

**1999 - 2000**  
**SUMMARY OF SCHOLARLY ACTIVITIES**  
**DEPARTMENT OF PHYSIOLOGY**

**I. ARTICLES PUBLISHED IN BOOKS AND JOURNALS**

**A. Full length published articles.**

C.P. Baines, L. Wang, M.V. Cohen, and J.M. Downey. Myocardial Protection by Insulin Is Dependent on Phosphatidylinositol 3-Kinase But Not Protein Kinase C or  $K_{ATP}$  Channels in the Isolated Rabbit Heart. *Basic Res. Cardiol.* 94:188-198 (2000).

S.T. Ballard, L. Trout, Z. Bebök, E.J. Sorscher, and A. Crews. CFTR Involvement in Chloride, Bicarbonate, and Liquid Secretion by Airway Submucosal Glands. *Am. J. Physiol.* 277:L694-L699 (1999).

M. Birincioglu, X.-M. Yang, S.D. Critz, M.V. Cohen, and J.M. Downey. S-T Segment Voltage During Sequential Coronary Occlusions Is an Unreliable Marker of Preconditioning. *Am. J. Physiol.* 277:H2435-H2441 (1999).

M.V. Cohen, C.P. Baines, and J.M. Downey. Ischemic Preconditioning: From Adenosine Receptor to  $K_{ATP}$  Channel. *Annu. Rev. Physiol.* 62:79-109 (2000).

M.V. Cohen, X.-M. Yang, and J.M. Downey. Smaller Infarct After Preconditioning Does Not Predict Extent of Early Functional Improvement of Reperfused Heart. *Am. J. Physiol.* 277:H1754-H1761 (1999).

M.V. Cohen, X.-M. Yang, T. Neumann, G. Heusch, and J.M. Downey. Favorable Remodeling Enhances Recovery of Regional Myocardial Function in the Weeks Following Infarction in Ischemically Preconditioned Hearts. *Circulation* 102:579-583 (2000).

M.V. Cohen and J.M. Downey. Ischemic Preconditioning: Description, Mechanism, and Significance. IN: N. Sperelakis, Y. Kurachi, A. Terzic, and M.V. Cohen (Eds.) *Heart Physiology and Pathophysiology*, 4<sup>th</sup> Edition, Academic Press, San Diego, CA, pp. 867-885 (2000).

J.M. Downey and G. Heusch. (1) Sequence of Cardiac Activation and Ventricular Mechanics, pp. 3-18; and (2) Control of Cardiac Output and Its Alterations During Exercise and in Heart Failure, pp. 61-69. IN: N. Sperelakis, Y. Kurachi, A. Terzic, and M. Cohen (Eds.) *Heart Physiology and Pathophysiology*, 4<sup>th</sup> Edition, Academic Press, San Diego, CA (2000).

J.M. Downey and M.V. Cohen. Preconditioning in Myocardial Viability. IN: V. Dilisizian (Ed.) Myocardial Viability: A Clinical and Scientific Treatise. Futura Publishing Co., Inc., Armonk, NY, pp. 55-75 (2000).

J.M. Downey and M.V. Cohen. Do Mitochondrial  $K_{ATP}$  Channels Serve as Triggers Rather Than End-Effectors of Ischemic Preconditioning's Protection? *Basic Res. Cardiol.* 95:272-274 (2000).

J.D. Gardner and J.N. Benoit. Effects of Capacitative Calcium Entry on Agonist-Induced Calcium Transients in A7r5 Vascular Smooth Muscle Cells. *J. Biomed. Sci.* 7:304-310 (2000).

G.A. Hand, P.J. Vrettakos, W.D. Shealy, B.S. Treuhft, and L.B. Wilson. Spinal Cholinergic Inhibition of the Pressor Response to Skeletal Muscle Activation. *Brain Res.* 837:143-151 (1999).

S.O. Kim, C.P. Baines, S.D. Critz, S.L. Pelech, S. Katz, J.M. Downey, and M.V. Cohen. Ischemia Induced Activation of Heat Shock Protein 27 and Casein Kinase 2 in the Preconditioned Rabbit Heart. *Biochem. Cell Biol.* 77:559-567 (1999).

