# *Ion Petre*

## Full name and contact

- Name: Petre, Ion
- ResearcherID: E-1766-2013
- Year of birth: 1974
- Nationality: Finnish, Romanian

## Date and place of birth, nationality, current residence

- Date and place of birth: June 22, 1974, Romania
- Citizenship: Finnish, Romanian
- Current residence: Finland

## Education and degrees awarded

- *(2016) Docent  in Discrete Applied Mathematics at University of Turku (degree similar to Dr.Hab. in Central Europe)*
- *(2007) Docent  in Computer Science (area of specialization: Bioinformatics) at Åbo Akademi University (degree similar to Dr.Hab. in Central Europe)*
- *(2002) PhD in Mathematics University of Turku, Finland. Topic of the thesis: "Commutation problems on sets and multisets of words".*
- *Research career phase: established researcher (professor)*

## Linguistic skills

- Mother tongue: Romanian
- Other languages: English (fluent), Finnish (cursive, certified 2010), Swedish (cursive, certified 2014), French (average)

## Current position

- *(2019-) Professor of Mathematics, University of Turku, Finland*
- *(2019-) Scientific advisor for Turku City Data, Finland*
- (2018-) *Ad-joint Research Professor, the National Institute of Research and Development in Biological Science, Academy of Romania*

## Previous professional appointments

- *(2010-2018) Professor of Computer Science, Åbo Akademi University, Finland*
- (2017-2018) *Visiting Scholar, University of South Florida*
- *(2005-2010) Research Fellow of the Academy of Finland*
- *(2002-2005) Postdoctoral researcher, Department of Information Technologies, Åbo Akademi University, Turku, Finland.*
- *(2002-2004) Marie-Curie individual fellowship of the European Commission (declined).*
- *(1997-2002) PhD student, Turku Centre for Computer Science and Department of Mathematics, University of Turku, Finland.*

## Major research funding and academic leadership, student supervision

### Substantial research founding

- *(2016-2018) Finnish Agency for Innovation for "Network Pharmacology" (co-PI): 1.000.000 eur*
- *(2013-2017) Academy of Finland grant for "Quantitative model refinement" (PI): 433.188 eur*
- *(2013-2017) Academy of Finland grant for "Synthetic controllability of biological networks through understanding and engineering of their control elements" (PI) – funded in the "Synthetic Biology (FinSynBio) research program of the Academy of Finland: 346.290 eur.*
- *(2008-2010) Academy of Finland research grant for "Computational modelling of the heat shock response in eukaryotes" (PI): 138.000 eur*
- *(2005 – 2010) Research Fellowship of Academy of Finland (PI): 299.340 eur*
- *(2005 – 2010) Academy of Finland grant supporting the appointment as Research Fellow (PI): 228.400 eur.*
- *(2004 – 2007) Academy of Finland grant for "Computational Processes in the Living Cell" (PI) – funded in the "Systems Biology and Bioinformatics" (SYSBIO) research programme of the Academy of Finland: 249.360 eur.*
- *(2016) Center for International Mobility Finland (grant for Krishna Kanhaiya): 10500 eur*
- *(2011-2012) Center for International Mobility Finland (grant for Bogdan Iancu): 10800 eur*
- *(2009) Academy of Finland grant for inviting foreign researchers to Finland: "Networks of cell-like processors": 13.500 eur*
- *(2007) Center for International Mobility Finland (grant for Andrzej Mizera): 10.800 eur*
- *(2006) Center for International Mobility Finland (grant for Tseren-Onolt Ishdorj): 7.200 eur*

