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Chronology of Education

08/1981 – 05/1985	Bachelor of Science in Electrical Engineering (cum laude) Texas A&M University College Station, Texas
06/1985 – 12/1986	Masters of Science in Electrical Engineering United States Air Force Institute of Technology Dayton, Ohio
01/1987 – 03/1987	Graduate Certificate in Reliability and Maintainability United States Air Force Institute of Technology Dayton, Ohio
04/1987 – 07/1992	See employment area
08/1992 – 07/1994	Doctor of Philosophy in Biomedical Engineering College of Engineering (Completed all course work but transferred to Medical Physiology, see next) Texas A&M University College Station, Texas
08/1994 – 05/2002	MD – PhD Combined Program (PhD in Medical Physiology) Texas A&M University College of Medicine College Station, Texas
06/2002 – 06/2005	Internal Medicine Residency Duke University Medical Center Durham, North Carolina
07/2005 – 06/2010	Cardiology Fellowship University of Wisconsin School of Medicine and Public Health Madison, Wisconsin

Board Certifications & Licenses

2004 – 2006	North Carolina Physician License, North Carolina Medical Board
2005 – not active	Internal Medicine Board Certification, ABIM
2008 – 2013	Wisconsin Physician License, State of Wisconsin Medical Examining Board

2010 – present	Cardiovascular Diseases Board Certification, ABIM
2010 – 2026	Texas Physician License, Texas Medical Board
2014 – present	Advance Heart Failure/Transplant Cardiology Board Certification, ABIM
2025 – present	Arizona Physician License, Arizona Medical Board

Chronology of Employment

05/1985 – 03/1987	Active-Duty Officer (2nd Lieutenant) United States Air Force Wright-Patterson Air Force Base, Dayton Ohio
04/1987 – 09/1992	Activity Officer (2nd Lieutenant – Captain, regular commission) Air Force System Command, Space Systems Division Los Angeles Air Force Base, El Segundo California
08/1992 – 07/1994	Graduate Teaching Assistant Texas A&M University College of Engineering College Station, Texas
08/1994 – 05/2002	Graduate Research Assistant Texas A&M University College of Engineering College Station, Texas
06/2002 – 06/2005	Internal Medicine Intern and Resident Duke University Medical Center Durham, North Carolina
07/2005 – 06/2010	Cardiology Fellow University of Wisconsin School of Medicine and Public Health Madison, Wisconsin
07/2010 – 08/2017	Assistant Professor – Tenure Track Advanced Heart Failure/Transplant Cardiologist Texas A&M University College of Medicine Bryan, Texas
07/2010 – 09/2019	Advanced Heart Failure/Transplant Cardiologist Baylor Scott & White Health Temple, Texas
09/2013 – 06/2015	Medical Director Advance Heart Failure/Transplant Cardiologist Heart Transplant and Mechanical Circulatory Support

	Baylor Scott & White Health Temple, Texas
09/2017 – 10/2026	Associate Professor – Tenured Advanced Heart Failure/Transplant Cardiologist Texas A&M University College of Medicine Bryan, Texas
3/2023 – 10/2025	Director, Cardiac Health and Disease Division of Texas A&M University Cardiovascular Research Institute
11/2025 – present	Medical Director, Heart Failure Section Advanced Heart Failure/Transplant Cardiologist Banner Health Professor of Medicine, Clinical Track Department of Internal Medicine College of Medicine, University of Arizona Tucson, Arizona

Honors and Awards

1984	Tau Beta Pi (Engineering Honor Society)
1984	Etta Kappa Nu (Electrical Engineering Honor Society)
1990	United States Air Force Achievement Medal
1991	United States Air Force Commendation Medal
1992	United States Air Force Commendation Medal First Oak Cluster
1994	Phi Kappa Phi (Honor Society for all academic disciplines)
1995	Elvin P. Smith Award for the outstanding student of the year in Medical Physiology at Texas A&M University, College of Medicine
1997	Alpha Omega Alpha (Medical Honor Society)
2000	First Place – Student Research Week 2000 Awards Biological Sciences II, Graduate, Oral category Texas A&M University
2001	First Place – Oral Presentation, Research Symposium Texas A&M University System Health Science Center
2008	Outstanding Abstract, International Thick and Thin Filament Regulation Striated Muscle Meeting, Madison, Wisconsin

2009	Selected as one of the top 3 Oral Abstracts American Heart Association Scientific Session
2011	Fellow, American College of Cardiology
2021	Frank W. Mayborn Endowed Chair for Heart Research Texas A&M University

Service/Outreach

Local/State Outreach

1995 – 1996	Pioneering & Planning member, Villa Union Mexico.
2017	Volunteer on-site physician for Hurricane Harvey Shelter
2021 – 2021	Volunteer vaccinator and on-site physician for free COVID-19 vaccination Bryan College Station, Texas.

