

Masaryk University	
Faculty	Faculty of Science
Procedure field	Botany
Applicant	doc. RNDr. Petr Bureš, Ph.D.
Applicant's home unit, institution	Faculty of Science, Masaryk University
Board members	
Chair	prof. RNDr. Milan Chytrý, Ph.D. <i>Faculty of Science, Masaryk University</i>
Members	prof. RNDr. Tomáš Herben, CSc. <i>PřF UK Praha</i> doc. RNDr. Eduard Kejnovský, CSc. <i>BFÚ AV ČR Brno</i> prof. RNDr. Karol Marhold, CSc. <i>Botanický ústav SAV, Bratislava</i> Elwira Śliwińska <i>UTP University Bydgoszcz, Polsko</i>

Evaluation of the applicant's scholarly/artistic qualifications

The scientific career of doc. RNDr. Petr Bureš, Ph.D., has been connected with the Faculty of Science, Masaryk University. In 1986 he graduated there with an RNDr. degree. In 1987–1989 he was appointed as a Technician at the Department of Plant Biology, and in 1990–1991 as a Junior Scientist at the Department of Systematic Botany and Geobotany. For the following ten years, he held the position of Assistant Professor at this Department. He completed his Ph.D. in Botany in 1999 and was promoted to Associate Professor (docent) of Botany in 2005. Since 2006 he has been the Head of the Plant Biosystematics Working Group at the Department of Botany and Zoology, Faculty of Science, Masaryk University.

The research interests of Petr Bureš mostly in the biology of vascular plants, especially karyotype and genome evolution and hybridization. Starting from scratch in the late 1990s, he made a major contribution to the development of infrastructure for this research at the Department of Botany (later Department of Botany and Zoology) of the Faculty of Science. He systematically developed modern plant biosystematics laboratories with the focus on flow cytometry and its application to the study of the plant genome. Currently, his laboratory is one of the largest of this kind in the world (measured by the number of flow cytometers used in plant research).

Petr Bureš is an example of a botanist who started his career with detailed field research of flora. He has excellent knowledge of plants of Central European flora, and wrote several detailed floristic and phytogeographical contributions, especially on the flora of the Bohemian-Moravian Highlands. Based on the solid fundament of this classical botanical knowledge, he developed his research interest in plant biosystematics, involving intimate knowledge of the study objects and awareness of systematic and evolutionary relationships among them.

Since the time of his Ph.D., he has developed a special interest in the family *Cyperaceae* and has been working on taxonomy, interspecific hybridization, geographic distribution and genome size of the species from this family. He is well known for his work on the origin and evolution of holocentric chromosomes, which he studied not only in plants but also in some groups of animals. Another important body of his research has been dealing with the evolution of genome size in plants and its relationships to the genomic base composition of numerous species, e.g. those belonging to the families *Cyperaceae*, *Asteraceae*, *Lentibulariaceae*, *Rosaceae*, and *Brassicaceae*. Another object that is recurrent in his work is the genus *Cirsium*, which he uses as a model for the study of interspecific hybridization.

In comparison with other botanists and systematic biologists, Petr Bureš stands out by asking very broad and general questions. He is always interested in causes and mechanisms that are behind the observed patterns. Therefore he does not restrict his interests to a selected group of plants but studies also various groups of invertebrates that have similar karyological features to those he detected in plants.

Petr Bureš has published 78 original research papers, of which 53 are listed in the Web of Science (WoS) database, and 25 have been published in other peer-reviewed journals. Most of them are multi-author studies, and if Petr Bureš is not the first author, then the first author is in most cases one of his current or former Ph.D. students. Several papers were prepared with the participation of authors from abroad, which demonstrates that the candidate is able to effectively lead his working group and collaborate researchers from abroad. He has published his research in high-impact journals with rigorous peer-review panels, such as *New Phytologist* (five papers), *Proceedings of the National Academy of Sciences of the United States of America*, *Plant Physiology*, *Evolution*, *Scientific Reports* (three papers), *BMC Plant Biology* and *Annals of Botany* (13 papers). His total Impact Factor is about 170. In addition, he has published eight chapters in scholarly books (including two with international publishers) and seven articles in proceedings not listed in international databases. His work has been cited over 1000 times in journals included in international databases (H-index = 18), which confirms a high impact and novelty of his research and his international recognition.

