

SHORT BIOS

Martin Polak started his career at Masaryk University where he got his Master's degree in Molecular Biology and Genetics. Interested in zoology he shortly tried to combine the two fields at the Department of Parasitology. However, the course of life brought him to plant cytogenomics where he studied the evolution of crucifer chromosomes. His supervisor then introduced him to his current PI, Jiri Novacek, who offered him a position at Cryoelectron microscopy core facility at CEITEC MU. After a year Martin successfully optimised chromosome samples for a scanning electron microscope and started his PhD. Now, in his second year of PhD candidacy, Martin has started to focus mainly on 3D structures of protein fibrils. Besides his strictly scientific career, Martin has also worked in the field of popularisation of science and spent several years in different educational institutes working with children.

Daniela Kristeková is a PhD candidate at Masaryk University, working in the team of Assoc. Professor Marcela Buchtová at the Czech Academy of Science. She obtained a Master's degree in Molecular Biology and Genetics in 2018. Although she originally focused on microorganisms in her research, now she is interested in nanoparticles. She is studying the effects of the inhalation of metal nanoparticles in the living organisms on both the cellular and molecular level. She is also researching how nanodiamonds can be potentially used as drugs in biomedicine. She was involved in the popularization of science during European Night of Museums and Researchers' Night. Daniela is passionate about education and spends some part of her free time tutoring children from low-income or foreign families through the Faculty of Education.

Mgr. Andrea Martišová is a first-year PhD candidate at Masaryk University who works in the team of Assoc. Prof. Roman Hrstka based in the RECAMO research facility at Masaryk Memorial Cancer Institute. She has been actively working in the RECAMO as an intern since autumn 2017 when she started her Bachelor's thesis research and then continued there with her Master's thesis. Andrea has graduated in the field of Genomics and Proteomics with her research focused on the regulation of AGR2 expression in cancer cells. By now she has co-authored five publications, that were published in impact factor journals, out of which two deal with the topic of AGR2.

Mgr. Zuzana Trebichalska, a 1st year PhD candidate at CEITEC PhD School, gained her Master's degree in Molecular Biology and Genetics at the Faculty of Science, Masaryk University, Brno. She is currently a member of the Structural virology lab, led by Mgr. Pavel Plevka, Ph.D., at CEITEC, MU. For her PhD project, she is resolving the structure of human enteroviruses inside the cells in close-to-native conditions. She is experienced in the field of electron microscopy. In 2018, she was an intern member in the European Molecular Biology Laboratory in Heidelberg, Germany, working on a volume electron microscopy project. Alongside the academic research, she has participated in the popularization show Science Slam MUNI.

Eliška Svobodová is a Ph.D. candidate and a member of a research team focused on mRNA splicing and its connection to human diseases (mostly immunodeficiencies). She gained her Master's degree at Masaryk university in the field of molecular biology and genetics. She currently works as a molecular geneticist in the Cytogenetics laboratory in Brno where she analyzes the sequencing data of patients with RASopathies or cardiovascular diseases. During her work, she has observed an arising need to better understand splicing and its importance in clinical practice where splicing and intronic sequences are mostly ignored. That is why she has focused/has been focusing her work on a specific type of splicing dysregulation (pseudoexon inclusion) in human neurofibromatosis type 1 disease.

Evelína Gahurová is a PhD candidate at Masaryk University and works for the team of Mendel Centre for Plant Genomics and Proteomics at CEITEC MU. She focused on genetic aspects of Cannabis in her

Bachelor's thesis. Subsequently, she completed her Master's degree in Molecular Biology and Genetics in 2019 and her Master's thesis dealt with localization of expansins in plants. Currently, she studies Life Sciences and investigates the cell wall biomechanical properties of the cell wall with modified expansin expression. She has been an active participant of the European Researchers' Night. Apart from activities connected with science, she teaches on-line lessons in an elementary school in her free time as a part of training practice at the Faculty of Education.

Mgr. Alžběta Kusová is a first year PhD candidate at Masaryk University, currently working in a group of Prof. Jiří Fajkus - Molecular complexes of chromatin, which deals mostly with structure, evolution and maintenance of telomeres and their roles in chromosome stability and DNA repair. She obtained her Master's degree in the field of Genomics and Proteomics at MU. From the beginning of her career as a researcher, Alžběta has been focused on proteins associated with plant telomeres. She studied the function and interaction partners of TRB (telomere-repeat binding) proteins during her Bachelor's and Master's degree. Now, during her doctoral studies, her work consists of searching for proteins involved in the plant telomerase biogenesis, regulation of biogenesis or its access to the telomeres.

