# DAVID I. MILLER

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#### EDUCATION

Ph.D. Candidate, Psychology						
Northwestern University	Evanston, IL	2012 - 2018				
<ul> <li>Dissertation committee: David H. Utta</li> </ul>	l, Alice H. Eagly, Larry V. Hedges					
<ul> <li>Dissertation title: "Characterizing Path</li> </ul>	ways for Joining STEM in College an	nd Beyond"				
Graduate Student, Science Education R	esearch					
University of California – Berkeley	Jniversity of California – Berkeley Berkeley, CA 2010 – 2012					
<ul> <li>Research Advisor: Marcia C. Linn</li> </ul>						
<b>B.S.</b> , Mathematical Physics						
Harvey Mudd College	Claremont, CA	2006 - 2010				
Scholastic Distinction: B.S. with High D	Distinction; Dean's List (2006 – 2010	); Honors in Physics				
<ul> <li>Thesis Advisor: Diane F. Halpern</li> </ul>						
RESEARCH FELLOWSHIPS						

- National Science Foundation (NSF) Graduate Research Fellowship: \$120,000 (2011–2014)
- **Data Science for Social Good Fellowship** at University of Chicago: \$16,000 (2014)
- **University of California Berkeley** Graduate Division Fellowship: \$21,347 (2010–2011)
- National Science Foundation (NSF) Research Undergraduate Experience (REU) at State University of New York – Stony Brook: \$3,500 (2008)
- National Science Foundation (NSF) Research Undergraduate Experience (REU) at Lowell Observatory: \$4,775 (2007)

# RESEARCH GRANTS

- American Psychological Association of Graduate Students Basic Psychological Science Research Grant: \$1,000 (2013)
- Society for the Psychological Study of Social Issues Clara Mayo Grant and Matching Funds from Northwestern University: \$1,500 (2012)
- Harvey Mudd College Research Grant for Longitudinal Extension to Thesis Project: \$575 (2010)
- Harvey Mudd College Shanahan Student-Directed Research Funds: \$5,000 (2009–2010)

### RESEARCH AWARDS

- Anne Anastasi General Psychology Graduate Student Research Award awarded by Division 1 (Society of General Psychology) of the American Psychological Association (APA): \$300 (2013)
- Student Research Award awarded by the Association for Psychological Science (APS): \$250 (2011)
- Anne Anastasi Student Poster Award awarded by Division 1 (Society of General Psychology) of the American Psychological Association (APA): \$100 (2010)
- Robert L. Solso Research Award awarded by the Western Psychological Foundation: \$500 (2010)

- 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

- 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 genderscience 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:10.1177/1745691616663918
- 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

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

- 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-biasedabout-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-studentsfrom-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

- 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:
  - o Latent variable modeling (instructor: William Revelle)
  - o Meta-analysis (instructor: Larry V. Hedges)
  - o 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)
  - o 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

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

Association for Psychological Science Washington, DC May 26th, 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 AssociationSan Francisco, CAMay 1st, 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

- 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

# How Gender Bias Relates to Career Progression in STEM

Society for Personality and Social Psychology San Diego, CA January 28th, 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 2nd, 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

# 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

• 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 13th, 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 18th, 2015

