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Ústav organické chemie a biochemie  
Akademie věd České republiky, v. v. i.  
Institute of Organic Chemistry and Biochemistry  
of the Czech Academy of Sciences

PRESS RELEASE

## The Dream Chemistry Award goes to Dr. Jessica R. Kramer for a project focusing on new perspectives for cancer treatment

*Prague, December 6, 2017 – On December 4-5, 2017, the finale of the international scientific contest Dream Chemistry Award was held in Prague, organized by the leading chemistry institutes of the Czech and Polish Academy of Sciences. The winner of the competition is Dr. Jessica R. Kramer from the University of Utah (USA), with a research project investigating the protective saccharide coat of cell membranes (glycocalyx) as a tool to design new cancer therapeutics.*

The Dream Chemistry Award recognizes visionary projects in the field of chemistry and related disciplines that have the ambition and potential to make the world a better place. The competition is open to young scientists under 37 years of age, who have been nominated by respected senior researchers. The competition was established in 2013 by the Institute of Physical Chemistry of the Polish Academy of Sciences in Warsaw (IPC PAS) and runs every other year. In 2017, the Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences (IOCB Prague) stepped in the organization of the contest.

This year's competition has seen the record number of nominations of promising scientific talents from around the world. Five young researchers were invited to present the most remarkable projects to the international scientific committee during the finale of the competition in Prague.

*"We received 35 applications from best universities worldwide. It was very hard to pick the winner and in my view all five finalists are the winners of this year's contest,"* says Prof. Pavel Jungwirth (IOCB Prague). *"We heard fantastic lectures covering subjects ranging from targeting the surface of tissue cancer cells, engineering the microbiome in the gut as a tool for metabolism applications, developing microelectronics based on metal organic frameworks, or optimizing electron transfer reactions, to ending mercury pollution in gold mining."*

The laureate of the Dream Chemistry Award 2017 became Dr. Jessica R. Kramer from the University of Utah, USA, nominated by Prof. Hamid Ghandehari. She presented a project "Glycocalyx engineering to probe the role of mucins in cancer". It focuses on the idea of establishing new methods and tools for the research of a protective sugar (oligosaccharide) coat of the cells, the so-called glycocalyx. Glycocalyx is found on the surface of almost all cells, but its function is not well understood. Changes in its structure correlate with tumor growth in tissues. The ultimate aim of the project is to design specific cancer therapeutics based on an artificially synthesized glycocalyx. Apart from the recognition by the scientific committee and The Dream Chemistry Award statuette, the laureate receives also a financial reward of 10,000 EUR.

*"We want to give young scientists who are at the beginning of their independent career an opportunity to share their boldest ideas and dreams of solving important scientific puzzles or problems of the present world,"* says Prof. Robert Holyst (IPC PAS). *"I am very happy, that every year we get more and more top applications that deserve international attention. And Dr. Kramer's project on glycocalyx engineering is the best example of such dreams that can lead to important discoveries and innovations changing entire fields of study and ultimately our lives as well."*

The other finalists were Dr. Rob Ameloot (KU Leuven, Belgium) with a project "Self-Assembling

a Smarter World: The Hole Story", Dr. Nathan Crook (Washington University in St. Louis, USA) with a project "Expanding Human Metabolism by Engineering Our Commensal Microbes", Dr. Justin M. Chalker (Flinders University, Australia) with a project "Ending Mercury Pollution from Artisanal Gold Mining", and Dr. Yogesh Surendranath (MIT, USA) with a project "A Molecular Theory of Interfacial Inner-Sphere Electron Transfer".

More about Dream Chemistry Award at [www.dreamchemistryaward.org](http://www.dreamchemistryaward.org).

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**The Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences / IOCB Prague ([www.iocb.cz](http://www.iocb.cz))** is a leading scientific institution in the Czech Republic, recognized internationally. Its primary mission is basic research in the fields of chemical biology and medicinal chemistry, organic and material oriented chemistry, chemistry of natural compounds, biochemistry and molecular biology, physical chemistry, theoretical chemistry, and analytical chemistry. The Institute has a long tradition and expertise in medicinal chemistry and drug development together with the pharma industry. Antivirals discovered by Antonín Holý and developed further by Gilead Sciences revolutionized the treatment of AIDS and hepatitis B and have significantly improved lives of millions of people around the globe.

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**The Institute of Physical Chemistry of the Polish Academy of Sciences / IPC PAS ([www.ichf.edu.pl](http://www.ichf.edu.pl))** was established in 1955 as one of the first chemical institutes of the PAS. The Institute's scientific profile is strongly related to the newest global trends in the development of physical chemistry and chemical physics. Scientific research is conducted in nine scientific departments. CHEMIPAN R&D Laboratories, operating as part of the Institute, implement, produce and commercialise specialist chemicals to be used, in particular, in agriculture and pharmaceutical industry. The Institute publishes approximately 200 original research papers annually.

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**PRESS CONTACTS:**

Dušan Brinzanik (IOCB Prague / Communications): [dusan.brinzanik@uochb.cas.cz](mailto:dusan.brinzanik@uochb.cas.cz), mob: +420 731 609 271

Prof. Pavel Jungwirth (IOCB Prague): [pavel.jungwirth@uochb.cas.cz](mailto:pavel.jungwirth@uochb.cas.cz)

Prof. Robert Holyst (IPC PAS): [holyst@ichf.edu.pl](mailto:holyst@ichf.edu.pl)