

PROFILE FOR INSTITUTE WEBSITE

Current photo in graphic file e.g. 2024, 2023.		
Name and surname, Title	Mariusz Pierzchała	
Position	Profesor	
Hirsch Index and Number of citations (according to Scopus) on the day of completing the form	Indeks Hirscha = 19 Liczba cytowań 1387	
Research areas (in points, min. 200 characters, max. 500 characters)	– Nutrigenomic research: Molecular basis of fatty acid metabolism (mainly at the level of mRNA and micro RNA expression) belonging to the omega-6 and omega-3 family - nutrigenomic studies on a pig and mouse model. Proteomic analyses of liver metabolism. Mass spectrometry (MS Maldi, TOF/TOF and MS ESI). – Model studies on the impact of hepatoprotective substances on the occurrence of metabolic disorders leading to the development of civilization diseases. Using the pig as an animal model to describe the deregulation of liver metabolism. – Epigenetic analyses – proteomic analyses. Regulation of epigenetic mechanisms. Changes in chromatin condensation levels, histone acetylation and methylation, and DNA methylation.	– –
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...	Head of 6 projects/tasks, Contractor of 17 projects – NCN Opus 18 (2020-2024) Identification and functional characterization of mtDNA mutations in mammary gland malignancies in dogs based on genomic, epigenomic and proteomic studies. coordinator of the research carried out by IGiBZ PAN, As part of the consortium with UP LUBLIN IGiBZ PAN - head of the IGiBZ PAS task – OPUS-22 LAP (2023-2025) Multilevel molecular analysis of the hepatoprotective effect of medicinal herbs extracts in prevention of liver dysfunction caused by aflatoxin B1 in pig as an animal model (in-vivo), and hepatocyte cell culture analysis in human and pig (in-vitro), part of the consortium, Nicolaus Copernicus University in Toruń, UP Lublin, WPUT Szczecin, UWM Olsztyn IGBZ PAN and FBN Dummerstorf Germany – task manager at IGiBZ PAN – Supervisor project "The effect of a diet with different levels of polyunsaturated fatty acids – omega6/3 on the metabolism of mouse liver" - proteomic analyses as part of KNOW "HEALTHY ANIMAL – SAFE FOOD", implementation period 2017-2019, for the amount of PLN 150,000, project manager – KBN/113/P06/2005/03 – "Expression profile of genes from the MyoD family and genes of GH and IGF1 growth factor receptors in skeletal muscle during the period of individual development of pigs differentiated by carcass meatiness" – implementation period 2005-2009,	– –

Total number of publications; ORCID (number and hyperlink to the profile); SCOPUS (number and hyperlink to the profile); indicate selected publications (max. 5)	Ogólna liczba Publikacji 250 https://orcid.org/0000-0001-7001-1336 , https://www.scopus.com/authid/detail.uri?authorId=6603710874 1. Liput KP, Lepczyński A, Ogłuszka M, Nawrocka A, Poławska E, Grzesiak A, Ślaska B, Pareek CS, Czarnik U, Pierzchała M. Effects of Dietary n-3 and n-6 Polyunsaturated Fatty Acids in Inflammation and Cancerogenesis. <i>Int J Mol Sci.</i> 2021 Jun 28;22(13):6965. doi: 10.3390/ijms22136965. PMID: 34203461; PMCID: PMC8268933. 2. Te Pas MF, Kruijt L, Pierzchała M, Crump RE, Boeren S, Keuning E, Hoving-Bolink R, Hortós M, Gispert M, Arnau J, Diestre A, Mulder HA. Identification of proteomic biomarkers in M. Longissimus dorsi as potential predictors of pork quality. <i>Meat Sci.</i> 2013 Nov;95(3):679-87. doi: 10.1016/j.meatsci.2012.12.015. Epub 2013 Jan 12. PMID: 23375457. 3. Szostak A, Ogłuszka M, Te Pas MF, Poławska E, Urbański P, Juszczuk-Kubiak E, Blicharski T, Pareek CS, Dunkelberger JR, Horbańczuk JO, Pierzchała M. Effect of a diet enriched with omega-6 and omega-3 fatty acids on the pig liver transcriptome. <i>Genes Nutr.</i> 2016 Mar 17;11:9. doi: 10.1186/s12263-016-0517-4. PMID: 27482299; PMCID: PMC4959555. 4. Ogłuszka M, Szostak A, Te Pas MFW, Poławska E, Urbański P, Blicharski T, Pareek CS, Juszczuk-Kubiak E, Dunkelberger JR, Horbańczuk JO, Pierzchała M. A porcine gluteus medius muscle genome-wide transcriptome analysis: dietary effects of omega-6 and omega-3 fatty acids on biological mechanisms. <i>Genes Nutr.</i> 2017 Jan 31;12:4. doi: 10.1186/s12263-017-0552-8. PMID: 28163789; PMCID: PMC5282897. 5. Pareek CS, Smoczyński R, Kadarmideen HN, Dziuba P, Błaszczuk P, Sikora M, Walendzik P, Grzybowski T, Pierzchała M, Horbańczuk J, Szostak A, Ogłuszka M, Zwierzchowski L, Czarnik U, Fraser L, Sobiech P, Wąsowicz K, Gelfand B, Feng Y, Kumar D. Single Nucleotide Polymorphism Discovery in Bovine Pituitary Gland Using RNA-Seq Technology. <i>PLoS One.</i> 2016 Sep 8;11(9):e0161370. doi: 10.1371/journal.pone.0161370. PMID: 27606429; PMCID: PMC5015895.	— —
Total number of patents; selected patents (max. 2) and a hyperlink to personal patent achievements (UP RP), on the day of completing the form	— 1	—

