

# Diheng Zhang, M.A.

Phone: (917) 861-0223  
Email: dihengzhang@email.arizona.edu  
Linkedin: Diheng (Adam) Zhang

## Research Interests

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- Cognitive biases/deficits in mood and anxiety disorders and related neural mechanisms
- Bio/behavioral markers of mood and anxiety disorders
- Computational modeling of brain functions/dysfunctions and predicting symptom/markers

## Summary of Professional Experience

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### *Graduate Assistant*

Psychophysiology Lab, **University of Arizona**  
Supervisor: John J.B. Allen, Ph.D.

*Aug. 2018 – Present*  
Tucson, AZ

### *Visiting Researcher*

Penn Computational Cognitive Neuroscience Lab, **University of Pennsylvania**  
Supervisor: Anna Schapiro, Ph.D.

*Jun. 2019 – Aug. 2019*  
Philadelphia, PA

*Research projects dedicated to develop neural network model for memory reconsolidation during sleep to simulate process of emotional memories.*

### *Project Coordinator*

Program for Anxiety, Cognition, and Treatment (PACT) Lab, **University of Virginia**  
Supervisor: Bethany Teachman, Ph.D.

*Jun. 2015 – Jul. 2018*  
Charlottesville, VA

*Research projects dedicated to developing, evaluating and disseminating novel interventions for mood and anxiety disorders.*

### *Research Assistant*

Langone Medical Center, **New York University & Bellevue Hospital Center**  
Supervisors: Isaac Robert Galatzer-Levy, Ph.D. & Uzma Samadani, M.D., Ph.D.

*Jan. 2013 – Jun. 2014*  
New York, NY

*Research project for establishing for a neural model for predicting early stage brain trauma.*

### *Research Assistant: Summer Intern*

CEDAR Clinic, **Beth Israel Deaconess Medical Center**

Supervisor: Kristen Woodberry, M.S.W., Ph.D.

*Jun. 2013 – Aug. 2013*  
Boston, MA

*Research project for understanding the prodromal phase of early onset schizophrenia.*

### *Research Assistant: Summer Intern*

Department of Psychology, **Harvard University**

Supervisors: Jill Hooley, D.Phil. & Kenneth Allen, Ph.D.

*May 2013 – Aug. 2013*  
Cambridge, MA

*Research project for underpinning relationship between cognitive deficits and Non Suicidal Self Injury.*

## Education

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### **Ph.D. Student in Clinical Psychology, University of Arizona**

School of Mind, Brain, and Behavior

**Tucson, AZ**  
*Aug. 2018 - Present*

### **M.A. Clinical Psychology, Columbia University in the City of New York**

Teachers College, GPA: 3.84/4.00

**New York, NY**  
*Aug. 2012 - May 2014*

### **B.Sc. Applied Psychology, Nanjing University**

School of Social and Behavioral Science, GPA: 3.80/4.00

**Nanjing, China**  
*Sep. 2009 - Jul. 2012*

## Presentations

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- Eberle, J.W., Boukhechba, M.O., Sun, J., **Zhang, D.**, Funk, D.H., Barnes, L.E. & Teachman, B.A. (2019, November). *Online Cognitive Bias Modification to Shift Negative Prospection: A Randomized Controlled Trial Using Technology to Extend Reach*. Poster to be presented at Association for Behavioral and Cognitive Therapies' 2019 convention in Atlanta, GA.
- Zhang, D.**, Allen, J.J. (2019, September). *A Comparison of Normothetic and Individualized Alpha Frequency Approaches to Measuring Frontal EEG Alpha Asymmetry*. Poster presented at Society for Psychophysiological Research's 2019 convention in Washington D.C..
- Zhang, D.**, Shi, Y., Wang, H. & Teachman, B.A. (2017, November). *Predictors of Attrition in a Public Online Interpretation Training Program for Anxiety*. Poster presented at Association for Behavioral and Cognitive Therapies' 2017 convention in San Diego, CA.
- Werntz, A.J., **Zhang, D.**, Geyer, E. & Teachman, B. A. (2017, November). *Am I anxious?: Implicit and explicit self-concepts of anxiety predict symptom acknowledgement*. Poster presented at Association for Behavioral and Cognitive Therapies' 2017 convention in San Diego, CA.
- Calicho-Mamani, C., **Zhang, D.**, Blaisdell, K.N., Friedmann, C.I., Werntz, A.J. & Teachman, B.A. (2017, November). *Gender and Age Differences in Social Media Advertising Reception: Using Facebook to Promote Free, Web-Based Interventions*. Poster presented at Diversifying Scholarship at UVA Interdisciplinary Conference in Charlottesville, VA.
- Calicho-Mamani, C., **Zhang, D.**, & Teachman, B.A. (2017, August). *Responding and Flexibility: Relationship between Variability on Interpretation Bias Measures and Anxiety and Depressive Symptoms*. Poster presented at University of Virginia Summer Research Symposium in Charlottesville, VA.
- Bacon, G., Teachman, B.A., **Zhang, D.** (2017, August). *The Impact of Education Level on Drinking Identity*. Poster presented at University of Virginia Summer Research Symposium in Charlottesville, VA.
- Matsuba, M., **Zhang, D.**, Graham, A., Hong, J., Dorfman, M. & Chen, X. (2014, August). *Analysis of Universal and Culture-Specific Negative Coping in Chinese Immigrants with Schizophrenia*. Poster presented at American Psychological Association's 2014 convention in Washington, D.C..
- Zhang, D.**, Luguya, C., Chhuon, R., Wang, L. & Matsuba, M. (2013, August). *'Excessive Thinking' as a Cultural Idiom Used by Chinese to Explain Relatives' Psychiatric Etiology*. Poster presented at American Psychological Association's 2013 convention in Honolulu, HI.
- Zhang, D.** (2012, November). *Chinese Adolescence Depression and Identity Formation*. Poster presented at International Education Week at Teachers College, Columbia University, New York, NY.

