

Masaryk University	
Faculty	Faculty of Medicine
Procedure field	Radiology
Applicant	Mgr. Ing. Marek Dostál, Ph.D.
Applicant's home unit, institution	Faculty of Medicine, Masaryk University
Habilitation thesis	Optimization of acquisition and analysis methods for magnetic resonance images
<u>Board members</u>	
Chair	prof. MUDr. Miroslav Heřman, Ph.D. <i>Radiologická klinika LF UP a FN Olomouc</i>
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Evaluation of the applicant's scholarly/artistic qualifications

Mgr. Ing. Marek Dostál, Ph.D., graduated from the Faculty of Mathematics and Physics at Charles University and began his full-time doctoral studies in 2013 at the Biophysical Institute of the Faculty of Medicine, Masaryk University, and at the Department of Radiology and Nuclear Medicine (DRNM) of University Hospital Brno as a research scientist. In 2018, he obtained professional qualification to work as a Radiological Physicist. He completed his doctoral studies in 2020 and in the same year was appointed Deputy Head of DRNM for Science and Research. In 2022, he was appointed to the Advisory Committee of the Deputy for Science and Research at University Hospital Brno. In 2023, he was named a specialist doctoral supervisor by the Scientific Council of the Faculty of Electrical Engineering and Communication Technologies at Brno University of Technology. In 2025, he was appointed Head of the Department of Radiological Physics at DRNM, University Hospital Brno.

The main focus of his scientific research is the imaging and quantification of diffusion-weighted magnetic resonance images of the central nervous system. He is also involved in research on muscle atrophy and segmentation methods. He has been a named member of three grant projects funded by the Czech Health Research Council.

According to the Web of Science, he is the author of 38 publications with 412 citations (excluding self-citations) and a Hirsch index of 8.

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

Evaluation of the applicant's pedagogical experience

Since 2013, he has been actively involved in teaching bachelor's and master's degree programs at the Faculty of Medicine and the Faculty of Science of Masaryk University, as well as at the Institute of Biomedical Engineering of Brno, University of Technology. He contributes to the specialized training of radiology technologists and education of radiology residents. Throughout his academic career, he has supervised seven bachelor's and master's theses and served as a consultant for two doctoral dissertations. Notably, he is the sole representative from non-medical disciplines involved in the development of national magnetic resonance imaging guidelines under the National Institute for Quality and Excellence in Healthcare (NIQEH).

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

Habilitation thesis evaluation

The habilitation thesis by Mgr. Ing. Marek Dostál, Ph.D., titled "Optimization of Acquisition and Analysis Methods for Magnetic Resonance Imaging," summarizes the results of ten manuscripts published in high-impact international journals. In the introduction, the author provides a clear overview of the principles, advantages, and challenges of diffusion-weighted imaging of the central nervous system. The following chapter addresses analytical methods for processing and evaluating brain and cervical spinal cord images, including segmentation and computational techniques. In the final chapter, these methods are applied to clinical data in the study of multiple sclerosis.

This habilitation thesis was reviewed by three respected experts in the field of magnetic resonance imaging. All reviewers confirmed the high quality of the submitted work by Mgr. Ing. Marek Dostál, Ph.D. Based on these evaluations, the thesis meets all criteria and standards required by the Department of Radiology and Nuclear Medicine at the Faculty of Medicine, Masaryk University.

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

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 Medicine of Masaryk University to **appoint the applicant associate professor** of Radiology.

In Brno on 04.11.2025

prof. MUDr. Miroslav Heřman, Ph.D.

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