

**Vanessa Cao, B.S.**

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**EDUCATION**

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- 2020—Present      **The University of Rochester**, Rochester, NY  
 Ph.D. Student, Developmental Psychology | Developmental Psychopathology  
 Quantitative Methods Certificate  
*Expected: May 2025*
- 2015—2018      **The Pennsylvania State University**, University Park  
 Bachelor of Science, Biology (Neuroscience)  
 Minor: Psychology  
*GPA: 3.85/4.00, Cum Laude*

**PUBLICATIONS**

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- Shroff, D.S., Harte, T., **Cao, V.**, Waschbusch, D.A. (In preparation) Reward and Punishment Sensitivity in Children with ADHD: Validating the Contingency Response Rating Scale.
- Waxmonsky, J.G., Kujawa, A., Pegg, S., Babinski, D., Baweja, R., **Cao, V. T.**, Shroff, D., & Waschbusch, D.A. (In Preparation) Associations between Early-Onset Conduct Problems and Neurophysiological Reward Responsiveness in Children with ADHD.
- Babinski, D. E., Shroff, D. M., **Cao, V. T.**, & Waschbusch, D. A. (accepted). Sex-Specific Norms for Diagnosing Attention-Deficit/Hyperactivity Disorder in Childhood: A Receiver Operating Characteristic (ROC) Analysis. *Evidence-Based Practice in Child and Adolescent Mental Health*.
- Vernon, T.M., Bradburn, E.H, Cook, A.D., Jammula, S., **Cao, V.**, Rogers, F.B. (accepted with minor revisions) Trauma Patients Admitted to Non-surgical Services—A Marker For Poor Outcome. *The Journal of Trauma and Acute Care Surgery*.

**POSTER PRESENTATIONS**

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- Shroff, D.M., **Cao, V.T.**, Waschbusch, D.A., Babinski, D.E. Sex-Specific Norms for Diagnosing ADHD: A Receiver Operating Characteristic (ROC) Analysis. Poster to be presented at the 53<sup>rd</sup> Annual Meeting of the ABCT. Atlanta, GA. (Nov. 21-24, 2019).
- Horst M.A., Vernon T., **Cao V.**, Morgan M., Rogers A., Bradburn E.H., Rogers F.B. An Analysis of Pediatric Social Vulnerability in the Pennsylvania Trauma Systems. 49<sup>th</sup> Annual Meeting Western Trauma Association (2019). (Abstract and Poster).
- Vernon, T.M., Bradburn, E.H, Cook, A.D., Jammula, S., **Cao, V.**, Rogers, F.B., Trauma Patients Admitted to Non-surgical Services—A Marker For Poor Outcome. 77<sup>th</sup> Annual Meeting of the American Association for the Surgery of Trauma and Clinical Congress of Acute Care Surgery (Sept. 26-29, 2018).
- Vernon T., Horst M.A., **Cao V.**, Morgan M., Rogers A., Bradburn E.H., Rogers F.B. An Analysis of Pediatric Social Vulnerability and Insurance Status in the Pennsylvania Trauma Systems. 23<sup>rd</sup> Annual Challenges in Critical Care (2018). Hershey, PA (Abstract and Poster).
- Horst M.A., Vernon T., **Cao V.**, Morgan M., Rogers A., Bradburn E.H., Rogers F.B. An Analysis of

Pediatric Undertriage and Social Vulnerability in the Pennsylvania Trauma Systems. 23<sup>rd</sup> Annual Challenges in Critical Care (2018). Hershey, PA. (Abstract and Poster).

## RESEARCH EXPERIENCE

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**2020—Present**      **University of Rochester, Department of Psychology**  
**Rochester Center for Research on Children and Families | Graduate**  
**Research Assistant**  
*Dr. Patrick Davies*

*Studies of high interest are marked with an \**

2020—Present      \*Constructive Interparental Conflict Resolution (Project THRIVE)  
*National Institute of Child Health and Human Development*  
 P.I. Dr. Patrick Davies | Project Role: Graduate Research Assistant  
*Study Summary:* This work aims to better understand how witnessing constructive interparental conflict may play a role in child development.

