

## **CURRICULUM VITAE**

### *PERSONAL INFORMATION*

Name: Sylva Přerostová  
Birth: 15<sup>th</sup> January 1987  
Address: Pod Sokolovnou 319, Plánice 340 34, Czech Republic  
E-mail: [prerostova@ueb.cas.cz](mailto:prerostova@ueb.cas.cz)  
Nationality: Czech

### *EDUCATION*

- 2011 - **PhD student**, Department of Experimental Plant Biology, Faculty of Sciences, Charles University, Prague, programme: Plant Anatomy and Physiology, state exam fulfilled in 2014
- 2009 - 2011 **Mgr.** (graduate with honours), Department of Experimental Plant Biology, Faculty of Sciences, Charles University, Prague, programme: Plant Anatomy and Physiology, specialization: Molecular Biology and Biochemistry of Plants, thesis: Characterization of the PTEN domain of selected *Arabidopsis* class II formins
- 2006 - 2009 **Bc.**, Faculty of Sciences, Charles University, Prague, programme: Biology, thesis: Not all stresses are equal: comparing the response of plant cells to salt, osmotic and drought stress
- 2000 - 2006 Grammar School, Gymnázium Jaroslava Vrchlického in Klatovy

### *WORK EXPERIENCE*

- 2011 - PhD student at the Laboratory of Hormonal Regulations in Plants, Institute of Experimental Botany, Czech Academy of Sciences, Prague ([www.ueb.cas.cz](http://www.ueb.cas.cz)), research activity in the fields of: stress physiology, role of plant hormones in abiotic stress responses, regulation of hormone homeostasis

### *ABROAD EXPERIENCE*

- 4/2014, 4/2015 European Plant Phenotyping Network (EPPN), Forschungszentrum Jülich, Germany, project: Elucidation of the functions of the plant hormones cytokinins during the drought stress response in *Arabidopsis*
- 9/2016, 9//2017, 6/2018 Exchange research fellowship, Hungarian Academy of Sciences, Martonvásár, Hungary

### *TRAINING COURSES*

- 2011 Scientific Writing and Scientific Presentations workshops, Charles University, Prague
- 2013 Real-Time PCR course, SEQme s.r.o., Prague
- 2015 Practical Rhetoric and Presentation, Charles University, Prague
- 2017 Training School "Modelling in systems biology", COST action FA1405, Ljubljana, Slovenia, skills: analyses of omics datasets, software Orange

### *TEACHING*

Two-week course Pokročilé praktikum II (MC250C08), Department of Biochemistry, Charles University, Prague

### *GRANTS*

- 2014 – 2016 Charles University project GA UK (306714), project: Comparison of Phytohormone Metabolism in *Arabidopsis thaliana* and *Thellungiella halophila* – Two Model Plants with Different Tolerance to Salt Stress

### *LANGUAGES*

Czech – mother tongue  
English – active  
French – passive

### *LABORATORY SKILLS*

- Advanced PCR, DNA and RNA isolation, quantitative RT-PCR, sequencing, primer design, isolation of phytohormones for MS analysis, pH and conductivity measurement, chlorophyll fluorescence measurement, preparation of hydroponics, cultivation in-vitro
- Basics cloning, transfection, microscopy, protein isolation, measurement of antioxidant enzymes activity

### *PC SKILLS*

- Advanced MS Office, Photoshop, work with databases (TAIR, NCBI, UniProt, eFP Browser), BioEdit, on-line applications (e.g. The Sequence Manipulation Suite, Primer3, Heatmapper), work with internet
- Basics R, Genevestigator, PAST3

## LIST OF ALL PUBLICATIONS

### Published Scientific Articles (peer-reviewed)

Vankova R., Kosova K., Dobrev P., Vitamvas P., Travnickova A., Cvikrova M., Pesek B., Gaudinova A., **Prerostova S.**, Musilova J., Galiba G., Prasil I.T. (2014): Dynamics of cold acclimation and complex phytohormone responses in *Triticum monococcum* lines G3116 and DV92 differing in vernalization and frost tolerance level. *Environmental and Experimental Botany*, 101, 12-25. (IF 3.003)

