This volume contains a selection of the top papers presented at ESOP 2010, the 19th European Symposium on Programming held March 22–24, 2010 in Paphos, Cyprus.

ESOP is an annual conference devoted to fundamental issues in the specification, design, analysis, and implementation of programming languages and systems. The programme committee invited papers on all aspects of programming language research including, but not limited to, the following areas:

- Programming paradigms and styles: functional programming, object-oriented programming, aspect-oriented programming, logic programming, constraint programming, extensible programming languages, domain-specific languages, synchronous and real-time programming languages.
- Methods and tools to write and specify programs and languages: programming techniques, logical foundations, denotational semantics, operational semantics, meta programming, module systems, language-based security.
- Methods and tools for reasoning about programs: type systems, abstract interpretation, program verification, testing.
- Methods and tools for implementation: program transformations, rewriting systems, partial evaluation, experimental evaluations, virtual machines, intermediate languages, run-time environments.
- Concurrency and distribution: process algebras, concurrency theory, parallel programming, service-oriented computing, distributed and mobile languages.

The ESOP programme committee received 121 full submissions, and selected 30 for presentation at the conference, and for publication in the conference proceedings.

Following the conference, we invited the authors of the highest rated papers to submit full versions to this special issue of Logical Methods in Computer Science.

We thank the authors and the journal reviewers for their hard work. We hope you enjoy the papers!

Andrew D. Gordon, Michael Hicks
Guest Editors for the ESOP 2010 Special Issue

All articles have already been published in the regular issues of Logical Methods in Computer Science.