

**RAMON VELAZQUEZ, Ph.D.***Assistant Professor, [rvelazq3@asu.edu](mailto:rvelazq3@asu.edu)**Curriculum Vitae*

School of Life Sciences (SoLS) and ASU-Banner Neurodegenerative Disease Research Center (NDRC)

The Biodesign Institute C, 797 E. Tyler Mall, Tempe AZ, 85287

**Nationality:** Uniter States of America, June 22<sup>nd</sup>, 1984Velazquez lab website: <https://velazquezlab-asu.github.io/index.html>**SHORT BIO**

Dr. Ramon Velazquez is an Assistant Professor at the Arizona State University (ASU) School of Life Sciences and a member of the ASU-Banner Neurodegenerative Disease Research Center. His research focuses on 1) Identifying pathogenic mechanisms in the neurodegenerative process resulting from environmental factors such as nutritional deficiencies and toxin exposures; and 2) Developing therapeutic strategies to slow progression of neurodegeneration in the aging brain, with a strong focus on Alzheimer's disease and Down Syndrome. Dr. Velazquez received his PhD in Neuroscience at Cornell University in 2014, where he was funded by the National Science Foundation (NSF) Graduate Research Fellowship. He then completed a post-doc at ASU where he was funded by NSF post-doctoral and Alzheimer's association research fellowships. Dr. Velazquez is currently principal investigator and co-investigator of numerous grants from the National Institute of Health (NIH) and serves as a standing member of the NIH Chronic Dysfunction and Integrative Neurodegeneration study section. Dr. Velazquez believes that collaborations across labs, institutions and disciplines are critical to advance the fight against aging and neurodegenerative diseases. Dr. Velazquez is also the director of the NIH-funded "Workforce Inclusion in Neuroscience through Undergraduate Research Experience" program with the goal of exposing underrepresented minorities to research opportunities to provide paths towards Neuroscience PhD programs and is mPI of a NIA T32 program to train PhD students in Alzheimer's disease and Artificial Intelligence space.

**EDUCATION AND POSITIONS**

2021-present	<b>Assistant Professor (Tenure Track)</b> , School of Life Sciences, Arizona State University, Tempe AZ
2019 – 2021	<b>Assistant Research Professor</b> , NDRC, Arizona State University, Tempe AZ
2014 – 2019	<b>Post-Doctoral fellow</b> , Arizona State University, Tempe AZ
2008 - 2014	<b>Ph.D.</b> , Cornell University, Ithaca NY
2002 - 2007	<b>B.A.</b> , California State University, Long Beach CA

**SUMMARY TABLES**

Agency	Funding	Amount	Years	Role
NIA	T32AG082658	\$2,354,488.00	2024-2029	mPI
AAC	Arizona Alzheimer's Con.	\$21,819.00	2024-2025	Subcont.
ASU	Edson seed grant	\$125,000.00	2024-2025	PI
NINDS	R25NS107188	\$251,649.00	2023-2025	PI
NIA	R01AG062500	\$3,040,398.00	2019-2025	PI
NIA	R01AG059627	\$3,112,707.00	2019-2025	PI
NIH	R42NS129400	\$185,965.00	2022-2024	Co-I
NIA	P30AG072980 Dev. Grant	\$219,536.00	2021-2024	PI
ASU	Edson seed grant	\$97,784.56	2021-2022	Co-PI
ASU	Edson seed grant	\$57,800.00	2021-2022	Co-PI
ASU	Edson seed grant	\$100,410.00	2020-2022	PI
IDSA	Seed grant	\$100,000.00	2020-2021	Co-I

Courses taught	Times instructed
BIO 360: Animal Physiology	3
BIO 394: Discussion of BIO 360	3
BIO 498: NEU 598: Neurodegenerative Disorders	2
NEU 591: Neuroscience Seminar	4

Mentoring	Status	Primary	Co-mentor
Post doctoral	complete	0	1
	In progress	1	0
PhD students	complete	1	2
	In progress	2	7
Masters students	complete	1	3
	In progress	1	0
Undergraduate students	complete	13	5
	In progress	5	1
WINURE – Undergrads in directed program	complete	NA	4
	In progress	NA	7

Publications	Senior	First	Co-author
27	11	8	8
Under review	3	0	0
Invited talks / Interviews			
National	14		
International	3		

## **ACADEMIC / INDUSTRY EMPLOYMENT**

### **1. Assistant Professor, ASU School of Life Sciences (August 2021 – present)**

*Supervisor:* Dr. Nancy Manley, Ph.D. (SoLS Director)

### **2. Neurodegenerative Disease Research Center at the Biodesign Institute, ASU (April 2019 - present)**

*Supervisor:* Jeffrey Kordower, Ph.D. (Founding director)

*Position:* Assistant Research Professor investigating the early events that trigger the progression of Alzheimer's disease, with a strong focus on tau pathogenesis. This includes environmental factors, such as diet and toxins, and neurodevelopmental disorders leading to neurodegeneration, particularly Down syndrome.

### **3. Associate Editor, Elsevier Brain Research Journal (June 2021 - present)**

*Supervisor:* Editor-in-Chiefs, Dr. Jose Francisco Abisambra, Ph.D. and Susan Ravizza, Ph.D.

*Position:* Associate editor receiving new manuscripts, assigning peer reviewers, and making acceptance decisions after review

### **4. Neurodegenerative Disease Research Center at the Biodesign Institute, ASU (September 2014 - March 2019)**

*Advisor:* Salvatore Oddo, Ph.D.

*Position:* Post-Doctoral fellow identifying molecular mechanisms and novel therapeutic targets for neurodegenerative diseases.

### **5. Neuroscience consultant for Opti-Nutra (August 2016 – July 2022)**

*Position:* Consultant for mid lab pro formulation and nootropic science. Sample videos at <https://www.mindlabpro.com>

### **6. Laboratory of Barbara Strupp Ph.D., Cornell University (August 2008 - August 2014)**

*Advisor:* Barbara J. Strupp, Ph.D.

*Collaborators:* Elliott Mufson, Ph.D. (Rush University) and Steven Ginsberg, Ph.D. (New York University)

*Position:* Graduate Student investigating pathogenesis and treatments for Down syndrome and Alzheimer's disease

### **7. Greater LA Veteran Affairs & UCLA Nicotine Research Unit (August 2007 - July 2008)**

*Director:* Nina Schneider, Ph.D.

*Position:* Project Director/ Lab Manager developing educational tools about Nicotine Replacement Treatments

### **8. Genzyme Genetics (May 2007 - July 2007)**

*Director:* Moacyr DaSilva M.D.

*Position:* Assistant to: Dr. Steve Kargas M.D., Ph.D.

### **9. National Institute of Mental Health Career Opportunities in Research Program (May 2005 - May 2007)**

*Advisors:* John Jung, Ph.D., Chi-Ah Chun, Ph.D., Diane W. Lee, Ph.D.

*Position:* Undergraduate student investigating the neurobiological consequences of traumatic brain injury

## **CURRENT FUNDING**

### **1. T32 NIH (MPI Wu, Velazquez, Li, Klein-Seetharaman). \$2,354,488.00 (2024-2029)**

PI on a training grant, immersing PhD students to Alzheimer's disease via artificial intelligence, clinical immersion, and neurobiology.

### **2. Edson Foundation Seed grant (ASU Foundation) (PI Velazquez, Co-Is Manfredsson, Dunckley) \$125,000.00 (2024-2025).**

PI on a grant examining the contributions of Dyrk1a microglia to the inflammatory state of the diseased brain.

### **3. R25NS107188-05 HHS: NINDS (PI Velazquez). \$251, 649.00 (2023-2025).**

Transfer of award originally to Dr. Janet Neisewander to promote undergraduates working inclusion of underrepresented minorities in neuroscience.

### **4. R01 AG062500 HHS: NIH (PI Velazquez) \$3,040,398.00 (2019 - 2025)**

PI on a grant to identify how the ribosomal protein S6 kinase beta-1 (S6K1) mechanistically links aging and AD.

### **5. R01 AG059627 HHS: NIH (PI Velazquez) \$3,112,707.00 (2019 - 2025)**

PI on a grant to identify common mechanisms of neurodegeneration between Down syndrome (DS) and AD

## **COMPLETED GRANTS**

### **1. NIH Small Business Technology Transfer (STTR) (PI Dunckley, Subcontract Velazquez). \$185, 965.00 (2022-2024)**

Collaborator on a grant to test a novel Dyrk1a inhibitor as a potential treatment option for AD-like pathology in DS.