National/International Outreach

2014 – 2017	Chairman, Academic Work Group of Early Career Section of American College of Cardiology
2017 – 2019	Member, Editorial Board of Journal of Molecular and Cellular Cardiology
2019 – 2020	Ad hoc reviewer, NIH special emphasis panels

Departmental Committee(s), Dept of Medical Physiology, Texas A&M University

2011 – 2016	Departmental Core Equipment Committee for Temple Texas Campus
2015 – 2018	Faculty Recruitment Committee
2019 – 2023	Media Committee

College Committee(s), College of Medicine, Texas A&M University

2015 – 2025	Steering Committee for MD – PhD program
2018 – 2019	Workgroup Chairman on Committee to prepare college of medicine for Liaison Committee on Medical Education (LCME) accreditation in 2020.
2019 – 2020	Workgroup chairman on cardiovascular education of the 12th Man Committee to establish curriculum for creating a new Engineering Medicine (EnMED) program
2020 – 2024	Course Director for Cardiovascular Medicine at (EnMED) program

2019 – 2025 Vivarium Committee

University Committee(s), Texas A&M University

2012 – 2015 Senator of the Faculty Senate

2023 – 2025 Ad hoc reviewer for internal grant involving patient care and cardiovascular diseases.

2023 – 2025 Faculty Developmental Leave Committee

Publication/Creative Activity

NCBI Web Link for Publications
https://www.ncbi.nlm.nih.gov/myncbi/carl.tong.1/bibliography/public/

Published Peer-Reviewed Journals

1. **Tong CW**, Rogers SK, Mills JP, Kabrisky MK; *Multisensor Data Fusion of Laser Radar and Forward Looking Infrared for Target Segmentation and Enhancement" in the *Proceedings of the International Society of Optical Engineers (SPIE)* Vol 782-02, 1987. Presented paper at a SPIE conference on 19 May 1987.

2. Rogers SK, **Tong CW**, Kabrisky M, Mills JP; *Multisensor Fusion of LADAR and Passive Infrared Imagery for Target Segmentation in *Optical Engineering* Vol 28(8), 881-886, August 1989. DOI:10.1117/12.7977051

3. **Tong CW**, Kolomenskii AA, Schuessler HA, Trache A, Granger HJ, Muthuchamy M; *Measurements of the Crossbridge Attachment/Detachment Process within Intact Sarcomeres Using the Surface Plasmon Resonance, *Biochemistry Vol 40, 13915-13924, December 2001.* PMID:11705381

4. **Tong CW**, Gaffin RD, Zawieja DC, Muthuchamy M; *Roles of Phosphorylation of Myosin Binding Protein-C and Troponin I in Mouse Cardiac Twitch Dynamics, *J. of Physiology* Vol 558, 927-941, August 2004. PMID:15194741

5. Gaffin RD, **Tong CW**, Zawieja DC, Hewett TE, Klevitsky R, Robbins J, Muthuchamy M; *Charged residue alterations in the inner-core domain and carboxy-terminus of alpha-tropomyosin differentially affect mouse cardiac contractility. *J. of Physiology* Vol 561, 777-791, Dec 2004. PMID:15486021

6. **Tong CW**, Stelzer JE, Greaser ML, Powers PA, Moss RL; Acceleration of crossbridge kinetics by protein kinase A phosphorylation of cardiac myosin binding protein C modulates cardiac function. *Circulation Research,* Vol 103, 974-982, 2008 October 24, doi: 10.1161/CIRCRESAHA.108.177683. PMID:18802026

7. De Lange WJ., Hegge BS, **Tong CW**, Brost TM, Moss RL, Ralphe JC; Neonatal mouse-

derived engineered cardiac tissue: a novel model system for studying genetic heart disease. *Circulation Research,* Vol 109 p8-19, 2011 Jun 24, doi: 10.1161/CIRCRESAHA.111.242354. PMID:21566213

8. Colson BA, Patel JR, Chen PP, Bekyarova T, Abdalla MI, **Tong CW**, Fitzsimons DP, Irving TC, Moss RL; Myosin binding protein-C phosphorylation is the principle mediator of protein kinase A effects on thick filament structure in myocardium, J. of Molecular Cellular Cardiology, Vol 53 p609-16, 2012 Nov, DOI:10.1016/j.yjmcc2012.07.012. PMID:22850286
9. **Tong CW**, Nair NA, Doersch KM°, Liu Y°, Rosas PC°. Cardiac myosin-binding protein-C is a critical mediator of diastolic function. *Pflugers Arch*. 2014 Mar 466(3):451-7;doi:10.1007/s00424-014-1442-. PMID:24442121

10. Stoehr A, Neuber C, Baldau C, Vollert I, Fredrich, FW, Flenner F, Carrier L, Eder A, Schaaf S, Hirt MN, Aksehirlioglu B, **Tong CW**, Moretti A, Eschenhagen T, Hansen A; Automated analysis of contractile force and Ca2+ transients in engineered heart tissue. *American Journal of Physiology Heart and Circulatory Physiology* 2014 May 306(9)H1353-63, doi: 10.1152/ajpheart.00705.2013. PMID:24585781

11. **Tong CW**, Ahmad T, Brittain EL, Bunch TJ, Damp JB, Dardas T, Hijar A, Hill JA, Hillard AA, Houser SR, Jahngir E, Kates AM, Kim D, Lindman BR, Ryan JJ, Rzeszut AK, Sivaram CA, Valente AM, Freeman AM; Challenges facing early career academic cardiologists. *Journal of American College of Cardiology* 2014 Jun 3, 63(21)2199-2208, doi: 10.1016/j.jacc.2014.03.011. PMID:24703919

