A Missing Piece from the World of Science: Remembering Michael P. Sherman

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Michael P. Sherman, MD, PhD (doctor honoris causa), FAAP (Fig 1), passed away peacefully on September 22, 2017, following complications from a stroke. Michael was a mentor, colleague, and collaborator to many and a respected educator, dedicated scientist, and physician to all. Dr Sherman was a superb neonatologist and world-renowned scientist focusing on infection and immunity in the newborn. He was Professor Emeritus of Child Health, University of Missouri, Columbia, MO, and Professor Emeritus of Pediatrics, University of California, Davis (UC-Davis). Dr Sherman’s scientific accomplishments extended over

Figure 1. Dr Michael P. Sherman June 8, 1942–September 22, 2017.

AUTHOR DISCLOSURE Drs Wahidi, Reese, and Sherman have disclosed no financial relationships relevant to this article. Dr Underwood is a member of Abbott Laboratories speakers’ bureau and a consultant with AveXegen. He also has a research grant with Evolve Bioscience. Dr Niklas is an employee and stockholder of Prolacta Bioscience, Inc. This commentary does not contain a discussion of an unapproved/investigative use of a commercial product/device.
decades, with notable contributions in the fields of microbiology, immunology, genetics, and neonatal intensive care. He was born on June 8, 1942. Michael’s intellectual reach was enviable, and his passion for understanding and curing disease will be greatly missed.

Dr Sherman attended California State Polytechnic University in San Luis Obispo, CA, and graduated in 1965 as a member of the Beta Beta Beta Honor Society with honors in Microbiology. He was a member of Alpha Omega Alpha National Medical Honor Society and graduated cum laude from the Medical College of Wisconsin, Milwaukee, WI (formerly Marquette School of Medicine) in 1969. He completed his pediatric internship and residency at the University of Michigan and was a Senior and Chief Resident in the Department of Pediatrics, University of California San Diego. Michael was particularly proud of his training in San Diego with the late Louis Gluck, MD, and fondly remembered these years by his membership in the “Gluck Club.” Michael served as a Major in the Air Force and as the Chief of Pediatric Services at Vandenberg US Air Force Hospital in San Diego, CA, from 1972 to 1974. He completed a fellowship in Neonatal-Perinatal Medicine at UC-Davis in 1976.

THE LUNG, MACROPHAGES, AND NITRIC OXIDE

Michael’s career spanned more than 35 years (Fig 2), including service and leadership positions at Kaiser Medical Center in Sacramento, CA, University of California, Los Angeles (UCLA) Medical Center, the University of Kansas School of Medicine, Baylor College of Medicine, UC-Davis Medical Center, Southern Illinois University School of Medicine, and the University of Missouri, among other appointments. Michael joined the faculty at UCLA School of Medicine in 1982. He spoke of his years at UCLA as his most productive and enjoyable in research. His interest in microbiology and immunology led him to focus on the pathogenesis of group B Streptococcus, a then frequent cause of pneumonia, sepsis, and death in newborns. Intent on defining the mechanisms for this vulnerability, Michael collaborated with several investigators at UCLA including Dr Boyd Goetzman, Dr Robert I. Lehrer, and Dr Tomas Ganz, identifying defects in oxidative killing by lung macrophages and defects in the release of microbicidal cationic peptides in the lung as critical factors that permitted GBS colonization and infection in the newborn lung. (1)(2)(3) Alongside Dr Henry Gong and Dr Donald P. Tashkin, Dr Sherman found that tobacco and marijuana use had distant effects on pulmonary alveolar macrophages, providing additional insight into the harmful effects of smoking and drug use on defense in the lung. (4) One of Michael’s most exciting collaborations was with the 1998 Nobel Laureate, Dr Louis Ignarro at UCLA where Michael focused on the impact of nitric oxide on health and disease in the lung and multiple organ systems. (5) Michael’s research was sponsored by numerous National Institutes of Health (NIH) and other research grants during his career at UCLA and beyond.