### **2. NIH-Arizona Alzheimer's Disease Core Developmental Grant (PI Velazquez) \$219,536.00 (2021 - 2024)**

PI on a grant to identify the role of Neuronal Rbbp7 as a mediator against tau pathology in Alzheimer's disease.

- 3. Edson Foundation Seed grant (ASU Foundation) (PI Dunckley, Co-PI Velazquez) \$97,784.56 (2021 - 2022)**  
Co-PI on a 1-year pilot grant to test a novel Dyrk1a inhibitor in the 3xTg-AD mouse model of Alzheimer's disease.
- 4. Edson Foundation Seed grant (ASU Foundation) (PI Mastroeni, Co-PI Velazquez) \$57,800.00 (2021 - 2022)**  
Co-PI on a 1-year pilot grant to examine neuronal and astrocyte interactions in the APP/PS1 mouse model of Alzheimer's disease.
- 5. Edson Foundation Seed grant (ASU Foundation) (PI Velazquez) \$100,410.00 (2020 - 2022)**  
PI on a 2-year grant to determine if glyphosate exposure is associated with cognitive aging and Alzheimer's Disease (AD).
- 6. IDSA - The Role of Microbe-induced Necroptotic Death in Tauopathy (PI Jacobs, Co-PI Velazquez) \$100,000.00 (2020 - 2021).** Co-PI on a grant to determine mechanisms of cell death in Alzheimer's disease and related tauopathies.
- 7. Alzheimer's Association International Research Grant (PI Velazquez) \$174,999.00 (2016 - 2020)**  
PI on a 3-year grant to investigate Pim1 inhibition as a novel target for AD leveraging nanoparticle technology.

## **PENDING GRANTS**

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- 1. R01 NIH (MPI Hulme, Dunckley, Velazquez), Renewal R01 (Yr 6). First submission.** mPI on a grant to develop novel Dyrk1a inhibitors for Alzheimer's disease and primary tauopathies.
- 2. R01 NIH (PI Mastroeni, Co-I Velazquez), Resubmission in preparation. First submission, A0 = 34 percentile.** Co-I on a grant examining the Membrane Attack Complex (MAC) and its contributions to Vascular Dementia.
- 3. Arizona Biomedical Research Center (ABRC; PI Velazquez) LOI.** PI on a grant to identify the levels of glyphosate throughout the AZ population and decipher gut-brain axis mechanisms.
- 4. Rainwater Charitable Foundation (PI Velazquez).** PI on a grant to attend a workshop and receive subsequent funding on work linked to choline deficiency in primary tauopathies.
- 5. ABRC (Co-PI Velazquez) LOI.** Co-PI on a grant to understand methamphetamine use as a risk factor for Alzheimer's disease.

## **AWARDED FELLOWSHIPS**

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- 1. National Science Foundation (NSF) Post-Doctoral Research Fellowship (1606833), \$221,882.00 (2016 - 2018)**  
PI on a 2-year grant to elucidate the underlying molecular mechanisms linked to choline supplementation and healthy cognitive aging
- 2. NSF Graduate Research Fellowship, \$30,000.00/yr for three years plus tuition (2009 - 2012)**  
Based on abilities and accomplishments as well as potential to contribute to strengthening the vitality of science in the U.S.
- 3. Cornell University Sage Graduate Fellowship (2008-2010)**  
Two-year graduate funding plus 4 summers awarded to top incoming graduate students
- 4. National Institute of Mental Health Career Opportunities in Research Fellowship (2005 - 2007)**  
Undergraduate research training program

## **HONORS AND AWARDS**

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- 1. AAAS/Science Program for Excellence in Science Inductee (October 2018)**  
Goal of the organization is to promote the development of science and engineering at the national level.
- 2. Biology Travel Award (April 2018)**  
Top 35 of the "Biology Travel Awards 2018" from worldwide applications.
- 3. Society for Neuroscience Trainee Professional Development Award (November 2017)**  
Recognizes young investigators demonstrating scientific merit and excellence in research.
- 4. Alzheimer's Drug Discovery Foundation Young Investigator Scholar (July 2017)**  
Awarded to top 3 applicants to attend the 18<sup>th</sup> annual Alzheimer's Drug Discovery Foundation meeting in Newark, NJ (2017) and presented research findings (Oral presentation) on Pim1 inhibition as a novel therapeutic strategy for Alzheimer's disease.

**5. James Bradford and NBTS “Best student presentation Award” (June 2012)**

Awarded for the best presentation at the 2012 joint meeting of the Neurobehavioral Teratology Society (NBTS) and Teratology Society.

**6. Phi Beta Kappa (inducted May 2007)**

Oldest undergraduate honors organization in the United States

**INVITED SEMINARS / INTERVIEWS**

1. University of New Mexico School of Medicine Neuroscience seminar series. Talk title: “The use of the IntelliCage system in rodent models of disease.” November 14<sup>th</sup>, 2024, Albuquerque, NM.
2. American Association for the Advancement of Science (AAAS) – ACC – Cinvestav – UNAM Professional Meeting: Opportunities for U.S.-Cuba-Mexico Collaboration in Public Health. Talk title: “Preventive and therapeutic strategies to slow Alzheimer’s disease. September 2024, Mexico City, MX.
3. AAAS invited speaker to Shared Challenges and Opportunities in Aging and Disaster Management: Potential for U.S. - Cuba Scientific Collaboration. Talk title “Nutritional and pharmacological approaches to slow inflammation and neurodegeneration of the aging brain”. March 2024, Havana Cuba.
4. Tribal Consultation group, Arizona Health Care Cost Containment System (AHCCCS) health awareness talk: “Alzheimer’s disease, other dementias, and brain health.” July 27<sup>th</sup>, 2023.
5. State of AZ AHCCCS Brain health awareness talk. “Brain health and Alzheimer’s disease.” June 7<sup>th</sup>, 2023.
6. Soroka Virtual Symposium. “Translational approaches to untangle Alzheimer’s disease and associated neuropathologies.” May 2<sup>nd</sup>, 2023.
7. ASU Innovation in Action webinar series “Untangling Alzheimer’s disease utilizing innovative strategies at ASU”. October 20<sup>th</sup>, 2022.
8. Arizona PBS, Interview about “Glyphosate infiltrates the brain”, September 6<sup>th</sup>, 2022.
9. ASU Edson Lecture Series “Glyphosate and implications for brain disorders” August 17<sup>th</sup>, 2022
10. University of California Santa Barbara (UCSB) Neuroscience seminar series, “Untangling Alzheimer’s Disease: Identification of early events contributing to pathogenesis”, December 3<sup>rd</sup>, 2021.
11. AZ Regenerative Medicine Conference featured speaker, ASU, “Untangling Alzheimer’s Disease: Identification of early modifiable events that may reduce pathogenesis”, November 18<sup>th</sup>, 2021.
12. Arizona Consortium Alzheimer’s Retreat, “Dissecting the role of the Pim1 kinase in AD”, January 24<sup>th</sup>, 2020.
13. Arizona PBS, Interview about “Common supplement for Alzheimer’s disease (AD)”, Oct. 8<sup>th</sup>, 2019.
14. Sip of Science Seminar hosted by the ASU Biodesign Institute – “Clues to curing Alzheimer’s disease”, March 2019
15. Arizona State University Biodesign Symposium “How to find a Post-Doctoral fellow position”, November 2018.
16. Keynote Address, California State University Long Beach NIH funded “BUILD” research program, May 2017.
17. Oral presentation, 18<sup>th</sup> Annual Alzheimer’s Drug Discovery Foundation (ADDF), September 2017.

