
Education

Baylor University, Waco, Texas; B.S. in Biology	1974-1978
University of Texas Southwestern Medical School, Dallas, Texas; M.D.	1978-1982
Internship, Internal Medicine UCSF, Moffitt Hospital	6/82 - 6/83
Residency, Internal Medicine UCSF, Moffitt Hospital	7/83 - 6/85
Chief Resident, Internal Medicine UCSF, Moffitt Hospital	7/85 - 6/86
Research Fellow in Cardiology, Am Heart Assoc. grant 86-N25	7/86 - 6/88
Clinical Fellow in Cardiology, UCSF Moffitt Hospital	7/88 - 6/90

Board Certification

Internal Medicine	1985
Cardiovascular Diseases	1989

Honors

Omicron Delta Kappa, Baylor University	1977
Phi Beta Kappa, Baylor University	1978
Summa cum laude with distinction, Baylor University	1978
Morgan-Goode Research Fellowship, U.T. Southwestern Medical School	1979
Alpha Omega Alpha, U.T. Southwestern Medical School	1982
Chief Resident, Internal Medicine UCSF, Moffitt Hospital	1985
Bristol/ACC Fellowship Competition	1989
Merck/ACC Fellowship Award	1990
Career Development Award, Dept. of Veterans Affairs (Research Associate)	1991
Upjohn Award for Young Investigators, International Society for Heart Research	1992
Western Society for Clinical Investigation	1994
Burroughs Wellcome Research Travel Grant (work in the laboratory of Dr. Peter Sugden, National Heart and Lung Institute, London, U.K. 9/27-11/5/95)	1995
Scientific Board of the Sarnoff Foundation for Cardiovascular Research, Chair 2000-2001	1998
Cardiovascular Subspecialty Research Award, WAFMR	1999
Young Investigator Award, Western Society for Clinical Investigation	2000
Secretary/Treasurer, Western Society for Clinical Investigation	2000
Fellow, American Heart Association	2001
Metro Board American Heart Association Desert Mountain Affiliate	2001
Association of University Cardiologists	2002
President, Denver Metro Board, American Heart Association	2003
President, Western Society for Clinical Investigation	2003
Western Association of Physicians	2004
Anna and Henry Borun visiting Professor, University of California, Los Angeles	2005
Who's Who in Medical Sciences Education	2005

Publications

Reviewed Articles:

1. **Long, C.S.**, R.G. Haller, D.W. Foster, and J.D. McGarry. 1982. Kinetics of carnitine-dependent fatty-acid oxidation: implications for human carnitine deficiency. *Neurology* 32:663-666.
2. McGarry, J.D., S.E. Mills, **C.S. Long**, and D.W. Foster. 1983. Observations on the affinity for carnitine and malonyl Co-A sensitivity of carnitine palmitoyl transferase I in animal tissues. *Biochem J.* 214:21-28.
3. **Long, C.S.** 1987. Right ventricular infarction in the 1980's. *Western J. Med.* 146:344-350.