## Supervision of post-doc researchers

- Vladimir Rogojin (2013-2018, 2009-2010), PhD from Åbo Akademi University, Finland. Currently working as research engineer, Guardtime, Estonia.
- Dwitiya Tyagi (2016-2018, 2013-2014), PhD from National Institute of Technology Bhopal, India.
- Sepinoud Azimi (2015-2018), PhD from Åbo Akademi University, Finland. Currently researcher at Åbo Akademi University.
- Eugen Czeizler (2015-2017, 2008-2010), PhD from University of Turku, Finland. Currently PI at the National Institute of Research and Development in Biological Science, Academy of Romania
- Chang Li (2014-2015), PhD from Åbo Akademi University, Finland.
- Cristian Gratie (2013-2015), PhD from the Technical University of Bucharest, Romania. Currently working as data scientist, France.
- Anne Seppänen (2013-2014), PhD from University of Turku, Finland. Currently researcher at University of Turku, Finland.
- An Le Thi Thanh (2013), PhD from University of Heidelberg, Germany. Currently researcher at University of Turku.
- Elena Czeizler (2008-2010), PhD from University of Turku, Finland. Currently lead data scientist at Varian Medical Systems Finland.
- Tseren Onolt-Ishdorj (2007-2009), PhD from University of Seville, Spain. Currently senior lecturer at Mongolian State University, Ulaanbaatar, Mongolia.
- Artiom Alhazov (2007), PhD from University of Tarragona, Spain. Currently senior lecturer at State University of Moldova.

## Supervision of doctoral students

- Jose Angel Sanchez Martin, Universita Politecnica de Madrid (started 2018), co-supervisor
- Muhammad Sanwal, Åbo Akademi (to graduate 2019)
- Krishna Kanhaiya, Åbo Akademi (to graduate 2019)
  - o Recipient of the *Akademikerprizet*, for outstanding scientific merits, Åbo Akademi University 2018

- Victor Popescu, Åbo Akademi University (started 2017)
- Charmi Panchal, Åbo Akademi University (2018)
- Diana-Elena Gratie, Åbo Akademi University (2016)
- Sepinoud Azimi, Åbo Akademi University (2015); degree awarded **"with honours"**
- Bogdan Iancu, Åbo Akademi University (2015)
- Andrzej Mizera, Åbo Akademi University (2011); degree awarded **"with honours"**
- Vladimir Rogojin, Åbo Akademi University (2009); degree awarded **"with honours"**
    - o Recipient of the Academy of Sciences of Moldova's award for young scientists (2009)
- Chang Li, Åbo Akademi University (2008)

## Supervision of undergraduate students

- (2019) Patric Gustafsson, Åbo Akademi University (Master)
- (2019) Denisa Ionascu, University Politehnica Bucharest, Romania (Bachelor)
- (2018) Loredana Gheorghe, University Politehnica Bucharest, Romania (Master)
- (2016) Keivan Kazemi, Åbo Akademi University (Master)
- (2016) Ami Kai Chiu Wu, Åbo Akademi University (Master)
- (2016) Victor Popescu, University Politechnica Bucharest, Bucharest (Master)
- (2012) Samuel Rönnqvist, Åbo Akademi University (Master)
- (2011) Diana-Elena Gratie, University Politehnica Bucharest, Romania (Master)
- (2010) Sepinoud Azimi, University of Turku, Finland (Master)
- (2009) Bogdan Iancu, University Politehnica Bucharest, Romania (Master)
- (2009) Rolf Smeds, Åbo Akademi University (Master)
- (2008) Henrik Rönnholm, Åbo Akademi University (Master)
- (2007) Zoltan Bicskei, Åbo Akademi University (Master)
- (2007) Sebastian Skogman, Åbo Akademi University (Master)
- (2007) Henry Ogoe, Åbo Akademi University (Master)
- (2006) Miika Langille, Åbo Akademi University (Master)
    - o Recipient of the yearly award for the best Master of Science thesis in Computer Science in Finland. Awarded by the Society for Computer Science in Finland
- (2006) Kristian Nylund, Åbo Akademi University (Master)
- (2006) Andreas Pada, Åbo Akademi University (Master)
- (2005) Vladimir Rogojin, Åbo Akademi University (Master)
- (2004) Satu Jääskeläinen, Åbo Akademi University (Master)
- (2004) Peter Bäck, Åbo Akademi University (Master)
- (2016) Maria Ström-Bestor, Åbo Akademi University (Bachelor)
- (2016) Anton Björklund, Åbo Akademi University (Bachelor)
- (2016) Markus Liljeberg, Åbo Akademi University (Bachelor)
- (2012) Markus Miekkoja, Åbo Akademi University (Bachelor)
- (2012) Stefan Virtanen, Åbo Akademi University (Bachelor)
- (2012) Daniel Wärnå, Åbo Akademi University (Bachelor)
- (2011) Marc Englund, Åbo Akademi University (Bachelor)

