

RAMON VELAZQUEZ, Ph.D.

*Assistant Research Professor
Curriculum Vitae*

ASU-Banner Neurodegenerative Disease Research Center (NDRC)
The Biodesign Institute C, 797 E. Tyler Mall, Tempe AZ, 85287
Ramon.velazquez@asu.edu, (480) 965-4452

EDUCATION

- 2019 – Present **Assistant Research Professor, NDRC, Arizona State University, Tempe AZ**
- 2014 – 2018 **Post-Doctoral fellow, Arizona State University, Tempe AZ**
- 2008 - 2014 **Ph.D., Cornell University, Ithaca NY**
- 2002 - 2007 **B.A., California State University, Long Beach CA**

ACADEMIC / INDUSTRY EMPLOYMENT

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

Supervisors: Joshua LaBaer M.D., Ph.D., Eric Reiman M.D.

Position: Assistant Research Professor conducting Alzheimer's disease research to identify novel therapeutic targets and therapies to prevent as well as treat those in advance stages of this insidious disease.

2. 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.

3. Neuroscience consultant for Opti-Nutra (August 2016 – August 2018)

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

4. 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

5. 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

6. Genzyme Genetics (May 2007 - July 2007)

Director: Moacyr DaSilva M.D.

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

7. National Institute of Mental Health 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

AWARDED GRANTS / FELLOWSHIPS

1. P30 AG019610: Pilot grant (NIH Velazquez, PI), \$30,000 (2019-2020)

PI on a 1-year grant to collect preliminary data on the Pim1 kinases' involvement in Alzheimer's disease

2. R01 AG062500 HHS: NIH (Velazquez, PI) (2019-2024)

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

3. R01 AG059627 HHS: National Institutes of Health (NIH Velazquez, PI) (2019-2023)

PI on a grant to identify common mechanisms of neurodegeneration between Down syndrome and Alzheimer's Disease

4. Alzheimer's Association International Research Grant, \$174,999 (2016 - 2020)

PI on a 3-year grant to investigate Pim1 inhibition as a novel target for Alzheimer's disease leveraging a nanoparticle technology.

5. 1606833 National Science Foundation Post-Doctoral Research Fellowship, \$221,882 (2016 - 2018)

PI on a 2-year grant to elucidate the underlying molecular mechanisms linked to choline supplementation and healthy cognitive aging

6. National Science Foundation Graduate Research Fellowship, \$30,000/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.

7. Cornell University Sage Graduate Fellowship (2008 - 2010)

Two-year graduate funding plus 4 summers awarded to top incoming graduate students

8. National Institute of Mental Health Career Opportunities in Research Fellowship (2005 - 2007)

Undergraduate research training program

PENDING GRANTS

1. R01 National Institutes of Health (NIH) (Huentelman, PI; Velazquez Co-I)

Co-I on a grant to identify and develop Triggering Receptor Expressed on Myeloid Cells 2 (TREM2) agonists to prevent AD.

2. Edson Foundation Seed grant (ASU-Edson Foundation) (Velazquez PI)

PI on a proposal to determine if glyphosate exposure is associated with cognitive aging and AD in humans and mice

HONORS AND AWARDS

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 18th 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 Award (June 2012)

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

6. NBTS "Best student presentation Award" (June 2012)

Awarded by the Neurobehavioral Teratology Society for best presentation amongst students at the 2012 annual meeting.

7. Phi Beta Kappa (inducted May 2007)

Oldest undergraduate honors organization in the United States

INVITED SEMINARS / INTERVIEWS

1. Arizona PBS, Interview about "Common supplement for Alzheimer's disease", Oct. 8th, 2019.

2. Sip of Science Seminar hosted by the ASU Biodesign Institute – "Clues to curing Alzheimer's disease", March 2019

3. Arizona State University Biodesign Symposium "How to find a Post-Doctoral fellow position", November 2018.

4. Keynote Address, California State University Long Beach NIH funded "BUILD" research program, May 2017.

5. Oral presentation, 18th Annual Alzheimer's Drug Discovery Foundation (ADDF), September 2017.

PUBLICATIONS

* = First Co-authors

1. **Velazquez R (Corresponding author)**, 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](#)
2. **Velazquez R**, 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](#)
3. **Velazquez R**, 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](#)
4. 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*, [PMID: 30488653](#)
5. **Velazquez R**, 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](#)
6. **Velazquez R**, 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](#)
7. 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](#)
8. **Velazquez R**, 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](#)
9. Powers BP*, **Velazquez R***, 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](#)
10. 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](#)
11. 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](#)
12. 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](#)
13. 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](#)
14. 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](#)
15. 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](#)

