

CURRICULUM VITAE

Bong Sook Jhun, PhD

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Rhode Island Hospital
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EDUCATION**MONTH/YEAR****DEGREE/YR/SUBJECT****Undergraduate School**

Department of Chemistry
Kyung Hee University
Seoul, Republic of Korea

Mar 1995 – Feb 1999

B.S., 1999, Chemistry

Graduate School

Department of Chemistry
Kyung Hee University
Seoul, Republic of Korea

Mar 1999 – Feb 2001

M.S., 2001, Biochemistry

School of Medicine

Kyung Hee University
Seoul, Republic of Korea

Mar 2003 – Feb 2006

Ph.D., 2006, Molecular/Cell Biology

POSTGRADUATE TRAINING**INSTITUTION****MONTH/YEAR**

Postdoctoral Fellow
(Laboratory of Dr. Chad K. Oh)

Harbor-UCLA Medical Center
Los Angeles Biomedical Research
Institute (LA BioMed)
Torrance, CA, USA

Oct 2006 – Aug 2007

Postdoctoral Research Associate
(Laboratory of Dr. Zheng-Gen Jin
& Laboratory of Dr. Yisang Yoon)

University of Rochester
School of Medicine and Dentistry
Rochester, NY, USA

Sept 2007 – Jan 2012

(POST)GRADUATE HONORS AND AWARDS

Excellent Graduate Award	Kyung Hee University, Seoul, Republic of Korea	2000
President Scholarship	Kyung Hee University, Seoul, Republic of Korea	2003, 2004
Superiority Scholarship	Kyung Hee University, Seoul, Republic of Korea	2004, 2005
Academic Research Scholarship	Kyung Hee University, Seoul, Republic of Korea	2004, 2005
Research Presentation Scholarship	Kyung Hee University, Seoul, Republic of Korea	2004, 2005

Research Abroad Scholarship	Kyung Hee University, Seoul, Republic of Korea	2005
Excellent Poster Presentation Award	Korean Society of Medical Biochemistry and Molecular Biology, Seoul, Republic of Korea	2005
Young Investigator Travel Award	Society of General Physiologists	2011
Advance-Clinical and Translational Research (Advance-CTR), Pilot Projects Program Award	NIH/NIGMS	2017
Medical Research Grant Award	Rhode Island Foundation	2018
New Investigator Award	American Physiological Society Cell and Molecular Physiology Section	2018

ACADEMIC APPOINTMENTS

Research Associate I	Thomas Jefferson University, Philadelphia, PA	02/2012 – 07/2015
Instructor (Research)	Thomas Jefferson University, Philadelphia, PA	08/2015 – 01/2016
Instructor (Research)	Brown University, Providence, RI	03/2016 – 09/2017
Assistant Professor (Research)	Brown University, Providence, RI	10/2017 – present

HOSPITAL APPOINTMENTS

Research Associate I	Rhode Island Hospital, Providence, RI	01/2016 – 04/2016
Research Scientist	Rhode Island Hospital, Providence, RI	05/2016 – present

OTHER APPOINTMENTS

Researcher	Bioneer Corporation, Daejeon, Republic of Korea	12/2000 – 12/2001
Researcher	Sam's Bio Corporation, Seoul, Republic of Korea	02/2002 – 02/2003
Ad hoc reviewer	Medical Science Monitor	2017 – present

MEMBERSHIP IN SOCIETIES

Member	Biophysical Society (BPS)	2012 – present
Member	Cardiac Muscle Society	2012 – present
Member	American Heart Association (AHA)	2012 – present
Member	International Society for Heart Research (ISHR)	2013 – present
Member	American Physiological Society (APS)	2015 – present

PUBLICATIONS LIST

PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Kim SJ, Kim YJ, Seo MR, **Jhun BS**: Regulatory mechanism of L-alanine dehydrogenase from bacillus subtilis. *Bull Korean Chem Soc.* **2000**, 21(12): 1217-1221.
2. Hong F, Kwon SJ, **Jhun BS**, Kim SS, Ha J, Kim SJ, Sohn NW, Kang C, Kang I: Insulin-like growth factor-1 protects H9c2 cardiac myoblasts from oxidative stress-induced apoptosis via phosphatidylinositol 3-kinase and extracellular signal-regulated kinase pathways. *Life Sci.* **2001**, 68(10): 1095-1105. PMID: 11228094
3. Lim JI, Bae BN, **Jhun BS**, Kang I, Kim SJ: A simple preparative polyacrylamide gel electrophoresis for the purification of chymotrypsin inhibitor isoforms from ganoderma lucidum. *Bull Korean Chem Soc.* **2003**, 24(10): 1531-1534.