**2018—2020**      **Penn State College of Medicine, Psychiatry**  
**Attention and Behavior Clinic Research Group | Research Coordinator**  
*Dr. Daniel Waschbusch, Dr. Dara Babinski, Dr. James Waxmonsky*

### Study Responsibilities

- Coordinated all present studies and team members for project execution, including 4 EEG studies, 1 fMRI study, and 3 clinical FDA trials
- Executed new study development including budget adjustments, study documents, IRB regulatory documents, and Risk Analyses
- Prepared IRB submissions, abstracts, posters, and manuscripts
- Programmed participant database through RedCap and Qualtrics
- Operated EEG to predict emotion regulation through ERP and LPP collection
- Utilized E-prime and Presentation to program and administer behavioral tasks in conjunction with the EEG/fMRI
- Operated EKG to document participant heart activity
- Executed use of fMRI on participants to obtain brain imaging to predict adolescent response to reward
- Processed and analyzed neuroimaging data via Matlab and BrainVision
- Completed statistical analysis utilizing R and/or SPSS
- Utilized DPICS behavior coding manual to assess parent-child interactions

### Administrative Responsibilities

- Maintained all lab finances and budgets for studies and expenditures
- Co-coordinated Summer Treatment Program for Children with ADHD, including staff hiring and assisting during child intake appointments
- Communicated with sponsoring clinical organizations to ensure all documents and procedures remained up to date
- Executed the creation and design of the lab website, as well as study advertisements and visuals for both staff and participant recruitment

### Clinical Responsibilities

- Assessed children, adolescent, and adult well-being, intelligence, and achievement through the administration of clinical batteries

Investigative Studies

- 2020 \*The Examination of Underlying Neural Mechanisms in Girls With and Without ADHD  
*National Institute of Mental Health*  
P.I. Dr. Dara Babinski | Project Role: Project Coordinator  
*Study Summary:* This work aims to understand the neural underpinnings of social processing in girls.
- 2019—2020 \*The Examination of Underlying Mechanisms of Borderline Personality Features in female, adolescent ADHD Populations  
*Children's Miracle Network*  
P.I. Dr. Dara Babinski | Project Role: Project Coordinator  
*Study Summary:* This work aims to understand the link between ADHD and BPD and identify risks for BPD to inform future intervention efforts.
- 2019—2020 Examining the Role of Reward Responsiveness in the Behavioral Treatment of Pediatric ADHD  
*Penn State College of Medicine, Department of Psychiatry*  
P.I. Dr. James Waxmonsky | Project Role: Project Coordinator  
*Study Summary:* This work aims to capture how the 2019 Summer Treatment Program affects child responsiveness to reward through EEG capture of ERPs and LPPs.
- 2019—2020 \*Examining Executive Functioning Deficits, Affective Deficits, and Social Functioning to Understand Disruptive Behaviors and Callous-unemotional Traits  
*\$39,301 Children's Miracle Network*  
P.I. Dr. Daniel Waschbusch | Project Role: Project Coordinator  
*Study Summary:* This work aims to understand the impact of Attention-Deficit Hyperactivity Disorder, conduct problems, and callous-unemotional traits on different behaviors and cognitive skills in children ages 6 to 13 years.
- 2018—2020 \*Monetary Reward Processing and Emotion Regulation in Adolescence: An fMRI pilot Study  
*Penn State College of Medicine, Department of Psychiatry*  
P.I. Dr. Dara Babinski | Project Role: Project Coordinator  
*Study Summary:* This work utilizes EEG and fMRI techniques to identify patterns of brain activation underlying monetary reward processing and emotion regulation in adolescents, as well as the correspondence between parent and adolescent neural activation.

Treatment Studies

- 2019—2020 \*Reward and Punishment Sensitivity and Treatment Response in Children with Disruptive Behavior Disorders and Callous-Unemotional Traits  
*\$39,301 Children's Miracle Network*  
P.I. Dr. Daniel Waschbusch | Project Role: Project Coordinator  
*Study Summary:* This work aims to examine the effectiveness of parent management training for children with conduct problems and callous-unemotional traits in children 5 to 12 years of age.
- 2018—2020 \*The Role of Parental Emotion Regulation in Parent-Child Conflicts  
*\$59,993 Tobacco CURE Project, PA Department of Health*

P.I. Dr. James Waxmonsky | Project Role: Project Coordinator

*Study Summary:* This work aims to address negative parenting through therapy in order to combat child misbehavior in the home. Throughout this study EEG data is collected from both parents and children, as well as a recorded interaction.

