

# EATCS ANNUAL REPORT

## July 2015 – June 2016



### 1 Introduction

This document is a report on the activities of the European Association for Theoretical Computer Science (EATCS) during the period between ICALP 2015 and ICALP 2016. The main purpose of the document is to inform all EATCS members of the activities carried out by the association and about the issues to be presented and discussed at the General Assembly during ICALP 2016 in Rome.

### 2 Awards

In 2014–2015, the EATCS has sponsored the following awards:

- The **EATCS Award 2016** to Dexter Kozen for fundamental contributions across the whole spectrum of theoretical computer science. Dexter Kozen is a theoretical computer scientist, perhaps **the** theoretical computer scientist, who has excelled across the entire spectrum of our field and crashed through the so-called Volume A/Volume B barrier. Even within these tracks he has exhibited remarkable diversity and depth. This makes him an exceptional candidate for the EATCS Award and he continues the lineage of stellar scientists who have received the EATCS Career Award so far. The full citation for the award is available at <http://www.eatcs.org/index.php/component/content/article/1-news/2227-press-release-for-the-eatcs-award-2016-to-dexter-kozen>
- The **Gödel Prize 2016** is awarded to Stephen Brookes and Peter W. O’Hearn for their invention of Concurrent Separation Logic, as described in the following two papers:
  - S. Brookes, *A Semantics for Concurrent Separation Logic*. Theoretical Computer Science 375(1-3): 227-270 (2007)
  - P. W. O’Hearn, *Resources, Concurrency, and Local Reasoning*. Theoretical Computer Science 375(1-3): 271-307 (2007)

The full citation for the award, which is presented jointly by ACM SIGACT and the EATCS, is available at <http://eatcs.org/index.php/component/content/article/1-news/2280-2016-godel-prize->

- The **Presburger Award 2016** for young scientists to Mark Braverman for achieving fundamental results in complexity theory, the theory of real-number computation, machine learning, algorithms and game theory. Amongst his many results, in 2009 Mark Braverman proved the Linial-Nisan conjecture from 1990 regarding  $AC^0$  circuits, by showing that no poly-logarithmically independent distribution can be distinguished from a truly random distribution by a polynomial-size constant-depth circuit.

- The **Nerode Prize 2016**, co-sponsored by EATCS and IPEC, to Andreas Björklund for the tools and ideas developed for finding Hamiltonian cycles in graphs. In particular, the prize is awarded for his paper: *Determinant Sums for Undirected Hamiltonicity*. SIAM Journal of Computing 43(1): 280–299 (2014). In this paper Andreas Björklund showed what many thought was impossible: a significantly improved algorithm finding Hamiltonian cycles in time  $O^*(1.66^n)$ .
- The **Alonzo Church Award 2016**, awarded for outstanding Contributions to Logic and Computation is given to Rajeev Alur and David Dill for their invention of timed automata, a decidable model of real-time systems, which combines a novel, elegant, deep theory with widespread practical impact. In particular, the awardees are honoured for their paper “*A theory of timed automata*”. Theoretical Computer Science 126(2):183–235, 1994. The award is joint with ACM SIGLOG, the EACSL and the Kurt Gödel Society.
- The **EATCS Distinguished Dissertation Award** was established in 2014 to promote and recognize outstanding dissertations in the field of Theoretical Computer Science. The deadline for nominations was on 31st of December, 2015 and any PhD dissertation in the field of Theoretical Computer Science that had been successfully defended in 2015 was eligible. Three dissertations were selected by the committee for year 2015:
  - “*The Simple, Little and Slow Things Count: On Parameterized Counting Complexity*”, by Radu Curticapean.
  - “*Complexity Classification of Exact and Approximate Counting Problems*”, by Heng Guo.
  - “*Monoids as storage mechanisms*”, by Georg Zetsche.
- The **ICALP Best Papers Awards 2016** assigned as follows:
  - Track A: Andreas Galanis, Andreas Göbel, Leslie Ann Goldberg, John Lapinskas and David Richerby. “*Amplifiers for the Moran Process*”.
  - Track A: Neeraj Kayal, Chandan Saha and Sébastien Tavenas. “*An almost Cubic Lower Bound for Depth Three Arithmetic Circuits*”.
  - Track B: Olivier Bournez, Daniel Graça and Amaury Pouly. “*Polynomial Time corresponds to Solutions of Polynomial Ordinary Differential Equations of Polynomial Length*”.
- The **ICALP Best Student Papers Awards 2015** assigned as follows:
  - Track A: Samuel Hetterich. “*Analysing Survey Propagation Guided Decimation on Random Formulas*”.
  - Track C: Keerti Choudhary. “*An Optimal Dual Fault Tolerant Reachability Oracle*”.
- The **ETAPS Best Paper Award 2016** for the best paper in Theoretical Computer Science at the European Joint Conferences on Theory and Practice of Software 2014, ETAPS’15, has been assigned to the following papers:
  - “*Weakest Precondition Reasoning for Expected Run-Times of Probabilistic Programs*”, by Benjamin Lucien Kaminski, Joost-Pieter Katoen, Christoph Matheja, and Federico Olmedo (ESOP)
  - “*Comprehensive Parametric Polymorphism: Categorical Models and Type Theory*”, by Neil Ghani, Fredrik Nordvall Forsberg, and Alex Simpson (FDOSSACS)
- The **ESA Best Paper Award 2015** assigned to the paper *Consensus Patterns (Probably) Has no EPTAS* by Christina Boucher, Christine Lo and Daniel Lokshtanov.
- The **ESA Best Student Paper Award 2015** assigned to the following papers:

