



Prof. Dr. Zoltán Molnár

Full professor • Deputy dean for international and academic affairs

Contact

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Current position

Széchenyi István University, Albert Kázmér Faculty of Agricultural and Food Sciences in Mosonmagyaróvár –

Full professor, Deputy dean for international and academic affairs

H-9200 Mosonmagyaróvár, Vár tér 2., Hungary

Studies and academic degrees

- **2008:** University of West Hungary – habilitated doctor
- **2003:** Szent István University, Doctoral School of Plant Sciences – PhD (dissertation title: "*Production of faba bean breeding materials from in vitro somatic and meristem cultures*" *cum laude*)
- **1980–1985:** University of Agricultural Sciences, Keszthely, Faculty of Agricultural Sciences, Mosonmagyaróvár – agricultural engineer

Professional experience

- **from 01/09/2019:** Széchenyi István University, Albert Kázmér Faculty of Agricultural and Food Sciences in Mosonmagyaróvár (legal predecessor: Faculty of Agriculture and Food Sciences), Department of Plant Sciences – associate professor, deputy dean for international and academic affairs, head of department
- **2016-2019:** Széchenyi István University, Faculty of Agriculture and Food Sciences, Department of Plant Sciences – associate professor, deputy dean of research, head of department
- **2002-2015:** – associate professor
- **1996-2002:** University of West Hungary (legal predecessor: Pannon University of Agricultural Sciences), Faculty of Agriculture and Food Sciences, Institute of Crop Sciences (legal predecessor: Department of Crop Production) – university lecturer
- **1989-1995:** Pannon University of Agricultural Sciences, Faculty of Agricultural Sciences, Department of Crop Production – research fellow
- **1986-1989:** University of Agricultural Sciences, Keszthely, Faculty of Agricultural Sciences, Mosonmagyaróvár, Department of Crop Production – research assistant
- **1985:** Lajta-Hanság State Farm, Mosonmagyaróvár – general agricultural engineering intern

Management assignments

- Széchenyi István University, Albert Kázmér Faculty of Agricultural and Food Sciences in Mosonmagyaróvár, Department of Plant Sciences – head of department (2022-)
- Széchenyi István University, Albert Kázmér Faculty of Agricultural and Food Sciences in Mosonmagyaróvár – deputy dean for international and academic affairs (2022-)
- Széchenyi István University, Faculty of Agriculture and Food Sciences, Department of Plant Sciences – head of department (2016-2022)
- Széchenyi István University, Faculty of Agriculture and Food Sciences – deputy dean of research (2016-2022)

Positions and professional public engagement

- Member of the OTKA Complex Agricultural Science Expert Group (2022-2024)
- Chairman of the Supervisory Board of the Óvár Farmers' Alumni Association (2018-)
- Member of the Variety Certification Committee, Field Crops Section, Plant Production and Horticulture Directorate, NÉBIH (2018-)
- Hungarian Soybean and Protein Crop Association (2016-)
- Association for Innovative Agricultural Biotechnology (2008-)
- MTA Department of Agricultural Sciences, Scientific Committee for Agricultural Biotechnology – public body member (2003-)
- Hungarian Society of Plant Biology (1992-)
- Federation of European Societies of Plant Biology (FESPB) (1992-)
- Hungarian Association of Plant Micropropagators (1990-)

Awards and recognitions

- Acta Agronomica Óváriensis scientific journal award for outstanding reviewer (2025)
- Széchenyi István University Foundation Academic Scholarship (2021, 2022, 2024)
- Publication Quality Award, Széchenyi István University, November 3, 2016
- Outstanding Lecturer at the University of West Hungary, University of West Hungary, June 15, 2007
- Outstanding employee of the University of West Hungary, University of West Hungary, June 15, 2001
- Certificate of commendation from the Rector, Pannon University of Agricultural Sciences, Keszthely, June 5, 1993

Teaching and research activities

I have been employed as a university lecturer (assistant professor, associate professor, and professor) since January 1, 1996. As part of my educational development activities, I have developed the *syllabus for courses in plant physiology and plant biotechnology in the field of plant biology*, which are included in undergraduate and postgraduate programs. I participated in the development of the application for the establishment and launch of the Master of Science (MSc) program in Agricultural Biotechnology in Hungarian and English in 2008, and I have been the program coordinator since 2017. I am currently responsible for 11 subjects taught in Hungarian, in full-time and part-time programs, in several majors, at undergraduate (higher education vocational training, bachelor's, master's) and postgraduate (professional engineer training) levels. I teach one subject in English in the undergraduate program. In the Plant Science Program of the Wittmann Antal Multidisciplinary Doctoral School of Plant, Animal and Food Sciences (teaching activity in PhD training), I am responsible for three subjects, developing the curriculum and teaching in Hungarian and English.

Supervisor and talent management (total until 2025):

- 76 students obtained MSc/BSc degrees
- Co-supervision of 5 PhD students
- Currently co-supervising 6 domestic and international PhD students

- Support for 29 faculty TDK projects (including 2 first place and 2 third place winners)
- Preparing 4 students for OTDK (1st place: 1)

