



Evaluation Board Decision on the Nomination for Appointment to Professor

Masaryk University

Faculty

Procedure field

Applicant

**Applicant's home unit,
institution**

Faculty of Science

Genomics and Proteomics

doc. RNDr. Zbyněk Zdráhal, Dr.

Central European Institute of Technology, Masaryk University, Brno; National Centre for Biomolecular Research, Faculty of Science, Masaryk University, Brno

Board members

Chair

Prof. RNDr. Jiří Fajkus, CSc.

Central European Institute of Technology, Masaryk University, Brno; National Centre for Biomolecular Research, Faculty of Science, Masaryk University, Brno

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Clinical Institute of Pathology, Medical University of Vienna

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Laboratory of Molecular Structure Characterization, Institute of Microbiology, Academy of Sciences of the Czech Republic, Prague; Department of Analytical Chemistry, Faculty of Science, Palacky University, Olomouc

Prof. RNDr. Jozef Nosek, DrSc.

Department of Biochemistry, Faculty of Natural Sciences, Comenius University, Bratislava

Prof. Mgr. Marek Šebela, Dr. – Department of Biochemistry, Faculty of Science, Palacky University, Olomouc; Department of Protein Biochemistry and Proteomics, Centre of the Region Hana for Biotechnological and Agricultural Research, Faculty of Science, Palacky University, Olomouc

Evaluation of the applicant's scholarly/artistic qualifications

Doc. Zdráhal is in the long-term interested in proteomics methodology. He focuses on the development of sample preparation techniques prior to mass spectrometric analysis and application. His efforts in the development of MALDI-MS profiling techniques resulted in improvement of discriminatory power of the technique which makes it possible to differentiate, e.g., closely related bacterial species or extend the application area of the method (beers, malting barley varieties). He is also interested in the development of sample preparation techniques for characterization of plant histones enabling reliable assessment of dynamics of individual modified forms. His methods have been applied for several species and model systems ranging from bacteria to higher eukaryotes. Next to his methodological research, he and his laboratory provide the proteomics expertise to a wide range of collaborators from Masaryk University or the Czech Republic. Especially, cooperation with Dr. Honys (Institute of Experimental Botany, CAS, Prague) in pollen proteomics or with Assoc. Prof. Bryja (FS MU) resulted in publications in distinguished international journals. He also established international collaboration with a number of laboratories.

He is author or co-author over 90 scientific publications in the field of proteomics (total number of publication is over 120, h-index 22, over 1400 citations w/o auto citations, WOS, Oct 8, 2018). He is the first or corresponding author of 10 and 25 publications, respectively. He published his works in the prestigious journals (Journal of Proteome Research, Journal of Proteomics, Mass Spectrometry Reviews, Food Chemistry, Genome Biology, Science Signaling, Proceedings of the National Academy of Sciences of the United States of America). His citation record demonstrates references to his work mainly in top quartile rank (Q1) journals. He regularly participates in national or international conferences and training courses (15 conference abstracts in last five years, five invited lectures). He is also co-author of two applied results.

Conclusion: The applicant's scholarly/artistic capabilities *meet* the requirements expected of applicants participating in a professor appointment procedure in the field of Genomics and Proteomics.

Evaluation of the applicant's pedagogical experience

Pedagogical activities of Zbyněk Zdráhal are focused on the application of mass spectrometry in proteomics and proteomics methodology in general, i.e., in the field which is the main topic of his research activities. The courses are dedicated mainly to master and doctoral students of life science fields at the Faculty of Science. He had started with teaching in 2005 when he prepared his new course *Protein characterization using mass spectrometry* (Bi7050/C7250). This course he supplemented with practical course dealing with the fundamentals of proteomic data processing (since 2010, Bi7050c/C7350). Since 2007 he has managed the course *Proteomics - a basic course* (C8202). He also participates in the courses *Proteomics* (CG010) and *Methods in genomics and proteomics* (CG080) and the practical course *Proteomics – practice* (Bi8202/C8302). In 2016, he was invited to establish the course *Basic Principles of Proteomics* (FCH-MCO_ZP) for master students at the Faculty of Chemistry, Brno University of Technology.

All his courses are available to students electronically in the form of PowerPoint presentations.

He actively serves also as supervisor of bachelor (7 successfully defended), master (10 successfully defended) and doctoral students (4 successfully defended plus two ongoing and one on maternity leave at present).

He became an internal member of doctoral committees for the fields *Genomics and Proteomics* and *Bio-omics*. He is an external member of the doctoral board of the doctoral programme *Food Hygiene and Processing Technology* at the Faculty of Veterinary Hygiene and Ecology (University of Veterinary and Pharmaceutical Sciences, Brno). He is a member of state examination board of the master field *Genomics and Proteomics* (FS MU) and an external member of the master field *Chemistry for Medical Applications* at the Faculty of Chemistry, Brno University of Technology.

He is a co-author of four textbook texts. He also participated in courses outside the university, namely in the education of non-medical healthcare professionals in the field of clinical biochemistry organized by the National Centre of Nursing and Other Health Professions in Brno.

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

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

Doc. Zdráhal returned to his *Alma mater* with the aim to start running the first mass-spectrometry equipped laboratory dedicated to proteomic applications. This Laboratory was founded thanks to joint efforts of the Faculty of Science and the Faculty of Medicine, MU. In this way, he brought new expertise to the academic community of the Masaryk University. During the time he has built the qualified team, and the laboratory has developed to meet European standards and provide high-quality proteomic analyses to a wide range of academic institutions over the Czech Republic and abroad.

He contributed to the development of proteomic techniques, especially in sample preparation procedures. His work is broadly recognized and cited (50 publications, over 290 citations w/o auto citations in the last five years, WOS, Oct 8, 2018). He regularly passes his expertise to students of Masaryk University via his courses or as a supervisor. He also participated in training courses such as School of mass spectrometry organized by Ioannes Marcus Marci Spectroscopic Society. He was actively involved in the organizing of one international conference (17th International Mass Spectrometry Conference, Aug 27 – Sep 1, 2006, Prague). During 2005-2008, Zbyněk Zdráhal significantly contributed to the establishment and further development of a proteomic group at the Department of Biochemistry and Laboratory of Growth Regulators at the Faculty of Science, Palacký University in Olomouc, which has been transformed since 2010 into the Department of Protein Biochemistry and Proteomics, Centre of the Region Haná for Biotechnological and Agricultural Research at the same faculty. His credit in this matter resided in many expert consultings and providing altruistically an access to the instrumental facilities in Brno, which were not available in Olomouc at that time. Thanks to his support and collaborative research work, two joined scientific papers have been published.

He was, or he is PI or co-PI of several national projects (Czech Science Foundation, Ministry of Education, Youth and Sports CR, Ministry of Agriculture CR).

He serves as a reviewer for several funding agencies (Grant Agency of the Czech Republic, Czech health research council, Grant Agency of Charles University and The Research Foundation Flanders, and an FP7 project).

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

Number of board members
Number of votes cast
of which

in favour
against
invalid

5
5
5
0
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 name] of Masaryk University to

appoint the applicant professor of [field name]. Genomics and Proteomics

terminate the procedure.

In Brno on Oct 16th 2019

Jiří Fajkus

Gerda Egger

Vladimír Havlíček

Jozef Nosek

Marek Šebela