12. **Tong CW**; Early Career Academic Cardiologist Workgroup of the American College of Cardiology; Reply: is it time to launch JACC: early career? *Journal of American College of Cardiology* 2014 Sep 9;64(10):1068-9. doi: 10.1016/j.jacc.2014.06.1165. PMID: 25190247

13. Abdalla M, Light-McGroary K, **Tong C**, Freeman AM; Launching the New American College of Cardiology Research Network, Advancing High-Value Collaborative Research via "Innovative Networking"; *Journal of American College of Cardiology* 2015, 65(10)1053-1056, doi:10.1016/j.jacc.2015.01.020, PMID:25766954

14. **Tong CW**, Wu X, Liu Y°, Rosas PC°, Saddayappan S, Hudmon A, Muthuchamy M, Powers PA, Valdivia HH, Moss RL; Phosphoregulation of cardiac inotropy via myosin binding protein-C during increased pacing frequency or β_1-adrenergic stimulation; *Circulation Heart Failure* May 2015 8(3)595-604, pii: CIRCHEARTFAILURE.114.001585; PMID:25740838

15. Rosas PC°, Liu Y°, Abdalla MI°, Thomas CM, Dusio GF°, Kidwell D°, Mukhopadhyay D°, Kumar R, Mitchell BM, Baker KM, Fitzsimons DP, Powers PA, Patel BG, Warren CM, Solaro RJ, Moss RL, **Tong CW**; Phosphorylation of Cardiac Myosin Binding Protein-C is a Critical Mediator of Diastolic Function; *Circulation Heart Failure* May 2015, 8(3)582-594; pii: CIRCHEARTFAILURE.114.001550; PMID: 25740839

16. Doersch KM°, **Tong CW**, Gongora E, Konda S, Sareyyupoglu B; Temporary Left Ventricular Assist Device Through an Axillary Access is a Promising Approach to Improve Outcomes in Refractory Cardiogenic Shock Patients. *American Society of Artificial Internal Organs ASAIO Journal* 2015 May-Jun 61(3)253-8. Doi:10.1097/MAT.000000000000222; PMID:25923576

17. Lindman BR[#], **Tong CW[#],** Carlson DE, Balke W, Jackson EA, Madhur MS, Barac A, Abdalla M, Brittain EL, Desai N, Kates AM, Freeman AM, Mann DL; National Institutes of Health Career Development Awards for Cardiovascular Physician-Scientists, Recent Trends and Strategies. *Journal of American College of Cardiology*, October 2015, 66(16)1816-1827; doi:10.1016/j.jacc.2015.08.858; PMID:26483107 ([#]Equal first author)

18. **Tong CW[#]**, Dusio GF, Govindan S, Johnson DW, Kidwell DT, De La Rosa LM, Rosas PC, Liu Y, Newell-Rogers MK, Michel JB, Treciakowski JP, Sadayappan S.[#]; Usefulness of Released Cardiac Myosin Binding Protein-C as a Predictor of Cardiovascular Events. *American Journal of Cardiology* , E-published ahead of print July 2017, doi: 10.1016/j.amjcard.2017.07.042 ;PMID: 28847594 ([#]equal senior author)

19. **Tong CW**, Madhur MS, Rzeszut AK, Abdalla M, Abdudayyeh I, Alexanderson E, Buber J, Feldman DN, Gopinathannair R, Hira RS, Kates AM, Kessler T, Leung S, Raj SR, Spatz ES, Turner MB, Valente AM, West K, Sivaram CA, Hill JA, Mann DL, Freeman AM; Status of Early-Career Academic Cardiology, A Global Perspective. *Journal of American College of Cardiology*, October 2017, 70:2290-303.

20. Liu Y[o], Wang J, Li J, Wang R, Tharakan B, Zhang SL, **Tong CW**, Peng X; Deletion of Cdc42 in embryonic cardiomyocytes results in right ventricle hypoplasia. *Clinical and Translational Medicine,* November 2017, 6:40, doi 10.1186/s40169-017-0171-4.

21. Rosas PC[o], Warren CM, Creed HA[o], Trzeciakowski JP, Solaro RJ, **Tong CW**; Cardiac Myosin Binding Protein-C Phosphorylation Mitigates Age-Related Cardiac Dysfunction, Hope for Better Aging? *Journal of American College of Cardiology: Basic to Translation Science,* November 2019, 4:817-830; doi:10.1016/j.jacbts.2019.06.003

22. Jokerst S, Nizmutdinov D[o], Edgar C, Kaspick AM, **Tong CW**, Dostal DE. Preparation of Neonatal Rat Papillary Muscle for Contractile Studies. Methods Mol Biol. 2021;2319:31-44. doi: 10.1007/978-1-0716-1480-8_4. PubMed PMID: 34331240; NIHMSID:NIHMS1755981

23. Liu Y[o], Dostal DE, **Tong CW**. Isolation of Adult Cardiomyocytes Using Langedorff Perfusion Aparatus. Methods Mol Biol. 2021;2319:143-152. doi: 10.1007/978-1-0716-1480-8_16. PubMed PMID: 34331252.

24. Lei Yuanjiu[o], Martinez CG, Torres-Odio S, Bell SL, Birdwell CE, Bryant JD, **Tong CW**, Watson RO, West LC, West AP. Elevated type I interferon responses potentiate metabolic dysfunction, inflammation, and accelerated aging in mtDNA mutator mice. *Science Advances*, May 2021, V7 eabe7548. PMID 34039599.

