

C-CRAM is Celebrating 3 years of Cardiovascular Research Excellence at Univ. of Wyoming**Fiscal Year Summary: July 2006 – professional activity (Culver, Du, Ren & Sreejayan labs)****A. Research paper in press or in print (alphabetically by last name of 1st author):**

1. Barceló-Coblijn G, Wold LE, Ren J, Murphy EJ. Prenatal ethanol exposure increases brain cholesterol content in adult rats *Lipids* in press (IF=1.94).
2. Dong F*, Yang X*, Sreejayan N, Ren J. Chromium (D-phenylalanine)₃ improves obesity-induced cardiac contractile defect in ob/ob mice. *Obesity Res.* in press. (*equal first authorship) (IF=3.49)
3. Dong F, Ford SP, Nijland MJ, Nathanielsz PW, Ren J. Influence of maternal undernutrition and overfeeding on cardiac ciliary neurotrophic factor receptor and ventricular size in fetal sheep. *J. Nutri. Biochem.* in press (IF=2.95).
4. Dong F, Li Q, Sreejayan N, Nunn JM, Ren J. Metallothionein prevents high fat diet-induced cardiac contractile dysfunction: Role of peroxisome proliferator-activated receptor γ coactivator-1 α and mitochondrial biogenesis. *Diabetes* in press (IF=7.96).
5. Dong F, Ren J. Fidarestat improves cardiomyocyte contractile function in db/db diabetic obese mice through a histone deacetylase Sir2-dependent mechanism. *J. Hypertens* in press (IF=4.02).
6. Dong F, Ren J. Fitness or fatness - the debate continues for the role of leptin in obesity-associated heart dysfunction. *Curr Diabetes Rev.* in press (IF=N/A).
7. Dong F, Taylor MM, Samson WK, Ren J. Intermedin (Adrenomedullin-2) enhances cardiac contractile function via a protein kinase C and protein kinase A-dependent pathway in murine ventricular myocytes. *J. Appl. Physiol.* 101: 778-784, 2006 (IF=3.18).
8. Doser TA, Culver B, Ren J. COX-2 inhibitors and cardiovascular event: deja vu du jour. *Vascular Disease Prevention* 3: 217-221, 2006 (IF=N/A).
9. Du M, Shen QW, Zhu MJ, Ford SP. Leucine stimulates mTOR signalling in C2C12 myoblast cells through inhibition of AMP-activated protein kinase. *J. Animal Science*, 2007; 85: 919-927 (IF=1.98).
10. Duan J, Dai S, Fang CX, Sun RY, Shavali S, Sharma SK, Ebadi M, Ren J. Phytoestrogen α -zearalanol antagonizes homocysteine-induced imbalance of nitric oxide/endothelin-1 and apoptosis in human umbilical vein endothelial cells (HUVEC). *Cell. Biochem. Biophys.* 45: 137-145, 2006 (IF=1.69).
11. Duan J, Xu HS, Dai S, Wang X, Wu Y, Zhang Y, Sun R, Ren J. Phytoestrogen α -zearalanol inhibits homocysteine-induced endothelin-1 expression and oxidative stress in human umbilical vein endothelial cells. *Atherosclerosis* in press (IF=3.81).
12. Ebadi M, Brown-Borg H, Ren J, Sharma S, Shavali S, El ReFaey H, Carlson EC. Therapeutic efficacy of selegiline in neurodegenerative disorders and neurological diseases. *Curr Drug Targets* 7:1513-1529, 2006 (IF=4.27).
13. Fang CX, Wu S, Ren J. Intracerebral hemorrhage elicits aberration in cardiomyocyte contractile function and intracellular Ca²⁺ transients. *Stroke* 37: 1875-1882, 2006 (IF=5.39).
14. Fang CX, Yang X, Sreejayan N, Ren J. Acetaldehyde promotes rapamycin-dependent activation of p70S6K and glucose uptake despite inhibition of Akt and mTOR in dopaminergic SH-SY5Y human neuroblastoma cells. *Exp. Neurol.* 203:196-204, 2007 (IF=4.16).
15. Han B, Ma C, Zhu MJ, Du M. Insulin-like growth factor-1 (IGF-1) and leucine stimulate mammalian target of rapamycin (mTOR) signaling in pig myogenic satellite cells. *Molecular Reproduction and Development.* In press (IF=2.38).
16. Jay MA, Ren J. Peroxisome proliferator-activated receptor (PPAR) in metabolic syndrome. *Curr Diabetes Rev.* 3: 33-39, 2007 (IF=N/A).
17. Li LL, Kang XL, Ran XJ, Wang CH, Huang L, Wang Y, Ren J, Luo X, Mao XM. Association of 45T/G polymorphism in adiponectin gene and plasma adiponectin level with type 2 diabetes. *Clin. Exp. Pharm. Physiol* in press (IF=1.78).