Selected scientific achievements from the newest, i.e. 2023, 2022, 2021... (in points, min. 800 characters, max. 1000 characters)	1. Pioneering research on the mapping of genes influencing the quality of pig carcasses within the framework of the "Polish Pig Genome Mapping Project" Polish Pig Genome Mapping Project 1999, and the international CT960902 project "Identification and mapping of candidate genes for carcass and meat quality in pig" – INCO-COPERNICUS – 2003, 2. Identification of candidate gene polymorphisms associated with porcine performance". 2005, 3. Development of transcriptomic profiles for genes related to muscle tissue development in different pig breeds 2009, 4. Identification of biomarkers of pork quality traits based on gene expression analysis within the European project "Q-PorkChains" 2011. 5. Nutrigenomic research - development of transcriptomic profiles related to supplementation with bioactive components of PUFAs feed as part of the "Biofood" 2014 project. 6. Model studies on the impact of bioactive components of diet on the occurrence of metabolic disorders, including deregulation of liver metabolism leading to the development of civilization diseases. 7. Genomic and proteomic analyses related to the development and progression of liver and mammary gland cancers. –	–
Number and list of defended PhD students from the latest, i.e. 2024, 2023, 2022...	• Magdalena Śmiech, PhD - PhD thesis entitled: The role of selected BRAF gene mutations on the development of liver cancer using a mouse model. at IGAB PAN – 2022. • Paweł Leszczyński, PhD – PhD thesis entitled: "The role of Prdm3 and Prdm16 in the process of stem cell self-renewal and neuronal differentiation. at IGAB PAN – 2022. • Agnieszka Szostak, Ph.D. , PhD thesis entitled: "Effect of a diet enriched with omega-6 and omega-3 fatty acids on the pig liver transcriptome". "Effect of a diet enriched with omega-6 and omega-3 fatty acids on the transcriptome of porcine liver". IGAB PAS - November 2020 • Kamila Stepanow, PhD - PhD thesis entitled: "The effect of a diet with varying levels of omega-6/omega-3 polyunsaturated fatty acids on the proteomic profile and liver metabolism" IGAB PAS in 2020 • Magdalena Ogłuszka, PhD thesis entitled: "The effect of diet supplemented with omega-6 and omega-3 fatty acids on the gene expression profile in the pig skeletal muscle tissue" IGAB PAS in 2017	–
Organizational activities, dissemination of knowledge and others (in points, min. 300 characters, max. 1000 characters)	Lectures for PhD students of IGBZ PAS • "Molecular genetics techniques used in animal breeding". 2009, 2011	–

	• Methods for studying the structure and function of genes, 2014-2022. • Epigenetic regulation of gene expression:" -2014-2022 Lectures at courses and conferences • The use of genomic markers in diagnostics": "Human Capital National Cohesion Strategy" Warsaw, 18.04.2010, 16.01.2011. • The influence of bioactive dietary components on gene expression in nutrigenomic and nutrigenetic studies". IV Polish Congress of Genetics, Poznań, 10.09.2013 • The use of molecular techniques in modern pig breeding VII Congress of Postgraduate Specialization Training "Pig Diseases" 3-4.03.2012 in Popielno • The genomics technologies on measuring genes expression". College of Food Science & Nutritional Engineering of China Agricultural University (CAU), Chiny, 21.10.2013 • Transcriptomics (NGS) and Proteomics (Mass Spectrometry) in functional genomics. INRA, UR1213 Herbivores, 63122 Saint-Genes-Champanelle, Francja, sierpień 2013 • Genomics in the selection of farm animals". VIII Winter School of Pig Breeders, Ustroń, 18.02.2015 • "PUFA diet supplementation influence on hepatic and muscle transcriptomic profile on pig animal model", Harvard Medical School (HMS), Boston 06.06-2016. Organization of conferences and workshops • Centre of Excellence ANIMBIOGEN in EU IGiHZ PAN Jastrzębiec: – Gene polymorphisms affecting health and production traits in farm animals"2-3.10.2003. – Functional genomics and its application in meat and milk quality"22-23.10.2009. – Methods of gene expression measurement in animal breeding and quality of animal products"18-22.10.2010. • „I Havemeyer International Horse Genetic Diversity Workshop”, Wierzba, 15-18.08. 2005.	
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