**PUBLICATIONS**

**h-index (19); i10-index (24); Total citations = 1493; \* = First author (8); # = senior corresponding author (11).**

1. Judd JM, Jasbi P, Winslow W, Serrano GE, Beach TG, Klein-Seetharaman J, **Velazquez R**<sup>#</sup>, 2023. “Inflammation and the pathological progression of Alzheimer’s disease are associated with low circulating choline levels.” *Acta Neuropathologica*. [PMID: 37548694](https://pubmed.ncbi.nlm.nih.gov/37548694/).
2. de Avial Dal Bo C, Suazo C, Nolz J, Cochran JN, Wang Q, **Velazquez R**, Dammer EB, Readhead B, Mastroeni D, 2023. “Reduced *PINI* gene expression in neocortical and limbic brain regions in female Alzheimer’s patients correlates with cognitive and neuropathological phenotypes”. *Neurobiology of Aging*. [PMID: 38964013](https://pubmed.ncbi.nlm.nih.gov/38964013/)
3. Tallino S, Winslow W, **Velazquez R**<sup>#</sup>, 2023. “Pathological trajectory of the Ts65Dn model of Down Syndrome.” *Aging*. [PMID: 36707069](https://pubmed.ncbi.nlm.nih.gov/36707069/).
4. Dave N\*, Judd JM\*, Decker A, Winslow W, Sarette P, Villareal Espinosa O, Tallino S, Bilal A, Sandler J, McDonough I, Winstone JK, Blackwood EA, Glembotski C, Karr T, **Velazquez R**<sup>#</sup>, 2023. “Dietary choline intake is necessary to prevent systems-wide organ pathology and reduce Alzheimer’s disease hallmarks”. *Aging Cell*. [PMID: 36642814](https://pubmed.ncbi.nlm.nih.gov/36642814/).

5. Winstone JK, Pathak K, Winslow W, Piras IS, White J, Sharma R, Huentelman MJ, Pirrotte P, **Velazquez R**<sup>#</sup>, 2022. "Glyphosate infiltrates the brain and increases pro-inflammatory cytokine TNF $\alpha$ : implications for neurodegenerative disorders." *J. Neuroinflammation*, PMID: [35897073](#).
6. Tallino S, Winslow W, Bartholomew SK, **Velazquez R**<sup>#</sup>, 2022. Temporal and brain region-specific elevations of soluble Amyloid- $\beta$  40-42 in the Ts65Dn mouse model of Down syndrome and Alzheimer's disease. *Aging Cell*. PMID: [35290711](#).
7. Powers B, **Velazquez R**, Strawderman MS, Ginsberg SD, Muson EJ, Strupp BJ, 2021. Maternal choline supplementation as a potential therapy for Down syndrome: Assessment of effects throughout the lifespan. *Front. Aging Neurosci*. PMID: [34690739](#).
8. Winslow W, McDonough I, Tallino S, Decker A, Vural SA, **Velazquez R**<sup>#</sup>, 2021. "IntelliCage automated behavioral phenotyping reveals behavioral deficits in the 3xTg-AD mouse model of Alzheimer's disease associated with brain weight." *Front. Aging Neurosci*. PMID: [34483889](#).
9. Dave N, Vural AS, Piras IS, Winslow W, Surendra L, Winstone JK, Beach TG, Huentelman MJ, **Velazquez R**<sup>#</sup>, 2021. "Identification of the retinoblastoma binding protein 7 (Rbbp7) as a mediator against tau acetylation and subsequent neuronal loss in Alzheimer's disease and related tauopathies." *Acta Neuropathologica*. PMID: [33978814](#).
10. Mifflin MA, Winslow W, Surendra L, Tallino S, Vural AS, **Velazquez R**<sup>#</sup>, 2021. "Sex differences in the IntelliCage and Morris water maze in the APP/PS1 mouse model of amyloidosis. *Neurobiology of Aging*. PMID: [33610962](#).
11. **Velazquez R**<sup>#</sup>, Winslow W, Mifflin MA, 2020. "Choline as a prevention for Alzheimer's Disease." *Aging*, PMID: [32039834](#).
12. **Velazquez R**<sup>#</sup>, Ferreira E, Knowles S, Fux C, Rodin A, Winslow W, Oddo S, 2019. "Life-long choline supplementation ameliorates Alzheimer's disease pathology and associated cognitive deficits by attenuating microglia activation." *Aging Cell*, PMID: [31560162](#).
13. **Velazquez R**<sup>\*</sup>, Meechoovet B, Ow A, Foley C, Shaw A, Smith B, Oddo S, Hulme C, Dunckley T, 2019. "Chronic Dyrk1 Inhibition Delays the Onset of AD-like Pathology in 3xTg-AD Mice". *Mol Neurobiol*. PMID: [31240602](#).
14. **Velazquez R**<sup>\*</sup>, Ferreira E, Winslow W, Dave N, Piras I, Naymik M, Huentelman M, Tran A, Caccamo A, Oddo S, 2019. "Maternal choline supplementation ameliorates Alzheimer's disease pathology by reducing brain homocysteine levels across multiple generations". *Mol. Psychiatry*, PMID: [30622336](#).
15. Belfiore R, Rodin A, Ferreira E, **Velazquez R**, Branca C, Caccamo A, Oddo S, 2018. "Temporal and Regional Progression of Alzheimer's disease-like pathology in 3xTg-AD mice". *Aging Cell*, 1-13. PMID: [30488653](#).
16. **Velazquez R**<sup>\*</sup>, Tran A, Ferreira E, Turner EC, Oddo S, 2018. "Acute Tau knockdown in the hippocampus of adult mice causes learning and memory deficits". *Aging Cell*, 17, 1-12. PMID: [29749079](#).
17. **Velazquez R**<sup>\*</sup>, Tran A, Ishimwe E, Denner L, Dave N, Oddo S, Dineley KT, 2017. "Central insulin dysregulation and energy dyshomeostasis in two mouse models of Alzheimer's disease." *Neurobiol. of Aging* 58, 1-13. PMID: [28688899](#).
18. Powers BP, Kelly CM, **Velazquez R**, Ash JA, Strawderman MS, Alldred MJ, Ginsberg SD, Mufson EJ, Strupp BJ, 2016. "Maternal choline supplementation in a mouse model of Down syndrome: effects on attention and nucleus basalis/substantia innominata neuron morphology in adult offspring." *Neuroscience* 340, 501-514. PMID: [27840230](#).
19. **Velazquez R**<sup>\*</sup>, Shaw DM, Caccamo A, Oddo S, 2016. "Pim1 inhibition as a novel therapeutic strategy for Alzheimer's disease." *Mol Neurodegener.* 11, 1 – 14. PMID: [27412291](#).
20. Powers BP, **Velazquez R**<sup>\*</sup>, Kelley CM, Ash JA, Strawderman MS, Alldred MJ, Ginsberg SD, Mufson EJ, Strupp BJ, 2016. "Attentional function and basal forebrain cholinergic neuron morphology during aging in the Ts65Dn mouse model of Down syndrome." *Brain Struct Funct.* 221, 4337-4352. PMID: [26719290](#).

21. Kelley CM, Ash JA, Powers BP, **Velazquez R**, Alldred MJ, Ikonovic MD, Ginsberg SD, Strupp BJ, Mufson EJ, 2016. “Effects of Maternal Choline Supplementation on the Septohippocampal Cholinergic System in the Ts65Dn Mouse Model of Down Syndrome.” *Curr Alzheimer’s Res.* 1, 84-96. [PMID: 26391045](#).
22. Strupp BJ, Powers BE, **Velazquez R**, Ash JA, Kelley CM, Alldred MJ, Strawderman MS, Caudill MA, Mufson EJ, Ginsberg SD, 2016. “Maternal Choline Supplementation: A Potential Prenatal Treatment for Down Syndrome and Alzheimer’s Disease.” *Curr Alzheimer’s Res.* 13, 97-106. [PMID: 26391046](#).
23. Talboom JS, **Velazquez R**, Oddo S, 2015. “The mammalian target of rapamycin at the crossroad of aging and Alzheimer’s disease.” *Aging and mechanism of disease.* [PMID: 28721257](#).
24. Ash JA, **Velazquez R\***, Kelley CM, Powers BE, Ginsberg SD, Mufson EJ, Strupp BJ, 2014. “Maternal choline supplementation improves spatial mapping and increases basal forebrain cholinergic neuron number and size in aged Ts65Dn mice.” *Neurobiol. Dis* 70, 32-42. [PMID: 24932939](#).
25. Kelley CM, Powers BP, **Velazquez R**, Ash JA, Ginsberg SD, Strupp BJ, Mufson EJ, 2014. “Maternal choline supplementation differentially alters the basal forebrain cholinergic system of young-adult Ts65Dn and disomic mice.” *J Com Neurol.* 522, 1390-1410. [PMID: 24178831](#).
26. Kelley CM, Powers BP, **Velazquez R**, Ash JA, Ginsberg SD, Strupp BJ, Mufson EJ, 2013. “Sex differences in the cholinergic basal forebrain in the Ts65Dn mouse model of Down syndrome and Alzheimer’s disease.” *Brain Pathol.* 24, 33-44. [PMID: 23802663](#).
27. **Velazquez R\***, Ash JA, Powers BE, Kelley CM, Strawderman MS, Luscher ZI, Ginsberg SD, Mufson EJ, Strupp BJ, 2013. “Maternal choline supplementation improves spatial learning and adult hippocampal neurogenesis in the Ts65Dn mouse model of Down syndrome.” *Neurobiol. Dis* 58, 92-101. [PMID: 23643842](#).

