Second Announcement and Call for Participation

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2nd INTERNATIONAL WORKSHOP ON REACTION SYSTEMS AND 1ST SCHOOL ON REACTION SYSTEMS

Toruń, Poland, June 3-7, 2019

Additional information about the conference will be published via
http://wors2019.mat.umk.pl
Contact e-mail: wors2019@mat.umk.pl

Important Dates:

Early registration	April 25, 2019
School	June 3-5, 2019
Workshop	June 5-7, 2019

Fees (cover participation in all sessions, lunches, and coffee breaks):

	before April 25	after April 25
School	50 EUR	70 EUR
Workshop	50 EUR	70 EUR
School + Workshop	70 EUR	100 EUR

Since their introduction about 10 years ago, reaction systems matured into a fruitful and dynamically evolving research area, which attracted a noticeable group of researchers. The original motivation was the understanding of interactions of biochemical reactions in the living cell and since then reaction systems have developed as an innovative approach to formal modelling of biological systems. They have also become a popular novel model of interactive computation.

Due to growing interest in this research area, the need has arisen to organise a periodic workshop providing a forum for exchanging research ideas and, hopefully, initiating new or strengthening already existing collaborative research efforts. The first workshop took place in Milano, Italy, in June 2018. The second meeting will take place in Toruń, Poland, in the period 3-7 June 2019.

The meeting in Toruń will consist of a school and a workshop. The school will take place from Monday, June 3, until Wednesday, June 5. The school program consists of tutorial lectures accessible also to participants who are not yet familiar with reaction systems. They will cover the biological aspects of reaction systems, the computational aspects of reaction systems (reaction systems as a model of interactive computation), and the relationship of reaction systems to other models of computation. Then the workshop will take place from Wednesday, June 5, until Friday, June 7. The workshop program will cover the recent as well as by now established scientific results. Also, the presentations of work in progress are welcome. Moreover, the program of the workshop includes sessions which instigate collaboration of workshop participants.

The school and the workshop are of interest to mathematicians and computer scientists (PhD students and researchers) interested in models of computation as well as bioinformaticians and biologists interested in foundational / formal understanding of biological processes.

Invited speakers for the Workshop:

- Giancarlo Mauri, Milano, Italy – Membrane systems
- Roberta Gori, Pisa, Italy – Causalities in reaction systems

Regular contributions to the Workshop

We encourage submissions to the Workshop concerned with reaction systems and related areas. The submissions are not reviewed, they will be collected in local proceedings. However, we plan to prepare (after the workshop) a special issue of a reputable international journal which will include selected contributions to the workshop.

If you plan to contribute to the workshop, then please submit (to wors2019@mat.umk.pl) an extended abstract of your planned contribution not later than April 10. You will receive a notification of possible inclusion soon afterwards.

The lectures of the school are scheduled as follows:

- G. Rozenberg, Leiden, The Netherlands – “Introduction to reaction systems”
- E. Porreca, Marseille, France – “State sequences of reaction systems”
- Ł. Mikulski, Toruń, Poland – “Equivalences for reaction systems”
- D. Besozzi, Milano, Italy – “Biological aspects of reaction systems”
- J. Kleijn, Leiden, The Netherlands – “Evolving reaction systems”
- G. Rozenberg, Leiden, The Netherlands – “Qualitative vs quantitative reaction systems”
- P. Milazzo, Pisa, Italy – “Genetic regulatory networks”
- G. Rozenberg, Leiden, The Netherlands – “Zoom structures”
- W. Penczek, Warsaw, Poland – “Logic for reaction systems (model checking)”
- P. Bottoni, Rome, Italy – “Networks of Reaction Systems”
- M. Koutny, Newcastle, United Kingdom – “Petri nets and reaction systems”
- A. Yakovlev, Newcastle, United Kingdom – “Asynchronous Computations”
- L. Manzoni, Milano, Italy – “Cellular automata, dynamical systems, and reaction systems”
- H.-J. Kreowski, Bremen, Germany – “Graph rewriting and reaction systems”
- R. Brijder, Hasselt, Belgium – “Chemical Reaction Networks”

Student grants:

Student grants, provided by the City Council of Toruń and Nicolaus Copernicus University, are available. To apply for a grant you need to be a PhD or a MSc student.