GUT HOMEOSTASIS AND THE IMPACT OF LACTOFERRIN, A MAJOR WHEY PROTEIN IN BREAST MILK, AND PROBIOTICS

Groundbreaking work with lactoferrin, a major whey protein component found in breast milk, began at UC-Davis in 2001 with Dr Denis R. Headon and Dr Robert A. Shalwitz. Michael’s accomplishments in the mucosal immune system in the lung propelled his interests to understand the benefits of lactoferrin in reducing bacteremia and necrotizing enterocolitis (NEC) in the newborn through its actions in the mucosal lining of the gut. Collaborating with Dr Karel Petrak, then at Agennix Corporation, Michael demonstrated the beneficial effects of oral lactoferrin in reducing systemic infection in animal models of bacteremia and NEC in preclinical rat models of disease. (6)(7)(8) This research was the basis for a randomized clinical trial using recombinant human lactoferrin for reducing nosocomial infections and NEC in preterm newborns, which concluded in 2016 with Dr David Adamkin and Dr Victoria Niklas. (9) Michael’s
subsequent work defined the role of lactoferrin in shaping the intestinal microbiome of preterm newborns and the development of the gut-brain axis. (10)(11)

Michael’s interests in neonatal infection and immunity led him to study key cells of the innate immune system (eg, Paneth cells, eosinophils, and basophils) and their role in NEC and other infant diseases and outcomes. (12)(13)(14)(15) His seminal studies in Paneth cell inhibition led to the development of a novel and promising mouse model with significant advantages over previous animal models. (15)(17) His encouragement in the study of the intestinal microbiota and the impact of probiotics on this developing community in newborns led to early studies of probiotics in premature infants and in NEC. (18)(19)

IMPROVING NEONATAL CARE AND EDUCATION IN POLAND

Dr Sherman’s career focused on advancing clinical care through research, but he was deeply committed to improving the lives of newborns, infants, and children around the globe. As early as 1981, Michael began work with the Children’s Medical Care Foundation (CMCF), which was first established by Dr Stefan P. Wilk with the mission of improving neonatal care in Poland. Throughout the years, Dr Sherman worked closely with Dr Ryszard Lauterbach, Dr Jerzy Szczapa, and Dr Tomasz Szczapa, along with Dr Maria Kornacka and Dr Janusz Bursa, implementing programs to improve education and practice in neonatal medicine. In 2014, Dr Sherman and Dr Szczapa presented an abstract describing transfusion-associated NEC in the NICU in Poland during the Pediatric Academic Societies meeting at Vancouver, British Columbia. Michael’s efforts over 28 years were acknowledged by CMCF as critical to the reduction in infant mortality in Poland from 20 in 1,000 live births to the current level of 4 in 1,000 live births. In 2015, Michael was awarded an honorary doctorate by Poznan University of Medical Sciences, Poznan, Poland, for these contributions to newborn medical care in Poland (Fig 3). (20) Dr Sherman continued to work with Bjoern Martinoff, the current CMCF President, to ensure that advances in neonatal health care and physician education benefitted countries beyond Poland.

ACADEMIC SERVICE AND ACCOMPLISHMENTS

Dr Sherman witnessed an era of tremendous growth and discovery in the nascent field of neonatology, where he earned board certificate 552 in 1977 (Fig 4). His joy for science and discovery never waned during his fruitful career, nor did his support and enthusiasm for training the next generation of investigators and clinicians. Michael devoted his career to the development of students, medical residents, and post-doctoral and clinical fellows. He served tirelessly as a mentor, neonatal program director, and chief of neonatology. He was a master teacher at the bedside combining his clinical acumen and command of the literature to inspire generations of trainees, many of whom pursued careers in academic medicine and research, and maintained productive research collaborations.

Dr Sherman was an accomplished author with over 100 peer-reviewed publications, 24 book chapters, 100s of abstracts, and national and international presentations. He served extensively as an NIH study section member over a 30-year period, as well as a reviewer for federal and private

Figure 3. Dr Sherman after receiving his honorary doctorate at Poznan University of Medical Sciences, Poznan, Poland, in 2015.

Figure 4. Michael P. Sherman, one of neonatology’s unsung heroes.
Dr. Sherman is survived by his wife, Dr. Jan Sherman; children Christopher and Ryan Wheeler; and grandchildren, as well as 5 daughters whom he called his 5 daughters. He was pre-deceased by his parents, Roger and June, as well as his sister, Ruth Ann.

References

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