## **MANUSCRIPTS UNDER REVIEW**

1. Bartholomew SK, Winslow W, Sharma R, Pathak KV, Tallino S, Judd J, Leon H, Pirrotte P, **Velazquez R#**. “Glyphosate exposure exacerbates neuroinflammation and Alzheimer’s disease-like pathology despite a 6-month recovery period in mice.” *J. Neuroinflammation*, under review as of September 05, 2024.
2. Judd J, Winslow W, I McDonough, Mistry F, **Velazquez R#**. “Modifying reaction time tasks parameters in the automated IntelliCage identifies heightened impulsivity and impaired attention in the 3xTg-AD model of Alzheimer’s disease”. *Frontiers in Aging Neuroscience*, under review as of July 17, 2024.
3. Tallino S, Etebari R, McDonough I, Leon H, Sepulveda I, Winslow W, Bartholomew SK, Perez S, Mufson E, **Velazquez R#**. “Adult choline supplementation in a Down syndrome model reduces co-morbidities and improves Cognition”. Submitted to *The EMBO J.*, September 23, 2024.

## **PRESS RELEASES**

[AAAS and Cuban Academy of Sciences Brainstorm on U.S.-Cuba shared challenges and opportunities in Aging and Disaster Management \(Featured in New and Ongoing conversation section\)](#)  
[New research links low choline levels in blood to Alzheimer’s disease progression](#)  
[Study Explores Effects of Dietary Choline Deficiency on Neurologic, System-Wide Health](#)  
[Pesticide research links chemical compound to brain disorder, an interview on AZ PBS](#)  
[Can a common used herbicide get into our brains? Arizona scientists want to find out](#)  
[New study shows glyphosate may be linked to neurodegenerative diseases](#)  
[New study shows that commonly used herbicide crosses blood-brain-barrier](#)  
[Untangling the brain: new research offers hope for Alzheimer’s disease](#)  
[Edson seed grants advance innovate dementia solutions – grant award to Velazquez Lab](#)  
[Researchers examine common nutrient choline to battle Alzheimer’s disease](#)  
[Supplementation of common nutrient choline may hold the answers to combat Alzheimer’s disease](#)  
[Essential nutrient may help fight Alzheimer’s disease across multiple generations](#)  
[A pregnant mother’s diet is key to reduce disabilities resulting from Down syndrome](#)

## SCIENTIFIC CONFERENCE ABSTRACTS

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# = senior author (27); First author (14); co-author (9)

1. **Velazquez R<sup>#</sup>**, Bartholomew SK, Turk J, Winslow W, Rokey S, Foley C, Hulme C, Dunckley T, 2024. “The therapeutic potential of DYR533, a novel Dyrk1a inhibitor, in slowing tau pathogenesis and neuroinflammation in frontotemporal dementia, Alzheimer’s Disease, and Down syndrome.” Submitted to AD/PD 2025 conference.
2. Winslow W, Judd J, Katsanos C, **Velazquez R<sup>#</sup>**, 2024. “The Impact of Low Circulating Choline on Metabolic Dysfunction and Cognitive Health: Comparative Analysis in Prediabetic Humans and the 3xTg-AD model of Alzheimer’s disease”. Submitted to AD/PD 2025 conference.
3. Tallino S, Etebari R, McDonogh I, Leon H, Sepulveda I, Winslow W, Bartholomew SK, Perez S, Mufson E, **Velazquez R<sup>#</sup>**, 2024. “Adulthood choline supplementation in a down syndrome mouse model reduces co-morbidities and improves cognition.” Submitted to AD/PD 2025 conference.
4. Judd J, Winslow W, Huentelman MJ, Piras I, Pirrotte P, Sharma R, Dave N, **Velazquez R<sup>#</sup>**, 2024. “Rescuing deficient chaperone/chromatic remodeling retinoblastoma binding protein 7 (Rbbp7) attenuates autophagy, neuroinflammation and tau pathogenesis in tauopathies.” Submitted to AD/PD 2025 conference.
5. Bartholomew SK, Winslow W, Sharma R, Pathak KV, Tallino S, Judd J, Leon H, Pirrotte P, **Velazquez R<sup>#</sup>**, 2024. “Glyphosate exposure exacerbates neuroinflammation and Alzheimer’s disease-like pathology despite a 6-month recovery in NonTg and 3xTg-AD mice.” Society for Neuroscience, October 2024, Chicago IL.
6. Judd J, Mistry F, Winslow W, Tallino S, Turk J, **Velazquez R<sup>#</sup>**, 2024. “3xTg-AD mice exhibit neuropathological sex discrepancies that correlate with circulating choline levels”. Society for Neuroscience, October 2024, Chicago IL.
7. Tallino S, Etebari R, Leon H, Sepulveda I, Bartholomew SK, **Velazquez R<sup>#</sup>**, 2024. “Adulthood dietary choline supplementation modestly lowers metabolic symptoms related to Alzheimer’s disease risk in the Ts65Dn model of Down Syndrome”. Society for Neuroscience, October 2024, Chicago IL.
8. Turk J, Winslow W, Tallino S, Judd J, Bartholomew SK, Mistry F, Hulme C, Dunckley T, **Velazquez R<sup>#</sup>**, 2024. “Validating the efficacy of a novel potent Dyrk1a inhibitor (DYR533) in the Ts65Dn mouse model of Down Syndrome”. Society for Neuroscience, October 2024, Chicago IL.
9. Judd J, Winslow W, Serrano GE, Beach TG, Piras IS, Huentelman, **Velazquez R<sup>#</sup>**, 2023. “The retinoblastoma binding protein 7 (Rbbp7), which mediates against tau acetylation and subsequent hyperphosphorylation, is reduced in Alzheimer’s disease.” Society for Neuroscience, November 2023, Washington DC.
10. Leon H, Winslow W, Bartholomew SK, Martinez MN, Pathak K, Sharma R, Pirrotte P, **Velazquez R<sup>#</sup>**, 2023. Thirteen weeks of glyphosate exposure at early adulthood followed by cessation is sufficient to exacerbate neuroinflammation, amyloid- $\beta$ , and tau pathology in the 3xTg-AD mouse model of Alzheimer’s disease.” Society for Neuroscience, November 2023, Washington DC.
11. Winslow W, Judd JM, Serrano GE, Katsanos C, Beach TG, **Velazquez R<sup>#</sup>**, 2023. Patients with Mild Cognitive Impairment (MCI) and obese prediabetes exhibit low circulating choline levels that correlate with various metabolic and brain pathologies.” Society for Neuroscience, November 2023, Washington DC.
12. Judd J, Winslow W, Jasbi P, Klein-Seetharaman J, **Velazquez R<sup>#</sup>**, 2023. Low circulating choline levels correlate with Alzheimer’s disease pathology severity and cognitive impairment. Alzheimer’s Association International Conference (AAIC), July 2023, Amsterdam NL.
13. Tallino S, Vural A, Villareal Espinosa O, **Velazquez R<sup>#</sup>**, 2023. Utilization of the novel adeno-associated virus PHP.eB serotype to modulate Intersectin 1 expression in the Ts65Dn mouse model of Down syndrome. AAIC, July 2023, Amsterdam NL.
14. Bartholomew S, Winslow W, Rokey S, Hulme C, Dunckley T, **Velazquez R<sup>#</sup>**, 2023. A novel DYRK1a inhibitor, DYR533, reduces tau pathology and TNF alpha in the 3xTg-AD and PS19 mouse models. AAIC, July 2023, Amsterdam NL.