Successful applications cover the school fee (with a reduced fee of 20 EUR for participating in both school and workshop) as well as an accommodation in University Hotel (June 2-6 – four nights) in a single room in a studio consisting of two rooms (with shared bathroom).

To apply for a grant you need to send (to wors2019@mat.umk.pl) before April 10:

- scientific CV,
- motivation letter,
- support letter from your supervisor, and
- document confirming your student status.

The number of grants is limited.

Organization:

Program Committee Co-chairs

Grzegorz Rozenberg
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Kamila Barylska, Poland
Anna Gogolińska, Poland
Jetty Kleijn, The Netherlands
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Marcin Piątkowski, Poland

Program Committee

Paolo Bottoni, Italy
Daniela Besozzi, Italy
Ion Petre, Finland
Hans-Jörg Kreowski, Germany
Giancarlo Mauri, Italy
Wojciech Penczek, Poland
Jetty Kleijn, The Netherlands
Maciej Koutny, UK

Toruń

Toruń, one of the oldest cities in Poland, is located on the Vistula river in the northern part of the country, and is best known as the birthplace of the astronomer **Nicolaus Copernicus**. In 1997 the medieval part of the city was designated a **UNESCO World Heritage Site**, and in 2007 the Old Town in Toruń was designated as one of the **Seven Wonders of Poland**. Toruń is also European City of Sport in 2019.

National Geographic rated the old town market and the Gothic town hall as one of the **30 Most Beautiful Places in the World**. Toruń has many monuments of architecture beginning from the Middle Ages. Most of them have an almost intact medieval layout.

Toruń has the largest number of preserved Gothic houses in Poland, many with original wall paintings or wood-beam ceilings from the 16th to the 18th century. Among the most important monuments are: the Cathedral John the Evangelist and John the Baptist (14th century), St. Mary Church (14th century), the Old Town Hall (12th-16th century) - one of the most monumental town halls in Central Europe, ruins of the city fortifications (12th-15th century), and the 15th-century Gothic house (now a museum) where Nicolaus Copernicus was born.

Travel

By plane: The nearest airports are in (60 km) Bydgoszcz (low cost airlines across Europe), Poznań airport (140 km, low cost airlines across Europe), Gdańsk airport (~180 km, low cost airlines across Europe, connected by motorway) and Warsaw - Okęcie airport - long haul airlines (230 km) - or Modlin airport.

By train: Polish State Railways operate train connections to Toruń from Warsaw, Poznań, Gdańsk, Łódź, Katowice and Olsztyn. Toruń's main railway station is Toruń Główny (positioned across the river Vistula from the Old Town).

By car: A1 motorway runs between Toruń and Gdańsk - quick way (170 km). Warsaw can be reached via A1+A2 motorways (260 km). **By bus:** There are many connections to Toruń. Bus station is a short walk from the Old Town.

Nicolaus Copernicus University

The Nicolaus Copernicus University in Toruń (NCU) is one of the largest universities in Poland, currently comprising 17 faculties providing courses for almost 30 000 students, offering education in over 80 fields of study. QS World University Ranking has placed NCU in the top 4% of universities in the world.

Faculty of Mathematics and Computer Science (the venue of the event)

The Faculty of Mathematics and Computer Science was founded in 1993, but, mathematical sciences were developed in NCU from the very beginning of its existence, first, within departments, later, in the Institute of Mathematics – a part of the Faculty of Mathematics, Physics and Chemistry. In the 1960s a new specialization, a ‘numerical division‘, was established. It can be regarded as the beginning of the computer science studies in Toruń.

Well-equipped laboratories, lecture halls, and the library providing access to the large collection of resources, together with free wireless Internet access in the halls, form a modern infrastructure. The building of the Faculty is within a 5 minute walking distance from the Old Town, which offers a wide range of restaurants and affordable hotels.