

Abbie M. Popa, ScB

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UC Davis Neuroscience Graduate Group

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EDUCATION **PhD University of California at Davis** (September 2012 - December 2017)

Major: Cognitive Neuroscience

Data Science Initiative Affiliation

Honors ScB., Brown University (September 2006-December 2010)

Major: Cognitive Neuroscience

DISSERTATION **Behavior and EEG Testing of Teen Anxiety**

Mentor: Dr. Tony J. Simon

June 2013 - present

A study of 20 adolescents with anxiety disorders and 40 typical controls examining attentional and inhibitory control using event-related potentials, heart rate variability, and behavioral data. Participants complete four tasks and self and parent reports of daily function. Data analysis included ICA, k-means clustering, and mixed effects linear models.

TECHNICAL SKILLS

Software including: Python, R, Matlab, Jupyter, git, SQL, SPSS, DataGraph, L^AT_EX

Packages including: sklearn, pandas, numpy, scipy, matplotlib, TensorFlow, keras, ggplot, nlme

TECHNICAL EXPERIENCE

UC Davis MIND Institute

Sacramento, CA

PhD Researcher

September 2012 - present

- Developed six child-friendly computerized behavior tests (disguised as games)
- Used k-means clustering to classify children as "copers" or "strugglers" based on behavioral, eye-tracking, and self-report measures
- Used ICA to isolate brain activity from noise in EEG data
- Used mixed effects linear modeling to classify participants behavior over time
- Used linear regression to correlate trajectories of brain development and children's outcomes in a large (approximately 500 GB) MRI dataset
- Programmed data analyses and visual stimuli using R, Python, and Matlab
- Trained and mentored four junior research assistants and seven volunteer interns

Davis Incubator Group

Student organized group at UC Davis

President

(September 2016 - present)

Member

(January - August 2016)

- Completed online coursework in python, SQL, and machine learning
- Completed two collaborative Kaggle image classification challenges using skimage, TensorFlow, tflearn, keras, OpenCV and PIL on an AWS machine to efficiently localize and classify images through convolutional neural networks for datasets up to 100 GB.
- Completed a collaborative Driven Data competition using Pandas and sklearn to finish in the top 10% of competitors
- Developed individual projects using tools including sklearn in Python, and nnet in R
- Organized and scheduled meetings for a group of 6-8 data scientists to practiced coding, machine learning, and share data science skills

UC Davis Data Science Initiative

Davis, CA

Affiliate

April 2016 - present

- Contributed to a collaborative reading group on *Think Python* where we read and discussed the chapters and implemented the exercises as well as elaborated on best practices
- Implementing *An Introduction to Statistical Learning* collaboratively using Python and packages including statsmodels, scipy, numpy, pandas, sklearn, matplotlib, and seaborn
- Consulted with members of the UC Davis community on data science problems from twitter scraping to genomics as part of team un-seminars

TEACHING EXPERIENCE

Neurobiology

Dr. Lee M. Miller UC Davis Department of Neurobiology, Physiology, and Behavior, Davis CA
Teaching Assistant April 2015-June 2015

- Planned nine weeks of discussion sections with two co-TAs. Prepared material for an hour of homework review, practice problems, and discussion of lecture material and readings.
- Independently led 3 one hour discussion sections for a total of 75 students each week.
- Graded two short answer midterms and one short answer final exam for 200 students

Laboratory on Genes and Behavior

Dr. Rebecca D. Burwell Brown University Department of Psychology, Providence RI
Teaching Assistant January 2010-May 2010

- Set up equipment for behavioral experiments run on knockout mice, including the Morris Water Maze, tail suspension and basic habituation tasks
- Explained procedures to students and helped them run the tasks

LEADERSHIP EXPERIENCE

Neuroscience Initiative to Enhance Diversity

Davis, CA

Student Organizer

Event held April 2016

- Organized event that recruits 25 undergraduates from historically black and Hispanic serving colleges to increase representation in PhD programs
- Coordinated 10 workshops led by faculty and students
- Led a student data blitz and student panel on preparing your best application
- Conducted mock interviews with the students

Explorations, UC Davis Undergraduate Research Journal

Davis, CA

Editor

February 2015 - August 2015

Managing Editor, Physical and Life Sciences

September 2015 - June 2017

- Found appropriate faculty reviewers for student submitted publications
- Communicated faculty reviewer comments to student authors
- Assessed the reviewed and edited papers for acceptance in a yearly UC Davis publication
- Copy-edited and formatted student articles for publication