The applicant has established a broad scientific network including colleagues from the Czech Republic, South Africa, Spain, United Kingdom, USA, Israel, Italy, and Germany. He has not taken a long-time sabbatical abroad but has been in several short-time expeditions and research visits, e.g. in Austria, Hungary, Italy, South Africa, Norway (Svalbard) and Sweden. He is a member of several professional societies, for example, the International Association for Plant Taxonomy, Czech Botanical Society, and Czech Society for Analytical Cytometry.

He has actively participated in national and international scientific conferences, in some cases with invited talks. He has been a member of organizing committees for three conferences held in the Czech Republic. This, again, demonstrates his national and international recognition in his scientific field.

Petr Bureš has repeatedly successfully applied for research funding. He was the principal investigator (five grants) or co-principal investigator (two grants) of research projects funded by the Czech Science Foundation and co-principal investigator of a project funded by the Ministry of Education, Youth and Sports of the Czech Republic. In 2006–2015 he served as a panel member for the Czech Science Foundation.

Conclusion: The applicant's scholarly capabilities *meet* the requirements expected of applicants participating in a professor appointment procedure in the field of Botany.

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Evaluation of the applicant's pedagogical experience

Petr Bureš graduated in a teacher-training program of Mathematics-Biology, and he is a very experienced academic teacher. Since 1989 he has been reading lectures (eight courses) and laboratory and field classes (eleven courses) at both the Bachelor's and Master's level, mostly for the students in biology programmes with different specializations. He has prepared 26 educational texts on the phylogeny and diversity of land plants, history of biology, and plant taxonomy, all of which are accessible on-line. At present, he teaches 'Phylogeny and Diversity of Land Plants' (one of the main compulsory lectures for bachelor students of Ecological and Evolutionary Biology), 'History of Botany', 'Information Resources in Botany', and 'History of Biology'. He also leads 'Field Excursions in Botany and Zoology'. He has published nine science popularization articles.

During his 30-year career as a teacher, the applicant supervised 16 Bachelor, 45 Master and 3 Ph.D. students. Further theses under his supervision at all of these three study levels are in progress.

Petr Bureš's pedagogical experience also includes membership in the state examination committees and the Doctoral Board in Botany at the Faculty of Science, Masaryk University. Currently, he is also the Guarantor of the Master Study Programme Botany. In 2003 and 2006 he obtained education-oriented grants funded by the Ministry of Education, Youth and Sports of the Czech Republic.

The Evaluation Board also considered the high quality of the public lecture of the candidate, which took place at the Botanical Seminar of the Department of Botany and Zoology on 26 September 2019 and was attended by 92 people including academic staff and students. The lecture covered one part of the applicant's research, dealing with the evolutionary significance of holocentric chromosomes. It was presented in a very clear and illustrative way and was followed by extensive discussion.

Conclusion: The applicant's pedagogical capabilities *meet* the requirements expected of applicants participating in a professor appointment procedure in the field of Botany.

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Evaluation of the applicant as a respected and recognized scholarly or artistic figure in a given field

Taking into consideration all the scholarly and organizational achievements as well as the pedagogical contributions of Petr Bureš, the Evaluation Board concludes that he is a nationally and internationally recognized personality in his field, both as a scientist and a respected academic teacher. He also provides considerable service to the academic community as a member of various committees, boards and panels.

Conclusion: The applicant *is* a respected and recognized scholarly figure in his field. The applicant *has* made a significant contribution to the development of his field. The applicant *constitutes* a leading figure in his field of scholarship or research.

Conclusion: The applicant *is* a respected and recognized scholarly figure in his/her field. The applicant *has* made a significant contribution to the development of his/her field. The applicant *constitutes* a leading figure in his/her field of scholarship or research.

Secret vote results

Voting took place: electronically

Number of board members		5
Number of votes cast		5
of which	in favour	5
	against	0

Board decision

Based on the outcome of the secret vote and following an evaluation of the applicant's scholarly or artistic qualifications, pedagogical experience and role as a respected and recognized scholarly or artistic figure, the board hereby submits a proposal to the scientific board of the Faculty of Faculty of Science of Masaryk University to **appoint the applicant professor** of Botany.

In Brno on 07.10.2019

prof. RNDr. Milan Chytrý, Ph.D.