

CURRICULUM VITAE

NAME: Paul J. McDermott, Ph.D.

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EDUCATION:

1979 B.A., Biology, Rowan University
Glassboro, New Jersey

1984 Ph.D., Anatomy and Cell Biology
University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania

ACADEMIC APPOINTMENTS:

2005-Present Professor of Medicine
Division of Cardiology
Medical University of South Carolina

Adjunct Appointments, Dept. of Cell Biology and Anatomy,
Dept. of Biochemistry and Molecular Biology

1992-Present Research Health Scientist
Ralph H. Johnson Department of Veterans Affairs Medical Center
Charleston, South Carolina

1996-2005 Associate Professor of Medicine
Division of Cardiology
Medical University of South Carolina

1990-1996 Assistant Professor of Medicine, Cell Biology and Anatomy,
and Pediatrics
Division of Cardiology
Medical University of South Carolina

1987-1990 Associate Scientist
Weis Center for Research, Geisinger Clinic
Danville, Pennsylvania

1985-1987 Postdoctoral Fellow
National Research Service Award
Department of Physiology

The Milton S. Hershey Medical Center
The Pennsylvania State University

- 1985 Postdoctoral Fellow
Department of Medicine
Division of Endocrinology and Metabolism
University of Pittsburgh School of Medicine
- 1984-1985 Instructor
Community College of Allegheny County, Evening Division
- 1984 Instructor
Anatomy and Cell Biology
University of Pittsburgh School of Medicine
- 1980-1984 Graduate Teaching Fellow
Anatomy and Cell Biology
University of Pittsburgh School of Medicine

ACADEMIC COMMITTEES:

- 2007-Present Chairman, Institutional Animal Care and Use Committee,
Medical University of South Carolina
- 2001-Present MUSC Fall Medical Curriculum Committee
- 2006-Present MUSC Course Evaluation Subcommittee
- 2001-Present Graduate Curriculum Committee
- 1996-2006 Vice-Chairman, Institutional Animal Care and Use Committee,
Medical University of South Carolina
- 1993-2005 Chairman, Radiation Safety Committee,
Ralph H. Johnson Department of Veterans Affairs Medical Center
- 1992-2001 Research and Development Committee,
Ralph H. Johnson Department of Veterans Affairs Medical Center
- 1993-1999 Chairman, Biosafety Subcommittee,
Ralph H. Johnson Department of Veterans Affairs Medical Center
- 1994-1996 University Research Committee,
Medical University of South Carolina

PEER REVIEWS:

- 2004-2008 NIH Cardiac Contractility, Hypertrophy & Failure Study Section
- 2004 VA Merit Review Subcommittee for Cardiovascular Studies-B
- 2002-2004 NIH Cardiovascular and Renal Study Section, Ad hoc Member

1997-Present	NIH Ad hoc reviewer for individual grant proposals
2000-2001	American Heart Association, National Peer Review Committee
1998-2001	American Heart Association Mid-Atlantic Peer Review Research Consortium
1999-2000	Ad hoc Member, VA Merit Review Subcommittee for Cardiovascular Studies
1998	NIH, National Heart Lung and Blood Institute Special Emphasis Panel for RFA entitled "Heart Failure Research: New Approaches to Pathogenesis"
1998-1999	NIH, National Heart Lung and Blood Institute Special Review Committee for Program Project Grants

PEER REVIEW FOR SCIENTIFIC JOURNALS:

American Journal of Physiology/Heart
 Cardiovascular Research
 Circulation
 Circulation Research
 Journal of Biological Chemistry
 Journal of Clinical Investigation
 Journal of Molecular and Cellular Cardiology

TEACHING AND MENTORING:

Medical and Graduate Education:

Molecular Basis of Medicine, Co-Director
 Integrative Biology of the Cardiovascular System
 The Molecular Basis of Cardiovascular Disease
 Steering Committee for NHLBI Training Grant: Training to Improve Cardiovascular Drug Therapy

