

Andrew Voss Curriculum Vita

Current Position

Associate Professor 2018 – present
Department of Biological Sciences
Wright State University
Tel: (937) 775-3734
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Website: <https://andrewvosslab.org/>

Faculty Positions

Assistant Professor, California State Polytechnic University, Pomona 2009 – 2014
Assistant Professor, Wright State University 2014 – 2018

Education

- Postdoctoral Fellow, Physiology, UCLA David Geffen School of Medicine 2004 – 2009
Advisor: Ernest M. Wright
- Ph.D., Pharmacology and Toxicology, University of California, Davis 1999 – 2004
Advisor: Isaac N. Pessah (UCDavis Vet Med, Molecular Biosciences)
- Teaching Credential, National University, Sacramento, California 1997 – 1998
- B.S., Biochemistry, University of California, Davis 1994 – 1996
- Transfer Student, American River Community College, Sacramento, California 1991 – 1993

Research Bio

Currently, my laboratory examines skeletal muscle and neuromuscular physiology using electrophysiology, force measurements, molecular biology, and optics. We complete mechanistic studies that connect detailed biophysical and molecular mechanisms to in vivo muscle contractility. This approach has helped us reveal muscle dysfunction in disorders typically considered only neurodegenerative such as Huntington's disease and amyotrophic lateral sclerosis. Facilitating this broad but detailed approach are varied projects during training that include structure/function studies of the ryanodine receptor Ca²⁺ release channels and sodium-glucose cotransporters.

Research Grants

Awarded

1. Department of Defense W81XWH2110679 (\$464,329 direct and indirect costs). **Co-PI** (H. Ren is PI). Lipin1 Improves Dystrophic Mice. Grant funding is from Aug 2021 – Aug 2023.
2. NIH/NIAMS R01 AR077574 (\$1,849,454 direct and indirect costs). **Co-PI** (H. Ren is PI). The Role of Lipin1 in Myofiber Stability and Integrity. Grant funding is from July 2021 – May 2026.
3. NIH/NIA R03 AG065626 (\$165,425 direct and indirect costs). **Multi-PI**, Voss and Bannister (UMB). Impact of Rad-mediated inhibition of Cav1.1 on muscle composition and contractile function. Grant funding is from Aug 2020 – May 2022.
4. Autifony Pilot Project (\$22,500 direct and indirect costs). **PI**. This small contract was established with Autifony Therapeutic to determine the effects of a compound developed by Autifony to modulate action potentials in R6/2 Huntington's disease muscle. Grant funding is from Sept. 2020 – March 2021.
5. NIH/NINDS R01 AR074985 (\$2,689,890 in direct and indirect costs). **Co-PI** (M.Rich is PI). Novel Approaches to Therapy of Muscle Ion Channelopathies. Grant funding is from April 2019 – March 2024.

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6. NIH/NINDS R15NS099850 (\$454,967 in direct and indirect costs). **PI**. Determining if there is a primary myopathy in Huntington's disease. Grant funding is from July 2018 – June 2021.
7. Muscular Dystrophy Association, grant 378033 (\$251,000 in direct and indirect costs). **Co-PI** (Mark Rich, PI). Developing Therapy for Myotonia Congenita. February 2016 – January 2019.
8. NIH/NIGMS Score 3, SC3GM096945 (\$435,000 in direct and indirect costs). **PI**. Mechanism and function of a novel purinergic signaling cascade in skeletal muscle. April 2012 – March 2014.
9. CSUPERB Faculty-Student Collaborative Research: New Investigator Grant (\$15,000). **PI**. Skeletal muscle dysfunction in a transgenic mouse model of Huntington's disease. May 2012 – November 2013.
10. 2011 Cal Poly Pomona Faculty Professional Development Mini-Grant (\$1800). **PI**. Elucidating the role of protein kinase C in a novel skeletal muscle signaling mechanism. 6/2011
11. CSUPERB Faculty-Student Collaborative Research Seed Grant (\$14,987). **PI**. Examining a novel signaling mechanism in skeletal muscle: implications for treating muscle fatigue and myotonia. 5/2010 – 10/2011.
12. Provost's Teacher-Scholar Program at the Cal Poly Pomona (Summer Salary). **PI**. 6/2010 – 6/2012.
13. President's Research, Scholarship, and Creative Activity Award (\$4,973). **PI**. The effect of a novel signaling mechanism on active skeletal muscle. 2/2010.
14. NIH/NIDDK Ruth L. Kirschstein National Research Service Award, F32 DK072818. **PI**. Electrogenic glucose sensor of neuromuscular junction. 5/2006 – 5/2009.
15. NIH/NIEHS Training Grant, ES07059. **PI**. Awarded for research proposal to determine structure and function relationships of the ryanodine receptor. 10/2000 – 10/2003.

