Dear EATCS members,

I hope my letter finds you and your family safe and in good health. While we are still living in the times marked by the global coronavirus pandemic that has a major impact on our lives and our scientific activities, I hope that the situation is improving and we will be able to have a batter balance of online and of networking activities. This spring I have already attended a few international workshops and conferences, and it seems that we may be coming back to more active scientific interaction. And most importantly, we see some fantastic research done by our community; and so I take the opportunity to wish you all the best and much success for your work.

*As usual, the June issue of the Bulletin will be available just before ICALP, the flagship conference of the EATCS and an important meeting of the theoretical computer science community world-wide. The 49th **EATCS International Colloquium on Automata, Languages, and Programming (ICALP 2022)**, will be held in Paris, France, July 4-8, 2022 (URL: https://icalp2022.irif.fr/). The conference will be run in a hybrid mode, with almost all talks delivered in-person, though online participation will be made possible. The conference chair Thomas Colcombet, supported by his colleagues in Paris, promises us an exciting scientific event. I am very grateful to Thomas Colcombet and his team (including Sandrine Cadet, Olivier Carton, Geoffroy Couteau, Hugo Férée, Irène Guessarian, Natalia*
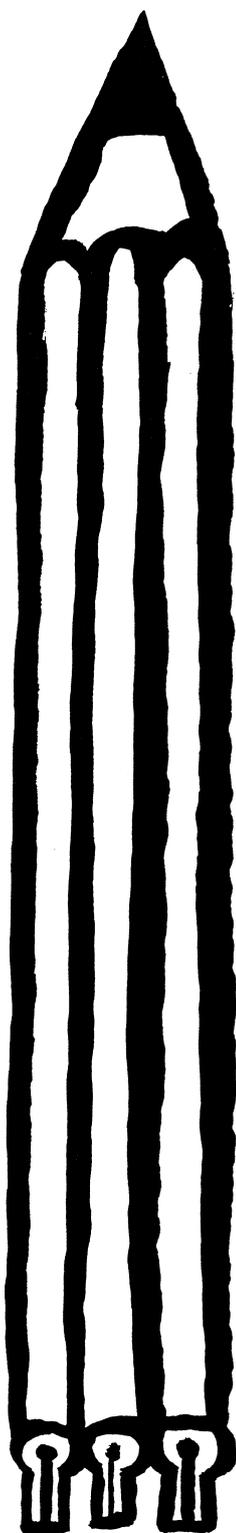
Hacquart, Florian Horn, Maximilien Lesellier, Simon Mauras, Valia Mitsou, Sylvain Perifel, Amaury Pouly, Arnaud Sangnier, Sylvain Schmitz, Mahsa Shirmohammadi, Laurent Viennot) for the extraordinary work they have done in organizing ICALP 2022.

An important part of ICALP 2022 will be the celebration of the **50th anniversary of both the first ICALP and of EATCS** - with year 1972 marking the birth of European theoretical computer science. The first ICALP conference was organized by Maurice Nivat in July 1972 in Rocquencourt, Paris, in the premises of IRIA, now INRIA. At roughly the same time, the efforts to establish a Europe-centered scientific organization in Theoretical Computer Science led to the submission to EEC and to Belgian authorities of legal documents to create EATCS on June 24, 1972; this is the official date of the constitution of EATCS. A royal decree by the King of Belgium from September 4, 1972 officially created EATCS and approved its statute. This has happened thanks to the main founders of EATCS: Giorgio Ausiello (Italy), Jaco de Bakker (The Netherlands), Maurice Nivat (France), Mike Paterson (UK), Manfred Paul (Federal Republic of Germany), Michel Sintzoff (Belgium), and Leo Verbeek (The Netherlands), and with a broad support of the Theory community. I hope to see many of you joining us in these celebrations of the 50th anniversaries of ICALP and of EATCS during the ICALP 2022 conference in Paris!

