

Introduction to German-American Frontiers of Science

Since 1989, the National Academy of Sciences 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 group and one-on-one discussions among participants. Speakers present their talks on current cutting-edge research in their disciplines to colleagues outside of their fields and 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 involve surmounting the barriers imposed by the specialized terminologies and techniques that characterize different branches of science. This approach 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.

These symposia are attended by approximately 70 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, about 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 lim-

itations 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.

Frontiers of Science symposia also are 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* (PNAS) publishes collected summaries of the talks presented at these symposia, as part of the “From the Academy” series that is designed to inform PNAS readers about the workings of the National Academy of Sciences. Starting with the 1996 U.S. Frontiers of Science symposium (1), these collected summaries, including the German-American Frontiers of Science (2), have been published in PNAS. The following papers summarize sessions of the German-American Frontiers of Science symposium held June 4–6, 1998 in Irvine, CA.

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1. Eighth Annual Symposium on Frontiers of Science (1997) *Proc. Natl. Acad. Sci. USA* **94**, 2773–2795.
2. Third Annual Symposium on German-American Frontiers of Science (1997) *Proc. Natl. Acad. Sci. USA* **94**, 12733–12750.