## Major teaching duties and pedagogical competence

### Involvement in curriculum planning and the implementation of courses

- (2016-2018) Introduced the first fully-online Master-level study module (25 sp) in Data Science in Finland
- (2017) Restructured the Master of Science program in Computer Science at Åbo Akademi, following the university-wide reorganization of the Master education

- (2012-2013) Restructured the Bachelor curriculum in Computer Science at Åbo Akademi
- (2011-2012) Chair of the Curriculum Committee in Computer Science at Åbo Akademi
- (2010) Restructured the Master of Science program in Computer Science at Åbo Akademi University to allow for the admission of international students to the program
- (2010) Introduced the International Master Degree Program in Computer Science at Åbo Akademi University, consistently in top 3 the most popular programs of the university
- (2002-2017) Planned and implemented several new advanced courses in Computer Science at Åbo Akademi:
  - Advanced computational modeling
    - Cross-listed in the International Masters School in Bioinformatics at University of Turku, Finland
  - Computability and computational complexity
  - Cryptography and network security
  - Computational modeling techniques
    - Cross-listed in the International Masters School in Bioinformatics at University of Turku, Finland
    - Redeveloped as a fully-developed online course, 2017-2018
  - Rule-based modeling in systems
    - Cross-listed in the International Masters School in Bioinformatics at University of Turku, Finland
  - Computational models for cell processes
    - Cross-listed in the International Masters School in Bioinformatics at University of Turku, Finland
  - Computational processes in living cells
  - Molecular informatics: theory and applications
  - Introduction to biocomputing
- Developed and lectured several tutorials and guest courses:
  - Tutorial on Computational Systems Biology, a satellite event of the International Conference on Formal Methods 2009, Eindhoven, the Netherlands and 2008, Turku, Finland
  - Tutorial on Computational Systems Biology, a satellite event of the International Conference on Biocomputation, Bioinformatics, and Biomedical Technologies 2008, Bucharest, Romania
  - Lectures on Computational Systems Biology at the International Doctoral Course of Latvia University of Agriculture, 2007, 2008.

## Pedagogical qualifications

- (1996) Completed the pedagogical qualification module at University of Bucharest, as part of my undergraduate studies. The module included the following courses::
  - Methods of informatics teaching
  - Psychology
  - Pedagogy
  - Pedagogic training (including teaching high-school classes)
- (2003) Completed the module on "Academic presentation skills" at Åbo Akademi University

## Pedagogical awards

- (2003, 2004, 2011) Voted "Teacher of the year" by the students in Computer Science and Engineering, Åbo Akademi University

## Scientific awards and honours

- (2018) Top 100 (5%) most read oncology papers in Scientific Reports in 2017
- (2016) Best paper award at the 14th International Conference on Computational Methods in Systems Biology, Cambridge, UK.
- (2011) Best paper award at the 9th International Conference on Computational Methods in Systems Biology, Paris, France.
- (2009) My research project Computational Processes in Living Cells was nominated as 1 of only 6 outstanding projects (of the 16 funded projects) in the final evaluation report of Academy of Finland's Systems Biology and Bioinformatics research programme (2004-2007)
- (2008) The yearly Computer Science award of Academy of Romania (the "Grigore Moisil" award), for work published during 2006 on "Computational nature of gene assembly in ciliates"