4. Jin Q, **Jhun BS**, Lee SH, Lee J, Pi Y, Cho YH, Baik HH, Kang I: Differential regulation of phosphatidylinositol 3-kinase/Akt, mitogen-activated protein kinase, and AMP-activated protein kinase pathways during menadione-induced oxidative stress in the kidney of young and old rats. *Biochem Biophys Res Commun.* **2004**, 315(3): 555-561. PMID: 14975736
5. **Jhun BS**, Jin Q, Oh YT, Kim SS, Kong Y, Cho YH, Ha J, Baik HH, Kang I: 5-Aminoimidazole-4-carboxamide riboside suppresses lipopolysaccharide-induced TNF-alpha production through inhibition of phosphatidylinositol 3-kinase/Akt activation in RAW 264.7 murine macrophages. *Biochem Biophys Res Commun.* **2004**, 318(2): 372-380. PMID: 15120611
6. **Jhun BS**, Oh YT, Lee JY, Kong Y, Yoon KS, Kim SS, Baik HH, Ha J, Kang I: AICAR suppresses IL-2 expression through inhibition of GSK-3 phosphorylation and NF-AT activation in Jurkat T cells. *Biochem Biophys Res Commun.* **2005**, 332(2): 339-346. PMID: 15910743
7. Lee JY, **Jhun BS**, Oh YT, Lee JH, Choe W, Baik HH, Ha J, Yoon KS, Kim SS, Kang I: Activation of adenosine A₃ receptor suppresses lipopolysaccharide-induced TNF-alpha production through inhibition of PI3-kinase/Akt and NF-kB activation in murine BV2 microglial cells. *Neurosci Lett.* **2006**, 396(1): 1-6. PMID: 16324785
8. **Jhun BS**, Lee JY, Oh YT, Lee JH, Choe W, Baik HH, Kim SS, Yoon KS, Ha J, Kang I: Inhibition of AMP-activated protein kinase suppresses IL-2 expression through down-regulation of NF-AT and AP-1 activation in Jurkat T cells. *Biochem Biophys Res Commun.* **2006**, 351(4): 986-992. PMID: 17097050
9. Ma Z, **Jhun B**, Oh CK: Upstream stimulating factor-1 mediates the E-box-dependent transcriptional repression of the plasminogen activator inhibitor-1 gene in human mast cells. *FEBS Lett.* **2007**, 581: 4485-4490. PMID: 17765890
10. Ma Z., **Jhun B**, Oh CK: Binding of USF-1 to the E-Box regulates the 4G/5G polymorphism-dependent PAI-1 expression in mast cells. *J Allergy Clin Immunol.* **2008**, 121(4): 1006-1012. PMID: 18234320
11. Xu X, **Jhun BS**, Ha CH, Jin ZG: Molecular mechanisms of Ghrelin-mediated endothelial nitric oxide synthase activation. *Endocrinology* **2008**, 149(8): 4183-4192. PMCID: PMC2488251
12. Ha CH, Wang W, **Jhun BS**, Wong C, Hausser A, Pfizenmaier K, Mckinsey TA, Olson EN, Jin ZG: Protein kinase D-dependent phosphorylation and nuclear export of histone deacetylase 5 mediates vascular endothelial growth factor-induced gene expression and angiogenesis. *J Biol Chem.* **2008**, 283(21): 14590-14599. PMCID: PMC2386927
13. Ha CH, **Jhun BS**, Kao HY, Jin ZG: VEGF stimulates HDAC7 phosphorylation and cytoplasmic accumulation modulating matrix metalloproteinase expression and angiogenesis. *Arterioscler Thromb Vasc Biol.* **2008**, 28(10): 1782-1788. PMCID: PMC2746922
14. Wang W, Ha CH, **Jhun BS**, Wong C, Jain MK, Jin ZG: Fluid shear stress stimulates phosphorylation-dependent nuclear export of HDAC5 and mediates expression of KLF2 and eNOS. *Blood* **2010**, 115(14): 2971-2979. PMCID: PMC2854437
15. Ha CH, Kim JY, Zhao J, Wang W, **Jhun BS**, Wong C, Jin ZG: PKA phosphorylates histone deacetylase 5 and prevents its nuclear export, leading to the inhibition of gene transcription and cardiomyocyte hypertrophy. *Proc Natl Acad Sci U S A.* **2010**, 107(35): 15467-15472. PMCID: PMC2932618
16. Yu T, **Jhun BS**, Yoon Y: High-Glucose Stimulation Increases Reactive Oxygen Species Production Through the Calcium and Mitogen-Activated Protein Kinase-Mediated Activation of Mitochondrial Fission. *Antioxid Redox Signal.* **2011**, 14(3): 425-437. PMCID: PMC3025178
17. Yoon Y, Galloway CA, **Jhun BS**, Yu T: Mitochondrial Dynamics in Diabetes. *Antioxid Redox Signal.* **2011**, 14(3): 439-457. PMCID: PMC3025181