4. **Long, C.S.** and C.P. Ordahl. 1988. Transcriptional repression of an embryo-specific muscle gene. *Dev. Biol.* 127; 228-234.
5. **Long, C.S.**, C.P. Ordahl, and P.C. Simpson. 1989. Alpha-1 adrenergic receptor stimulation of sarcomeric actin isogene transcription in hypertrophy of cultured rat heart muscle cells. *J. Clin. Invest.* 83;1078-1082.
6. Simpson, P.C., **C.S. Long**, L.E. Waspe, C.J. Henrich, and C.P. Ordahl. 1989. Transcription of early developmental isogenes in cardiac myocyte hypertrophy. *J. Mol. Cell. Cardiol.* 21 (Suppl V): 79-89.
7. **Long, C.S.**, K. Kariya, L. Karns, and P.C. Simpson. 1990. Trophic factors for cardiac myocytes. *J. Hypertension* 8(Suppl 7):S219-224.
8. **Long, C.S.**, K. Kariya, L. Karns, and P.C. Simpson. 1991 Sympathetic activity: modulator of myocardial hypertrophy. *J. Cardiovasc. Pharm* 17(Suppl 2): S20-24.
9. Simpson, P.C., K. Kariya, L. Karns, **C.S. Long**, and J. Karliner. 1991. Adrenergic hormones and control of cardiac myocyte growth. *Mol and Cell Biochem.* 104: 35-43.
10. **Long, C.S.**, C. Henrich, and P.C. Simpson. 1991. A growth factor for cardiac myocytes is produced by cardiac non-myocytes *Cell Reg.* 2:1081-1095.
11. **Long, C.S.**, W.E. Hartogenesis, and P.C. Simpson. 1993. β adrenergic stimulation of cardiac non-myocytes augments the growth-promoting activity of non-myocyte conditioned medium. *J. Mol. Cell. Cardiol.* 25: 915-925.
12. Piedimonte, G., J.A. Nadel, **C.S. Long**, and J.I.E. Hoffman. 1994. Neutral endopeptidase in the heart: NEP inhibition prevents isoproterenol-induced myocardial hypoperfusion in rats by reducing bradykinin degradation. *Circ. Res.* 75: 770-779.
13. Rokosh, G.D., B.A. Bailey, A.F.R. Stewart, L.R. Karns, **C.S. Long**, and P.C. Simpson. 1994. Distribution of α_1C -adrenergic receptor mRNA in adult rat tissues by RNase protection assay and comparison with α_1B and α_1D . *Biochem Biophys. Res. Comm.* 200: 1177-1184.
14. Stewart, A.F.R., G.D. Rokosh, B.A. Bailey, L.R. Karns, K.C. Chang, K.K. Kariya, **C.S. Long**, and P.C. Simpson. 1994. Cloning of the α_1C -adrenergic receptor from neonatal rat cardiac myocytes: α_1C , α_1B , and α_1D mRNAs are present in cardiac myocytes, but not in cardiac fibroblasts. *Circ. Res.* 75: 796-802.
15. Li, H.-T., **C.S. Long**, G.D. Rokosh, N.Y. Honbo, and J.S. Karliner. 1995. Chronic hypoxia differentially regulates α_1 -adrenergic receptor subtype mRNAs and inhibits α_1 -adrenergic receptor-stimulated cardiac hypertrophy and signaling. *Circulation* 92: 918-925.
16. Palmer, J.N., W.E. Hartogenesis, M. Patten, F.D. Fortuin, and **C.S. Long**. 1995. Interleukin-1 β induces cardiac myocyte growth but inhibits cardiac fibroblast proliferation in culture. *J. Clin. Invest.* 95: 2555-2564.
17. Rokosh, G.D., A.F.R. Stewart, B.A. Bailey, L.R. Karns, **C.S. Long**, J.S. Karliner, and P.C. Simpson. 1996. Differential agonist regulation of α_1 -adrenergic receptor subtype mRNA expression: chronic α_1 -adrenergic stimulation of cardiac myocytes down-regulates α_1B and α_1D but up-regulates α_1C . *J. Biol. Chem.* 271:5839-5843.

