

# 4<sup>th</sup> Central European Biomedical Congress, Kraków, Poland, June 7-9, 2021

## *“Impact of bioinformatics and omics on biology and medicine”*

Date	Time	Event	Chair
June 7, 2021	09.00 - 9.10 a.m.	<b>Welcome message</b>	Chairs: Honorary Committee & Organizing Committee
	9.10 - 10.00 a.m. 10.00 – 10.10 a.m. chat A	<b>Plenary lecture 1</b> <b>Inaugural lecture</b>  <b>Francesco Pavone</b> University of Florence, Florence, Italy <i>Human brain optical mapping</i>	Professor Władysław Lasoń, PhD
	10.30 a.m.– 12.20 p.m. 12.20 – 12.30 p.m. chat A	<b>Session 1</b>  <b>Covid-19 pandemic</b>	Professor Marek Sanak, PhD
	10.30 a.m. – 12.20 p.m. 12.20 – 12.30 p.m. chat B	<b>Session 2</b>  <b><i>Chem- and bioinformatics in drug design</i></b>  <b>S.02-1</b> <b>Didier Rognan</b> Université de Strasbourg, Strasbourg, France <i>Designing a truly unbiased dataset for machine learning and virtual screening</i>  <b>S.02-2</b> <b>Johannes Kirchmair</b> University of Vienna, Vienna, Austria <i>Computational methods for flagging compounds likely to cause false outcomes in biological assays</i>  <b>S.02-3</b> <b>Tomasz Rzymiski</b> Ryvu Therapeutics, Kraków, Poland <i>Identification of Actionable Protein Targets for Cancer Therapy by Integrated Analysis of Next-Generation Sequencing Data and High-Content Genomic Interrogation Screens</i>	Professor Andrzej Bojarski, PhD

	<p><b>S.02-4</b>  <b>Anna Karawajczyk</b>  Selvita S.A., Kraków, Poland</p>	
<p>1.00 – 2.50 p.m.  2.50 – 3.00 p.m. chat  A</p>	<p><b>Session 3</b>  <i>Clinical genomics</i></p> <p><b>S.03-1</b>  <b>Rafał Płoski</b>  Medical University of Warsaw, Warsaw, Poland  <i>Whole exome and genome sequencing for discovery of novel human diseases</i></p> <p><b>S.03-2</b>  <b>Maciej Giefing</b>  Institute of Human Genetics Polish Academy of Sciences, Poznan, Poland  <i>New (epi)genetic diagnostic tools for cancer - liquid biopsy and beyond</i></p> <p><b>S.03-3</b>  <b>Maria M. Sąsiadek</b>  Wroclaw Medical University, Wrocław, Poland  <i>Multigene panel testing in oncology clinical practice - pros and cons</i></p> <p><b>S.03-4</b>  <b>Arkadiusz Piotrowski</b>  Medical University of Gdańsk, Gdańsk, Poland  <i>Somatic driver mutations in normal mammary tissue from breast cancer patients – incidental or causal?</i></p>	<p>Michał Korostyński, PhD  Michał Dąbrowski, PhD</p>
<p>1.00 – 2.50 p.m.  2.50 – 3.00 p.m. chat  B</p>	<p><b>Session 4</b>  <i>Discovery of biomarkers in mental disorders</i></p> <p><b>S.04-1</b>  <b>Gordana Nedic Erjavec</b>  Rudjer Bošković Institute, Zagreb, Croatia  <i>Biomarkers of schizophrenia</i></p> <p><b>S.04-2</b>  <b>Rebecca Strawbridge</b>  King's College London, London, UK  <i>What's the use of biomarkers for depression?</i></p>	<p>Bernadeta Szewczyk, PhD  Andreas Grabrucker, PhD</p>