18. **Jhun BS***, O-Uchi Jin*, Wang W, Ha CH, Zhao J, Kim JY, Wong C, Dirksen RT, Lopes CM, Jin ZG: Adrenergic signaling controls Rgk-dependent trafficking of cardiac voltage-gated L-type Ca²⁺ channels through PKD1. *Circ Res.* **2012**, 110: 59-70. PMID: PMC4232192 (*Equal Contribution)
19. Galloway CA, Lee H, Nejjar S, **Jhun BS**, Yu T, Hsu W, Yoon Y: Transgenic control of mitochondrial fission induces mitochondrial uncoupling and relieves diabetic oxidative stress in mice. *Diabetes.* **2012**, 61(8): 2093-2104. PMID: PMC3402299
20. O-Uchi J, Komukai K, Kusakari Y, Morimoto S, Kawai M, **Jhun BS**, Hurst S, Hongo K, Sheu SS, Kurihara S: Alpha1-adrenoceptor stimulation inhibits cardiac excitation-contraction coupling through tyrosine phosphorylation of beta1-adrenoceptor. *Biochem Biophys Res Commun.* **2013**, 433(2):188-93. PMID: 23454381
21. **Jhun BS**, Lee H, Jin ZG, Yoon Y: Glucose stimulation induces dynamic change of mitochondrial morphology to promote insulin secretion in the insulinoma cell line INS-1E. *PLoS One.* **2013**, 8(4):e60810. PMID: PMC3614983
22. O-Uchi J, **Jhun BS**, Hurst S, Bisetto S, Gross P, Chen M, Kettlewell S, Park J, Oyamada H, Smith GL, Murayama T, Sheu SS: Overexpression of ryanodine receptor type 1 enhances mitochondrial fragmentation and Ca²⁺-induced ATP production in cardiac H9c2 myoblasts. *Am J Physiol Heart Circ Physiol.* **2013**, 305(12):H1736-51. PMID: PMC3882548
23. **Jhun BS***, O-Uchi Jin*, Xu S, Hurst S, Raffaello A, Liu X, Yi B, Zhang H, Gross P, Mishra J, Ainbinder A, Kettlewell S, Smith GL, Dirksen RT, Wang W, Rizzuto R, Sheu SS: Adrenergic signaling regulates mitochondrial Ca²⁺ uptake through Pyk2-dependent tyrosine phosphorylation of the mitochondrial Ca²⁺ uniporter. *Antioxid Redox Signal.* **2014**, 21(6):863-79. PMID: PMC4116095 (*Equal contribution)
24. O-Uchi J, Ryu SY, **Jhun BS**, Hurst S, Sheu SS: Mitochondrial Ion Channels/Transporters as Sensors and Regulators of Cellular Redox Signaling. *Antioxid Redox Signal.* **2014**, 21(6):987-1006. PMID: PMC4116125
25. Jakob R, Beutner G, Sharma VK, Duan Y, Gross RA, Hurst S, **Jhun BS**, O-Uchi J, Sheu SS: Molecular and functional identification of a mitochondrial ryanodine receptor in neurons. *Neurosci Lett.* **2014**, 575:7-12. PMID: PMC4122666
26. O-Uchi J, Sorenson J, **Jhun BS**, Mishra J, Hurst S, Williams K, Sheu SS, Lopes CM: Isoform-specific dynamic translocation of PKC by alpha1-adrenoceptor stimulation in live cells. *Biochem Biophys Res Commun.* **2015**, 465(3):464-70. PMID: PMC4564329
27. **Jhun BS***, Mishra J*, Monaco S, Fu D, Jiang W, Sheu SS, O-Uchi J: The mitochondrial Ca²⁺ uniporter: Regulation by auxiliary subunits and signal transduction pathways. *Am J Physiol Cell Physiol.* **2016**, 311(1):C67-80. PMID: PMC4967134. (*Equal contribution)
28. **Jhun BS***, Mishra J*, Hurst S, O-Uchi J, Csordás G, Sheu SS. The Mitochondrial Ca²⁺ uniporter: Structure, Function and Pharmacology. *Handb Exp Pharmacol.* **2017**, 240:129-156. PMID: PMC5554456 (*Equal contribution)
29. Allawzi AM, Vang A, Clements RT, **Jhun BS**, Kue NR, Mancini T, Landi AK, Terentyev D, O-Uchi J, Comhair SA, Erzurum SC, Choudhary G. Activation of Anoctamin-1 Limits Pulmonary Endothelial Cell proliferation via p38-MAPK-dependent Apoptosis. *Am J Respir Cell Mol Biol.* **2017**, in press. Nov 3, PMID:29100477
30. **Jhun BS#**, O-Uchi J#, Adaniya SM, Mancini TJ, Cao JL, King ME, Landi AK, Ma H, Shin M, Yang D, Xu X, Yoon Y, Choudhary G, Clements RT, Mende U, Sheu SS#: Protein kinase D activation induces mitochondrial fragmentation and dysfunction in cardiomyocytes. *J. Physiol.* **2018**, 596(5):827-855. PMID: PMC5830422 (#Corresponding author)