Patents

1. Inventor on U.S. and International Patent WO 2015/109107 A1. Treatment and diagnosis of Huntington's disease.

Publications

Peer-reviewed Journal Articles:

*Undergraduate Student

**Graduate Student

1. Xueyong Wang, Murad Nawaz*, Chris Dupont**, Jessica Meyers**, Steven R.A. Burke, Roger Bannister, Brent Foy, **Andrew A. Voss**, Mark M. Rich. The role of Action Potential Changes in Depolarization-Induced Failure of Excitation Contraction Coupling in Mouse Skeletal Muscle. [eLife 2022;11:e71588](#).
2. Briana Simpson**, Mark M. Rich, **Andrew A. Voss**, Robert J. Talmadge. Acetylcholine receptor subunit expression in Huntington's disease mouse muscle. [Biochemistry and Biophysics Reports. 2021 Volume 28, December, 101182](#).
3. Daniel R. Miranda**, **Andrew A. Voss**, and Roger A. Bannister. Into the spotlight: RGK proteins in skeletal muscle. [Cell Calcium. 2021, September, Volume 98, 102439](#).
4. Jessica H Myers**, Kirsten Denman**, Chris DuPont**, Ahmed A Hawash**, Kevin R Novak**, Andrew Koesters, Manfred Grabner, Anamika Dayal, **Andrew A Voss**, Mark M Rich. The mechanism underlying transient weakness in myotonia congenita. [eLife 2021;10:e65691](#).
5. Shannon H. Romer, Sabrina K Metzger**, Kristiana Peraza*, Matthew C. Wright*, D. Scott Jobe**, Long-Sheng Song, Mark M Rich, Brent D Foy, Robert J Talmadge and **Andrew A. Voss (corr auth)**. A mouse model of Huntington's disease shows altered ultrastructure of transverse tubules in skeletal muscle fibers. [Journal of General Physiology. 2021 April Vol. 153, Issue 4](#).