2018—2020

Neurophysiological Markers of Pediatric Irritability and its Response to Intervention

*\$39,848 Children's Miracle Network Research*

P.I. Dr. Raman Baweja | Project Role: Project Coordinator

*Study Summary:* This work aims to predict both ADHD and irritability in children ages 5 to 12 years old through EEG ERP and LPP data and how both of these realms may be better managed with stimulant medication.

### Pharmaceutical Trials

2019—2020

A Phase 3, Randomized, Double-Blind, Placebo-Controlled, Parallel Group, Adult Laboratory Classroom Study to Evaluate the Safety and Efficacy of PRC-063 Compared to Placebo in Adults with ADHD

*Purdue Pharma*

P.I. Dr. Dara Babinski | Project Role: Project Coordinator

*Study Summary:* This work aims to continue testing the effectiveness of a new, extended-release, stimulant medication in adults with ADHD.

2018—2020

Open-Label Extension Study to Evaluate the Long Term Safety and Efficacy of SPN-812 ER for the Treatment of Pediatric Patients with Attention Deficit/Hyperactivity Disorder (ADHD).

*Supernus Pharmaceuticals*

P.I. Dr. James Waxmonsky | Project Role: Project Coordinator

*Study Summary:* This open-label investigational trial is a continuation study for participants who participated in the original blinded study.

2018—2019

Evaluation of SPN-812 ER 400 and 600 mg Efficacy and Safety in Adolescents with ADHD - A Double-Blind, Placebo Controlled, Pivotal Trial

*Supernus Pharmaceuticals*

P.I. Dr. James Waxmonsky | Project Role: Project Coordinator

*Study Summary:* This investigational trial seeks determine the safety and efficacy of a non-stimulant drug in children ages 6 to 17 years with ADHD.

### Other Studies

2018—Present

Maternal Depression and Reward Responsiveness

*\$40,000 Children's Miracle Network*

P.I. Dr. Dahlia Mujurkee, Dr. Dara Babinski | Project Role: Research Support

*Study Summary:* This work examines maternal reward responsiveness, measured across neurophysiological, behavioral, and self-report measures as a marker of depression in mothers of adolescents.

**2018**

**Penn Medicine Lancaster General Hospital, Trauma Surgery | Research Assistant**

*Dr. Frederick Rogers*

- Supported faculty during morning rounds and patient overviews
- Utilized RedCap for data and survey entry for PHI of participants
- Submitted IRB applications for institution study approval

- Authored project abstracts, manuscripts, and posters for trauma and critical care conference presentations
- 2018 Trauma Patients Admitted to Non-Surgical Services: A Marker for Poor Outcome  
*Lancaster General Hospital, Department of Acute and Trauma Surgery*  
P.I. Dr. Eric Bradburn | Project Role: Research Intern  
*Study Summary:* This work aimed to investigate how trauma patient surgical outcomes are affected based on whether or not they are admitted to a recognized trauma center.
- 2018 American Trauma Society, Pennsylvania Division (ATSPA) Safety Grant Award  
*\$1,400 State Mini-Grant*  
P.I. Dr. Eric Bradburn | Project Role: Research Intern  
*Study Summary:* This grant was awarded to provide funding to train and supply rural and Amish populations with the skills and supplies necessary to deliver trauma care prior to the arrival of medical services.
- 2017—2020 Penn State, The Relationships and Stress Lab | Research Assistant (2017-2020) & Lab Manager (2017-2018)**  
*Dr. Amy Marshall*
- Operated as the liaison between graduate students and undergraduate research assistants to prompt efficient project completion
  - Executed audio isolation through Audacity to be analyzed as fundamental frequency predictor
  - Utilized structured behavioral rating scale to transform observational data into quantitative data; data utilized in graduate student's master thesis
  - Coded and inputted survey information into Qualtrics and SPSS
  - Performed and created literature reviews and summaries for grant application regarding adolescent alcohol use and family violence
- 2019 \*Family Violence: The Role of Trauma  
*\$1,835,954 National Institute of Health, NICHD*  
P.I. Dr. Amy Marshall | Project Role: Research Assistant  
*Study Summary:* This work aims to bridge the gap between trauma exposure and family violence perpetration in the context of diverse forms of perceived threat.
- 2018 \*Mechanisms of Firearm-Related Family Violence: Children, Intimate Relationships, and Conflictual Life Events (CIRCLE) Study II  
*\$4,915 Penn State Justice Center for Research*  
P.I. Dr. Amy Marshall | Project Role: Lab Manager  
*Study Summary:* This work is a continuation of the CIRCLE study, examining behavior observed in inter-parental and parent-to-child aggression while also assessing the effects of the presence of firearms in the household.
- 2018 \*Emotion Regulation and Co-regulation in Couples with Posttraumatic Stress Disorder  
*\$155,093 National Institute of Health*  
P.I. Dr. Steffany Fredman | Project Role: Lab Manager