## Other scientific or academic merits and activities

### Preliminary examiner, opponent, or membership in dissertation committees

- (2019) PhD thesis reviewer for Artur Meski, Institute of Computer Science, Polish Academy of Science, Poland
- (2019) PhD thesis reviewer for Martin Demko, Masaryk University, the Czech Republic
- (2017) External member of the PhD jury for Qixia Yuan, University of Luxembourg, Luxembourg.
- (2016) PhD external examiner for Matteo Rucco, University of Camerino, Italy.
- (2015) PhD external examiner for Manasi Kulkarni, University of Western Ontario, Canada
- (2014) PhD opponent for Mari Suova, University of Turku, Finland
- (2014) PhD thesis examiner for Johannes Tuikkala, University of Turku, Finland
- (2013) PhD thesis external examiner for Mayur Bapodra, University of Leicester, UK
- (2012) PhD thesis reviewer for Ivars Mozga, Latvia University of Agriculture, Department of IT, Latvia
- (2012) Member of the evaluation committee for Jozsef Mezei, Åbo Akademi University
- (2012) Member of the evaluation committee for Fredrik Degerlund, Åbo Akademi University
- (2012) Member of the evaluation committee for Siw Lundqvist, Åbo Akademi University
- (2011) Member of the evaluation committee for Marta Olszewska, Åbo Akademi University
- (2010) Member of the dissertation committee for Virgil Serbanuta's thesis, University of Bucharest, Romania
- (2010) Member of the evaluation committee for Leonidas Tsiopoulos, Åbo Akademi University
- (2010) Member of the evaluation committee for Johannes Eriksson, Åbo Akademi University
- (2007) PhD thesis reviewer for Tseren-Onolt Ishdorj's thesis, University of Seville, Spain
- (2006) Member of the dissertation committee for Peter Leupold's PhD disputation, University of Tarragona, Spain

### Evaluation of scientific competence

- (2019) Reviewer for the promotion to full professor of Dr. Jetty Kleijn, University of Leiden, the Netherlands
- (2019) Reviewer for the promotion to assistant professor of Dr. Jun Pang, University of Luxembourg, Luxembourg
- (2019) Reviewer for the Hablitation committee for Dr. David Safranek, Masaryk University, Czech Republic

- (2017) Reviewer for the promotion to full professor of Dr. Ian McQuilan, University of Saskatchewan, Canada
- (2017) Reviewer for University of South Florida for Prof. Natasha Jonoska's appointment as a "Distinguished University Professor"
- (2017) Reviewer for the tenure evaluation of Dr. Andre Sanchez Ribeiro, University of Tampere, Finland
- (2013) Reviewer for the appointment as Professor of Computer Science of Dr. Andrei Paun, University of Bucharest, Romania.
- (2012) Reviewer for the appointment as Professor of Computer Science of Dr. Florentin Ipate, University of Bucharest, Romania.
- (2012) Reviewer for the tenure evaluation of Dr. Daniela Genova, University of North Florida, US.
- (2011) Reviewer for the tenure evaluation of Dr. Ovidiu Lipan, University of Richmond, US.
- (2011) Reviewer for the docentship application of Dr. Laura Elo, University of Turku, Finland.