- “*Mixing Color Coding-Related Techniques*”, by Meirav Zehavi.
- “*Trip-Based Public Transit Routing*”, by Sascha Witt.
- The **MFCS Best Paper Award 2015** assigned to the paper *Strong Inapproximability of the Shortest Reset Word*, by Paweł Gawrychowski and Damian Straszak.
- The **MFCS Best Student Paper Award 2015** assigned to the paper *Maximum Minimal Vertex Cover Parameterized by Vertex Cover*, by Meirav Zehavi.

### 3 Fellows

The EATCS Fellows Program was established in 2013 by the Association to recognize outstanding EATCS Members for their scientific achievements in the field of Theoretical Computer Science. The Fellow status is conferred by the EATCS Fellows-Selection Committee upon a person having a track record of intellectual and organizational leadership within the EATCS community. Fellows are expected to be “model citizens” of the TCS community, helping to develop the standing of TCS beyond the frontiers of the community.

In 2016 the EATCS Fellows-Selection Committee proposed that the following members receive the status of EATCS Fellow:

- the late Zoltan Esik, University of Szeged
- David Harel, Weizmann Institute of Science
- Giuseppe F. Italiano, University of Rome Tor Vergata
- Kurt Mehlhorn, Max-Planck-Institut für Informatik
- Scott A. Smolka, Stony Brook University

In 2015 the EATCS Fellows-Selection Committee proposed that the following members receive the status of EATCS Fellow:

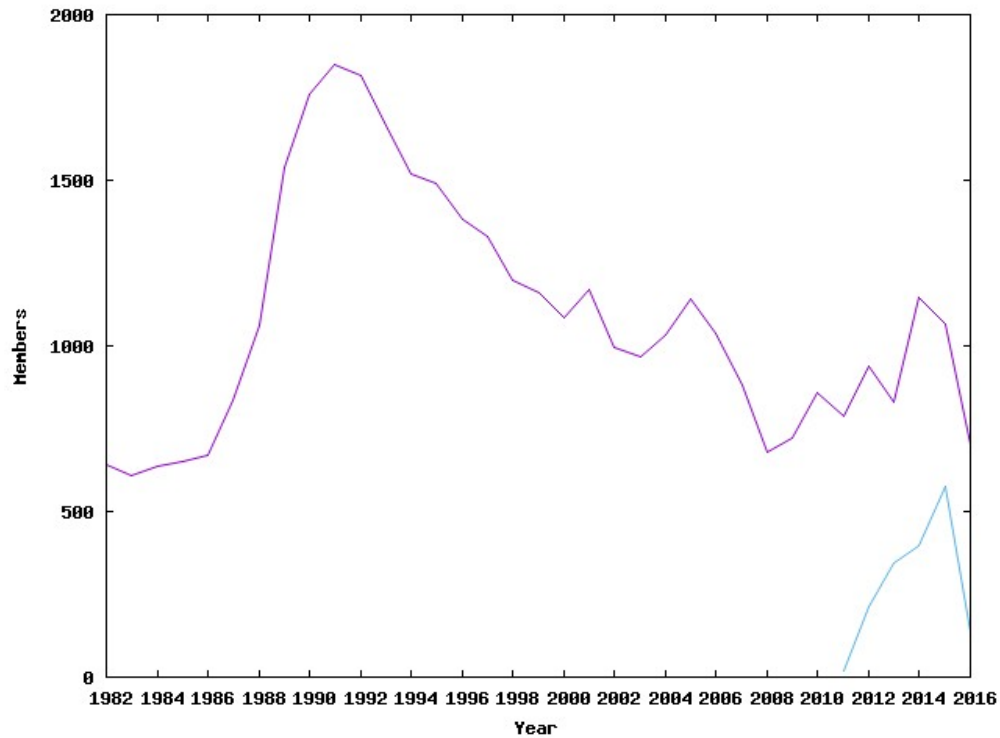
- Artur Czumaj, University of Warwick
- Mariangiola Dezani-Ciancaglini, Università di Torino
- Thomas A. Henzinger, Institute of Science and Technology Austria
- Dexter Kozen, Cornell University
- Moshe Y. Vardi, Rice University