COMMUNITY SERVICE

Intertational Rescue Committee

Sacramento, CA

Refugee Empowerment Volunteer

January 2017 - October 2017

- Assisted recent refugees to the United States in preparing resumes and job applications
- Helped organize the first cohort of Women's Empowerment Programming, including survey design, focus group summary, and working with the women in the program
- Organized paperwork including financial forms to ensure compliance

Women in Science and Engineering

Davis, CA

Mentor, Workshop Organizer and Presenter

September 2015 - June 2017

- Mentored an undergraduate woman interested in pursuing an engineering graduate degree
- Designed, organized, and presented a workshop on how to apply to graduate school to 20 undergraduate women

The Graduate Academic Achievement and Advocacy Program

Davis, CA

Graduate Student Volunteer and Mentor

September 2013 - June 2015

- Advised and assisted students from underrepresented minorities on topics including graduate school applications and science writing
- Planned and ran workshops for students from underrepresented minorities on topics including graduate school applications, research assistantships, and gap years
- Mentored a student

Graduate Student Assembly

Departmental Representative

Davis, CA

September 2013 - June 2015

- Attended meetings and voted on policy affecting graduate students at UC Davis and in the wider UC graduate student assembly
- Publicized information to graduate group

AWARDS AND CERTIFICATES	UC Davis Graduate Student Assembly Travel Award	2015-16 Academic Year
	UC Davis FUTURE Certificate Track	2015-16 Academic Year
	UC Davis Graduate Student Assembly Travel Award	2014-15 Academic Year
	ERP Boot Camp (Dr. Steven J. Luck)	Completed July 2014
	UC Davis Graduate Student Assembly Travel Award	2013-14 Academic Year

PUBLICATIONS *Submitted:* **Popa AM**, Cruz J, Wong L, Harvey D, Angkustsiri K, Leckliter I, Perez-Edgar K, Simon TJ. Seeing Eye to Eye with Threat: Atypical Threat Bias Responses in Children with 22q11.2 Deletion Syndrome.

In Progress: McCabe KL, **Popa AM**, Durdle C, Amato M, Cabaral M, Wong L, Harvey D, Simon TJ. Quantifying the resolution of spatial and temporal representation in children with 22q11.2 deletion syndrome.

In Progress: **Popa AM**, McCabe KL, Morgan H, Garner J, Harvey D, Amato M, Simon TJ. Children with 22q11.2 Deletion Syndrome show Visuospatial Impairments on Bisection Tasks.

PRESENTATIONS AND POSTERS *Selected from 13 Posters (5 first author) and 5 Presentations (4 first author) at International Conferences*

- **Popa AM**, Mayo D, Durdle C, Morgan H, Shapiro H, Ferrer E, Niendam T, Luck S, Carter C, Simon TJ. Attention and Inhibition Deficits in Youth with 22q11.2DS are Associated with Symptoms of Psychosis Proneness (an IBBC abstract). Poster Accepted at the 17th International Congress of the European Society for Child and Adolescent Psychiatry 2017, Geneva, Switzerland.
- **Popa AM**, Durdle C, Morgan H, Shapiro H, Niendam T, Carter C, Luck S, Simon TJ. Highly Psychosis-Prone Adolescents show Increased Capture by Distractor Stimuli and More Effort to Inhibit Emotional Stimuli than Typically Developing Controls. Oral Accepted at the 16th International Congress on Schizophrenia Research 2017, San Diego, CA.
- **Popa AM**, Shapiro H, Harvey D, Amato M, Cruz J, Cung N, Reyes D, Simon TJ. Children with 22q11.2 Deletion Syndrome Show Lower Spatial and Temporal Acuity Than TD Children In Continuously Varying Tasks. Abstract Accepted at the 10th Biennial International 22q11.2 Conference 2016, Sirmione, Italy.
- **Popa AM**, Hunsaker N, Deng M, Garner J, Cruz J, Cung N, Reyes D, Simon TJ. Cortical Tissue Volumes Correlate to Cavum Septum Pellucidum Size in Children with 22q11.2 Deletion Syndrome and Typical Controls. Oral Accepted at the 71st Annual Meeting of the Society of Biological Psychiatry 2016, Atlanta, GA.
- **Popa AM**, Beaton E, Cruz J, Wong L, Cung N, Harvey D, Simon TJ. Adaptation to a Mild Stressor in Initially Anxious Children was related to their Attention to Perceived Threat in a Dot Probe Experiment. Poster Presented at the 70th Annual Meeting of the Society of Biological Psychiatry 2015, Toronto, ON, Canada.