## Membership and positions of trust in scientific societies

- (2016-2020) Co-director of the "Computational and Molecular Methologies for Life Sciences" research program of BioCity Turku, a multi-disciplinary community of 15 research groups, with 50 PhD students and 30 postdocs.
- (2015-2018) Director of Turku Centre for Computer Science. As director, I wrote the new strategy of TUCS, re-launching TUCS as a research institute, after a 20-year period as a graduate school. I also launched the TUCS Internship Program, a collaborative program between TUCS and local companies, that created 40 paid positions for our students in its first two editions (2016, 2017).
- (2015-2017) Member of the board of the Finnish Society for Computer Science
- (2011-2014) Vice-director of Turku Centre for Computer Science. As vice-director, I initiated the TUCS Distinguished Lecture Series, a series of high-level international guest lectures that gathers audiences of around 100 students and researchers.
- (2010-2018) Head of the Computer Science programs at Department of IT, Åbo Akademi University, Finland. In this position, I reformed the curriculum in Computer Science both on the Bachelor and on the Master level, based on the latest ACM curriculum guidelines. I also launched the International Master's Program in Computer Science at Åbo Akademi, that ranks consistently in top 3 at Åbo Akademi University in terms of number of yearly applications.
- (2005-) Leader of the Computational Biomodelling Laboratory, Turku Centre for Computer Science.

## Membership in national or international expert, evaluation or steering groups as well as other expert duties

- (2017-2019) Member of the board of the Doctoral School in Computer Science at University of Bucharest, Romania
- (2017, 2016, 2015) Member of the 3-member award panel for "The Best PhD thesis in Computer Science in Finland". Chair of the panel in 2017.
- (2019) Scientific reviewer for NOW, the Netherlands
- (2016) Scientific reviewer for European Union's Horizon 2020 and Cost programmes
- (2016) Scientific reviewer for the Romanian National Council for Scientific Research
- (2016) Scientific evaluator for NSERC, Canada
- (2016) Member of the award panel of the Ad-Astra association for "Romanian Researcher of the Year in Computer Science"
- (2016) Member of the 3-member award panel for "The Best PhD thesis in Bioinformatics in Finland"

- (2011-2015) Member of the national committee for the evaluation and the ranking of computer science university education and research in Romania. In this position I contributed to the ranking of the publication forums in computer science. I also contributed to defining the minimal criteria that must be satisfied for awarding all academic titles in computer science Romanian universities, from PhD to full professor.

## Membership in editorial committees and guest editor of scientific journals

- Member of the advisory board of the Springer Natural Computing Book Series (since 2018)
- Frontiers in Bioinformatics and Computational Biology (since 2011)
- Theoretical Computer Science. Track C on "Natural Computing" (since 2010), Elsevier.
- Journal of Natural Computing (since 2009), Springer.
- International Journal on Nanotechnology and Molecular Computation (since 2008), IGI Global.
- Fundamenta Informaticae (2007-2009), IOS Press.
- Guest co-editor of a special issue of Theoretical Computer Science, track C, vol. 701, 2017
- Guest co-editor of a special issue of Theoretical Computer Science, track A, vol. 429, 2012.
- Guest co-editor of Transactions on Computational Systems Biology for a special issue on "Computational models for cell processes", LNCS 7625, 2012.
- Guest co-editor of Natural Computing for a special issue on "Unconventional Computing", vol 11(4), 2012.
- Guest co-editor of Transactions on Computational Systems Biology XIII for a special issue on "Computational models for cell processes", LNBI 6575, 2011.
- Guest co-editor of Transactions on Computational Systems Biology XI for a special issue on "Computational models for cell processes", LNBI 5750, 2009.