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- This article was highlighted by the journal with a Commentary, [Journal of General Physiology \(2021\) 153 \(6\): e202012843](#).
- Sandhya Ramani Sattiraju, Abdulrahman Jama**, Abdullah A. Alshudukhi**, Nicholas Edward Townsend, Daniel Reynold Miranda**, Rebecca R Reese, **Andrew A. Voss**, Hongmei Ren. Loss of membrane integrity drives myofiber death in lipin1 deficient skeletal muscle. [Physiological Reports. 2020, Vol 8 \(20\) e14620](#).
 - Daniel R. Miranda**, Eric Reed**, Abdulrahman Jama**, Michael Bottomley, Hongmei Ren, Mark M. Rich, and **Andrew A. Voss** (corr auth). Mechanisms of altered skeletal muscle action potentials in the R6/2 mouse model of Huntington's disease. [American Journal of Physiology – Cell Physiology. 2020, 319 \(1\) July, C218-C232](#).
 - Chris Dupont, Kevin Novak**, Kirsten Denman, Jessica H. Myers**, Jeremy M. Sullivan, Phillip V, Walker II**, Nicklaus L. Brown, David R. Ladle, Laurent Bogdanik, Cathleen M. Lutz, **Andrew A. Voss**, Charlotte J. Sumner, and Mark M. Rich. TRPV4 antagonism prevents mechanically induced myotonia. [Annals of Neurology. 2020 Vol. 88, No. 2, 297–308](#).
 - Xueyong Wang, Steven R.A. Burke**, Robert J. Talmadge, **Andrew A. Voss** (co-corr auth), and Mark M. Rich (co-corr auth). Depressed neuromuscular transmission causes weakness in mice lacking BK potassium channels. [Journal of General Physiology. 2020, 152 \(5\): e201912526](#).
 - This article was highlighted by the journal with a Research News article, [Journal of General Physiology. 2020, 152 \(5\): e202012616](#).
 - Faculty Opinions (formerly f1000Prime) recommendation (<https://f1000.com/prime/737867914>)
 - Sabrina Metzger**, Chris Dupont, **Andrew A. Voss**, and Mark M. Rich. The central role of subthreshold currents in myotonia. [Annals of Neurology. 2020 Vol. 87, No. 2, 175–183](#).
 - Chris Dupont, Kirsten S. Denman, Ahmed A. Hawash**, **Andrew A. Voss**, and Mark M. Rich. Treatment of Myotonia Congenita with Retigabine in Mice. [Experimental Neurology. 2019 Vol. 315, 52-59](#).
 - Steven R.A. Burke**, Eric J. Reed**, Shannon H. Romer, and **Andrew A. Voss** (corr auth). Levator Auris Longus Preparation for Examination of Mammalian Neuromuscular Transmission Under Voltage Clamp Conditions. [J. Vis. Exp. \(135\), e57482, doi:10.3791/57482 \(2018\)](#).
 - Ahmed Hawash, **Andrew A. Voss** (co-corr auth), and Mark M. Rich (co-corr auth). Inhibiting persistent inward sodium currents prevents myotonia. [Annals of Neurology. 2017 Vol. 82, No. 3, 385-395](#).
 - Ahmad Khedraki**, Eric J. Reed**, Shannon H. Romer, Qingbo Wang, William Romine, Mark M. Rich, Robert J. Talmadge, and **Andrew A. Voss** (corr auth). Depressed Synaptic Transmission and Reduced Vesicle Release Sites in Huntington's Disease Neuromuscular Junctions. [Journal of Neuroscience. 2017 Aug 23, 37\(34\):8077-91](#).
 - Featured on the cover of the Aug. 23 issue.
 - Daniel R. Miranda**, Monica Wong**, Shannon H. Romer, Cynthia McKee*, Gabriela Garza-Vasquez*, Alyssa C. Medina*, Volker Bahn, Andrew D. Steele, Robert J. Talmadge, and **Andrew A. Voss** (corr auth). Progressive Cl⁻ channel defects reveal disrupted skeletal muscle maturation in R6/2 Huntington's mice. [Journal of General Physiology. 2017 Jan;149\(1\) 55-74](#).
 - Highlighted with a Commentary, Martin Skov and Robert T. Dirksen. Trojan triplets: RNA-based pathomechanisms for muscle dysfunction in Huntington's disease. [Journal of General Physiology. 2017 Jan;149\(1\) 49-53](#).
 - Donald Beqollari, Christian F. Romberg, Gabriella Dobrowolny, Martina Martini, **Andrew A. Voss**, Antonio Musarò, and Roger A. Bannister. Progressive impairment of Cav1.1 function in the skeletal muscle of mice expressing a mutant type 1 Cu/Zn superoxide dismutase (G93A) linked to amyotrophic lateral sclerosis. [Skeletal Muscle. 2016 Jun 23;6:24](#).

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17. **Christopher W. Waters, *Grigor Varuzhanyan, Robert J. Talmadge, and **Andrew A. Voss** (*corr auth*). Huntington's disease skeletal muscle is hyperexcitable owing to chloride and potassium channel dysfunction. [*Proceedings of the National Academy of Sciences*. 2013 May;**110**\(22\): 9160-65.](#)
 - Faculty of 1000 Recommendation (<https://f1000.com/prime/723892806>)
18. Charles S. Hummel, C Lu, Donald D. Lu, Bruce Hirayama, **Andrew A. Voss** and Ernest M. Wright. Glucose transport by human renal Na⁺/D-glucose cotransporters SGLT1 and SGLT2. [*American Journal of Physiology – Cell Physiology*. 2011 Jan;**300**\(1\):C14-21.](#)
 - Faculty of 1000 Recommendation (<https://f1000.com/prime/6016957>)
19. **Andrew A. Voss** (*corr auth*). Extracellular ATP inhibits chloride channels in mature mammalian skeletal muscle by activating P2Y₁ receptors. [*Journal of Physiology-London*. 2009 **587**: 5739-5752.](#)
20. **Andrew A. Voss**, Paul D. Allen, Isaac N. Pessah and Claudio F. Perez. Allosterically coupled calcium and magnesium binding sites are unmasked by ryanodine receptor chimeras. *Biochemical and Biophysical Research Communications*. 2008 Feb;**366**: 988-93.
21. **Andrew A. Voss** (*corr auth*), Ana Diez-Sampedro, Bruce Hirayama, Donald D.F. Loo and Ernest M. Wright. Imino sugars are potent agonists of the human glucose sensor SGLT3. *Molecular Pharmacology*. 2007 Feb;**71**(2):628-634.
22. Jun Gao, **Andrew A. Voss**, Isaac N. Pessah, Fredine Lauer, Trevor Penning and Scott W. Burchiel. Ryanodine receptor-mediated rapid increase in intracellular calcium induced by 7,8-benzo(a)pyrene quinone in human and murine leukocytes. *Toxicological Sciences*. 2005 Oct;**87**(2):419-426.
23. **Andrew A. Voss**, Jozsef Lango, Michael Ernst-Russell, Dexter Morin and Isaac N. Pessah. Identity of redox-sensitive hyperreactive cysteines within ryanodine receptor type 1. *The Journal of Biological Chemistry*. 2004 Aug;**279**(33):34514-20.
24. Claudio F. Perez, **Andrew A. Voss**, Isaac N. Pessah and Paul D. Allen. RyR1/RyR3 chimeras reveal that multiple domains of RyR1 are involved in skeletal-type E-C coupling. *Biophysical Journal*. 2003 Apr;**84**(4):2655-63.

