

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow the sample format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME		POSITION TITLE		
Michael B. Reid		Professor and Chair		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)				
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY	
University of Texas, Arlington, TX	B.S.	1974	Biology	
University of Texas Southwestern Medical Center Dallas, TX	Ph.D.	1980	Physiology	

POSTDOCTORAL TRAINING:

1980-81 University of Texas Southwestern Medical Center, Dallas
1981-83 Harvard School of Public Health, Boston

ACADEMIC APPOINTMENTS (primary):

1983-87	Research Associate	Harvard School of Public Health, Boston
1987-89	Assistant Professor of Physiology	Harvard School of Public Health, Boston
1989-1993	Assistant Professor of Medicine	Baylor College of Medicine, Houston
1993-1998	Associate Professor of Medicine	Baylor College of Medicine, Houston
1998-2003	Professor of Medicine	Baylor College of Medicine, Houston
2003-present	Professor and Chair of Physiology	Univ of Kentucky Medical Center, Lexington

REVIEW ACTIVITIES (selected):

2001-2002 Chair, NIH Skeletal Muscle Biology Study Section
1998-2001 Chair and Member, NIH Respiratory and Applied Physiology Study Section
2000-present Associate Editor, *Physiological Reviews*
1996-present Editorial Board, *Journal of Applied Physiology*
1996-present Editorial Board, *American Journal of Respiratory and Critical Care Medicine*
1998-present Editorial Board, *Antioxidants and Redox Signaling*

SELECTED PUBLICATIONS (37 of 83 total):

Reid, M.B., R. Banzett, H. Feldman, and J. Mead. Reflex compensation of spontaneous breathing when immersion changes diaphragm length. *J. Appl. Physiol.* 58(4): 1136-1142, 1985.
Banzett, R., R. Lansing and **M.B. Reid**. Reflex compensation of voluntary inspiration when immersion changes diaphragm length. *J. Appl. Physiol.* 59(2): 611-618, 1985. .
Banzett, R., J. Lehr, and **M.B. Reid**. High frequency oscillation of the lung alone lengthens expiration in anesthetized dogs. *Respir. Physiol.* 61: 57-67, 1985.
Reid, M.B., R. Banzett, S. Loring, and J. Mead. Passive mechanics of the upright human chest wall during immersion from hips to neck. *J. Appl. Physiol.* 60(5): 1561-1570, 1986.
Barnas, G.M., R.B. Banzett, **M.B. Reid**, and J. Lehr. Pulmonary afferent activity during high frequency ventilation at constant mean lung volume. *J. Appl. Physiol.* 61(1): 192-197, 1986.
Mead, J., and **M.B. Reid**. Respiratory muscle activity during repeated air flow interruption. *J. Appl. Physiol.* 64(6): 314-2317, 1988.
Banzett, R., R. Lansing, **M.B. Reid**, L. Adams, and R. Brown. 'Air hunger' arising from increased PCO₂ in mechanically-ventilated C₁₋₂ quadriplegics. *Respir. Physiol.* 76: 53-68, 1989.
Banzett, R.B., R.W. Lansing, R. Brown, G.P. Topulos, D. Yager, S.M. Steele, B. Londono, S.H. Loring, **M.B. Reid**, L. Adams, and C.S. Nations. 'Air hunger' from increased PCO₂ persists after complete neuromuscular block in humans. *Resp. Physiol.* 81:1-18, 1990.

