

Dr. Michael Wrzaczek - *Curriculum vitae*

1. Full name and date

Dr. Michael Alois Wrzaczek

Academy Research Fellow

Docent (Adjunct Professor)

Date of the CV: Thursday, May 23, 2019

Gender: Male



2. Date and place of birth, nationality, current residence

Birth date and place: July 29, 1976, Mödling, Austria

Citizenship: Austrian

Work address:

Organismal and Evolutionary Biology Research
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Viikki Plant Science Centre, VIPS
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<http://www.wrzaczek.at>

Research group webpage:

<https://www.helsinki.fi/en/researchgroups/plant-receptors>



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3. Education and degrees awarded

- ❖ Docent in plant molecular physiology and bioinformatics, University of Helsinki, March 1, 2011.
- ❖ Doctoral degree, University of Vienna, Dept of Microbiology and Genetics, Austria. Subject: Genetics. November 9, 2004. Group of Dr. Claudia Jonak. Title: “*MsK1, a Glycogen Synthase Kinase from Medicago sativa, Modulates Plant Stress Tolerance*”.
- ❖ Master’s degree, University of Vienna, Dept of Microbiology and Genetics, Austria. Subject: Human biology. January 16, 2001. Group of Prof. Dr. Heribert Hirt. Title: “*Characterisation of interaction partners of the Glycogen synthase kinase-3 homologues MsK4 and MsK5 in Medicago sativa*”.

4. Other education and training, qualifications and skills

- ❖ Selected for participation in the highly competitive **Arabidopsis Molecular Genetics course at the Cold Spring Harbor Laboratories, USA** (June 29 - July 20, 2001).

5. Language skills

- ❖ German – native speaker
- ❖ English – excellent (self-assessment of language skills C2 for listening, reading, speaking and writing)
- ❖ French – basic (self-assessment of language skills B1 for listening, reading, speaking and writing)
- ❖ Finnish – intermediate (self-assessment of language skills B1 for listening, speaking and writing, B2 for reading)

6. Current position

- ❖ Academy Research Fellow (September 1, 2014 – August 31, 2019), Academy of Finland (decision #275632), and group leader in the Finnish Centre of Excellence in Molecular Biology of Primary Producers (2014-2019; *Primaarituottajien molekyylibiologian huippuyksikkö*), Academy of Finland (decision #271832) starting from January 1st, 2014.
The Receptor-ligand signaling group (<http://www.helsinki.fi/plantreceptors/>) consists of Dr. Michael Wrzaczek (principal investigator), Dr. Sachie Kimura (postdoc), Ms. Aleksia Vaattovaara (doctoral student), Ms. Kerri Hunter (doctoral student), Ms. Huiting Jin (doctoral student, from October 2016).
- ❖ Principal investigator at University of Helsinki (March 2013)
- ❖ Independent research group leader (research career phase 3)

7. Previous work experience

- ❖ Junior group leader of the RLK, ROS perception and cell death team associated with the plant stress group of Prof. Jaakko Kangasjärvi. January 1, 2011 – December 31, 2013.
- ❖ Post-Doctoral researcher and junior group leader at the University of Helsinki associated with the group of Prof. Jaakko Kangasjärvi funded by a Helsinki University post-doc project “*Novel mechanisms in the regulation of programmed cell death in plants*”. Period: January 1, 2008 – December 31, 2010
- ❖ Post-Doctoral researcher at the University of Helsinki in the group of Prof. Dr. Jaakko Kangasjärvi (Plant Stress Group) in the Academy of Finland-funded project “*Functional genomics of oxygen radical perception and signaling in plants*”. February 1, 2005 – December 31, 2007
- ❖ Doctoral student at the Institute of Microbiology and Genetics, University of Vienna in the Group of Dr. Claudia Jonak. February 1, 2001 – December 31, 2004.

