

Curriculum Vitae
Eric R. Gross MD, PhD, MS

I. Personal Information:

Work Address: Stanford University
 Department of Anesthesiology, Perioperative and Pain Medicine
 Grant Building, Room S268b
 Stanford, California 94305-5640

Profiles: http://med.stanford.edu/profiles/Eric_Gross/
 <http://med.stanford.edu/grosslab/>
 Twitter: @gross_lab; @ericrgross

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II. Educational Background and Training:

Education:

2000-2007 Medical College of Wisconsin, Milwaukee, WI
 Medical Scientist Training Program
 Doctor of Medicine (2007)
 Doctor of Philosophy in Pharmacology (2005)
 Thesis: "Opioid-induced Infarct Size Reduction: Central Role of Glycogen
 Synthase Kinase Beta"
 Advisor: Garrett J. Gross, PhD

1998-2000 Marquette University, Milwaukee, WI
 Alpha Sigma Nu Scholarship (full tuition)
 Department of Engineering
 Masters of Science, Biomedical Engineering
 Thesis: "The Effects of Acute Hyperglycemia on Oxidant and Mechanical
 Stress"
 Advisor: Lars E. Olson, PhD

1993-1997 Marquette University, Milwaukee, WI
 Pere Marquette Scholarship (half tuition)
 Bachelor of Science, Biomedical Engineering, *Magna Cum Laude*

Residency and Fellowship Training:

2008-2012 Stanford University, Stanford, CA
 Physician Scientist Training Program: Fellowship in Anesthesia Research
 and Medicine (FARM program)
 Dr. Daria Mochly-Rosen Laboratory

2008-2011 Stanford University, Stanford, CA
 Resident, Anesthesiology

2007-2008 St. Joseph Hospital, Milwaukee, WI
Transition Year Resident

Licensure and Certification:

2008-Pres Medical License, #A105620, State of California
2008-Pres DEA License
2013 Anesthesiology Board Certification, Certification #50941

III. Professional Appointments:

Dec 2022-Present Associate Professor with Tenure, Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University, Stanford, CA
Sept 2014-Nov 2022 Assistant Professor (Tenure Track), Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University, Stanford, CA
July 2011- Sept 2014 Instructor, Department of Anesthesiology, Perioperative and Pain Medicine, Stanford, CA
July 2007- June 2008 Adjunct Instructor, Department of Pharmacology, Medical College of Wisconsin, Milwaukee, WI
Feb 2003- May 2005 Adjunct Faculty, College of Health Sciences, Carroll University, Waukesha, WI

IV. Honors and Awards:

2022 Best of Basic Science Abstract, Anesthesiology Annual Meeting, Neuroscience (selected as one of 12 out of the 655 total abstracts submitted)
2022 Best of Basic Science Abstract, Anesthesiology Annual Meeting, Cardiovascular (selected as one of 12 out of the 655 total abstracts submitted)
2021 Best of Meeting Award as Senior Author, International Anesthesia Research Society (1 award given to the best basic science abstract from ~500 submissions to meeting)
2019 Invited Visiting Professor, Anesthesiology, University of California San Francisco
2019 Certificate of Appreciation, American Physiological Society as UGREF mentor program
2019 Invited Visiting Professor, Pharmacology, Weill Cornell Medicine, New York, NY
2019 Invited Visiting Professor and Keynote Lecture, Anesthesiology, Ruijin Hospital, Shanghai, China
2018 Top 10% of reviewers, *Anesthesiology* (also awarded in 2015 and 2016)
2018 Certificate of Appreciation, American Physiological Society as UGREF mentor program
2017 Invited Visiting Professor, Anesthesiology, Washington University, St. Louis, MO
2017 3rd place research award, California Society of Anesthesiologists Annual Meeting
2016 NIGMS early career MIRA award recipient, NIH
2015 Best Overall Poster Presentation, Basic Science, Academic University Anesthesiologists Annual Meeting Nashville, TN (1 award given to the best basic science poster for the meeting),

- 2014 American Association of Anesthesiologists, Elected Member
- 2013 Best of Meeting, International Anesthesia Research Society Annual Meeting, San Diego, CA (1 award given to the best basic science abstract for the meeting)
- 2013 Best of Category Abstract Award Winner, Cardiac Anesthesia, International Anesthesia Research Society Annual Meeting, San Diego, CA
- 2011 Stanford Anesthesiology Resident Research Award, Stanford University (1 award given upon graduation)
- 2010 New York Society of Anesthesiologists Resident Research Award, 1st place
New York Society of Anesthesiologists, New York, NY
- 2010 Kosaka Award Finalist (1 of 5), International Anesthesia Research Society Annual Meeting Honolulu, HI
- 2010 1st Place Award, Research, Western Anesthesia Resident Conference
- 2010 3rd Place Award, Research, Cal. Society of Anesthesiologists
- 2008 Foundation for Anesthesia and Research Scholar- ASA National Meeting, Orlando, FL
- 2005 Graduate Student Travel Award, American Society of Pharmacology and Experimental Therapeutics, Experimental Biology National Meeting
- 2005 Young Investigator Award, Runner-Up, International Society For Heart Research
- 2005 Summer Institute for Medical Students, Betty Ford Center
- 2004 Proctor and Gamble Professional Opportunity Award, Cardiac Physiology, Experimental Biology National Meeting.
- 2004 2nd Place, Cardiovascular Pharmacology Student Competition, Experimental Biology National Meeting
- 2004 World Congress Travel Award, International Society for Heart Research XVIII, Brisbane, Australia
- 2003 3rd Place, Cardiovascular Pharmacology Student Competition, Experimental Biology National Meeting
- 2003 New Investigator Award, American Heart Association Basic Science Council

V. Scholarly Publications:

A. Peer Reviewed Journal Articles (Original Research):

1. Yu X, Zeng X, Xiao F, Chen R, Sinharoy P, **Gross ER**. E-cigarette aerosol elevates cardiovascular oxidative stress in mice with aldehyde dehydrogenase-2 deficiency. Redox Biology, 2022, Aug 54:102369, PMID: 35751982
2. Le AD, Li Y, Zhu A, Singh J, Xu JY, Srinivasan M, Palaniappan LP, Long J, **Gross ER**. How Race Affects U.S. Opioid Drug Overdose Deaths: An Observational Cross-sectional Study. British Journal of Anaesthesia, 2022, Sept 129 (3):e66-68 PMID: 35787800
3. Wang B, Wu C, He S, Wang Y, Wang D, Tao H, Wang C, Pang X, Li F, Yuan Y, **Gross ER**, Liang G, Zhang Y. V1-cal hydrogelation enhances its effects on ventricular remodeling reduction and cardiac function improvement post myocardial infarction. Chemical Engineering Journal 2022 April Vol 433 Part 1, 134450.
4. Goodnough CL, Wu Y, **Gross ER**. Topical analgesic Bengay reduces myocardial infarct size in rodents. British Journal of Anaesthesia, 2021 Nov 127(5):e163-e166, PMID: 34503834
5. Hellenthal KEM, Brabenec L, **Gross ER**, Wagner NM. TRP channels as sensors of aldehyde

