

**The Department of  
Physiology & Biophysics**



***MATTHEW N. LEVY  
SYMPOSIUM***

***Wednesday, October 1, 2014***

***Robbins Building, E-501***

**Case Western Reserve University**

*Symposium*  
*honoring*  
*Matthew N. Levy*

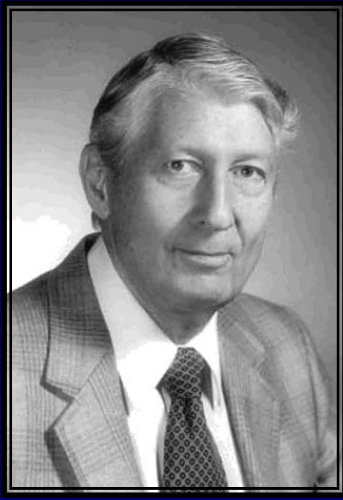
*Wednesday, October 1, 2014*

*8:00 a.m.*

*Robbins Building, E-501*

*Department of*  
*Physiology and Biophysics*

*Case Western Reserve University*  
*School of Medicine*



Dr. Matthew Levy was a gifted, dedicated teacher and scientist who influenced countless students, conducted groundbreaking research on heart function and its relationship to the autonomic nervous system, and who co-authored one of the most influential texts on physiology.

**8:00 a.m. – 8:30 a.m.**

**Registration & Continental Breakfast**

**8:30 a.m. – 8:45 a.m.**

**Walter F. Boron, MD, PhD**

-Case Western Reserve University Cleveland, OH

**8:45 a.m. – 9:15 a.m.**

**Mark E. Dunlap, MD**

Director, Heart Failure Section, Heart & Vascular Center

-MetroHealth Cleveland, OH

*Title: “Matthew Levy: The Gentleman Researcher”*

**9:15 a.m. – 9:55 a.m.**

**Michael R.S. Hill, PhD, MBA**

Vice President, Research and Development, Heart Failure Business,  
Cardiac Rhythm & Heart Failure Management

-Medtronic, Inc. Minneapolis, MN

*Title: “Fundamentals of autonomic modulation applied as a  
new therapy for heart failure in medical devices.”*

• ***9:55 a.m. – 10:00 a.m. -Q&A***

**10:00 a.m. – 10:30 a.m.**

**Morning Break**

*(Refreshments served)*

**10:30 a.m. – 11:15 a.m.**

**Francois M. Abboud, MD**

Professor, Internal Medicine; University of Iowa

-University of Iowa Iowa City, IA

*Title: “Autonomic neural regulation of immune system:  
Implications for hypertension”*

• ***11:15 a.m. – 11:30 a.m. -Q&A***

**11:30 a.m. – 12:15 p.m.**

**Julian E. Stelzer, PhD**

Assistant Professor

-Case Western Reserve University, Cleveland, OH

*Title: “Integrative control of cardiac muscle contraction”*

• ***12:15 p.m. – 12:30 p.m. -Q&A***

**12:30 p.m. – 1:30 p.m.**

**Break for Lunch**

**1:30 p.m. – 2:15 p.m.**

**Elizabeth M. McNally, MD, PhD**

Chair & Director, Center of Genetic Medicine

–Northwestern University, Chicago, IL

*Title: “The genetic landscape of cardiomyopathy”*

• *2:15 p.m. – 2:30 p.m. -Q&A*

**2:30 p.m. – 3:15 p.m.**

**Yoram Rudy, PhD, FAHA**

Professor & Director of Cardiac Bioelectricity  
and Arrhythmia Center

–Washington University in St. Louis, St. Louis, MO

*Title: “Arrhythmogenic substrates and arrhythmia  
mechanism in the human heart –insights  
from noninvasive mapping in patients”*