BOOKS AND BOOK CHAPTERS

1. O-Uchi J, **Jhun BS**, Sheu SS. Structural and Molecular Basis of Mitochondrial ion channel function. *Cardiac Electrophysiology: From Cell to Bedside (6th edition)*. (Elsevier); 71-84, **2013**
2. O-Uchi J, **Jhun BS**, Mishra J, Sheu SS. Structural and Molecular Basis of Mitochondrial ion channel function. *Cardiac Electrophysiology: From Cell to Bedside (7th edition)*. (Elsevier); 66-79, **2017**

ABSTRACTS

1. **Jhun BS**, Kim MS, Kim SJ. Isolation and characterization of a proteinase inhibitor from Ganoderma Lucidum. 2000 Fall Scientific Meeting and General Assembly of The Biochemical Society of The Republic of Korea, October 7, **2000**, inBioNET Co., Taejon, Korea. (Poster Presentation)
2. **Jhun BS**, Lee JH, Cho YH, Baik HH, Kang I. AMPK Activation Stimulates DNA Synthesis and Protects Jurkat T Lymphocytes from Oxidative Stress-induced Apoptosis. The 14th Annual Meeting of The Korean Society for Molecular and Cellular Biology, October 17, **2002**, Seoul Kyoyuk Munhwa Heokwan, Seoul, Korea. (Poster Presentation)
3. **Jhun BS**, Yoon KS, Cho YH, Baik HH, Lee JH, Kang I. AICA riboside suppresses lipopolysaccharide-induced TNF- α productions through inhibition of phosphatidylinositol 3-kinase/Akt activation in murine macrophages. The 12th Federation Meeting of Korean Basic Medical Scientists, May 8, **2004**, Korea University, Seoul, Korea. (Poster Presentation)
4. **Jhun BS**, Yoon KS, Cho YH, Baik HH, Kang I. AICAR suppresses LPS-induced TNF- α productions through inhibition of phosphatidylinositol 3-kinase/Akt activation in Raw 264.7 murine macrophages. The 61st Annual Meeting 2004 of Korean Society for Biochemistry and Molecular Biology, May 28, **2004**, COEX, Seoul, Korea. (Poster Presentation)
5. **Jhun BS**, Lee JY, Cho YH, Yoon KS, Baik HH, Kang I. Effects of Adenosine, ATP and its Analogs on LPS-induced TNF-alpha Production in Microglia. The 16th Annual Meeting of The Korean Society for Molecular and Cellular Biology, October 15, **2004**, Seoul Kyoyuk Munhwa Heokwan, Seoul, Korea. (Poster Presentation)
6. **Jhun BS**, Yoon KS, Baik HH, Kang I. 5-Aminoimidazole-4-carboxamide riboside suppresses interleukin-2 expression through inhibition of GSK-3 phosphorylation and NF-AT and AP-1 activations in human leukemic Jurkat T cells. The 13th Federation Meeting of Korean Basic Medical Scientists, May 13, **2005**, Grand Hilton Seoul Hotel, Seoul, Korea. (Poster Presentation)
7. **Jhun BS**, Yoon KS, Baik HH, Kang I. AICAR suppresses IL-2 expression through inhibition of NF-AT and AP-1 activations in Jurkat T cells. 62nd KSBMB Annual Meeting in 2005 of Korean Society for Biochemistry and Molecular Biology, May 20, **2005**, COEX, Seoul, Korea. (Poster Presentation)
8. **Jhun BS**, Baik HH, Yoon KS, Kang I. 5-Aminoimidazole-4-carboxamide riboside suppresses interleukin-2 expression through inhibition of nuclear factor of activated T cells in human leukemic Jurkat T cells. The 13th International Conference of Women Engineers and Scientists, August 27, **2005**, Ewha Womens University, Seoul, Korea. (Poster Presentation)
9. **Jhun BS**, Baik HH, Yoon KS, Kang I. Role of AMP-Activated Protein Kinase in Interleukin-2 Production from PMA/Ionomycin and anti-CD3/anti-CD28 Stimulated Human T Lymphocytes. 2005 Fall International Conference of Korean Society of Medical Biochemistry and Molecular Biology, October 26, **2005**, Seoul Kyoyuk Munhwa Heokwan, Seoul, Korea. (Poster Presentation)