25. Creed HA[o], **Tong CW**, Preparation and Identification of Cardiac Myofibril from Whole Heart Samples, *Methods Molecular Biology* 2021; 2319:15-24; doi: 10.1007/978-1-0716-1480-8_2. PubMed PMID: 34331238; NIHMSID:NIHMS1755980.

26. Koyilot MC, Natarajan P, Hunt CR, Sivarajkumar S, Roy R, Joglekar S, Pandita S, **Tong CW**, Marakkar S, Subramanian L, Yadav SS, Cherian AV, Pandita TK, Shameer K, Yadav KK. Breakthroughs and Applications of Organ-on-a-Chip Technology. *Cells*. 2022 Jun 2;11(11). doi: 10.3390/cells11111828. Review. PubMed PMID: 35681523; PubMed Central PMCID: PMC9180073.

27. Yan H, Yang W, Zhou F, Pan Q, Allred K, Allred C, Sun Y, Threadgill D, Dostal D, **Tong C**, Guo S. Estrogen Protects Cardiac Function and Energy Metabolism in Dilated Cardiomyopathy Induced by Loss of Cardiac IRS1 and IRS2. *Circulation: Heart Failure*. 2022. June. V15 e008758; doi:10.1161/CIRCHEARTFAILURE.121.008758; PMID:35579013; PCMID: PMC9675316

28. Nelson S, Beck-Previs S, Sadayappan S, **Tong C**, Warshaw DM. Myosin-Binding Protein C stabilizes, but is not the sole determinant of SRX myosin in cardiac muscle. *J Gen Physiol*. 2023 Apr 3;155(4). doi: 10.1085/jgp.202213276. Epub 2023 Jan 23. PubMed PMID: 36688870; PubMed Central PMCID: PMC9884578.

29. Lei Y°, VanPortfliet JJ, Chen Y, Bryant JD, Li Y, Fails D Torres-Odio S, Ragan KB, Deng J, Mohan A, Wang B, Brahms ON, Yates SD, Spencer M, **Tong CW**, Bosenberg MW, West LC, Shadel GS, Shutt TE, Upton JW, Li P, West AP. Cooperative sensing of mitochondrial DNA by ZBP1 and cGAS promotes cardiotoxicity. *Cell,* 2023 July 6 186(3013). https://doi.org/10.1016/j.cell.2023.05.039. PubMed PMID: 37352855. PMCID: PMC10330843.

30. Williamson B, **Tong C**. Management of chronic heart failure with reduced ejection fraction. *The Journal of the American Board of Family Medicine*, 2024 v37p364. DOI: https://doi.org/10.3122/jabfm.2023.230436R1 PMID: 39142870.

31. Hsiao Chin-To, **Tong C**, Cote Gerard L. Machine Learning-Based VO_2 Estimation Using a Wearable Multiwavelength Photoplethysmography Device. Biosensors 2025 v15(4), p208, https://doi.org/10.3390/bios15040208 PMID: 40277522.

Other Scholarship

Abstracts

2000 **Tong CW**, Kolomenski AA, Schuessler HA, Granger HJ, Muthuchamy M; *Determination of Myosin to Actin Attachment and Detachment Within Intact Cardiac Sarcomeres in Real Time by Using Surface Plasmon Resonance. Presented at Molecular Biology of the Cardiovascular System (A Keystone Symposium), Snowbird, Utah, January 12-17, 2000.

2000 **Tong CW**, Kolomenski AA, Schuessler HA, Granger HJ, Muthuchamy M; *Using Surface Plasmon Resonance to Monitor Acto-myosin Attachment/Detachment Within Intact Sarcomeres. *Biophysics J*78(1): 1386. Presented at 44th Annual Biophysical Society meeting, New Orleans, Louisiana, February 12-16, 2000

2001 **Tong CW**, Gaffin RD, Zawieja DC, Muthuchamy M; *Role of Tropomyosin and Myosin Binding Protein C in Force Frequency Relationship of Cardiac Muscle. Presented at Experimental Biology, Orlando, Florida, March 31 - April 4, 2001.

2007 **Tong CW**, Powers P, Greaser M, Hacker T, Moss RL; Phosphorylation of Myosin Binding Protein-C Enhances *in Vivo* Cardiac Contractility, Presented at 51st Biophysical Society Annual Meeting, March 3-7 2007, Baltimore, MD

2007 **Tong CW**, Stelzer JE, Greaser ML, Powers PA, Moss RL; Phosphorylation of Myosin Binding Protein C Affects Skinned Myocyte Fiber Mechanics, Presented at International Society of Heart Research World Congress, June 23rd 2007, Bologna, Italy

2007 **Tong CW**, Stelzer JE, Greaser ML, Powers PA, Moss RL; Absence of Protein Kinase A Phosphorylation of Cardiac Myosin Binding Protein Causes Myocardial Dysfunction and Hypertrophy Presented at 80th American Heart Association Scientific Sessions in Orlando, FL, November 5th 2007

2008 **Tong CW**, Wu X, Muthuchamy M, Moss RL; Ablation of Myosin Binding Protein C Accelerates the Kinetics of Cross-Bridge Cycling during Myocardial Twitch, Presented at 52nd Biophysical Society Annual Meeting, February 5th 2008, Long Beach, CA

