CURRICULUM VITAE

Sima T. Tarzami, MS, PhD
Associate Professor
Department of Physiology & Biophysics
Howard University College of Medicine

Contact Information

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Education

Albert Einstein College of Medicine	Doctor of Philosophy (pathology/Cardiology)	98-02
Hofstra University	Master of Science (Human Cytogenetics)	92-95
Hofstra University	Bachelor of Arts (Biology)	90-92

Post Graduate Education and Training

Albert Einstein College of Medicine	Post-doctoral Fellow	04-06
Eli Lilly Pharmaceutical Company	Post-doctoral Fellow	02-04

Employment History

Academic Appointments

Associate Professor
Department of Physiology & Biophysics
College of Medicine
Howard University 2015-present

Assistant Professor
Cardiovascular Research Center
Mount Sinai School of Medicine 2008-2015

Instructor
Cardiovascular Research Center
Mount Sinai School of Medicine 2006-2008

Professional Society Memberships

American Heart Association
American Physiological Society

Administrative Services

1) Institutional Service

HU-Dept. Physiology Funding Committee 2016-2018
HU-University Wide Faculty Welfare Committee 2016-2018
HU-University Wide Library System Research Committee 2016-2018
HU-Dept. Physiology Student Thesis Committee 2016
Basic Science Advisor for 1-2 year medical students 2017-present
Directing and mentoring Nursing Practicium Program 2016
Mentoring The American Conference of Investigative Cardiology(ACIC) Student 2015-2017
MentoringSTEP UP summer program student 2015-2017
Mentoring American Physiological Society student 2015-2017

2) Local and National Service

Invited Peer Reviewer

Reviewer on AHA Molecular Signaling1-Basic Science Panel 2014-2021
Reviewer on the AHA-Institutional Research Enhancement Award (AIREA) 2017
Member of STEP UP Symposium Career Round-tables at NIH (NIDDK) 2015-2018
Editorial Board Member of the International Journal of Clinical and Experimental Medicine (IJCEM) 2015-present
Guest Editor of the Stem Cell International Journal 2017-2018
Ad-Hoc-Reviewer for the following journals:
Journal of Cardiovascular Pharmacology, International Journal of Clinical and Experimental Pathology (IJCEP), FEBSLETTERS, Journal of Molecular and Cellular Cardiology (JMCC), International Journal of Molecular Sciences (IJMS) 2015-present

3) Teaching Service

HU-College of Medicine:

Small Group Learning Structure and Function Units 1-3 2015-present
50hrs/year
Physiology Laboratory-Structure and Function Units 1-3 2015-present
20hrs/year
Lecturing Structure and Function unit 3 2016-present

- ✓ Hemodynamics and Circulation
- ✓ Cardiovascular Regulation & Coronary Circulation
- ✓ Circulation through Special Regions

HU-College of Dentistry:

Co-coordinating Dental Physiology Program 2018-present
Lecturing Physiology Course 2016-present

- ✓ Cardiovascular Anatomy & Functional Characteristics
- ✓ Dynamics of Blood Flow
- ✓ Microcirculation and Edema
- ✓ Regulation of the Cardiovascular System I & II
- ✓ Coronary and Skin Blood Flow
- ✓ Cardiac Failure

HU-Graduate School: Department of Pharmacology:

Co-coordinating Physiology Program 2018-present
Lecturing Physiology Course 2018-present

- ✓ Cardiovascular Anatomy & Functional Characteristics

- ✓ Dynamics of Blood Flow
- ✓ Microcirculation and Edema
- ✓ Regulation of the Cardiovascular System I & II
- ✓ Coronary and Skin Blood Flow
- ✓ Cardiac Failure

HU- Undergraduate General Physiology:
Lecturing Cardiac physiology, hemodynamics and blood flow 2015-2017&2019

HU- Graduate Advance Physiology
Lecturing Cardiac Anatomy & Function, Hemodynamics and Vascular Biology 2015-present

HU-Nursing and Allied Health
Directing Nursing Practicum Program 2015-2016

MSSM-School of Medicine
Small Group Learning First Year Medical Student 2007-2015
Lecturer for the "Molecules and Cells" course (Core 1) 2007-2015
Lecturer for the Cardiac Anatomy-Physiology and Pharmacology 2014-2015