10. Ma Z, **Jhun B**, Oh CK. USF-1 regulates the 4G/5G polymorphism-dependent PAI-1 expression in human mast cells. *J Allergy Clin Immunol.* 121(2), Suppl.I:S216 **2008** (Poster Presentation)
11. Jin ZG, Xu XB, **Jhun BS**, Wong C, Ha CH. Ghrelin stimulates endothelial nitrite oxide synthase activation through AMP-activated protein kinase in vascular endothelium. 9th Annual Conference on Arteriosclerosis, Thrombosis and Vascular Biology, April 16-18, **2008**, Atlanta, GA, USA. (Poster Presentation)
12. Jin ZG, **Jhun BS**, Wang W, Ha CH, Wong C. Reactive oxygen species inhibit flow-mediated endothelial nitric oxide synthase activation. 48th Annual Meeting of the American Society for Cell Biology, December 13-17, **2008**, San Francisco, CA, USA. (Poster Presentation)
13. Wang W, Ha CH, **Jhun BS**, Wong W, Jin ZG. Fluid shear stress stimulates HDAC5 phosphorylation modulating KLF2 expression and endothelial inflammation. 48th Annual Meeting of the American Society for Cell Biology, December 13-17, **2008**, San Francisco, CA, USA. (Poster Presentation)
14. **Jhun BS**, Lee H, Yoon Y. Mitochondrial fission is an essential process for glucose-stimulated insulin secretion in pancreatic β cells. 65th Annual Meeting and Symposium of the Society of General Physiologists, September 7-11, **2011**, Woods Hole, MA, USA. (Poster Presentation)
15. O-Uchi J, Pan S, **Jhun BS**, Gross P, Wang N, Sheu SS. Overexpression of ryanodine Receptor type I induces mitochondrial fragmentation in cardiac H9c2 cells. *Biophys J.* (late abstract), **2012** (Poster presentation).
16. O-Uchi J, Porter GA Jr, Kang SH, Boncompagni S, Sokolova N, Gross P, **Jhun BS**, Beutner G, Brookes P, Blaxall BC, Dirksen RT, Protasi F, Pan S, Sheu SS. Malignant hyperthermia mutation of RyR1 (Y522S) increases catecholamine-induced cardiac arrhythmia through mitochondrial injury. *Circ Res.* 111(4) Suppl:A370, **2012** (Platform presentation).
17. O-Uchi J, **Jhun BS**, Sheu SS. Overexpression of RyR1 enhances Ca^{2+} -induced mitochondrial ATP production in cardiac H9c2 cells. *Biophys J.* 104(2):440, **2013** (Poster Presentation).
18. O-Uchi J, **Jhun BS**, Sheu SS. Adrenergic stimulation accelerates mitochondrial Ca^{2+} uptake by PYK2-dependent phosphorylation of mitochondrial Ca^{2+} uniporter in cardiac H9c2 cells. *Biophys J.* 104(2):657, **2013** (Poster Presentation).
19. Lee H, **Jhun BS**, Yoon Y. Role of mitochondrial morphology in bioenergetics. *Biophys J.* 104(2):302, **2013** (Poster Presentation).
20. O-Uchi J, **Jhun BS**, Hurst S, Sheu SS. Alpha1-adrenergic signaling regulates mitochondrial Ca^{2+} uptake through tyrosine phosphorylation of mitochondrial Ca^{2+} uniporter in cardiac cells. *J Mol Cell Cardiol.* 65:S97, **2013** (Poster Presentation).
21. **Jhun BS**, O-Uchi J, Hurst S, Sheu SS. Alpha1-adrenoceptor stimulation induces mitochondrial fragmentation and dysfunction through PKD1 in H9c2 cardiac myoblasts. *J Mol Cell Cardiol.* 65:S152, **2013** (Poster Presentation).
22. Hurst S, O-Uchi J, **Jhun BS**, Sheu SS. Truncated Glycogen Synthase Kinase 3 β (T-GSK3 β) Increases Mitochondrial Fragmentation, Reactive Oxygen Species (ROS) Generation, and Cell Injury. *Circ Res.* 113(4) Suppl:A266, **2013** (Poster Presentation).
23. **Jhun BS**, O-Uchi J, Hurst S, Sheu SS. Adrenergic Stimulation Induces Mitochondrial Fragmentation and Cell Injury through PKD1-dependent Phosphorylation of DLP1 in H9c2 Cardiac Myoblasts. *Circ Res.* 113(4) Suppl:A093, **2013** (Poster Presentation).
24. O-Uchi J, **Jhun BS**, Hurst S, Sheu SS. FAK/Pyk2 Inhibitor Prevents Mitochondrial Ca^{2+} Overload and Cardiac Injury during Adrenergic Stimulation. *Circ Res.* 113(4) Suppl:A150, **2013** (Poster Presentation).
25. O-Uchi J, **Jhun BS**, Hurst S, Raffaello A, Ainbinder A, Dirksen RT, Sun J, Rizzuto R, Sheu SS.