18. Li LL, Ma XL, Ran JX, Sun XF, Xu LM, Ren J, Mao XM. Genetic polymorphism of peroxisome proliferator-activated receptor-[gamma]2 pro12Ala on ethnic susceptibility to diabetes in Uygurs, Kazaks and Hans subjects. *Clin Exp. Pharm. Physiol.* in press (IF=1.78).
19. Li Q, Fang CX, Nunn JM, Zhang J, LaCour KH, Ren J. Characterization of cardiomyocyte excitation-contraction coupling in the FVB/N-C57BL/6 intercrossed “chocolate” brown mice. *Life Sci.* 80:187-192, 2006 (IF=2.39).
20. Li Q, Ren J. Cardiac overexpression of metallothionein attenuates chronic alcohol intake-induced cardiomyocyte contractile dysfunction. *Cardiovasc. Toxicol.* 6: 173-182, 2006 (IF=N/A).
21. Li Q, Ren J. Cardiac overexpression of metallothionein rescues chronic alcohol intake-induced cardiomyocyte dysfunction: Role of Akt, mammalian target of rapamycin and ribosomal p70s6 kinase. *Alcohol Alcoholism* 41: 585-592, 2006 (IF=2.06).
22. Li Q, Ren J. Chronic alcohol consumption reduces activation of mammalian target of rapamycin (mTOR) and ribosomal p70S6 kinase in cerebral cortex. *Exp. Neurol.* 204:840-844, 2007 (IF=4.16).
23. Li Q, Ren J. Influence of cardiac specific overexpression of insulin-like growth factor-1 on life span and aging-associated changes in cardiac intracellular Ca²⁺ homeostasis, protein damage and apoptotic protein expression. *Aging Cell* in press (IF=6.28).
24. Li Q, Wu S, Li SY, Lopez FL, Du M, Kajstura J, Anversa P, Ren J. Cardiac specific overexpression of insulin-like growth factor-1 (IGF-1) attenuates aging-associated cardiac diastolic contractile dysfunction and protein damage. *Am J Physiol: Heart Circ Physiol* 292: H1398-H1403, 2007 (IF=3.72).
25. Li Q, Yang X, Sreejayan N, Ren J. Insulin-like growth factor I deficiency prolongs survival and antagonizes paraquat-induced cardiomyocyte dysfunction: Role of oxidative stress. *Rejuvenation Res.* in press (IF=8.35).
26. Li SY, Sigmon VK, Babcock SA, Ren J. Advanced glycation endproducts induce ROS accumulation, apoptosis, MAP kinase activation and nuclear O-glcNAcylation in human cardiac myocytes. *Life Sci* 80:1051-1056, 2007 (IF=2.39).
27. Relling DP, Esberg LB, Johnson WT, Murphy EJ, Carlson EC, Saari JT, Lukaski HC, Ren J. Dietary interaction of high fat and marginal copper deficiency on cardiac contractile function. *Obesity Res.* 15: 1242 – 1257, 2007 (IF=3.49).
28. Ren J, Li Q, Wu S, Li SY, Babcock SA. Cardiac overexpression of antioxidant catalase attenuates aging-induced cardiomyocyte relaxation dysfunction. *Mech. Aging Dev.* 128: 276-285, 2007 (IF=3.85).
29. Ren J. Acetaldehyde and alcoholic cardiomyopathy: lessons from the ADH and ALDH-2 transgenic models. *Novartis. Found. Symp.* 285:69-76, 2007 (IF=N/A).
30. Ren J. Influence of gender on oxidative stress, lipid peroxidation, protein damage and apoptosis in hearts and brains from spontaneously hypertensive rats. *Clin. Exp. Pharm. Physiol.* 34: 432-438, 2007 (IF=1.78).
31. Ren J. Interaction between high fat diet and ADH on ethanol-elicited cardiac depression in murine myocytes. *Obesity Res.* in press (IF=3.49).
32. Ren J. Wide spectrum of presentation and variable mechanisms of compromised cardiac function in multiple organ dysfunction syndrome. *J. Organ Dysfunction* in press (IF=N/A).
33. Ren J. New technology, new concept - American College of Cardiology 2007. *New Drug Invest. Tribune* 35: 21, 2007 (IF=N/A).
34. Ren J. Pharmacology of the 21st century: bridging the past and forefront of molecular medicine. *New Drug Invest. Tribune* 28:7, 2006 (IF=N/A).
35. Ren J, Xu JX. Issue of cardiovascular safety of rosiglitazone: a revisit of its clinical application. *New Drug Invest. Tribune* in press (IF=N/A).
36. Saari JT, Wold LE, Duan J, Ren J, Carlson HL, Bode AM, Lentsch AB, Zeng H, Schuschke DA. Cardiac nitric oxide synthases are elevated in dietary copper deficiency. *J. Nutr. Biochem.* 18: 443-448, 2007 (IF=2.95).

