

DEPARTMENT OF MEDICAL PHYSIOLOGY FACULTY/STAFF ACTIVITIES

1991

Awards and Appointments

Grants

Chilian WM (MPHY) received a \$15,635 Small Instrumentation Grant from the National Heart, Lung, and Blood Institute entitled "Flexercell Strain Unit" for the period 09/01/91-08/31/92.

Davis MJ (MPHY) received a \$132,000 American Heart Association Grant-in-Aid Award entitled "Cellular Mechanisms of the Vascular Myogenic Response." for the period 07/01/91-06/30/94.

DeFily DV (MPHY) received a \$66,000 grant from the American Heart Association, Texas Affiliate entitled "Mechanisms of Ischemia-Reperfusion Injury of the Coronary Microcirculation" for the period, 07/01/91-06/30/93.

DeFily DV (MPHY) received a \$5,000 Biomedical Research Support Grant from the Office of Research and Graduate Studies, College of Medicine, Texas A&M University entitled "Coronary Microvascular Structural Changes After Preconditioning and Ischemia-Reperfusion" for the period 04/12/91-03/31/92.

Falcone JC (MPHY) received a \$29,700 American Heart Association, Texas Affiliate grant entitled "Myogenic Mechanisms and Vascular Smooth Muscle Contraction" for the period 07/01/91-06/30/92.

Falcone JC (MPHY) received a \$5,000 Biomedical Research Support Grant from the Office of Research and Graduate Studies, College of Medicine, Texas A&M University entitled "Alterations in the Intracellular $[Ca^{2+}]$ of Isolated Arterioles from Hypertensive Rats" for the period 04/12/91-03/31/92.

Yuan Y (MPHY) received a \$5,000 Biomedical Research Support Grant from the Office of Research and Graduate Studies, College of Medicine, Texas A&M University entitled "Quantitative Permeability to Albumin in Isolated Coronary Venules" for the period 04/12/91-03/31/92.

Ziche M (MPHY) received a \$827 Minigrant from the Office of University Research entitled "Assessment of Endothelin Production by Cultured Coronary Endothelial Cells During Hypoxia".

Publications

Davis MJ (MPHY) Myogenic responses of isolated arterioles: test for a rate-sensitive mechanism. *Am. J. of Physiol.*, Vol. 259, pp. H1890-H1900, 1990.

Falcone JC, Davis MJ, and Meininger GA (MPHY) Endothelial independence of myogenic response in isolated skeletal muscle arterioles. *Am. J. of Physiol.* Vol. 260, pp. H130-H135, 1991.

Hawker JR Jr. and Granger HJ (MPHY) Internalized bFGF is Translocated to the Nuclei of Venular Endothelial Cells and Established Fibroblast Cell Lines. *Annals of the New York Academy of Sciences*, Vol. 638, pp. 424-426, 1991

Kuo L, Davis MJ, and Chilian WM (MPHY). Endothelium-dependent, flow-induced dilation of isolated coronary arterioles. *Am. J. of Physiol.* Vol. 259, pp. H1063-H1070, 1990.

Kuo L (MPHY) Interaction of pressure- and flow-induced responses in porcine coronary resistance vessels. *Am. J. of Physiol.: Heart and Circ. Physiol.*, Vol. 261, pp. H1706-H1715, 1991.

Meininger GA (MPHY) et al. Application of 3-D Optical Sectioning Microscopy to the Study of Microvascular Biology" *Annals of Biomed. Eng.*, 19:556 1991.

Peterson TV (MPHY) et al. Renal nerves and postprandial renal excretion in the conscious monkey. *Am. J. of Physiol.* Vol. 261, pp. R1197-R1203, 1991.

Zawieja DC, Greiner ST, Davis KL, Hinds WM, and Granger HJ (MPHY) Reactive oxygen metabolites inhibit spontaneous lymphatic contractions. *Am. J. of Physiol.* Vol. 260, pp. H1935-H1943, 1991.