Abstracts:

*Undergraduate Student co-author

**Graduate Student co-author

1. Steven R.A. Burke**, Mark M. Rich and **Andrew A. Voss**. In vivo force experiments suggest calcium handling defects during repetitive activity in Huntington's disease skeletal muscle. Biophysical Society 64th Annual Meeting, San Diego, CA, February 18, 2020.
2. Xueyong Wang, Steven R.A. Burke**, Chris Dupont, Daniel R. Miranda**, Eric J. Reed**, Mark M. Rich and **Andrew A. Voss**. An important role of large conductance Ca²⁺- and voltage-activated K⁺ (BK) channels in motor and skeletal muscle function. Poster at Gordon Research Conference - Muscle: Excitation-Contraction Coupling, Renaissance Tuscany II Ciocco in Lucca (Barga) Italy. May 19-24, 2019.
3. Daniel R. Miranda**, Eric J. Reed**, Mark M. Rich and **Andrew A. Voss**. Skeletal Muscle Excitation in Huntington's Disease. Poster at Gordon Research Conference - Muscle: Excitation-Contraction Coupling, Renaissance Tuscany II Ciocco in Lucca (Barga) Italy. May 19-24, 2019.
4. Shannon H. Romer, Melissa A. Bautista, Daniel Hutcherson*, Robert J. Talmadge, and **Andrew A. Voss**. Architecture of Transverse Tubules and Triads in Huntington's Disease Skeletal Muscle. Biophysical Society 62nd Annual Meeting, San Francisco, CA, February 20, 2018.
5. Shannon H. Romer, **Ahmad Khedraki, **Eric J. Reed, Qingbo Wang, Robert J. Talmadge, Mark M. Rich, and **Andrew A. Voss**. Neuromuscular transmission and muscle hyperexcitability in Huntington's disease. Annual Meeting for the Society of Neuroscience, Washington, D.C.,

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November 14, 2017.