In the scientific part of the ICALP program, the Programme Committee chairs David Woodruff (track A) and Mikołaj

Bojańczyk (track B) and their PCs have done fantastic job selecting an impressive collection of papers, 102 accepted papers in track A and 24 in track B out of 429 submissions (342 for track A and 87 for track B). The acceptance rate was 29.4 percent. The programme of ICALP 2022 will highlight research across many areas within theoretical computer science. I invite you to attend and/or watch the talks even outside your own research field.

The **best paper awards at ICALP 2022** will go to the following two articles:

- Track A: Ilan Newman and Nithin Varma. Strongly Sublinear Algorithms for Testing Pattern Freeness;

- Track B: Jakub Gajarský, Marcin Pilipczuk, Michał Pilipczuk, Wojciech Przybyszewski, and Szymon Toruńczyk. Twin-width and Types.

The **best student paper award** for a paper that is solely authored by a student will go to the following three papers:

- Track A: Joakim Blikstad. Sublinear-round Parallel Matroid Intersection;

- Track A: Jakub Tětek. Approximate Triangle Counting via Sampling and Fast Matrix Multiplication;

- Track B: Gaëtan Douéneau-Tabot. Hiding Pebbles when the Output Alphabet is Unary.

Congratulations to the authors of the award-receiving papers!

In addition to regular research talks, ICALP 2022 will feature six invited talks delivered by
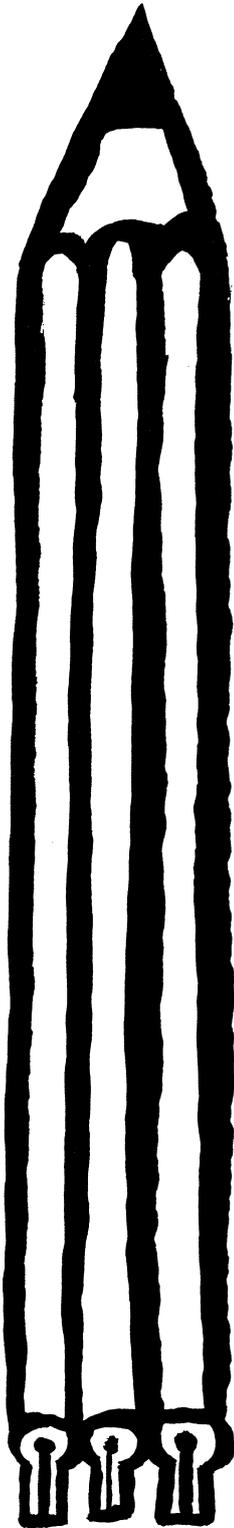
- *Albert Atserias (Universitat Politècnica de Catalunya),*

- *Constantinos Daskalakis (MIT),*

- *Leslie Ann Goldberg (Oxford),*

- *Madhu Sudan (Harvard, USA),*

- *Stéphan Thomassé (l'Ecole Normale Supérieure de Lyon), and*

- *Santosh Vempala (Georgia Tech).*

Apart from the invited and contributed talks, ICALP 2022 will feature three special presentations:

- *of the **EATCS Award 2022** to **Patrick Cousot** (New York University), the recipient of the award for introducing and developing the framework of abstract interpretation for program analysis,*

- *of the **Presburger Award 2022** to **Dor Minzer** (MIT), the recipient of the award for his deep technical contributions towards resolving the 2-to-2 Games Conjecture, and*

- *of the **Gödel Prize 2022** (sponsored jointly by the EATCS and the ACM SIGACT) for the seminal work making transformative contributions to cryptography by constructing efficient fully homomorphic encryption schemes to **Zvika Brakerski** (Weizmann Institute of Science), **Craig Gentry** (Algorand Foundation), and **Vinod Vaikuntanathan** (MIT).*