• *3:15 p.m. – 3:30 p.m. -Q&A*

**3:30 p.m. – 4:00 p.m.**

**Afternoon Break**

*(Refreshments served)*

**4:00 p.m. – 4:45 p.m.**

**Donald M. Bers, PhD**

Professor & Chair, Pharmacology

–University of California, Davis

*Title: “Calcium regulation and signaling in cardiac  
myocytes in health and disease”*

• *4:45 p.m. – 5:00 p.m. -Q&A*

**6:00 p.m. – 10:00 p.m.**

**Reception & Dinner ~**

**Crawford Galleries of the Western Reserve Historical Society**

**10825 East Boulevard, Cleveland, OH 44106**

## *Mark E. Dunlap, MD*



*Mark E. Dunlap, MD, is Professor of Medicine at Case Western Reserve University with a secondary appointment in Physiology and Biophysics. He received his MD degree from the University of Tennessee College of Medicine, Memphis, Tennessee, and completed Medicine, Cardiology, and Research training at the Medical College of Virginia. He currently serves as Director of the Heart Failure Section for The MetroHealth System in Cleveland.*

*His research has focused on abnormalities of autonomic control in hypertension and heart failure, showing that cardiopulmonary baroreflex control of sympathetic activity is blunted in both animals and humans with HF. He also has focused on mechanisms underlying abnormal cholinergic control in HF, including the role of nicotinic acetylcholine receptor subtypes in ganglionic transmission. More recently his work has focused on the role of sympathetic activation causing redistribution of fluid from splanchnic venous vessels into the circulatory volume leading to decompensated HF.*

*Dr. Dunlap has been a part of numerous clinical trials designed to test therapies aimed at treating the neurohumoral excitatory state in HF, including DIG (digoxin), MERIT-HF (beta-blocker), CHARM (angiotensin receptor inhibitor), OVERTURE (neutral endopeptidase inhibitor), PROTECT (adenosine a1 inhibitor), BALANCE (vasopressin receptor inhibitor), TOPCAT (aldosterone receptor blocker), and ASCEND (nesiritide), and has served on the Steering Committees and Endpoint Committees for several clinical trials. He also served as PI for the Symplicity HTN-1 and HTN-3 trials of renal denervation for the treatment of resistant hypertension, and is currently an investigator in the NHLBI-sponsored National HF Research Network. He has served on numerous study sections for the NHLBI, the American Heart Association, and the Department of Veterans Affairs, and is past President of the Society for Heart Brain Medicine.*

## *Michael R.S. Hill, PhD, MBA*



*Michael Hill, Ph.D., MBA, joined Medtronic in July 1992 as a Scientist in the Cardiac Rhythm Management division of Medtronic in Minneapolis, MN. He has served in research, clinical, program, international and management roles over his tenure at Medtronic.*

*Dr. Hill is a Technical Fellow (1998) and Bakken Fellow (2001). He was awarded a CRDM Star of Excellence award in 2011. In 2012, he was inducted as Fellow of the American Institute of Medical and Biological Engineering.*

*He currently leads the Research and Development efforts for the Heart Failure Business Unit. He holds over 50 patents, has authored several manuscripts and abstracts, and often is an invited lecturer at international cardiac-related conferences and university events.*

*A native of Jackson, Tennessee, Dr. Hill received his BSE [Biomedical and Electrical Engineering] and BS [Mathematics] Degrees from Duke University, MS and PhD [Biomedical Engineering] Degrees from Case Western Reserve University, and MBA [Management] Degree from the University of St. Thomas.*

## *Francois M. Abboud, MD*



*François M. Abboud, MD, Edith King Pearson Chair of Cardiovascular Research, is Professor and Past Chairman of the Department of Internal Medicine (1976-2002), Professor of Molecular Physiology and Biophysics, and Associate Vice President for Research at the University of Iowa. He joined the faculty in 1960 and was appointed founding director of the Cardiovascular Research Center in 1974. In 2013 the Center gained international prominence and to honor his legacy of over 5 decades in perpetuity, the Board of Regents*

