



*Robert C. Moellering, Jr., MD*

RECIPIENT OF THE 2006

MAXWELL FINLAND AWARD FOR

SCIENTIFIC ACHIEVEMENT

In the investigation, treatment, and prevention of infectious diseases and the training of the next generation of clinical scientists there are few, if any, who can match Robert C. Moellering, Jr., MD, this year's recipient of the Maxwell Finland Award for Scientific Achievement. Until July 2005 Dr. Moellering was the Herrman L. Blumgart Professor of Medicine at Harvard Medical School and Chairman of the Department of Medicine at Beth Israel Deaconess Medical Center, Boston. He now holds the Shields Warren-Mallinckrodt Chair of Medical Research at Harvard Medical School.

For more than 35 years Dr. Moellering has shown an unwavering commitment to the prevention and treatment of infectious diseases through his research, academic and administrative leadership in the

infectious disease community. He has made many important contributions to our understanding of the principles of antimicrobial chemotherapy and has published over 380 original reports of his studies. Despite his long service as a medical department chairman, he considers himself first an infectious disease specialist.

He is particularly qualified for the award since he has spent, as did Dr. Finland, a large part of his career in studying virtually every known antibiotic. Like Dr. Finland, Dr. Moellering has warned of microorganisms developing resistance to antibiotics through over or inappropriate use.

"Dr. Moellering is one of the first persons to be thought of by those planning the development of new antimicrobial agents. He has carried out in vitro studies of the activities of new agents, worked out their





mechanisms of action, and made seminal observations concerning mechanisms of resistance to new b-lactams, aminoglycosides, macrolides, streptogramins, glycopeptides, fluoroquinolones, and oxazolidinones,” said Joseph B. Martin, MD, PhD, dean of the faculty of medicine at Harvard Medical School.

But while Dr. Moellering and his colleagues have evaluated many of the antibiotics as they have been developed, he himself says “probably most important is that we have uncovered the ways by which they work, and the mechanisms by which bacteria develop resistance, so that we can be in a position to develop strategies to overcome this resistance.”

Dr. Martin enumerated highlights of Dr. Moellering’s accomplishments, including being one of the pioneers in recognizing the importance of enterococci. Over the past several decades, these organisms have emerged as major nosocomial acquired pathogens throughout

the world, in large part due to their unique patterns of resistance. Dr. Moellering was one of the very first to define the remarkable variety of the resistance mechanisms in these organisms and to identify appropriate therapy for enterococcal infections.

It was Dr. Moellering’s original observations in the laboratory, and subsequently in patients, that led to the first demonstration of the clinical effectiveness of penicillin-gentamicin therapy for enterococcal endocarditis—now the worldwide standard treatment of these infections. He and his colleagues were the first to show that stool colonization and carriage of enterococci is important in development of nosocomial infections with resistant strains of enterococci.

In addition, he and his colleagues have discovered several unique mechanisms of resistance to vancomycin in enterococci, and have cloned and sequenced the genes responsible for this resistance, developing a system for reversing vancomycin resistance in enterococci.

Most recently, he and his colleagues have found specific mutations in genes of the regulatory system in *Staphylococcus aureus* which lead to resistance and failure of therapy with vancomycin. This provides an explanation for the clinical observations suggesting that the effectiveness of vancomycin against staphylococci has been eroded over the past decade, and also provides the basis for more rational therapy of resistant staphylococcal infections.

“Dr. Moellering’s contributions to infectious diseases are legion and his bibliography reads like the modern history of antibiotics and infection. Over these many years, Bob Moellering has taught us more than any other investigator about these organisms and their





ability to resist antibiotic action. His incredible contributions have set the standard for successful investigation in this field,” stated Stephen H. Zinner, MD, chair of the department of medicine at Mount Auburn Hospital.

Today, looking back at his decades of studying new antibiotics, Dr. Moellering voices some concern. “I have lived through a period of great development of

antimicrobials, but we are now at the point where the parade of new antimicrobials is tapering off.”

He points out that over the past 20 years approvals of new antibacterial agents have decreased by 56%. “This is worrisome. Bacteria are becoming more resistant, so just at a time when we need more, we are getting fewer,” says Dr. Moellering. “My hope is that in the coming years the pharmaceutical and biotechnology industry will be able to step in and fill this void. But it’s touch-and-go right now in terms of whether they can come up with new agents.”

While research occupies much of Dr. Moellering’s energies and time, he is also involved in administration, teaching, and clinical infectious disease practice. “I served for the better part of 24 years as chairman of the department and also ran the faculty practice plan here. But I view administration as nothing more than a means to an end--a means to create more effective clinical and teaching programs in the department, and a way to ensure that I could have an impact on the training of physicians and the internal medicine house staff.”

“Teaching,” he emphasizes, “is the most important thing we do. Imparting knowledge to the next generation of physicians is incredibly important. It’s a privilege we are given in the academic setting. Not only does it give you a tremendous sense of satisfaction in that you’ve done something worthwhile, but it gives you some immediate gratification because you can watch students who go on to successful careers.”

Sentiments that would, no doubt, be appreciated by Dr. Finland.