*Study Summary:* This work investigates how PTSD affects emotion regulation in couples through the examination of patterns in voice frequencies during specific interactions.

2017—2018

**\*Predicting Severity of IPA in Men with PTSD through Romantic Relationships**

*Penn State University Park, Department of Clinical Psychology*

P.I. Amy Marshall | Project Role: Research Assistant

*Study Summary:* This work examined how interpersonal aggression may be able to be predicted through behaviors observed through couple interactions.

2015—2016

**Penn State, Freshman Research Initiative | Research Student**

*Dr. Kim Nelson, Dr. Glenna Malcolm, Dr. Charles Anderson*

- Performed PCR, and DNA/RNA analyses for genomic identification of lactose gene
- Conducted an independent project involving bacteria culture and experimental biological assay
- Extracted RNA and DNA from transgenic plant samples
- Studied the effects of environmental stressors on transgenic plant samples grown on agar plates in greenhouse settings
- Developed and composed a scientific research proposal presented at end of year seminar

2016

**Heat and Drought Tolerance of Transgenic Plants in the Wheat Family**

*Penn State University Park, Department of Biology*

P.I. Dr. Charles Anderson | Project Role: Research Student

*Study Summary:* This work investigated various DNA mutations in the Wheat family that would survive extreme weather circumstances with an aim to target hunger crises in areas with poor growing conditions.

2016

**Environmental and Toxic Stressors on *Arabidopsis* Thaliana**

*Penn State University Park, Department of Biology*

P.I. Dr. Charles Anderson | Project Role: Research Student

*Study Summary:* This work investigated transgenic mutations within *Arabidopsis* Thaliana that would be able to survive extreme conditions such as extremely acidic or basic environments.

2011—2017

**Penn State, Valentine Center for Turfgrass Science | Laboratory Assistant**

*Dr. Wakkar Uddin*

- Utilized chlorophyll meter and nutrient assessments to evaluate turfgrass health
- Inputted daily experimental data electronically for further statistical analysis
- Retrieve turfgrass samples from experimental plots weekly for biomass quality and root quality analysis

## **CLINICAL EXPERIENCE**

2019—2020

**\*Annual Summer Treatment Program (STP) for Children with ADHD and related disorders**

*\$72,000 Children's Miracle Network*

*Penn State College of Medicine Department of Psychiatry*

Program Director: Dr. Daniel Waschbusch | Project Role: Assistant Coordinator  
*Program Summary:* The STP is designed to implement behavioral training through a point system in a summer camp setting for children exhibiting externalizing behaviors.