G.S. Liu, M.V. Cohen, D. Mochly-Rosen, and J.M. Downey. Protein Kinase C- $\epsilon$  Is Responsible for the Protection of Preconditioning in Rabbit Cardiomyocytes. *J. Mol. Cell. Cardiol.* 31:1937-1948 (1999).

J. Martin, J. Young, J.N. Benoit, and D.A. Dean. Gene Transfer to Intact Mesenteric Arteries by Electroporation. *J. Vasc. Res.* 37(5):372-380 (2000).

R.K. McMillon and M.I. Townsley.  $\alpha$ -Adrenergic Vasoreactivity of Canine Intrapulmonary Bronchial Arteries in Pacing-Induced Heart Failure. *Am. J. Physiol.* 277:H1392-H1402 (1999).

T. Miki, M.V. Cohen, and J.M. Downey. Failure of N-2-Mercaptopropionyl Glycine to Reduce Myocardial Infarction After 3 Days of Reperfusion in Rabbits. *Basic Res. Cardiol.* 94:180-187 (1999).

A. Nakano, C.P. Baines, S.O. Kim, S.L. Pelech, J.M. Downey, M.V. Cohen, and S.D. Critz. Ischemic Preconditioning Activates MAPKAPK2 in the Isolated Rabbit Heart: Evidence for Involvement of p38 MAPK. *Circ. Res.* 85:144-151 (2000).

A. Nakano, M.V. Cohen, and J.M. Downey. Ischemic Preconditioning: From Basic Mechanisms to Clinical Applications. *Pharmacol. Ther.* 86:263-275 (2000).

A. Nakano, G.S. Liu, G. Heusch, J.M. Downey, and M.V. Cohen. Exogenous Nitric Oxide Can Trigger a Preconditioned State Through a Free Radical Mechanism, but Endogenous Nitric Oxide Is Not a Trigger of Classical Ischemic Preconditioning. *J. Mol. Cell. Cardiol.* 32:1159-1167 (2000).

T. Pain, X.-M. Yang, S.D. Critz, Y. Yankun, A. Nakano, G.S. Liu, G. Heusch, M.V. Cohen, and J.M. Downey. Opening of Mitochondrial  $K_{ATP}$  Channels Triggers the Preconditioned State by Generating Free Radicals. *Circ. Res.* Vol. 87, pp. 460-466 (2000).

J.C. Parker, M.N. Gillespie, A.E. Taylor, and Sherri L. Martin. Capillary Filtration Coefficient, Vascular Resistance and Compliance in Isolated Mouse Lungs. *J. Appl. Physiol.* 87:1421-1427 (1999).

A.E. Taylor and T.M. Moore. Capillary Fluid Exchange. IN: F.L. Belloni (Ed.) Advances in Physiology Education (Special Issue). Lippincott Publishing Co., Philadelphia, PA, 22:S203-S210 (1999).

M.I. Townsley, K.S. Snell, C.L. Ivey, D.E. Culberson, D.C. Liu, R.K. Reed, and O. Mathieu-Costello. Remodeling of Lung Interstitium But Not Extra-Alveolar Vessels in Canine Pacing-Induced Heart Failure. *J. Appl. Physiol.* 87:1823-1830 (2000).

L.B. Wilson, J. Engbretson, and A.D. Crews. The Pressor Reflex Evoked by Static Muscle Contraction: Role of Nitric Oxide in the Dorsal Horn. *Am. J. Physiol.* 276:R1639-R1646 (1999).

D. Zhu, M. Bousamra, D.C. Zeldin, J.R. Falck, M.I. Townsley, D.R. Harder, R.J. Roman, and E.R. Jacobs. Epoxyeicosatrienoic Acids Constrict Isolated Pressurized Rabbit Pulmonary Arteries. *Am. J. Physiol.* 278:L335-L343 (2000).

