

The Ernst Strüngmann Forum

Founded on the tenets of scientific independence and the inquisitive nature of the human mind, the Ernst Strüngmann Forum is dedicated to the continual expansion of knowledge. Through its innovative communication process, the Ernst Strüngmann Forum provides a creative environment within which experts scrutinize high-priority issues from multiple vantage points.

This process begins with the identification of themes. By nature, a theme constitutes a problem area that transcends classic disciplinary boundaries. It is of high-priority interest, requiring concentrated, multidisciplinary input to address the issues. Proposals are received from leading scientists active in their field and selected by an independent Scientific Advisory Board. Once approved, a steering committee is convened to refine the scientific parameters of the proposal and select participants. Approximately one year later, a central gathering, or Forum, is held to which circa forty experts are invited. Expansive discourse is employed to approach the problem. Often, this necessitates reexamining long-established ideas and relinquishing conventional perspectives. When this is accomplished, however, new insights begin to emerge. As a final step, the resultant ideas and newly gained perspectives from the entire process are communicated to the scientific community for further consideration and potential implementation.

Preliminary discussion for this theme began in 2012, based on the recognition that translational neuroscience was at a critical juncture. Despite the impact that diseases of the nervous system have on individuals and society as a whole, available therapies are extremely limited and dated. The unique challenges and numerous failures to treat these complex and often slowly developing diseases have caused disinvestment by the private sector, just as breakthrough technologies have emerged to offer unprecedented insight into brain function and potential treatment possibilities. “What is to be done?” was the motivating call behind this Forum, which brought leading experts together to envision a conceptual roadmap—one that would create an effective, credible, and productive path emanating from the patient to the lab and back again. From February 22–24, 2013, the Program Advisory Committee (Steven E. Hyman, Julia Lupp, Robert C. Malenka, Karoly Nikolich, Menelas N. Pangalos, and Bernd Sommer) met to define the scientific framework for this Forum, which was held in Frankfurt am Main from March 16–21, 2014.

This volume communicates the synergy that emerged from a very diverse group of experts and is comprised of two types of contributions. Background information is provided on key aspects of the theme. These chapters, drafted before the Forum, have subsequently been reviewed and revised. In addition, Chapters 4, 7, 10, and 13 summarize the extensive discussions of the working

groups. These chapters are not consensus documents nor are they proceedings; they transfer the essence of the multifaceted discourse, expose areas where opinions diverge, and highlight topics in need of future enquiry.

An endeavor of this kind creates its own unique group dynamics and puts demands on everyone who participates. Each invitee played an active role and embraced the process with a willingness to probe beyond that which is evident. For their efforts and commitment, I extend a word of gratitude to all. A special word of thanks goes to the Program Advisory Committee, to the authors and reviewers of the background papers, as well as to the moderators of the individual working groups (Mene Pangalos, Karoly Nikolich, Steve Hyman, Bernd Sommer, and Rob Malenka). The rapporteurs of the working groups (David Holtzmann, Stephan Heckers, Ilka Diester, and Gül Dölen) deserve special recognition, for to draft a report during the Forum and bring it to a final form in the months thereafter is no simple matter. Most importantly, I extend my sincere appreciation to Karoly Nikolich and Steve Hyman: as chairpersons of this 17th Ernst Strüngmann Forum, their dedication and guidance ensured a most vibrant intellectual gathering.

A communication process of this nature relies on institutional stability and an environment that encourages free thought. The generous support of the Ernst Strüngmann Foundation, established by Dr. Andreas and Dr. Thomas Strüngmann in honor of their father, enables the Ernst Strüngmann Forum to conduct its work in the service of science. In addition, the following valuable partnerships are gratefully acknowledged: the Scientific Advisory Board, which ensures the scientific independence of the Forum; the German Science Foundation, for its supplemental financial support; and the Frankfurt Institute for Advanced Studies, which shares its intellectual setting with the Forum.

Long-held views are never easy to put aside. Yet, when this is achieved, when the edges of the unknown begin to appear and the resulting gaps in knowledge are able to be identified, the act of formulating strategies to fill such gaps becomes a most invigorating activity. On behalf of everyone involved, I hope that this volume will convey a sense of this lively exercise, inspire future work in pathophysiology, and encourage the development of effective therapies to aid those who suffer from the devastating effects of neurodevelopmental and neurodegenerative disorders.

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