



CONFERENCE
**MULTIDISCIPLINARY APPROACH TO STRUCTURAL BIOLOGY
FROM MACROMOLECULES TO CELLS**
Poznan Science Center
Wieniawskiego 17/19, Poznan, Poland
March 6-7, 2015



Department of Crystallography - Center for Biocrystallographic Research at the Institute of Bioorganic Chemistry, Polish Academy of Sciences in Poznan organises on 6-7 March 2015 a conference “**Multidisciplinary Approach to Structural Biology. From Macromolecules to Cells**”. The meeting will bring together representatives of leading Polish research institutions dedicated to various aspects of structural biology and using state-of-the-art techniques. The purpose of the conference is to take stock of structural biology in Poland, as well as a presentation of our research community and infrastructure to the European consortium “**Instruct**”, with the prospect of joining the consortium.

“**Instruct**” provides researches with access to modern infrastructure and expertise throughout Europe and encourages multi-disciplinary approach in order to build an integrated model of the cell. Presently, “**Instruct**” has 2618 members and 16 Instruct Centres in 11 countries. It also provides short-term internships for young scientists in leading research laboratories.

“**Instruct**” will be represented by its director, prof. David Stuart from Oxford University, and representatives from other member states.

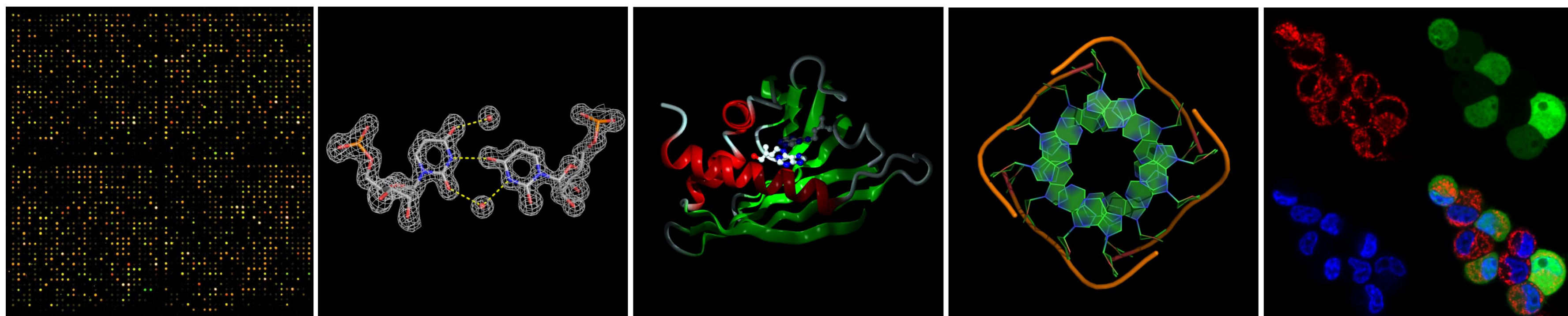
For detailed information about “**Instruct**” please go to: <http://www.structuralbiology.eu>

Organising Committee

Wojciech Rypniewski, Mariusz Jaskólski, Michał M. Sikorski

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Invited Speakers

Prof. David Stuart - special Instruct guest - Oxford University, London, UK

Prof. Marek Figlerowicz - Director of the Institute of Bioorganic Chemistry, Polish Academy of Sciences Poznań, Poland

Dr. Krzysztof Brzeziński - University of Białystok, Białystok, Poland

Dr. Honorata Czapińska - International Institute of Molecular and Cell Biology, Warszawa, Poland

Prof. Michał Dadlez - Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warszawa, Poland

Dr. Grzegorz Dubin - Jagiellonian University, Kraków, Poland

Prof. Tadeusz Holak - Jagiellonian University, Kraków, Poland

Dr. Agnieszka Kiliszek - Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznań, Poland

Prof. Maciej Kozak - Adam Mickiewicz University, Poznan, Poland

Prof. Paweł P. Liberski - Medical University of Lodz, Łódź, Poland

Prof. Barbara Nawrot - Department of Bioorganic Chemistry, Polish Academy of Sciences, Łódź, Poland

Dr. Izabela Sierocka - Adam Mickiewicz University, Poznań, Poland

Joanna Śliwiak - Institute of Bioorganic Chemistry, Polish Academy of Sciences Poznań, Poland

Dr. Anna Urbanowicz - Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznań, Poland