It's my pleasure to introduce miss Virmani today. Miss Virmani is compassionate about toxicology and has been a PhD candidate at Research Center for toxic compounds in the environment since October 2019. She has a background in chemistry but has always wanted to research in the field, which is amalgamation of Chemistry and Biology. She chose to pursue her career in toxicology and she obtained two master's in toxicology from India and United Kingdom respectively. She is currently working on high content imaging and their analysis using in-vitro models of toxicology under the supervision of Dr. Iva Sovadinova. Miss Virmani has already presented her findings at five poster presentations at national or international conferences. She has also been supervising a high school student and has been involved in the science popularization events at Masaryk University. Further, she is actively looking forward the collaboration.

Marina Grossi is a Ph.D. candidate in the RECETOX Department of Masaryk University. As a biologist, she has always been concerned with human, animal, and ecosystem well-being but, overloaded with many classes and laboratory practices she was still looking for a purpose within the graduation course. During her master's, she has started to work with in vitro models of kidneys to validate an easy, low-cost-alternative method to animal testing, aiming at reducing the number of tests in animals and also improving its predictive value. It has given her the purpose she previously lacked to pursue her career in the human and environmental toxicology area. Currently, she is working with 2D and 3D models of human liver cell lines optimizing spheroid systems and their adaptation into a cost-effective and potentially high-throughput screening (HTS)-compatible setup, for in vitro assessment of molecular and cellular events relevant for chronic liver diseases and toxicity.

Peter Pajtinka is a PhD candidate in the field of Structural Biology within the CEITEC PhD School at Masaryk University in Brno. As a member of the Robert Vácha research group, his main areas of interest are protein-membrane interactions and factors affecting them. During his bachelor's and master's studies he gained experience of theoretical and computational methods used to investigate lipid membranes, their elastic properties, membrane curvature, and how membranes change in the presence of peptides. He obtained a Master's degree in Biophysics in 2020 with his thesis "Peptides and curvature of lipid membranes". In his ongoing PhD project, he focuses on the issue of antibiotic-resistant bacteria and on the study of antimicrobial peptides as a potential solution.

Filip Melicher is a PhD candidate under the supervision of Prof. Michaela Wimmerova at Central European Institute of Technology at Masaryk University in Brno. He is in the 3rd year of the Life Sciences programme in the Structural Biology field of study. Filip is conducting his research in the Glycobiology group, which focuses on a protein involved in interactions of cells called lectins. His

position in the group is a protein crystallographer. He was already co-author of an article in *Molecules* journal and he has already first author structure in Protein Data Bank (PDB). During his study, he attended several international conferences, where he won prizes for best presentations/posters. Besides his work in the laboratory, Filip is also teaching courses: Structural biochemistry and Methods for structural characterisation of biomolecules.

Mgr. Susrisweta Behera is a passionate lover of science. She began her research career by qualifying from one of the toughest exams in India and joining the topmost institution to pursue her Master's Degree in the field of chemistry. During her studies, she got several opportunities to work in the versatile fields of science where she was able to publish two articles in the topmost journals. To achieve research as a profession, she took her next step by joining at Masaryk University as a researcher in the field of physical chemistry under the supervision of Prof. Dominik Heger. Her research focuses on "spectroscopical insights of frozen samples" where she synthesizes biological and organic samples and studies their spectroscopic changes upon freezing. She has always believed in the fact that "Science is a symmetry of dead ideas". In the future, she aspires to use her skills and techniques to develop the integrity field of sciences for the betterment of mankind.

Alena Hofrová is a big fan of Harry Potter so she has always wanted to use magic. Since the start of her scientific studies, she has been fascinated by how detecting the quantum state of molecules enables one to acquire information about their structure. Nuclear magnetic resonance is a versatile experimental method that allows one to investigate both the structure and interaction properties of biomolecules. During her bachelor's and master's studies, she has been studying essential protein-protein interactions of transcription coactivator KIX domain, which has culminated in two articles. She used the opportunity to work abroad and spent six months prestigious Max F. Perutz Laboratories in Vienna gaining experience in IDP measurements using NMR. She is currently working in a/the group of Protein Structure and Dynamics at the Central European Institute of Technology (CEITEC). She realized that magic is science.

Zhengyue Zhang is a second-year PhD candidate at Masaryk University, CEITEC, studying in, the Prof. Jiří Šponer's group of Structure & Dynamics of Nucleic Acids. During his studies, he showed strong interests in Molecular Modelling. He obtained his master's degree in Utrecht University, the Netherlands, by focusing on Biomolecule Docking and Molecular Dynamics simulation in Biophysics & Molecular Imaging program. In the PhD program, he has been investigating the structural effects of phosphorothioate chemical modification on RNA with MD simulations and Quantum Mechanics calculations during his first-year study. He is currently studying DNA 4-way junction with Enhanced Sampling methods, aiming to reproduce the junction conformation transition in molecular level simulations.