- Adrenergic Stimulation Enhances Mitochondrial Ca²⁺ Uptake and Cell Death Signaling Through Pyk2-Dependent Tyrosine Phosphorylation of the Mitochondrial Ca²⁺ Uniporter. *Circulation*. 128(22) Suppl:A18531, **2013** (Poster Presentation).
26. O-Uchi J, Porter G, Kang SH, Boncompagni S, Sokolova N, Gross P, **Jhun BS**, Beutner G, Brookes P, Blaxall B, Dirksen RT, Protasi F, Pan S, Sheu SS. RyR1 mutation associated with malignant hyperthermia facilitates catecholaminergic stress-included arrhythmia via mitochondrial injury and oxidative stress. *FASEB J*. 28(1) Suppl:893.8, **2014** (Poster Presentation).
 27. O-Uchi J, **Jhun BS**, Xu S, Hurst S, Raffaello A, Liu X, Yi B, Gross P, Ainbinder A, Kettlewell S, Smith GL, Dirksen RT, Wang W, Rizzuto R, Sheu SS. Cardiac α_1 -adrenergic signaling accelerates mitochondrial Ca²⁺ uptake, ROS generation and cell death signaling through Pyk2-dependent phosphorylation of the mitochondrial Ca²⁺ uniporter. *FASEB J*. 28(1) Suppl:893.9, **2014** (Poster Presentation).
 28. Hurst S, O-Uchi J, **Jhun BS**, Sheu SS. Non-Canonical Regulation of GSK-3 β during Oxidative Stress. Gordon Research Conference: Cardiac Regulatory Mechanisms, June 8-13, **2014**, New London, New Hampshire, USA. (Poster Presentation)
 29. O-Uchi J, **Jhun BS**, Hurst S, Kettlewell S, Smith G, Dirksen RT, Wang W, Rizzuto R, Sheu SS. Tyrosine phosphorylation of the mitochondrial Ca²⁺ uniporter regulates mitochondrial Ca²⁺ uptake and cardiomyocyte death signaling under adrenergic stimulation. Gordon Research Conference: Cardiac Regulatory Mechanisms, June 8-13, **2014**, New London, New Hampshire, USA. (Poster Presentation)
 30. **Jhun BS**, O-Uchi J, Hurst S, Mende U, Sheu SS. Cardiac Gq-protein coupled receptor stimulation induces mitochondrial fragmentation and dysfunction through PKD-dependent phosphorylation of DLP1. Gordon Research Conference: Cardiac Regulatory Mechanisms, June 8-13, **2014**, New London, New Hampshire, USA. (Poster Presentation)
 31. **Jhun BS**, Xu X, Mishra J, Hurst S, O-Uchi J, Sheu SS. Small-Molecule PKD Inhibitor Prevents Mitochondrial Fragmentation and Dysfunction during Gq-Protein Coupled Receptor Stimulation in Cardiac Cells. *Biophys J*. 108(2), Suppl:608a, **2015** (Poster Presentation).
 32. O-Uchi J, Hurst S, Mishra J, Xu X, **Jhun BS**, Sheu SS. Tyrosine Phosphorylation of Mitochondrial Ca²⁺ Uniporter Regulates Mitochondrial Ca²⁺ Uptake. *Biophys J*. 108(2), Suppl:609a, **2015** (Poster Presentation).
 33. O-Uchi J, Hurst S, Fontana J, Mishra J, Xu X, Fu D, **Jhun BS**, Aperia A, and Sheu SS. Pyk2-Dependent Phosphorylation of Mitochondrial Ca²⁺ Uniporter Modulates Mitochondrial Ca²⁺ Uptake. *FASEB J*. 29(1), Suppl:844.11, **2015** (Poster Presentation).
 34. **Jhun BS**, O-Uchi J, Mishra J, Xu X, Hurst S, Mende U, Sheu SS. PKD Regulates Mitochondrial Morphology and Function via Phosphorylation of DLP1 in Cardiac Myocytes. *FASEB J*. 29(1), Suppl:LB615, **2015** (Poster Presentation).
 35. Hurst S, Gomez L, **Jhun BS**, O-Uchi J, Sheu SS. Truncation of GSK-3 β in Cardiac Mitochondria is the Master Switch of the mPTP. *FASEB J*. 29(1), Suppl:979.3, **2015** (Platform Presentation).
 36. O-Uchi J, Mishra J, **Jhun BS**, Hurst S, Fu D, Gomez L, Sheu SS. Characterization of the cardiac phenotype of malignant hyperthermia-associated mutation of RyR1. *J Gen Physiol*. 146:264, **2015** (Platform Presentation).
 37. **Jhun BS**, O-Uchi J, Mishra J, Xu X, Hurst S, Mende U, Sheu SS. PKD Translocation to the Outer Mitochondrial Membrane Induces Mitochondrial Fragmentation and Cell Death via DLP1 Phosphorylation in Cardiomyocytes. *FASEB J*. 30(1), Suppl:742.7, **2016** (Poster Presentation).