- and oxidative stress. Biomolecules, 2021, 11(10):1401 PMID: 34680034
6. Otto M, Brabenec L, Muller M, Kintrup S, Hellenthal KEM, Steinbuch SC, Karsten OS, Pryvalov H, Rossaint J, **Gross ER**, Wagner NM. Development of heart failure with preserved ejection fraction in type 2 diabetic mice is ameliorated by preserving vascular function. Life Sciences 2021 Nov 284: 119925. PMID: 34480933
 7. McAllister SL, Sinharoy P, Vasu M, **Gross ER**. Aberrant reactive aldehyde detoxification by aldehyde dehydrogenase-2 influences endometriosis development and pain-associated behaviors. Pain 2021 Jan;162(1):71-83. PMID: 32541390
 - selected as editor's choice and with accompanying video
 8. Wu Y, Chen AW, Goodnough CL, Lu Y, Zhang Y, **Gross ER**. IcyHot analgesic topical cream limits cardiac injury in rodents. Translational Research, 2021 227: 42-52 PMID: 32629175
 9. Otto M, Bucher C, Liu W, Müller M, Schmidt T, Kardell M, Driessen MN, Rossaint J, **Gross ER**, Wagner N. 12(S)-HETE mediates diabetes induced endothelial dysfunction by activating intracellular endothelial cell TRPV1. Journal of Clinical Investigation, 2020 Aug 17:136621 PMID: 32584793
 - This manuscript was with a trainee that was in the lab for 2 years. While in my laboratory, I conceived the idea with the senior author, provided funding, and designed the experiments. I also developed and designed the peptide therapeutic used within the manuscript that I hold a patent. After leaving the lab, I worked with Dr. Wagner on completing the manuscript after she started up her lab in Germany.
 10. Jiang S, Bastov D, Bharadwaj A, **Gross ER**. Asian Flush. Annals of Intern Medicine, 2019 Aug 13. doi: 10.7326/G18-0025. PMID: 31404928
 11. Cayla NS, Dagne BA, Wu Y, Lu Y, Rodriguez L, Davies DL, **Gross ER**, Heifets BD, Davies MF, MacIver B, Bertaccini EJ. A new anesthetic based on a novel chemical core. Proceedings of the National Academy of Sciences, Jul 30;116(31):15706-15715, 2019. PMID: 31308218
 - This manuscript was a combined research effort of 4 faculty (Heifets, Davies, MacIver, and Bertaccini). For this manuscript, I assisted with designing the experiments, worked with trainees in my lab (Wu and Lu on the manuscript) to perform all the experiments performed in rodents for this study and provided funding for the study.
 12. Heymann HM, Gardner AM, **Gross ER**. Aldehyde-induced DNA and protein adducts as biomarker tools for alcohol use disorder. Trends in Molecular Medicine, 24 (2): 144-155, 2018.
 13. Wejermars L, Shaapenherder A, George T, Sinharoy P, **Gross ER**. Association of impaired reactive aldehyde metabolism with delayed graft function in human kidney transplantation. Oxidative Medicine and Cellular Longevity, 3704129, 2018. PMID: 30671169
 14. Heymann HM, Wu Y, Lu Y, Qvit N, Gross GJ, **Gross ER**. Transient Receptor Potential Vanilloid 1 Inhibitors Block Laparotomy- and Opioid-induced Infarct Size Reduction in Rats. British Journal of Pharmacology, 174(24):4826-4835, 2017
 - with editorial comment: 175(5):855-856, 2018 doi: 10.1111/bph.14130

15. Qvit N, Rubin SJ, Urban TJ, Mochly-Rosen D, **Gross ER**. Peptidomimetic therapeutics: scientific approaches and opportunities. Drug Discovery Today, S1359-6446(16)30419-6, 2016.
16. Lu Y, Piplani H, McAllister SL, Hurt CM, **Gross ER**. TRPA1 activation within the cardiac myocyte limits ischemia-reperfusion injury in rodents. Anesthesiology, 125(6):1171-1180, 2016.
17. Hurt CM, Lu Y, Stary CM, Piplani H, Small BA, Urban T, Qvit N, Gross GJ, Mochly-Rosen D, **Gross ER**. TRPV1 regulates mitochondrial membrane potential and myocardial reperfusion injury. Journal of American Heart Association, e003774, 2016.
18. Nakano Y, Ochi H, Onohara Y, Sairaku A, Tokuyama T, Matsumura H, Tomomori S, Amioka M, Hironomobe N, Motoda C, Oda N, Chayama K, Chen CH, **Gross ER**, Mochly-Rosen D, Kihara Y. Genetic variations of aldehyde dehydrogenase 2 and alcohol dehydrogenase 1B are associated with the etiology of atrial fibrillation in Japanese. Journal of Biomedical Sciences, 23(1):89, 2016.
 - I assisted with conceiving the idea and providing suggestions during the writing of the manuscript
19. **Gross ER**, Zambelli VO, Chen C, Mochly-Rosen D. A personalized medicine approach for Asian Americans with the aldehyde dehydrogenase 2*2 variant. Annual Review of Pharmacology and Toxicology. 55:107-27, 2015.
20. Small BA, Lu Y, Hsu AK, Gross GJ, **Gross ER**. Morphine reduces myocardial infarct size via heat shock protein 90 in rodents. Biomedical Research International, 129612, 2015.
21. Zambelli VO*, **Gross ER***, Chen CH, Guttierrez V, Cury Y, Mochly-Rosen D. Aldehyde dehydrogenase-2 regulates nociception in rodent models of acute inflammatory pain. Science Translational Medicine, 27:6(251):251ra118, 2014.
 - contributed equally, featured on cover of *Science Translational Medicine*, featured in *Science* magazine "in Science" section, featured in *Scientific American Mind*
22. Chen CH, Ferreria, J, **Gross ER**, Mochly-Rosen D. Targeting Aldehyde Dehydrogenase 2 - New Therapeutic Opportunities. Physiologic Reviews. 94: 1-34, 2014.
23. **Gross ER**, Urban TJ, Hsu AK, Mochly-Rosen D, Gross GJ. Nociceptive-induced Myocardial Remote Conditioning is Mediated by Neuronal Gamma Protein Kinase C. Basic Research in Cardiology. 108(5): 381, 2013.
 - corresponding author
24. Gross GJ, Hsu AK, **Gross ER**, Falck JR, Nithipatikom K. Factors Which Mediate Remote Preconditioning of Trauma (RPCT) in the Rat Heart: Central Role of Cytochrome P450 Pathway in Mediating Cardioprotection To Reduce Infarct Size. Journal of Cardiovascular Therapeutics 18(1):38-45, 2013.
25. **Gross ER**, Hsu AK, Gross GJ. Acute Methadone Treatment Reduces Myocardial Infarct Size via the δ Opioid Receptor in Rats During Reperfusion. Anesthesia & Analgesia, 109(5):1395-1402, 2009.
 - corresponding author
26. Peart JN, **Gross ER**, Reichelt ME, Hsu A, Headrick JP, Gross GJ. Activation of kappa-opioid receptors at reperfusion affords cardioprotection in both rat and mouse hearts. Basic Research in Cardiology, 103(5):454-63, 2008.