Student Training Program

I. Basic Science Advisor at HU for 1-2 year medical students
Including:
1) Michael Smith 2016-2017
2) Karen Jeoffroy 2016-2017
3) JasminThompson 2017-2018
4) Alexis James 2017-2018
5) B'lane Daly 2019-2020
6) Julisha Patten 2019-2020
7) Kelsey Green 2021-2022
8) Nader Shayegh 2021-2022
9) Jasmine Walker 2022-2023
10) Chandler Gilliard 2022-2023
11) David Eke 2022-2023
12) Bassan Tegshjargal 2022-2023

II. Directing and mentoring Nursing Practicium Program
Including:
1. Edna A Howerton, Nursing Practicum Program 2015
2. Tsigereda Nigussie, Nursing Practicum Program 2015

III. Mentoring summer students who were sponsored by:
The American Conference of Investigative Cardiology(ACIC), and
The American Physiological Society's(APS) STEP UP
Including:

1. Adam Abad, Summer Research Program sponsored by ACIC 2016
2. Ahamd Peeran, Summer Research Program sponsored by ACIC 2016
3. Janay Little, Summer Research Program sponsored by APS 2016
4. Kiara Williams, Summer Student Program sponsored by APS-STEP UP 2015

IV. Advisor and mentor to graduate student at Mount Sinai School of Medicine
Including:

1. Andrew Jarrah, Pre-med student 2010-2015
2. Edward Wang: MS student 2012-2014
3. Tom LaRocca: MD, PhD student recipient of NRSA F30 (F30 HL096344-01) award 2009-2012

Funded Grants/Completed

1. Knockdown of CXCR4 and CXCR7 delays cardiogenesis in hiPSC-derived cardiomyocytes
NIH/HU RCMI-P3 Pilot Project grant (PI) 2016-2018

2. SDF-1/CXCR7 role in IPSCs transmigration
HU-Advance Mini grant (PI) 2016-2017

3. Chemokine receptor-4 activation regulates Beta adrenergic-mediated calcium channel internalization and/or desensitization and its subsequent activity
NIH/NHLB K02 award (PI) 2010-2013

4. SDF-1/CXCR4 activation prevents isoproterenol induced-hypertrophy in cardiac myocyte
AHA/Founders Affiliate Award (PI) 2010-2013

5. CXCR4 modulation of L type Ca channels
AHA**/** Founders Affiliate Award (PI) 2007-2010

Publications

Peer-reviewed Journal articles

1) Bisserier M, Mathiyalagan P, Zhang S, Elmastour F, Dorfmüller P, Humbert M, David G, Tarzami S, Weber T, Perros F, Sassi Y, Sahoo S, Hadri L. Regulation of the Methylation and Expression Levels of the BMPR2 Gene by SIN3a as a Novel Therapeutic Mechanism in Pulmonary Arterial Hypertension. 2020 Feb 5;28(2):394-410.Circulation. **2021** Jul 6;144(1):52-73.

2) Malik Bisserier, Javier Milara, Sarah Gubara, Carly Jones, Carlos Bueno-Beti, Elena Chepurko, Erik Kohlbrenner, Michael G. Katz, Anthony Fargnoli, Sima Tarzami, Julio Cortijo, Jane Leopold, Roger J. Hajjar, Yassine Sassi, Lahouaria Hadri. Targeted Gene Therapy using AAV1.Serca2a reverses Pulmonary Fibrosis By Blocking The STAT3/FOXM1 Pathway And Promoting The SNON/SKI Axis. Mol Ther. **2020** Feb 5;28(2):394-410.

3) Thomas J LaRocca, Perry Altman, Andrew A Jarrah, Ron E. Gordon, Edward Wang, Lahouaria Hadri, Mark W. Burke, Georges E. Haddad, Roger J. Hajjar and Sima T. Tarzami. CXCR4 cardiac specific knockout mice develops a progressive cardiomyopathy. Int J Mol Sci. **2019** May 8;20(9).

4) Adam Abad, Ahmed Peeran, Janay I. Little, Georges E. Haddad, Sima T. Tarzami. Alcohol-Mediated Organ Damages: Heart and Brain. Review. Frontier in Pharmacology **2018** Feb 13;9:81. doi: 10.3389/fphar.2018.00081.