16. **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](#)

PRESS RELEASES

<http://news.cornell.edu/stories/2013/09/more-choline-mom-decreases-down-syndrome-effects>

<https://asunow.asu.edu/20190108-essential-nutrient-may-help-fight-alzheimers-across-generations>

<https://www.sciencedaily.com/releases/2019/01/190108084424.htm>

<https://www.sciencedaily.com/releases/2019/09/190927122526.htm>

https://azpbs.org/horizon/2019/10/asu-researchers-looking-at-common-supplement-to-battle-alzheimers/?fbclid=IwAR0euN5l_CgP4r7pn_l2XDGy6RCinwliK_5XHh5e6Ff2nRfLBtFTEy7G2NY

SCIENTIFIC ABSTRACTS

1. **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. Society for Neuroscience (SFN), October 2019, Chicago IL.
2. Knowles S, **Velazquez R**, Caccamo A, Oddo S, 2018. Pim1 inhibition as a novel therapeutic strategy for Alzheimer's disease. SFN, November 2018.
3. **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.
4. 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.
5. **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.
6. **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.
7. **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.
8. Stokes AM, **Velazquez R**, Oddo S, Quarles C, 2017. "Development of preclinical MRI biomarkers in mouse models of Alzheimer's disease." AAC, May 2017.
9. **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.
10. **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.
11. **Velazquez R**, Shaw DM, Talboom JS, Oddo S, 2016. "Pim 1 inhibition as a novel therapeutic strategy for Alzheimer's disease." AAC, May 2016.
12. **Velazquez R**, Shaw DM, Talboom JS, Oddo S, 2015. "PRAS40 as a novel therapeutic target for Alzheimer's disease". SFN, October 2015, Chicago IL.

13. **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.
14. 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.
15. **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.*
16. **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.
17. 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.
18. 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.
19. 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.
20. **Velazquez R**, Menjivar J, Drumheller K, Lee DW, 2008. “Hippocampal damage induces cell proliferation in the septo-hippocampal system.” SFN, November 2008, Washington DC.
21. 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

1. Aging cell
2. FASEB
3. Behavioral Brain Research
4. Frontiers in: Aging Neuroscience and Behavioral Neuroscience
5. Nutrients

GRANT REVIEWER

1. Alzheimer’s Association
2. Florida Department of Health’s Ed and Ethel Moore Alzheimer’s Disease Research Program

TEACHING

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: Teaching assistant: 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: Teaching assistant: 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: Teaching assistant: preparation of syllabus, office hours, exam preparation and grading
- 4. Course:** Introduction to Psychology, “The brain and mental illness”, undergraduate level (25 students)
Institution/Semester: Cornell University, Fall 2013
Instructor: Ramon Velazquez
Duties: Developed course, syllabus preparation, led discussion, lectures, grading responsibilities.
- 5. Course:** Adult Psychopathology, undergraduate levels (500 students)
Institution/Semester: Cornell University, Spring 2014
Instructor: Harry Segal Ph.D.
Duties: Teaching assistant: led study sections, grading, lectures
- 6. Course:** 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
- 7. Course:** Cellular and Molecular Neurobiology, graduate level (25 students)
Institution/Semester: Arizona State University, Fall 2018
Instructor: Salvatore Oddo Ph.D.
Duties: Guest lecture on Fetal alcohol syndrome and neurodevelopment
- 8. Course:** Neurobiology of Memory and Aging, graduate level (10 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

MENTORING

- 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 will apply for Ph.D. programs in Biomedical engineering in the Fall of 2019.
- 3. Nikhil Dave** – Mentored at Arizona State University as a high school research trainee. He was the recipient of the 2018 Arizona Flint Foundation Scholarship and is currently pursuing his Bachelor’s in neuroscience (2016-2018).
- 4. Lukith Surendra** - Mentored at Arizona State University as part of the Barrett’s Honor’s college program. Currently, he has multiple interviews for medical school throughout the united states (2018-2019).
- 5. Marc Mifflin** - Mentored at Arizona State University as part of the Barrett’s Honor’s college program. I am a member of the students’ thesis committee (2018-present).
- 6. 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 - present).
- 7. Joanna Winstone** – Primary mentor of her graduate work which involves identifying common links between Down syndrome and Alzheimer’s disease (2010 – present).