2008 **Tong CW**, Wu X, Muthuchamy M, Scherman JA, Valdivia HH, Moss RL; Reduced phosphorylation of cardiac myosin binding protect C (cMyBP-C) depresses myofilaments' responses to calcium during the myocardial twitch, Presented at Inaugural Thick and Thin Filament Regulation in Striated Muscle Meeting May 4-6 2008, Madison, WI; ****selected as Outstanding Abstract for this meeting***

2008 **Tong CW**, Wu X, Muthuchamy M, Scherman JA, Valdivia HH, Moss RL; Cardiac Myosin Binding Protein C (cMyBP-C) Ablation Causes Acceleration of Kinetics and Depressed Cooperative Activation During the Myocardial Twitch, Presented at International Society of Heart Research (ISHR) North American Section, June 16-21 2008, Cincinnati OH

2008 **Tong CW**, Wu X, Muthuchamy M, Moss RL; Cardiac Myosin Binding Protein-C (cMyBP-C) Phosphorylation Modulates Relaxation in Myocardium, Presented at American Heart Association Basic Cardiovascular Sciences Conference 2008 - Heart Failure: Molecular Mechanisms and Therapeutic Targets, July 28-31 2008, Keystone, CO

2008 **Tong CW**, Wu X, Muthuchamy M, Scherman JA, Valdivia HH, Moss RL: Myosin Binding Protein C is Essential for Beta-adrenergic Mediated Acceleration of Cardiac Relaxation, Oral presentation in American Heart Association Scientific Sessions, November 10, 2008 in New Orleans, LA; *Circulation 2008, Vol 118 supplement, page S_350 Abstract 1578.*

2008 **Tong CW**, Wu X, Muthuchamy M, Scherman JA, Valdivia HH, Moss RL: Phosphoryation of Myosin Binding Protein C Contributes to the Force-Frequency Response and Beta-Adrenergic Enhancement of Cardiac Function, Oral presentation in American Heart Association Scientific Sessions, November 10, 2008 in New Orleans, LA; *Circulation 2008, Vol 118 supplement, page S_350 Abstract 1580.*

2009 **Tong CW**, De Lange WE, Ralphe JC: Pacing During Culture Improves Performance of Engineered Cardiac Tissue, International Society of Heart Research (ISHR) North American Section Meeting 2009, May 26-29, 2009, Baltimore, Maryland

2009 **Tong CW**, De Lange WE, Ralphe JC: Electrical Pacing Improves Contractile Function Of Engineered Cardiac Tissue, American Heart Association Basic Cardiovascular Sciences Conference 2009 in July 20 - 23, 2009 at the Ritz-Carlton in Lake Las Vegas, Nevada.

2009 **Tong CW**, Wu X, Muthuchamy M, Scherman JA, Valdivia HH, J. Ralphe JC, Moss RL; Cardiac Myosin Binding Protein C Regulates Cross-bridge Kinetics to Affect Diastolic Function; Oral presentation at American Heart Association 2009 Scientific Sessions in Orlando FL, November 13-18 2009. *Selected as one of the top 3 oral abstracts for 11/18/2009; Circulation 2009, Vol 120 supplement, page S871-b*

2010 **Tong CW**, Wu X, Muthuchamy M, Sadayappan S, Hudmon H, Muthuchamy M, Ralphe JC, Valdivia HH, Moss RL; Frequency dependent phosphorylation of cardiac myosin binding protein-C mediates acceleration of myocardial relaxation to support normal diastolic function; Oral presentation at American Heart Association 2010 Scientific Sessions in Chicago IL, November 12-17 2010; *Circulation 2010, Vol 122 supplement, page A16507*

2011 Liu Y°, Phaong H, Gerilechaogetu FNU, Saddayappan S, Dostal DE, **Tong CW**: A Mechanical stretch induces phosphorylation of cardiac myosin binding protein-C, American Heart Association Basic Cardiovascular Sciences Conference 2011, July 18-21, New Orleans

2012 Abdalla MA°, Liu Y°, Moss RL, **Tong CW**: Lack of Cardiac Myosin Binding Protein-C Phosphorylation Is a Model of Heart Failure with Preserved Ejection Fraction, presented on 3/24/2012 in Chicago at American College of Cardiology 2012 Scientific Sessions

2012 Liu Y°, Abdalla MI°, Alluri H, Glaser SS, Dostal DE, Moss RL, **Tong CW**: Cardiac Myosin Binding Protein-C Couples Cross-Bridge Cycling to Calcium Transients to Provide Normal Cardiac Function. American Heart Association Basic Cardiovascular Sciences Meeting in New Orlean LA, presented on July 24th 2012.

2012 **Tong CW**, Abdalla MI°, Liu Y°, Alluri H°, Dostal DE, Powers PA, Moss RL: Cardiac Myosin Binding Protein-C Phosphorylation is Critical for Normal Diastolic Function. Presented at American Heart Association Basic Cardiovascular Sciences Meeting in New Orlean LA, July 24th 2012.

2013 Mukhopadhyay DH°, Abdalla MI°, Liu Y, Alluri H°, Dostal DE, Thomas C, Kumar R, Baker KM, Patel BG, Warrens C, Powers PA, Moss RL, Solaro RH, **Tong CW:** Cardiac Myosin-Binding Protein C Phosphorylation Enhances Cardiac Relaxation. Presented at American College of Cardiology Scientific Sessions 2013 in San Francisco, CA, March 9, 2013.