## Manuscripts and Publications

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- Chow, P.I., Portnow, S., **Zhang, D.**, Saleminck, E., Wiers, R.W., & Teachman, B.A. (2018). Comorbid Interpretation and Expectancy Bias in Social Anxiety and Alcohol Use. *Anxiety, Stress, and Coping*
- Zhang, D.**, Shi, Y., Wang, H. & Teachman, B.A. (in prep). Predictors of Attrition in a Public Online Interpretation Training Program for Anxiety.
- Ji, L. J., Baee, S., **Zhang, D.**, Meyers, J., Funk, D., Portnow, S., Barnes, L., & Teachman, B. (Submitted). Multi-session online interpretation bias training for anxiety in a community sample.
- Steinman, S.A., Portnow, S., Billingsley, A., **Zhang, D.**, & Teachman, B.A. (in prep). The presence of threat bias, but not the absence of positive bias, predicts trait and state anxiety in a large online sample
- Geng, L., Zhang, L., & **Zhang, D.** (2011). Improving spatial abilities through mindfulness: Effects on the mental rotation task. *Consciousness and Cognition*, 20(3), 801 - 806. doi: <http://dx.doi.org/10.1016/j.concog.2011.02.004>

## Honors and Awards

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- GPSC Travel Grants, University of Arizona, Graduate & Professional Student Council (GPSC) Summer 2019
- Departmental Scholarship, University of Arizona, Dept. of Psychology Spring 2019

Flexibility Fund Awards, **Academy of Psychological Clinical Science**

Dec. 2018

Graduate Student Fellowship, **University of Arizona, Dept. of Psychology**

Aug. 2018 - Present

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## Research Experience

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### *Graduate Assistant*

Aug. 2018 – Present

Psychophysiology Lab, **University of Arizona**

Tucson, AZ

Supervisors: John J.B. Allen, Ph.D.

- Under training of psychophysiology research methods and data analysis techniques, including EEG signal preprocessing and alpha power asymmetry analysis.

### *Visiting Researcher*

Jun. 2019 – Sept. 2019

Penn Computational Cognitive Neuroscience Lab, **University of Pennsylvania**

Philadelphia, PA

Supervisors: Anna Schapiro, Ph.D.

- Developed and extended previous neural network models for mimicking memory reconsolidation during sleep to include emotional valence representation.
- Used the developed model to simulate memory reconsolidation process of emotional materials for both “depressive” and “normal” conditions as hypothesis testing for etiology theories of depression.

### *Project Coordinator*

Jun. 2015 – Jul. 2018

Program for Anxiety, Cognition, and Treatment (PACT) Lab, **University of Virginia**

Charlottesville, VA

Supervisor: Bethany Teachman, Ph.D.

- Developed and managed the MindTrails Project, an online platform for testing and delivering novel Cognitive Bias Modification (CBM) interventions for anxiety disorders, with a reach over 2,500 participants.
- Developed programs and packages in Python and R to automatize data management, data cleaning, and analyses for multiple research studies to ensure data integrity and streamlining data preparation. (See [Github](#)).
- Recruited participants, analyzed research data and facilitated grant writings for multiple grant applications which resulted in a R01 grant.
- Programmed and managed online studies with Project Implicit and Amazon Mechanical Turk to assist graduate students’ research projects.
- Recruited, trained and supervised research assistants for daily lab tasks, including participant recruitment, data management, data cleaning, and programming.
- Administrated study IRBs, dataset codebooks, experiment documentations, and lab supplies to enable smooth lab functioning.