Zawieja DC (MPHY) Thermal effects of MR imaging: worst case studies on sheep. *Am. J. of Roentgenography*, Vol. 155, pp. 1105-1110, 1990.

Zawieja, DC (MPHY) et al. Calcium Measurement in Isolated Arterioles During Myogenic and Agonist Stimulation. *Am. J. of Physiol.: Heart and Circ. Physiol.* Vol. 261, pp. H950-H959, 1991.

Presentations

Carter AB (MPHY) Environmental enrichment program for non-human primates. Presented at the Texas Branch of the American Association for Laboratory Animal Science Annual Meeting, San Antonio, Texas, May 1991.

Chilian WM (MPHY)

- Distribution and control of coronary microvascular resistance. Presented for the Cardiovascular Institute Speaker Series, Department of Physiology, Loyola University School of Medicine, Chicago, Illinois, February 1991.
- New insights into coronary physiology based on microvascular studies. Presented at the Federation of American Societies for Experimental Biology annual meeting, Atlanta, Georgia, April 1991.
- Endothelium-dependent flow-induced vasodilation of coronary arterioles. Presented at the Federation of American Societies for Experimental Biology annual meeting, Atlanta, Georgia, April 1991.
- Coronary microcirculation: locations of resistance and regulatory mechanisms. Presented at the International Society for Heart Research, Cincinnati, Ohio, May 1991.
- Physiological Control of Coronary Arteriolar Tone. Presented at the XIIIth Congress of the European Congress of Cardiology, Amsterdam, August 1991.
- Neural Control of the Coronary Microcirculation. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991.
- Pathophysiological Disturbances in the Coronary Microcirculation. Presented at the Ischemic-Grant SCOR, Houston, Texas, November 1991.
- Effects of Hypertrophy on the Coronary Circulation. Presented at the American Heart Association, Post Graduate Conference, Anaheim, California, November 1991.

- Effects of Pathology on Coronary Microvascular Regulation. Presented at the University of Wales College of Medicine, Cardiff, Wales, December 1991.
- Regulation of Coronary Arteriolar Resistance. Presented at the British Cardiac Society Lecture, London, United Kingdom, December 1991.

Davis MJ (MPHY)

- Stretch-activated single-channel and whole-cell currents in isolated vascular smooth muscle cells. Presented at the Annual Biophysical Society meetings, San Francisco, California, February 1991.
- Pressure and flow-induced responses of isolated arterioles. Presented at the New York Medical College and University of Rochester, Valhalla, New York, April 1991 and at the University of Nebraska Medical School, Omaha, Nebraska, July 1991.
- Pressure- and Flow-Induced Responses of Isolated Arterioles. Presented at the University of Indiana Medical School, Indianapolis, Indiana, August 1991.
- Stretch-Activation of Arterioles. Johns Hopkins University, Baltimore, Maryland, November 1991.
- Vascular Smooth Muscle Cells. Presented at the Eastern Virginia Medical School, Norfolk, VA, November 1991.

DeFily DV (MPHY)

- In vivo ablation of endothelial-dependent coronary microvascular dilation presented at the Third International Symposium on Resistance Arteries, Aalborg, Denmark, May 1991.
- Coronary microvascular response to ischemia. Presented at the University of Amsterdam, Amsterdam, The Netherlands, May 1991.
- Preconditioning Protects Coronary Microvascular Endothelial Function. Presented at the American Heart Association meeting, Anaheim, California, November 1991.

Falcone JC (MPHY)

- Myogenic response of isolated large arterioles from spontaneously hypertensive rat skeletal muscle. Presented at the Third International Symposium on Resistance Arteries, Aalborg, Denmark, May 1991.
- Enhanced Myogenic Reactivity in Arterioles from Spontaneously Hypertensive Rats. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991.