Moreover, during the conference, we will honor the recipients of the 2021 EATCS
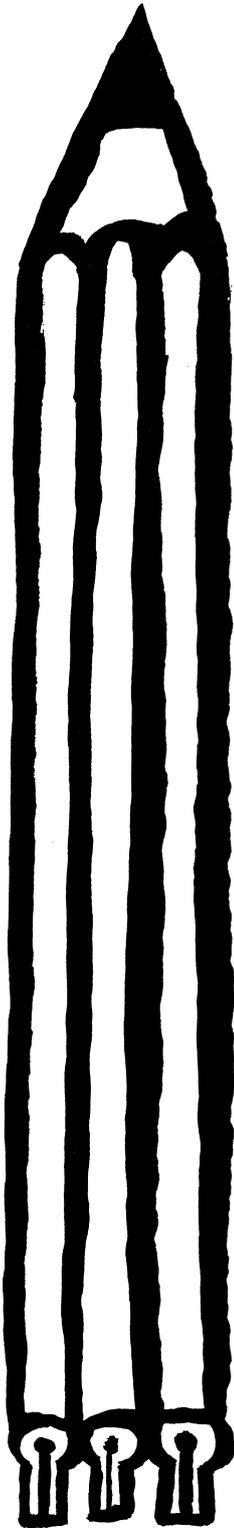
Distinguished Dissertation Award and the new group of EATCS Fellows.
*The recipients of the **2021 EATCS Distinguished Dissertation Award** are*

- *Alexandros Hollender, University of Oxford (advisor: Paul W. Goldberg),*

- *Jason Li, Carnegie Mellon University (advisors: Anupam Gupta and Bernhard Haeupler),*

- *Jan van den Brand, KTH Royal Institute of Technology (advisor: Danupon Nanongkai).*

*The new group of **EATCS Fellows (class 2022)** recognized for their scientific achievements in the field of Theoretical Computer Science consists of*

- *Samson Abramsky (University College London, United Kingdom), and*

- *Orna Kupferman (Hebrew University, Israel).*

Congratulations to the award winners and new EATCS Fellows!

On behalf of the EATCS, I also heartily thank the members of the awards, dissertation and fellow committees for their work in the selection of this stellar set of award recipients and fellows. It will be a great honor to celebrate the work of these colleagues during ICALP 2022. (More details about the EATCS Award 2022, the Presburger Award 2022, the 2021 EATCS Distinguished Dissertation Award, and the EATCS Fellows are presented on the later pages of this issue of the Bulletin.)

*ICALP 2022 will also have nine satellite workshops co-located with the main*
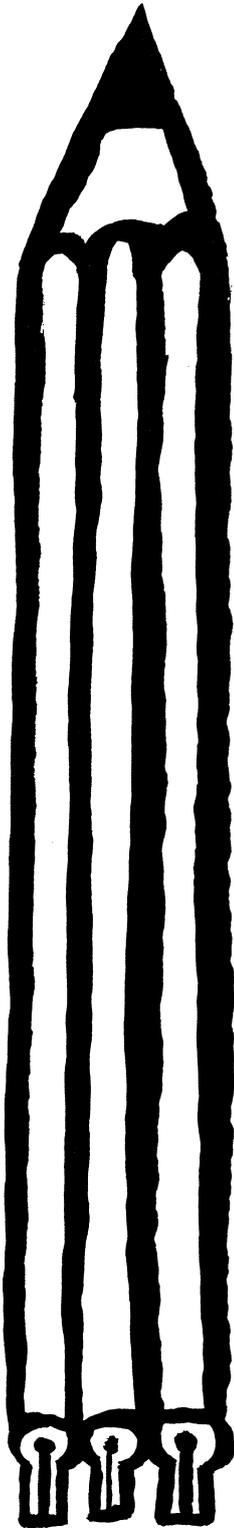
conference, taking place (online) on Sunday and Monday before the main event:

- *Parameterized Approximation Algorithms Workshop*

- *Combinatorial Reconfiguration*

- *Recent Advances on Total Search Problems*

- *LearnAut: 4th edition of the Learning and Automata workshop*

- *Algorithmic Aspects of Temporal Graphs V*

- *Trends in Arithmetic Theories*

- *Structure Meets Power 2022*

- *Straight-Line Programs, Word Equations and their Interplay*

- *Graph Width Parameters: from Structure to Algorithms*

As usual, a more detailed report on the ICALP 2022 conference will be published in the October 2022 issue of the Bulletin.