38. Mishra J, Hurst S, **Jhun BS**, Sheu SS, O-Uchi J. Tyrosine Phosphorylation of Mitochondrial Ca²⁺ Uniporter Dictates Mitochondrial Ca²⁺ Overload and Cardiomyocyte Death. FASEB J. 30(1), Suppl:1224.11, **2016** (Poster Presentation).
39. O-Uchi J, Mishra J, **Jhun BS**, Hurst S, Fu D, Gomez L, Sheu SS. Malignant Hyperthermia-associated Mutation of RyR1 Induces Mitochondrial Damages and Cellular Oxidation in the Heart. FASEB J. 30(1), Suppl:960.5, **2016** (Poster Presentation).
40. O-Uchi J, Fu D, Mishra J, **Jhun BS**, Hurst S, Sheu SS. Angiotensin II-mediated Mitochondrial Ca²⁺ Uptake and Superoxide Generation Activate Proliferative Pathway in Neonatal Cardiac Fibroblasts. FASEB J. 30(1), Suppl:960.6, **2016** (Poster Presentation).
41. **Jhun BS**, O-Uchi J, Zhang P, Mende U, Sheu SS. GqPCR-mediated PKD activation induces mitochondrial fragmentation and dysfunction via phosphorylation of DLP1 in cardiomyocytes. Gordon Research Conference: Cardiac Regulatory Mechanisms, June 5-10, **2016**, New London, New Hampshire, USA. (Poster Presentation)
42. O-Uchi J, Mishra J, **Jhun BS**, Sheu SS. Post transcriptional and post translational modifications of Mitochondrial Ca²⁺ Uniporter (MCU) in cardiac cells. Gordon Research Conference: Cardiac Regulatory Mechanisms, June 5-10, **2016**, New London, New Hampshire, USA. (Poster Presentation).
43. O-Uchi J., Fu D, Mishra J, **Jhun BS**, Sheu SS. Mitochondrial Ca²⁺ Uptake and Superoxide Generation Regulates Angiotensin II-Induced Proliferation in Neonatal Cardiac Fibroblasts. Biophys J. 112(3), Suppl:1, p95a, **2017** (Poster Presentation).
44. Mishra J, Fu D, **Jhun BS**, Sheu SS, O-Uchi J. Angiotensin II-mediated Proliferation of Neonatal Cardiac Fibroblasts and Role of Mitochondrial Ca²⁺ Uptake and Superoxide Generation. FASEB J. 31(1), Suppl:lb690, **2017** (Poster Presentation).
45. Valkov N, Yang D, **Jhun BS**, Zhang P, O-Uchi J. Role of transcript variants of Mitochondrial Ca²⁺ Uniporter. FASEB J. 31(1), Suppl:1007.18, **2017** (Poster Presentation).
46. O-Uchi J, Mishra J, **Jhun BS**, Sheu SS. Malignant hyperthermia-associated mutation of RyR1 induces mitochondrial Ca²⁺ overload in the cardiomyocytes. FASEB J. 31(1), Suppl:1080.5, **2017** (Platform Presentation).
47. O-Uchi J, Mishra J, **Jhun BS**, Sheu SS. Malignant hyperthermia-associated mutation of leaky RyR1 induces mitochondrial damage in the heart. J Investig Med. 65; 810, **2017** (Platform Presentation).
48. Cao JL, Adaniya S, Landi AK, Yang D, **Jhun BS**, Sheu SS, O-Uchi J. Role of Tyrosine Phosphorylation of Mitochondrial Calcium Uniporter in Regulating Mitochondrial Calcium Homeostasis. Biophys J. 114(3):44a, **2018** (Platform Presentation). Biophysical Society (BPS), Education Committee Travel Award
49. **Jhun BS**, Adaniya S, King ME, Sheu SS, O-Uchi J. Mitochondrial calcium uptake-mediated superoxide production induces cardiac fibroblast proliferation under G_q-protein coupled receptor stimulation. Biophys J. (late abstract) **2018** (Poster Presentation).
50. **Jhun BS**, Adaniya SM, King ME, Zhang P, O-Uchi J. Mitochondrial calcium influx-mediated superoxide generation induces cardiac fibroblast proliferation under angiotensin II stimulation. FASEB J. **2018** (in Press) (Poster Presentation).
51. Cao JL, Adaniya SM, Yang D, King ME, **Jhun BS**, Mende U, Sheu SS, O-Uchi J. Proline-rich tyrosine kinase 2 phosphorylates mitochondrial calcium uniporter and regulates mitochondrial calcium uptake. FASEB J. **2018** (in Press) (Poster Presentation).
52. O-Uchi J, **Jhun BS**, Sheu SS. Malignant hyperthermia-associated mutation of leaky RyR1 induces mitochondrial Ca²⁺ overload in the heart. FASEB J. **2018** (in Press) (Poster

Presentation).