Landa P., **Prerostova S.**, Petrova S., Knirsch V., Vankova R., Vanek T. (2015): The transcriptomic response of *Arabidopsis thaliana* to zinc oxide: a comparison of the impact of nanoparticle, bulk, and ionic zinc. *Environmental science and technology*, 49, 14537-14545. (IF 5.393)

Mazari K., Landa P., **Prerostova S.**, Muller K., Vankova R., Soudek P., Vanek T. (2016): Thorium impact on tobacco root transcriptome. *Journal of Hazardous Materials*, 325, 163-169. (IF 6.065)

Vankova R., Landa P., Podlipna R., Dobrev P., **Prerostova S.**, Langhansova L., Gaudinova A., Motkova K., Knirsch V., Vanek T. (2017): ZnO nanoparticle effects on hormonal pools in *Arabidopsis thaliana*. *Science of the Total Environment*, 593, 535-542. (IF 4.900)

Landa P., **Prerostova S.**, Langhansova L., Marsik P., Vanek T. (2017): Transcriptomic response of *Arabidopsis thaliana* (L.) Heynh. roots to ibuprofen. *International Journal of Phytoremediation*, 19, 695-700. (IF 1.770)

**Prerostova S.**, Dobrev P. I., Gaudinova A., Hosek P., Soudek P., Knirsch V., Vankova R. (2017): Hormonal dynamics during salt stress responses of salt-sensitive *Arabidopsis thaliana* and salt-tolerant *Thellungiella salsuginea*. *Plant Science*, 264, 188-198. (IF 3.437)

Landa P., Dytrych P., **Prerostova S.**, Petrova S., Vankova R., Vanek T. (2017): Transcriptomic response of *Arabidopsis thaliana* exposed to CuO nanoparticles, bulk material, and ionic copper. *Environmental Science & Technology*, 51, 10814-10824. (IF 6.198)

**Prerostova S.**, Dobrev P.I., Gaudinova A., Knirsch V., Korber N., Pieruschka R., Fiorani F., Brzobohaty B., Cerny M., Spichal L., Humplik J., Schurr U., Vankova R. (2018): Cytokinins: their role in molecular and growth responses to drought stress and re-watering in *Arabidopsis*. *Frontiers in Plant Science*, 9, 655. (IF 4.291)

**Prerostova S.**, Kramna B., Dobrev P.I., Gaudinova A., Marsik P., Fiala R., Knirsch V., Vanek T., Kuresova G., Vankova R. (2018): Organ-specific hormonal cross-talk in phosphate deficiency. *Environmental and Experimental Botany*, 153, 198-208. (IF 4.369)

### Submitted Articles

Landa P., Prerostova S., Langhansova L., Marsik P., Vanek T. (2018): Transcriptomic response of *Arabidopsis thaliana* roots to naproxen and praziquantel. *Ecotoxicology and Environmental Safety*, in revision. (IF 3.743)

## **Presentations on Conferences**

### ***Oral Presentations***

**Prerostova S., Dobrev P., Gaudinova A., Prochazkova D., Vankova R.:** Changes of phytohormone content in salt-sensitive *Arabidopsis* and halophyte *Thellungiella* during salt stress response. Paper presented at: The Society for Experimental Biology Conference (SEB), 2013 July 2-6, Valencia, Spain.

**Prerostova S., Dobrev P., Gaudinova A., Vankova R.:** Comparison of phytohormone metabolism in model plants with different tolerance to salt stress. Paper and poster session presented at: Utilization and protection of halophytes and salt-affected landscapes, 2013 September 4-6, Kecskemét, Hungary.

**Prerostova S., Dobrev P.I., Gaudinova A., Hosek P., Soudek P., Knirsch V., Vankova R.:** Hormonal dynamics during salt stress response of salt-sensitive *Arabidopsis thaliana* and salt-tolerant *Thellungiella salsuginea*. Paper presented at: Global Conference on Plant Science and Molecular Biology (GPMB), 2017 September 11-13, Valencia, Spain.