## TEACHING & LEADERSHIP

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<b>2021—Present</b>	<b>Graduate Teaching Assistant, Department of Psychology</b> PSYC 262, Human Motivation <i>Dr. Christopher Neimiec</i>
<b>2020—2020</b>	<b>Graduate Teaching Assistant, Department of Psychology</b> PSYC 289, Developmental Child Psychopathology <i>Dr. Jennifer Aube</i>
<b>2018—2020</b>	<b>Research Advisor, Illinois Science and Technology Institute (Remote)</b>
<b>2016—2018</b> 2017, 2018	<b>Teaching Assistant, Department of Biology</b> BIOL 230W Lab, Molecular and Cellular Biology <i>Dr. Jennelle Malcos, Dr. Matthew Endres</i>
2017, 2018	BIOL 120A, Plants, People, and Places <i>Dr. Glenna Malcolm</i>
<b>2016</b>	<b>Research Supervisor, Freshman Research Initiative, Department of Biology</b> <i>Dr. Kim Nelson, Dr. Glenna Malcolm</i>

## HONORS & AWARDS

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<b>2016—2018</b> 2017—2018 2017	<b>Psi Chi, International Honor Society in Psychology</b> President, Psi Chi Penn State Chapter Secretary, Psi Chi Penn State Chapter
<b>2015—2018</b> 2017—2018 2016—2017 2015—2016	<b>ServeState: Students for Philanthropy</b> President Service Coordinator Assistant Philanthropy Chair

## HONORS & AWARDS

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<b>2018</b>	<b>Graduated Cum Laude</b> <i>Top 12% of all 2018 Eberly College of Science Graduates</i>
<b>2016—Present</b>	<b>Psi Chi, Psychology National Honor Society</b>
<b>2015—2018</b>	<b>Dean's List Academic Honors</b> <i>Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Spring 2018</i>
<b>2015—2018</b>	<b>University Trustee Scholarship</b> <i>Awarded 2015—2016, 2016—2017, 2017—2018</i>
<b>2015</b>	<b>4-year Provost Award</b>

## MEDIA APPEARANCES

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- 2016**                    **Members of Penn State's service organization ServeState speak on their passion for volunteering**  
[https://www.collegian.psu.edu/news/campus/article\\_57c340dc-b845-11e6-81a7-4b612eccc930.html](https://www.collegian.psu.edu/news/campus/article_57c340dc-b845-11e6-81a7-4b612eccc930.html)

## TECHNICAL TRAININGS

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- 2020**                    **Intro to Structural Equation Modeling, Curran-Bauer Analytics (Web)**  
*Dr. Patrick Curran & Dr. Dan Bauer, University of North Carolina*
- 2020**                    **D-PICS Training Seminar, Penn State College of Medicine**  
*Dr. Jessica Mattingly, Penn State Health*
- 2020**                    **Structural Equation Modeling Short Course, University of Maryland**  
*Dr. Gregory Hancock, University of Maryland*
- 2019**                    **EEG and fMRI Processing Retreat, Vanderbilt University**  
*Dr. Autumn Kujawa, Vanderbilt University*
- 2019**                    **R for Social Scientists Workshop, Carnegie Mellon University**  
*Dr. Jeffrey Girard, Carnegie Mellon*
- 2018**                    **Clinical Research Skills Workshop, Penn State College of Medicine**  
*Terry Novchich, RN, BSN, CCRC, Penn State College of Medicine*
- 2018**                    **EEG Collection and Processing Retreat, Penn State College of Medicine**  
*Dr. Autumn Kujawa, Vanderbilt University*

## SOFTWARE & PROGRAMS PROFICIENCIES

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Audacity	BrainVision	CareConnect/Cerner
CATS IRB	EPIC	E-Prime
Electrocardiography	Electroencephalography	i2b2
PCR	Presentation	R
RedCap	NMR/IR Spectroscopy	Matlab/SPM
Microsoft Office	Mindware	SPSS
TriNetX	Qualtrics	

## CLINICAL ASSESSMENT SKILLS

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- 2019**                    **Administration of the Wide Range Achievement Test (WRAT)**
- 2019**                    **Administration of the Wechsler Intelligence Scale for Children (WISC)**
- 2018**                    **Administration of the Wechsler Abbreviated Scale of Intelligence (WASI)**
- 2018**                    **Diagnostic Interview Schedule for Children (C-DISC)**
- 2018**                    **Administration of the Development and Well-Being Assessment (DAWBA)**
- 2018**                    **Columbia—Suicide Severity Rating Scale Certification (C-SSRS)**
- 2018**                    **B-Con Certified**