6. Shannon H. Romer, Ang Guo, Long-Sheng Song, and **Andrew A. Voss**. Transverse tubular architecture in Huntington's disease skeletal muscle. Poster at Gordon Research Conference - Muscle: Excitation-Contraction Coupling, Les Diablerets, Switzerland, June 4-9, 2017.
This poster was featured in oral poster preview session.
7. **Andrew A. Voss**, Daniel R. Miranda**, Monica Wong**, Shannon H. Romer, Volker Bahn, and Robert J. Talmadge. Early Cl⁻ and K⁺ channel defects in Huntington's disease skeletal muscle reveal disrupted maturation. Poster at Muscular Dystrophy Association Scientific Conference, Arlington, VA, March 19-22, 2017.
8. **Eric J. Reed, Mark M. Rich, and **Andrew A. Voss**. Fast voltage-gated sodium channel activity in Huntington's disease skeletal muscle. Poster at 31st Annual Meeting of the Ohio Physiological Society, Columbus, OH, November 19, 2016.
Eric Reed was selected as an oral presenter.
9. **Eric J. Reed, Mark M. Rich, and **Andrew A. Voss**. Fast voltage-gated sodium channel activity in Huntington's disease skeletal muscle. Poster at Society of General Physiologists 70th Annual Symposium, Woods Hole, MA, September 7-11, 2016.
Eric J. Reed was selected as a speaker for this project.
10. **Ahmed Hawash, **Andrew A. Voss**, and Mark M. Rich. Discovery of a persistent inward current in skeletal muscle with characteristics suggesting it plays a central role in triggering myotonia in myotonia congenita. Society of General Physiologists 70th Annual Symposium, Woods Hole, MA, September 7-11, 2016.
Ahmed Hawash was selected as a speaker for this project.
11. **Ahmad Khedraki, *Eric J. Reed, Mark M. Rich, and **Andrew A. Voss**. Increased probability of release in Huntington's disease neuromuscular junctions. Annual Experimental Biology Meeting, San Diego, CA, April 2-6, 2016.
12. **Ahmad Khedraki and **Andrew A. Voss**. Neuromuscular Transmission in Huntington's disease. Poster at Gordon Research Conference - Muscle: Excitation-Contraction Coupling, Newry ME, June 3-4, 2015.
Awarded Best Student Poster
13. **Daniel R. Miranda, **Monica Wong, *Cynthia M. Mckee, Volker Bahn, Robert J. Talmadge, and **Andrew A. Voss**. Progressive defects in chloride channel activity and mRNA processing in Huntington's disease skeletal muscle. 10th Annual Cal Poly Pomona College of Science Research Symposium, May 29, 2015.
14. **Daniel R. Miranda, **Monica Wong, *Cynthia M. Mckee, *Michelle Mendizabal, Robert J. Talmadge, and **Andrew A. Voss**. Age-dependence of chloride and potassium channel dysfunction in Huntington's disease skeletal muscle. Annual Meeting for the Society of Neuroscience, Washington, D.C., November 15, 2014.
15. **Andrew A. Voss**, **Christopher W. Waters, *Grigor Varuzhanyan, and Robert J. Talmadge. Hyperexcitability in Huntington's disease skeletal muscle caused by chloride and potassium channel dysfunction. Society of Neuroscience Annual Meeting, November 2013.
16. **Christopher Waters, *Grigor Varuzhanyan, Robert J. Talmadge, and **Andrew A. Voss**. Chloride and potassium channel dysfunction in Huntington's disease skeletal muscle causes hyperexcitability. 8th Annual Cal Poly Pomona College of Science Research Symposium, May 31, 2013.
17. *Michelle Mendizabal, *Cynthia McKee, *Monica Wong, and **Andrew A. Voss**. Electrical model of the cell membrane. 8th Annual Cal Poly Pomona College of Science Research Symposium, May 31, 2013.
18. **Christopher Waters, *Grigor Varuzhanyan, and **Andrew A. Voss**. Chloride and potassium channel dysfunction in the skeletal muscle of Huntington's disease. Inaugural Cal Poly Pomona Student Research Conference, March 1, 2013.