*of the University of Iowa approved the naming of the Center: The François M. Abboud Cardiovascular Research Center, University of Iowa, in 2013.*

*Since 1971 Dr. Abboud has been principal investigator of an NIH-funded Program Project Grant (PPG) on the Regulation of the Circulation in Pathologic States. The very recent review by the NHLBI of this research program resulted in a renewal until 2019. This current PPG, entitled, "Integrative Neurobiology of Cardiovascular Regulation", is most likely the longest funded research program under the same principal investigator in the National Heart, Lung and Blood Institute. His 1974 Institutional Research Training Grant from the NIH will receive NIH support until 2016.*

*His prestigious awards include: the Robert H. Williams Distinguished Chairman of Medicine Award, APM; CIBA Award and Medal for Hypertension Research of the Council of High Blood Pressure Research of the AHA; Gold Heart and Research Achievement Awards of the AHA; Distinguished Research Scientist Award from AAMC, the AHA and the American College of Cardiology; the Cannon Lecture and Award of APS, and the Kober Medal, AAP.*

*Abboud is a member of the ASCI; served as President of AAP, AHA, Central Society for Clinical Research, American Federation for Clinical Research, and the American Clinical and Climatological Association. He was elected to membership of the Institute of Medicine of the National Academy of Sciences and to the American Academy of Arts and Sciences.*



## *Julian E. Stelzer, PhD*



*Julian E. Stelzer, PhD, is an Assistant Professor in the Department of Physiology and Biophysics at Case Western Reserve University School of Medicine. He joined the faculty in 2008 and was named a Mount Sinai Scholar.*

*Dr. Stelzer's major research interests are the cellular and molecular mechanisms that control cardiac muscle contraction, and how these mechanisms contribute to the development and progression of heart failure.*

*Dr. Stelzer's laboratory has received funding from the American Heart Association and the National Institutes of Health, and employs an integrative approach that combines mechanical studies in isolated cardiac muscle preparations and in vivo whole animal studies of cardiac function.*

*Current studies investigate how genetic defects in cardiac contractile proteins affect cardiac muscle force generation and cause cardiomyopathy, and how acquired forms of heart failure cause molecular changes in cardiac regulatory proteins through post-translational modifications.*

*The long-term goal is to develop therapies that directly target cardiac contractile proteins in order to improve the ability of failing hearts to contract.*

## *Elizabeth M. McNally, MD, PhD*



*Elizabeth McNally is a physician scientist who studies inherited cardiovascular and neuromuscular diseases. Her expertise in the genetic mechanisms of cardiomyopathies and muscular dystrophies has led to new insight about how heart failure and muscle dysfunction occur. Dr.*

*McNally's team has identified a number of genes critical for cardiac and skeletal muscle membrane stability. Her interest in degenerative disorders that affect cardiac and skeletal muscle has also lead to studies in regeneration and cellular repair to improve heart and muscle function. In September 2014, she moved from the University of Chicago to Northwestern University to direct the Center for Genetic Medicine.*

*Dr. McNally was born and raised in Chicago. She received her undergraduate degree in Biology and Philosophy from Barnard College at Columbia University. She was awarded M.D. and Ph.D. degrees from the Albert Einstein College of Medicine as part of the NIH-sponsored Medical Scientist Training Program. Dr. McNally trained in Internal Medicine and Cardiology at the Brigham and Women's Hospital and Harvard Medical School. Her postdoctoral research was at Children's Hospital Boston in the Division of Genetics. Dr. McNally remains an active cardiologist who specializes in inherited cardiovascular disease. She is an also an advocate for research and patients through her work with the Muscular Dystrophy Association and Parent Project Muscular Dystrophy Foundation. She was president of the American Society for Clinical Investigation, an Established Investigator of the AHA and a Distinguished Clinical Scientist of the Doris Duke Charitable Foundation.*