- Banzett, R.B., J. Mead, **M.B. Reid**, and G.P. Topulos. Locomotion in man has no appreciable mechanical effect on breathing. *J. Appl. Physiol.* 72(5): 1922-1926, 1992.
- Reid, M.B.**, G.J. Grubweiser, D.S. Stokic, S.M. Koch, and A.A. Leis. Development and reversal of fatigue in human tibialis anterior. *Muscle Nerve* 16: 1239-1245, 1993.
- Reid, M.B.**, D.S. Stokic, S.M. Koch, F.A. Khawli, and A.A. Leis. N-acetylcysteine inhibits human muscle fatigue. *J. Clin. Invest.* 94: 2468-2474, 1994.
- Lansing, R.W., R.B. Banzett, R. Brown, and **M.B. Reid**. Tidal volume perception in a C1-C2 tetraplegic subject is blocked by airway anesthesia. *J. Spinal Cord Med.* 21: 137-141, 1998.
- Pantoja, J.G., F.H. Andrade, D.S. Stokic, A.E. Frost, W.L. Eschenbacher, and M.B. Reid. Respiratory and limb muscle function in lung allograft recipients. *Am. J. Resp. Crit. Care Med.* 160: 1205-1211, 1999.
- Reid, M.B.**, K.E. Haack, K.M. Franchek, P.A. Valberg, L. Kobzik, and M.S. West. Reactive oxygen in skeletal muscle: I. Intracellular oxidant kinetics and fatigue *in vitro*. *J. Appl. Physiol.* 73: 1797-1804, 1992.
- Reid, M.B.**, T. Shoji, M.M. Moody, and M.L. Entman. Reactive oxygen in skeletal muscle: II. Extracellular release of free radicals. *J. Appl. Physiol.* 73: 1805-1809, 1992.
- Reid, M.B.**, F.A. Khawli, and M.R. Moody. Reactive oxygen in skeletal muscle: III. Promotion of contractile function. *J. Appl. Physiol.* 75: 1081-1087, 1993.
- Kobzik, L., **M.B. Reid**, D.S. Bredt, and J.S. Stamler. Nitric oxide in skeletal muscle. *Nature* 372: 546-548, 1994.
- Aghdasi, B., **M.B. Reid**, and S.L. Hamilton. Nitric oxide protects the skeletal muscle Ca²⁺ release channel from oxidation induced activation. *J. Biol. Chem.* 272: 25462-25467, 1997.
- Abraham, R.Z., L. Kobzik, M.R. Moody, **M.B. Reid**, and J.S. Stamler. Cyclic GMP is a second messenger by which nitric oxide inhibits diaphragm contraction. *Comp. Biochem. Physiol.* 119: 177-183, 1998.
- Reid, M.B.**, L. Kobzik, D.S. Bredt, and J.S. Stamler. Nitric oxide modulates excitation-contraction coupling in the diaphragm. *Comp. Biochem. Physiol.* 119: 211-218, 1998.
- Reid, M.B.** Role of nitric oxide in skeletal muscle: synthesis, distribution, and functional importance. *Acta Physiol. Scand.* 162: 401-409, 1998.
- Krause, K.M., M.R. Moody, F.H. Andrade, A.A. Taylor, C.C. Miller, L. Kobzik, and **M.B. Reid**. Peritonitis causes diaphragm weakness in rats. *Am. J. Resp. Crit. Care Med.* 157(4): 1277-1282, 1998.
- Andrade, F.H., **M.B. Reid**, D.G. Allen, and H. Westerblad. Effect of hydrogen peroxide and dithiothreitol on contractile function of single skeletal muscle fibres from mouse. *J. Physiol.* 509:565-575, 1998.
- Pellegrino, R., J.R. Rodarte, A.E. Frost, and **M.B. Reid**. Breathing by double-lung recipients during exercise: response to expiratory threshold loading. *Am. J. Resp. Crit. Care Med.* 157: 106-110, 1998.
- Clancy, J.S., H. Takeshima, S.L. Hamilton, and **M.B. Reid**. Contractile function is unaltered in diaphragm from mice lacking the calcium release channel isoform 3. *Am. J. Physiol.* 277: R1205-R1209, 1999.
- Reid, M.B.** Redox modulation of skeletal muscle contraction by reactive oxygen and nitric oxide. In: *Membranes, Muscle, and Exercise; Proceedings of the 10th International Conference on the Biochemistry of Exercise*, M. Hargreaves, ed.; Human Kinetics. Champaign, IL. 1999, pp. 155-166.
- Reid, M.B.** Muscle fatigue: mechanisms and regulation. In: *Exercise and Oxygen Toxicity*, 2nd edition, C.K. Sen, L. Packer, and O. Hanninen, eds.; Elsevier Science B.V., Amsterdam. 1999, pp. 599-628.
- Hirschfield, W., M.R. Moody, W.E. O'Brien, A.R. Gregg, R.M. Bryan, Jr., and **M.B. Reid**. Nitric oxide release and contractile function of skeletal muscles from mice deficient in type 3 NOS. *Am. J. Physiol.* 278: R95-R100, 2000.
- Li, X., M.R. Moody, D. Engel, S. Walker, F.J. Clubb, N. Sivasubramanian, D.L. Mann, and **M.B. Reid**. Cardiac-specific overexpression of TNF- α causes contractile dysfunction in mouse diaphragm. *Circulation* 102(14): 1690-1696, 2000.
- Andrade, F.H., **M.B. Reid**, and H. Westerblad. Contractile response to low peroxide concentrations: myofibrillar calcium sensitivity as a likely target for redox modulation of skeletal muscle function. *FASEB J.* 15: 309-311, 2001.
- Reid, M.B.** Invited review: Redox modulation of skeletal muscle contraction: what we know and what we don't. *J. Appl. Physiol.* 90: 724-731, 2001
- Reid, M.B.** and W.J. Durham. Generation of reactive oxygen and nitrogen species in contracting skeletal muscle: potential impact on aging. *Ann. N.Y. Acad. Sci.* 959: 108-116, 2002.
- Reid, M.B.**, J. Lännergren, and H. Westerblad. Respiratory and limb muscle weakness induced by TNF- α : involvement of muscle myofilaments. *Am. J. Resp. Crit. Care Med.* 166: 479-484, 2002.
- Kumar, A., I. Chaudhry, **M.B. Reid**, and A. Boriek, Distinct signaling pathways are activated in response to mechanical stress applied axially and transversely to skeletal muscle fibers. *J. Biol. Chem.* 277: 46493-46503, 2002.