37. Shen QW, Underwood KR, Means WJ, McCormick RJ, Du M. Halothane gene, energy metabolism, AMP-activated protein kinase, and glycolysis in postmortem pig longissimus dorsi muscle. *J. Animal Science*. 2007; 85: 1054-1061 (IF=1.98).
38. Sreejayan N, Dolence J, Liu YZ, Ren J. Inhibitory effect of dehydrozingerone on vascular smooth muscle cell function. *J. Vasc. Res.* acceptable (IF=2.51).
39. Turdi S, Li Q, Lopez FL, Ren J. Catalase alleviates cardiomyocyte dysfunction in diabetes: Role of Akt, forkhead transcriptional factor and silence information regulator 2. *Life Sci* in press (IF=2.39).
40. Wu S, Fang CX, Kim J, Ren J. Enhanced pulmonary inflammation following experimental intracerebral hemorrhage. *Exp. Neurol.* 200; 245-249, 2006 (IF=4.16).
41. Wu S, Li Q, Du M, Li SY, Ren J. Cardiac overexpression of catalase prolongs lifespan, attenuates aging-induced cardiomyocyte contractile dysfunction and protein damage. *Clin. Exp. Pharm. Physiol.* 34: 81-87, 2007 (IF=1.78).
42. Xu P, Li SY, Li Q, Ren J, Van Kirk EA, Murdoch WJ, Radosz M, Shen Y. Biodegradable cationic polyester as an efficient carrier for gene delivery to neonatal cardiomyocytes. *Biotechnology and Bioengineering* 95:893-903, 2006 (IF=1.94).
43. Yang X, Li SY, Dong F, Ren J, Sreejayan N. Insulin-sensitizing and cholesterol lowering effects of chromium (phenylalanine)₃. *J. Inorganic Biochem.* 100:1187-1193, 2006 (IF=2.95).
44. Zhang QJ, Li QX, Zhang HF, Zhang KR, Guo WY, Wang HC, Fan M, Zhou Z, Cheng HP, Ren J, Gao F. Aerobic exercise sensitizes myocardial contractile response to insulin - Role of Akt-dependent eNOS activation. *Cardiovasc Res.* 75: 369-380, 2007 (IF=5.85).
45. Zhu MJ, Du M, Hess BW, Means WJ, Nathanielsz PW, Ford SP. Maternal nutrient restriction upregulates growth signaling pathways in the cotyledonary artery of cow placentomes. *Placenta* In press (IF=2.97).
46. Zou XW, Wu S, Ren J. Systemic inflammatory response after stroke. *Int. J. Cerebrovasc Dis* 14: 537-542, 2006 (IF=N/A).

Top performers: Li Q: 12 (7 first); Feng Dong; 7 (6 first); Wu S: 6 (2 first); Fang CX 5 (2 first).