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19. *Varuzhanyan, G., **Waters, C.W., and **Voss, A.A.** Motor defects in Huntington's disease caused by chloride and potassium channel dysfunction in skeletal muscle. 25th Annual CSU Biotechnology Symposium, Anaheim, CA, January 3-5, 2013.
20. *Varuzhanyan, G., **Waters, C.W., and **Voss, A.A.** Reduced chloride conductance causes muscle hyperexcitability and contributes to the motor dysfunction of Huntington's disease. 2012 Southern California Conference for Undergraduate Research (SCCUR), CSU Channel Islands, November 17, 2012.
21. *Varuzhanyan, G., **Waters, C.W., **Yoshino, K., and **Voss, A.A.** The role of PLC in the purinergic regulation of chloride channels in mammalian skeletal muscle. 2011 Southern California Conference for Undergraduate Research (SCCUR), Mount San Antonio College, Walnut CA, November 19, 2011.
22. **Voss, A.A.** Examining a novel signaling mechanism in skeletal muscle. Cal Poly Pomona CCRAA 2011 Summer Research Seminar Series, August 17, 2011.
23. *King, D., and **Voss, A.A.** Effects of extracellular ATP on mammalian muscle. 2011 Cal Poly Pomona McNair Symposium, July 28, 2011.
24. *King, D., and **Voss, A.A.** Effects of extracellular ATP on mammalian muscle. 19th Annual Ronald E. McNair Scholars Symposium, Berkeley, CA, August 4-7, 2011.
25. *Varuzhanyan, G., **Waters, C.W., **Yoshino, K.Y., * King, D., and **Voss, A.A.** Elucidating the mechanism of a novel purinergic signaling cascade in mammalian muscle. Cal Poly Pomona RISE, CCRAA & McNair Summer Research Symposium, September 2, 2011.
26. **Voss, A.A.** and Vergara, J. ATP Regulates Mammalian Neuromuscular Transmission by Dramatically Decreasing the Resting Muscle Chloride Conductance via P2Y1. Biophysical Society Annual Meeting, 2009.
27. **Voss, A.A.**, Diez-Sampedro, A., Hirayama, B., Loo, D.D.F., and Wright, E.M. Imino Sugars are Potent Agonists of the Human Glucose Sensor SGLT3. Experimental Biology Annual Meeting, 2007.
28. **Voss, A.A.**, Feng, W., Allen, P.D., Perez, C.F. and Pessah, I.N. Allosteric Mechanism of RyR Cation Regulation and Conductance States are Unmasked by RyR3/RyR1 Chimera. Biophysical Society Annual Meeting, 2004.
29. **Voss, A.A.**, Ernst-Russell, M., Lango, J. and Pessah, I.N. Identity of Redox-Sensitive Hyperreactive Cysteines within Ryanodine Receptor Type 1. Biophysical Society Annual Meeting, 2004.
30. Lauer, F.T., Gao, J., **Voss, A.A.**, Pessah, I.N. and Burchiel, S.W. Benzo (a) pyrene Metabolites Increase Intracellular Ca^{2+} in a Human B Cell Line. Mountain West Chapter of the Society of Toxicology Annual Meeting, 2003.
31. **Voss, A.A.**, Perez, C.F., Allen, P.D, and Pessah, I.N. RyR₃/RyR₁ Chimeras Unmask Two Mechanisms of Mg^{2+} Inhibition: Competition with Calcium and Allosterism. University of California, Davis, Center for Environmental Health Sciences Annual Meeting, 2003.
32. **Voss, A.A.**, Perez, C.F., Allen, P.D. and Pessah, I.N. RyR₃/RyR₁ Chimeras Unmask Two Mechanisms of Mg^{2+} Inhibition: Competition with Calcium and Allosterism. Biophysical Society Annual Meeting 2003.

Presentations

Invited Speakerships

1. University of Maryland Interdisciplinary Training Program in Muscle Biology. *Contributions of skeletal muscle defects to Huntington's disease*. Baltimore, Maryland, November 10, 2021.
2. Colloquia in Cellular Signalling, Medical University of Vienna. *An important role of large conductance Ca^{2+} - and voltage-activated K^+ (BK) channels in motor and skeletal muscle function*. Vienna, Austria, May 17, 2019.

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3. Huntington Study Group 2018 Meeting, Unlocking HD. Speaker at main session. *What if peripheral isn't peripheral? A look at Huntington skeletal muscle*. Houston, TX, November 8 – 10, 2018.
4. Muscular Dystrophy Association Scientific Conference, Channelopathies Session. *Early Cl⁻ and K⁺ channel defects in Huntington's disease skeletal muscle reveal disrupted maturation*. Arlington, VA, March 20, 2017.
5. University of Colorado Anschutz Integrated Physiology Program Seminar. *Early and Progressive Skeletal Muscle Defects in Huntington's Disease*. Denver, CO, March 11, 2016.
6. Ohio Miami Valley Chapter of the Society for Neuroscience Winter Meeting. *Neuromuscular transmission in Huntington's disease*. University of Cincinnati. January 29, 2016.
7. Wright State University Department of Biochemistry and Molecular Biology Seminar Series. *Ion channel and mRNA processing defects in Huntington's disease skeletal muscle*. Dayton, OH. January 28, 2016.
8. NIH RISE Seminar. *Progressive muscle defects and neuromuscular transmission in Huntington's disease*. California State Polytechnic University, Pomona. January 15, 2016.
9. Washington University of St. Louis Center for the Investigation of Membrane Excitability Diseases EXCITE Seminar. *Early and progressive excitability defects in Huntington's disease skeletal muscle*. St. Louis, MO. December 7, 2015.
10. Neurology Grand Rounds, Wright State University Boonshoft School of Medicine. *Skeletal muscle excitability defects in Huntington's disease*. Dayton, OH. September 14, 2015.
11. Gordon Research Conference, Muscle: Excitation-Contraction Coupling. *Excitation defects in Huntington's disease skeletal muscle*. Newry, ME. June 3, 2015
12. Neurology Grand Rounds, Ohio State University Wexner Medical Center. *Hyperexcitable skeletal muscle – is Huntington's disease also a muscle disorder?* Columbus, OH. October 7, 2014.
13. Cal Poly Pomona Department of Biological Sciences Seminar Series. *Skeletal muscle dysfunction in Huntington's disease*. Pomona, CA. May 11, 2012.
14. UCLA Neuroscience, Channelopathy Talks. *Extracellular ATP inhibits chloride channels in mature mammalian skeletal muscle by activating P2Y₁ receptors*. Los Angeles, CA. June 18, 2010.