B. Articles in press.

G.F. Baxter, S.L. Hale, T. Miki, R.A. Kloner, M.V. Cohen, J.M. Downey, and D.M. Yellon. Adenosine  $A_1$  Agonist at Reperfusion Trial (AART): Results of a Three-Center, Blinded, Randomized, Controlled Experimental Infarct Study. *Cardiovasc. Drugs Ther.* (2000).

Corboz, M.R., S.T. Ballard, H. Gao, J.N. Benoit, S.K. Inglis, and A.E. Taylor. Differential Effects of Furosemide on Porcine Vascular and Bronchial Smooth Muscle. *J. Appl. Physiol.* (2000).

D.L. Dyess, J.N. Collins, J.L. Ardell, M.I. Townsley, A.E. Taylor, and J.J. Ferrara. Modulation of Microvascular Permeability After Burn Injury by 21-Aminosteroids. *J. Burn. Care Rehabil.* (2000).

D.L. Dyess, J.L. Hunter, J.R. Lakey, D. Moyer, F.C. Dougherty, and M.I. Townsley. Attenuation of Histamine-Induced Endothelial Permeability Responses After Pacing-Induced Heart Failure: Role for Endogenous Catecholamines. *Microcirculation* (2000).

G. Heusch, G.S. Liu, J. Rose, M.V. Cohen, and J.M. Downey. A Causal Role of Volume-Regulated Chloride Channels in Ischemic Preconditioning in Rabbits Cannot Be Confirmed. *J. Mol. Cell. Cardiol.* (2000).

A. Nakano, M.V. Cohen, S. Critz, and J.M. Downey. SB 203580, an Inhibitor of p38 MAPK, Abolishes Infarct-Limiting Effect of Ischemic Preconditioning in Isolated Rabbit Hearts. *Basic Res. Cardiol.* (2000).

J.C. Parker. Inhibitors of Myosin Light Chain Kinase and Phosphodiesterase Reduce Ventilator Induced Lung Injury. *J. Appl. Physiol.* (2000).

B. Rippe and A.E. Taylor. Passive Transport of Tracer Albumin Across Rat Lung Microvessels. *J. Appl. Physiol.* (2000).

L.B. Wilson. Spinal Modulation of the Muscle Pressor Reflex by Nitric Oxide and Acetylcholine. *Brain Res. Bull.* (2000).

## II. PUBLISHED ABSTRACTS

S.T. Ballard and C. Howard. Inhibitory Effects of Bumetanide and Dimethylamiloride in Ach-induced Liquid Secretion Across Porcine Bronchial Epithelium. *FASEB J.* 14:A781 (2000).

S.T. Ballard, L. Trout, and A. Crews. Effect of CFTR Inhibition on Acetylcholine-Induced Bicarbonate Secretion by Porcine Bronchi. *Pediatr. Pulmonol.* 19:192 (1999).

S.T. Ballard, L. Trout, and A. Crews. Regulation of Liquid Secretion Across Porcine Bronchi. *FASEB J.* 14:A781 (2000).

J. Brashears, A.M. McMahon, and J.N. Benoit. Effects of PKA Inhibition on Vascular Vasopressin Responsiveness in Cirrhosis. *FASEB J.* 14:A667 (2000).

F.C. Dougherty and M.I. Townsley. Harmonic Analysis of Pulsatile Blood Pumps. *FASEB J.* 14:A6 (2000).

T.M. Fan, J. Xu, T.S. Pain, M. Krenz, M.V. Cohen, and J.M. Downey. Diazoxide Inhibits Mitochondrial Cytochrome C Release in Ischemic Rabbit Myocardium. *Circulation* 100:I-630 (1999).

J.D. Gardner, M.S. Taylor, A. Sharma, and J.N. Benoit. Cyclic Nucleotide Modulation of Calcium and Tension in Phospholamban Knockout Mice. *FASEB J.* 14:A663 (2000).

M. Krenz, G. Heusch, M.V. Cohen, and J.M. Downey. Inhabitation of JAK-2 Does Not Block Ischemic Preconditioning in Rats. *J. Mol. Cell. Cardiol.* 32:A19 (2000).