B. Book edited

Molecular Medicine - Vascular Biology Protocols, edited by N. Sreejayan & J. Ren (Humana 2007, 414 page)

C. Research paper currently under revision or publication consideration:

47. Han B, Zhu MJ, Ma C, Ford SP, Nathanielsz PW, Du M. Down-regulation of insulin signaling and AMP-activated protein kinase in pregnant sheep skeletal muscle due to obesity and over-nutrition. *Endocrinology*. In review.
48. Han B, Zhu MJ, Tong J, Ma C, Du M. Rat hindlimb unloading induces down-regulation of insulin like growth factor-1 signaling and AMP-activated protein Kinase, and severe Atrophy of Soleus muscle. *Applied Physiology, Nutrition and Metabolism*. Submitted.
49. Li J, Zhang HF, Wu F, Nan Y, Ma J, Guo WY, Wang HC, Ren J, Das UN, Gao F. Insulin inhibits TNF- α induction in myocardial ischemia/reperfusion: Role of Akt and eNOS phosphorylation. *Crit. Care Med.* in revision.
50. Li LL, Liu XY, Ran JX, Wang Y, Luo X, Wang T, Ren J, Aisha M, Abudurehman R, Xiawudong A, Zhang XC, Mao XM. Analysis of prevalence and risk factors of hypertension among Uygur adults in Tushala and Hetian of Xinjiang Uygur autonomous region. *Acta Pharmacologica Sinica* in review.
51. Li SY, Xu PS, Babcock SA, Dolence EK, Brownlee M, Shen Y, Ren J. Advanced glycation endproducts (AGEs) is linked to cardiomyocyte contractile dysfunction in streptozotocin-induced diabetic mice. *Diabetes* in revision.
52. Ren J, Duan J, Thomas DP, Yang X, Sreejayan N, Sowers JR, Leri A, Kajstura J, Gao F, Anversa P. IGF-1 alleviates diabetes-induced RhoA activation, eNOS uncoupling and myocardial dysfunction. *Obesity Res.* in review.

53. Shen, QW, Ren J, Zhu MJ, Du M. Ca²⁺/calmodulin-dependent protein kinase kinase is involved in AMP-activated protein kinase activation by α -lipoic acid in C2C12 myotubes. *American Journal of Physiology-Cell Physiology*. in revision.
54. Stratton MS, Yang X, Sreejayan N, Ren J. Impact of insulin-like growth factor I on migration, proliferation and Akt-ERK signaling in early and late-passages of vascular smooth muscle cells. *Growth Hormone IGF Res* in review.
55. Sun JB, Duan JH, Dai SL, Ren J, Guo L, Jiang W, Li Y. Preparation and anti-tumor efficiency evaluation of doxorubicin-loaded bacterial magnetosomes, the magnetic nanoparticles as drug carriers isolated from *Magnetospirillum Gryphiswaldense*. *Cancer Detect Prev* in review.
56. Sun JB, Duan JH, Dai SL, Ren J, Zhang YD, Tian JS, Li Y. In Vitro and in vivo antitumor effects of doxorubicin loaded with bacterial magnetosomes (DBMs) on H22 Cells: the magnetic bio-nanoparticles as drug carriers. *Cancer Lett.* in review.
57. Turdi S, Xu PS, Li Q, Kerram P, Shen Y, Ren J. Amidization of doxorubicin alleviates doxorubicin-induced cardiomyopathy. *J. Med. Chem.* in review.
58. Xu H, Duan J, Dai S, Wu Y, Sun R, Ren J. Reactive oxygen species mediate oxidized LDL-induced endothelin-1 gene expression via extracellular signal-regulated kinase (ERK) pathway in vascular endothelial cells. *Free Rad. Biol. Med.* in review.

D. Meeting presentation and abstract submitted in June – July 2007.

Jun, Catherine, Shiyan and Sree submitted abstracts to AHA meeting in Orlando (Nov 2007). Good luck!