Other Research Presentations

1. Cal Poly Pomona CCRAA 2011 Summer Research Seminar Series. Examining a novel signaling mechanism in skeletal muscle. August 17, 2011.
2. Cal Poly Pomona Provost's Symposium on Faculty Scholarship. Can more ATP cause fatigue? Novel insights into exercising muscle, December 11, 2009
3. UCLA David Geffen School of Medicine, Physiology Seminar Series. ATP Shapes Neuromuscular Transmission in Developed Mammalian Skeletal Muscle. April 2008
4. Pharmacology and Toxicology Symposium, UC Davis. Identity of Redox-Sensitive Hyperreactive Cysteines within Ryanodine Receptor Type 1. September 2003
5. Pharmacology and Toxicology Symposium, UC Davis. ³H-ryanodine Binding Analysis of Ryanodine Receptor Chimeras. April 2002.

Teaching Presentations (invited guest lectures)

1. Seminar in Animal Research (AVS 463) at Cal Poly Pomona. Skeletal muscle dysfunction in Huntington's disease. May 16, 2012.
Explained my laboratory's use of animal model of Huntington's disease.
2. Seminar in Biophysics (BIO/PHY 410) at Cal Poly Pomona. Dysfunction in Huntington's disease skeletal muscle: membrane properties. February 29, 2012.

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Used an electric circuit model of the muscle membrane to explain my research on skeletal muscle dysfunction in Huntington's disease.

Professional Memberships

American Physiological Society	July 2007 – present
Biophysical Society	October 2008 – present
Society for Neuroscience	April 2013 – present
Ohio Physiological Society	November 2016 – present
Society of General Physiologists	May 2016 – present

Journal Reviewer

Proceedings of the National Academy of Sciences, Frontiers in Pediatrics: Pediatric Neurology, Frontiers in Physiology: Membrane Physiology and Membrane Biophysics, Physiological Reports, Neurochemistry International, Neuropharmacology, Neuromuscular Disorders, Neuroscience, Frontiers in Physiology: Striated Skeletal Muscle, American Journal of Physiology: Cell Physiology, Journal of Gerontology, Biological Sciences, Journal of Applied Physiology, Canadian Journal of Physiology and Pharmacology

Grant Review

2015 and 2017, invited MRC external reviewer (UK).
2013, CSUPERB New Investigator Grant Program in San Jose, CA

Miscellaneous Awards/Honors

Elected President of the Ohio Physiological Society	September 2018 – September 2019
American Institute of Biological Sciences (AIBS) Congressional Visit	November 6, 2013
Host a visit by U.S. Congressional Representative Gloria Negrete McLeod to my research laboratory	
Selected to participate in the NIH Early Career Reviewer Program	August 2011 – present
Best Poster, UC Davis, Center for Environmental Health Sciences Annual Meeting	August 2003
Awarded for poster entitled: RyR ₃ /RyR ₁ Chimeras Unmask Two Mechanisms of Mg ²⁺ Inhibition: Competition with Calcium and Allosterism	
Phi Sigma Honor Society, Gamma Delta Chapter	June 1996
Awarded for achievements in biological research as an undergraduate	