2014 Rosas PC°, Liu Y°, Abdalla MI, Thomas CM, Kidwell D°, Kumar R, Baker KM, Patel BG, Warren CM, Solaro RJ, Powers PA, Moss RL, **Tong CW**: Phosphorylated Cardiac Myosin Binding Protein-C Enhances Lusitropy. Presented at American College of Cardiology Scientific Sessions 2014 in Washington DC, March 30, 2014.

2014 Rosas PC°, Liu Y°, Abdalla MI°, Thomas CM, Kidwell D°, Kumar R, Baker KM, Patel BG, Warren CM, Solaro RJ, Powers PA, Moss RL, **Tong CW**: Phosphorylated Cardiac Myosin

Binding Protein-C Enhances Cardiac Relaxation. Presented at Myofilamentment Meeting in Madison WI, June 7, 2014.

2015 Rosas PC[o], Dusio GF[o], Liu Y[o], Abdalla MI[o], Weber D[o], Mitchell BM, **Tong CW**: Cardiac Myosin Binding Protein-C Phosphorylation Enhances Diastolic Function Despite Aging. Presented at American College of Cardiology Scientific Sessions, March 31st 2015, San Diego, CA. Journal of American College of Cardiology, March 2015, Vol 65 Issue10_S, doi:10.1016/S0735-1097(15)60956-1

2015 Liu Y[o], Rosas PC[o], Abdalla MI[o], Duonge KW[o], Kidwell DT[o], Dusio GF[o], **Tong CW**; Cardiac Myosin Binding Protein-C Phosphorylation Mitigates Pressure-Overload Heart Failure Despite Alterations in Calcium Handling; Poster presentation at American Heart Association Scientific Sessions 2015 on 8th November 2015 at Orlando. *Circulation 2015 Vol 132 Supplement-3, Abstract 17263.*

2016 Dusio GF, Liu Y, Rosas PC, Tobin R, Newell-Rogers MK, **Tong CW**. Absence of Cardiac Myosin Binding Protein-C Increases Inflammatory Damage to the Heart. Invited to present at American College of Cardiology Scientific Sessions, April 2nd 2016, Chicago IL

2016 Paola C. Rosas[o], Giuseppina Dusio[o], Piayli Chatterjee, Yang Liu[o], **Carl W. Tong**. Cardiac Myosin Binding Protein-C Phosphorylation Preserves Diastolic Function in Aging Hearts. American Heart Association 2016 Scientific Sessions, 11/14/2016, New Orleans LA. *Circulation 2016 Vol 134 Supplement-1, Abstract 19346*

2016 Yang Liu[o], Paola C. Rosas[o], David T. Kidwell[o], **Carl W. Tong**. Phosphorylated Cardiac Myosin Binding Protein-C Alters Signaling Response to Improve Survival in Heart Failure with Reduced Ejection Fraction. American Heart Association 2016 Scientific Sessions, presented on 11/14/2016 at New Orleans LA, *Circulation 2016 Vol 134 Supplement-1, Abstract 20432*

2017 **Tong CW**, Sharma GV, Rzeszut AK, Bither CD, Byrd K, Walsh MN, Acute Decompensated Heart Failure; the Journey from Patients' Perspective**.** Presented at American College of Cardiology 2017 Scientific Sessions, on 3/17/2017 at Washington DC.

2017 **Tong CW**, Madhur M, Rzeszut AK, Valente AM, Hira R, Leung S, Bubor J, Feldman D, Abudayyeh I, Turner M, Spatz E, Gopinathannair R, Freeman AM. Status of Early Career Academic Cardiology, A Global Perspective. Presented at American College of Cardiology 2017 Scientific Sessions, on 3/18/2017 at Washington DC.

2017 **Tong CW**, Rosas PC, Kidwell DT, Liu Y. Cardiac Myosin Binding Protein-C De-Phosphorylation Mediated Slowing of Cross-Bridge Detachment Worsens Heart Failure. Presented at American College of Cardiology 2017 Scientific Sessions, on 3/18/2017 at Washington DC.

2017 **Carl Wei-Chan Tong**, Dustin Johnson°, Lisa Delarosa°, Giuseppina Dusio°, Suresh Govindan, Paola Rosas°, Yang Liu°, Jeffrey Michel, Jerome Trzeciakowski, Sakthivel Sadayappan. Serum Cardiac Myosin Binding Protein-C Correlates with Severity of Overall Cardiovascular Stress. American Heart Association 2017 Scientific Sessions, 11/12/2017 at Anaheim CA

2017 Paola C. Rosas°, Yang Liu°, **Carl Tong**. Loss of Cardiac Myosin Binding Protein-C Leads to Ineffective Contraction and Relaxation Kinetics which are Reinstated by Reintroducing the Phosphorylated Protein. American Heart Association 2017 Scientific Sessions, presented on 11/12/2017 at Anaheim CA

2017 **Carl Wei-Chan Tong**, Giuseppina Dusio°, Susannah Rogers°, Paola Rosas°, Yang Liu°. Cardiac Myosin Binding Protein-C Modulates the Cellular Immune Response to Protect the Heart. American Heart Association 2017 Scientific Sessions, accepted for presentation on 11/13/2017 at Anaheim CA.