### *Other collaborative projects at UVA:*

- Extended the current computational model of the hippocampus, to achieve a higher level of temporal resolution in simulation with Matlab/C++, with Professor William Levy.
- Applied machine learning (ML) algorithms on MindTrails datasets for multiple research topics, including users’ dropout prediction and subgroup classification, with Professor Hongning Wang.
- Modeled participants’ mood fluctuations with datasets from an ecological momentary assessment (EMA) study to predict optimized-timing for intervention, with Professor Laura Barnes’ group.
- Programmed fMRI studies with PsychoPy to facilitate lab transition from Matlab to Python, with Professor James Coan.

### *Research Assistant*

Jan. 2013 – Jun. 2014

Langone Medical Center, **New York University & Bellevue Hospital Center**

New York, NY

Supervisors: Isaac Robert Galatzer-Levy, Ph.D. & Uzma Samadani, M.D., Ph.D.

*Research project for establishing model to predict PTSD in early stage.*

- Assessed concussion or other trauma patients in emergency room (ER) to recruit eligible participants for research.
- Operated Eye-tracker to collect research data.
- Reviewed literature and collected trauma-related scales to facilitate experimental design.
- Administered data and case management including data entry, updating research logs, tracking new patients from patient regulation system and arranging further research appointment to assist project operation.

*Research Assistant: Summer Intern*

Jun. 2013 – Aug. 2013

CEDAR Clinic, **Beth Israel Deaconess Medical Center**

Boston, MA

Supervisor: Kristen Woodberry, M.S.W., Ph.D.

*Research project for understanding prodromal phase of early onset schizophrenia.*

- Setup EEG, biofeedback equipments and experiment environment for study data collection.
- Assessed clients with SIPS to recruit participants for research study.
- Organized interview toolkits and salivation and blood collecting kits to support study recruitment.
- Reviewed research articles and feedbacks from reviewers to assist grant application.
- Established online surveys to collect feedback about research outcome to help design future researches.
- Applied administrative tasks including case management, case follow up and data management to support center daily running.

*Research Assistant: Summer Intern*

May 2013 – Aug. 2013

Department of Psychology, **Harvard University**

Cambridge, MA

Supervisors: Jill Hooley, D.Phil. & Kenneth Allen, Ph.D.

*Research project for underpinning relationship between cognitive deficits and Non Suicidal Self Injury.*

- Operated portable EEG, delivered assessment (WAIS, etc.) and cognitive tests (Iowa Gambling Test, etc.) to collect experimental data.
- Scored questionnaires with Excel to establish dataset, calculated first-step research outcome and helped generate preliminary conclusion for research project.
- Coded case subjective responses to PANAS questions, discussed and proposed new ideas based on collected data to extend research project with further hypothesis.
- Conducted literature review on neuroimaging researches with fMRI targeting Default Mode Network to facilitate proposal writing.
- Organized case files, entered and cleaned up data to help with data management, storage and prepare for later analysis.

*Research Assistant*

Oct. 2012 – May 2014

Mailman School of Public Health, **Columbia University in the City of New York**

New York, NY

Supervisor: Lawrence H. Yang, Ph.D.

*Research group for investigating stereotypes towards schizophrenia consumers among Chinese immigrants.*

- Translated research interviews whose battery included a wide array of tests with Chinese immigrants with psychosis and their family caregivers to prepare for further analysis.
- Coded, and trained lab members to code interview materials according to various coding schemes with Atlas.TI, to extend original stigma model to culture specific immigrant population in U.S..
- Prepared and submitted poster and symposium proposals to national conferences including APA, AAPA, and Teachers College Winter Roundtable to share research outcome. (See **Presentations** for more detail.)

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## Clinical Experience

*Intern*

Sept. 2013 – May 2014

**Hamilton Madison House**

New York, NY

Supervisor: Angela Yeung, Psy. D.

*Personalized Recover-Orientated Services (PROS) Program*

- Designed and co-led multiple training groups to assist participants who experiencing Schizophrenia or Schizoaffective disorders to ameliorate their cognitive function and prepare them for returning to the community.
- Facilitated annual assessment for participants, and updated cases and documentation to assist daily operations.
- Shadowed core staffs and sat in multiple skills-enhancement groups to gain clinical experience as a trainee.

### *Counselor, Senior Trainee*

Feb. 2010 – Jul. 2012

Department of Psychology, **Nanjing University**

Nanjing, China

Supervisor: Karen Gabe, M.S.