In 2014 the EATCS Fellows-Selection Committee proposed that the following members receive the status of EATCS Fellow:

- Susanne Albers, Technische Universität München
- Giorgio Ausiello, Università di Roma “La Sapienza”
- Wilfried Brauer, Technische Universität München
- Herbert Edelsbrunner, Institute of Science and Technology Austria and Duke University
- Mike Fellows, Charles Darwin University
- Yuri Gurevich, Microsoft Research
- Monika Henzinger, University of Vienna
- Jean-Eric Pin, LIAFA, CNRS and University Paris Diderot
- Paul Spirakis, University of Liverpool
- Wolfgang Thomas, RWTH Aachen University

## 4 Membership

The chart below shows the evolution of the membership of the EATCS, from ICALP'82 until today (not counting ICALP'16 registrations).



Detailed membership figures from the last few years are reported in the table below:

Year	Members	Young
2005	1140	
2006	1036	
2007	882	
2008	678	
2009	724	
2010	858	
2011	787	17
2012	937	210
2013	832	343
2014	1146	396
2015	1067	575
<b>2016</b>	<b>705</b>	<b>136</b>

## 5 Financial Overview

### EATCS: Financial overview June 18, 2015 - June 24, 2016

<b>june 18, 2015</b>	<b>€</b>
Securities	111 004,52
Savings acc.	40 436,10
Cash acc.	79 108,55
Provision Dijkstra prize	- 34 668,74
Provision RTA/FLoC	- 1 766,96
Total	194 113,47

<b>june 24, 2016</b>	<b>€</b>
Securities	108 493,72
Savings acc.	40 515,47
Cash acc.	79 342,67
Provision Dijkstra prize	- 35 641,09
Provision RTA/FLoC	- 1 766,96
Total	190 943,81
Balance	- 3 169,66

**EATCS: Financial overview**  
**June 18, 2015 - June 24, 2016**

<b>Income</b>	<b>€</b>	(previous)
Members	15 552,25	(20 437,35)
Springer	12 236,50	(11 483,90)
Interest, capital gains	781,15	(840,07)
ICALP Surplus	2 000,00	(0,00)
Dijkstra prize	34 668,74	(30 749,54)
RTA/FLoC	1 766,96	(1 766,96)
<b>Total</b>	<b>67 005,60</b>	<b>(65 277,82)</b>

<b>Expenses</b>	<b>€</b>	(previous)
Bulletins 116 - 118	8 293,46	(8 551,16)
Awards, EATCS sponsorships	4 230,25	(11 988,04)
Support conferences	8 009,68	(7 577,42)
Scholarships (Springer)	0,00	(2 500,00)
Secretary	9 598,91	(10 000,00)
Treasurer	1 391,30	(1 830,36)
Taxes	1 243,61	(1 445,34)
Provision DISC/Dijkstra	35 641,09	(34 668,74)
Provision RTA/FLoC	1 766,96	(1 766,96)
<b>Total</b>	<b>70 175,26</b>	<b>(80 328,02)</b>