Also, please allow me to remind you about three other EATCS affiliated conferences that will be taking place later this year.

- ***MFCS 2022:*** *the 47th International Symposium on Mathematical Foundations of Computer Science, will be held in Vienna, Austria, August 22--26, 2022 (https://ac.tuwien.ac.at/mfcs2022/).*

- ***ESA 2022:*** *the 30th Annual European Symposium on Algorithms, will be held in Potsdam, Germany, September 5-9, 2022 (https://algo2022.eu/esa/).*
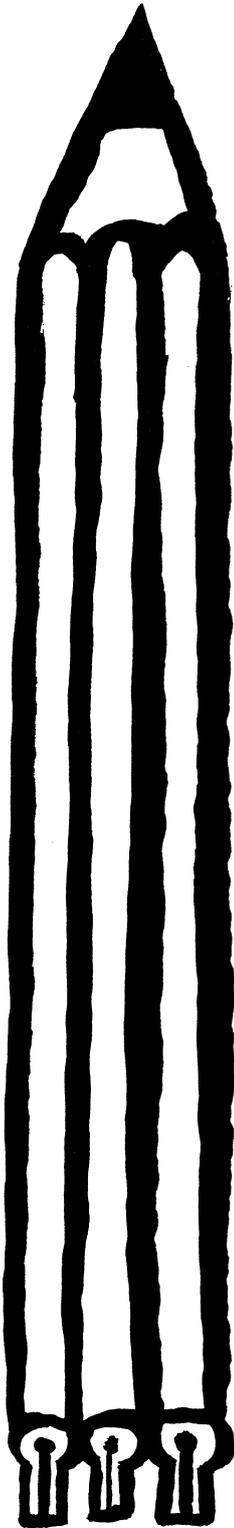
- *DISC 2022:* the 35th International Symposium on Distributed Computing, will be held in Augusta, Georgia, October 25-27, 2022 (http://www.disc-conference.org/wp/disc2022/).

In the recent months we have seen announcements of numerous further awards given to the members of theoretical computer science. While more details about many of these awards can be found on the pages of this Bulletin and elswhere, let me list some highlights here.

The **Gödel Prize** for outstanding papers in the area of theoretical computer science is sponsored jointly by the EATCS and the ACM SIGACT. This year it has been awarded for the seminal work making transformative contributions to cryptography by constructing efficient fully homomorphic encryption schemes to the following two papers:

- *Zvika Brakerski and Vinod Vaikuntanathan. Efficient Fully Homomorphic Encryption from (Standard) LWE. SIAM Journal of Computing 43(2): 831-871, 2014.*

- *Zvika Brakerski, Craig Gentry, and Vinod Vaikuntanathan. (Leveled) Fully Homomorphic Encryption without Bootstrapping. ACM Transactions on Computation Theory 6(3): 13:1-13:36, 2014.*

The **Edsger W. Dijkstra Prize in Distributed Computing** is awarded for outstanding papers on the principles of distributed computing, and is sponsored jointly by the ACM Symposium on Principles of Distributed
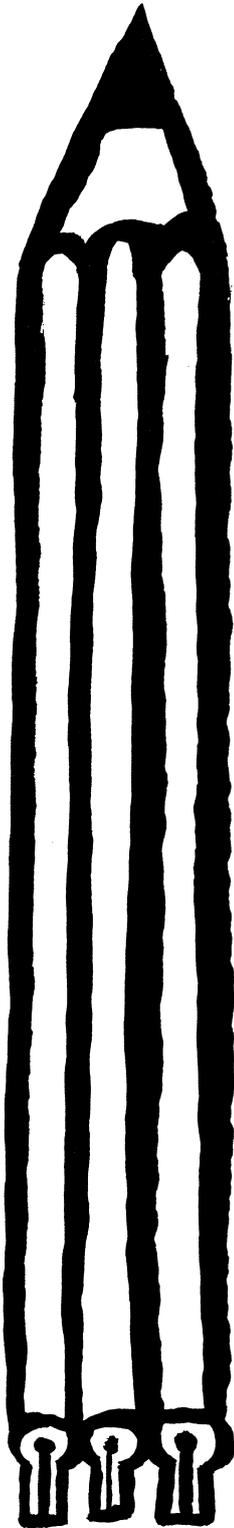
Computing (PODC) and the EATCS Symposium on Distributed Computing (DISC). The 2022 Dijkstra Prize has been awarded to the following two papers for providing the first general approach to memory reclamation in nonblocking data structures, with significant impact both in research and practice