5) Andrew A. Jarrah, Martina Schwarskopf, Edward R. Wang, Thomas J LaRocca, Ashwani Dhume, Shihong Zhang, Lahouria Hadri, Roger J. Hajjar, Alison D. Schecter and Sima T. Tarzami. SDF-1 induces TNF-mediated apoptosis in cardiac myocytes. Apoptosis. **2018** Jan;23(1):79-91.

6) Delaine K. Ceholski, Irene C. Tumbull, Andrew A. Jarrah, Changwon Kho, Ahyoung Lee, Lahouaria Hadri, Kevin D. Costa, Roger J. Hajjar, and Sima T. Tarzami. A unique network involving CXCR4 and CXCR7 coordinates cardiac lineage specification and mobilization of induced pluripotent stem cells. Stem Cell Res. **2017** Aug;23:77-86.

7) Edna Howerton and Sima T. Tarzami. Tumor Necrosis Factor-Alpha and Inflammation-Mediated Cardiac Injury. Review. J Cell Sci Ther **2017** Apr; 8:2 .

8) Jarrah AA, Tarzami ST. The duality of chemokines in heart failure. Review. Expert Rev Clin Immunol. **2015** Apr;11(4):523-36.

9) Wang ER, Jarrah AA, LaRocca TJ, Benard L, Chen J, Tarzami ST. Deletion of CXCR4 in cardiomyocytes exacerbates cardiac dysfunction following isoproterenol administration. Gene Ther. 2014 May;21(5):496-506.

10) Larissa Lipskaia, Regis BOBE, Jiqiu Chen, Irene C. Turnbull, jose-javier lopez-barba, Elise Merlet, Dongtak Jeong, Ioannis Karakikes, Alexandra Ross, Lifan Liang, Nathalie Mougenot, Fabrice Atassi, Anne-Marie Lompre, Sima T Tarzami, Jason Kovacic, Evangelia Kranias, Roger Hajjar, and Lahouaria Hadri. Synergistic role of Protein Phosphatase Inhibitor 1 and SERCA2a in the acquisition of the Contractile Phenotype of Arterial Smooth Muscle Cells. Circulation. 2014 Feb 18;129(7):773-85.

11) LaRocca TJ, Jeong D, Kohlbrenner E, Lee A, Chen J, Hajjar RJ, Tarzami ST. CXCR4 gene transfer prevents pressure overload induced heart failure. J Mol Cell Cardiol. 2012 Aug;53(2):223-32.

12) Sima T. Tarzami. Chemokines and Inflammation in Heart disease: Adaptive or Maladaptive? Review. Int J Clin Exp Med. 2011;4(1):74-80..

13) LaRocca T, Schwarzkopf M, Altman P, Zhang S, Gupta A, Gomes I, Alvin Z, Champion HC, Haddad G, Hajjar RJ, Devi LA, Schecter AD, Tarzami ST. B_2 adrenergic receptor in the heart is modulated by interactions with CXCR4 chemokine receptor. J Cardiovasc Pharmacol. 2010 Nov;56(5):548-59.

14) Chen J, Chemaly E, Liang L, Kho C, Lee A, Park J, Altman P, Schecter AD, Hajjar RJ, Tarzami ST. Effects of CXCR4 gene transfer on cardiac function following ischemia-reperfusion. Am J Pathol. 2010 Apr;176(4):1705-15.

15) Tarzami ST, Wang G, Li W, Green L, Singh JP. Enhancement of Bone Marrow-Derived Endothelial Progenitor Cell Differentiation by PAR-1 Activation. J Thromb Haemost. 2006 Mar;4(3):656-63.

16) Tarzami ST, Calderon TM, Deguzman A, Lopez L, Kitsis RN, Berman JW. MCP-1/CCL-2 protects cardiac myocytes from hypoxia-induced apoptosis by a Gαi independent pathway. Biochem Biophys Res Commun. 2005 Oct 7;335(4):1008-16.

17) Tarzami ST, Hsieh SS, Esterman MA, Singh JP. Staurosporine Promotes Endothelial Cell Assembly During In Vitro Angiogenesis by Enhancing FAK Phosphorylation. J Cardiovasc Pharmacol. 2005 Jan;45(1):22-9.

18) Tarzami ST, Singh JP. Pharmacological Revascularization in Coronary and Peripheral Vascular Disease. Review. Expert Opin Investig Drugs. 2004 Oct;13(10):1319-26. Review.