Graduate Students:

Charles T. Ivester, Ph.D. in Physiology awarded 8/95, awarded M.D.- 5/96
 Antoine Makhoul, Ph.D. in MCBP Program awarded 11/98, awarded M.D.- 5/00
 William J. Tuxworth, Jr., Ph.D. in MCBP Program awarded 5/02
 Vijay U. Rao, Ph.D. in MCBP Program awarded 6/03, M.D. awarded 5/04

Laura S. Spruill, Ph.D. in MCBP Program awarded 4/07

Postdoctoral Fellows:

Atif N. Saghir, Ph.D., 1998-2000

Aryan M.S. Namboodiri, Ph.D., 1998-2000

Krista Blackwell, Ph.D. 2005-2006

ACADEMIC AWARDS:

1980-1982 Samuel T. Owens Fellowship
University of Pittsburgh

1985-1987 Postdoctoral Fellow, National Research Service Award

2006 Excellence in Teaching Award

SCIENTIFIC ORGANIZATIONS:

International Society for Heart Research, American Section

American Heart Association, Basic Science Council

Cardiology Fellow, American Physiological Society

CURRENT GRANT SUPPORT

VA Merit Review Award Paul J. McDermott (PI) 10/01/06 - 3/31/10

Contractile Regulation of Cardiocyte Protein Synthesis

BIBLIOGRAPHY:

1. Short, J.A., McDermott, P., and Truite, D. Humoral Modulation of hepatic nuclear triiodothyronine receptors in the cross-circulated rat. *Hor. Met. Res.*, 14: 224, 1982.
2. Truite, D., McDermott, P., Short, J., and Desser-Wiest, L. Reciprocal relationship between the levels of the hepatic nuclear binding sites for T3 and DNA replication in the liver of the rat: a possible unifying concept. *Cytobios.*, 38: 7-19, 1983.
3. McDermott, P., Daood, M., and Klein, I. Measurement of myosin adenosinetriphosphatase and myosin content in cultured heart cells. *Arch. Biochem. Biophys.*, 240: 312-318, 1985.
4. McDermott, P., and Klein, I. Contraction regulates myosin synthesis and myosin content of cultured heart cells. *Am. J. Physiol.*, 249: H763-H769, 1985.
5. McDermott, P., Whitaker-Dowling, P., and Klein, I. Regulation of cardiac myosin synthesis: Studies of RNA content in cultured heart cells. *Exp. Cell Res.*, 173: 183-192, 1987.
6. Morgan, H.E., Gordon, E.E., Kira, Y., Chua, B.H.L., Russo, L.A., Peterson, C.J., McDermott, P.J., and Watson, P.A. Biochemical mechanisms of cardiac hypertrophy. *Ann. Rev. Physiol.*, 49: 533-543, 1987.
7. McDermott, P.J., and Morgan, H.E. Contraction modulates the capacity for protein synthesis during growth of neonatal heart cells in culture. *Circ. Res.*, 64: 542-553, 1989.
8. McDermott, P.J., Rothblum, L.I., Smith, S.D., and Morgan, H.E. Accelerated rates of ribosomal RNA synthesis during growth of contracting heart cells in culture. *J. Biol. Chem.*, 264: 18220-18227, 1989.
9. Foster, K.A., McDermott, P.J., and Robishaw, J.D. Cellular distribution and expression of G proteins in rat heart: Effect of KC1-depolarization. *Am. J. Physiol.*, 259: H432-H441, 1990.
10. McDermott, P.J., Carl, L.L., Conner, K.J., and Allo, S.N. Transcriptional regulation of ribosomal RNA synthesis during growth of cardiac myocytes in culture. *J. Biol. Chem.*, 266: 4409-4416, 1991.
11. Haneda, T., and McDermott, P.J. Stimulation of ribosomal RNA synthesis during hypertrophic growth of cultured heart cells by phorbol ester. *Mol. Cell. Biochem.*, 104: 169-177, 1991.
12. Foster, K.A., McDermott, P.J., and Robishaw, J.D. The effect of culture and membrane potential on Goa expression in neonatal rat cardiac myocytes. *Mol. Cell. Biochem.*, 104: 63-72, 1991.
13. Allo, S.N., McDermott, P.J., Carl, L.L., and Morgan, H.E. Phorbol ester stimulation of protein kinase C activity and ribosomal DNA transcription: Role in hypertrophic growth of cultured cardiomyocytes. *J. Biol. Chem.*, 266: 22003-22009, 1991.
14. Ivester, C.T., Kent, R.L., Tagawa, H., Tsutsui, H., Imamura, T., Cooper IV, G., and McDermott, P.J. Electrically stimulated contraction accelerates protein synthesis rates in adult feline cardiocytes. *Am. J. Physiol.*, 265: H666-H674, 1993.