		<p><b>S.04-3</b>  <b>Andreas Grabrucker</b>  University of Limerick, Limerick, Ireland  <i>Zinc deficiency and affected signalling networks as biomarkers and causative factors of Autism Spectrum Disorders</i></p>	
3.30 – 5.20 p.m. 5.20 – 5.30 p.m. chat A	<p><b>Session 5</b>  <i>Presentations from ERC grant awardees</i></p> <p><b>S.05-1</b>  <b>Maja Jagodic</b>  Karolinska Institutet, Stockholm, Sweden  <i>Applied epigenomics: insights into the pathogenesis of Multiple Sclerosis</i></p> <p><b>S.05-2</b>  <b>Jan Gründemann</b>  University of Basel, Basel, Switzerland  <i>Imaging deep: Sensory and state coding in subcortical circuits</i></p> <p><b>S.05-3</b>  <b>Ewelina Knapska</b>  Nencki Institute of Experimental Biology of Polish Academy of Sciences,  Warsaw, Poland</p>	Jan Manuel Rodriguez Parkitna, PhD	
9.00 a.m. – 5.30 p.m.	<b>Poster session</b>		

Date	Time	Event	Chair
June 8, 2021	9.00 – 9.10 a.m.	Opening of the 2 <sup>nd</sup> day of the CEBC	
	9.10 – 11.00 a.m. 11.00 – 11.10 a.m. chat A	<p><b>Session 6</b> <i>Perspectives for therapy of treatment-resistant depression</i></p> <p><b>S.06-1</b> <b>Wiesław J. Cubala</b> Medical University of Gdansk, Poland <i>New developments in understanding mechanisms of drug resistance in the treatment of depression</i></p> <p><b>S.06-2</b> <b>Łukasz Świącicki</b> Institute of Psychiatry and Neurology, Warsaw, Poland <i>Somatic therapies for treatment-resistant depression: ECT, TMS, VNS, DBS</i></p> <p><b>S.06-3</b> <b>Paul Willner</b> Swansea University, Swansea, UK <i>Pharmacological and optogenetic studies on mechanisms of resistance to antidepressant drugs in animal models of treatment-resistant depression</i></p> <p><b>S.06-4</b> <b>Adrian Newman-Tancredi</b> Neurolix Inc., Wilmington, DE 19808, USA <i>Cortical 5-HT<sub>1A</sub> receptor biased agonism - a novel mechanism for effective therapy of treatment-resistant depression</i></p>	Professor Mariusz Papp, PhD
	9.10 – 11.00 a.m. 11.00 – 11.10 a.m. chat B	<p><b>Session 7</b> <i>Neuroimaging – beyond the structure</i></p> <p><b>S.07-1</b> <b>Bogdan Draganski</b> University of Lausanne, Lausanne, Switzerland <i>MRI-based in vivo histology - myth or reality</i></p>	Professor Joanna Pera, PhD, Professor Tadeusz Marek, PhD

	<p><b>S.07-2</b>  <b>Adrian Chrobak</b>  Jagiellonian University Medical College, Krakow, Poland  <i>Time-frequency dynamics of resting state in euthymic bipolar disorder patients - a preliminary fMRI study</i></p> <p><b>S.07-3</b>  <b>Anna Ceglarek</b>  Jagiellonian University, Krakow, Poland  <i>Reduced regional homogeneity after intraocular lens (IOL) implantation - resting-state fMRI study</i></p> <p><b>S.07-4</b>  <b>Anna Sobczak</b>  Jagiellonian University, Krakow, Poland  <i>Functional connectivity differences in Salient Network among euthymic bipolar disorder patients in regard to suicide risk; a preliminary fMRI study</i></p>	
11.30 a.m.– 12.20 p.m. 12.20 – 12.30 p.m. chat A	<p><b>Plenary lecture 2</b></p> <p><b>Professor Francesco Battaglia</b>  Radboud University, Nijmegen, The Netherlands  <i>The lifetime of memories: processing and reprocessing of information in the brain</i></p>	Professor Małgorzata Filip, PhD
1.00 – 2.50 p.m. 2.50 – 3.00 p.m. chat A	<p><b>Session 8</b>  <i><b>The role of serotonin in neurodevelopmental disorders</b></i></p> <p><b>S.08-1</b>  <b>Judith Homberg</b>  Radboud University, Nijmegen Medical Centre, Nijmegen, the Netherlands  <i>The role of serotonin in brain development and behaviour: the SSRI and efavirenz cases</i></p> <p><b>S.08-2</b>  <b>Francesca Calabrese</b>  University of Milan, Milan, Italy  <i>Stress exposure as a risk factor for the development of psychiatric disorders: a role for the serotonergic system</i></p>	Professor Piotr Popik, PhD Agnieszka Nikiforuk, PhD

