

Introduction to German-American Frontiers of Science

Since 1989, the National Academy of Sciences (NAS) has organized annual symposia on Frontiers of Science. The goal of these symposia is to bring together some of the very best young scientists to discuss exciting advances and opportunities in their fields in a format that encourages informal discussions among participants, both in groups and one-on-one. Speakers present their talks on current cutting-edge research in their disciplines to colleagues outside their field and to address questions such as, “What are the major research problems and distinctive tools of your field?” “What are the current limitations in advancing your field?” and “How might insight derived from other fields contribute to overcoming these limitations?” Formulating and answering such questions involves surmounting the barriers imposed by the specialized terminologies and techniques that characterize different branches of science. This poses formidable challenges that these symposia are addressing with success.

The U.S. Frontiers Symposium series has spawned similar programs, including the German-American Frontiers of Science symposia, under the auspices of the German-American Academic Council and in coordination with the Alexander von Humboldt Foundation and the Max Planck Society.

These symposia are attended by approximately 80 scholars under 45 years of age (half from the U.S. and half from Germany), by up to a dozen senior colleagues, and by several

science writers. At each symposium, approximately 25 young scientists report on current research within their disciplines to an academically trained and scientifically diverse audience. They highlight major research challenges, methodologies, and limitations to progress at the frontiers of their respective fields. All attendees participate actively in a general discussion period, during which they learn from and form collaborative relationships with other young scientists in different fields.

New Frontiers of Science symposia are being organized with Japan and China. Thus, the Frontiers of Science symposia have become a major instrument in bringing together the best young researchers—the next generation of leaders—in the natural sciences and engineering in the United States, and, increasingly, in other countries.

The Proceedings of the National Academy of Sciences publishes collected summaries of the papers presented at these symposia, as part of the “From the Academy” series which is designed to inform Proceedings readers about the workings of the National Academy of Sciences. The following papers summarize sessions of the German-American Frontiers of Science symposium held on June 20–22 in Munich, Germany.

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