27. **Gross ER**, Hsu AK, Gross GJ. Delayed Cardioprotection Afforded By The Glycogen Synthase Kinase 3 Inhibitor SB216763 Occurs Via A K_{ATP} And MPTP-dependent Mechanism At Reperfusion. American Journal of Physiology: Heart Circ Physiol. 294(3):H1497-500, 2008.
28. **Gross ER**, Hsu AK, Gross GJ. Diabetes abolishes morphine-induced cardioprotection via modification of multiple cellular signaling pathways. Diabetes, January, 56(1):127-36, 2007.
29. **Gross ER**, Hsu AK, Gross GJ. GSK3beta inhibition and $K(ATP)$ channel opening mediate acute opioid-induced cardioprotection at reperfusion. Basic Research in Cardiology, 102(4): 341-9, 2007.
30. Peart JN, **Gross ER**, Headrick JP, Gross GJ. Impaired p38 MAPK/HSP27 signaling underlies aging-related failure in opioid-mediated cardioprotection. Journal of Molecular and Cellular Cardiology. 42(5):972-80, 2007.
31. **Gross ER**, Gross GJ. Ischemic Preconditioning and Myocardial Infarction: An Update and Perspective. Drug Discovery Today: Disease Mechanisms 4(3):165-174, 2007.
32. **Gross ER**, Hsu AK, Gross GJ. The JAK/STAT Pathway is Essential For Opioid-Induced Cardioprotection: JAK2 as a Mediator of STAT3, Akt and GSK3 β . American Journal of Physiology: Heart Circ Physiol. 291(2):H827-34, 2006.
33. **Gross ER**, Gross GJ. Ligand triggers of classical preconditioning and postconditioning. Cardiovascular Research 70(2):212-21, 2006.
34. **Gross ER**, Peart JN, Hsu AK, Auchampach JA, Gross GJ. Extending the cardioprotective window by a novel delta opioid agonist fentanyl isothiocyanate via the phosphatidylinositol-3 kinase pathway. American Journal of Physiology: Heart Circ Physiol. 288(6):H2744-9, 2005.
35. Gross GJ, Falck JR, **Gross ER**, Isbell M, Moore J, Nithipatikom K. Cytochrome P450 and arachidonic acid metabolites: Role in myocardial ischemia/reperfusion injury revisited. Cardiovascular Research. 68(1):18-25, 2005.
36. Patel HH, **Gross ER**, Peart JN, Hsu AK, Gross GJ. The sarcolemmal K_{ATP} channel triggers delayed ischemic preconditioning in rat hearts. American Journal of Physiology: Heart and Circulatory Physiology, 285(1): H445-7, 2005.
37. Peart JN, **Gross ER**, Gross GJ. Opioid-induced preconditioning: recent advances and future perspectives. Vascular Pharmacology. 42(5-6):211-8, 2005.
38. **Gross ER**, Nithipatikom K, Hsu AK, Peart JN, Falck JR, Campbell WB, Gross GJ. Cytochrome P450 omega hydroxylase inhibition reduces infarct size during reperfusion via the sarcolemmal K_{ATP} channel. Journal of Molecular and Cellular Cardiology, 37(6): 1245-9, 2004.
39. Peart JN, **Gross ER**, Gross GJ. Effect of exogenous kappa-opioid receptor activation in a rat model of myocardial infarction. Journal of Cardiovascular Pharmacology, 43(3):410-5, 2004.
40. **Gross ER**, Hsu AK, Gross GJ. Aspirin abolishes while ibuprofen enhances morphine-induced cardioprotection: role of 12-lipoxygenase. Journal of Pharmacology and Experimental Therapeutics, 310(1):185-91, 2004.
41. Nithipatikom K. **Gross ER**. Endsley MP. Moore JM. Isbell MA. Falck JR. Campbell WB. Gross GJ. Inhibition of cytochrome P450 omega-hydroxylase. A novel endogenous cardioprotective pathway. Circulation Research, 95(8):e65-71, 2004.
42. **Gross ER**, Hsu AK, Gross GJ. Opioid-induced acute cardioprotection occurs by glycogen synthase kinase inhibition. Circulation Research, 94(7): 960-6, 2004.

43. Patel HH, Fryer RM, **Gross ER**, Hsu AK, Isbell M, Nithipatikom K, Jensen R, Gullans SR, Gross GJ. Implication of 12-Lipoxygenase in Opioid-Induced Delayed Cardioprotection by Gene Array, Spectroscopic, and Pharmacological Analysis. Circulation Research, 92(6): 676-682, 2003.
44. **Gross ER**, Peart JN, Hsu AK, Grover GJ, Gross GJ. KATP opener-induced cardioprotection: involvement of the sarcolemmal and mitochondrial KATP channel: Free radicals and MEK1,2. Journal of Molecular and Cellular Cardiology, 35(8): 985-992, 2003.
45. **Gross ER**, LaDisa Jr JF, Wienreich D, Kress TT, Olson LE, Hettrick DA, Pagel PS, Warltier DC, Kersten JR. Reactive oxygen species modulate coronary wall shear stress and endothelial function during hyperglycemia. American Journal of Physiology: Heart and Circulatory Physiology, 284(5): H1552-1559, 2003.
46. LaDisa JF, Olson LE, Guler I, **Gross ER**, Kress TT, Hettrick DA, Kersten JR, Warltier DC, Pagel PS. Coronary artery stent implantation alters wall shear stress during maximal vasodilation. Applied Journal of Physiology, 93(6):1939-1946, 2002.
47. Pritchard KA, Ackerman AW, **Gross ER**, Stepp DW, Shi Y, Fontana JT, Baker JE, Sessa WC. Heat shock protein 90 mediates the balance of nitric oxide and superoxide anion from endothelial nitric-oxide synthase. Journal of Biological Chemistry. 276(21):17621-4, 2001.
48. Kersten JR, Montgomery MW, Ghassemi T, **Gross ER**, Toller WG, Pagel PS, Warltier DC. Diabetes and hyperglycemia impair activation of mitochondrial K(ATP) channels. American Journal of Physiology - Heart & Circulatory Physiology. 280(4):H1744-50, 2001.
49. **Gross ER**, Gare M, Toller WG, Kersten JR, Warltier DC, Pagel PS. Ethanol enhances the functional recovery of stunned myocardium independent of K(ATP) channels in dogs. Anesthesia & Analgesia. 92(2):299-305, 2001.
50. Pagel PS, Toller WG, **Gross ER**, Gare M, Kersten JR, Warltier DC. K(ATP) channels mediate the beneficial effects of chronic ethanol ingestion. American Journal of Physiology: Heart & Circulatory Physiology. 279(5):H2574-9, 2000.
51. Toller WG, **Gross ER**, Kersten JR, Pagel PS, Gross GJ, Warltier DC. Sarcolemmal and mitochondrial adenosine triphosphate- dependent potassium channels: mechanism of desflurane-induced cardioprotection. Anesthesiology. 92(6):1731-9, 2000.
52. Toller WG, Kersten JR, **Gross ER**, Pagel PS, Warltier DC. Isoflurane preconditions myocardium against infarction via activation of inhibitory guanine nucleotide binding proteins. Anesthesiology. 92(5):1400-7, 2000.
53. Kersten JR, Toller WG, **Gross ER**, Pagel PS, Warltier DC. Diabetes abolishes ischemic preconditioning: role of glucose, insulin, and osmolality. American Journal of Physiology: Heart & Circulatory Physiology. 278(4):H1218-24, 2000.