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

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

May 27th, 2012

#### How Communal Goals Contribute To STEM Employment Society for Personality and Social Psychology Long Beach, CA February 26th, 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 18th, 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 26th, 2014 Aguiar, E., Lakkaraju, H., Bhanpuri, N., Miller, D. I., & Yuhas, B. Oral and poster presentation at the 20th ACM SIGKDD Conference on Knowledge Discovery and Data Mining. **Replacing The Leaky Pipeline Metaphor** Inter-Science of Learning Center Conf. Pittsburgh, PA February 3rd, 2014 • Miller, D. I., Wai, J., & Uttal, D. H. Oral presentation at the 7th 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 14th, 2014 • Miller, D. I., Nolla, K., Eagly, A. H., & Uttal, D. H. Poster presentation at the 15th 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 121st American Psychological Association (APA) Annual Convention. **Reflectively Prototyping a Tool for Exchanging Ideas** Computer Supported Collaborative Learning Madison, WI June 18th, 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 10th International Conference on Computer Supported Collaborative Learning. Comparing Gender Stereotypes Across Cognitive Intelligences: Spatial Stereotypes Matter Association for Psychological Science Washington, DC May 26th, 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 1st, 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 22nd, 2013 • Miller, D. I., Maloney, E., Beilock, S. L., & Uttal, D. H. Poster presentation at the 6th 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 Cohe	erent Understanding of Inquiry	Investigations
Intl. Conference of the Learning Sciences	Sydney, Australia	July 5th, 2012
<ul> <li>McElhaney, K. W., Matuk, C. F., M International Conference of the Learni</li> </ul>	liller, D. I., & Linn, M. C. Oral ng Science (ICLS).	presentation at the 2012
The Idea Manager: A Tool to Scaffold Stu Ideas in Science Inquiry	dents Documenting, Sorting, an	nd Distinguishing
Intl. Conference of the Learning Sciences	Sydney, Australia	July 4th, 2012
<ul> <li>Matuk, C. F., McElhaney, K. W., Cher presentation at the 2012 International</li> </ul>	n, J. K., <b>Miller, D. I.</b> , Lim-Breitbar Conference of the Learning Science	rt, J., & Linn, M. C. Poster (ICLS).
Removing Stereotype Threat Substantially I	Boosts Women's Spatial Performa	ance: A Meta-Analysis
Association for Psychological Science	Chicago, IL	May 27 <sup>th</sup> , 2012
<ul> <li>Miller, D. I. Oral symposium present Annual Convention.</li> </ul>	tation at the 34 <sup>th</sup> Association for Ps	sychological Science (APS)
<b>Can a Bridging Visualization Help Chemist</b> American Educational Research Association	try Students Integrate Observable Vancouver, Canada	e and Molecular Views? April 14 <sup>th</sup> , 2012
<ul> <li>Miller, D. I., McElhaney, K. W., &amp; American Educational Research Assoc</li> </ul>	Linn, M. C. Poster presentation at iation (AERA).	the 2012 Meeting of the
Spatial Thinking in Physics: Longitudinal	I Impacts of 3-D Spatial Trainin	g
Cognitive Science Society	Boston, MA	July 23 <sup>rd</sup> , 2011
<ul> <li>Miller, D. I., &amp; Halpern, D. F. Post Conference.</li> </ul>	er presentation at the 33rd Cognitiv	ve Science Society Annual
Longitudinal Impacts of 3-D Spatial Train	ning among Gifted STEM Unde	ergraduates
Association for Psychological Science	Washington, DC	May 28 <sup>th</sup> , 2011
<ul> <li>Miller, D. I., &amp; Halpern, D. F. Oral a for Psychological Science (APS) Annua</li> </ul>	award address and poster presentat al Convention.	ion at the 23 <sup>rd</sup> Association
Spatial Training Improves Mathematical	Physics Problem-Solving	
American Psychological Association	San Diego, CA	August 13 <sup>th</sup> , 2010
<ul> <li>Miller, D. I., &amp; Halpern, D. F. Poster (APA) Annual Convention.</li> </ul>	presentation at the 118th American	Psychological Association
Can Spatial Skills Training Improve Stude	ents' Understanding of Introduc	ctory Physics?
American Association of Physics Teachers	Portland, OR	July 21st, 2010
<ul> <li>Miller, D. I., Halpern, D. F., &amp; Sa American Association of Physics Teach</li> </ul>	eta, P.N. Oral presentation at the hers (AAPT).	Summer Meeting of the
Spatial Training Narrows Gender Differen	nces in Spatial Skills	
Western Psychological Association	Cancun, Mexico	April 23 <sup>rd</sup> , 2010
<ul> <li>Miller, D. I., &amp; Halpern, D. F. Poste (WPA) Annual Meeting.</li> </ul>	er presentation at the 90th Western	Psychological Association
INVITED LABORATORY GROUP PRESE	NTATIONS	

# Gender-STEM Stereotypes: From the Sociocultural to Cognitive

University of ChicagoChicago, ILMay 3rd, 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 9th, 2013

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

How Does Conceptual Knowledge and Psychosocial Factors Influence Spatial Thinking?University of ChicagoChicago, ILSeptember 19th, 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
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 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

• 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

# Low Temperature Pressure Gauge Based on a Quartz Tuning Fork

American Physical Society	Portland, OR	March 19th, 2010
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 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 8th, 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 5th Hadron Blind Detector (HBD) group meeting.

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

Astronomy REU Student SymposiumFlagstaff, AZAugust 8th, 2007

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

# PHYSICS RESEARCH EXPERIENCE

# 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.

May 31st, 2011

# Research Experience for Undergraduates (REU) – High-Energy Nuclear Physics

SUNY – Stony Brook	Stony Brook, NY	June 2008 – August 2008
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- Developed an event reconstruction algorithm to be used with the installation of the novel Hadron-Blind Detector (HBD) and tested its efficacy using realistic simulated collision events.
- Presented results during an international conference call of ~25 physicists involved with the HBD's original design at Brookhaven National Laboratory's Relativistic Heavy Ion Collider (RHIC).

