Candidate supervisor's information summary form

Name and surname, degree, title: **prof. dr hab. Monika Rakoczy-Trojanowska**	
Discipline/ disciplines of science	Biological sciences
Professional development (degrees and titles) in chronological order	- Master of Science (MSc) -, 1980 - PhD, agricultural sciences - 1985 - Habilitated doctor, agricultural sciences - 1999 - Professor - 2007
Most important publications/patens over the last 3 years (maximum 10)	1. Wlazło A., Święcicka M, Koter MD, Krępski T. Bolibok L, Stochmal A, Kowalczyk M, Rakoczy-Trojanowska M. 2020. Genes ScBx1 and SclgI – competitors or cooperators? Genes 11: 223:1-19. 2. Bakera B, Święcicka M, Stochmal A, Kowalczyk M, Bolibok L, Rakoczy-Trojanowska M. 2020. Benzoxazinoids biosynthesis in rye (*Secale cereale* L.) is affected by low temperature. Agronomy 10: 1260. 3. Święcicka M, Dmochowska-Boguta M, Orczyk W, Grądzielewska A, Stochmal A, Kowalczyk M, Bolibok L, Rakoczy-Trojanowska M. 2020. Changes in benzoxazinoid contents and the expression of the associated genes in rye (*Secale cereale* L.) due to brown rust and the inoculation procedure. PLoS ONE 15(5): e0233807. 4. Rakoczy-Trojanowska M, Święcicka M, Bakera B, Kowalczyk M, Stochmal A, Bolibok L. 2020. Co-cultivating rye with berseem clover affects benzoxazinoid production and expression of related genes. Crop Sci 60: 3228-3246. 5. Rakoczy-Trojanowska M, Szabała BM, Różańska E, Kowalczyk M, Burza W, Święcicka M, Bakera B. 2021. The roots of rye (*Secale cereale* L.) are capable of synthesizing benzoxazinoids, International Journal of Molecular Sciences 22: 1-14 6. Tyrka M, Mokrzycka M, Tyrka D, Szeliga M, Stojałowski S, Matysik P, Rokicki M, Rakoczy-Trojanowska M, Krajewski P. 2021. Evaluation of genetic structure in European wheat cultivars and advanced breeding lines using high-density genotyping-by-sequencing approach, BMC Genomics 22: 1-17. 7. Tyrka M, Bakera B, Szeliga M, Święcicka M, Krajewski P, Mokrzycka M, Rakoczy-Trojanowska M. 2021. Identification of Rf genes in hexaploid wheat (*Triticum aestivum* L.) by RNA-Seq and Paralog Analyses, International Journal of Molecular Sciences.22: 9146 8. Rabanus-Wallace M, …, Rakoczy-Trojanowska M,…, Stein N. 2021. Chromosome-scale genome assembly provides insights into rye biology, evolution and agronomic potential. Nature Genetics 53: 564–573. 9. Puchta M, Groszyk J, Małecka M, Koter MD, Niedzielski M, Rakoczy-Trojanowska M, Boczkowska M. 2021. Barley seeds miRNome stability during long-term storage and aging.

	International Journal of Molecular Sciences. 22(9):4315. 10. Zajączkowska U, Denisow B, Łotocka B, Dołkin-Lewko A, Rakoczy-Trojanowska M. 2021. Spikelet movements, anther extrusion and pollen production in wheat cultivars with contrasting tendencies to cleistogamy. BMC Plant Biol 21: 136.
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	<u>defended doctoral dissertations</u> 1. Bolibok Hanna. Molecular analysis of reactions in in vitro culture of immature embryos and immature inflorescences of rye *Secale cereale* L. using microsatellite markers. 2005. 2. Gruszczyńska Anna. Molecular analysis of the reaction of immature embryos of rye (*Secale cereale* L.) in in vitro culture with particular emphasis on genes related to somatic embryogenesis. 2007. 3. Hromada-Judycka Aneta. GDDSC subtraction analysis of the reaction of immature embryos of rye (*Secale cereale* L.) in an in vitro culture. 2011. 4. Bakera Beata. Structural, expression and functional analysis of selected genes controlling the biosynthesis of hydroxamic acids in rye (*Secale cereale* L.). 2017. 5. Targońska Małgorzata. Assessment of genetic diversity in the genus Secale using different types of molecular markers. 2019
Project/grants achievements (from the last 10 years)	1. Development of molecular markers for effective selection of the forms of common rye (*Secale cereale* L.) with increased resistance to diseases and pre-harvest fouling of the National Centre for Research and Development, NCRD (PBS1). 2012-2016 2. Genetic and environmental determinants regulating biosynthesis of benzoxazinoids – key secondary metabolites of rye (*Secale cereale* L.). National Science Centre, NSC (Opus). 2016 - 2019 3. Identification, characteristics and maping of rye (*Secale cereale* L.) genes conferring resistance to brown rust caused by Puccinia recondita f. sp. secalis NSC (Opus). 2019-2023. <u>Managing packages in projects</u> 1. Integrated strategy for reactivation of Polish hybrid wheat breeding. WP2. Obtaining valuable components of parental heterosis hybrids. NCRD (BIOSTRATEG III). 2017 - 2022.
Topic – research problem – for which the candidate supervisor seeks a doctoral student	Identification and analysis of rye (*Secale cereale* L.) genes conferring resistance to brown rust, and siRNAs involved in the pathogenesis process.
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