

## Preface

“Look deep into nature and you will understand everything better.” advised Albert Einstein.

In recent years, the research communities in Computer Science, Engineering, and other disciplines have taken this message to heart, and a relatively new field of “biologically-inspired computing” has been born. Inspiration is being drawn from nature, from the behaviors of colonies of ants, of swarms of bees and even the human body. This new paradigm in computing takes many simple autonomous objects or agents and lets them jointly perform a complex task, without having the need for centralized control. In this paradigm, these simple objects interact locally with their environment using simple rules. Applications include optimization algorithms, communications networks, scheduling and decision making, supply-chain management, and robotics, to name just a few.

There are many disciplines involved in making such systems work: from artificial intelligence to energy aware systems. Often these disciplines have their own field of focus, have their own conferences, or only deal with specialized sub-problems (e.g. swarm intelligence, biologically inspired computation, sensor networks). The Second IFIP Conference on Biologically-Inspired Collaborative Computing aims to bridge this separation of the scientific community and bring together researchers in the fields of Organic Computing, Autonomic Computing, Self-Organizing Systems, Pervasive Computing and related areas.

We are very pleased to have two very important keynote presentations:

- *Swarm Robotics: The Coordination of Robots via Swarm Intelligence Principles* by Marco Dorigo (Université Libre de Bruxelles, Belgium), of which an abstract is included in this volume.
- *Immuno-engineering* by Jon Timmis and his collaborators at University of York, UK (full paper included in this volume).

The contributions to the program of this conference have been selected from submissions originating from North and South America, Asia, Europe and Australia. We would like to thank the members of the program committee for the careful reviewing of all submissions, which formed the basis for selecting this attractive program. We are grateful to IFIP and in particular IFIP TC-10 for their support.

We welcome all participants of this Second IFIP Conference on Biologically-Inspired Collaborative Computing—BICC 2008—and look forward to an inspiring series of talks and discussions, part of a range of excellent conferences in the IFIP World Computer Conference 2008.

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