

Hannah Johnson  
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## EDUCATION

**University of Arizona** 2016-present  
MD-Ph.D. Candidate, College of Medicine (COM), Graduate Interdisciplinary Program (GIDP) in Neuroscience  
Commitment to Underserved People Distinction, UA COM  
Medical Education Distinction, UA COM  
GPA: 4.00

**Arizona State University** 2010-2014  
Bachelors of Science, Biological Sciences  
GPA: 3.95

## RESEARCH

**University of Arizona, Tucson AZ**  
*Graduate Student* 2018-present  
As a neuroscience PhD candidate in a *Toxoplasma gondii* lab, my research focuses on the host-pathogen interface between neurons and *T. gondii*. *T. gondii* not only primarily infects neurons over any other central nervous system cell type, it also hides in life-long cysts within the neuron. These cysts are chiefly in neuron processes rather than the neuron soma. My research focuses on the sub-regional differences in neuron cytokine activation and response to *T. gondii* infection. By examining how sub-regions differentially respond to *T. gondii*, I hope to define how *T. gondii* establishes a chronic infection and what neuronal factors impact the likelihood of its survival.

**Arizona State University, Biodesign Institute, Center for Personalized Diagnostics, Tempe AZ**  
*Research Technician* 2013-2016  
Managed the Production Team for the center, overseeing half a dozen projects and collaborations, and reporting to the center Director with weekly progress reports. Trained undergraduate volunteers and oversaw lab ordering and safety.

### *Projects:*

*Protein Structure Initiative* (2013-2016) - receiving, curating, storing, and distributing over thousands of constructs used in a protein purification pipeline, in collaboration with scientists worldwide. Individual tasks included transformations, competent cell production, organization of over 10,000 clones, and analyzing sequence data.

*Human genome collection, ORFeome*, under Dr. Joshua LaBaer (2014-2016) – a million dollar project aimed at cloning all known human ORFs into gateway vectors that were compatible with Nucleic Acid Programmable Protein Arrays (NAPPAs). Individual tasks included PCRs, protein purifications, Gateway and Clontech Infusion cloning, sequence analysis and high throughput organization.

*ExPEC epitope mapping* with Dr. Melha Mellata (2014-2015) – collaborated with Dr. Mellata in designing epitopes of four antigens with vaccination potential for extraintestinal pathogenic *E. coli*.

Individual tasks included primer design, PCR's, cloning, and sequence validation. Optimized to a 97% success rate.

*Mice study of Ibutrinib ERB4/WNT5A cancers* with Dr. Mitch Magee and Dr. Femina Rauf (2015) – in vivo validation of in vitro ERB4 inhibition by Ibutrinib with concurrent low WNT5. Individual tasks included administering drug, measuring tumor size and dissection of tumors, spleen and liver.

## POSTER ABSTRACTS AND PRESENTATIONS

**Johnson HJ**, Chandrasekaran S, Kochanowsky J, Cabral C, Koshy AA. "Distinct neural inflammatory profiles in response to *Toxoplasma gondii*." Alzheimer's Drug Discovery Foundation 13<sup>th</sup> Annual Drug Discovery for Neurodegeneration, 2019.

**Johnson HJ**. "Toxoplasma's Interaction with the CNS." Data Blitz at MD/PhD Annual Retreat. University of Arizona, July 2019

## PUBLICATIONS

**Johnson, HJ**, Koshy, A. A. "Latent Toxoplasmosis Effects on Rodents and Humans: How Much is Real and How Much is Media Hype?" *mBio* 11, e02164-19 (2020) DOI:10.1128/mBio.02164-19

Merritt EF\*, **Johnson HJ\***, Wong ZS, Buntzman AS, Conklin AC, Cabral CM, Romanoski CE, Boyle JP, Koshy AA. "Transcriptional Profiling Suggests T Cells Cluster around Neurons Injected with *Toxoplasma gondii* Proteins." *mSphere*. 2020 Sep 2;5(5):e00538-20. doi: 10.1128/mSphere.00538-20. PMID: 32878927; PMCID: PMC7471001.

\*Co-first authors. Author order by seniority.

Pending submission in 2021. Bracha, S. Pranckevicius, N. **Johnson, HJ**. Hassi, K. Ross, PD. Cobb, S. Koshy, AA. Sheiner, L. Rechavi, O. "Engineering Brain Parasites for Intracellular Delivery of Therapeutic Proteins to the Central Nervous System."