Granger HJ (MPHY)

- Role of endothelial cells in myocardial angiogenesis. Presented to the Department of Molecular Physiology and Biophysics at Baylor College of Medicine, Houston, Texas, March 1991.
- Overview of Interstitial Physiology. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991
- Blood Flow Regulation. Presented at the Ocular Microcirculation Conference, Lake Louise, Canada, September 1991.

Hawker JR (MPHY)

- Basic fibroblast growth factor accumulates in the nuclei of venular endothelial cells before initiation of DNA synthesis. Presented at the 30th Annual Meeting for the American Society for Cell Biology, San Diego, California, December 1990.
- Internalized β FGF is translocated to the nuclei of venular endothelial cells and established fibroblast cell lines. Presented at the New York Academy of Sciences Symposia, entitled "The Fibroblast Growth Factor Family", La Jolla, California, January 1991.
- Internalized basic fibroblast growth factor translocates to the nuclei of coronary venular endothelial cells before the onset of DNA synthesis. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991.

Kuo L (MPHY)

- Alteration of arteriolar responses during atherosclerosis. Presented at the Third International Symposium on Resistance Arteries, Aalborg, Denmark, May 1991.
- A Nitrovasodilator is Responsible for Flow-Reduced Dilation in Porcine Coronary Arterioles. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991.

Liu J (MPHY) Mechanism of Norepinephrine Enhancement of Myogenic Reactivity. Presented at the Fifth World Congress for Microcirculation and Microcirculatory Society meetings, Louisville, Kentucky, September 1991.

Meininger CJ (MPHY)

- FGF, endothelial cell growth factors. Presented at the Keystone Symposia on Molecular and Cellular Biology, Keystone, Colorado, April 1991.
- Adenosine and mast cells - a role in angiogenesis? Presented at the Children's Hospital - Harvard Medical School, Boston, Massachusetts, May 1991.
- Adenosine - a role in angiogenesis. Presented at the University of Massachusetts Medical Center, Worcester, Massachusetts, May 1991.
- Role of mast cells in angiogenesis. Presented at the Symposium on the Regulation of Angiogenesis, American Physiological Society Conference on Interactions of the Endocrine and Cardiovascular Systems in Health and Disease, San Antonio, Texas, September 1991.

Meininger GA (MPHY)

- Intracellular distribution of fluorescent derivatives of phorbol ester in smooth muscle. Presented at the Annual Biophysical Society meetings, San Francisco, California, February 1991.
- Cellular mechanisms involved in the myogenic response. Presented to the Department of Physiology, University of Vermont, Burlington, Vermont, May 1991.
- Distribution of protein - kinase C in smooth muscle. Presented to the Department of Pharmacology Blood Vessel Group, University of Vermont, Burlington, Vermont, May 1991.
- Myogenic mechanism and blood flow autoregulation. Invited Speaker at the Third International Symposium on Resistance Arteries, Aalborg, Denmark, May 1991.
- Microcirculation in arterial hypertension. Presented to the International Society for Heart Research, American Section, Cincinnati, Ohio, May 1991.

- Pathobiology of vasoregulation in hypertension. Presented at the Cardiovascular Drug Development Division of Ciba Geigy, Worcester, Massachusetts, July 1991.
- Three dimensional distribution of protein kinase C in smooth muscle. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991.
- Application of 3-D optical sectioning microscopy to the study of microvascular biology. Presented at the Annual meeting of the Biomedical Engineering Society, Charlottesville, Virginia, October 1991.
- A role for the cytoskeleton in regulating vascular tone. Presented at the American Heart Association meeting, Anaheim, California, November 1991.
- Cellular mechanisms of the vascular myogenic response. Presented at USCD at San Diego, California, November 1991.
- Distribution and translocation of protein kinase C in smooth muscle. Presented at the University of Massachusetts Medical Center, Worcester, Massachusetts, December 1991.
- Distribution of protein kinase C in smooth muscle. Presented at the Annual meeting of the American Society for Cell Biology, Boston, Massachusetts, December 1991.