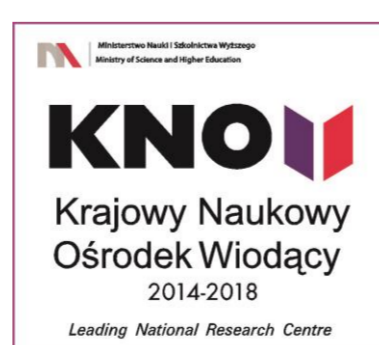
Prof. Krzysztof Woźniak - Warsaw University, Warszawa, Poland

Dr. Mirosław Zarebski - Jagiellonian University, Kraków, Poland

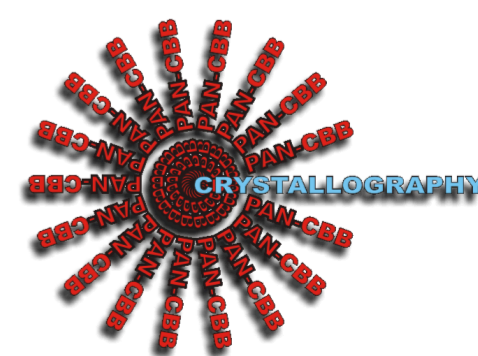
Organized by:



Institute of Bioorganic Chemistry
Polish Academy of Sciences
Poznan, Poland



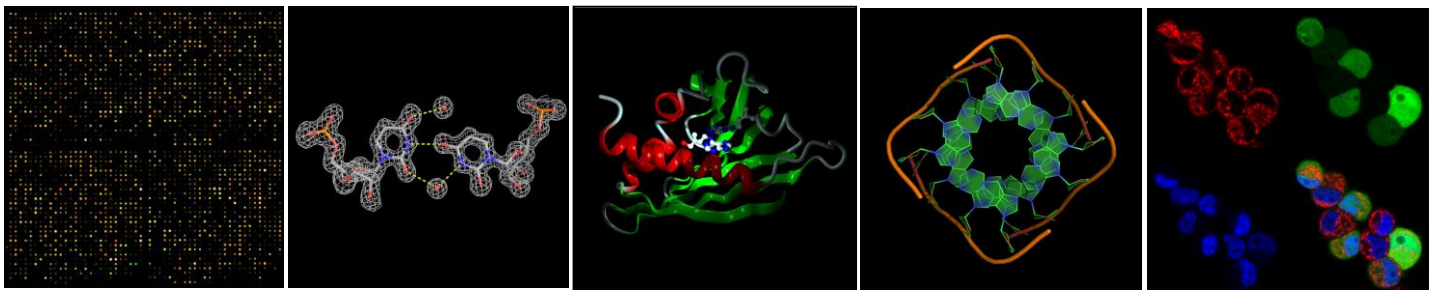
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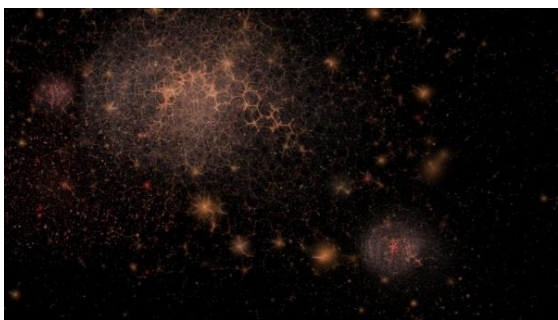