18. Simonini, A., **C.S. Long**, G.A. Dudley, P. Yu, J. McElhinny, and B.M. Massie. 1996. Heart failure in rats causes changes in skeletal muscle morphology and gene expression which are not explained by reduced activity. *Circulation Research* 79:128-136.
19. Simonini, A., B.M. Massie, **C.S. Long**, M. Qi, and A.M. Samarel. 1996. Alterations in skeletal muscle gene expression in the rat with chronic congestive heart failure. *J. Mol. Cell. Cardiol.* 28:1683-1691.
20. Patten, M., W.E. Hartogensis, and **C.S. Long**. 1996. IL-1 β is a negative transcriptional regulator of α_1 -adrenergic induced gene expression in cultured cardiac myocytes. *J. Biol. Chem.* 271:21134-21141.
21. **Long, C.S.** 1996. Autocrine and paracrine regulation of myocardial cell growth in vitro. *Trends Cardiovasc. Med.* 6:217-226.
22. Kacimi, R., **C.S. Long**, and J.S. Karliner. 1997. Chronic hypoxia modulates the interleukin-1 β -stimulated inducible nitric oxide synthase pathway in cardiac myocytes. *Circulation* 96:1937-1943.
23. Li, H-T, **C.S. Long**, M.O. Gray, D.G. Rokosh, N.Y. Honbo, and J.S. Karliner. 1997. Crosstalk between angiotensin AT1 and α_1 -adrenergic receptors: angiotensin II downregulates α_1A -adrenergic receptor subtype mRNA and density in neonatal rat cardiac myocytes. *Circ. Res.* 81:396-403.
24. Kacimi, J. S. Karliner, F. Koudssi, and **C. S. Long**. 1998. Expression and regulation of adhesion molecules in cardiac cells by cytokines. *Circ. Res.* 82:576-586.
25. Yue P., B. M. Massie, P. C. Simpson, **C. S. Long**,. 1998. Cytokine gene expression increases in non-myocytes from rats with post-infarction heart failure. *Am J. Physiol.* 275: H250-258.
26. Koudssi F., J. E. Lopez, S. Villegas, **C. S. Long**. 1998. Cardiac fibroblasts arrest at the G1/S restriction point in response to interleukin-1 β : evidence for IL-1 β induced hypophosphorylation of Rb. *J. Biol. Chem.* 273:25796-25803.
27. Yue, P., **C.S. Long**, R. Austin, P.C. Simpson, and B.M. Massie. 1998. Post-infarction heart failure in the rat is associated with distinct alterations in cardiac myocyte molecular phenotype. *J. Mol Cell. Cardiol.* 30: 1615-1630.
28. Gray, M.O., **C. S. Long**, J.E. Kalinyak, H.-T. Li, and J.S. Karliner. 1998. Angiotensin II stimulates cardiac myocyte hypertrophy via paracrine release of transforming growth factor- β 1 and endothelin from fibroblasts. *Cardiovascular. Res.* 40:352-363.
29. Simonini, A., K. Chang, P. Yue, **C.S. Long**, and B.M. Massie. 1999. Skeletal muscle sarcoplasmic reticulum Ca²⁺ATPase is reduced in rats with post-infarction heart failure. *Heart* 81:303-310.
30. Clerk, A., **C. S. Long**, and P. H. Sugden. 1999. Pro-inflammatory cytokines stimulate mitogen-activated protein kinase subfamilies and increase phosphorylation of c-jun and ATF2 in neonatal ventricular myocytes. *J. Molec. Cell. Cardiol.* 31:2087-2099.
31. Kacimi, R., J. Chentoufi, N. Honbo, **C. S. Long**, and J. S. Karliner, 1999. Hypoxia differentially regulates stress proteins in cultured cardiomyocytes: role of the p38 stress-activated kinase signaling cascade, and relation to cytoprotection. *Cardiovasc. Res.* 46:139-150.
32. Patten M., W. Wang, S. Shakeri, M. Burson, and **C. S. Long**. 2000. IL-1 β increases YY1 abundance and activity of the negative transcriptional regulator Yin Yang 1 (YY1) in neonatal rat cardiac myocytes. *J. Mol. Cell. Cardiol* (7):1341-1352.