B. Peer Reviewed Publications (correspondence, working group white papers, letter to editor):

1. Whitlock EL, **Gross ER**, King CR, Avidan MS. Anaesthetic depth and delirium: a challenging balancing act. British Journal of Anaesthesia, 2021 Nov 127(5):667-671, PMID: 34503835
2. Zambelli VO, Alcantara Q, **Gross ER**. Alcohol and analgesia: a fine wine getting better with age. British Journal of Anaesthesia, 2021 June, PMID: 34090680
3. Tarran R, Barr RG, Benowitz NL, Bhatnagar A, Chu HW, Dalton P, Doerschuk CM, Drummond MB, Gold DR, Goniewicz ML, **Gross ER**, Hansel NN, Hopke PK, Kloner RA, Mikheev VB, Neczypor EW, Pinkerton KE, Postow L, Rahman I, Samet, JM, Salathe M, Stoney CM, Tsao P,

Widome R, Xia T, Xiao D, Wold LE. E-cigarettes and Cardiopulmonary Health, Function, Feb 8, 2021, <https://doi.org/10.1093/function/zqab004>.

- This is a white paper published by an e-cigarette working group I am part of. I contributed to the article by writing and editing the portion of the article regarding aldehydes within e-cigarette aerosol.
- 4. Chen CH, Ferriera JCB, Mochly-Rosen D, **Gross ER**. Alcohol consumption and vascular disease: other points to consider. Lancet, 2019 Nov 2;394 (10209):1617-1618. PMID: 31690444
- 5. Bozi LHM, Campos JC, **Gross ER**, Ferreira JCB. Mitochondrial Unfolded Protein Response (UPRmt) Activation in Cardiac Diseases: Opportunities and Challenges. Journal of the American College of Cardiology, 2019 Aug 20;74(7):1011-1012. PMID: 31416520.
- 6. Wu Y, Heymann HM, **Gross ER**. Non-opioid analgesic use and concerns for impaired organ protection. British Journal of Anaesthesia, 120 (2): 403-405, 2018.
- 7. Wagner NM, **Gross ER**, Patel HH. A slick way volatile anesthetic reduce myocardial injury. Anesthesiology, 124 (5):968-8, 2016.
- 9. Wagner NM, Lu Y, **Gross ER**. Remote Ischemic Preconditioning and Cardiac Surgery. New England Journal of Medicine, 374(5):490, 2016.
- 10. McAllister SL, Sun K, **Gross ER**. Developing precision medicine for people of East Asian descent. Journal of Biomedical Sciences, 23(1):80, 2016.
- 11. Zambelli VO, Chen CH, **Gross ER**. Reactive aldehydes: an initial path to develop pain control. Annals of Translational Medicine, 258, 2015.
- 12. Pai-Cole S, **Gross ER**. Happy Birthday GIK: Insulin, Presents and Cake. Anesthesiology, 123(2):249-50, 2015.
- 13. Gross GJ, **Gross ER**, Peart JN. Association of intravenous morphine use and outcomes in acute coronary syndromes: results from the CRUSADE quality improvement initiative. American Heart Journal, 150(6):e3, 2005.

C. Non-Peer Reviewed Articles (preprints and manuscripts under various stages of review):

1. Guo H, Yu X, Liu Y, Paik D, Justesen J, Chandy M, Jahng J, Zhang T, Wu W, Rwere F, Pokhrel S, Simon D, Manhas A, Zhang A, Chen CH, Rivas MA, **Gross ER**, Mochly-Rosen D, Wu J. Empagliflozin Ameliorates Endothelial Dysfunction Associated with the Common ALDH2 Alcohol Flushing Mutation. *Under resubmission to Science Translational Medicine*
2. Liu C, Tan W, Shen M, Chen I, Liu Y, Yu X, Zhang M, Yang H, Zhang A, Liu Y, Zhao M, Ameen M **Gross ER**, Qi L, Sayed N, Wu J. Statins improve endothelial function via suppression of epigenetics driven-EndMT. *Submitted to Nature Cardiovascular Research*
3. He S, Zambelli VO, Bian Y, Rwere F, **Gross ER**. A discrete site in mammalian TRPV1 is crucial for the control of nociception. *Resubmitted revision to JCI*
4. Vermesh O, D'Souza AL, Alam IS, Wardak M, McLaughlin T, Rami F, Sathirachinda A, Bell JC, Hori SS, **Gross ER**, Gambhir SS. Engineering genetically-encoded synthetic biomarkers for breath-based cancer detection. BioRxiv doi: <https://doi.org/10.1101/2021.09.01.456741>
5. White JR, Rwere F, Zeng X, McNeil L, Zhou K, Angst MS, Chen C, Mochly-Rosen D, **Gross ER**. Phenotyping genetic differences in aldehyde dehydrogenase 2 after an alcohol challenge in humans. Medrxiv, doi.org/10.1101/2020.06.26.20137513

D. Book Chapters:

1. Wagner NM, Driessen MN, Zambelli VO, and **Gross ER**. Peptide Therapeutic Use in Anesthesiology. in Qvit N, Peptide and Peptidomimetic Therapeutics, Chapter 26, Elsevier, Accepted, Nov 2021
2. Sinharoy P, McAllister SL, Vasu M, **Gross ER**. Environmental aldehyde sources and implications for exposure. In Ren J, *Aldehyde dehydrogenases: from alcohol metabolism to human health and precision medicine*. Adv Exp Med Biol, 1193:35-52, 2019.
3. **Gross ER**. Cerebral Ischemia Pathophysiology: Global vs Focal, Glucose, Brain Trauma or Tumor Effects. In Chu LF, *START-PREP Online Course*, published online 12/19/2013, Topic #180, 1-9.
4. **Gross ER**. Pharmacology, Gases and Vapors: Effects on CV. In Chu LF, *START-PREP Online Course*, published online 8/28/2013, topic #97, 1-12.
5. **Gross ER**. Cun T. Anticholinesterases. In Chu LF, *Manual of Clinical Anesthesiology*. Wolters Kluwer, 2012, 1275.

H. Abstracts (20 selected from ~75 total):

1. Goodnough CL, Ozawa R, Chang K, Hell RC, **Gross ER**. A genetic variant causing alcohol intolerance leads to impaired recovery from propofol-induced general anesthesia in rodents. Association of University Anesthesiologists Annual Meeting. March 17-20, 2022.
2. He S, Zambelli VO, Bian Y, Rwere F, **Gross ER**. Leveraging TRPV1 genetic divergence between avian and mammalian species to develop a non-opioid pain therapeutic. International Anesthesia Research Society Annual Meeting. May 15-16, 2021.
 - Kosaka award winner (Overall best basic science abstract for meeting from ~500 abstracts submitted)
3. Zambelli VO, Salgado JS, Heifets BD, Tawfik VL, **Gross ER**. Aldehyde Dehydrogenase-2 Regulates Morphine-Induced Tolerance and Addiction. Association of University Anesthesiologists Annual Meeting. May 15-16, 2021.
 - Selected for American Society of Anesthesiologists oral presentation
4. Yu X, Xiao F, **Gross ER**. Acetaldehyde within e-cigarette aerosol and cigarette smoke triggers intracellular calcium release in primary adult cardiomyocytes that is exacerbated in ALDH2*2 mice. Experimental Biology, April 27-30, 2021.
 - 2nd place in ASPET cardiovascular pharmacology trainee abstract competition
5. Yu X, Zeng X, Chen R, Sinharoy P, **Gross ER**. E-cigarette aerosol elevates cardiovascular oxidative stress in mice with aldehyde dehydrogenase-2 deficiency. American Heart Association BCVS Annual Meeting, July 2020.
 - AHA press release <https://newsroom.heart.org/news/difference-in-a-single-gene-may-boost-stress-on-heart-from-e-cigarettes-in-people-of-east-asian-descent>
6. Rwere F, White J, Chen CH, Mochly-Rosen D, **Gross ER**. Characterization of a human ALDH2 mutant that causes alcohol flushing in non-east Asians. The FASEB Journal, <https://doi.org/10.1096/fasebj.2020.34.s1.09088>
7. He S, Sinharoy P, **Gross ER**. Engineering rodent TRPV1 to mimic chicken TRPV1 reduces capsaicin-induced calcium influx in H9C2 cells. American Heart Association BCVS Scientific Sessions, 2019 Circulation Research, 2019;125(suppl 1). https://doi.org/10.1161/res.125.suppl_1.299

