PROFILE FOR INSTITUTE WEBSITE

Current photo in graphic file e.g. 2024, 2023.	
Name and surname, Title	**Mariusz Sacharczuk**
Position	Professor
Hirsch Index and Number of citations (according to Scopus) on the day of completing the form	Hirsch Index: 17, Number of citations (according to Scopus): 931
Research areas (in points, min. 200 characters, max. 500 characters)	– Genetics (animal and human genetics) – Neurobiology (depression, addiction, neurodegenerative diseases) – Oncology – Gastroenterology (inflammatory bowel diseases) – Translational medicine
Total number of completed research projects; currently implemented research projects (title and number) and selected max. 3 completed projects (title and number) from the newest ones, i.e. 2024, 2023, 2022…	– 2P05A13029 - Assessment of the genetic background of depressive-like behaviors in the laboratory mouse by using genetic marker and gene expression analyses -2005-2008 - Principal Investigator – UMO-2014/13/B/NZ4/01179 - Activity of the opioid system in the pathogenesis and therapy of inflammatory bowel diseases in mice with high and low sensitivity to stress. – Participation in the project „ Red blood cell distribution width (RDW) as a risk factor of myocardial infarction and stroke” – Warsaw Medical University. – BASTION “From Basic to Translational Research in Oncology”
Total number of publications; ORCID (number and hyperlink to the profile); SCOPUS (number and hyperlink to the profile); indicate selected publications (max. 5)	– ORCID (78, https://orcid.org/0000-0002-6309-5292) – Scopus (82, https://www.scopus.com/authid/detail.uri?authorId=6506134744) Łazarczyk M, Mickael ME, Skiba D, Kurzejamska E, Ławiński M, Horbańczuk JO, Radziszewski J, Fraczek K, Wolinska R, Paszkiewicz J, Religa P, Sacharczuk M. The Journey of Cancer Cells to the Brain: Challenges and Opportunities. Int J Mol Sci. 2023 Feb 14;24(4):3854. doi: 10.3390/ijms24043854

	Lazarczyk M, Duda K, Mickael ME, Ak O, Paszkiewicz J, Kowalczyk A, Horbańczuk JO, Sacharczuk M. Adera2.0: A Drug Repurposing Workflow for Neuroimmunological Investigations Using Neural Networks. Molecules. 2022 Sep 30;27(19):6453. doi: 10.3390/molecules27196453 Ananthaseshan S, Bojakowski K, Sacharczuk M, Poznanski P, Skiba DS, Prahl Wittberg L, McKenzie J, Szkulmowska A, Berg N, Andziak P, Menkens H, Wojtkowski M, Religa D, Lundell F, Guzik T, Gaciong Z, Religa P. Red blood cell distribution width is associated with increased interactions of blood cells with vascular wall. Sci Rep. 2022 Aug 11;12(1):13676. doi: 10.1038/s41598-022-17847-z Lesniak A, Poznański P, Religa P, Nawrocka A, Bujalska-Zadrozny M, Sacharczuk M. Loss of Brain-Derived Neurotrophic Factor (BDNF) Resulting From Congenital- Or Mild Traumatic Brain Injury-Induced Blood-Brain Barrier Disruption Correlates With Depressive-Like Behaviour. Neuroscience. 2021 Mar 15:458:1-10. doi: 10.1016/j.neuroscience.2021.01.013 Poznanski P, Lesniak A, Korostynski M, Sacharczuk M. Ethanol consumption following mild traumatic brain injury is related to blood-brain barrier permeability. Addict Biol. 2020 Jan;25(1):e12683. doi: 10.1111/adb.12683.
Total number of patents; selected patents (max. 2) and a hyperlink to personal patent achievements (UP RP), on the day of completing the form	– Patent: Lang B, Lipkowski AW, Sacharczuk M, Salinska E. 2013 Enzymatic hydrolysate of proteins of animal tissue of nervous system for use in treatment of memory disorders. NAPCO SARL. Patent no. WO2013098415-A1. – Patent: “Oleacein for treating or preventing diseases resulting from atherosclerotic plaques” nr patentu US 9.682.056 B2, EU “Use of oleacein, particularly from Ligustrum vulgare L.” –EP 13742600.3, PCT/IB2014/001940, P.413385, EP 15460037
Selected scientific achievements from the newest, i.e. 2023, 2022, 2021... (in points, min. 800 characters, max. 1000 characters)	1. Demonstration that both the genetically determined, increased stress susceptibility and chronic environmental stress conditions constitute factors predisposing to increased chromosomal aberration frequency and DNA damage 2. Indication of the critical role of the δ-opioid receptor C320T polymorphism on the stress-induced analgesia 3. Identification of the differences in functional opioid receptor activity associated with G-protein activation as the leading cause for the divergent opioid sensitivity caused by selective breeding. 4. Determining the role of the opioid system and blood-brain barrier in the pathogenesis of disorders associated with alcohol abuse, epilepsy, central nervous system (CNS) injuries and gastrointestinal disorders.

	5. Development of a central nervous system protein hydrolysate and the assessment of its effectiveness in the therapy of neurodegenerative diseases. 6. Explanation that that influenza vaccination partially protect people against SARS-CoV-2 infections and that flu-mediated cross-protective immunity significantly dampened the first SARS-CoV-2 outbreaks.
Number and list of defended PhD students from the latest, i.e. 2024, 2023, 2022...	– 4 – Opioid system activity in the pathogenesis and therapy of epilepsy in a mouse line model of high and low post-stress analgesia, 23/09/2020, dissertation author Anna Ruszczak – The role of the blood-brain barrier in the pathogenesis of ethanol dependence in mouse lines selected for high and low post-stress analgesia, 07/03/2019, dissertation author Piotr Poznanski – Mapping QTLs conditioning analgesia and thermoregulatory and metabolic performance in mouse lines selected for high and low stress sensitivity, 15/11/2017, dissertation author Kamila Fedorowicz – Differentiation of inoculated melanoma progression in mouse lines selected for high and low stress sensitivity, 25/06/2015, dissertation author Agnieszka Renata Ragan
Organizational activities, dissemination of knowledge and others (in points, min. 300 characters, max. 1000 characters)	– My contribution to the popularization of science was fulfilled not only by publication of original scientific work, but also by preparing popular science articles in Neurologia i Neurochirurgia Polska, Prace i Materiały Zootechniczne, Kosmos, Wszechświat – Presenting scientific results on the Academic Internet Television Network (ATVN) and giving invited lectures on conferences for physicians, veterinary physicians and other public health professionals. ATV broadcasts were an important contribution to popularizing my scientific work by presenting the latest information on human neurogenesis or safety of antibiotic and hormone use in animal Production – On behalf of the scientific community, I also delivered my expertise to the government subcommittee regarding the medical use of cannabinoids. – Additionally, I actively take part in organizing conferences and seminars like the Multidisciplinary Conference on Drug Research. – I was a member of the organizing committee of the 'Opioid Expert Group' at the Mossakowski Medical Research Centre Polish Academy of Sciences in Warsaw and also presented recent results in the 'Clinical problems are a challenge to pharmacology' and 'Molecular modeling in opioid research' scientific panels. I was also invited to give lectures and presentations of my latest work by scientific institutions both at home and abroad