- Maged M. Michael. Safe Memory Reclamation for Dynamic Lock-Free Objects Using Atomic Reads and Writes. Proceedings of the 22nd ACM Symposium on Principles of Distributed Computing (PODC), pages 21-30, Monterey, CA, USA, July 2002.

- Maurice Herlihy, Victor Luchangco, and Mark Moir. The Repeat Offender Problem: A Mechanism for Supporting Dynamic-Sized, Lock-Free Data Structures. Proceedings of the 16th International Symposium on Distributed Computing (DISC), pages 339-353, Toulouse, France, October 2002.

The **Alonzo Church Award** for outstanding contributions to logic and computation is awarded annually in a collaboration of the European Association for Theoretical Computer Science (EATCS), the ACM Special Interest Group on Logic (SIGLOG), the European Association for Computer Science Logic (EACSL), and the Kurt Gödel Society (KGS). The 2022 Alonzo Church Award has been awarded to Dexter Kozen (Cornell University) for his fundamental work on developing the theory and applications of Kleene algebra with tests, an equational system for reasoning about iterative programs, published in

- Dexter Kozen. Kleene Algebra with Tests. ACM Transactions on Programming Languages and Systems 19(3): 427-443, 1997.

The prize will be formally presented at the Federated Logic Conference 2022 (FLOC2022), held in August in Haifa, Israel.

EATCS also co-sponsors the **EATCS-IPEC Nerode Prize** for outstanding papers in the area of multivariate algorithmics, which this year was awarded to Bruno Courcelle for the following two papers:

- Bruno Courcelle. The Monadic Second-Order Logic of Graphs. I. Recognizable Sets of Finite Graphs. Information and Computation 85(1): 12-75, 1990.

- Bruno Courcelle. The Monadic Second-Order Logic of Graphs III: Tree-Decompositions, Minors and Complexity Issues. RAIRO - Theoretical Informatics and Applications 26: 257-286, 1992.

EATCS also sponsors the **Best ETAPS Paper Award 2022** for the best theory paper at ETAPS, which this year was awarded to the following paper:

- Emmanuel Hainry, Bruce Kapron, Jean-Yves Marion and Romain Péchoux, Complete and Tractable Machine-independent Characterizations of Second-order Polytime.

Unfortunately, during the last months, we received the sad news that two active members of our community pass away: Gerhard Woeginger and Rolf Niedermeier. Gerhard Woeginger (RWTH in Aachen) was

renowned for his research in approximation algorithms, online algorithms, scheduling, and also complexity theory, discrete mathematics, graph drawing, optimization, graph theory, social choice theory, and NP-hard problems (also thanks to his fantastic list of failed proofs of P vs NP); he was a very active member of the TCS community (including being the current EATCS Council member and a member of Academia Europaea). Rolf Niedermeier was a professor of computer science at TU Berlin, known for his research in computational complexity theory, especially in parameterized complexity, graph theory, computational social choice, and social network analysis. The entire Theory community will miss both of them dearly.

As usual, let me close this letter by reminding you that you are always most welcome to send me your comments, criticisms and suggestions for improving the impact of the EATCS on the Theoretical Computer Science community at president@eatcs.org. We will consider all your suggestions and criticisms carefully.

I look forward to seeing many of you at ICALP 2022 and to discussing ways of improving the impact of the EATCS within the theoretical computer science community at the general assembly.

Artur Czumaj
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June 2022