8. Research funding as well as leadership and supervision

Funding:

- ❖ Academy of Finland Research Project “*Signal integration through plasma membrane-localized proteins during stress signaling in plants*” (decision #323917; € 499 651) September 1, 2019 – August 31, 2023.
- ❖ Academy of Finland Travel Grant 2018.
- ❖ Academy of Finland Research Fellow – research costs (#312498; € 342 664) September 1, 2017 – August 31, 2019.
- ❖ Academy of Finland Research Fellow – research costs (#283139; € 299 901) September 1, 2014 – August 31, 2017).
- ❖ Academy of Finland Research Fellow “*Understanding peptide ligands and their receptors in plants*” (decisions #275632; € 434 485) September 1, 2014 – August 31, 2019.
- ❖ Prime-X grant for proteomic analysis of secreted peptides in plant suspension culture (Collaboration with Dr. Hannele Tuominen, Dr. Simon Stael, Prof. Frank Van Breusegem, Prof. Kris Gevaert), March 2014.

- ❖ Academy of Finland Travel grant 2014.
- ❖ University of Helsinki Three-Year-Grant “*Cell death regulation by small extracellular proteins in plants*” (145 000 €). January 1, 2013 – December 31, 2015.
- ❖ University of Helsinki Post-Doctoral Researcher grant. January 1, 2008 – December 31, 2010.
- ❖ Coordinator for the application and leading junior group leader of the European Research Area Plant Genomics (ERA PG; <http://www.erapg.net>) consortium ”PROSIG” (2009-2012) together with Prof. David Collinge and Dr. Michael Lyngkjær (Denmark), Dr. Silke Robatzek (UK), Prof. Stanislaw Karpinski (Poland) and Dr. Jan Willem Borst (Netherlands). Project was accepted for funding in 2008.

Supervision:

- ❖ Supervisor for Cuong Tran (2018)
- ❖ Supervisor for Master student Nghia Le Tri (2017)
- ❖ Postdoctoral advisor for Dr. Takamitsu Kurusu (September 2017 to December 2017)
- ❖ Postdoctoral advisor for Dr. Derek Collinge (August 2015 to July 2016).
- ❖ Postdoctoral advisor for Dr. Sachie Kimura (from October 2014).
- ❖ Supervisor for doctoral student Msc. Huiting Jin (from October 2016).
- ❖ Supervisor for doctoral student Msc. Ville Pannanen (from April 2019).
- ❖ Supervisor for doctoral student Msc. Kerri Hunter (from May 2014; defense in November 2019).
- ❖ Supervisor for doctoral student Msc. Aleksia Vaattovaara (from April 2013; defense in June 2019).
- ❖ Postdoctoral advisor for Dr. Adrien Gauthier together with Prof. Jaakko Kangasjärvi (2009-2015).
- ❖ Co-supervisor for doctoral student Msc. Niina Idänheimo with Prof. Jaakko Kangasjärvi (from 2007; Defense December 18, 2014, opponent Prof. Alistair Hetherington).
- ❖ Host and supervisor for exchange students
 - 2019: Mr. Denis Owczarek (University of Braunschweig, Germany)
 - 2019: Mr. Jan-Niklas Weber (University of Braunschweig, Germany)
 - 2018: Mr. Markus Laurel (University of Helsinki, Finland)
 - 2017/2018: Ms. Maya Willkens (University of Braunschweig, Germany)
 - 2017: Ms. Lena Meißner (University of Braunschweig, Germany)
 - 2017: Markéta Luklová (Mendel University, Brno, Czech Republic)
 - 2017: Mr. Simon Schmitz (University of Braunschweig, Germany)
 - 2016: Mr. Awais Zahid Muhammad (University of Hohenheim, Germany)
 - 2016: Mrs. Rajita Thapa (Nepal)
 - 2014: Mr. Pawel Burdiak (Warsaw University of Life Sciences, Poland)
 - 2014: Ms. Daniela Van Thiel (University of Braunschweig, Germany)
 - 2012: Mr. David Kaufholdt (University of Braunschweig, Germany)
 - 2011: Ms. Jennifer Sand (University of Münster, Germany)
 - 2010: Mr. Hansjörg Stampfl (Gregor-Mendel-Institute, Austria)

Each visit lasted four months. I arranged the visit and planned the research project for the student. The students were supervised by me during their visit.