Teaching Experience

Wright State University	2014 – present
<ul style="list-style-type: none">• Exercise Physiology (BIO3530) – This lecture and laboratory course covers nutrition and exercise physiology for pre-health and applied physiology undergraduates.• Neuromuscular Physiology (BIO4020) – This is an integrated writing, capstone course focused on neuromuscular physiology that uses lecture and primary literature.• Cell Biology and Physiology (BIO4030) – This is a senior course that integrates molecular biology and cell physiology.• Cell Biology (BIO7300) – This is a graduate course in which I cover nerve and muscle physiology using a combination of lectures, assignments, and primary literature.	
California State Polytechnic University, Pomona	2009 – 2014
<ul style="list-style-type: none">• Human Physiology lecture and laboratory (BIO235/L) – This is a sophomore level course offered every quarter and provides a basic, integrative introduction to human physiology. Cellular and molecular mechanisms are emphasized.	

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- Advanced Topics in Biology: Neuromuscular Physiology (BIO575) – This is a graduate course focused on neuromuscular physiology that uses lecture and primary literature.
- Advanced Topics in Biology: Animal Models & Muscle Disease (BIO575) – This is a graduate course focused on animal model used to study neuromuscular diseases that uses lecture and primary literature.
- Basic Biology (BIO115) – A survey of basic biology for non-biology majors.

California State University, Los Angeles March 2009 – June 2009
Animal Physiology – Developed and taught the second half of a two quarter, upper division course in Animal Physiology, including lecture and laboratory.

University of California, Davis September – December 2001
Teaching assistant and lecturer in PTX 202, a graduate level core class in pharmacology and toxicology on molecular mechanisms - I discussed the function of soluble receptors

Hiram Johnson High School, Sacramento, CA August 1998 – June 1999
Full-time chemistry teacher responsible for over 150 students in grades 9-12

Mesa Verde High School, Citrus Heights, CA June – August 1998
Biology teacher in summer school session for students in grades 9-12

Mentor for Undergraduate Students in Research Programs

- 2011 Ronald E. McNair Scholar Program mentor for Mr. Deandre King
- 2011 Louise Stokes Alliance for Minority Participation (LSAMP) Student Research Experience mentor for Mr. Greg Varuzhanyan
- 2011 College Cost Reduction and Access Act (CCRAA) Award mentor for Mr. Greg Varuzhanyan
- 2011 California Institute for Regenerative Medicine (CIRM) undergraduate research program for Mr. Greg Varuzhanyan
- 2011 Science Educational Enhancement Services (SEES) Faculty Mentor for Mr. Jesse Morris
- 2012 NIH Research Initiative for Scientific Enhancement (RISE) Program mentor for Mr. Daniel Miranda and Mr. Jesse Morris
- 2013 Science Educational Enhancement Services (SEES) Faculty Mentor for Ms. Michelle Mendizabal
- 2013 Ronald E. McNair Scholar Program mentor for Ms. Cynthia McKee
- 2013 Ronald E. McNair Scholar Program mentor for Mr. Gabriela Garza-Vazquez

Committees/Service

Wright State University

- Biological Sciences Department:
 - Seminar Committee, member.
 - Grad Committee, member.
- College of Science and Mathematics:
 - Neuroscience Advisory Committee, member.
 - Biomedical Sciences PhD Program Nominating Committee, member.
- University:
 - Athletics Council, member, served as member of the Student Welfare and Student Diversity Committees.
 - Wright State University Institutional Animal Care and Use Committee (IACUC), member.
- Professional:

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- Poster judge for 2021 the annual meeting of Ohio/Miami Valley section of the Society for Neuroscience.
- Review editor for *Frontiers Physiology*
- President of the Ohio Physiological Society

Cal Poly Pomona

- Biological Sciences Department: Long-Term Planning Committee, chair; Teaching Award, member; Neuroscience Search Committee, member; Bioinformatics Search Committee, member; and Zoology Major/Option Committee, member
- College of Science Service: RISE, member, Seminar Speaker Recruiter and Host; and College of Science Research Task Force, member
- University Service: University Radiation Safety Committee, member, and chair; Cal Poly Pomona Residence Hall Speaker; McNair Scholars Program, evaluate student rehearsals.
- Community Service: 2012 iPoly High School Science Fair, Poster Judge; McNair Scholars Cal Poly Pomona 2011 Annual Symposium, Session Moderator; Southern California Academy of Sciences 2011 Annual Meeting, Poster Judge

Graduate School

- School of Veterinary Medicine's Research Committee and Pharmacology/Toxicology Committee on Educational Policy