8. Sinharoy P, McAllister SM, **Gross ER**. E-Cigarette Vapor Elevates Heart Rate in Mice with Limited Reactive Aldehyde Metabolism, *Experimental Biology*, April, 2018
 - Awarded American Physiological Society Cardiovascular Trainee Award
9. Cayla NS, Dagne BA, Davies MF, Wu Y, **Gross ER**, MacIver MB, Bertaccini EJ. Teasing apart the desired effects of anesthetics from unwanted side-effects at GABA_A receptors, *International Society of Anesthetic Pharmacology*, Boston, Massachusetts, October 2017.
 - Awarded best in show for meeting.
10. Do M, Kadry, B, Pinesett AJ, **Gross ER**. Taking the Blinders Off Big Data: How Accurate Are We With Assessing Postoperative Myocardial Infarction? *Anesthesiology Annual Meeting* New Orleans, LA October 2014.
 - Awarded best FAER medical student abstract in big data
11. **Gross ER**, Urban TJ, Hsu AK, Mochly-Rosen D, Gross GJ. Neuronal Gamma Protein Kinase C Mediates Remote Cardioprotection In Rats, *IARS Annual Meeting* San Diego, CA May 2013.
 - Awarded the best of meeting award for abstract in basic science (1/1)
12. **Gross ER**. Hsu AK, Gross GJ, Mochly-Rosen D. Acute capsaicin treatment reduces myocardial infarct size in rats via transient receptor potential vanilloid 1 activation. *IARS March*, 2010, Honolulu, Hawaii
 - International Anesthesia Research Society 1 of 5 finalists for best in meeting
13. **Gross ER**. Hsu AK, Gross GJ. The JAK/STAT signaling pathway is essential for opioid-induced cardioprotection: role of JAK2 as a mediator of STAT3 and the phosphatidylinositol-3 kinase pathway. *AHA Scientific Sessions. Circulation* Vol 110, #17, 313 October 26, 2004.
14. **Gross ER**. Peart JN. Hsu AK. Auchampach JA. Gross GJ. Cardioprotection by the novel delta opioid FIT persists for 5 days after administration and occurs via phosphatidylinositol-3 kinase. *AHA Scientific Sessions. Circulation* Vol 110, #17, 512 October 26, 2004.
15. **Gross ER**. Hsu AK. Gross GJ. Opioid-Induced Cardioprotection Occurs Via Glycogen Synthase Kinase (GSK) Inhibition By Phosphatidylinositol-3 Kinase And Target of Rapamycin Dependent Pathways. *AHA Scientific Sessions. Circulation*. 595: Vol 108, #17 2003, October 28.
16. **Gross ER**. Hsu AK. Gross GJ. Sarcolemmal KATP Channel Opening Requires 12-Lipoxygenase (12-LO) To Trigger Delayed Cardioprotection: Mechanistic Differences in P-1075 and BMS-191095-induced Delayed Cardioprotection. *AHA Scientific Sessions. Circulation*. 433: Vol 108, #17 2003, October 28.
17. **Gross ER**. Olson LE. Weihrauch D. Kersten JR. Hettrick DA. Pagel PS. Warltier DC. Acute hyperglycemia alters shear and oxidant stress in coronary arteries in vivo. *Annals of Biomedical Engineering*. Volume 28, Supplement 1, S-63, T6.63, 2000.
18. Pagel PS. Toller WG. **Gross ER**. Kersten JR. Warltier DC. Chronic intermittent consumption of low doses of ethanol reduces experimental infarct size by KATP channel activation in dogs. *Anesthesiology*. Volume 93, A-682, 2000.
19. **Gross ER**. Hettrick DA. Kersten JR. Pagel PS. Warltier DC. Effects of acute hyperglycemia on in vivo velocity profiles of the left anterior descending coronary artery. *IEEE/BMES Joint Meeting*. 1999 October.
20. Merker MP. Bongard RD. Daum JM. **Gross ER**. Dawson CA. Reductase activity associated with lung endothelial cell membrane vesicles. *ALA/ATS International Conference*. San Francisco, CA 1997 May 17-21.

VI. Editorial Service:

A. Editorial Board Memberships:

| | |
|--------------|--|
| 2022-Present | Associate Editor, <i>Journal of Pharmacology and Experimental Therapeutics</i> |
| 2021-Present | Associate Editor, <i>British Journal of Anaesthesia</i> |
| 2021-Present | Editorial board (Anesthesiology), <i>Annals of Translational Medicine</i> |
| 2019-Present | Handling Editor (Critical Care Medicine), <i>Scientific Reports</i> |
| 2018-2022 | Editorial advisory board, <i>Journal of Pharmacology and Experimental Therapeutics</i> |
| 2019-2021 | Peer review fellow, <i>British Journal of Anaesthesia</i> |

B. Other Peer Review Activities:

| | |
|------|---|
| 2021 | Guest Editor, <i>Biomolecules</i> , issue on "Aldehyde Toxicity and Metabolism" |
| 2018 | Guest Editor, <i>Oxidative Stress and Cellular Longevity</i> , issue on "Mitochondrial Bioenergetics and Quality Control Mechanisms in Health and Disease." |

Frequent reviewer for *Anesthesiology* (54 reviews), *British Journal of Anaesthesia* (60 reviews) and *JPET* (39 reviews).

Ad hoc reviewer for several journals: *Journal of Clinical Investigation*, *Annals of Internal Medicine*, *Redox Biology*, *Journal of Molecular and Cellular Cardiology*, *Journal of Cellular and Molecular Medicine*, *British Journal of Pharmacology*, *Basic Research in Cardiology*, *FASEB journal*, *JCI: Insight*, *Life Sciences*, *Toxins*, *Alcohol*, *Circulation: Heart Failure*, *Plos One*, *American Journal of Physiology: Heart*, *Journal of Clinical Anesthesia*, *Anesthesia & Analgesia*

VII. Grants:

A. Current Funding:

Title: Precision medicine for Asian Americans requiring anesthesia
Source: NIH, NIGMS MIRA R35, GM119522
Role: Principal Investigator
Dates: June 2021- May 2026 (Second Competitive Renewal)
Amount: \$2,145,000

Title: E-cigarette aerosol effects on the cardiovascular system in rodents
Source: NIH, NHLBI R01, HL144388
Role: Principal Investigator
Dates: September 2018- August 2022 (Under no-cost extension)
Amount: \$1,904,680

Title: Unraveling the mechanism of electronic-cigarette mediated vascular remodeling
Source: Tobacco-Related Disease Research Program Research Award
Role: co-Investigator (2.5%)
Dates: July 2022- June 2025
Amount: \$1,388,074