Other presentations or accepted presentations

- Mei J. Zhu, Jessica M. Kimsey, Junfeng Tong, Stephen P. Ford, Peter W. Nathanielsz, and Min Du. (2007) Enhanced adipogenesis and decreased AMPK ACTIVITY in fetal muscle of obese, overnourished pregnant sheep. Aspen Perinatal Biology Symposium, The Given Institute, Aspen, Colorado, 8/25-28.
- Tong, J., K. R. Underwood, J. M. Kimsey, M. J. Zhu, W. J. Means, and M. Du. (2007) Myosin type IIb isoform is absent in the longissimus dorsi muscle of beef cattle. The 60th Reciprocal Meat Conference, Brookings, South Dakota. June 17-20, 2007.
- Zhu, M. J., J. Tong, K. R. Underwood, and M. Du. (2007) Activation of AMP-activated protein kinase inhibits adipogenesis in 3T3 cells. The 60th Reciprocal Meat Conference, Brookings, South Dakota. June 17-20, 2007.
- Du, M., B. Han, M. J. Zhu, P. W. Nathanielsz, S. P. Ford. (2007) Insulin signaling and AMP-activated protein kinase are down-regulated in skeletal muscle of overnourished, obese pregnant sheep. Annual Meeting of the Society for the Study of Reproduction. San Antonio, Texas, July 21 to July 25, 2007.
- Du, M., B. Han, M. J. Zhu, P. W. Nathanielsz, S. P. Ford. (2007) Down-regulation of AMP-activated protein kinase in fetal muscle of obese, overnourished pregnant sheep. Annual Meeting of the Society for the Study of Reproduction. San Antonio, Texas, July 21 to July 25, 2007.
- Du, M. Maternal nutrition and fetal skeletal muscle development. Aspen Perinatal Biology Symposium, The Given Institute, Aspen, Colorado, August 25 to 28, 2007.
- Ren J. eNOS uncoupling and diabetic heart diseases. Natural Science Foundation of China, Beijing, China July 2007.
- Ren J. Views from within and beyond: narratives of cardiac contractile dysfunction under senescence", Institute of Geriatric Medicine, Beijing Hospital, Ministry of Health, Beijing, China July 2007

E. Research Proposal submitted or awarded in June – July 2007

Ren J. Outstanding Young Scientist award from the Natural Science Foundation of China, July 2007.

F. C-CRAM activities, news & other laboratory issues:

- (1). We sincerely apologize for the delay in announcing the C-CRAM research award due to incomplete information and the uncompleted publications (some journals are behind by 1-2 months). Will ASAP.
- (2). Dr. [Shiyan Li](#), winner of our most recent 2007 College of Health Sciences New Investigator Award, has moved to Scott & White Hospital in Temple, TX for drug development research. His wife, [Yizhen](#)

Liu, has accepted a research position at Colorado State University. We wish them the best in their career endeavor and thanks for their great contributions to C-CRAM during the past 5 years.

(3). [Asli](#) (right) is now a doctor. She received her PhD degree in July, congratulations!



(4). Dr. [Ji Li](#) (pictured to the left), a CV physiologist, from Yale Univ. will join SoP as an Assistant Professor in September, welcome on board, Professor Li!



(5). School of Pharmacy's NHL's hockey playoff wrapped up in June with [Bonnie](#), [Jun](#) and [Subat](#) finished with a 1-2-3 punch (total points: 226-213-206). Girl rules as Bonnie beat all the guys in the pool.

(6). The 3 SRAP students completed their two months of training in C-CRAM and have headed to their respective hometown just now. Thanks to [Susan](#), [Subat](#) and [Sree](#) for guidance to [Joe](#), [Eliza](#) and [Archit](#), respectively. Their presentations on methamphetamine, Alzheimer's diseases and atherosclerosis, respectively, were well performed this afternoon.

(7). The C-CRAM is glad to welcome several new comers from China Ms. [Jinxia \(Ruth\) Xu](#), Mr. [Peng Zhao](#) and Miss [Jing Neng \(Wendy\)](#). There are two more students are in the process of obtaining visa.



Ruth Xu



Peng Zhao



Wendy Neng

(8). During his most visit to Beijing 3 weeks ago, Dr. [Jun Ren](#) had a chance to chat with the vice chairman of the National People's Congress (soon Vice Premier Minister of China) Prof. [Han, Qide](#) (pictured here). Prof. Han is a cardiovascular scientist we know for over 10 years. He is the honorary president of ACRE, academy of cardiovascular research excellence that we are a major part of. Hopefully there will be more official government support to C-CRAM. The Chinese ambassador to USA Mr. [Zhou, Wenzhong](#) will be here at UW campus in late August and pledge some kind of formal government support to UW's oversea scholars and students.



(9). The C-CRAM will do a back-to-school retreat at Dr. Ren's house during the first week of 2007 fall semester. Everyone is expected to share delicious food, drink as well as some "food for thoughts" - your science with the new comers. By the same token, new comers can share your past research experience.

Enjoy your summer before school starts! *Editor: Jun Ren, 766-6131 (July 27, 2007)*