## 6 ICALP Conferences

- **ICALP 2015:** The 42nd International Colloquium on Automata, Languages took place from July 6 to July 10, 2015, in Kyoto, Japan; the first time in ICALP’s history that the conference is organized outside Europe. The conference was co-located with **LICS 2015**, the 30th ACM/IEEE Symposium on Logic in Computer Science. A detailed account of the scientific program and logistic organization was given at the annual meeting of the EATCS Council and at General Assembly during the conference. Our warm thanks go to the conference chair Chair Kazuo Iwama and his team, and the program chairs Bettina Speckmann (track A), Naoki Kobayashi (track B), and Magnús M. Halldórsson (track C) for the excellent program and the high quality of the contributed papers. The participants enjoyed the invited talks by Ken Kawarabayashi, Luke Ong, Daniel Kifer, Valerie King and Thomas Moschibroda. The conference also included two invited talks jointly organized by LICS and ICALP given by Peter O’Hearn and Anca Muscholl. In addition an ICALP Tutorial was given by Piotr Indyk and an ICALP Masterclass by Ryuhei Uehara.
- **ICALP 2016:** This year’s ICALP conference will take place from July 12 to July 15, 2016, in Rome, Italy. The conference is organized by Tiziana Calamoneri, Irene Finocchi, Nicola Galesi and Daniele Gorla from the Università di Roma “La Sapienza”. The scientific program is again divided into three tracks: Track A - Algorithms, Complexity and Games (chaired by Yuval Rabani), Track B - Logic, Semantics, Automata and Theory of Programming (chaired by Davide Sangiorgi), and Track C - Foundations of Networked Computation: Models, Algorithms and Information Management (chaired by Michael Mitzenmacher). The complete program is ready and can be viewed in detail on the corresponding web site: <http://www.easyconferences.eu/icalp2016/>. ICALP 2016 had the largest number of submissions in history (515). All tracks received many submission of very high quality contributing to an excellent program. The invited talks will be given this year by Devavrat Shah, Xavier Leroy, Subhash Khot and Marta Z. Kwiatkowska. The program of ICALP 2016 also included presentation of the EATCS Award 2016 to Dexter Kozen, the Gödel Prize 2016 to Steve Brookes and Peter O’Hearn, and the Presburger Award 2016 to Mark Braverman. For the first time, this volume of the proceedings was published under the LIPIcs (Leibniz International Proceedings in Informatics) series published according to the principle of Open Access, i.e., they are available online and free of charge. A detailed account of the scientific program and logistic organization will be given at the annual meeting of the EATCS Council and at General Assembly during the conference. Our warm thanks go to all the organizers and to the PC and workshop chairs.
- **ICALP 2017:** The organization of the 44th International Colloquium on Automata, Languages and Programming is progressing well. ICALP 2017 will take place from July 3 to July 7, 2017, in Warsaw, Poland. The conference chair will be Mikolaj Bojanczyk from the University of Warsaw. In Rome, you will have the opportunity to see the first Call for Papers with the indication of the program committees. The conference will have the same tracks as this year. The program committees will be chaired by Piotr



Indyk (Track A), Anca Muscholl (Track B) and Fabian Kuhn (Track C). The list of invited speakers for the conference includes Mikolaj Bojanczyk, Monika Henzinger and Mikkel Thorup.

- **ICALP 2018:** For the 45th International Colloquium on Automata, Languages and Programming we have got a proposal from Charles University, Prague. The prospective conference chair is Jiri Sgall and he will come to Rome to present the proposal at the General Assembly.

## 7 Other Conferences

There are three categories of conferences in which the EATCS is involved. The first category, where the EATCS is the only responsible institution, consists only of ICALP, as our main conference and the most important instrument to recruit new members.

In the second category, there are some conferences that have “closer ties” to the EATCS, collect EATCS membership fees and provide a reduced conference fee to EATCS members. In the second category we have:

- ESA - The Annual European Symposium on Algorithms,
- MFCS - The International Symposium on Mathematical Foundations of Computer Science, and
- DISC - The International Symposium on Distributed Computing.

In the third category, there are the rest of the “sponsored conferences”. In some cases, the EATCS has sponsored “best paper awards” or offered student scholarships, but mainly the sponsoring was confined to advertising the events. During the period under consideration, the EATCS has sponsored the following events in this category:

- ALGOSENSORS 2016 - 12th International Symposium on Algorithms for Sensor Systems, Wireless Ad Hoc Networks and Autonomous Mobile Entities
- ATMOS 2016 - 16th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems
- CIAC 2016 - 10th International Conference on Algorithms and Complexity
- CiE 2016 - 12th conference of Computer Science Models of Computation in Context
- ETAPS 2016 - 19th The European Joint Conferences on Theory and Practice of Software
- iPEC 2016 - 11th International Symposium on Parameterized and Exact Computation
- TTCS 2016 - 2nd IFIP International Conference on Topics in Theoretical Computer Science
- WABI 2016 - Workshop on Algorithms in Bioinformatics

## 8 Publications

During the reporting period, the main publication activities of the EATCS have been as follows:

**The Bulletin (Ed. K. Iwama).** Numbers 118 and 119 have been published since October 2015, containing a variety of contributions, including technical papers, reports from conferences, and news, as well as the following regular columns:

- The Algorithmics Column - Gerhard Woeginger (Eindhoven, NL)
- The Concurrency Column - Nobuko Yoshida (London, UK)
- The Computational Complexity Column - Vikraman Arvind (Chennai, India)
- The Distributed Computing Column - Stefan Schmid (Berlin, Germany)
- The Education Column - Juraj Hromkovic (Zurich, Switzerland)
- The Formal Language Theory Column - Giovanni Pighizzini (Milano, Italy)
- The Logic in Computer Science Column - Yuri Gurevich (Microsoft, USA)

Since issue 90 the EATCS Bulletin is freely accessible on-line through the EATCS web site, and since issue 101 the Bulletin is fully electronically published using the Open Journal System.

