

# 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 reviewed by an independent Scientific Advisory Board. Once approved, we convene a steering committee 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.

Preliminary discussion for this theme began in 2012. Impetus behind this theme was the growing concern that human beings may inadvertently be contributing to an epidemic of trace metal deficiency—one that affects billions of people worldwide and is especially prevalent in developing countries. From January 26–29, 2013, the Program Advisory Committee met to transform the approved proposal into a working scientific framework that would support the ensuing discussion. The collective expertise and international experience of the committee members—Rodney R. Dietert, Jerome O. Nriagu, Lothar Rink, Anthony B. Schryvers, and Eric P. Skaar—were instrumental in refining the issues for debate.

From January 19–24, 2014, the Forum was held in Frankfurt am Main. The activities and discourse that surround a Forum begin well beforehand and conclude with the publication of this volume. Throughout each stage, focused dialog is the means by which issues are examined anew. Often, this requires relinquishing long-established ideas and overcoming disciplinary idiosyncrasies that might otherwise bias or inhibit joint examination. When this is accomplished, synergism results from which new insights can emerge.

This volume conveys the ideas and input of a diverse group of experts, each of whom assumed an active role, and it is comprised of two types of contributions. The first set provides background information on key aspects of the overall theme. Originally written in advance of the Forum, these chapters have been extensively reviewed and revised to provide current understanding on these key topics. The second set (Chapters 7, 13, 17, and 20) summarizes the extensive group discussions that transpired. These chapters should not be viewed as consensus documents nor are they proceedings; their purpose is to transfer the essence of the multifaceted discussions, to expose areas where opinions diverge and open questions remain, and to highlight topics in need of future enquiry.

An endeavor of this kind creates its own unique dynamics and puts demands on everyone who participates. Invitees must embrace the process with a willingness to probe beyond that which is evident, and I wish to extend my gratitude to all. A special word of thanks goes to the Program Advisory Committee as well as to the authors and reviewers of the background papers. The work of the moderators of the individual working groups (Robert Perry, Robert Black, Ellen Silbergeld, and Joseph Caruso) is gratefully acknowledged. In addition, I am especially grateful to the rapporteurs (Jennifer Cavet, Dieter Rehder, Leigh Ackland, and Wolfgang Maret), who drafted the group reports during the Forum and brought them to their final form. Most importantly, I extend my sincere appreciation to Jerome Nriagu and Eric Skaar, chairpersons of this 16th ES Forum. Their commitment and steady guidance throughout the entire process 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 vibrant 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 knowledge gaps are able to be identified, the act of formulating strategies to fill them becomes a most invigorating activity. It is our hope that this volume will convey a sense of this lively exercise and inspire further scientific enquiry into the linkages between trace metals and the pathogenesis of infectious disease.

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# Trace Metals and Infectious Diseases

**Edited by: Jerome O. Nriagu, Eric P. Skaar**

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