MULTIDISCIPLINARY APPROACH TO STRUCTURAL BIOLOGY FROM MACROMOLECULES TO CELLS

PROGRAMME

Friday, March 6, 2015

08:30 – 8:45	Wojciech Rypniewski - General remarks
08:45 – 9:00	Marek Figlerowicz - Director of the Institute - Research at the Institute of Bioorganic Chemistry
09:00 – 9:30	David Stuart - special Instruct guest
09:30 – 10:00	Maciej Kozak - Polish synchrotron SOLARIS and its potential in Bio-SAXS applications
10:00 – 10:30	Honorata Czapińska - Structural studies of restriction-modification systems
10:30 – 10:50	Coffee break
10:50 – 11:20	Krzysztof Woźniak - Crystallography beyond Independent Atom Model
11:20 – 11:50	Michał Dadlez - Approach to structures of difficult protein targets by hydrogen-deuterium exchange/mass spectrometry analysis - new clothes for the old emperor
11:50 – 12:20	Tadeusz Holak - Monitoring the Antagonist-Protein and Protein-Protein Interactions with NMR Spectroscopy: Inhibitors of the p53-Mdm2 Interaction
12:20 – 12:50	Barbara Nawrot - Synthetic oligonucleotides as molecular tools for applications in cell biology
12:50 – 14:00	Lunch
14:00 – 14:30	Paweł P. Liberski - Prions, prionoids and misfolded proteins
14:30 – 14:50	Mirosław Zarębski - Subcellular Cytometry - Quantitative 3-D Analysis of Discrete Subcellular Structures and Events
14:50 – 15:10	Grzegorz Dubin - Structural and functional analysis of Spl proteases from <i>S. aureus</i>
15:10 – 15:30	Joanna Śliwiak - Protein-ligand- interactions - structural and biophysical studies
15:30 – 15:50	Agnieszka Kiliszek - Crystallographic studies of toxic RNA
15:50 – 16:10	Izabela Sierocka - High-throughput platforms for RNA analyses in the Institute of Molecular Biology and Biotechnology at the Faculty of Biology, Adam Mickiewicz University, Poznan
16:10 – 16:30	Coffee break
16:30 – 16:50	Anna Urbanowicz - TROSPA from <i>Ixodes ricinus</i> - the first intrinsically disordered protein involved in specific vector-microbe recognition
16:50 – 17:10	Krzysztof Brzeziński - Structural and biochemical characterization of archaeal type S-adenosyl-L-homocysteine hydrolases
17:10 – 18:00	Discussion



The Conference accompanying event

„Microscope”

Joanna Hoffmann-Dietrich

Sound composition: Andre Bartetzki

Joanna Hoffmann, a renowned Polish artist sharing her life between Poznan & Berlin. She is Professor (Dr.hab) of the University of Arts in Poznan and leader of the Studio for Transdisciplinary Projects and Research. She is also the Chair of Art & Science Node in Berlin. Joanna Hoffmann's transdisciplinary works combine art, science and technology. Her use of multimedia installations, 3d stereoscopy, experimental video animation and other media explore the visualization of molecular as well as cosmic space. Her work relates to advanced scientific research on the phenomenon of life and to the interplay between scientific and cultural, sensual and illusive, digital and biological, natural and synthetic. www.johoffmann.com

“**Microscope**” brings together a few threads of artistic research being developed within the frame of the long-term project „Hidden Topologies of Being” inspired by the origin and complex geometry of protein molecules, named "basic bricks of life". *“Proteins are associated mostly with cellular robots. For me however, as an ‘assembly of proteins’ a protein molecule became a key to explore relations between micro and macro scales of my existence, a unique unite of my “space-time”[...]*

The artistic presentation „**Microscope**” accompanying the Conference "Multidisciplinary Approach to Structural Biology. From Macromolecules to Cells" embraces:

πρωτεο/ Proteo hologram-like animation

The work's title refers to the Greek root of the word protein (Gr. πρωτεῖος *the first, in the lead*) as well as to the philosophical tradition of searching for *arche* – the essence of the physical world. *Πρωτεο / Proteo* is an animation portraying a cloud of particles creating a mini-universe folded in the form of Calabi-Yau space, in which, according to superstring theory, successive dimensions of our world are “curled up” at the subatomic level. Giving birth to a convoluted protein molecule and its dynamic molecular 'dance of life', it brings to mind a question about the relations between the energy, matter and form.

“If the scientific hypothesis about multi-dimensional nature of the world is true, then these hidden spaces are everywhere, in each ‘point’ of the space outside as well as inside us. (...) One day, maybe, our brain will be able to perceive how we exist in the multidimensional universe. For the time being, we have only our imagination in command and enormous diversity of protein globules, each of them suggesting, in other scale, a blister of some world.”

“**Microscope**” 3D multimedia installation

The 3D multimedia installation is based on scientific data of molecular structures and transcribed by the artist into a computer animation. The work, in tandem with Andre Bartetzki's sound composition, relates specifically to the viewer's body and present itself as an artistic study on space and existence.

By using technologies as diverse as Pepper's ghost (a forerunner of holography) and 3D video, Hoffmann's work merges interpretations of scientific data, image, sound and poetry. “**Microscope**” poses questions about the challenges and boundaries of our cognition creating an emotional bridge between our sensual experiences and abstractness of contemporary science.