- ❖ Supervisor for Practice Work in Molecular Biotechnology: Ms. Salla Jalkanen (February-March 2015), Mr. Robin Moore (April-May 2015), Mr. Nghia Le Tri (from April 2016).
- ❖ Supervisor for Ms. Susanna Tarkiainen in Practice work for Biochemistry (Spring 2013).

9. Merits in teaching and pedagogical competence

- ❖ Teaching “Adaptation in plants” – lecture course 2019.
- ❖ Teaching “Plant physiology and biochemistry” – lecture course 2019.
- ❖ Teaching “Cell walls in plants” – lecture course 2019, session on cell wall signal transduction (University of Helsinki, Finland).

- ❖ Teaching “Adaptation in plants” – lecture course 2018.
- ❖ Teaching “Plants in a changing world” – lecture course 2017 and 2018.
- ❖ Teaching “Gene family evolution in plants” – invited teacher Tokyo University of Science, Noda, Japan, 2016 and 2017.
- ❖ Teaching “Protein phosphorylation” and “Post-translational modifications” – invited teacher Tokyo University of Science, Noda, Japan, 2016 and 2017.
- ❖ Teaching “Signal transduction in plants” – lecture course August 2016. I designed and managed the course and coordinated the teachers.
- ❖ Course in University Pedagogics – Constructive alignment (UP1, 2 modules, 10 credits), autumn 2012.
- ❖ Course in University Pedagogics – Assessment of learning (UP4, 1 module, 5 credits), spring 2013.
- ❖ Course in University Pedagogics – Academic supervising (UP3, 1 module, 5 credits; autumn 2013).
- ❖ Course “Leadership Program for Academic Staff at University of Helsinki” (winter 2013/2014).
- ❖ Teaching: Methods in molecular biology (“Übung im Pflichtfach Gen- und Biotechnologie”) at University of Vienna (2002-2004) together with Dr. Claudia Jonak and Prof. Heribert Hirt.
- ❖ Teaching: Practical course “Advanced Course in Plant Molecular Biology”, together with Jaakko Kangasjärvi, Pinja Jaspers, Tiina Blomster, Airi Lamminmäki and Mikael Brosché (University of Helsinki).
- ❖ Development and teaching of the practical course “Advanced Computer Methods for Biologists”. I initiated the course to introduce biology students to advanced computer techniques to facilitate interaction with bioinformaticians and to allow efficient computer work. I am the main organizer and one of the teachers on the course for the past years.
- ❖ Member of the follow-up group for Mrs. Pooneh Sotoudehnia (University of Turku, Finland; Supervisor: Dr. Esa Tyystjärvi), Mrs. Moona Rahikainen (University of Turku, Finland; Supervisor: Dr. Saijaliisa Kangasjärvi), Mrs. Yafei Zhao (University of Helsinki, Finland; Supervisor: Prof. Paula Elomaa) and Mr. Raffael Lichtenberger (University of Helsinki, Finland; Supervisor: Prof. Ykä Helariutta).
- ❖ Opponent and pre-examiner for Mrs. Rewaa Jalal (King Abdullah University of Science & Technology, Saudi Arabia; May 2019).
- ❖ Member of reading and PhD committee (opponent) for Mr. Lorin Mignolet (Ghent University and VIB, Belgium; December 2014 – March 2015).