15. Jasbi P, Judd J, **Velazquez R**, Klein-Seetharaman, 2023. Metabolomics profiling of aqueous metabolites and short-chain fatty acids in human serum of Alzheimer's disease patients using GC-MS and bioinformatics. AAIC, July 2023, Amsterdam NL.
16. Huentelman MJ, Piras IS, Beres S, Hudson S, Wright S, Head E, **Velazquez R<sup>#</sup>**, 2022. Epigenomic-wide association study reveals DNA methylation changes in the brains of people with Down syndrome and Alzheimer's disease. Society for Neuroscience, November 2022, San Diego CA.
17. Judd JM, Dave N, Decker A, Winslow W, Sarette P, Espinosa OV, Tallino S, Sandler J, Bilal A, McDonough I, Winstone JK, Glembotski C, Blackwood EA, Karr T, **Velazquez R<sup>#</sup>**, 2022. Dietary choline deficiency induces system-wide cellular and molecular dysfunction across several pathogenic axes associated with Alzheimer's disease. Society for Neuroscience, November 2022, San Diego CA.
18. Tallino S, Bartholomew S, Sepulveda I, Winstone J, **Velazquez R<sup>#</sup>**, 2022. Adulthood choline supplementation in the Ts65Dn mouse model of Down syndrome. Society for Neuroscience, November 2022, San Diego CA.
19. Winslow W, Tallino S, Bartholomew S, **Velazquez R<sup>#</sup>**, 2022. Temporal and regional-specific elevations of soluble A $\beta$ 40 - 42 in the Ts65Dn mouse model for Down syndrome. Society for Neuroscience, November 2022, San Diego CA.
20. Winstone JK, Winslow W, **Velazquez R<sup>#</sup>**, 2022. Glyphosate accelerates amyloid-beta production in the APP/PS1 mouse model of Alzheimer's disease. Society for Neuroscience, November 2022, San Diego CA.
21. Bartholomew S, Winslow W, Shaw Y, Rokey S, Foley C, Hulme C, Dunckley T, **Velazquez R<sup>#</sup>**, 2022. Validating the efficacy of an potent Dyrk1a inhibitor (DYR533) in the 3xTg-AD mouse model of Alzheimer's disease. Society for Neuroscience, November 2022, San Diego CA.
22. Piras IS, Beres S, Hudson S, Johnson M, Wright S, Tallino S, Head E, Huentelman MJ, **Velazquez R<sup>#</sup>**, 2022. Multi-omics analysis suggests increased exocytic processes in the brains of patients with Trisomy-21 and Alzheimer's Disease. Arizona Alzheimer's Consortium, September 2022, Tempe AZ.
23. Winstone JK, Pathak K, Winslow W, Piras IS, White J, Sharma R, Huentelman MJ, Pirrotte P, **Velazquez R<sup>#</sup>**, 2022. "Glyphosate infiltrates the brain and increases pro-inflammatory cytokine TNF $\alpha$ : implications for neurodegenerative disorders." Arizona Alzheimer's Consortium, September 2022, Tempe AZ.
24. Bartholomew S, Wendy Winslow, Shaw Y, Rokey S, Foley C, Hulme C, Dunckley T, **Velazquez R<sup>#</sup>**, 2022. "The novel Dyr533 Dyrk1a Inhibitor reduces AD-like pathologies in the 3xTg-AD mouse model of Alzheimer's Disease". Arizona Alzheimer's Consortium, September 2022, Tempe AZ.
25. Dave N, Vural AS, Piras IS, Winslow W, Surendra L, Winstone J, Huentelman MJ, **Velazquez R<sup>#</sup>**, 2021. Identification of the retinoblastoma binding protein 7 (Rbbp7) as a mediator against tau acetylation and subsequent neuronal loss in Alzheimer's disease and related tauopathies. Society for Neuroscience (SFN), Nov 2021, Online conference.
26. Decker A, Winslow W, Winstone J, McDonough I, Blackwood E, Bilal A, Tallino S, Glembotski C, **Velazquez R<sup>#</sup>**, 2021. Adulthood dietary choline deficiency; a risk factor for obesity, impaired glucose tolerance, cardiac pathology, and subsequent Alzheimer's disease. SFN, Nov 2021, Online conference
27. Tallino S, Decker A, Dave N, Sandler J, Karr T, **Velazquez R<sup>#</sup>**, 2021. Unbiased proteomic analysis reveals dietary choline deficiency-induced changes to neurodegeneration-relevant pathways in 3xTg-AD mouse model of Alzheimer's disease. SFN, Nov 2021, Online conference
28. Winstone J, Pathak KV, Sharma R, Donnay M, Huentelman MJ, Pirrotte P, **Velazquez R<sup>#</sup>**, 2021. Glyphosate infiltrates the brain and may be a risk factor for Alzheimer's Disease. SFN, Nov 2021, Online conference
29. Tallino S, Winslow W, McDonough I, Decker A, **Velazquez R<sup>#</sup>**, 2021. First assessment of the 3xTg-AD mouse model of Alzheimer's in the IntelliCage reveals cognitive deficits associated with decreased brain weight and insoluble Amyloid- $\beta$ 40. ASU Biodesign Retreat, April 2021, Tempe AZ.



- 30. Velazquez R**, Ferreira E, Winslow W, Piras IS, Dave N, Naymik M, Huentelman MJ, Oddo S. 2019. Maternal choline supplementation ameliorates Alzheimer's disease pathology by reducing brain homocysteine levels across multiple generations. SFN, October 2019, Chicago IL.
- 31.** Knowles S, **Velazquez R**, Caccamo A, Oddo S, 2018. Pim1 inhibition as a novel therapeutic strategy for Alzheimer's disease. SFN, November 2018.
- 32. Velazquez R**, Tran A, Ferreira E, Turner EC, Oddo S, 2017. "Acute knockdown of tau in the adult hippocampus impairs learning and memory." SFN, November 2017, Washington DC.
- 33.** Belfiore R, Ferreira E, **Velazquez R**, Branca C, Dave N, Rodin A, Caccamo A, Oddo S, 2017. "Staging Alzheimer's disease-like pathology in 3xTg-AD mice." SFN, November 2017, Washington DC.
- 34. Velazquez R**, Shaw DM, Caccamo A, Oddo S, 2017. "Pim1 inhibition as a novel therapeutic strategy for Alzheimer's disease." Alzheimer's drug discovery foundation (ADDF), September 2017.
- 35. Velazquez R**, Tran A, Ferreira E, Oddo S, 2017. "Elucidating the role of tau in adulthood by using an inducible AAV-ShRNAtau." Arizona Alzheimer's Consortium (AAC), May 2017.
- 36. Velazquez R**, Tran A, Ishimwe E, Denner LL, Dave N, Oddo S, Dineley KT, 2017. "Central insulin resistance precedes peripheral insulin resistance in two mouse models of Alzheimer's disease." AAC, May 2017.
- 37.** Stokes AM, **Velazquez R**, Oddo S, Quarles C, 2017. "Development of preclinical MRI biomarkers in mouse models of Alzheimer's disease." AAC, May 2017.
- 38. Velazquez R**, Caccamo A, Ferreira E, Tran A, Nikhil D, Oddo S, 2016. "Maternal choline supplementation as a preventive therapeutic strategy for Alzheimer's disease-like pathology." SFN, November 2016, San Diego CA.
- 39. Velazquez R**, Ferreira E, Tran A, Oddo S, 2016. "Maternal choline supplementation as a preventive therapeutic option with transgenerational altering properties for Alzheimer's disease pathology". AAC, May 2016.
- 40. Velazquez R**, Shaw DM, Talboom JS, Oddo S, 2016. "Pim 1 inhibition as a novel therapeutic strategy for Alzheimer's disease." AAC, May 2016.
- 41. Velazquez R**, Shaw DM, Talboom JS, Oddo S, 2015. "PRAS40 as a novel therapeutic target for Alzheimer's disease". SFN, October 2015, Chicago IL.
- 42. Velazquez R**, Ash JA, Powers BE, Kelley CM, Strawderman MS, Ginsberg SD, Mufson EJ, Strupp BJ, 2012. "Maternal choline supplementation improves spatial learning and increases adult hippocampal neurogenesis in the Ts65Dn mouse model of Down syndrome." SFN, October 2012, New Orleans LA.
- 43.** Powers B, Ash JA, **Velazquez R**, Kelley CM, Strawderman MS, Alldred M, Ginsberg SD, Mufson EJ, Strupp BJ, 2012. "Maternal choline supplementation improves cognitive function in the Ts65Dn mouse model of Down syndrome: Correlations between basal forebrain cholinergic neurons and performance." SFN, October 2012, New Orleans LA.
- 44. Velazquez R**, et al., 2012. "Perinatal choline supplementation improves spatial learning and increases cholinergic neuron number in the medial septum in the Ts65Dn mouse model of Down syndrome." Neurobehavioral Teratology Society, June 2012, Baltimore MA. *Recipient of the prestigious James Bradford award and NBTS best student presentation.*
- 45. Velazquez R**, Kelley CM, Powers BE, Ash JA, Ginsberg SD, Strupp BJ, Mufson EJ, 2011. "Age-related alterations in basal forebrain cholinergic neuron populations in the Ts65Dn mouse model of Down syndrome and Alzheimer's disease." SFN, November 2011, Washington DC.
- 46.** Ash JA, **Velazquez R**, Kelley CM, Powers BE, Strawderman MS, Mufson EJ, Ginsberg SD, Strupp BJ, 2011. "Perinatal choline supplementation improves spatial learning and increases cholinergic expression within basal forebrain cholinergic neurons in the Ts65Dn mouse model of Down syndrome." SFN, November 2011, Washington DC.
- 47.** Powers BP, Kelley CM, Ash JA, **Velazquez R**, Strawderman MS, Mufson EJ, Ginsberg SD, Strupp BJ, 2011. "Perinatal choline supplementation improves learning of an attention task and alters basal forebrain cholinergic neurons in the Ts65Dn mouse model of Down syndrome." SFN, November 2011, Washington DC.