33. Kinugawa K, W.A. Minobe, W.M. Wood, E.C. Ridgway, J.D. Baxter, R.C.J. Ribeiro, M.F. Tawadrous, B.A. Lowes, **C.S. Long**, and M.R. Bristow. 2001. Signaling Pathways Responsible for Fetal Gene Expression in the Failing Human Heart – Evidence for Altered Thyroid Hormone Receptor Gene Expression in the Failing Human Heart. *Circulation* 103:1089-94.
34. Ng, D. C. H., **C. S. Long** and M. A. Bogoyevitch. 2001. A role for the ERK and p38 MAP Kinases in Interleukin 1 α -stimulated delayed STAT3 activation, ANF expression and hypertrophic morphology of cardiac myocytes. *J. Biol. Chem.* 276:29490-29498
35. Kinugawa, K., K. Yonekura, R.C.J. Ribeiro, Y. Eto, T. Aoyagi, J.D. Baxter, S.A. Camacho, M.R. Bristow, **C.S. Long**, and P.C. Simpson 2001. Thyroid receptor isoforms are differentially regulated in pathologic and physiologic hypertrophy in the rat heart. *Circ. Res.* 89:591-598.
36. Kinugawa, K., **C.S. Long**, and M.R. Bristow. 2001. Expression of TR isoforms in failing human heart. *J Clin Endocrinol Metab.* 86:5089-5090.
37. Patten, M. E. Krämer, J. Bünemann, C. Wenck, M. Thoenes, T. Wieland, and **C. S. Long**. 2001. Endotoxin and Cytokines Alter Contractile Protein Expression in Cardiac Myocytes *in vivo*. *Pflugers Arch.* 2001 Sep;442(6):920-7.
38. Krantz, M. J., W. A. Baker, and **C. S. Long**. 2001. Secondary MI prevention: which drugs are essential? *Consultant* 41:1377-1405.
39. **C. S. Long**. 2001. The role of interleukin-1 in the failing heart. *Heart Fail Rev.* 6: 81-94.
40. **C. S. Long and R.D. Brown**. 2002. The cardiac fibroblast, another therapeutic target for mending the broken heart? *J Mol Cell Cardiol.* 2002 Oct;34(10):1273-8.
41. M. B. Bristow and **C. S. Long**. 2002. Cardiotrophin-1 in heart failure. *Circulation.* 2002 Sep 17;106(12):1430-2.
42. Xu, Y., L. Lu, C. Greyson, K. Kinugawa, **C. S. Long**, J. Lee, C. Simpfendorfer, and G.S. Schwartz. 2003. Acute treatment with a PPAR α activator in myocardial ischemia and reperfusion in pigs. *Diabetes* 52:1187-1194.
43. Sucharov, C.C., P.D. Mariner, M.R. Bristow, **C.S. Long**, and L.A. Leinwand. 2003. YY1 is increased in human heart failure and represses the activity of the human α -MyHC promoter. *J. Biol. Chem.* 278:31233-31239.
44. Krantz MJ, Havranek EP, Mehler PS, Haynes DK, **Long CS**. Impact of a cardiac risk reduction program in vulnerable patients hospitalized with coronary artery disease. *Pharmacotherapy* 2004;24(6):768-775.
45. DeBiasi, R.L., B. A. Robinson, B. Sherry, R. Bouchard, M. Rizeq, R. D. Brown, **C.S. Long** and K.L. Tyler. 2004. Caspase inhibition protects against virus-induced myocardial injury *in vitro* and *in vivo*. *J. Virol.* 78:11040-50
46. P.D. Mariner, S.W. Luckey, **C.S. Long**, C.C. Sucharov, and L.A. Leinwand. 2004. Yin Yang 1 represses alpha-myosin heavy chain gene expression in pathologic cardiac hypertrophy. *Biochem Biophys Res Commun* 326:79-84.
47. Jeong, M.Y., K. Kinugawa, C. Vinson, and **C.S. Long**. 2005. Dominant negative c-Fos dissociates cardiac myocyte hypertrophy and expression of the pathologic gene program. *Circulation* 111:1645-1651.

48. Ya Xu, Y, M Gen, J. Fox, D. Perlov, P. Zhu, C. Greyson, **C.S. Long**, G. G. Schwartz. 2005. Metabolic and Anti-Inflammatory Effects of PPAR- α Activation in Myocardial Ischemia and Reperfusion in Pigs. *Am. J. Physiol.* 288:H1314-1323.
49. Kinugawa, K., M.Y. Jeong, M.R. Bristow, and **C.S. Long**. 2005. Thyroid hormone induces cardiac myocyte hypertrophy in a TR α_1 -specific manner that requires TAK1 and p38 MAPK. *Mol. Endo.* 19:1618-1628.
50. Brown, R.D., S.K. Ambler, M.D. Mitchell, and **C.S. Long**. 2005. THE CARDIAC FIBROBLAST: Therapeutic Target in Myocardial Remodeling and Failure. *Annu. Rev. Pharmacol. Toxicol.* 45:657-687.
51. Xu, Y, L Lu, C. Greyson, M Rizeq, K Nunley, **C.S. Long**, G. G. Schwartz. 2005. The PPAR α Activator, Fenofibrate, Fails to Provide Myocardial Protection in Ischemia and Reperfusion in Pigs *Am J. Physiol* (submitted in revision).
52. Krantz M.J., S. Haugen, and **C.S. Long**. 2005 Off-site percutaneous coronary intervention reduces hospital length of stay in vulnerable patients with acute myocardial infarction. *Crit. Pathways in Cardiol.* 4:127-130.
53. Mitchell, M.D., R.E. Laird, R.D. Brown, **C.S. Long**. 2005. IL-1 α stimulates cardiac fibroblast migration via MAP kinase pathways *Am J. Physiol* (submitted in revision).
54. Brown, R.D., G.M. Jones, P. Hudson, R.E. Laird, **C.S. Long**. 2005. The relationship between cytokine regulation of matrix metalloproteinase expression and cell migration in rat cardiac fibroblasts. *Cardiovasc. Res.* (submitted).