Project proposals and project activities

- MÉM-MŰFA, ref. no.: 1306, "Development and adaptation of cell and tissue culture methods for the production of breeding material for leguminous plants (field beans, alfalfa)", project leader (1988-1990)
- MTA OTKA, ref. no.: 565, "Investigation of cell culture and somatic cell genetics methods in leguminous plants (peas, field beans, alfalfa)", project leader (1991-1995)
- With the support of the Brandenburg Ministry of Research (Germany), "Investigation of phytohormone-like substances in microalgae (cyanobacteria and green algae) using biotests," participating researcher (1993-1997)
- MKM-FKFP, ref. no.: 0926/1997, "Enhancing the drought tolerance of large-seeded legume species using biotechnological methods," participating researcher (1997-2000)
- OM Deputy State Secretariat for Research and Development, "Development of new combined gene transfer methods on the model plant *Beta vulgaris* L.", project leader (ref. no. BIO-00124/2000) (2000-2002)
- OECD Fellowship, "Plant biotechnological application of immunocytochemical methods" (Consejo Superior de Investigaciones Científicas, Estación Experimental del Zaidín, Granada, Spain), scholarship researcher (2000)
- MTA Bolyai János Research Fellowship, "Development of gene transfer methods in *Beta vulgaris* L. plants", fellow researcher (2001-2004)
- Participant in the project entitled "Alternative energy sources from *Beta vulgaris* L. using biotechnological methods" (identification number GVOP-3.1.1.-2004-05-0019/3.0) (2005-2008)
- OECD Fellowship, "Improved screening procedures for selection of faba bean and pea plants against abiotic stresses" (Faculty of Agriculture and Forestry, University of Helsinki), scholarship researcher (2009)
- Project manager of the project entitled "Microalgae biotechnology in sustainable agriculture" (TÁMOP-4.2.2.A-11/1/KONV-2012-0003) (2012-2015)
- Participating researcher in the project entitled "Extraction and industrial utilization of organic matter from high-lipid suspensions" (GOP-1.1.1-11-2012-0157) (2013-2015)
- Participation in the Horizon 2020 project SABANA – "Sustainable Algae Biorefinery for Agriculture and Aquaculture", No.: 727874 (2016-2021)
- EFOP-3.6.1-16-2016-00017 Head of the agricultural and food science research group of the project entitled "Internationalization, creation of a supply of teachers, researchers and students, development of knowledge and technology transfer as tools for smart specialization at Széchenyi István University" (2016-2020)
- EFOP-3.4.3-16-2016-00016, "Institutional developments for the joint improvement of the quality and accessibility of higher education at Széchenyi István University", participating researcher (2017-2021)
- Co-leader of the project entitled "Innovative scientific workshops in Hungarian agricultural higher education" (EFOP-3.6.3-VEKOP-16-2017-00008) (2017-2022)
- Széchenyi István University, KFI Program Support System, "Identification of functional foods/food ingredients that can be grown in vertical farms, development of cultivation technology and digital monitoring system," participating researcher (2024-2025)
- HUN-REN Office of Supported Research Groups, HUN-REN-SZE PhotoPlant-Lab Research Group, identification and characterization of plant pathogens, development of diagnostic methods and environmentally friendly plant protection technologies; investigation of the phytophysiological effects of natural plant extracts, evaluation of the plant growth-regulating effects of microalgae strains (2022-2027)

Publications, citations, patents

Publication data (MTMT, until 2025; ID: 10001955):

- Scientific journal articles (Hungarian + foreign languages): 67 (14 + 53)
- Conference papers (Hungarian + foreign languages): 18 (3 + 15)
- Popular science articles: 6
- Abstracts: 112
- Books/book excerpts: 5
- Total publications: 230
- Total citations: 925
- Hirsch index: 14

Patents:

- Domestic patent (2024): "*Microbiological preparation facilitating decomposition for composting extracted herbal waste*" patent protection (registration number: 231 448)
- International patent (2020): „*Hidrólise enzimática da biomassa de microalga e obtenção de produto à base de aminoácidos livres para uso agrícola*” (“Enzymatic hydrolysis of microalgae biomass and agricultural use of free amino acid-based products”), registration number: BR 102019006567-2, Brasil

Domestic and international professional activities

I am gradually expanding my professional knowledge through contacts with domestic and foreign institutions, which I use in teaching subjects related to plant biology (plant physiology and plant biotechnology) and in research on plant cell and tissue cultures. I collaborate with the Agricultural Institute of the HUN-REN Agricultural Research Center (Martonvásár), the MATE Institute of Genetics and Biotechnology (Gödöllő), the MATE Agricultural Biotechnology Research Center (Gödöllő), and the BETA Research Institute Nonprofit Ltd. in Sopronhorpács.

I coordinate the work carried out on a continuous basis for several years by the Department of Plant Sciences at the Albert Kázmér Mosonmagyaróvár Faculty of Széchenyi István University:

- OGET GmbH (Austria), Agria Logisztikai Kft.: testing of natural products (PlanTonic, SoilTonic, PowerTonic, SeedTonic) on small plots of arable land, biochemical analysis of collected plant samples.
- TerrAgro Kft.: I also supervised the testing of soil-improving bacterial preparations on small plots of arable land (planning and evaluation of experiments).
- National Association of Grain Growers, Seed Association Interprofessional Organization and Product Council: post-registration variety trials of winter wheat.
- Corteva Crop Solutions HUN Kft.: testing of plant nutrition-promoting preparations
- BioFil Mikrobiológiai, Géntechnológiai és Biokémiai Kft.: development of microbial dressings and inoculants for arable crops to improve soil and plant health and increase yields.
- AGRITURF 2022 Zrt.: testing of peat humate concentrate.
- Axereal Hungary Ltd.: comparative testing of cereal grain varieties.

Organization/chairing of domestic and international conferences (e.g., Symposium on Microalgae and Seaweed Products in Agriculture, Óvár Scientific Day Conference, COS Conference 2023–2024, ABS 2024).

Editorial board membership: Emirates Journal of Food and Agriculture (2010–2012), Acta Agronomica Óvariensis (2024-).

Guest Editor: Special Issue – Biostimulants for Sustainable Crop Productivity and Protection: From Concept to Application (Agronomy, Q1, MDPI) (2025).