# Preface

From August 27 to 31, 2000, the International Conference and Research Center for Computer Science in Schloss Dagstuhl, Dagstuhl for short, celebrated its 10th anniversary. Since its founding in 1990, the objective of the Center has been to promote world-class research in computer science, support leading-edge continuing education, and promote the exchange of knowledge and findings between academia and industry. It hosts research seminars at which promising young research scientists are afforded the opportunity of discussing their views and research findings with the international elite of their field in a specific cutting-edge field of computer science. The seminars enable new ideas to be showcased, topical problems to be discussed, and the course to be set for future development in this field. Roughly 15 000 scientists from all over the world and from all areas of computer science as well as from application areas have participated in about 500 meetings in Dagstuhl during these 10 years. They have all enjoyed the "Dagstuhl Magic", as several guests have called it, guaranteeing creative and productive meetings.

At the occasion of the 10th anniversary, a conference was held, under the name

*Informatics - 10 Years Back, 10 Years Ahead.*

It was meant to do *globally* what usually happens *locally* in one field or a few related fields of Informatics every week in Dagstuhl, namely that a group of scientists presents the state of the art, identifies relevant open problems, and develops visions for the future.

Internationally renowned researchers were asked to reflect upon what progress had been made in their field in the decade of Dagstuhl's existence and what will probably be waiting for us in the next decade. We shamelessly, but successfully exploited their feelings of gratitude towards Dagstuhl; only very little pressure was necessary to make them accept the invitation. The speakers invested considerable effort into preparing their talks, and their enthusiasm was contagious; the audience was overwhelmed by talks of high quality. It was particularly welcome that a broad range of topics was presented, covering many areas of Informatics. The talks provoked quite lively discussions.

The speakers agreed to contribute to this proceedings volume. The results of the discussions also found their way into the articles. Two authors, Fred Schneider and Robert Harper, even agreed to write a contribution jointly. Fred Schneider was originally grouped under Security, while Robert Harper had been asked to present Semantics. In Robert's opinion, Semantics is applied Type Theory, and currently one of the hottest applications of type theory is in the area of Security.

The speakers represented high competence across many areas of Informatics. It was therefore tempting to use their competence to discuss and identify Grand

Challenges in Informatics. This discussion process was started before and continued during the conference. A number of challenges were identified. However, it could not be claimed that they were **the** grand challenges of Informatics. The list of challenges is therefore not included in these proceedings, but presented on the Dagstuhl web site under http://www.dagstuhl.de/Challenges. It will be the starting point of an ongoing discussion process. Dagstuhl guests and scientists from outside are invited to contribute to this list.

We would like to acknowledge the kind support for the conference that was provided by a variety of sources. Saarland University, Saarbrücken, offered its premises. Compaq, SAP AG, Dresdner Bank, Microsoft Research, Siemens AG, SUN Microsystems, DaimlerChrysler AG, and sd&m provided financial support.

My very special thanks go to the speakers who invested time and energy into making the conference, and this volume, possible.

Information about the International Conference and Research Center for Computer Science in Schloss Dagstuhl, the concept, the organization, the application procedure for meetings, a description of the venue, photos, travel hints, the current program, and reports about past meetings, can be found under http://www.dagstuhl.de/

December 2000                                             Reinhard Wilhelm
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