15. Kent, R.L., Rozich, J.D., McCollam, P.L., McDermott, D.E., Thacker, U.F., Menick, D.R., McDermott, P.J., and Cooper IV, G. Rapid expression of the Na⁺Ca²⁺ exchanger in response to cardiac pressure overload. *Am. J. Physiol.*, 265:H1024-H1029, 1993.
16. Johnson, T.B., Kent, R.L., Bubolz, B. and McDermott, P.J. Electrical stimulation of contractile activity accelerates growth of cultured neonatal cardiocytes. *Circ. Res.*, 74:448-459, 1994.
17. Imamura, T., McDermott, P.J., Kent, R.L., Nagatsu, M., Cooper IV, G., and Carabello, B.A. Acute changes in myosin heavy chain synthesis rate in pressure versus volume overload. *Circ. Res.*, 75:418-425, 1994.
18. Rozich, J.D., Barnes, M.A., Schmid, P.G., Zile, M.R., McDermott, P.J., and Cooper IV, G. Load effects on gene expression during cardiac hypertrophy. *J. Mol. Cell. Cardiol.*, 27:485-499, 1994.
19. Kato, S., Ivester, C.T., Cooper IV, G., Zile, M.R., and McDermott, P.J. Growth effects of electrically stimulated contraction on adult feline cardiocytes in primary culture. *Amer. J. Physiol.*, 268:H2495-H2504, 1995.
20. Ivester, C.T., Tuxworth, W. J., Cooper, IV G. and McDermott, P.J. Contraction accelerates myosin heavy chain synthesis rates in adult feline cardiocytes by an increase in the rate of translational initiation. *J. Biol. Chem.*, 270:21950-21957, 1995.
21. Neumar, R.W., DeGarcia, D.J., White, B.C., McDermott, P.J., Evans, D.R., and Krause, G.S. eIF-4E degradation during brain ischemia. *J. Neurochem.*, 65:1391-1394, 1995.
22. Wada, H., Zile, M.R., Ivester, C.T., Cooper IV, G., and McDermott, P.J. Comparative effects of contraction and angiotensin II on growth of adult feline cardiocytes in primary culture. *Amer. J. Physiol.*, 271:H29-H37, 1996.
23. Tagawa, H., Rozich, J.D., Tsutsui, H., Narishige, T., Kuppuswamy, D., Sato, H., McDermott, P.J., Koide, M., and Cooper IV, G. Basis for increased microtubules in pressure hypertrophied cardiocytes. *Circulation*, 93:1230-1243, 1996.
24. Wada, H., Ivester, C.T., Carabello, B.A., Cooper IV, G., and McDermott, P.J. Translational initiation factor eIF-4E: A link between cardiac load and protein synthesis. *J. Biol. Chem.*, 271:8359-8364, 1996.
25. Kent R.L., and McDermott, P.J. Passive load and angiotensin II evoke differential responses of gene expression and protein synthesis in cardiac myocytes. *Circ. Res.*, 78:829-838, 1996.
26. Yang, Q., McDermott, P.J., Duzic, E., Pleij, C.W.A., Sherlock, J.D., and Lanier, S.M. The 3' untranslated region of the α_2C -adrenergic receptor mRNA impedes translation of the receptor message. *J. Biol. Chem.*, 272:15466-15473, 1997.
27. Makhlof, A., and McDermott, P.J. Increased expression of eukaryotic initiation factor 4E during growth of neonatal rat cardiocytes in vitro. *Amer. J. Physiol.*, 274:H2133-H2142, 1998.
28. Matsuo, T., Carabello, B.A., Nagatomo, Y., Koide, M., Hamawaki, M., Zile, M.R., and McDermott, P.J. Mechanisms of cardiac hypertrophy in canine volume overload. *Am. J. Physiol.*, 275:H65-H74, 1998.