M. Krenz, Z. Xu, C.P. Baines, G. Heusch, M.V. Cohen, and J.M. Downey. Acute Ethanol Exposure Is Protective Both *In Vitro* and *In Situ*, But Only If Washed Out Before Ischemia. *J. Mol. Cell. Cardiol.* 32:A45 (2000).

J.F. LeDoux and L.B. Wilson. The Effect of Peripheral Neuropathy on Somatic Pressor Reflexes. *FASEB J.* 14:A381 (2000).

G.S. Liu, M.V. Cohen, and J.M. Downey. Inhibition of Nitric Oxide Synthesis Does Not Affect Ischemic Preconditioning in Isolated, Perfused Rabbit Hearts. *Circulation* 100:I-243 (1999).

R.K. McMillon, A. Hill, and J.N. Benoit. Ischemia-Reperfusion Induced Alterations in Lymphocyte Population of Gastrointestinal Lymph. *FASEB J.* 14:A366 (2000).

T.M. Moore and A.E. Taylor. Anti-CD40 Antibody Reduces Early Ischemia/Reperfusion-Induced Lung Microvascular Dysfunction. *FASEB J.* 14:A12 (2000).

A. Nakano, C.P. Baines, S.O. Kim, S.L. Pelech, T.S. Pain, J.M. Downey, M.V. Cohen, and S.D. Critz. MAPKAPK2, But Not JNK, Is Activated During Ischemia in Preconditioned Hearts. *Circulation* 100:I-325 (1999).

A. Nakano, G.S. Liu, G. Heusch, J.M. Downey, and M.V. Cohen. Exogenous, But Not Endogenous, Nitric Oxide Triggers Preconditioning of the Isolated Rabbit Heart by Formation of Free Radicals. *J. Mol. Cell. Cardiol.* 32:A24 (2000).

T.S. Pain, M.V. Cohen, and J.M. Downey. The Mitochondrial  $K_{ATP}$  Channel May Be a Trigger Rather Than the End-Effector of Preconditioning's Anti-Infarct Effect. *Circulation* 100:I-342 (1999).

J.C. Parker. Ventilator Induced Lung Injury (VILI) Attenuated by Inhibitors of Myosin Light Chain Kinase and Calmodulin. *Am. J. Respir. Crit. Care Med.* 161:A212 (2000).

J.C. Parker and T. Stevens. Mechanical Stress Induced Calcium Transients in Rat Pulmonary Artery and Microvascular Endothelial Cells. FASEB J. 14:A693 (2000).

J.C. Parker, T. Stevens, and S.L. Martin. Vascular Segmental Permeability After High Peak Inflation Pressure (PIP) Injury in Isolated Rat Lungs. FASEB J. 14:A605 (2000).

J.C. Parker, J. Thomas, and C.R. Hamm. Optimized Blood Gases During Total Liquid Ventilation in Piglets. FASEB J. 14:A609 (2000).

D.R. Sawmiller, S.J. Strada, W.J. Thompson, and M.I. Townsley. Lung Cyclic Nucleotide Phosphodiesterase (PDE) Activity and Isoform Distribution After Heart Failure. FASEB J. 14:A588 (2000).

R.S. Southard, S. Laurendine, L. Trout, and S.T. Ballard. Inhibition of Liquid Secretion From Airway Submucosal Glands and Its Effect on Mucociliary Transport. Pediatr. Pulmonol. Suppl. 19:192 (1999).

M.I. Townsley and M.D. Ardell. Expression of Message for Lung Interstitial Matrix Proteins After Pacing-Induced Heart Failure. FASEB J. 14:A124 (2000).

Z. Xu, M.V. Cohen, G. Heusch, and J.M. Downey. AMP579 Started During Ischemia Limits Infarct Size in Rabbit Hearts. J. Mol. Cell. Cardiol. 32:A55 (2000).

