Habilitation Board Decision on the Nomination for Appointment to Associate Professor

Masaryk University	
Faculty	Faculty of Science
Procedure field	Mathematics - Applied Mathematics
Applicant	RNDr. Lenka Přibylová, Ph.D.
Applicant's home unit, institution	Faculty of Science, Masaryk University
Habilitation thesis	Applied nonlinear dynamics
Board members	
Chair	prof. RNDr. Vlastimil Křivan, CSc. *Faculty of Science, University of South Bohemia in České Budějovice*
Members	prof. RNDr. Jan Slovák, DrSc. *Faculty of Science, Masaryk University* prof. RNDr. Zdeněk Pospíšil, Dr. *Faculty of Science, Masaryk University* prof. Alexander Lomtatidze, DrSc. *Faculty of Mechanical Engineering, Brno University of Technology* Assoc. Prof. Kateřina Staňková, PhD. *Delft University of Technology, Netherlands*

Evaluation of the applicant's scholarly/artistic qualifications

RNDr. Lenka Přibylová, Ph.D., received her RNDr. degree in 2000 in Mathematical analysis at the Faculty of Science of Masaryk University and completed her Ph.D. under the supervision of assoc. Prof. Josef Kalas in 2004. During the study she spent one semester at Lomonosov Moscow State University. Her professional experience includes the assistant professor position at the Dept. of Applied Mathematics at the Faculty of Forestry and Wood Technology of Mendel University of Agriculture and Forestry (2002-2006) and at the Dept. of Applied Mathematics at the Faculty of Science of Masaryk University (since 2006).

The main scientific contribution of Dr. Přibylová lies in a wide range of nonlinear dynamics and its application. It can be divided into three areas: the asymptotic behaviour of dynamical systems applied in economics, population dynamics, and epidemiology; the theory of bifurcations together with continuation methods; recently, she has been involved in the development of oscillation and resonance theory and its application in neuroscience.

Based on the Scopus database and Scimago journal ranking, she is the (co)author of 24 scientific papers, including 7 published in Q1 journals, 7 in Q2 journals, 2 in Q3 journals, and she has 12 records in the Web of Science database with h-index 5.

She was invited to international scientific meeting between the Royal Society and the Academies of Sciences of the V4 countries for early-career researchers: the UK-V4 Frontiers of Science 2021.

She is a laureate of the 2022 MUNI Scientist Award.

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

Evaluation of the applicant's pedagogical experience

The pedagogical qualification of Dr. Přibylová includes full-semester lectures and exercises in Mathematics at MZLU. At MU, she has introduced four original courses: M6201 Nonlinear dynamics and M9BCF Bifurcation theory, chaos and fractals, M1VM01 Algorithmization and numerical computations, M6VM06 Deterministic models. Moreover, she initiated the doctoral seminary MLGDS Lie groups in dynamical systems.

She continues to teach several lectures and exercises for faculties of science, of informatics.

She is the (co)author of 7 electronic educational texts that are widely used not only in the courses taught by L. Přibylová but also in courses for mathematical biology and even for physics.

Dr. Přibylová is an excellent and zealous teacher whose educational performance is highly appreciated by students. She demonstrated her pedagogical skills also during her public lecture.

Dr. Přibylová supervised 27 bachelor’s and 11 master’s theses. She supervised one successful doctoral student, and she was the consultant of another one. Currently, she supervises two doctoral students and one post-doctoral student (Europe HORIZON), and she is the head of the Nonlinear dynamics team.

The popularization of mathematics, its application, and its impact on society constitute a very important part of the applicant’s activity. She is the head of the Analytical group of the National Institute for managing pandemics at the Ministry of Health, and a member of the scientific council of the Centre for Modelling Biological and Social Processes. She communicated her opinions and suggestions in TV, radio broadcasting, and

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journals. She is also regularly participating in outreach events organized by the University, e.g., Nights of science, Open-door days, MjUNI, U3V etc.

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

Habilitation thesis evaluation

The habilitation thesis of Dr. Přibylová entitled “Applied nonlinear dynamics” includes twelve original research papers supplemented by an extensive introduction (42 pages). Four of the papers have been published after 2017, showing that she has been very active in her research in recent years.

The habilitation board addressed three internationally recognized experts in the field of mathematical analysis as opponents. They are Hil G.E. Meijer (University of Twente, Department of Applied Mathematics, Netherlands), Michal Fečkan (Department of Mathematical Analysis and Numerical Mathematics, Comenius University in Bratislava, Slovakia), and Petr Stehlík (Department of Applied Sciences, University of West Bohemia). They have stated that the habilitation thesis by dr. Přibylová shows a consistent line of research in nonlinear dynamics and applications (Meijer), that the processing and documentation of the results is excellent (Fečkan), and that the different contributions of the author in various fields are often nicely introduced (Stehlík).

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

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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 Mathematics - Applied Mathematics.

In Brno on 14.02.2023

prof. RNDr. Vlastimil Křivan, CSc. .....

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