Peterson TV (MPHY)

- Renal Nerves and Renal Adaptation to Low Sodium Intake in the Nonhuman Primate. Presented at the American Heart Association Council for High Blood Pressure Research Scientific Sessions, Chicago, Illinois.
- Vasopressin and Renin Responsiveness to Changes in Blood Volume in Conscious Monkeys. Presented at the American Physiological Society Conference on Interactions of the Endocrine and Cardiovascular Systems in Health and Disease, San Antonio, Texas.
- Neurohumoral Control of Renal Sodium Excretion in the Primate. Presented at the Indiana University Northwest Center for Medical Education, Gary, Indiana, September 1991.

Miller RA (MPHY) The advantages of excelling in the laboratory. Presented at the Texas Branch of the American Association for Laboratory Animal Science Annual Meeting, San Antonio, TX, May 1991.

Morley C (MPHY) Increasing efficiency in chemical analysis procedures by use of time management techniques. Presented at the Texas Branch of the American Association for Laboratory Animal Science Annual Meeting, San Antonio, Texas, May 1991.

Yuan Y (MPHY) Quantitative Permeability to FITC-Dextran in Isolated Coronary Venules. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991.

Zawieja DC (MPHY)

- Effects of reactive oxygen metabolites on microcirculatory transport. Presented at the Faculty of Toxicology Seminar Series, Texas A&M University, College Station, Texas, February 1991.
- Quantitative videomicroscopy using digital imaging techniques. Presented at the Interdisciplinary Research Workshop on Image Analysis sponsored by Sigma Xi, April 1991.
- Effects of Oxygen-Derived Free Radicals on Cultured Coronary Venular Endothelial Cells. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991.

Ziche M (MPHY) Bradykinin-Induced Cytosolic Calcium Release is Prevented by Thapsigargin in Cultured Coronary Venular Endothelial Cells. Presented at the Fifth World Congress for Microcirculation, Louisville, Kentucky, August 1991.

Professional Activities

Carter AB (MPHY) received a \$100 honorarium and a free one-year membership to the Texas Branch AALAS for an Outstanding Technical Paper award entitled, "A Method for Obtaining Blood Samples From Caged, Conscious Non-human Primates" from the Texas Branch of the American Association for Laboratory Animal Science Annual Meeting, San Antonio, Texas, May 1991.

Chilian WM (MPHY)

- consulted with collaborators on Ischemic SCOR grants at Southwestern Medical School, Dallas, Texas, January 1991.
- was appointed to the University Lectures Committee, February 1990.
- chaired a session entitled, "Microvascular Methodology" at the Third International Symposium on Resistance Arteries, Aalborg, Denmark, May 1991.

Davis MJ (MPHY)

- participated in a session entitled, "Pressure Profiles" at the Third International Symposium on Resistance Arteries, Aalborg, Denmark, May 1991.
- traveled to Dallas, Texas to review grants as a member of the American Heart Association Research Review Committee, February, 1991.

DeFily DV (MPHY) received a \$1,000 travel scholarship award for his abstract entitled "In Vivo Ablation of Endothelial-Dependent Coronary Microvascular Dilation" to be presented at the Third International Symposium on Resistance Arteries, Aalborg, Denmark, May 1991.

Granger HJ (MPHY)

- traveled to San Antonio, Texas to consult with faculty in the Department of Pharmacology, University of Texas Health Science Center, San Antonio, regarding renewal of an NIH Program Project Grant, January 1991.
- traveled to Keystone, Colorado to attend the Keystone Symposia on Molecular and Cellular Biology entitled "Molecular Mechanisms in Vascular Diseases, January 1991.
- reviewed grants and made funding recommendations as a member of the Experimental Cardiovascular Science Study Section for the National Institutes of Health, Keystone, Colorado, January 1991.
- traveled to Austin, Texas to attend a meeting of the Research Allocations and Advisory Committee for the American Heart Association, February, 1991.
- was elected Secretary of the Cardiovascular Section, American Physiological Society.
- traveled to Atlanta, Georgia to attend annual meetings of the Federation of American Society for Experimental Biology, April, 1991.