### ***Poster Presentations – active participation***

**Prerostova S., Dobrev P., Gaudinova A., Motyka V., Vankova R.:** Comparison of cytokinin, auxin and abscisic acid response during salt stress in salt-sensitive *Arabidopsis* and salt-tolerant *Thellungiella*. Poster session presented at: The 23rd International Conference on Arabidopsis Research (ICAR), 2012 July 3-7, Vienna, Austria, p. 93.

**Prerostova S., Dobrev P., Gaudinova A., Vankova R.:** Charakterizace rozdílné reakce halofytu *Thellungiella halophila* a *Arabidopsis thaliana* na solný stres. In: Hnilicka F. (ed.): Vliv abiotických a biotických stresorů na vlastnosti rostlin [brochure], Česká zemědělská univerzita v Praze, ISBN: 978-80-213-2357-5, 2013 February 13-14, Prague, Czech Republic, p. 222.

**Prerostova S., Dobrev P., Gaudinova A., Prochazkova D., Vankova R.:** Salt stress effects on phytohormone dynamics in salt-sensitive *Arabidopsis thaliana* and salt-tolerant *Thellungiella halophila*. Poster session presented at: Auxins and Cytokinins in Plant Development (ACPD), 2014 June 29 – July 4, Prague, Czech Republic, p.135.

**Přerostová S., Dobrev P., Gaudinová A., Procházková D., Vaňková R.:** Comparison of phytohormone metabolism between salt-sensitive *Arabidopsis thaliana* and salt-tolerant *Thellungiella halophila* during salt stress. Poster session presented at: 12<sup>th</sup> PhD Student Conference of Plant Experimental Biology, 2014 September 4-5, Olomouc, Czech Republic, p. 74.

**Prerostova S., Dobrev P.I., Gaudinova A., Hosek P., Knirsch V., Vankova R.:** Dynamic of phytohormones levels in *Arabidopsis thaliana* during moderate salt stress. Poster session

presented at: VISCEA Plant Abiotic Stress Tolerance III, 2015 June 29 – July 1, Vienna, Austria, p. 69.

Hošek P., **Prerostová S.**, Vaňková R.: Přehledné zobrazení velkého množství dat pomocí programu CircleGraph v1.14. Poster session presented at: 6. Metodické dny, 2014 October 19-22, Seč, Czech Republic.

**Prerostová S.**, Vanková R., Knirsch V., Dobrev P.I., Fiorani F., Koerber N., Pieruschka R., Brzobohaty B., Cerný M., Spichal L.: Elucidation of the functions of the plant hormones cytokinins during the drought stress response in *Arabidopsis*. Poster session presented at: Plant Phenotyping Symposium, 2015 November 11-12, Barcelona, Spain, p.32.

**Prerostová S.**, Dobrev P.I., Gaudinová A., Hošek P., Knirsch V., Motyka V., Vanková R.: The impact of salinity on phytohormonal dynamics in *Arabidopsis thaliana* and *Thellungiella salsuginea*. Poster session presented at: Salt & Water Stress in Plants, 2016 May 29 – June 3, Les Diablerets, Switzerland.

**Prerostová S.**, Dobrev P.I., Gaudinová A., Hošek P., Knirsch V., Motyka V., Vanková R.: Cytokinin, auxin and abscisic acid cross-talk in *Arabidopsis thaliana* during moderate salt stress. Poster session presented at: EPSO/FESPB 2016 Congress, 2016 June 26-30, Prague, Czech Republic, ID 762.

**Prerostová S.**, Kramná B., Dobrev P., Gaudinová A., Knirsch V., Vanková R.: Effect of strigolactone GR24 on phytohormonal cross-talk during phosphate deficiency. Poster session presented at: VISCEA Plant Molecular Biology, 2017 February 24-25, Vienna, Austria, ID 10.

## **Co-author of Oral and Poster Presentations**

### ***Oral Presentations***

Vanková R., **Prerostová S.**, Dobrev P.I., Gaudinová A., Knirsch V.: The comparison of phytohormone functions in salt and phosphate deficiency stress responses. Paper presented at: 1<sup>st</sup> General Meeting COST (FA1306), 2015 June 22-24, Gatersleben, Germany.