## Program committee member in international conferences and workshops

- International Workshop on Hybrid Systems and Biology, 2020, 2019
- International Workshop on Reaction Systems, 2020, 2019, 2018
- International Conference on Computational Methods in Systems Biology (CMSB), 2019, 2018, 2011, 2010
- Special session on Bio-Inspired Computing and Bioinformatics at Knolwedge-Based and Intelligent Information and Engineering Systems (KES), 2019
- 16th IEEE International Conference on Computational Intelligence in Computational Biology and Bioinformatics, 2019
- Working Formal Methods Symposium (FROM), 2019, 2018
- Middle-European Conference on Applied Theoretical Computer Science, 2019
- International Conference on Unconventional Computation and Natural Computing (UCNC), 2018, 2015, 2011, 2006, 2005 (PC co-chair)
- Computability in Europe, 2017 (PC co-chair), 2016
- 30th Nordic Workshop on Programming Theory, 2018
- 6th International Conference on ASM, Alloy, B, TLA, VDM, and Z (ABZ), 2018
- Special session of PDP 2018 on High Performance Computing in Systems Biology, 2018, Cambridge, UK.
- International Symposium on Molecular Logic and Computational Synthetic Biology, 2018, Santiago de Chile, Chile.
- AUTOMATA, Milan, Italy, 2017.
- International Conference on Algebraic Informatics, Kalamata, Greece, 2017.
- International Conferece on Formal Engineering Methods, Xi'an, China, 2017.
- Workshop on Interactions between Computer Science and Biology (CS2Bio), Berlin, Germany, 2014 (**PC co-chair**).

- Workshop on Computational Processes in Living Cells (CompMod), Turku, Finland, 2013 (**PC chair**)
- International Workshop on Interactions between Computer Science and Biology (CS2Bio), Florence, Italy, 2013.
- International Conference on the Theory and Practice of Natural Computing (TPNC), Tarragona, Spain, 2012.
- International Workshop on Interactions between Computer Science and Biology (CS2Bio), Stockholm, Sweden, 2012.
- International Conference on Computability in Europe, 2011, Sofia, Bulgaria. Special session on Natural Computing (**PC co-chair**)
- Workshop on Computational Processes in Living Cells, Aachen, Germany, 2011 (**PC co-chair**)
- CS2Bio 2011: 2nd Workshop on Computer Science to Biology. June 9, Reykjavik, Iceland.
- Special Track on Modelling for sustainable development at the 9th International Conference on Software Engineering and Formal Methods, Montevideo, Uruguay, 2011.
- Workshop and Tutorials on Natural Computing, 2010, Enschede, the Netherlands (**PC co-chair**).
- Workshop on Computer Science in Systems Biology, Amsterdam, the Netherlands, June 10, 2010.
- International Workshop on Applications of Membrane Computing, Concurrency and Agent-based Modeling in Population Biology, 2010, Jena, Germany.
- International ISoLA Workshop on Modelling, Analyzing, Discovering Complex Biological Structures, 2009, Potsdam, Germany.
- Workshop on Computational Processes in Living Cells, Eindhoven, the Netherlands, 2009 (**PC co-chair**)
- Workshop on Natural Computing and Graph Transformation, satellite event of the International Conference on Graph Transformation, Leicester, UK, 2008 (**PC co-chair**)
- Workshop on Computational Processes in Living Cells, Turku, Finland, 2008 (**PC co-chair**)
- The 14$^{th}$ international meeting on DNA-based computers, DNA 14, 2008, Prague, Czech Republic.
- The 13$^{th}$ international meeting on DNA-based computers, DNA 13, 2007, Memphis, USA.
- International conference on Developments in Language Theory (DLT) 2004, Auckland, New Zealand, 2004.
- Workshop on word avoidability, complexity, and morphisms (WACAM), affiliated with ICALP 2004, Turku, Finland, 2004.

## Scientific refereeing activities

- Referee for many papers submitted to journals such as Theoretical Computer Science, Theoretical Informatics and Applications (RAIRO), Discrete Applied Mathematics, Discrete Mathematics, Journal of Logic and Computation, Journal of Theoretical Biology, Journal of Mathematical Biology, Journal of Natural Computing, PLoS Computational Biology, BMC Biophysics, Scientific Reports, and conferences such as International Colloquium on Automata, Languages, and Programming, Mathematical Foundations of Computer Science, Developments in Language Theory, Fundamentals of Computation Theory, ACM Symposium on Applied Computing, Conference on Implementation and Application of Automata, Combinatorics on Words, Computational Methods in Systems Biology, and others.
- Reviewer for Mathematical Reviews