INVITED PRESENTATIONS

1. October 21, **2010**. “Mitochondrial Dynamics and its Role in Insulin Secretion of Pancreatic β -Cells”
 - Mitochondrial Research and Innovation Group (MRIG) Seminar Series, Department of Anesthesiology, University of Rochester School of Medicine and Dentistry, Rochester, NY (Regional)
2. March 27, **2015**. “Role of PKD Signaling in Cardiac Mitochondria”
 - Dr. Mende and Dr. Zhang Group Meeting, Cardiovascular Research Center, Rhode Island Hospital, Providence, RI (Regional)
3. November 17, **2015**. “Role of GqPCR-PKD Signaling in Cardiac Mitochondria”
 - Special CVRC Seminar, Cardiovascular Research Center, Rhode Island Hospital, Providence, RI (Regional)
4. May 24, **2017**. “Role of Protein Kinase D Signaling in Cardiac Mitochondria”
 - CVRC Data Club, Cardiovascular Research Center, Rhode Island Hospital, Providence, RI (Regional)
5. July 10, **2017**. “Targeting Mitochondrial Morphology: A New Therapeutic Direction for Heart Failure?”
 - Special Lecture, Lillehei Heart Institute, University of Minnesota, Minneapolis, MN (Regional)
6. September 19, **2017**. “Targeting Abnormal Mitochondrial Morphology for the Treatment of Heart Failure”
 - Special Lecture, Department of Anesthesiology, University of Maryland School of Medicine, Baltimore, MD (Regional)
7. March 8, **2018**. “A novel therapy to reduce cardiac injury and dysfunction after myocardial infarction”
 - Advance-Clinical Translational Research (Advance-CTR) Seminar Series, The Alpert Medical School of Brown University, RI (Regional)

UNIVERSITY TEACHING ROLES

Co-Mentor, Postdoctoral Fellow Training, Sheu Lab, Thomas Jefferson University

Jyostna Mishra, Ph.D. 2014 – 2015

Co-Mentor, Visiting Scholar Training, Sheu Lab, Thomas Jefferson University

Xiaole Xu, Ph.D. 2014

Wenmin Jiang, M.D., Ph.D. 2015

Deming Fu, M.D. 2015

Mentor, Undergraduate Student Training, Cardiovascular Research Center, Rhode Island Hospital

Jessica L. Cao 2016 Summer, 2017 – Present

Amy K. Landi 2017 Summer

Stephanie M. Adaniya 2017 – Present

Milla Shin 2017 – Present

Hanley Ma 2017 – Present

GRANTS

CURRENT

- 1. U54GM115677** (Padbury, PI) 07/20/2017-04/30/2018
NIH/NIGMS Total direct cost: \$75,000
Advance-CTR, Pilot Project
Title: “A novel therapy to reduce cardiac injury and dysfunction after myocardial Infarction”
The goal of this project is to design a pilot study evaluating the activity levels of PKD-DLP1 signaling in atrial myocardium and white blood cells in patients with coronary artery disease, to seek the possibility for using this signaling as a biomarker to determine the severity of myocardial dysfunction.
Role: Pilot Project PI
- 2. P30GM1114750** (Shaw, PI) 05/01/2017-04/30/2018
NIH/NIGMS Total direct cost: \$50,000
COBRE Center for Perinatal Biology, Pilot Project
Title: “Role of mitochondrial Ca²⁺ and ROS in the early postnatal cardiac development”
This project is to examine the molecular mechanisms underlying the proliferation of neonatal cardiac fibroblasts under angiotensin II stimulation, especially focusing on the role of mitochondrial Ca²⁺ uniporter (MCU) and mitochondrial ROS.
Role: Pilot Project Co-I

COMPLETED

- 1. R01 HL122124** (Sheu & Csordas, Multi-PI) 02/12/2014-01/31/2016
NIH/NHLBI Total direct cost: \$1,186,000
Title: “Mitochondria-SR Tethering: Its Role in Cardiac Bioenergetics and Ca²⁺ Dynamics”
This project tested the hypothesis that mitochondria and sarcoplasmic reticulum tethering via Mfn2 family proteins creates a micro-domain of high Ca²⁺ between these two organelles during excitation-contraction coupling. Moreover, mitochondria Ca²⁺ uniporter is clustered in the region of inner mitochondrial membrane that is in proximity with SR. Losses of this juxtaposition decrease excitation-bioenergetics coupling efficiency that leads to energy deficiency and oxidative stress and subsequent heart failure.
Role: Co-I
- 2. R01HL093671** (Sheu, PI) 07/11/2014-01/31/2016
NIH/NHLBI Total direct cost: \$1,000,000
Title: “Ca²⁺ and ROS Crosstalk Signaling in Cardiac Mitochondria”
The goal of this project was to establish a unified theory to describe the mechanisms of crosstalk signaling between Ca²⁺ and reactive oxygen species (ROS) in cardiac muscle cells, and to translate these signaling pathways to the physiology and pathology of cardiac excitation, contraction, and energy metabolism.
Role: Co-I

OTHERS

1. Medical Research Grant #20174335 (Jhun, PI)

04/01/2018-03/31/2019

Rhode Island Foundation

Total direct cost: \$25,000

Title: "Role of PKD in right ventricular dysfunction under pulmonary arterial hypertension"

The goal of this project is to determine the pathophysiological role of protein kinase D (PKD)-mediated mitochondrial injury in right ventricular dysfunction under pulmonary arterial hypertension *in vivo*.

Role: PI

** The grant was relinquished because of institutional transfer to the University of Minnesota on April 30, 2018.*