23<sup>rd</sup>, 2010

- **Miller, D. I.**, & Halpern, D. F. Poster presentation at the 90<sup>th</sup> Western Psychological Association (WPA) Annual Meeting.

## INVITED LABORATORY GROUP PRESENTATIONS

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### **Gender-STEM Stereotypes: From the Sociocultural to Cognitive**

University of Chicago      Chicago, IL      May 3<sup>rd</sup>, 2013

- **Miller, D. I.** Invited presentation at Sian Beilock's Human Performance Laboratory Group Meeting.

### **Spatial Thinking in STEM Education: How Do Cognitive Strategies and Stereotypes Interact?**

University of Illinois at Chicago Chicago, IL April 9<sup>th</sup>, 2013

- **Miller, D. I.** Invited presentation at Mike Stieff's Research Group.

### **How Does Conceptual Knowledge and Psychosocial Factors Influence Spatial Thinking?**

University of Chicago Chicago, IL September 19<sup>th</sup>, 2012

- **Miller, D. I.** Invited presentation at Susan Levine's Research Group Meeting.

### **Longitudinal Impacts of 3-D Spatial Training among Gifted STEM Undergraduates**

University of California – Santa Barbara Santa Barbara, CA July 12<sup>th</sup>, 2011

- **Miller, D. I., & Halpern, D. F.** Invited presentation at the Mary Hegarty's Spatial Thinking Laboratory meeting at University of California – Santa Barbara.

### **Longitudinal Impacts of 3-D Spatial Training among Gifted STEM Undergraduates**

Temple University Philadelphia, PA May 31<sup>st</sup>, 2011

- **Miller, D. I., & Halpern, D. F.** Invited presentation at Nora Newcombe's Research in Spatial Cognition (RISC) Laboratory meeting at Temple University.

## PHYSICS PROFESSIONAL PRESENTATIONS

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### **Low Temperature Pressure Gauge Based on a Quartz Tuning Fork**

American Physical Society Portland, OR March 19<sup>th</sup>, 2010

- Huisman, F.M., Van Cleve, E., **Miller, D. I., & Taborek, P.** Oral presentation at the 2010 American Physical Society Annual Meeting.

### **Electron Counting Algorithm for Hadron Blind Detector - Hub and Spoke**

Physics/Astronomy REU Student Symposium Stony Brook, NY August 8<sup>th</sup>, 2008

- **Miller, D. I., & Hemmick, T.K.** Oral presentation at the annual 2008 Physics/Astronomy REU Student Symposium.

### **Hub and Spoke Counting Algorithm - Simulation Results and Future Directions**

Brookhaven National Laboratory Stony Brook, NY August 5<sup>th</sup>, 2008

- **Miller, D. I., & Hemmick, T.K.** Invited oral presentation at Brookhaven National Laboratory's August 5<sup>th</sup> Hadron Blind Detector (HBD) group meeting.

### **The Open Cluster Berkeley 70 and its Association with Cepheid Variable Auriga 45**

Astronomy REU Student Symposium Flagstaff, AZ August 8<sup>th</sup>, 2007

- **Miller, D. I., & Mandushev, G.** Oral presentation at the annual 2007 Astronomy REU Student Symposium.

## PHYSICS RESEARCH EXPERIENCE

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### **Physics Intern – Low-Temperature Physics Laboratory**

University of California - Irvine Irvine, CA June 2009 – August 2009

- Collaborated with a team of two graduate students and professor to implement a quartz crystal tuning fork as a sensitive pressure gauge in a vacuumed cryostat at operating temperature <2 K.
- Communicated results to laboratory group through oral presentation and written report.





