# Foreword

OLYMPIADS IN INFORMATICS is an annual refereed journal that provides an international forum for presenting research in teaching and learning informatics through competition. The journal is substantially connected with the conference held during the International Olympiad in Informatics (IOI). The papers in this volume are being presented during IOI'2009 in Plovdiv, Bulgaria.

*What a difference 20 years makes*

In May 1989, when the teams were gathering for the first IOI (also in Bulgaria), the 80486 microprocessor had just been released on the world and Tim Berners-Lee's "Information Management: A Proposal" was being distributed to CERN's management. That processor was available at 25 Mhz; the one this introduction is being written on is running at 2.5 Ghz. That proposal was the seed of the World Wide Web, which has become so ubiquitous that access has become a basic utility, along with water and power, in many countries.

*And what of the IOI?*

The foundation of the IOI, thanks to the efforts of Professor Blagovest Sendov and the support of UNESCO, saw the emergence of a second phase of international science olympiads. The 50s and 60s saw Mathematics, Physics and Chemisty flourish. It was to be another 20 years before another olympiad, the IOI, came into existence. Since then there has been an explosion of interest, from Astronomy to Earth Sciences, from Biology to Linguistics.

The 13 countries who participated in 1989 have grown to around 80. The contest has run every year since its inauguration, has been held in 19 different countries across 5 different continents. Contestants from earlier years are now lead delegations. Leaders who come for 'just one year' find themselves coming back year after year. The IOI community – the IOI family – continues to grow, and long may it continue.

The contest itself has been polished over the years, but is still fundamentally faithful to the original vision. The number of questions may have changed and their difficulty tuned, but contestants today require the same skills as those 20 years ago. Machines may have hundreds or thousands of times the speed or memory, but it is a testimony to the types of problems set that, with perhaps a little tweak here and there, the challenges from the contest's history remain a challenge. In a world that demands 'bigger' and 'faster', the IOI demands 'smarter'.

*And what of the wider community?*

National olympiads have become an established part of the educational system in many countries. You need only read the papers in these proceedings to see how many students we reach and have reached. Some contests are run with governmental support and guidance, some independently. In all cases opportunities, which might not otherwise exist, are given to students. Not just to those who know they are interested in informatics, but often at a junior level where such an interest can be inspired.

In this year, when the IOI returns to its birthplace, we should think back over the last 20 years. Think of the thousands of students who have been given the wonderful opportunity of attending an IOI, and of the hundreds of thousands (if not more) who have been touched across the world by national endeavours. Think of the teams of volunteers who have given their time and resources to making the contests the success that they are. Organisers who work tirelessly, often for no reward or even recognition, time and time again.

Thanks are due to everyone who has contributed to this volume and the IOI conference. In particular, we would like to thank Prof. Krassimir Manev and the Bulgarian organisation of this year's IOI for giving us the opportunity to host the conference.

Editors