29. Tuxworth Jr., W.J., Wada, H., Ishibashi, Y., and McDermott, P.J. The role of load in regulating eIF-4F complex formation in adult feline cardiocytes. *Amer. J. Physiol.*, 277:H1273-H1282, 1999.
30. Nagatomo, Y., Carabello, B.A., Hamawaki, M., Nemoto, S., Matsuo, T., and McDermott, P.J. Translational mechanisms accelerate the rate of cardiac protein synthesis during canine pressure overload hypertrophy. *Amer. J. Physiol.*, 277:H2176-H2184, 1999.
31. Nagatomo, Y., Carabello, B.A., Coker, M.L., McDermott, P.J., Nemoto, S., Hamawaki, M., and Spinale, F.G. Differential effects of pressure or volume overload on myocardial MMP levels and inhibitory control. *Amer. J. Physiol.*, 278:H151-H161, 2000.
32. Makhlof, A.A., Namboodiri, A.M.S., and McDermott, P.J. Transcriptional regulation of the rat eIF4E gene in cardiac muscle cells: The role of specific elements in the promoter region. *Gene*, 267:1-12, 2001.
33. Saghir, A.N., Tuxworth, Jr., W.J., Hagedorn, C.H., and McDermott, P.J. Modifications of eukaryotic initiation factor 4F (eIF4F) in adult cardiocytes by adenoviral gene transfer: Differential effects on eIF4F activity and total protein synthesis rates. *Biochem. J.*, 356:557-566, 2001.
34. Zhang, X., Song, J., Rothblum, L.I., Lun, M., Wang, X., Ding, F., Dunn, J., Lytton, J., McDermott, P.J., and Cheung, J.Y. Overexpression of Na⁺/Ca²⁺ exchanger enhances contractility and SR Ca²⁺ content in adult rat myocytes. *Am. J. Physiol.*, 281:H2079-H2088, 2001.
35. Sato, M., Shegogue, D., Gore, E., Smith, E., McDermott, P. and Trojanowska, M. The role of p38 MAPK in TGF-beta stimulation of collagen production by scleroderma and healthy dermal fibroblasts. *J. Invest. Dermatol.*, 118:704-711, 2002.
36. Iijima, Y., Laser, M., Shiraishi, H., Willey, C.D., Sundaravadivel, B., Xu, L., McDermott, P.J., and Kuppaswamy, D. cRaf/MEK/ERK pathway controls PKC-mediated p70S6K activation in adult cardiac muscle cells. *J. Biol. Chem.*, 277:23065-23075, 2002.
37. Takahashi, M., Shiraishi, H., Ishibashi, Y., Blade, K.L., McDermott, P.J., Menick, D.R., Kuppaswamy, D., and Cooper IV, G. Phenotypic consequences of β_1 -tubulin expression and MAP4 decoration of microtubules in adult cardiocytes. *Amer. J. Physiol.*, 285:H2072-H2083, 2003.
38. Tuxworth, Jr., W.J., Saghir, A.N., Spruill, L.S., Menick, D.R., and McDermott, P.J. Regulation of protein synthesis by eIF4E phosphorylation in adult cardiocytes: The consequence of secondary structure in the 5'-untranslated region of mRNA. *Biochem. J.*, 378:73-82, 2004.
39. Rao, V.U., and McDermott, P.J. PKC- ϵ regulation of extracellular signal-regulated kinase (ERK1/2): A potential role in phenylephrine-induced cardiocyte growth. *Amer. J. Physiol. Heart Circ. Physiol.*, 286:H2195-H2203, 2004.
40. Scholz, D., McDermott, P., Garnovskaya, M., Gallien, T.N., Huettelmaier, S., DeRienzo, C., and Cooper IV, G. MAP-4 inhibits the microtubule-dependent distribution of mRNA in isolated neonatal cardiocytes. *Cardiovasc. Res.*, 71:506-516, 2006.