10. Other academic merits

- ❖ Member of the Scientific advisory Board for the International Conference on Arabidopsis Research (ICAR) 2021 in Belfast, Northern Ireland.
 - ❖ Editorial Board member Journal for Plant Research.
 - ❖ Reviewing Editor for Frontiers in Plant Science.
 - ❖ Member of the steering committee of the Organismal and Evolutionary Biology Research Programme
- ❖ Chair of the organizing committee for the 29th International Conference on Arabidopsis Research (ICAR) 2018 in Turku, Finland, June 25 to 29, 2018. Over 600 participants from Europe, Asia, Australia, North and South America and also Africa gathered for five days to exchange the latest discoveries in modern molecular plant science.
- ❖ Shortlisted for Associate Professorship at HiLife Institute University of Helsinki.
 - ❖ Considered for position of Senior Lecturer in Molecular Cell Biology at Lund University, Sweden.
 - ❖ MASC (Multinational Arabidopsis Steering Committee) coordinator for Finland from 2014.
 - ❖ Panel member for National Science Center Poland (Poland, 2018).

- ❖ Grant reviewer for the Deutsche Forschungsgesellschaft (DFG, Germany, 2014, 2015, 2017), National Science Foundation (NSF, USA; 2014), National Science Center Poland (Poland, 2012-2016), the Einstein Foundation (2013, Germany), the Hungarian Scientific Research Fund (OKTA; Hungary, 2013-2015) and the FWO (Belgium, 2015 and 2016).
- ❖ Reviewer for international scientific journals including Nature Plants, Nature Communications, Annals of Botany, BMC Genomics, Molecular Plant-Microbe Interactions, Physiologia Plantarum, Plant Physiology and Biochemistry, New Phytologist, Journal of Plant Physiology, Scientific Reports, Molecular Plant Pathology, PLoS One, PLoS Biology, Journal of Experimental Botany, Plant Signaling and Behavior.
- ❖ Guest editor for the ROS special issue of Physiologia Plantarum (January 2010) together with Prof. Jaakko Kangasjärvi and Dr. Kirk Overmyer on the occasion of the Plant ROS 2009 meeting in Helsinki.
- ❖ Organizer of the Finnish-Japanese Meeting 2016 together with Dr. Yagut Allahverdieyeva.
- ❖ Organizer of the 2nd SPPS Career PI Meeting (Sweden, November 2015) together with Dr. Karin Stensjö.
- ❖ Secretary for the organization of the 1st SPPS Early Career PI Meeting (Naantali, Finland, November 25-26, 2014)
- ❖ Participation and assistance (responsible for computer systems) in the organization of the Plant Phosphorylation meeting in Vienna in September 2001.
- ❖ Participation and assistance in the organization of the XVI FESPB conference in Tampere, Finland, August 17-22, 2008.
- ❖ Member of the organizing committee for the Plant ROS 2009 meeting in Helsinki, Finland, July 8-10 2009.

11. Scientific and societal impact of research

- ❖ 30 total publications in Google Scholar. Three publications currently under review, two preprints on bioRxiv. H-index: 18, 1264 citations (23 May 2019). <http://scholar.google.fi/citations?user=o2a8L6oAAAAJ&hl=en>
- ❖ Invited lectures:
 - Palacky University Olomouc (hosted by Prof. Jozef Samaj and Doc. Tomas Takac), April 2019.
 - Academy of Sciences, Prague (hosted by Prof. Viktor Zarsky), Czech Republic, December 2018
 - CEITEC Brno (hosted by Prof. Karel Riha), Czech Republic, December 2018
 - Nara Institute of Technology (hosted by Prof. Shunsuke Miyashima), Japan, October 2018
 - Nagoya University (hosted by Prof. Hirofumi Yoshioka), Japan, October 2018
 - Tokyo University of Science (hosted by Prof. Kazuyuki Kuchitsu), Japan, March 2018
 - Kyoto, Kyoto University (hosted by Prof. Yasuo Mori), Japan, March 2018.
 - Saitama, Saitama University (hosted by Prof. Masatsugu Toyota), Japan, December 2017.
 - Tokyo University of Science (hosted by Prof. Satoru Miyazaki and Prof. Kazuyuki Kuchitsu), Japan, December 2017.
 - Munich, Technical University Munich (hosted by Dr. Stefanie Ranf), Germany, September 29, 2017.
 - Danforth Plant Science Centre, St. Louis, USA (hosted by Prof. Dilip Shah), June 25, 2017
 - University of Natural Resources and Life Sciences, Vienna, Austria (hosted by Prof. Marie-Theres Hauser), Mai 8, 2017
 - Tokyo University of Science (hosted by Prof. Satoru Miyazaki and Prof. Kazuyuki Kuchitsu), Japan, December 2016.