Vanková R., Dobrev P., Ricarova V., **Prerostová S.**, Knirsch V., Gaudinová A., Kramná B., Kazda J.: Comparison of hormonal dynamics in *Brassica napus* cultivars Alister and Hornet during *Plasmodiophora brassicae* infection. Paper presented at: Annual Meeting on Crop - Arthropod - Microorganism Interactions, 2017 January 31-February 3, Ljubljana, Slovenia.

Kramná B., **Prerostová S.**, Gaudinová A., Knirsch V., Kobzova E., Vanková R.: Antioxidant system response induced by exogenous strigolactone GR24 during phosphate deficiency. Paper presented at: 13<sup>th</sup> International Conference on Reactive Oxygen and Nitrogen Species in Plants (POG), 2017 September 10-13, Kuşadası, Turkey.

### ***Poster Presentations***

Vanková R., **Prerostová S.**, Gaudinová A., Dobrev P.I.: The effect of strigolactone GR24 on *Arabidopsis* hormonal pools in shoots and roots during phosphate deficiency and full

nutrition. Poster session presented at: 1<sup>st</sup> International Congress on Strigolactones, 2015 March 1-6, Wageningen, Netherlands, p. 60.

Vankova R., **Prerostova S.**, Gaudinova A., Knirsch V., Dobrev P.I.: The hormonal cross-talk during phosphate deficiency response of *Arabidopsis thaliana*. Poster session presented at: EMBO Signalling in plant development, 2015 September 20-24, Brno, Czech Republic, p. 73.

Vankova R., **Prerostova S.**, Gaudinova A., Knirsch V., Dobrev P.I.: Hormonal responses to phosphate deficiency. Poster session presented at: The Society for Experimental Biology Conference (SEB), 2015 June 30 – July 3, Prague, Czech Republic, p. 178.

Stillerova L., **Prerostova S.**, Cvrckova F.: Intracellular localization of *Arabidopsis* Class II formins AtFH13 and AtFH14: dissecting domain contribution. Poster session presented at: The Society for Experimental Biology Conference (SEB), 2015 June 30 – July 3, Prague, Czech Republic, p. 137.

Kramna B., Dobrev P.I., **Prerostova S.**, Gaudinova A., Knirsch V., Vankova R.: The impact of synthetic strigolactone GR24 on plant responses, cytokinin pool and cytokinin-related gene expression under phosphate deficiency. Poster session presented at: Plant Biology Europe EPSO/FESPB 2016 Congress, 2016 June 26-30, Prague, Czech Republic, ID 783.

Vankova R., **Prerostova S.**, Knirsch V., Gaudinova A., Spichal L., Prochazkova D., Dobrev P.I.: Heat stress acclimation modifies hormonal responses to heat shock in *Arabidopsis*. Poster session presented at: Plant Biology Europe EPSO/FESPB 2016 Congress, 2016 June 26-30, Prague, Czech Republic, ID 133.

Vankova R., Landa P., Dobrev P., **Prerostova S.**, Knirsch V., Gaudinova A., Vanek T.: Nanoparticle effect on phytohormone dynamics and transcriptome of *Arabidopsis* plants. Poster session presented at: The International Plant Growth Substances Association Meeting (IPGSA), 2016 June 21-25, Toronto, Canada, ID 101.

Vankova R., Kramna B., **Prerostova S.**, Gaudinova A., Knirsch V., Dobrev P.I.: The hormonal cross-talk during phosphate deficiency response and its impact on antioxidant system. Poster session presented at: American Society of Plant Biologists Conference (ASPB), 2017 June 24-28, Hawaii, USA.

Vankova R., Kramna B., **Prerostova S.**, Knirsch V., Gaudinova A.: Exogenous strigolactone GR24 influences the antioxidant system response to phosphate deficiency. Poster session presented at: Olomouc Biotech 2011 Plant Biotechnology: Green for Good (G4G), June 19-22, Olomouc, Czech Republic.

Kramna B., **Prerostova S.**, Gaudinova A., Knirsch V., Kobzova E., Vankova R.: Response of the antioxidant system to exogenous strigolactone GR24 during phosphate deficiency. Poster session presented at: VISCEA Plant Molecular Biology, 2017 February 24-25, Vienna, Austria, ID 17.