Title: Role of pesticides in triggering e-cigarette associated lung injury
Source: Tobacco-Related Disease Research Program Research Award
Role: Principal Investigator
Dates: July 2022- June 2025
Amount: \$1,424,046

B. Pending Funding:

Title: Impact of inactivating ALDH2 genetic variants on alcohol metabolism
Source: NIH, NIAAA R21, AA030106
Role: Principal Investigator
Amount: \$429,000

C. Prior Funding:

Title: Precision medicine for Asian Americans requiring anesthesia
Source: NIH, NIGMS MIRA R35, GM119522
Role: Principal Investigator
Dates: August 2016- May 2021
Amount: \$1,854,903

Title: NIGMS GM119522 Equipment Supplemental Award
Source: NIH, NIGMS MIRA R35, GM119522-S1
Role: Principal Investigator
Dates: August 2019- June 2020
Amount: \$149,989

Title: Functional Consequences of Novel Aldehyde Dehydrogenase Variants on Reducing Reactive Aldehyde Metabolism in Humans
Source: Stanford ChEM-H
Role: Co-Investigator
Dates: March 2018 – October 2019
Amount: \$24,500 + 0.2 FTE clinical research coordinator

Title: E-cigarette chemical effects on endothelial cell function
Source: University of California Tobacco Related Disease Research Program
Role: Principal Investigator
Dates: July 1 2017-June 30 2019
Amount: \$383,962

Title: Role of the TRPV1 receptor in myocardial salvage from ischemia-reperfusion injury
Source: NIH, NHLBI, R00, HL109212
Role: Principal Investigator
Dates: July 1 2014- June 30 2018

Amount: \$746,997

Title: Reducing reactive aldehyde levels to treat endometriosis
Source: Endometriosis Foundation of America
Role: Principal Investigator
Dates: March 2017 – February 2018
Amount: \$12,500

Title: Developing an endothelial cell resistant to hyperglycemia-induced endothelial cell dysfunction
Source: Stanford Cardiovascular Institute and Diabetes Resource Center
Role: Principal Investigator
Dates: September 2016- August 2017
Amount: \$12,500

Title: Reducing Reactive Aldehyde Levels to Treat Endometriosis-Associated Pain
Source: Women and Sex Differences in Medicine Center, Stanford University
Role: Co-PI
Dates: January 2016 – October 2016
Amount: \$20,000

Title: Role of the TRPV1 receptor in myocardial salvage from ischemia-reperfusion injury
Source: NIH, NHLBI HL109212-S1
Role: Principal Investigator, Diversity Supplemental Award
Dates: Jan 2015- Dec 30 2015
Amount: \$28,118

Title: Presence of ALDH2 Inhibitors In Drugs Measured By Mass Spectrometry
Source: Stanford SUMs Seed Grant
Role: Principal Investigator
Dates: Jan 2015-Dec 2015
Amount: \$5,000

Title: Role of the TRPV1 receptor in myocardial salvage from ischemia-reperfusion injury
Source: NIH, NHLBI
Role: Principal Investigator, K99, HL109212
Dates: July 15 2011- June 30 2014
Amount: \$266,382

Title: Ethnic Differences of In-hospital Morbidity and Mortality
Source: Stanford Society of Physician Scholars
Role: Co-Investigator
Dates: June 2013-July 1 2014

Amount: \$5,000

Title: Role of the phosphatidylinositol-3 kinase pathway in delayed cardioprotection

Source: American Heart Association, Northland Affiliate

Role: Principal Investigator, Pre-Doctoral Fellowship

Dates: July 1, 2003 - June 30, 2005

VII. Service as Grant Review:

2022 Foundation for Anesthesia Research and Education Medical Student Anesthesia Research Fellowship Grant Reviewer

2020 National Institutes of Health Grant Reviewer CVRS-H 50R, December 2020

2020 National Institutes of Health Grant Reviewer CVRS-H 50R, March 2020

2019-Present American Society of Anesthesiologists Foundation for Anesthesia Education and Research (FAER) Career Development Award Grant Review Panel

2018, 2019 FWF Der Wissenschaftsfonds, Austrian Science Fund, Grant Reviewer

2016, 2017 Vanderbilt Diabetes Research and Training Center Grant Reviewer for Pilot and Feasibility Projects

2016-Present International Anesthesia Research Society, IARS Mentored Research Grant Reviewer

IX. Patents:

1. U.S. Patent No.: 62/306,244, *Peptide Modulators to Break Specific Calcineurin Protein-protein Interactions*
2. U.S. Provisional Patent Application No.:62/502,310, Filed May 18, 2017, *Methods and Compositions for Treating Endometriosis and Endometriosis-Associated Symptoms*
-Licensed to Chiima Therapeutics

X. University Administrative Service:

A. Committee Service:

2021 Member, Department Committee on Non-Clinical Time Allocation

2016-2021 Member, Research Executive Committee, Department of Anesthesiology, Perioperative and Pain Medicine

2015-Present Fellowship in Anesthesia and Research (FARM) Residency Track Interview Committee Member

2012-Present Mock Oral Board Examiner for Anesthesiology Residents (~2x per year)

2009-2016 Member, Pharmacy and Therapeutics Committee

B. Leadership Roles:

2021-Present Faculty Mentor, Center for Asian Research and Education Summer Scholars Program

2020-Present Site Program Director, FAER Medical Student Anesthesia Research

- 2014-Present Fellowship Summer Program
- 2014-Present Co-Director, Anesthesia for Interventional Cardiology and Out of Operating Room Resident Rotation
- 2013-Present Co-Director, Neuroscience Scholarly Concentration for Medical Scholars Program, School of Medicine
- 2012-Present Director, Anesthesia Research Seminar Series, Research and Development

XI. Service to Professional Organizations:

A. Membership:

- 2018- Present American Society for Experimental Pharmacology and Therapeutics
- 2016- Present American Physiological Society (APS)
- 2015- Present Association of University Anesthesiologists (AUA), Full Membership (Requires nomination, review, and committee vote for selection)
- 2013- Present International Society for Heart Research (ISHR)
- 2007- Present International Anesthesia Research Society (IARS)
- 2006- Present American Society of Anesthesiology (ASA)
- 2003- Present American Heart Association, Basic Cardiovascular Science

B. Committee Service:

- 2019-Present Committee on Research, American Society of Anesthesiologists
- 2019-Present Subcommittee on Experimental Circulation, American Society of Anesthesiologists
- 2015-Present Steering Committee Member, International ALDH2 STAR Consortium

C. Leadership Roles:

- 2022 Foundation for Anesthesia Research and Education MSARF summer mentoring group- small group leader
- 2021 Session Proposal Review Panel Member for the International Anesthesia Research Society Annual Meeting
- 2020 Moderator, Session on Experimental Circulation, American Society of Anesthesiologists Annual Meeting (Virtual)
- 2020 Session Organizer, ASPET Annual Meeting at Experimental Biology “Precision Medicine Strategies for Treating Cardiovascular Disease” (Canceled due to COVID-19)
- 2019-Present Vice-Chair, Sub-committee on Experimental Circulation, American Society of Anesthesiologists
- 2019 Moderator, Session on Experimental Circulation, American Society of Anesthesiologists Annual Meeting, Orlando, FL
- 2018 Moderator, Fellowship of Anesthesia Education and Research Medical Student Poster Presentation Symposium, American Society of