19) Tarzami ST, Miao W, Mani K, Lopez L, Factor SM, Berman JW, Kitsis RN. Opposing Effects Mediated by the Chemokine Receptor, CXCR2, on Myocardial Ischemia-Reperfusion Injury: Recruitment of Potentially Damaging Neutrophils and Direct Myocardial Protection. Circulation. 2003 Nov 11;108(19):2387-92.

20) Tarzami ST, Cheng R, Miao W, Kitsis RN, Berman JW. Chemokine expression in myocardial ischemia: MIP-2 dependent MCP-1 expression protects cardiomyocytes from cell death. J Mol Cell Cardio. 2002 Feb; 34(2):209-21.

21) Pumo DE, Finamore PS, Franek WR, Phillips CJ, Tarzami ST, Balzarano D.complete Mitochondrial genome of a Neotropical fruit bat, Artibeus jamaicensis, and a new hypothesis of the relationships of bats to other eutherian mammals. J Mol Evol. 1998 Dec;47(6):709-17.

22) Jiang Y, Tarzami ST, Burch JB, Evans T. Common role for each of the cGATA-4/5/6 genes in the regulation of cardiac morphogenesis. Dev Genet. 1998;22(3):263-77.

23) Tarzami ST, Kringstein AM, Conte RA, Verma RS. Unique genomic sequences in human chromosome 16p are conserved in the great apes. Mol Gen Genet.1997 Jan 27;253(4):512-4.

24) Tarzami ST, Kringstein AM, Conte RA, Verma RS. A unique genomic sequence in the Wolf-Hirschhorn syndrome [WHS] region of humans is conserved in the great apes. Genetica. 1996 Oct;98(2):217-9.

Abstracts and / or Proceedings

1) UMDF Mitochondrial Medicine 2019 Symposium June 26-29, **2019** Washington DC. Poster Presentation. " CXCR4 cardiac specific Knockout mice develops a progressive cardiomyopathy". Thomas J LaRocca, Perry Altman, Andrew A Jarrah, Ron E. Gordon, Edward Wang, Lahouaria Hadri, Mark W. Burke, Georges E. Haddad, Roger J. Hajjar and Sima T. Tarzami.

2) 10th World Congress and Expo on Cell & Stem Cell Research March 19-21, **2018** New York, NY. **Keynote Speaker/Oral Presentation**. "CXCR4 and CXCR7 play distinct roles in cardiac lineage specification and pharmacologic β-adreneric response". Sima T. Tarzami.

3) RCMI Translational Science October 28-November 1, **2017** Washington DC. Poster Presentation. "A regulatory role for SDF-1/CXCR4 axis". Janay I. Little, Adam Abad, Ahmed Peeran, Mustafa Baker, Georges E. Haddad, Sima T. Tarzami.

4) 18th Biotechnology Congress October 19-20 **2017** New York, NY. **Keynote Speaker/Oral Presentation**. "Human induced pluripotent stem cells are invaluable tolls in the investigation of in vitro disease modeling, drug testing, and in vivo cell replacement therapies". Sima T. Tarzami.

5) Experimental Biology (EB) April 22-26, **2017** Chicago, IL (Cardiovascular Session). Poster Presentation. "A Regulatory role for SDF-1/CXCR4 axis In promoting TNF-mediated cardiac damage associated with alcoholic cardiomyopathy". Janay I. Little, Adam Abad, Ahmed Peeran, Mustafa Baker, Georges E. Haddad, Sima T. Tarzami.

6) 8th World Congress and Expo on Cell & Stem Cell Research March 20-22, **2017** Orlando, FL. Poster Presentation. "A unique network involving CXCR4 and CXCR7 coordinates cardiac lineage specification and mobilization of induced pluripotent stem cells". Delaine K. Ceholski, Irene C. Tumbull, Andrew A. Jarrah, Changwon Kho, Ahyoung Lee, Lahouaria Hadri, Kevin D. Costa, Roger J. Hajjar, and Sima T. Tarzami.

7) American Heart Association (AHA) Scientific Sessions Nov 12-16, **2016** New Orleans, Louisiana. Poster Presentation. "A unique network involving CXCR4 and CXCR7 coordinates cardiac lineage specification and mobilization of induced pluripotent stem cells". Delaine K. Ceholski, Irene C. Tumbull, Andrew A. Jarrah, Changwon Kho, Ahyoung Lee, Lahouaria Hadri, Kevin D. Costa, Roger J. Hajjar, and Sima T. Tarzami.

