

Masaryk University	
Faculty	Faculty of Science
Procedure field	Environmental Health Sciences
Applicant	Mgr. Eva Budinská, Ph.D.
Applicant's home unit, institution	Faculty of Science, Masaryk University
Habilitation thesis	Integrative Bioinformatics and Computational Modelling in Colorectal Cancer: Unveiling Tumor Heterogeneity through Multi-Omics Data
<u>Board members</u>	
Chair	prof. RNDr. Jana Klánová, Ph.D. <i>Faculty of Science, Masaryk University</i>
Members	prof. MUDr. Marek Svoboda, Ph.D. <i>Faculty of Medicine, Masaryk University</i> Assoc. Prof. Claudia Angelini <i>IAC-CNR, Italy</i> Prof. Victor Raul Moreno Aguado <i>Institut Catala d'Oncologia, Spain</i> Lars Engstrand, MD PhD <i>Karolinska Institutet, Sweden</i>

Evaluation of the applicant's scholarly/artistic qualifications

Dr. Eva Budinska has an excellent scientific CV, with a high number of publications and extensive participation in national and international projects, including as a principal investigator. Her expertise is highly interdisciplinary, spanning biostatistics, bioinformatics, and data analysis, with a deep knowledge of oncology and the molecular mechanisms underlying cancer. Her knowledge of microbiome data and the correlation with other omics data is a plus in modern cancer studies. She has also a translational approach in her research that is impressive.

Eva handles both basic science and clinical research in collaboration with a large number of national and international collaborators. This collaborative effort has shown to be successful. She has been successful in her funding applications and has published > 80 papers, many in high impact journals.

Dr. Budinska demonstrates the scientific independence, originality, and academic maturity and is fully qualified for the position of Associate Professor.

Conclusion: The applicant's scholarly/artistic capabilities **meet** the requirements expected of applicants participating in a habilitation appointment procedure in the field of Environmental Health Sciences.

Evaluation of the applicant's pedagogical experience

Eva Budinská has demonstrated her pedagogical commitment by her extensive teaching and student training in bioinformatics and biostatistics. She has been teaching various courses of the Computational Biology study programme and contributing to the annual summer schools in computational biology. She also authored 5 book chapters to the original textbooks and successfully supervised 15 bachelor's, 8 master's and 3 doctoral thesis.

Conclusion: The applicant's pedagogical capabilities **meet** the requirements expected of applicants participating in a habilitation appointment procedure in the field of Environmental Health Sciences.

Habilitation thesis evaluation

As stated by all three reviewers, the thesis provides a comprehensive overview of Eva's research on colorectal cancer (CLC) heterogeneity by synthesizing the author's research developments through selected high-impact publications. The candidate demonstrates a strong interdisciplinary approach, successfully bridging computational approaches with experimental and clinical validation of findings.

One of the major strengths of this work lies in its genuinely integrative nature. Dr. Budinska successfully combines transcriptomics, histopathological image analysis, microbiome characterization, and computational modelling into a unified framework aimed at deciphering tumour complexity. Importantly, the thesis goes beyond purely descriptive bioinformatics and

consistently seeks biological interpretation and translational applicability towards the patient. The candidate has played a leading role in both method development and biological interpretation. The provided publications underscore the substantial contribution that Dr. Budinska has had in several scientific research directions within the study of CRC. Ultimately

this body of work highlights the critical role of integrative computational methods in advancing clinical and basic cancer research. The quality of the presented work is of high standard and shows a wide but coherent approach to a very complex and impactful issue in human disease.

The reviewers had no doubts that this thesis fulfils and exceeds the criteria imposed on habilitation theses and saw it as a demonstration of a success story of a well-directed scientific career.

Conclusion: The applicant's habilitation thesis **meets** the requirements expected of habilitation theses in the field of Environmental Health Sciences.

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 habilitation thesis, the board hereby submits a proposal to the Scientific Board of the Faculty of Science of Masaryk University to **appoint the applicant associate professor** of Environmental Health Sciences.

In Brno on 20.05.2026

prof. RNDr. Jana Klánová, Ph.D.