2018 **Carl Wei-Chan Tong,** Paola C. Rosas°, Heidi A. Creed°, R. John Solaro. Cardiac Myosin Binding Protein-C Phosphorylation Mitigates Aging Induced Heart Dysfunction. American Heart Association 2018 Scientific Sessions, presented on 11/12/2018 at Chicago IL

2019 **Carl Wei-Chan Tong,** Ling Wang, Yixin Jin, Yang Liu°, Heidi Creed°, Jian Wang, Mariappan Muthuchamy, Xu Peng. Pressure Stress Triggers Src/focal adhesion kinase complex to phosphorylate tyrosine residue of cardiac myosin binding protein-C. American Heart Association 2019 Scientific Sessions, oral presentation on 11/17/2019 at Philadelphia PA.

2019 **Carl W. Tong,** Heidi A. Creed°, Shu-Huai Tsai, Lih Kuo, Travis W. Hein. Coronary Arteriolar Vasomotor Dysfunction Precedes Cardiac Diastolic Dysfunction in Diabetic Cardiomyopathy. American Heart Association 2019 Scientific Sessions, oral presentation on 11/17/2019 at Philadelphia PA.

2021 Maziyar Keshavarzian, Sunder Neelakantan, Lilly McAlister, Abby Leatherman, Tammay Mukherjee, Sarinity Frazier, **Carl Tong**, Reza Avazmohammdi. Left Ventricular Free Wall Adaptations in Heart Failure with Preserved Fraction: Insights from a Murine Model. American Heart Association 2021 Scientific Session (Virtual Format, 11/13-11/15 2021), Poster.

2022 Jacob D. Kuempel°, Yu Xi, Patrick DeSpain°, Tianru Zhang, Otitodilichukwu Ojukwu, Abigail Osborn°, Brady R. Kuempel°, Xiuren Zhang, Xu Peng, **Carl W. Tong**. Methyltransferase-14 Regulation of Adenosine Methylation on mRNA Contributes to Normal and Adaptive Heart Structure and Function. Lake Breaking Science – American Heart Association 2022 Scientific Session, 11/5/2022, at Chicago IL

2023 Patrick S. Despain°, Jacob D. Kuempel°, Ashley N. Kidwell°, Tianru Zhang, Reed A. Rivera°, Xiuren Zhang, Xu Peng, **Carl W. Tong**. Brahma Related Gene-1 (BRG1) Protein Mediates Helpful Compensatory Response to Retard Development of Heart Failure. –

America Heart Association 2023 Scientific Session, 11/12/2023, at Philadelphia PA. Circulation 148 (Suppl_1), A16825-A16825.

2024 Joshua A. Hale[o], Laticia Ellankil[o], Kaycee Nguyen[o], Lilly McAlister[o], Katherine Tugwell[o], Yunwoo Kwon[o], **Carl W. Tong**. Calcium to Cross-Bridge Coupling within Intact in vivo Hearts Elucidated by Simultaneous Intracardiac Pressure and Intra-Cardiac Myocytes Calcium Measurements. – American Heart Association 2024 Scientific Session, 11/16/2024 at Chicago IL. Circulation 150 (Suppl_1), A4141050-A4141050

2024 Joshua A. Hale[o], Alexander Kolomenksi, Hans A. Schuessler, **Carl W. Tong**. Ambulatory Breath Analyzer for Measuring Cardiac Output. **–** American Heart Association 2024 Scientific Session, 11/16/2024 at Chicago IL. Circulation 150 (Suppl_1), A4147462-A4147462

2025 **Carl W. Tong,** Joshua Hale[o], Lilly McAlister[o], Laila Abdel-Rahim[o], Farah Sheikh. Mechanisms of Heart Failure Induced by Myofilament Mutations: Disruption of mRNA Stability and Expression?. – American Heart Association 2025 Scientific Session to presented on 11/10/2025 at New Orleans, LA.

Conferences/Scholarly Presentations

National Conference (Invited)

2016 Junior PI talk: A Physician-Scientists' Laboratory and Research. International Myofilament Meeting, Madison WI (Jun 2016)

2016 Waging War Against Heart Failure, A Physician-Scientist's Campaign. Dept. of Cell and Molecular Physiology, Loyola University Chicago School of Medicine, Chicago IL (Jun 2016)

2016 Contributions of Cardiac Myosin Binding Protein-C to Healthy and Failing Hearts: Department of Physiology and Biophysics University of Illinois at Chicago, Chicago IL (Oct 2016)

2017 Cardiac Myosin Binding Protein-C in all Forms of Heart Failure: Cardiology Grand Rounds, Medical College of Wisconsin Milwaukee WI (Oct 2017)

2017 Cardiac Myosin Binding Protein-C as a Critical Player in Heart Failure with Preserved Ejection Fraction: Division of Cardiovascular Research, University of California at San Diego La Jolla CA (Nov 2017)

2017 Contributions of Cardiac Myosin Binding Protein-C in Healthy and Failing Hearts: Novartis Institute of Biomedical Research Boston MA (Dec 2017)

2018 Cardiac Myosin Binding Protein-C Modulation of Immune System: Diastolic Dysfunction

Occurs Independent of Fibrosis: International Bi-Annual Myofilament Meeting Madison WI (May 2018)