## Administrative responsibilities at university or research organizations

- (2015-2018) Director of Turku Centre for Computer Science

- (2015-2018) Member of the board of the Faculty of Science and Engineering, Åbo Akademi University
- (2013-2014) Member of the board of Department of IT, Åbo Akademi University
- (2011-2014) Vice-director of Turku Centre for Computer Science
- (2010-2018) Head of the Computer Science programs at Department of IT, Åbo Akademi University, Finland

## Invited lectures

- Plenary talk, International Conference on Developments in Language Theory, Tampa, USA, 2020
- Plenary talk, International Conference on Unconventional Computation and Natural Computation, Japan, 2019
- Special session talk, Life Science Live, Finland, 2019
- Plenary talk, Asian Chapter of Membrane Computing, New Zealand, 2018
- Plenary talk, AlgoNano: Algorithmic and Computational Methods in BioMedicine and Nanotechnology, 2018
- Invited talk at Université d'Évry Val d'Essonne, 2018
- Invited talk at the National Cancer Institute, NIH, Bethesda, USA, 2018.
- Plenary talk, Workshop on Formal Methods in Computational Systems Biology, Luxembourg, 2017
- Invited talk at Department of Mathematics and Statistics, University of South Florida, USA, 2017
- Invited talk at the Moffitt Cancer Research Institute, USA, 2017
- Plenary talk, International Symposium on Foundations of Computer Science (FROM), Bucharest (Romania), 2017
- Plenary talk, International Conference on Membrane Computing, Valencia (Spain), 2015
- Special session talk, Computability in Europe, Bucharest (Romania), 2015
- Special session talk, Congress of Romanian Mathematicians, Iasi (Romania), 2015
- Plenary talk, Theory Day in Computer Science, Bucharest (Romania), 2014
- Plenary talk, 13$^{th}$ Biennial Baltic Electronics Conference, Tallinn (Estonia), October 2012
- Plenary talk, Workshop on Logics in Systems Biology, Edinburgh (UK), July 2010
- Special session talk, Finnish Mathematical Days, Jyväskylä (Finland), January 2010
- Special session talk, Computability in Europe, Heidelberg (Germany), July 2009
- The international doctoral course on Systems Biology and Bioinformatics, Latvia University of Agriculture, Jelgava (Latvia), November 2008
- Plenary talk, The Jacques Monod conference dedicated to the biology of the heat shock factor, Roscoff (France), September 2008
- Plenary talk, Exploratory workshop on biology and bioinformatics, Bucharest (Romania), September 2008
- Plenary talk, The 5th Conference on New Exploratory Techniques NEXT 2008, Turku (Finland), August 2008
- Plenary talk, International Conference on Biocomputation, Bioinformatics, and Biomedical Technologies, Bucharest (Romania), June 2008
- Plenary talk, International conference on Automata and Formal Languages, Balatonfured (Hungary), May 2008
- Tutorial on Computational Systems Biology, satellite event of the International conference on formal methods, Turku (Finland), May 2008
- Special session talk, Finnish Mathematical Days, Espoo (Finland), January 2008
- Plenary talk, Workshop on Algorithmic bioprocesses, Leiden (the Netherlands), December 2007
- The international doctoral course on Systems Biology and Bioinformatics, Latvia University of Agriculture, Jelgava (Latvia), October 2007

- Tutorial, International Conference on Unconventional Computing. Tutorial on Computational processes in living cells. Sevilla (Spain), October 2005.
- Tutorial, International Conference on Graph Transformation, the DNA-GRA Tutorial Day on DNA Computing and Graph Transformation, Rome (Italy), 2004.
- Tutorial, International Conference on Graph Transformation, the DNA-GRA Tutorial Day on DNA Computing and Graph Transformation, Barcelona (Spain), 2002.
- Plenary talk, Weighted Automata: Theory and Applications, Dresden, Germany, 2002.

