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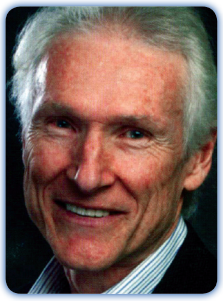

Wolfgang Sadee
The Ohio State University, USA

Personalized health care and therapy: How to implement a new paradigm

Over the past century, biomedical sciences and drug discovery have opened multiple avenues for novel strategies in disease prevention and therapy. However, successful therapies have remained limited, in particular against common complex diseases, such as cardiovascular and CNS disorders, diabetes, diabetes, cancer, and inflammatory disorders. Extraordinary early success in combating infectious diseases is now turning to setbacks because of resistance and emergence of novel pathogens. Presently, a rapid evolution of novel technologies provides unprecedented new insight into human biology and pathogenesis, spinning off new scientific fields such as genomic medicine, pharmacogenomics, computational biology, evolutionary medicine, and medical informatics, at the interface with social and behavioral sciences. All these disciplines not only shed light on common biology but also on the uniqueness of each individual. Indeed, understanding individual differences is the hallmark of large-scale computations in genomics and clinical sciences. Future advances will come from novel treatments exploiting drug targets involved in specific sub-types of common disorders, and by adjusting therapy to a spectrum of individual characteristics (genetic, environmental, cultural, etc). Pharmacogenomics in particular addresses the contributions of genetic factors to treatment outcomes, and its clinical implementation promises optimized outcomes - but many hurdles remain to be overcome. This presentation will summarize concepts and provide specific examples, critical to therapeutic decisions for each patient.

Biography

Wolfgang Sadee is Felts Mercer Professor of Medicine and Pharmacology at the Ohio State University, Columbus OH, and Director, Center for Pharmacogenomics, with appointments in Psychiatry, Pharmacy, and Public Health, the Davis Heart & Lung Research Institute, and OSU Comprehensive Cancer Center. He has a doctorate degree in Pharmaceutical Chemistry at the FU Berlin in 1968, and then served on the pharmacy faculties of USC and UCSF until 2002. His research focuses on pharmacogenomics, employing genomics technologies to discover regulatory variants affecting disease risk and drug response and develop biomarker tests for optimizing individualized therapies. He is a member of the NIGMS Pharmacogenomics Research Network III, leading the project "Expression Genetics in Drug Therapy". He has published over 350 research papers, chapters, and monographs. He has served as founding editor of Pharmaceutical Research and The AAPS Journal. He has received several awards, including the Distinguished Scientist Award from the AAPS.

Wolfgang.Sadee@osumc.edu