2019 Simultaneously Measuring Force & Intracellular Calcium on Intact Papillary Muscles. American Heart Association Basic Cardiovascular Sciences Scientific Meeting, Boston MA (July 2019)

2024 Basic to Translation Research for Improving Heart Function, Sarver Heart Center, University of Arizona, Tucson AZ (November 2024)

Awarded Grants and Contracts

Active Federal Grant:

1. Title: Cardiac Myosin Binding Protein-C in Development and Reversal of Heart Failure
    a. National Institutes of Health/National Heart Lung and Blood Institute (NIH/NHLBI): R01HL145534
    b. 1/15/2019 - 12/31/2025, plan to request no cost extension through 12/13/2026
    c. Total Direct Cost: $1,707,609; Total Indirect Cost: $725,412; Total: $2,433,021
    d. Role: Carl Tong (Principal Investigator), 20% effort
    e. Co-Investigators: Farah Sheikh (University of California San Diego), Xu Peng (Texas A&M University)

Active/Private Foundation Grants:

2. Title: New Tools for Heart Failure and Covid-19 Treatment
    a. Texas A&M University Presidential Clinical Research Partnership Grant
    b. 1/5/2021 – 12/31/2025
    c. Total Direct Cost: $200,000
    d. Role: Carl Tong (Principal Investigator), 5% effort
    e. Co-Investigators: Gerald Cote (Texas A&M University), Hans Schuessler (Texas A&M University)

3. Title: Calcium to Cross-bridge Coupling in Healthy and Failing Hearts
    a. Texas A&M University Health Science Center Seedling Grant
    b. Total Direct Cost: $65,000; does not fund faculty effort
    c. 6/1/2025 – 7/30/2026
    d. Role: Carl Tong (Principal Investigator), no charge of effort
    e. Co-Investigator: Reza Avazmohammadi (Texas A&M University)

Non-Active Federal Grants

1. Title: Contributions of Cardiac Myosin Binding Protein-C to Healthy and Failing
    a. NIH/NHLBI: K08HL114877
    b. Total Direct Cost: $525,000

c. 7/1/2012 – 6/30/2018
d. Role: Carl Tong (Principal Investigator), 75% effort (NIH requirement for this grant type, Texas A&M University provided the difference between NIH grant allowance and the actual pay for effort)

2. Title: Cardiac Myosin Binding Protein-C Modulates Immune Response to Protect the Heart
    a. NIH/NHLBI: R03HL140266
    b. Total Direct Cost: $100,000
    c. 9/15/2017 – 9/30/2019
    d. Role: Carl Tong (Principal Investigator), 30% effort (Texas A&M University provided the difference between NIH grant allowance and the actual pay for effort)

3. Title: Type I Interferon Responses in Pathobiology of Antracycline – Induced Cardiotoxicity
    a. NIH/NHLBI: R01HL148153
    b. Total Direct Cost: $1,250,000
    c. 8/5/2020 – 7/30/2025
    d. Role: Carl Tong (Co-Investigator at 5% effort); Andrew P. West (Principal Investigator)

<u>Non-Active State Grants</u>

1. Title: Implement Automated Equipment Suite for Non-Destructive Testing of Engineered Heart Tissue
    a. Texas A&M University Temple Campus Research Development
    b. Total Direct Cost: $105,000, equipment purchase and facilities upgrade only, charging of effort was not allowed
    c. 1/1/2016 – 12/31/2018
    d. Role: Carl Tong (Principal Investigator), no charged effort

2. Title: Using Electroluminescence for Multiplexed Detection of Multiple Proteins in Small Samples
    a. Texas A&M University Temple Campus Research Development
    b. Total Direct Cost: $55,000 equipment purchase only
    c. 5/30/2017 – 12/31/2018
    d. Role: Carl Tong (Principal Investigator), no charged effort

<u>Non-Active Private Foundation Grants</u>

1. Title: Roles of Cardiac Myosin Binding Protein-C in Heart Failure
    a. American Heart Association, BGIA7750035
    b. Total Direct Cost: $140,000
    c. 7/1/2011 – 6/30/2014
    d. Role: Carl Tong (Principal Investigator, 20% effort)

2. Title: Roles of Cardiac Myosin Binding Protein-C in Heart Failure
    a. Scott & White Foundation RGP
    b. Total Direct Cost: $50,000
    c. 8/1/2011 – 7/31/2013

    d. Role: Carl Tong (Principal Investigator, 10% effort)

3. Title: Diagnostic and Prognostic Value of Cardiac Myosin Binding Protein-C in Ischemia and Post-Infarction
    a. American Heart Association 14GRNT20490025
    b. Total Direct Cost: $120,000 (evenly split between PI and Co-PI)
    c. 7/1/2014 – 6/30/2016
    d. Role: Carl Tong (Co-Principal Investigator, 5% effort); Sakthivel Sadayappan (Principal Investigator)

4. Title: Cardiac myosin binding protein-C phosphorylation is essential to preserve diastolic function to support exercise tolerance in aging hearts
    a. JL Huffines Institute for Sports Medicine and Human Performance, Huffines Faculty Research Grant
    b. Total Direct Cost: $15,000, animal and facilities cost only
    c. 9/1/2015 – 9/1/2016
    d. Role: Carl Tong (Principal Investigator), did not charge effort