- traveled to Washington, DC to review grants and make funding recommendations as a member of the Experimental Cardiovascular Science Study Section for the National Institutes of Health, June 1991.
- traveled to San Antonio, Texas to chair a symposium entitled, "Regulation of Angiogenesis" at the American Physiological Society Conference, September 1991
- traveled to San Diego, California to participate in Program Project site visit for National Institutes of Health at the University of California - San Diego, October 1991.

Kuo LK (MPHY) received a \$1,000 travel scholarship award for his abstract entitled "Alteration of Arteriolar Responses During Atherosclerosis" to be presented at the Third International Symposium on Resistance Arteries, Aalborg, Denmark, May 1991.

Meininger GA (MPHY)

- was re-appointed to the Editorial Board of the American Journal of Physiology: Heart and Circulatory Physiology, July 1, 1991-1993.
- was appointed to the Research Allocation and Advisory Committee for the American Heart Association/Texas Affiliate.

Peterson TV (MPHY)

- organized and chaired a symposium on "The Heart and Control of Renal Excretion: Neural and Endocrine Mechanisms," at the 75th Annual Federation of American Societies for Experimental Biology (FASEB), Atlanta, Georgia, April 1991.
- gave a talk on "Cardiac Volume Receptors: Efferent Pathways" and presented a paper entitled, "Effects of Renal Denervation on Renal Responses to Hypo- and Hypervolemia in Conscious Monkeys" and co-chaired a session on "Atrial Natriuretic Peptides".
- traveled to Baltimore, MD to attend the American Society of Nephrology Annual Meeting, November 1991.

Sikes PJ (MPHY) traveled to San Antonio, Texas to attend the American Association for Laboratory Animal Science Annual Meeting as a member of the awards committee, which presented Outstanding Technical Paper awards, May 1991.

Zawieja DC (MPHY) traveled to Atlanta, Georgia to attend annual meetings of the Federation of American Society for Experimental Biology, April 1991.

David C. Zawieja, asst. prof., Medical Physiology and Microcirculation Research Institute, traveled to San Antonio, TX to attend the Annual Fall Meeting of the American Physiological Society, September 1991.

Lih Kuo, res. asst. prof., Medical Physiology and Microcirculation Research Institute, traveled to Louisville, KY to attend scientific sessions of the Fifth World Congress for Microcirculation and Microcirculatory Society, September 1991.

David V. DeFily, asst. res. sci., Medical Physiology and Microcirculation Research Institute, traveled to Louisville, KY to attend scientific sessions of the Fifth World Congress for Microcirculation and Microcirculatory Society, September 1991.

Jeff C. Falcone, asst. res. sci., Medical Physiology and Microcirculation Research Institute, traveled to Indianapolis, IN to confer with associates regarding Imaging Techniques and In Vivo studies at Indiana University School of Medicine, August 1991.

Martha Lundberg, grad. asst., Medical Physiology and Microcirculation Research Institute, traveled to Louisville, Kentucky to attend scientific sessions of the Fifth World Congress for Microcirculation and Microcirculatory Society meetings, September 1991.

Neeraj R. Sharma, grad. asst., Medical Physiology and Microcirculation Research Institute, traveled to Louisville, Kentucky to attend scientific sessions of the Fifth World Congress for Microcirculation and Microcirculatory Society meetings, September 1991.

Alice B. Carter, AHT, Medical Physiology, traveled to Buffalo, New York to attend the National Meeting for the American Association for Laboratory Animal Science, October 1991.

Cynthia J. Meininger, asst. prof., Medical Physiology and Microcirculation Research Institute, traveled to Boston, MA to present research findings at the American Society for Cell Biology, December 1991.