## HONORS AND AWARDS

ARCS Van Denburgh Scholar, 2020-2021

Broadening Horizons Travel Award, 2019

Alzheimer's Drug Discovery Foundation Young Investigator Scholarship, 2019

GPSC Travel Award, 2019

Commitment to Underserved People Leadership Award, 2018

Rookie of the Year, Institutional Award from Biodesign Institute, 2014

Dean's Honor List, Arizona State University, 2010-2014

ASU Merit Scholar Scholarship, 2010-2014

## TEACHING EXPERIENCE

*Teaching Assistant*

2014

Sole instructor of a lab section of twenty students, I gave introductory lectures, guided students through experiments and graded all assignments. The grading included tests, 10+ page lab reports, weekly data sheet assignments, and lab notebooks. The tests were written by the lab coordinator with questions submitted by myself and other TA's. Held weekly office hours and oversaw open lab times with students from other lab sections, providing guidance and advice in experiments and assignments. Participated in weekly meetings with other TAs and ATAs to review experiments, ask questions and provide advice.

*Assistant Teaching Assistant*

2012-2013

Provided guidance in all lab experiments and in sustaining student attention and interest. Training and extensive working hours in preparing media, growing cultures, staining, microscopy and differential testing.

*Peer Tutor, College of Medicine, Tucson AZ*

2017-present

Weekly tutoring sessions with medical students who have requested a peer tutor, focusing on course material and practice questions. Drop in tutoring hours held before exams, open to all medical students with any question. Advise on study habits and time management on individual basis.

**EMPLOYMENT**

*Microbiology Lab Assistant, Arizona State University*

2013

Prepared reagents and directed ATA's in proper aseptic technique and preparation. Assisted lab coordinator with grading and class outlines. Maintained safe and productive lab environment.

**LEADERSHIP AND OUTREACH**

*MD/PhD Wellness Committee, 2020*

Organized monthly events aimed at student wellness and networking. Assisted individual students with resources for mental health.

*MD/PhD Recruitment Committee, 2019*

Organized and ran MD/PhD University of Arizona interviews, including faculty outreach and student participation.

*Docapella Musical Director and Coordinator, 2017-2020*

Lead practices, coordinate parts and people, spearhead outreach and performance venues, arrange songs and set up events for group mentorship.

Events: Tucson Festival of Books volunteer performer, 2018-2019, Hillel Yearly Fundraiser, 2018, St. Luke's Home and Atria Campana del Rio, UACOM Wellness Days 2016-2019, UACOM Solidarity Day 2016-2018.

*MD-PhD Representative on Graduate Information Panels, 2017-2019*

*Leader of Students Together Against Trafficking, 2017-2018*

A volunteer organization committed to spreading awareness of sex trafficking. Prepared and led group discussions on physical and mental health with trafficking victims once a month and coordinated volunteers for outreach to high schools.

*YMCA Medical Outreach Spokesperson, 2018*

Led interactive lessons with children five to twelve years old about organs, reflexes, and healthy living.

*Honors and Awards Committee Member, 2016-present*

Helped decide recipients of awards and recognize distinguished academic achievements by graduating medical students.

*School of Life Sciences Mentor, 2013*

Helped integrate freshman into the university classes and environment.

*School of Life Sciences Ambassador, 2013*

As a volunteer at ASU's Freshman Orientation, I helped freshman set up class schedules, guided them through the event and around campus, and helped set up and break down meeting rooms and activities.

## **SERVICE**

*Diabetes Education, Prevention, and Outreach (DEPO), UA COM CUP program – Banner University Medical Center, Tucson AZ, August 2016 – December 2016*

Attended a Diabetes inpatient teaching training. Visited patients with diabetes at BUMC for 2 hours each week for 4 months, providing motivational interviewing and lifestyle changing advice. The goal was to discuss how to better manage and live with diabetes.

*Shubitz Clinic Volunteer, UA COM CUP Program – Tucson AZ, October 2016-Present.*

Student run clinic on campus for uninsured patients. Responsibilities include all that is included in running a clinic: conduct medical interview and physical exam, present patients to the attending, discuss differentials and treatments, author SOAP notes in EMR.

*Women's Clinic Volunteer, UA COM CUP Program – Tucson AZ, October 2016 – Present*

Student run clinic on campus specializing in women's health. Includes the same responsibilities as Shubitz Clinic.

*MIND Clinic Volunteer, UA COM CUP Program – Tucson AZ, October 2016 – Present*

Student run psychiatric clinic with an attending psychiatrist. Duties include assisting with the history, treatment and author notes in the EMR.

*First Aid Volunteer at Pascua Yaqui Easter – Tucson AZ, April 2017*

*Secondary Application and MMI Evaluator, UA COM Admissions, Tucson AZ, 2018-2019*

## **PROFESSIONAL MEMBERSHIPS**

American College of Physicians (ACP) August 2016 – Present

American Medical Association (AMA) August 2016 – Present