- Kyoto University (hosted by Prof. Takayuki Kohchi and Prof. Ryuichi Nishihama), Japan, December 2016.
- University of Nottingham, UK (hosted by Prof. Malcolm Bennett and Dr. Anthony Bishopp), May 4, 2016.
- University of Oslo, Oslo, Norway (hosted by Prof. Melinka Butenko), March 7, 2016.
- Norwegian University of Science and Technology, Trondheim, Norway (hosted by Dr. Tore Brembu), March 4, 2016.
- RIKEN Tsukuba (hosted by Dr. Fuminori Tahakashi), Japan, October 2014.
- RIKEN Yokohama (hosted by Dr. Hirofumi Nakagami), Japan, October 2014.
- Tokyo University of Science (hosted by Prof. Kazuyuki Kuchitsu), Japan, October 2014.
- ❖ Regular presenter at international scientific conferences. Oral presentations at conferences:
 - Invited speaker 2018 Finnish-Japanese Meeting, Kobe, Japan, September 24-27, 2018.
 - Invited Speaker for the 4th International Conference on Plant Proteases and Programmed Cell Death (PPPCD) 2018, Ghent, Belgium, September 11-13, 2018
 - Invited speaker 5th International Conference on Plant Physiology and Biochemistry 2018, Vienna, Austria, July 9-10, 2018.
 - Invited speaker 5th International Conference on Abiotic Stress Tolerance 2018, Vienna, Austria, July 5-6, 2018.
 - Invited speaker JSPP conference, Sapporo, Japan, March 2018.
 - Invited speaker EMBO Conference on Micro and metabolic regulators in plants, Trivandrum, Kerala, India, February 1-5, 2017.
 - Invited speaker 2016 Finnish-Japanese Seminar. Saariselkä, Finland, September 2016.
 - Norwegian Plant Biology Meeting, Trondheim, Norway, June 15-17, 2016.
 - Oral presentation at the 3rd Plant Peptide Meeting in Ghent, Belgium, 2015
 - Oral presentation at the ICAR 2015 Meeting, Paris, France.
 - Invited speaker at the 7th BCRB Fall Symposium, Brussels, Belgium, December 5, 2014.
 - 2014 Finnish-Japanese Seminar. Sapporo, Japan, October 2014.
 - 2014 Plant Peptides Meeting. Regensburg, Germany, September 3-4, 2014.
 - 2014 Keystone Symposium “Dynamic signaling properties in plants”. Breckenridge, Colorado, USA, February 5-10, 2014.
 - 2013 11th International POG Conference on Reactive Oxygen and Nitrogen Species in Plants. Warsaw, Poland, July 17-19, 2013.
 - 2013 Plant Symposium of the SEB: “Oxidative stress and cell death in plants: mechanisms and implications”. Florence, Italy, June 26-28, 2013.
 - Invited Speaker at the 10th Finnish Plant Science Days 2013, Helsinki, Finland, May 13-15, 2013.
 - Plant Abiotic Stress Tolerance II Conference. Vienna, Austria, February 22-25, 2012.
 - Plant ROS 2009 Conference, Helsinki, Finland, July 8-10, 2009
 - Japanese-Finnish Seminar 2008 “Genomics and Molecular Mechanisms of Photosynthetic Organisms”, Helsinki, Finland, October 28-November 1, 2008