48. Kelley CM, Powers BP, Ash JA, **Velazquez R**, Strupp BJ, Ginsberg SD, Mufson EJ, 2011. “Morphologic and transcriptomic alterations in cholinergic basal forebrain neurons in maternal choline supplemented trisomic (Ts65Dn mice).” SFN, November 2011, Washington DC.
49. **Velazquez R**, Menjivar J, Drumheller K, Lee DW, 2008. “Hippocampal damage induces cell proliferation in the septo-hippocampal system.” SFN, November 2008, Washington DC.
50. Law M, Menjivar J, Chapleau J, Ngo T, **Velazquez R**, Lee DW, 2006.” Injury-induced cell proliferation in the adult zebra finch hippocampus: sex differences and time course comparisons.” SFN, November 2006, Atlanta GA.

## **MANUSCRIPT REVIEWER**

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Science Signaling, Aging cell, FASEB, Behavioral Brain Research, Frontiers in Aging Neuroscience, Frontiers in Behavior Neuroscience, Scientific Reports, Nutritional Neuroscience, Nutrients, Biotechnology reports

## **SERVICE**

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### **I. National**

1. Associate Editor Elsevier: Brain Research peer reviewed journal (June 1, 2021 – present)
2. NIH; Chronic Dysfunction and Integrative Neurodegeneration (CDIN) Study section, Standing member, 4-year term (July 1, 2021 – June 30, 2025)
3. Arizona Alzheimer’s Consortium grant reviewer (Jan 2023-present)
4. Florida Department of Health, Ed and Ethel Moore research grant proposal review committee (July 2021 – present)

### **II. Local (School of Life Sciences and ASU wide)**

1. ASU GAINS Primary Advisor (2024-present)
2. ASU SoLS Workforce Inclusion in Neuroscience to promote underrepresented minorities in science (2023-present)
3. ASU SoLS Interdisciplinary Neuroscience Graduate Program executive committee member (2019 – present)
4. Barrett Honors college contract – 1 credit hour course in Animal physiology topics (2022-present)
5. ASU SoLS Neuroscience Seminar Series (2022-present)
6. ASU SoLS / SBHSE Stem Cell Biology, Organ Development, and Regeneration faculty search committee (2023-2024)
7. ASU SoLS Neurodegenerative Disease Research Center faculty search committee (2022-2023)
8. ASU-Biodesign Chalk Talk committee member (Fall 2020 – 2022)

## **Organized Symposiums / Seminars**

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1. Neuroscience Research Seminar (Fall 2022, Spring 2023, Fall 2023, Spring 2024)  
Co-lead the ASU Neuroscience seminar series with invited researchers throughout the USA and ASU PhD students
2. Barrow Neurological Institute (BNI) – ASU symposium (January 28<sup>th</sup>, 2023, February 2<sup>nd</sup> 2024)  
Co-lead the BNI-ASU symposium with an invited keynote speaker and BNI and ASU faculty and PhD student seminars
3. Neuroscience Grad school information panel (Hosted by WINURE and GAINS – September 26<sup>th</sup>, 2024)  
Lead an information panel for undergraduate students at ASU to learn about the PhD application process in Neuroscience.

## **TEACHING**

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### **I. Courses instructed**

1. **Course:** Introduction to Psychology, “The brain and mental illness”, undergraduate level (25 undergraduate students)  
**Institution/Semester:** Cornell University, Fall 2013  
**Instructor:** Ramon Velazquez  
**Duties:** Developed course, syllabus preparation, led discussion, lectures, grading responsibilities.  
**Student evaluation score: Very good overall score**
2. **Course:** BIO 360; Animal Physiology (335 undergraduate students)  
**Institution/Semester:** Arizona State University, Spring 2022  
**Instructor:** Ramon Velazquez Ph.D., Gro Amdam Ph.D.  
**Duties:** Instructed course on two of the four units, focused on cell biology and the nervous system.  
**Student evaluation score: 2.11 Very good overall score (scale; 1 excellent - 5: poor), 32% participation**

3. **Course:** BIO 394; Discussion of Animal Physiology (26 Honor undergraduate students)  
**Institution/Semester:** Arizona State University, Spring 2022  
**Instructor:** Ramon Velazquez Ph.D., Gro Amdam Ph.D.  
**Duties:** Discussion of Animal Physiology readings  
**Student evaluation score: 4.50 Very good overall score (scale; 1 poor – 5: very good), 38% participation**
4. **Course:** BIO 498 (6 undergraduate): NEU 598 (7 PhD students); Neurodegenerative disorders of the Aging Brain  
**Institution/Semester:** Arizona State University, Fall 2022  
**Instructor:** Ramon Velazquez Ph.D.  
**Duties:** Developed course on behavioral, cellular and molecular underpinnings of brain disorders  
**Student evaluation score: 1.08 Excellent overall score (scale; 1 excellent - 5: poor), 92% participation**
5. **Course:** NEU 591: Neuroscience Research Seminar (29 graduate students)  
**Institution/Semester:** Arizona State University, Fall 2022  
**Instructor:** Ramon Velazquez Ph.D. and Jason Newber Ph.D.  
**Duties:** Seminar designed to allow students to present their research projects, in addition to invited guest speakers  
**Student evaluation score. 1.71 Excellent-Very good overall score (scale; 1 excellent - 5: poor), 48% participation**
6. **Course:** NEU 591: Neuroscience Research Seminar (20 graduate students)  
**Institution/Semester:** Arizona State University, Spring 2023  
**Instructor:** Ramon Velazquez Ph.D. and Timothy Balmer Ph.D.  
**Duties:** Seminar designed to allow students to present their research projects, in addition to invited guest speakers  
**Student evaluation score. 1.4 Excellent-Very good overall score (scale; 1 excellent - 5: poor), 50% participation**
7. **Course:** BIO 360; Animal Physiology (366 undergraduate students)  
**Institution/Semester:** Arizona State University, Fall 2023  
**Instructor:** Ramon Velazquez Ph.D., Christos Katsanos Ph.D.  
**Duties:** Instructed course on two of the four units, focused on cell biology and the nervous system.  
**Student evaluation score. 1.56 Excellent-Very good score (scale; 1 excellent - 5: poor), 33.33% participation**
8. **Course:** BIO 394; Discussion of Animal Physiology (9 Honor undergraduate students)  
**Institution/Semester:** Arizona State University, Fall 2023  
**Instructor:** Ramon Velazquez Ph.D., Christos Katsanos Ph.D.  
**Duties:** Journal club discussion of Animal Physiology peer-reviewed articles  
**Course note evaluated.**
9. **Course:** NEU 591: Neuroscience Research Seminar (16 graduate students)  
**Institution/Semester:** Arizona State University, Fall 2023  
**Instructor:** Ramon Velazquez Ph.D. and Jeffrey Kordower Ph.D.  
**Duties:** Seminar designed to allow students to present their research projects, in addition to invited guest speakers  
**Student evaluation score. 1.57 Excellent-Very good overall score (scale; 1 excellent - 5: poor), 44% participation**
10. **Course:** BIO 498 (22 undergraduate): NEU 598 (3 PhD students); Neurodegenerative disorders of the Aging Brain  
**Institution/Semester:** Arizona State University, Spring 2024  
**Instructor:** Ramon Velazquez Ph.D.  
**Duties:** Developed course on behavioral, cellular and molecular underpinnings of brain disorders  
**Student evaluation score. 1.21 Excellent overall score (scale; 1 excellent - 5: poor), 68% participation**
11. **Course:** NEU 591: Neuroscience Research Seminar (19 graduate students)  
**Institution/Semester:** Arizona State University, Spring 2024  
**Instructor:** Ramon Velazquez Ph.D. and Jason Newbern Ph.D.  
**Duties:** Seminar designed to allow students to present their research projects, in addition to invited guest speakers  
**Student evaluation score. 1.67 Excellent-Very good overall score (scale; 1 excellent - 5: poor), 26% participation**