## *Yoram Rudy, PhD, FAHA*



*Professor Yoram Rudy was born in Tel-Aviv, Israel. In 1966, he entered the Department of Physics at the Technion-Israel Institute of Technology, where he earned a B.Sc. degree in 1970 and M.Sc. in 1973. During his graduate studies, Yoram developed interest in the life sciences and decided to pursue this interest. In 1973 he joined the Ph.D. program in Biomedical Engineering at Case Western Reserve University (CWRU), where he conducted research in bioelectric phenomena under the guidance of Dr. Robert Plonsey, a pioneer in this field of science. Yoram received his Ph.D. degree from CWRU in 1978, where he also attended the first*

*two years of medical school.*

*In 1980, Prof. Rudy joined the faculty of Case Western Reserve University as an assistant professor of Biomedical Engineering. He later became The M. Frank and Margaret C. Rudy Professor of Cardiac Bioelectricity, with academic appointments in the departments of Biomedical Engineering, Physiology & Biophysics, and Medicine. In 1994, he established the interdisciplinary Cardiac Bioelectricity Research and Training Center and became its director.*

*He joined Washington University in 2004 as the Fred Saigh Distinguished Professor of Engineering, with appointments in the departments of Biomedical Engineering, Medicine, Cell Biology & Physiology, Radiology, and Pediatrics. He established the interdisciplinary Cardiac Bioelectricity and Arrhythmia Center (CBAC) at Washington University, which includes 39 faculty members. He has also served as a visiting professor in various universities worldwide.*

*Dr. Rudy published over 200 scientific articles. He graduated 30 doctoral students, who continue to pursue careers in academic research and medicine, and in the biomedical industry. He is a member of the National Academy of Engineering and the recipient of numerous awards, among which are: the NIH Merit Award, the Biomedical Engineering Society Distinguished Lectureship Award, the Heart Rhythm Society Distinguished Scientist Award, Case Western Reserve University Distinguished Alumni Award and the Hein Wellens Distinguished Professor in Cardiology at Maastricht University. He also served as President of the Cardiac Electrophysiology Society from 2006-2008.*

## *Donald M. Bers, PhD*



*Dr. Donald M. Bers is the Joseph Silva Endowed Chair for Cardiovascular Research, Distinguished Professor and Chair of the Department of Pharmacology at UC Davis. He obtained his BA in Biology from the University of Colorado, and his Ph.D. in Physiology from UCLA. He did an AHA-supported postdoctoral fellowship at Edinburgh University, Scotland and returned to UCLA to a Research Faculty position. He rose from Assistant Professor to Professor and Associate*

*Dean of Biomedical Sciences at the University of California, Riverside from 1982-92. He was recruited to Loyola University Chicago as Chair of Physiology (1992-2008) where he rebuilt a strong Physiology Department, and held the DePauw endowed Chair.*

*Dr. Bers has >400 papers in studies of cardiac Ca signaling, mostly in high impact journals, an influential single author book on cardiac excitation-contraction coupling, and continuous NIH grant funding for >33 years. He has mentored >75 Ph.D. students, postdocs and junior faculty (many with subsequent successful independent careers). He collaborates extensively, throughout the U.S. and internationally, and has led large research groups. His scientific work focuses on cardiac Ca and Na transport, signaling and electrophysiology, including characterization of ion transporters and channels, electrophysiology, E-C coupling, myofilament activation, mitochondrial Ca/energetics, GPCR signaling, systolic dysfunction and arrhythmogenesis (e.g. in hypertrophy and heart failure), development of computational models and integrating these aspects for a more comprehensive quantitative mechanistic understanding of cardiac function and disease.*

*He has received numerous awards and held leadership positions for the AHA, International Society for Heart Research, Biophysical Society, Heart Failure Society of America, American Physiology Society, Association of Chairs of Departments of Physiology, and has served on numerous grant review panels and editorial boards, and has organized scientific meetings.*





SCHOOL OF MEDICINE

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