- Anesthesiologists Annual Meeting, San Francisco, CA
- 2018 Session Chair: ALDH2 and Precision Medicine, for the ALDH2 STAR Consortium Annual Meeting
- 2018 Symposium Committee Chair, Population Health and Prevention in the Omics and Big Data Era: A Cell to Society Approach, Stanford, CA, October 17-18, 2018

XII. Presentations:

A. National and Regional Meetings:

1. Acetaldehyde in e-cigarette aerosol and cigarette smoke exacerbate pulmonary microvascular endothelial dysfunction in ALDH2*2 mice. American Physiologic Society Annual Meeting at Experimental Biology Virtual Meeting, Session on Pathogenic Mechanisms of Electronic Cigarette Vaping Associated Lung Injury April 30, 2021.
2. Early Career Physicians in Academic Anesthesia: the BJA Editorial Fellowship. Anesthesiology Annual Meeting, October 2, 2021.
3. E-cigarette cardiovascular effects in wild type and ALDH2*2 rodents. Cardiopulmonary e-cigarette and nicotine meeting, National Institutes of Health, Bethesda, MD, January 30-31, 2020
4. Impact of genetics on e-cigarette aerosol exposure in rodents. Cardiopulmonary e-cigarette and nicotine meeting, National Institutes of Health, Bethesda, MD, February 4, 2019
5. Monitoring and Treatment of Reactive Aldehydes Produced During Surgery, Population Health and Prevention in the -Omics and Big Data Era: A Cell to Society Approach, October 17-18, 2018
6. Alcohol flushing and the ALDH2*2 genetic variant. Center for Asian Health Research and Education Kickoff. Stanford University Stanford, CA, October 3rd, 2018.
7. Real-time monitoring of volatile organic compounds in the breath of awake and anesthetized people. Center for Precision Health and Integrated Diagnostics, Stanford Symposium, May 19, 2017.
8. Could perioperative acetaminophen be harmful for some Asian Americans? California Society of Anesthesiologists Meeting, San Francisco, CA, April 28, 2017
9. Generation of endothelial cells resistant to hyperglycemia-induced endothelial cell dysfunction. Diabetes Research Symposium, Stanford University, November 28th, 2016.
10. How hot sauce and alcohol jump-started my career as an academic anesthesiologist. IARS/AUA combined international meeting, San Francisco, CA, May 2016.
11. Selective Inhibition of the Calcineurin Interaction Site of TRPV1 Reduces Myocardial Infarct Size by Reducing Mitochondrial Calcium Influx, American University Anesthesiologists Annual Meeting, Nashville, TN, April 2015.
12. Gamma PKC mediates remote incision-induced cardioprotection. American Heart

- Association Myocardial Ischemia Section, Los Angeles, CA, November 2012.
13. Acute capsaicin treatment reduces myocardial infarct size in rats via transient receptor potential vallinoid 1 activation. Kosaka Award Finalist, IARS, Honolulu, HI, March, 2010.
 14. Streptozotocin-induced diabetes abolishes morphine-induced cardioprotection via modification of multiple cellular signaling pathways and is reversed by glycogen synthase kinase 3 β inhibition. ISHR Young Investigator Competition, New Orleans, LA, May, 2005.
 15. Opioid-induced cardioprotection occurs via glycogen synthase kinase (GSK) inhibition by phosphatidylinositol-3 kinase and target of rapamycin dependent pathways. AHA Scientific Sessions, Orlando, FL, November 2003.

B. International Meetings:

1. Non-invasive quantification of alcohol-induced flushing in humans, 5th Annual ALDH2 STAR Symposium, Kaohsiung Medical University in Kaoshuing, Taiwan, September 27-28, 2019.
2. The alcohol flushing response: implications for anesthetic management, 15 annual Asian-Australasian Congress of Anesthesiologists, Beijing, China, November 5, 2018.
3. Optimizing reactive aldehyde production and metabolism during surgery, Invited Speaker, 3rd Annual ALDH2 STAR Consortium Symposium, National Taiwan University, Taipei, Taiwan July 29th, 2017.
4. Translating basic research into the clinics. Invited keynote speaker, International Symposium on Drug Discovery in Academia, Sao Paulo, Brazil, November 19, 2016.
5. Developing precision medicine for East Asians with an ALDH2*2 variant. Invited lecture, Tapei Medical University, ALDH2 deficiency and disease 2nd annual symposium, July 2016.
6. Perioperative heart attacks: incidence, timing and strategies to reduce reperfusion injury. Keynote lecture, Janghuei International Anesthesia Forum, Heifei, China, July 2016.
7. Quantification of clinical samples for aldehyde load and ALDH2, Invited lecture, Taipei Medical University, Taiwan, ALDH2 deficiency and disease inaugural symposium, August 2015.
8. G-Protein receptor pathway crosstalk: implications for preconditioning. ISHR World Congress, Brisbane, Australia, August 2004

C. Visiting Professorships:

1. University of Wisconsin, Alcohol Metabolism, Anesthesiology, and Public Health, Anesthesiology Department Grand Rounds, January 3rd, 2022
2. Medical College of Wisconsin Medical Scientist Training Program Retreat, Alcohol Metabolism and Human Health, Milwaukee, Wisconsin, November 11th 2021
3. Weill Cornell Medicine, Department of Pharmacology, The alcohol flushing response: implications for human health and anesthetic management, New York, New York, November 12, 2019.
4. Ruijin Hospital, Department of Anesthesiology, Precision medicine for Asians requiring

- anesthesia and analgesia, Keynote lecture, Shanghai, China, September 26, 2019.
5. University of California San Francisco, Department of Anesthesiology, Precision medicine for Asians requiring anesthesia and analgesia, Department of Anesthesiology Grand Rounds, June 5, 2019.
 6. Second Affiliated Hospital, Department of Anesthesiology and Perioperative Medicine, Anhui, China, November 8th, 2018.
 7. University of Minnesota, Department of Genetics, The alcohol flushing response: implications for human health and anesthetic management, March 2, 2018.
 8. Washington University, Department of Anesthesiology, Developing a Precision Medicine Platform for Asian Americans Requiring Anesthesia and Analgesia, St Louis, MO, June 14th 2017.
 9. Medical College of Wisconsin, Department of Pharmacology, Cardioprotection and Nociception: One and the same? Milwaukee, WI, June 2013.

XIII. Community Service:

Center for Asian Research and Education Community Outreach Series on Alcohol-induced Facial Flushing and Health Implications April 13th, 2021.

Community talk series sponsored by GoodRx on Alcohol and health risks of facial flushing May, 2022

Volunteer Basketball coach, Las Lomas & Las Entrada Grade Schools, Atherton, CA

XIV. Research Metrics:

| | |
|-----------------------------------|---|
| Total Number of Publications: | 70 |
| H-index: | 31 (31 publications cited greater than 31 times)* |
| i-10 index: | 50 (50 publications cited greater than 10 times) |
| G-index: | 59 (59 publications receiving 59 ² citations) |
| Total Citations: | 3,575 |
| Most Referenced Original Article: | 346 times (<i>Circ. Research</i> , 2004 PMID: 14976126) |
| Most Referenced Review Article: | 352 times (<i>Physiological Reviews</i> , 2014 PMID: 25163478) |

*For information regarding H-index relative to academic rank in Anesthesiology and other medical disciplines see PMID: 26114414, PMID: 21864299, and PMID: 30346467.