**II. Invited course guest lectures**

1. **Course:** BIO 498; Neu 598; Pathologies of the Aging Brain, undergraduate/graduate level, (10 students)  
**Institution/Semester:** Arizona State University, Fall 2017, Spring 2018  
**Instructor:** Salvatore Oddo Ph.D.  
**Duties:** Guest lecture on Alzheimer's disease
2. **Course:** NEU 576; Cellular and Molecular Neurobiology, graduate level (25 graduate students)  
**Institution/Semester:** Arizona State University, Fall 2018  
**Instructor:** Salvatore Oddo Ph.D.  
**Duties:** Guest lecture on Fetal alcohol syndrome and neurodevelopment
3. **Course:** PSY 591; Neurobiology of cognition, graduate level (10 graduate students)  
**Institution/Semester:** Arizona State University, Fall 2018  
**Instructor:** Heather Bimonte-Nelson Ph.D.  
**Duties:** Served as a mock NIH panel to review students' specific aims for grant proposals
4. **Course:** BIO 476; Cellular and Molecular Neuroscience (60 undergraduate students)  
**Institution/Semester:** Arizona State University, Fall 2019  
**Instructor:** Hong Lei, Ph.D.  
**Duties:** Lectured throughout the semester on Neurodegeneration, learning, memory and neuronal mechanisms
5. **Course:** BIO 467; Neurobiology, undergraduate level (300 undergraduate students)  
**Institution/Semester:** Arizona State University, Spring 2020  
**Instructor:** Jason Newbern, Ph.D.  
**Duties:** Lectured on Neurodegeneration and Alzheimer's Disease
6. **Course:** NEU 555; Human Systems Neuroscience, graduate level (20 graduate students)  
**Institution/Semester:** Arizona State University, Spring 2020  
**Instructor:** James Abbas, Ph.D.  
**Duties:** Lectured on the human learning and memory section of this course
7. **Course:** BIO 467; Neurobiology (60 undergraduate students)  
**Institution/Semester:** Arizona State University, Fall 2020  
**Instructor:** Joshua Klein, Ph.D.  
**Duties:** Provided multiple guest lectures throughout the semester on Neurodegeneration, Alzheimer's disease, learning, memory and neuronal mechanisms.
8. **Course:** BIO 467; Neurobiology (60 undergraduate students)  
**Institution/Semester:** Arizona State University, Spring 2021  
**Instructor:** Tim Balmer, Ph.D.  
**Duties:** Guest lectures on Alzheimer's disease
9. **Course:** NEU 555; Human Systems Neuroscience, graduate level (10 graduate students)  
**Institution/Semester:** Arizona State University, Spring 2021  
**Instructor:** James Abbas, Ph.D.  
**Duties:** Lectured on the human learning and memory section of this course
10. **Course:** BIO 467; Neurobiology (65 undergraduate students)  
**Institution/Semester:** Arizona State University, Fall 2021  
**Instructor:** Janet Neisewander Ph.D.  
**Duties:** Guest lecture on Alzheimer's disease
11. **Course:** BIO 476; Cellular and Molecular Neuroscience, undergraduate/graduate level (24 students)  
**Institution/Semester:** Arizona State University, Fall 2021  
**Instructor:** Joshua Klein, Ph.D.  
**Duties:** Guest lecture on Alzheimer's disease

- 12. Course:** BIO 467; Neurobiology (89 undergraduate students)  
**Institution/Semester:** Arizona State University, Spring 2022  
**Instructor:** Timothy Balmer Ph.D.  
**Duties:** Guest lecture on Alzheimer's disease
- 13. Course:** BIO 467 (18 undergraduate students); NEU 567 Neurobiology (16 graduate students)  
**Institution/Semester:** Arizona State University, Fall 2022  
**Instructor:** Joshua Klein Ph.D., Jason Newbern Ph.D.  
**Duties:** Lectured on Alzheimer's disease and led a peer-reviewed article discussion
- 14. Course:** PTX 301; Basics of pharmacology and toxicology (43 students)  
**Institution/Semester:** Arizona State University, Fall 2022  
**Instructor:** Maxwell Leung, Ph.D.  
**Duties:** Provided a lecture on Alzheimer's disease, choline and its importance for brain and body related functions

### **III. Teaching assistant courses**

- 1. Course:** Psychobiology, undergraduate level (300 students)  
**Institution/Semester:** California State University Long Beach, Fall 2005, Fall 2006, Spring 2007  
**Instructor:** Alexander Lynn Beckman Ph.D., Guido Urizar Ph.D.  
**Duties:** Preparation of syllabus, grading term papers, office hours to discuss topics with students.
- 2. Course:** Neurobiology of learning and memory, graduate level (25 students)  
**Institution/Semester:** Cornell University, Spring 2008  
**Instructor:** David Smith Ph.D.  
**Duties:** Led discussion of scientific papers, grading term papers, data entry
- 3. Course:** Obesity and the Control of Body Weight, undergraduate level (35 students)  
**Institution/Semester:** Cornell University, Summer 2013, Summer 2014  
**Instructor:** David Levitsky, Ph.D.  
**Duties:** Preparation of syllabus, office hours, exam preparation and grading

## **MENTORING**

Dr. Velazquez prides himself on mentoring the next generation of scientists and medical professionals. Dr. Velazquez is also heavily invested in mentoring students from underrepresented minorities given his own experience as a Hispanic in neuroscience and is now the director of the NIH funded Workforce Inclusion in Neuroscience through Undergraduate Research Experience (WINURE) program with this goal in mind.

We are very proud of the accomplishments made by students mentored in the Velazquez lab.

[Click here to see our success stories.](#)

### **Current Trainees**

#### **I. Post-Doctoral scholar:**

**1. Dr. Jessica Judd Ph.D.** – Primary mentor of Edson post-doctoral fellow Dr. Judd whose work investigates the mechanistic role of Rbbp7 in tau acetylation and subsequent neurodegeneration in Alzheimer's disease. (2021 - present).

#### **II. Graduate:**

**1. Savannah Tallino (Ph.D. student primary mentor)** - Primary mentor of Savannah's graduate work which investigates links between Down syndrome and Alzheimer's disease (2021 - present).

**2. Samantha Bartholomew (Ph.D. student primary mentor)** - Primary mentor of Samantha's graduate work which investigates the role of Dyrk1a in Down syndrome and Alzheimer's disease (2022 - present).

**3. James Bonner (Ph.D. student committee member)** – On James's Ph.D. committee whose primary mentor is Dr. Bertram Jacobs (2019 - present) at ASU. His work focuses on mechanisms associated with necroptotic cell death.

**4. Chelsea Tran** (Ph.D. student committee member) - On Chelsea's Ph.D. committee whose primary mentor is Dr. Robert Bowser at Barrow Neurological Institute in Phoenix AZ (2020 - present). Her work focuses on deciphering the molecular mechanisms associated with ALS.

**5. Sara Walton** (Ph.D. student committee member) – On Sara's Ph.D. committee whose primary mentor is Dr. Jeffrey Kordower (2022 - present) at ASU. Her work focuses on mechanisms associated with Parkinson's disease.

**6. Briana Ondatje** (Ph.D. student committee member) – On Briana's Ph.D. committee whose primary mentor is Dr. Rita Sattler (2022 – present) at ASU. Her work focuses examines the interplay between astrocytes and microglia, and how their interactions with one another contribute to Amyotrophic Lateral Sclerosis (ALS) onset and progression.