Since issue 111 the EATCS Bulletin production is decoupled from its editorship. Starting from the October 2013 issue, the BEATCS will be produced, printed and shipped by our Secretary Office in Greece.

**ICALP Proceedings.** This year the proceedings of ICALP have been published under the LIPIcs (Leibniz International Proceedings in Informatics) series published according to the principle of Open Access, i.e., they are available online and free of charge.

**EATCS series of books.** There are two series of books in which the EATCS is involved and which are published by Springer: *Monographs in Theoretical Computer Science* and *Texts in Theoretical Computer Science*.

During the reporting period, the editorial board of these book series has consisted of: Monika Henzinger, Juraj Hromkovic, Mogens Nielsen, Grzegorz Rozenberg and Arto Salomaa.

The advisory board of the book series consists of Susanne Albers, Hagit Attiya, Giorgio Ausiello, M. Broy, C. Calude, A. Condon, A. Czumaj, P. Degano, Josep Diaz, P. Gastin, Georg Gottlob, D. Harel, J. Hartmanis, Reiko Heckel, Lane A. Hemaspaandra, T. Henzinger, M. Hermenegildo, Bengt Jonsson, Juhani Karhumäki, Lila Kari, Maciej Koutny, Dexter Kozen, T. Leighton, Huimin Lin, Giancarlo Mauri, M. Nivat, Damian Niwiński, Christos

Papadimitriou, David Peleg, Don Sannella, Uwe Schöning, D. Scott, P.G. Spirakis, Dorothea Wagner, Emo Welzl and Martin Wirsing

The following title has been published in the last 12 months by Springer in the two EATCS series Monographs and Texts in Theoretical Computer Science.

Ehrig, H., Ermel, C., Golas, U., Hermann, F. *Graph and Model Transformation - General Framework and Applications*. Monographs in Theoretical Computer Science. An EATCS Series. Springer Publishing Company, Incorporated, 2015.

Kitaev, Sergey, Lozin, Vadim *Words and Graphs*. Monographs in Theoretical Computer Science. An EATCS Series. Springer Publishing Company, Incorporated, 2015.

## 9 Relationships with other Societies

In order to encourage double registration, the EATCS has established reciprocity agreements offering a discount to members of sister associations: EACSL, SIGACT, SIGLOG and SIGecon members can join EATCS for €25 per year.

The EATCS is also offering some modest support to the Computational Complexity Foundation Inc., which runs the annual Computational Complexity Conference.

## 10 EATCS Secretary Office

During the reporting period, the main activities of the EATCS Secretary office are as follows: **EATCS Fellows Poster**. We have prepared a poster advertising the EATCS Fellows class 2016. The poster was printed in A2 dimensions and displayed at ICALP 2016.

**Springer Reading Room**. In cooperation with Springer, the members of the EATCS are allowed to access the past proceedings of ICALP via the *internal members area* of the EATCS web site.

**Young Researchers**. A total of 132 announcements were made on the *young researchers internal area* mostly related to post-doctoral positions and job announcements. These announcements have been distributed also via Twitter and LinkedIn.

**Membership Expiration Reminders**. Membership expiration reminders have been streamlined during the reported period. Three times (August 2015, December 2015 and April 2016) we have queried the database and informed members of the expiration of their membership.

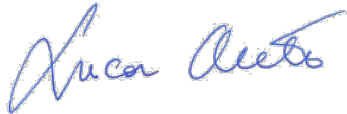
## 11 Acknowledgements

On behalf of the EATCS, I would like to express our grateful appreciation to Dirk Janssens for his outstanding contribution as EATCS treasurer for 27 years. I would like to welcome Jean-Francois Raskin as the new EATCS treasurer. I heartily thank our Secretary Ioannis Chatzigiannakis and Efi Chita for their precious and punctual help, as well as the whole team that is supporting the EATCS Secretarial Office at CTI in Patras. Moreover, I would like to express my special gratitude to Kazuo Iwama for his work as EATCS Bulletin editor.

I also thank the following institutional sponsors for their welcome financial support:

- CTI,
- CWI,
- MADALGO,
- Microsoft Research and
- Springer.

Last, but by no means least, I thank all the members of the EATCS for their contribution to our organization.



Luca Aceto  
EATCS President