41. Spruill, L.S., and McDermott, P.J. Regulation of *c-jun* mRNA expression in adult cardiocytes by MAP kinase interacting kinase-1 (Mnk1). *FASEB J.*, 20:E1465-E1475, 2006.
42. White, S.J., Kasman, L.M., Kelly, M.M., Lu, P., Spruill, L.S., McDermott, P.J. and Voelkel-Johnson, C. Doxorubicin generates a proapoptotic phenotype by phosphorylation of elongation factor 2. *Free Radic. Biol. Med.*, 43:1313-1321, 2007.
43. Spruill, L.S., Lowry, A.S., Stroud, R.E., Squires, C.E., Mains, I.M., Flack, E.C., Beck, C., Ikonomidis, J.S., Crumbley, A.J., McDermott, P.J., and Spinale, F.G. Membrane-type-1 matrix metalloproteinase transcription and translation in myocardial fibroblasts from patients with normal left ventricular function and from patients with cardiomyopathy. *Am. J. Physiol. Cell Physiol.*, 293:C1362-C1373, 2007. [doi:10.1152/ajpcell.00545.2006](https://doi.org/10.1152/ajpcell.00545.2006)
44. Moschella, P.C., Rao, V.U., McDermott, P.J., and Kuppuswamy, D. Regulation of mTOR and S6K1 Activation by the nPKC isoforms, PKC ϵ and PKC δ , in Adult Cardiac Muscle Cells. *J. Mol. Cell. Cardiol.*, 43:754-766, 2007. [doi:10.1016/j.yjmcc.2007.09.015](https://doi.org/10.1016/j.yjmcc.2007.09.015)
45. Tuxworth, W.J., Shiraishi, H., Moschella, P.C., Yamane, K., McDermott, P.J., and Kuppuswamy, D. Translational activation of 5'-TOP mRNA in pressure overload myocardium. *Bas. Res. Cardiol.*, 103:41-53, 2008. [doi:10.1007/s00395-007-0682-z](https://doi.org/10.1007/s00395-007-0682-z)
46. Spruill, L.S., Baicu, C.F., Zile, M.R., and McDermott, P.J. Selective translation of mRNAs in the left ventricular myocardium of the mouse in response to acute pressure overload. *J. Mol. Cell. Cardiol.*, 44:69-75, 2008. [doi:10.1016/j.yjmcc.2007.10.011](https://doi.org/10.1016/j.yjmcc.2007.10.011)
47. Cai, Y., Wang, Q., Ling, Z., Pipeleers, D., McDermott, P., Pende, M., Heimberg, H., and Van de Casteele, M. Akt activation protects pancreatic beta cells from AMPK-mediated death through stimulation of mTOR. *Biochem. Pharmacol.*, 75:1981-1993, 2008. doi.org/10.1016/j.bcp.2008.02.019
48. Spruill, L.S., and McDermott, P.J. Role of the 5'-untranslated region in regulating translational efficiency of specific mRNAs in adult cardiocytes. *FASEB J.*, In Press.