- Li, Y.-P., S.H. Lecker, Y. Chen, I.D. Waddell, A.L. Goldberg, **M.B. Reid**. TNF- α increases ubiquitin-conjugating activity in skeletal muscle by up-regulating UbcH2/E2-20k. *FASEB J* 17: 1048-1057, 2003.
- Mann, D.L., and **M.B. Reid**. Exercise training and skeletal muscle inflammation in chronic heart failure: feeling better about fatigue. *J Am Coll Cardiol* 42:869-72, 2003.
- Li, Y.-P., Y. Chen, A.S. Li, and **M.B. Reid**. Hydrogen peroxide stimulates ubiquitin conjugating activity and expression of genes for specific E2 and E3 proteins in skeletal muscle myotubes. *Am J Physiol* 285:C806-C812, 2003.
- Razehhi, P., S. Sharma, J. Ying, S. Stepkowski, M.B. Reid, H. Taegtmeier. *Circulation* 108:2536-2541, 2003.
- Kumar, A., N. Khandelwal, R. Malya, M.B. Reid, and A.M. Boriak. Loss of dystrophin causes aberrant mechanotransduction in skeletal muscle fibers. *FASEB J* 18:102-113, 2004.

Ongoing Research Support

- | | | | | |
|----|---|-----------|-------------------|------------|
| 1. | Grant #RO1 HL45721
National Institutes of Health
"Physiology of the Respiratory Muscles"
The purpose of this study is to determine mechanisms of ROS/NO effects on muscle contraction
Role: PI | Reid (PI) | 10/1999 - 09/2007 | 30% effort |
| 2. | Grant #RO1 HL59878
National Institutes of Health
"Physiology of the Respiratory Muscle Cells"
The purpose of this study is to determine mechanisms of muscle atrophy induced by TNF- α
Role: PI | Reid (PI) | 04/1998 - 03/2005 | 30% effort |
| 3. | No Grant #
National Space Biomedical Research Institute
"Redox Modulation of Muscle Function in Microgravity"
The purpose of this study is to evaluate muscle dysfunction in microgravity and test countermeasures
Role: PI | Reid (PI) | 04/2001 - 03/2004 | 30% effort |
| 4. | No Grant #
Muscular Dystrophy Association
"Redox Mechanisms in Dystrophic Muscle"
The purpose of this study is to evaluate mechanisms of dystrophic injury
Role: PI | Reid (PI) | 07/2001 - 06/2004 | no salary |

Pending Research Support

- | | | | |
|---|-----------|-------------------|-----------|
| Grant #R21A1 DK66232
National Institutes of Health
"Redox Signaling in Skeletal Muscle Biology"
The purpose of this pilot study is to evaluate muscle-derived ROS as mediators of glucose uptake
Role: PI | Reid (PI) | 10/1999 - 09/2007 | 5% effort |
|---|-----------|-------------------|-----------|

Completed Research Support

None