Book Chapters:

1. Simpson P.C., Karns L.R., **Long C.S.** 1990 An Approach to the Molecular Regulation of Cardiac Myocyte Hypertrophy, in *Molecular Biology of the Cardiovascular System* (S Chien, ed), Philadelphia, Lea & Febiger pp 53-81.
2. Bishopric, N.H., **C.S. Long**, L.E. Waspe, P.C. Simpson, and C.P. Ordahl. 1989. The Molecular Biology of Cardiac Myocyte Hypertrophy, Studies Using a Cell Culture Model, in *Cellular and Molecular Biology of Muscle Development*, UCLA Symposium on Cellular and Molecular Biology. New Series Vol. 93. F. Stockdale and L. Kedes, eds. Alan R. Liss Inc. New York, N.Y. pp399-412.
3. **Long, C.S.**, K. Kariya, L. Karns, and P.C. Simpson. 1992 Sympathetic Modulation of the Cardiac Myocyte Phenotype: Studies with a Cell Culture Model of Myocardial Hypertrophy, in *Cardiac Adaptation in Heart Failure: Risks Due to Myocardial Phenotype Changes.* (Drexler/Holtz), Darmstadt, Steinkopf Verlag, pp19-32.
4. **Long, C.S.**, and P.C. Simpson. 1993. Adrenergic Stimulation and Growth Factor Activity, in *Growth Factors and the Cardiovascular System* (P. Cummins, ed), London, Kluwer Academic Publishers, pp321-336.
5. Brown, R. D., M. D. Mitchell, and **C. S. Long**. 2004. Pro-inflammatory cytokine regulation of fibroblast phenotype in myocardial injury and failure. in "Interstitial Fibrosis" (F. Villareal, ed), London, Kluwer Academic Publishers.

Funded Research

1. 1986-1988, American Heart Association, California Affiliate Fellowship

2. 1990-1991, Merck/ACC Fellowship Award
3. 1990-1995, Dept. of Veterans Affairs Research Service Career Development Award, Research Associate "A growth factor for cardiac myocytes" CS Long, PI. (salary only)
4. 1990-1996, Dept. of Veterans Affairs Research Service, Merit Review Funding "A growth factor for cardiac myocytes" CS Long, PI. ~\$57,800/year (~\$350,000 total). Three year award, renewed X1.
5. 1994-1999, NIH, NHLBI Program Project Grant "Myocardial Ischemia" (Julian Hoffman PI), Co-PI with Dr. Joel Karliner on Project 3 "Receptor and biochemical Regulation in hypoxia". Share a supply budget of ~\$120,000/year (~\$600,000 total).
6. 1994-1996, Advanced Investigator, Program of Excellence in Molecular Biology, Project 8 supply budget of \$20,000/year (\$40,000 total).
7. 1997-2006 NIH RO1 HL59428 "IL-1 β regulates cardiac fibroblast growth/gene expression in culture" CS Long, PI.; ~\$210,000/year (~\$440,000 total).
8. 1998-2002 NIH RO1 HL58974, "IL-1 β inhibits cardiomyocyte-specific gene expression" CS Long, PI.; ~\$150,000/year (~\$750,000 total).
9. 9/2001-6/2006 NIH RO1 HL66399 "Cytokine expression in human and experimental heart failure" CS Long, PI.; \$200,000 DC/year.
10. 10/04-9/09 NIH U01 HL79160-01 "Latinos Using Cardiac Health Actions to Reduce Risk (LUCHAR)" Havranek, PI; Long, Co-Investigator (~ \$100,000 DC/year Project 4) total project ~\$500,000/yr

Pending:

1. 2R01 HL077749-01 "Thyroid hormone receptors and the failing heart" CS Long PI; \$250,000 DC/year