## Membership in organizing committees of international workshops and conferences

- The International Salomaa Symposium, 2014, Turku, Finland.
- Computability in Europe 2011, special track on Natural Computing.
- International Conference in Unconventional Computing, 2011, Turku, Finland.
- *Workshop on Applications of Membrane Computing, Concurrency and Agent-Based Modeling in Population Biology, Jena, Germany, August 2010.*
- *Workshop Series on Computational Process in Living Cells. Turku, Finland (2008), Eindhoven, the Netherlands (2009), Limerick, Ireland (2011)*
- *Tutorial Series on Computational Systems Biology, satellite event of the International Conference on Formal Methods. Turku, Finland (2008), Eindhoven, the Netherlands (2009), Limerick, Ireland (2011).*
- *31st International Colloquium on Automata, Languages and Programming, ICALP 2004, Turku, July 2004.*
- *Words 2003 conference, Turku, September 2003.*
- *The Spring meeting 2003 of the European Molecular Computing Consortium, Abo Akademi, Turku, May, 2003.*

## Scientific and societal impact of research

### Publications

- (February 2018) More than 100 articles, including one monograph, 65 peer-reviewed journal articles, 26 articles in peer-reviewed conference proceedings, 2 handbook chapters, 16 edited books and special issues of journals.

### Most important recent 10 publications

1. Krishna Kanhaiya, Eugen Czeizler, Cristian Gratie, Ion Petre, Controlling Directed Protein Interaction Networks in Cancer. *Scientific Reports*, 7(1), 10327, 2017.
2. Eugen Czeizler, Cristian Gratie, Wu Kai Chiu, Krishna Kanhaiya, Ion Petre. Controlability of Linear Networks. In: Ezio Bartocci, Pietro Lio', Nicola Paoletti (Eds.) Proceedings of Computational Methods in Systems Biology, Lecture Notes in Bioinformatics 9859, 67-81, Springer, 2016. **Best Paper Award.**
3. Eugen Czeizler, Vladimir Rogojin, Ion Petre. The phosphorylation of the heat shock factor as a modulator for the heat shock response, IEEE/ACM Transactions on Computational Biology and Bioinformatics 9(5), 1326-1337, 2012. **Best paper award.**
4. Eugen Czeizler, Andrzej Mizera, Elena Czeizler, Ralph-Johan Back, John E. Eriksson, and Ion Petre. Quantitative analysis of the self-assembly strategies of intermediate filaments from tetrameric vimentin. IEEE/ACM Transaction on Computational Biology and Bioinformatics 9(3), 885-893, 2012.
5. Krishna Kanhaiya, Vladimir Rogojin, Keivan Kazemi, Eugen Czeizler, Ion Petre. NetContrl4BioMed: A pipeline for biomedical data acquisition and analysis of network controllability. *BMC Bioinformatics*, 2018, to appear.

6. Mikhail Barash, Ion Petre. A foundational framework for step-by-step model construction, *Fundamenta* Informaticae 154, 15-24, 2017.

7. Cristian Gratie, Ion Petre. Complete characterization for the fit-preserving data refinement of mass-action reaction networks, *Theoretical Computer Science* 641, 11-24, 2016.

8. Sepinoud Azimi, Cristian Gratie, Sergiu Ivanov, Luca Manzoni, Ion Petre, Antonio E. Porreca. Complexity of model checking for reaction systems, *Theoretical Computer Science* 623, 103-113, 2016.

9. Sepinoud Azimi, Cristian Gratie, Sergiu Ivanov, Ion Petre. Dependency graphs and mass-conservation in reaction systems, *Theoretical Computer Science*, 1-17, 2015.

10. Charmi Panchal, Sepinoud Azim, Ion Petre. Generating the logicome of a biological network. In: M. Botón-Fernández, C. Martín-Vide, S. Santander-Jiménez, M. A. Vega-Rodríguez (Eds.) Algorithms for Computational Biology, Lecture Notes in Bioinformatics 9702, 38-49, Springer, 2016.