X.-M. Yang, J.M. Downey, and M.V. Cohen. HMR 1883, a Surface  $K_{ATP}$  Channel Antagonist, Blocks Protection From Diazoxide: Diazoxide's Specificity for Mitochondrial  $K_{ATP}$  Is Questionable. Circulation 100:I-342 (1999).

X.-M. Yang, T. Pain, G. Heusch, M.V. Cohen, and J.M. Downey. Diazoxide Protects the Heart by Release of Free Radicals. J. Mol. Cell. Cardiol. 32:A49 (2000).

### III. BOOKS PUBLISHED

None.

### IV. PRESENTATIONS

S.T. Ballard. Airway Anion and Liquid Secretion: Possible Roles in Cystic Fibrosis Lung Disease. Cystic Fibrosis and Pulmonary Disease Research Center, University of North Carolina, Durham, NC (1999).

S.T. Ballard. Effect of CFTR Inhibition on Acetylcholine-Induced Bicarbonate Secretion by Porcine Bronchi. Cystic Fibrosis Foundation Montreal Conf., Montreal, Canada (1999).

S.T. Ballard. (1) Inhibitory Effects of Bumetanide and Dimethylamiloride in Ach-Induced Liquid Secretion Across Porcine Bronchial Epithelium; and (2) Regulation of Liquid Secretion Across Porcine Bronchi. Exp. Biol. 2000, San Diego, CA (2000).

S.T. Ballard. (1) Effect of Anion Transport Inhibitors on Bicarbonate Secretion by Substance P-Stimulated Bronchi; and (2) Substance P-Mediated Bicarbonate Secretion by Airway Glands and Animal Models for Cystic Fibrosis Research. Cystic Fibrosis Foundation Williamsburg Conf., Williamsburg, VA (2000).

S.T. Ballard. Airway Ion and Liquid Secretion - Possible Role in CF Lung Disease. Newcastle University, Newcastle-on-Tyne, England (2000).

J.N. Benoit. (1) Ischemia/Reperfusion Induced Alterations in Lymphocyte Population of Gastrointestinal Lymph; (2) Cyclic Nucleotide Modulation of Calcium and Tension in Phospholamban Knockout Mice; (3) Effects of PKA Inhibition on Vascular Vasopressin Responsiveness in Cirrhosis; (4) Lymphatic Pump Response to Acute Edemagenic Stress in Chronic Portal Hypertension; and (5) In Vivo Gene Transfer by Electroporation. Gulf Coast Physiol. Soc., New Orleans, LA (1999).

J.N. Benoit. Modulation of Vascular Smooth Muscle Contraction by Cyclic Nucleotides: Ca<sup>2+</sup> Dependent and Independent Mechanisms. Department of Physiology, Tulane University Medical School, New Orleans, LA (2000).

J.N. Benoit. Cyclic Nucleotide Induced Modulation of Vascular Smooth Muscle. Department of Surgery, Ren Ji Hospital, Shanghai Second Medical University, Shanghai, People's Republic of China (2000).

M.V. Cohen. Mechanisms of Classical Preconditioning. British Soc. Cardiovasc. Res., London, UK (1999).

M.V. Cohen. Mechanisms of Ischemic Preconditioning. Am. Assn. for Study of Liver Disease, Dallas, TX (1999).

M.V. Cohen. Myocardial Protection. The Hatter Institute Workshop on Myocardial Protection (Cardioprotection 2000), Mauritius, FR (2000).

M.V. Cohen. New Concepts in Cardioprotection. Int. Soc. Heart Res., Am. Section, XXII Annu. Sess., Louisville, KY (2000).

M.V. Cohen. To Drink or Not to Drink: The Influence of Alcohol on the Cardioprotection of Classical Preconditioning. Res. Soc. on Alcoholism, 23<sup>rd</sup> Annu. Sci. Mtg., Denver, CO (2000).

J.M. Downey. Ischemic Preconditioning. Turkish Pharmacol. Soc., Malatya, Turkey (1999).

J.M. Downey. K<sub>ATP</sub> Channels in Ischemic Preconditioning. Department of Pharmacology, Medical College of Wisconsin, Milwaukee, WI (1999).