# Physics Research Assistant – High-Energy Particle Physics

Harvey Mudd College	Claremont, CA	Sept. 2007 – March 2008

• Applied different multivariate statistical classifiers to search for a faint signal of an excited charmstrange baryon using Stanford's BaBaR petabyte database of electron-positron collisions.

### **Research Experience for Undergraduates (REU) – Astrophysics**

Lowell Obse	ervatory			Flagstaff, AZ					June 2007 – August 200			st 2007	
Des	igned a	novel	statistical	field	star	removal	algorithm	to	construct	an	open	cluster's	color-
magnitude diagram using data acquired from the Hall 42" telescope at Anderson Mesa, AZ.													

Evanston, IL

Presented results to audience of thirty people including fellow REU interns and mentors.

### TEACHING EXPERIENCE

# Teaching Assistant for Research Methods

Northwestern University

- Hold consultation sessions to help develop students' research projects.
- Lead class section on how to use SPSS.
- Facilitate group discussions during class.

# Harvey Mudd Physics Academic Excellence (AE) Tutor

Harvey Mudd College

• Worked with a team of two to three other tutors guide an average of 15-20 freshmen and sophomores each session to complete weekly homework assignments while emphasizing development of problem-solving and critical-thinking skills.

Claremont, CA

# Harvey Mudd Physics Tutor

Harvey Mudd College

 Independently organized weekly group review-sessions to develop Harvey Mudd freshmen's understanding of special relativity and quantum mechanics through homework problems and conceptual review questions.

Claremont, CA

# **Community College Mathematics Tutor**

South Seattle Community College (SSCC) Seattle, WA

• While in high school, tutored college students in both group and individual settings at SSCC's Math and Science Tutoring Center. Subjects taught ranged from beginning algebra to multivariable calculus.

# STUDENT ADVISEES

### Calvin Dorsey: Undergraduate Research Assistant

Northwestern University

Evanston, IL

January 2013 – Present

March 2013 – June 2013

Sept. 2008 - May 2010

Sept. 2007 – May 2008

Sept. 2005 - Jan. 2006

- Mentoring him in writing a proposal for summer research funding.
- Trained him in running participants for psychology experiments.

Silva Tang: Undergraduate Researc	h Assistant					
Northwestern University	Evanston, IL	October 2013 – Present				
Mentoring her on how to code a	articles for conducting meta-anal	yses.				
Kylie Nolla: Undergraduate Summe	er Intern					
Northwestern University Evanston, IL January 2013 – P						
<ul> <li>Mentored on her how to search</li> <li>Worked with her to prepare a postuart Babcock: Undergraduate Residuate</li> </ul>	literature databases, code articles oster presentation for a national	s, and conduct meta-analyses. conference.				
Northwestern University	Evanston. IL	Oct. 2012 – June 2013				
<ul><li>Mentoring him in coding assess</li><li>Trained him in running participation</li></ul>	ment items for their required visu	ual-spatial thinking. its.				
Jessica Kwa: CalTeach Intern						
University of California - Berkeley	Berkeley, CA	June 2011 – August 2011				
<ul> <li>Mentored her in formulating internship which helps prepare</li> </ul>	research questions and analyz future math and science K-12 tea	ing student data for her Cal'Teach achers.				

# REVIEWING EXPERIENCE

- Ad-hoc journal reviewer:
  - Cognitive Processing
  - o Developmental Psychology
  - o IEEE Transactions on Learning Technologies
  - o Journal of Applied Research in Memory and Cognition
  - Journal of Educational Psychology
  - o Learning and Individual Differences
  - o Proceedings of the National Academies of Sciences
  - o Review of Psychology Frontier
  - Spatial Cognition
- Reviewer for the Student Research Award Competition hosted by the Association for Psychological Science Student Council (2012; 2013)
- Reviewer for the RISE Award Competition hosted by the Association for Psychological Science Student Council (2012; 2013).

# PROFESSIONAL ORGANIZATIONS

- American Educational Research Association (AERA)
- American Psychological Association (APA)
- Association for Psychological Science (APS)
- Cognitive Science Society
- Society for the Psychological Study of Social Issues (SPSSI)
- Society for Personality and Social Psychology (SPSP)