XV. Students / Trainees:

| Name | Relationship | Yr Trained | Current Title | Current Institution |
|------|--------------|------------|---------------|---------------------|
|------|--------------|------------|---------------|---------------------|

Current:

| | | | | |
|----------------|-------------------|-------|-----------------|---------------------|
| Freeborn Rwere | Research Advisor | 2019- | Instructor | Stanford University |
| Didi Goodnough | Research Advisor | 2019- | FARM/T32 fellow | Stanford University |
| Xuan Yu | Postdoc Advisor | 2018- | Postdoc Fellow | Stanford University |
| Katie Chang | Undergrad Advisor | 2020- | Undergrad | Stanford University |

| | | | | |
|-------------------|------------------|-------|-----------------|-----------------------|
| Jessica Hengelage | Research Advisor | 2020- | Medical Student | University of Munster |
|-------------------|------------------|-------|-----------------|-----------------------|

Alumni:

| | | | | |
|------------------|------------------|---------|-------------------------|---|
| Beatriz Stein | Research Advisor | 2021-22 | Graduate Student | Butantan Institute, Brazil |
| Vanessa Zambelli | Research Advisor | 2019-21 | Research head | Butantan Institute, Brazil |
| Feng Xiao | Research Advisor | 2019-20 | Associate Professor | Xiangya Hospital, Central South University |
| Joseph White | Research Advisor | 2019-20 | Anesthesiology Resident | UC Davis |
| Shu-Fang He | Research Advisor | 2017-20 | Associate Professor | Second Affiliated Hospital Anhui, China |
| Ri Chen | Research Advisor | 2017-20 | Undergrad Student | Stanford University |
| Xiaocong Zeng | Research Advisor | 2017-19 | Assistant Professor | Guangxi Medical U |
| Annabel Chen | Research Advisor | 2015-19 | Medical Student | Stanford University |
| Stacy McAllister | Research Advisor | 2015-19 | Assistant Professor | Emory University |
| Pritam Sinha Roy | Postdoc Advisor | 2016-18 | Postdoc Scholar | AstraZeneca |
| Yun Wu | Research Advisor | 2016-18 | Assistant Professor | Second Affiliated Hospital, Anhui, China |
| Nir Qvit | Research Advisor | 2015-17 | Assistant Professor | Bar-Ilan, Israel |
| Helen Heymann | Research Advisor | 2016-17 | Anesthesia Resident | Stanford University |
| Nana Wagner | Research Advisor | 2015-17 | Assistant Professor | Muenster, Germany |
| Hanit Piplani | Research Advisor | 2015-17 | Staff Scientist | Cedars-Sinai |
| Leonie Wijmarns | Research Advisor | 2015 | Surgery Resident | Leiden, Netherlands |
| Yao Lu | Research Advisor | 2015-17 | Assistant Professor | First Affiliated Hospital, Anhui, China |
| Andre Pinesett | Research Advisor | 2012-15 | Anesthesia Resident | UCSD |
| Anil Panigrahi | Clinical Advisor | 2012-15 | Assistant Professor | Stanford University |
| Bryce Small | Research Advisor | 2013-15 | Medical Student | Johns Hopkins |
| Sarah MacInnes | Research Advisor | 2014 | Staff Scientist | MyoKardia |
| Travis Urban | Research Advisor | 2012-13 | Neurology Resident | Stanford University |

Summer Students:

| | | | | |
|------------------|-------------------|------|----------------------|---------------------|
| Alex Chen | Undergrad Advisor | 2021 | Undergrad | UCLA |
| Jane Xu | FAER Advisor | 2021 | Medical Student | Dartmouth |
| Isabel Moh | Research Advisor | 2021 | Undergrad Student | Nevada-Reno |
| Zhuldyz Zhanzak | APS Advisor | 2018 | Graduate Student | Emory University |
| Raymond Liu | FAER Advisor | 2018 | Medical Student | U of Pennsylvania |
| Julia Kultchytka | APS Advisor | 2017 | Undergrad Student | LA City College |
| Michael Do | FAER Advisor | 2014 | Anesthesia Attending | UCSF |
| Brian Perez | USRP Co-Advisor | 2013 | Graduate Student | Stanford University |
| Uma Avula | FAER Advisor | 2013 | Medical Student | Indiana University |

Trainee Grants and Awards:

2022: Shufang He, Best of Basic Science Abstract Award ASA Annual Meeting
 2022: Didi Goodnough, Best of Basic Science Abstract Award ASA Annual Meeting

2022: Didi Goodnough, FAER MRTG Career Development Award, (\$250,000)
2021: Beatriz Stein, Stanford Bio-X Poster Award Winner (1 of 3 out of 55 posters)
2021: Shufang He, IARS Kosaka Award Winner, Best Basic Science Abstract, 1st place (\$500)
2021: Xuan Yu, ASPET Cardiovascular Pharmacology Early Career Competition, 2nd place (\$250)
2020: Xuan Yu, TRDRP Postdoctoral Fellowship Grant (\$207,000)
2020: Sunwoo Kang, Stanford VPUE travel grant (\$4,000)
2020: Freeborn Rwere, CARE Stanford Seed Grant (\$10,000)
2019: Feng Xiao, Chinese Government Scholarship (\$30,000)
2018: Pritam Sinharoy, TRDRP Postdoctoral Fellowship Grant (\$223,074)
2018: Raymond Liu, FAER Medical Student Anesthesia Research Fellowship (\$4,000)
2018: Zhuldyz Zhanzak, American Physiological Society Undergraduate Awardee (\$4,300)
2018: Pritam Sinharoy, Stanford University Cardiovascular Institute travel award (\$750)
2018: Pritam Sinharoy, APS Cardiovascular Trainee Award at Experimental Biology (\$800)
2017: Stacy McAllister, K99/R00 recipient from NICHD (\$252,000)
2017: Stacy McAllister, Selected trainee to attend the North American Pain School
2017: Annabel Chen, Stanford Biology Major Grant (\$6,500)
2017: Julia Kulchytska, American Physiological Society Undergraduate Awardee (\$4,300)
2016: Yao Lu, Finalist for IARS Scholar Award, IARS/AUA annual meeting
2016: Nana Wagner, Resident Travel Award AUA annual meeting (\$1,000)
2016: Annabel Chen, Stanford Bio-X USRP Fellowship (\$6,500)
2016: Helen Heymann, FAER Medical Student Year-Long Fellowship (\$60,000)
2015: Nana Wagner, DFG (German NIH equivalent) Fellowship (\$166,000)
2015: Stacy McAllister, NIGMS T32 fellowship, Henzl-Gabor Young Women in Science Award
2015: Leonie Wijermars, Dutch Kidney Foundation Research Grants (totaling €25,000)
2015: Bryce Small, NHLBI Diversity Supplement Award HL1092120S1 (\$28,000)
2014: Michael Do, FAER Best Outcomes Research Project, ASA Annual Meeting
2014: Michael Do, FAER Medical Student Anesthesia Research Fellowship
2014: Sarah MacInnes, AHA Travel Award to AHA BCVS Meeting, July 2014 (\$750)
2013: Andre Pinesett, Society of Physician Scholars Research Grant (\$5,000)
2013: Uma Avula, FAER Medical Student Anesthesia Research Fellowship (\$4,000)