	<p><b>S.08-3</b>  <b>Natalia Alenina</b>  Max Delbrück Center for Molecular Medicine, Berlin, Germany  <i>Maternal and central serotonin: contribution to the early development in rodents</i></p> <p><b>S.08-4</b>  <b>Markus Wöhr</b>  Philipps-University of Marburg, Marburg, Germany  <i>Affective communication in rodents: serotonin and its modulating role in ultrasonic vocalizations</i></p>	
1.00 – 2.50 p.m. 2.50 – 3.00 p.m. chat B	<p><b>Session 9</b>  <i>Biological context of bipolar disorder</i></p> <p><b>S.09-1</b>  Dominika Dudek  Jagiellonian University Medical College, Krakow, Poland  <i>Chronobiology and social rhythms in bipolar disorders</i></p> <p><b>S.09-2</b>  Janusz Rybakowski  Poznan University of Medical Sciences, Poznan, Poland  <i>Lithium: mechanisms of action in association with BD neurobiology</i></p> <p><b>S.09-3</b>  Marcin Siwek  Jagiellonian University Medical College, Krakow, Poland  <i>Biomarkers of staging in BD</i></p> <p><b>S.09-4</b>  Adrian Chrobak  Jagiellonian University Medical College, Krakow, Poland  <i>Neurocognitive and motor deficits in BD – neuroimaging and clinical studies</i></p>	Professor Dominika Dudek, MD
3.30 – 5.30 p.m.	Workshops	
9.00 a.m. – 5.30 p.m.	<b>Poster session</b>	

Date	Time	Event	Chair
June 9, 2021	9.00 – 9.10 a.m.	Opening of the 3 <sup>rd</sup> day of the CEBC	
	9.10 – 10.00 a.m. 10.00 – 10.10 chat A	<b>Plenary lecture 3</b>  <b>Professor, Jacek R. Wiśniewski, PhD</b> Max Planck Institute of Biochemistry, Martinsried, Germany <i>Large scale proteomics for understanding biological systems</i>	
	10.20 a.m. – 12.10 p.m. 12.10 – 12.20 p.m. chat A	<b>Session 10</b> <p style="text-align: center;"><i>Computational personalised medicine</i></p> <b>S.10-1</b> <b>Marian Bubak</b> Sano Centre for Computational Medicine, Krakow and AGH University of Science and Technology, Krakow, Poland  <b>S.10-2</b> <b>Róża Szweda</b> Lukasiewicz Research Network –PORT, Polish Centre of Technology Development, Wrocław, Poland <i>Sequence-defined polymers – a next generation data storage medium</i>  <b>S.10-3</b> <b>Zbigniew Szewczuk</b> University of Wrocław, Wrocław, Poland <i>Using markers in targeted diagnostics</i>	Marian Bubak, PhD Przemysław Mielczarek, PhD
	10.20 a.m. – 12.10 p.m. 12.10 – 12.20 p.m. chat B	<b>Session 11</b> <p style="text-align: center;"><i>Genes affect your risk for addiction</i></p> <b>S.11-1</b> <b>Lucia Caffino</b> Università degli Studi di Milano, Milano, Italy <i>Effects of cocaine self-administration on neuroplastic mechanisms: evidence from rats lacking the serotonin transporter</i>	Małgorzata Frankowska, PhD Irena Smaga-Maślanka, PhD