8) Cell Symposium September 25-27, **2016** Berkeley, CA. Poster Presentation. "SDF-1/CXCR4/CXCR7 role in iPS cell-based Therapies". Sima T. Tarzami.

9) STEP UP Program funded by NIH-NIDDK August 12, **2015** Bethesda, MD. Poster Presentation. "Low alcohol beneficial effects on the cardiac function during cardiac hypertrophy". Kiera Z. Williams, Mustafa Baker, Sima T. Tarzami, George E. Haddad.

10) Keystone Symposium April 7-12, 2013 (Cardiac remodeling, signaling, matrix and heart function (D4)). Poster Presentation. "CXCR4 knockout exacerbates cardiac dysfunction in an isoproterenol-induced model of heart failure". Edward R. Wang, B.S., Andrew J. Jarrah, Sima T. Tarzami.

11) Keystone Symposium April 7-12, 2013 (Cardiac remodeling, signaling, matrix and heart function (D4)). Poster Presentation. "CXCR4 gene transfer prevents pressure overload induced heart failure". Thomas J. LaRocca, Dongtak Jeong, ErikKohlbrenner, Ahyoung Lee, JiQiu Chen, Roger J. Hajjar, Sima T. Tarzami.

12) American Heart Association meeting November 12-17, 2011 (Mechanisms of Ischemic injury). Abstract Oral Session "AOS.712.01a". "By Virtue of its Interaction with the β_2-adrenergic Receptor, CXCR4 Plays a Role in the Regulation of β_2-adrenergic Receptor Signaling Pathway Affecting Calcium and Contractility in Cardiac Myocytes". LaRocca T, Champion HC, Haddad G, Hajjar R, Devi LA, Schecter AD, Tarzami ST.

13) 2nd Word Congress on Biomarkers and Clinical Research September 12-14, 2011 Baltimore. Invited Speaker/Oral Presentation. “Myocardial CXCR4 interaction with β-adrenergic receptor: a potential therapeutic approach for congestive heart failure”. Sima T. Tarzami., USA

14) Keystone Symposium February 22-27, 2011 (Cardiac Growth/Regeneration (X3) and Molecular Cardiology: Disease Mechanisms and Experimental Therapeutics (X4)). Poster Presentation. “Myocardial Expression, Signaling, and Function of Chemokine Receptor-4 (CXCR4): Effects of CXCR4 Gene Transfer on Cardiac Function Following Ischemia-Reperfusion Injury”. Chen J, Chemaly E, Liang L, Kho C, Lee A, Park J, Altman P, Schecter AD, Hajjar RJ, Tarzami ST.

15) Keystone Symposium February 22 - 27, 2011 (Cardiac Growth / Regeneration (X3) and Molecular Cardiology: Disease Mechanisms and Experimental Therapeutics (X4)). Poster Presentation. “The effect of biased CXCR4 signaling in the heart during pressure overload in the mouse”. Thomas J. LaRocca, Dongtak Jeong, Erik Kohlbrenner, Ahyoung Lee, JiQiu Chen, Roger J. Hajjar*, Sima T. Tarzami*.

16) Keystone Symposium April 7-12, 2010 (GPCRs meetings). Poster Presentation. “Beta 2-Adrenergic Receptor Signaling in the Cardiac Myocyte is Modulated by Interactions with CXCR4”. LaRocca, Thomas J; Schwarzkopf, Martina; Altman, Perry; Zhang, Shihong; Gupta, Achla; Gomes, Ivone; Alvin, Zikiar; Champion, Hunter C; Haddad, Georges; Roger, Hajjar J; Devi, Lakshmi A; Schecter, Alison D; Tarzami, Sima T.

17) Keystone Symposium April 2-7, 2009 (Common mechanisms in arrhythmias and Heart failure meetings). Poster Presentation. “A novel cross-talk mechanism between β-adrenergic receptors and CXCR4 in the cardiac myocyte”. Thomas LaRocca, Shihong Zhang, Roger Hajjar*. Sima T. Tarzami*.

18) Keystone Symposium January 22-27, 2007 (Cardiac development and disease/Cardiovascular disease). Poster Presentation. “CXCR4 regulation of Beta-adrenergic receptor in adult heart”. Sima T. Tarzami and Alison D. Schecter.