J.M. Downey. (1) Signal Transduction in Ischemic Preconditioning; and (2) Role of K<sub>ATP</sub> Channels in Ischemic Preconditioning. Int. Soc., Heart Res., Louisville, KY (2000).

J.M. Downey. Adenosine and Cardioprotection. Eur. Soc. Cardiol., Amsterdam, The Netherlands (2000).

J.M. Downey. K<sub>ATP</sub> Channels in Ischemic Preconditioning. Grand Rounds, Essen University Univ of Med. Klinik, Essen, Germany (2000).

J.M. Downey. Signal Transduction Pathways in Ischemic Preconditioning. The Japanese Circ. Soc., Osaka, Japan (2000).

J.C. Parker. (1) Vascular Segmental Permeability After High Peak Inflation Pressure (PIP) Injury in Isolated Rat Lungs; (2) Optimized Blood Gases During Total Liquid Ventilation in Piglets; and (3) Mechanical Stress Induced Calcium Transients in Rat Pulmonary Artery and Microvascular Endothelial Cells. Exp. Biol. 2000, San Diego, CA (2000).

J.C. Parker. Ventilator Induced Lung Injury (VILI) Attenuated by Inhibitors of Myosin Light Chain Kinase and Calmodulin. Am. Thorac. Soc., Toronto, Ontario, Canada (2000).

A.E. Taylor. Evaluated and Presented Overview of Oral Competitions for Young Investigator Awards. Am. Heart Assn., Atlanta, GA (1999).

A.E. Taylor. Use of Albumin as a Blood Volume Expander. Colloid Therapy Speakers Bureau Mtg., Austin, TX (2000).

A.E. Taylor. I/R Lung Injury. (1) 8<sup>th</sup> Shin Kong Wu Ho-Su Memorial Symp., Taipei, Taiwan; and (2) University of Dundee, Dundee, Scotland (2000).

A.E. Taylor. Presented Secretary/Treasurer Report and Presented Annual Survey to Members. Exp. Biol. 2000, San Diego, CA (2000).



A.E. Taylor. Cytokines and Chemokines in I/R Lung Injury. Cong., Scandinavian and Am. Physiol. Societies., Stockholm, Sweden (2000).

A.E. Taylor. Protect Lymphocytes in I/R Lung Injury. University Hospital of Lund, Lund, Sweden (2000).

A.E. Taylor. Role of CD4 T-Helper Cells in I/R Lung Injury. Department of Physiology, University of Bergen, Bergen, Norway (2000).

M.I. Townsley. Lung Interstitial Matrix After Pacing-Induced Heart Failure. Gulf Coast Physiol. Soc., New Orleans, LA (1999).

M.I. Townsley. (1) Lung Cyclic Nucleotide Phosphodiesterase (PDE) Activity and Isoform Distribution After Heart Failure; and (2) Expression of Message for Lung Interstitial Matrix Proteins After Pacing-Induced Heart Failure. Exp. Biol. 2000, San Diego, CA (2000).

M.I. Townsley. The Forgotten Organ: Adaptations of the Lung to Chronic Heart Failure. Department of Physiology and Cell Biology, Ohio State University, Columbus, OH (2000).

M.I. Townsley. Pulmonary Adaptations in Chronic Heart Failure. Heart Failure Division, Medtronic, Inc., Minneapolis, MN (2000).

L.B. Wilson. Neural Mechanisms in Cardiovascular Regulation. FASEB Summer Res. Conf., Saxton River, VT (1999).

L.B. Wilson. Autonomic Control During Movement, Opio, France (1999).

L.B. Wilson. The Effect of Peripheral Neuropathy on Somatic Pressure Reflexes. Exp. Biol. 2000, San Diego, CA (2000).