#### *Peer Counseling Program*

- Delivered psychological counseling to students to assist them in handling academic pressure, major life events, and romantic relationships.
- Provided psychological supervision and facilitated evaluations of entry-level counselors to develop their skills and inspire personal growth.
- Initiated supporting group for sophomores to facilitate identity exploration, and to enhance their problem solving and stress-coping skills.
- Organized and facilitated Self Management And Recovery Training (SMART) groups to help students eliminate addictive behaviors including excessive gaming and smoking.
- Managed documents to support program operations.

#### *Suicide Prevention Program*

- Monitored Nanjing Yangtze River Bridge area weekly for potential suicidal behaviors and applied first-aid intervention to rescue suicide attempters.
- Assessed rescued individuals and offered psychological services to prevent later suicidal attempts.
- Created and managed website providing scientific information to raise public awareness on suicide and depression.

### *Psychiatry Intern*

Oct. 2011 – Nov. 2011

Department of Medical Psychotherapy, **Nanjing Brain Hospital**

Nanjing, China

Supervisor: Ning Zhang, M.D.

- Managed and updated daily case files to support psychiatrists in following up with clients experiencing schizophrenia, depression and others psychiatry disorders.
- Interviewed incoming patients and performed initial assessment to facilitate diagnostic processes.
- Attended ward rounds under professional supervision to accumulate clinical experience and enhance understanding of diverse psychological disorders.

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## Teaching/Mentoring Experience

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### *Teaching Assistant*

Aug. 2018 - Present

PSY 352 : *Personality*

Spring 2019

PSY 150A: *Structure of Mind & Behavior*

Fall 2018

### *Workshops*

Delivered: *Data Management and Analysis with R - a Five Sessions Bootcamp*

Summer 2017

### *Mentoring*

#### **Undergraduate Research Assistant**

Maryam Farooqui, B.S., *University of Virginia Class of 2017*

Aug. 2017 - May 2018

Kaitlin Wray, B.S., *University of Virginia Class of 2017*

Aug. 2017 - May 2018

Kellyn Blaisdell, B.S., *Princeton University Class of 2016*

Aug. 2017 - May 2018

Casey Michelle Baker, *University of Virginia Class of 2018*

Jun. 2017 - May 2018

Claudia Patricia Calicho-Mamani, *University of Virginia Class of 2018*  
Imani Nichols, B.S., *University of Virginia Class of 2017*

*Jun. 2017 - May 2018*  
*Sep. 2016 - May 2018*

**Graduate Research Assistant**

Anyi Zhang, M. Eng, *Graduate School of Engineering, University of Virginia*

*Jan. - Jun. 2017*

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## Conference Attendance

<i>Association for Behavioral and Cognitive Therapies' 2017 convention in San Diego, CA</i>	<i>Nov. 2017</i>
<i>Association for Behavioral and Cognitive Therapies' 2016 convention in New York, NY</i>	<i>Oct. 2016</i>
<i>Social &amp; Affective Neuroscience Society Annual Meeting 2016 in New York, NY</i>	<i>Apr. 2016</i>
<i>Association for Behavioral and Cognitive Therapies' 2015 convention in Chicago, IL</i>	<i>Nov. 2015</i>
<i>Social &amp; Affective Neuroscience Society Annual Meeting 2015 in Boston, MA</i>	<i>Apr. 2015</i>
<i>American Psychological Association's 2014 convention in Washington, D.C.</i>	<i>Aug. 2014</i>
<i>Depression Among Asian Americans Conference in Edison, NJ</i>	<i>Apr. 2013</i>
<i>The 30th Annual Teachers College Winter Roundtable Conference in New York, NY</i>	<i>Feb. 2013</i>

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## Professional Associations

<i>Member, Association for Behavioral and Cognitive Therapies</i>	<i>Oct. 2015 – Oct. 2018</i>
<i>Member, The Social and Affective Neuroscience Society</i>	<i>Apr. 2015 – Apr. 2017</i>
<i>Member, Psi Chi National Honor Society in Psychology</i>	<i>Mar. 2013 – May 2014</i>
<i>Vice President, International Students' Psychology Association at Columbia University</i>	<i>Aug. 2013 – May 2014</i>

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## Professional Skills

**Experienced Working Environment:** Mac OS, MS Windows & Linux

**Programming Languages:** Python, R, SQL, Matlab, JavaScript/HTML/CSS &  $\text{\LaTeX}$ (use daily); Java (Web Development and Machine Learning); C/C++(learned in class); LISP (for fun)

**Professional Softwares:** SPSS, M-Plus, Atlas.TI & E-Prime

**Online Service Package:** Amazon Mechanical Turk, Qualtrics & SurveyMonkey

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## References Available Upon Request