

Candidate supervisor's information summary form

Name and surname, degree, title: Prof. dr Stanisław Karpiński	
Discipline/ disciplines of science	Biological Sciences
Professional development (degrees and titles) in chronological order	<p>The title of Professor of Biological Sciences - on September 25, 2009, awarded by the President of the Republic of Poland, Prof. zw. at SGGW in Warsaw</p> <p>Professor in the field of Plant Molecular Physiology - November 1999 - 2008 awarded by the Rector of Stockholm University, Stockholm, Sweden</p> <p>Priv. Docent (Swedish habilitation) in the field of Molecular Biology of Plants - November 1999 SLU Umea, Sweden</p> <p>PhD in Tree Cell and Plant Molecular Biology - May 1994 SLU Umea, Sweden</p>
Most important publications/patens over the last 3 years (maximum 10)	<ol style="list-style-type: none"> 1. Szechyńska-Hebda M, et al. Aboveground Plant-to-Plant Electrical Signaling Mediates Network Acquired Acclimation Plant Cell 2022 doi.org/10.1093/plcell/koac150 2. Witoń D, et al. MITOGEN-ACTIVATED PROTEIN KINASE4 impacts leaf development, temperature, and stomatal movement in hybrid aspen. Plant Physiol. 2021. DOI:10.1093/plphys/kiab186 3. Gawroński P, et al. CIA2 and CIA2-LIKE are required for optimal photosynthesis and stress responses in Arabidopsis thaliana. Plant J. 2021 105(3):619-638. doi: 10.1111/tpj.15058. 4. Czarnocka W, et al. Novel Role of JAC1 in Influencing Photosynthesis, Stomatal Conductance, and Photooxidative Stress Signalling Pathway in Arabidopsis thaliana. Front Plant Sci. 2020;11:1124. 5. Czarnocka W, et al. FMO1 Is Involved in Excess Light Stress-Induced Signal Transduction and Cell Death Signaling. Cells. 2020;9(10):2163. 6. Gawroński P, et al. Pausing of Chloroplast Ribosomes Is Induced by Multiple Features and Is Linked to the Assembly of Photosynthetic Complexes. Plant Physiol. 2018;176(3):2557-2569. 7. Górecka M, et al. Photosystem II 22kDa protein level a prerequisite for excess light-inducible memory, cross-tolerance to UV-C and regulation of electrical signaling. Plant Cell & Envir 42, (https://doi.org/10.1111/pce.13686). 8. Bernacki MJ, et al. LSD1, EDS1 and PAD4- dependent conditional correlation among salicylic acid, hydrogen peroxide, water use efficiency, and seed yield in Arabidopsis thaliana. Physiol Plant. 2018. doi: 10.1111/ppl.12863. 9. Bernacki MJ, et al. ENHANCED DISEASE SUSCEPTIBILITY 1 (EDS1) affects development, photosynthesis, and hormonal homeostasis in hybrid aspen (Populus tremula L. × P. tremuloides). J Plant Physiol. doi: 10.1016/j.jplph.2018.04.014. <p>*S.Karpiński is a senior correspondent author in all the above-mentioned publications</p>
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	<ol style="list-style-type: none"> 1. Ireneusz Ślesak (Z. Miszański supervisor, foreign co-supervisor. SK), 2001; 2. Christine Chi-Chen Chang (SK supervisor) University of Stockholm, 2005; 3. Alfonso Mateo (SK supervisor) University of Stockholm, 2005; 4. Per Mühlenbock (SK supervisor) University of Stockholm, 2006; 5. Marian Płaszycza (SK supervisor) 2008, PAN, Kraków; 6. Weronika Wituszyńska (SK supervisor) 2013, the Institute of Biophysics and Biochemistry PAS, Warsaw. Ph.D. The best PhD in Biology in Poland defended in 2013. FNP START special award;

	<p>7. Piotr Gawroński (SK supervisor) 2014, The Institute of Biophysics and Biochemistry PAS Warsaw; FNP START award ;</p> <p>8. Magdalena Górecka (supervisor of SK) 2014, the Institute of Biophysics and Biochemistry of the Polish Academy of Sciences, Warsaw;</p> <p>9. Paweł Burdiak, (SK supervisor) 2014, the Institute of Biophysics and Biochemistry of the Polish Academy of Sciences, Warsaw;</p> <p>10. Maciej J. Bernacki, (SK supervisor) 2020, Warsaw University of Life Sciences</p> <p>Current PhD students: Katarzyna Białas, Jakub Mielecki, Muhammad Kamran, Roshanak Zarrin Ghalami.</p>
<p>Project/grants achievements (from the last 10 years)</p>	<ol style="list-style-type: none"> 1. OPUS 20 (2021 – 2025). Unravelling molecular and physiological mechanisms of foliar temperature regulation during photoinhibition and its impact on retrograde cell death signalling and acclimatory responses in Arabidopsis. 2. Basic research program of MRIRW for biological progress in crop production (2020–2024). Precise phenomics, telemetry of modulated fluorescence and temperature of plants for modeling, optimization and acceleration of the rye breeding process (<i>Secale cereale</i> L.). 3. OPUS 15 (2019 – 2022). The new role of chloroplasts and PsbS-dependent non-photochemical quenching of absorbed energy and LSD1 regulon in retrograde signalling of cell death, cellular light memory and cross-tolerance to UV radiation in Arabidopsis. 4. Biostrateg 2 (24,5 million PLN) 2016 – 2020, Intelligent systems for breeding and cultivation of wheat, maize and poplar for optimized biomass production, biofuels and modified wood. 5. Maestro 6 (7 million PLN) (2015 – 2021) Novel molecular and cellular mechanisms of cell death regulation that depend on the chloroplast retrograde signalling and their influence on productivity and environmental stress tolerance in Arabidopsis thaliana. 6. NCBiR PBS3 (2015 – 2018). „Intelligent light systems for industrial plant production. 7. OPUS 6 (2014 – 2018). Identification and functional analysis of genes encoding putative factors involved in chloroplast to nucleus retrograde signalling during acclimatory and defense responses in Arabidopsis. 8. Welcome 2008/1 (6,7 million PLN) 2009-2014. Functional Analysis of Genetic, Molecular and Quantum Mechanisms that Regulate Plants Productivity and Biotechnologies for Cell Wall Degradation and Hydrogen Production.
<p>Topic – research problem – for which the candidate supervisor seeks a doctoral student</p>	<p>Topics of work: Regulation of photosynthesis and retroactive signals for network induction and systemic acquired acclimatization in plants or Regulation of leaf temperature during photosynthesis and light cell memory.</p> <p>High impact publications, cross-disciplinary work (molecular biology and biophysics).</p> <ol style="list-style-type: none"> 1. Graduate / final year student of biotechnology, biology, gardening or related direction 2. Basic knowledge of the methods of molecular genetics and bioinformatics 3. Skills to plan and execute experiments 4. Good work organization, motivation to work in science and willingness scientific development 5. Knowledge of the English language
<p><u>Contact details:</u> Faculty/Institute E-mail address, Tel.</p>	<p>Institute of Biology stanisław_karpinski@sggw.edu.pl 22 59 32174</p>