## V. NATIONAL PROFESSIONAL RECOGNITION.

AUBREY E. TAYLOR: Served in the following capacities: Secretary-Treasurer, Association for Chairmen of Departments of Physiology; American Heart Association – Basic Science Committee, Long Range Planning Committee of Cardiopulmonary and Critical Care Council; AHA Representative to AAALAC. Vice-President, International Society of Pathophysiology; Editor: *Clinical Sciences*; Editorial Board: *American Journal of Physiology: Heart and Circulation*; *Journal of Applied Physiology*; *American Journal of Respiratory Disease*; and *Critical Care Medicine*. Sponsor - Science by Mail. Awards: American Heart Association Southeast Affiliate Distinguished Honoree, University of South Alabama College of Medicine Medical Alumni Association Distinguished Service Award.

**STEPHEN T. BALLARD:** Served in the following capacities: Member - American Physiological Society, New York Academy of Sciences, American Heart Association, Da Vinci Society, Microcirculatory Society; and Reviewer - *Journal of Applied Physiology*; *American Journal of Physiology*; *Heart and Circulation Physiology*; *American Journal of Physiology: Lung, Cellular and Molecular Physiology*; *American Journal of Physiology: Cell Physiology*. Grant Reviewer: Cystic Fibrosis Foundation.

**JOSEPH N. BENOIT:** Served in the following capacities: Editorial Board: *Microcirculation*, *Frontiers in Biosciences*. Editorial Review: *American Journal of Physiology: Gastrointestinal and Liver Physiology*; *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*; *American Journal of Physiology: Heart and Circulatory Physiology*; *Gastroenterology*; *Journal of Vascular Research*; *Clinical Science*; *Journal of Applied Physiology*; *American Journal of Gastroenterology*. Grant Review: Veteran's Administration, National Science Foundation, American Heart Association Southeastern Affiliate (Committee 5a), National Institutes of Health Special Emphasis Panels ZRG1 ALTX-4(1) and ZHHL1 SRC(99), Fonds zur Förderung der Wissenschaftlichen Forschung (FWF) Austria. Other Review: Association for Accreditation and Assessment of Laboratory Animal Care International ((AAALAC) Council on Accreditation. Societies: American Physiological Society (Fellow of Cardiovascular Section), American Heart Association, American Gastroenterological Association, Microcirculatory Society, International Association of Medical Science Educators. Other Scholarly Activities: Physiology Panel Member at NIH Think Tank of Lymphatic Research. Community Service: Science-by-Mail Sponsor, University Lions Club, American Heart Association Mobile Chapter Board of Directors, University of South Alabama Science Olympiad.

**MICHAEL V. COHEN:** Served in the following capacities: Editorial Board of *Basic Research in Cardiology and Heart Disease: A Journal of Cardiovascular Medicine*. Member of Clinical and Integrative Cardiovascular Physiology Study Section of the American Heart Association and the NIH SCOR Study Section.

**JAMES M. DOWNEY:** Served in the following capacities: Co-organizer of "Adenosine Cardioprotection and its Clinical Application," an international satellite symposium to the American Heart Association Scientific Sessions in Atlanta. He also served as Co-Manager of the website on the Communications Committee of the Council of Basic Cardiovascular Sciences for the American Heart Association. He is currently President-Elect of the International Society for Heart Research, an international organization with over 3,000 members worldwide. Member of the AMP579 Advisory Committee to Aventis Pharmaceutical Co. Member of the CVB Study Section of the National Institutes of Health. Editorial board member for *Circulation Research*, *Journal of Cellular and Molecular Cardiology*, and *Basic Research in Cardiology*.

**JAMES C. PARKER:** Served in the following capacities: Reviewer: *Journal of Applied Physiology*; *American Review Respiratory Disease*; *Microvascular Research*; *American Journal of Physiology*; *Clinical Sciences*, *Anesthesiology*; *Journal of Physiology*

(London), and Banks and Sperelakis *Essentials of Medical Physiology* (textbook); Cardiopulmonary Council member, American Heart Association; Pulmonary Circulation Assembly, American Thoracic Society; Fellow of Cardiovascular and Respiratory Sections of American Physiological Society; Fellow of American Heart Association Circulation Council; and Member: American Physiological Society, Microcirculatory Society, American Thoracic Society, New York Academy of Sciences, North American Vasc. Biol. Organization.