**7. Ashton Spillman** (Ph.D. student committee member) - On Ashton's Ph.D. committee whose primary mentors are Drs. Rita Sattler and Fredric Manfredsson (2022 – present) at ASU. His work focuses on the role of microglia in Amyotrophic Lateral Sclerosis (ALS) onset and progression.

**8. Bruna Genisa Costa Lima** (Ph.D. student committee member) - On Bruna's Ph.D. committee whose primary mentor is Dr. Esther Florsheim at ASU (2023-present). Her work focuses on the role of allergens on inflammation and neuronal function.

**9. Pavani Dadi** (Ph.D. Student committee member) – On Pavani's Ph.D. committee whose primary mentors are Dr. Dhara Shah and Abishek Shrivastava at ASU. Her work is focused on the understanding the role of gut bacteria in producing critical GABA neurotransmitter.

**10. Ashley Ruland** (M.S. Student co-chair) – Co-chair of Ashley's MS committee, whose primary mentor is Dr. Johnathan Lifshitz PhD at the University of Arizona. Her work is focused on mechanism associated with traumatic brain injury.

### **III. Undergraduate:**

**1. Rachel Etebari** – ASU undergraduate research assistant who is an underrepresented minority and is assisting in various projects in the lab (2022- present). She was accepted to the SOLUR program in Fall 2023.

**2. Alison Martin** - Mentored at ASU as part of the Barrett's Honor's college program. She will prepare and defend her thesis in Spring 2026 (2023 - present).

**3. Anastasia Culibrk** (2024-present) – Mentored at ASU as part of the Barrett's Honor's college program. Her work is focused on understanding links between dental hygiene and dementia.

**4. Shauna Meshkin** (2024-present) - Mentored at ASU as part of the Barrett's Honor's college program. Her work is focused on understanding interactions between dental hygienist and dementia patients.

**5. Bryce Mortensen** (2023-present) – Mentored at ASU as part of the Barrett's Honor's college program. His work is focused on understating why patients with Alzheimer's disease versus Lewy body dementia are misdiagnosed given common symptomology.

### **Former students**

#### **I. Post-Doctoral scholar:**

**1. Dr. Adrian Fisher Ph.D.** – Co-mentor on Dr. Fisher's Presidential post-doc committee, whose primary mentor was Dr. Brain Smith. Dr. Fisher's work focused on environmental stressors affecting insect pollinator health (2022-2023).

#### **V. Graduate students:**

**1. Kavya Balasubramanian (M.S. student committee member)** – On Kavya's committee member whose primary mentor was Drs. Jason Newbern and Heather Bimonte-Nelson. Her work examined the effects of ovariectomies on basal forebrain cholinergic dysfunction (2023-2024).

**2. Nicole Houchin (M.S. student committee member)** – On Nicole's committee whose primary mentor was Dr. David Medina at Barrow Neurological Institute. Her work focused on characterizing a novel mouse model of mutated Matrin3, a genetic mutation tied to ALS.

- 3. Gabrielle Kizeev (M.S. student committee member)** - On Gabrielle's committee whose primary mentor was Dr. Timothy Balmer (2022 - 2023) at ASU. Her work focused on cerebellar neurocircuitry.
- 4. Joanna Winstone (Ph.D. student primary mentor)** - Primary mentor of Joanna's graduate work who investigated the widely used pesticide glyphosate as a risk factor for Alzheimer's disease (2019 – 2023; defended June 26<sup>th</sup>, 2023).
- 5. Sara Knowles (Ph.D. student committee member)** - On Sara's Ph.D. committee whose primary mentor was Dr. Jason Newbern (2019 - 2023). Her work focused on the ERK1/2 pathway and its involvement in GABAergic neuron development.
- 6. Nikhil Dave – (M.S. student primary mentor)** - Mentored as a high school researcher and undergraduate in my lab. He was the recipient of the 2018 Arizona Flint Foundation Scholarship and was appointed Arizona Student Regents (2020 - 2022). He published various high impact papers on the role of Rbbp7 in Alzheimer's disease. He has accepted a position at McKinsey & Company Global Consulting as of October 2022.
- 7. Hannah Weisman (M.S. student committee member)** - Was on Hannah's committee whose primary mentor was Dr. Rita Sattler (2020 - 2022) at ASU. Her work focused on the role of progranulin in a mouse model of frontal temporal dementia.

## **VI. Undergraduate students:**

- 1. Zoe I. Lusher** – Mentored at Cornell University and was co-authored on one of my publications. She received her B.S. in 2012, an M.D. in 2018 and is now in her medical residency.
- 2. An L. Tran** – Mentored at Arizona State University as part of the Barrett's Honor's college program. She was co-authored on three of my publications (2015 – 2017). She was accepted into a Clinical nursing program at Georgetown university to start in Fall 2021.
- 3. Lukith Surendra** - Mentored at Arizona State University as part of the Barrett's Honor's college program. Defended his thesis in Spring 2020 and was accepted to U of A medical School class of 2024. (2018 - 2020).
- 4. Marc Mifflin** - Mentored at Arizona State University as part of the Barrett's Honor's college program. Defended his thesis in Spring 2020 and is currently applying to law school (2018 - 2020).
- 5. David Moreno** - Co-mentor of an undergraduate working in the laboratory of Elliot Mufson at Barrow Neurological Institute as part of the Barrett's Honor's college program (2019 - 2020). Defended his thesis in Spring 2020.
- 6. Mara-Clarisa Boiangiu** - Mentored at Arizona State University as part of the Barrett's Honor's college program. She defend her thesis in Spring 2022 and started a master's in public health at Georgetown. (2019 - 2022).
- 7. Oscar Villarreal Espinosa** – Undergraduate mentored at Arizona State University to receive more training in biomedical research. Graduated in 2021 and entered a medical program at the University of Wisconsin (2020 – 2021).
- 8. Leia Brookhouser** - Co-mentored in collaboration with Dr. Paul Coleman at Arizona State University as part of the Barrett's Honor's college program. She will prepare and defend her thesis in Spring 2022 (2020 - present).
- 9. Shelby Coup** - Co-mentored in collaboration with Dr. Paul Coleman at Arizona State University as part of the Barrett's Honor's college program. She defended Spring 2022 and applied to Physician assistant school (2020 - 2022).
- 10. Jennifer White** - Undergraduate mentored at Arizona State University to receive more training in biomedical research prior to graduating in Spring 2022 (2020 - 2021).
- 11. Landon Mattingly** – ASU Neuroscholar undergraduate student mentored at ASU to receive training in biomedical research (May 2022- July 2022).
- 12. Isabella Sepulveda** - WINURE undergraduate underrepresented minority student mentored at ASU to receive training in biomedical research prior to graduating in Spring 2023 (2021- 2023).
- 13. Neha Yeturu** – Barrett Honor College thesis director for ASU undergraduate who worked with Dr. Drake Duane on a case study of a patient with frontotemporal dementia (2022-2023).

**14. Kavya Balasubramanian** – Barrett Honor College thesis committee member for ASU undergraduate who completed work with Dr. Jason Newbern on ERK1/2 loss-of-function during basal forebrain cholinergic neuron development (2022-2023).

**15. Garima Paliania** – Mentored at ASU as a summer intern as part of the prestigious Khorana scholarship program awarded by the Indian department of biotechnology. This student worked on understanding the role of S6K1 knockdown in the PS19 mouse model of tauopathies (May – August 2023).

**16. Mena Abdullah** – Mentored at ASU as a part of the NIH funded STEP-UP program. This student work is on understanding the role of Rbbp7 in the PS19 mouse model of tauopathies, which was presented at NIH in Bethesda, MD on July 30, 2023 (2023 – present).

**17. Hector Leon** - WINURE undergraduate underrepresented minority student mentored at ASU to receive training in biomedical research prior to graduating in Spring 2024 (2023- present).

**18. Faizan Mistry** - Mentored at ASU as part of the Barrett's Honor's college program. He will prepare and defend her thesis in Spring 2024 (2021 - present).

### **PRESENT EMPLOYED STAFF – VELAZQUEZ LAB**

1. Julie Turk (B.S.) – Research Technician (2023 – present)
2. Wendy Winslow (B.S.) – Senior Research Laboratory Manager (2019 - present)
3. Ian McDonough (B.S.) – Student Worker (2019 - 2023), Research technician (2023 – present)