	<p><b>S.11-2</b>  <b>Judith Homberg</b>  Radboud University Medical Center, Nijmegen, The Netherlands  <i>The neural mechanisms driving the transition from regular to compulsive cocaine intake in rats lacking the serotonin transporter</i></p> <p><b>S.11-3</b>  <b>Liubov Kalinichenko</b>  University Clinic, Friedrich-Alexander-University of Erlangen-Nuremberg, Erlangen, Germany  <i>Sphingolipids in depression-induced alcoholism</i></p> <p><b>S.11-4</b>  <b>Giuseppe Giannotti</b>  University of Colorado Denver, Aurora, CO, USA  <i>Paraventricular thalamic control of opioid withdrawal and relapse</i></p>	
1.00 – 1.50 p.m. 1.50 – 2.00 p.m. chat A	<p><b>Plenary lecture 4</b>  <b>Professor, David E. Nichols, PhD</b>  Purdue University College of Pharmacy, West Lafayette, LA, USA  <i>Psychedelic Research in the 21st Century</i></p>	Professor Krystyna Gołembiowska, PhD
2.30 – 4.20 p.m. 4.20 – 4.30 p.m. chat A	<p><b>Session 12</b>  <i>Novel views on psychoactive and addictive drugs</i></p> <p><b>S.12-1</b>  <b>Kathryn A. Cunningham</b>  University of Texas Medical Branch, Galveston, USA  <i>Defining and Mining Therapeutic Targets in Psychostimulant Use Disorders</i></p> <p><b>S.12-2</b>  <b>Nicola Simola</b>  University of Cagliari, Cagliari, Italy  <i>The novel psychoactive substance methoxetamine induces persistent behavioral abnormalities and neurotoxicity: a study in rats</i></p> <p><b>S.12-3</b>  <b>Nicholas Pintori</b>  University of Verona, Verona, Italy  <i>Dopamine system dysregulation, glial cells alteration, and behavioral correlates after repeated exposure to the synthetic cannabinoid receptor agonist JWH-018</i></p>	Professor Krystyna Gołembiowska, PhD Professor Kathryn A. Cunningham, PhD



	<p><b>S.12-4</b>  <b>Giulia Costa</b>  University of Cagliari, Cagliari, Italy  Mechanisms and neurotransmitter systems involved in the neurotoxic effects of 3,4-methylenedioxymethamphetamine (MDMA) administration during adolescence.</p>	
<p>2.30 –4.20 p.m.  4.20 – 4.30 p.m. chat  B</p>	<p><b>Session 13</b>  <i>Endocannabinoid signaling in health and disease</i></p> <p><b>S.13-1</b>  <b>Vincenzo Di Marzo</b>  Université Laval, Canada, Italy  <i>Bidirectional interaction between the gut microbiome and the endocannabinoidome</i></p> <p><b>S.13-2</b>  <b>Martin Kaczocha</b>  Stony Brook University, NY, USA  <i>FABP5 as a Trans-Synaptic Carrier for Endocannabinoids</i></p> <p><b>S.13-3</b>  <b>Beat Lutz</b>  University Medical Center of the Johannes Gutenberg, University Mainz, Mainz, Germany  <i>Anandamide Signaling in Stress Coping: For Good or Bad?</i></p>	<p>Katarzyna Starowicz - Bubak, PhD</p>
<p>4.45 – 5.45 p.m.  A</p>	<p><b>Session 14</b>  <i>Young scientific investigators' session</i></p> <p><b>S.14-1-10</b></p>	<p>Rafał Ryguła, PhD  Karolina Noworyta, PhD</p>
<p>5.45 – 6.00 p.m.</p>	<p>Closing &amp; Award ceremony</p>	<p>Professor Małgorzata Filip, PhD  Professor Joanna Pera, PhD</p>