**MARY I. TOWNSLEY:** Served in the following capacities: Editorial Board: *Microcirculation* (1999-2001); *Microvascular Research* (1997-2000); *InSight* (1998-Present); and *Clinical Science* (2000-2003). Member: American Physiological Society, elected Fellow of the Cardiovascular Section, Program Committee of Cardiovascular Section (1995-1998), Women in Physiology Committee (1996-1998); Microcirculatory Society, Publications Committee (1996-1999); Cardiopulmonary and Critical Care Council of the American Heart Association, Council Newsletter Editor (1996-2001), Executive Committee (1996-2001), Chair Communications Committee (2000-2002); American Heart Association Research Committee (2000-2005); American Heart Association Southeast Affiliate, Research Committee (2000-2003) (Vice Chair, 2000-) New York Academy of Sciences; European Microcirculatory Society; Sigma Xi. Reviewer: *Journal of Applied Physiology*, *Microvascular Research*, *American Journal of Physiology*, *Circulation Research*, *American Journal of Respiratory and Critical Care Medicine*. Study Sections: National American Heart Association Lung, Respiration and Resuscitation Study Committee (2000-2005), Co-Chair (2000-); VA Merit Review Subcommittee on Respiration (1998-2000). Awards: Selected to the 1999-2000 Class of the ELAM (Executive Leadership in Academic Medicine) Program for Women; Elected to Alpha Omega Alpha Medical Honor Society.

**L. BRITT WILSON:** Served in the following capacities: Ad Hoc Reviewer: National Science Foundation grants, *American Journal of Physiology*, *Circulation Research*, *Journal of Applied Physiology*, *Medicine and Science in Sports and Exercise*, *Experimental Physiology*, *Journal of the Autonomic Nervous System*. Member: American Physiological Society (Fellow: Cardiovascular Section), Sigma Xi, The Scientific Research Society, Society for Neuroscience, American College of Sports Medicine, International Society for Autonomic Neuroscience.

## **VI. BRIEF SUMMARY OF DEPARTMENT ACTIVITIES AND PROGRESS**

Drs. J. Gardner, M. Krenz, R. McMillon, T. Moore, A. Nakano, T. Pain, Y. Shirasawa, Z. Xu were postdoctoral fellows in the department. Drs. Cohen, Dyess, Haynes, Hamm, and Culpepper continue as excellent contributors to the research and teaching programs within the Department of Physiology. The following distinguished scientists have visited the department this year: Dr. Paul M. Quinton, Department of Pediatrics, University of California at San Diego School of Medicine, La Jolla, CA; Dr. Garrett J. Gross, Department of Pharmacology, University of Wisconsin, Milwaukee, WI; Dr. Arthur S. Slutsky, Department of Medicine, Mount Sinai Hospital, Toronto, Ontario, Canada; Dr. Steven Pelech, Department of Medicine, University of British Columbia, Vancouver, BC, Canada; Dr. Michael A. Matthay, Cardiovascular Research Institute, University of California, San Francisco, CA; and Dr. Kristine Kamm, Department of Physiology, University of Texas Health Sciences Center, Dallas, TX. Dr. Gerd Heusch, Department of Pathophysiology, University School of Medicine at Essen, Essen, Germany, continued his sabbatical working with Drs. Downey and Cohen.

Jason Martin and John LeDoux (Class of 2002) presented research papers at the National Medical Student Research Forum in Galveston, TX. Jason Martin won the competition. Jason Martin was sponsored by Dr. Benoit (Physiology) and Dr. David Dean (Microbiology). John LeDoux was sponsored by Dr. Wilson.

Dr. Britt Wilson was our Course Director this year, and the faculty continued to use the concept of "Bottom Lines" in order to emphasize certain key elements in physiology that must be learned by the medical students. Dr. Taylor received the Distinguished Service Award from the University of South Alabama College of Medicine Medical Alumni Association and was the distinguished honoree at the American Heart Association Gala held in Mobile in May 2000.