



TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE _____4636__

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Bioscienze dell'Università degli Studi di Milano**_____

Scientist- in - charge: _____**Prof. Matteo Montagna**_____

Szoboszlay, Márton

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Márton
Name	Szoboszlay
Date of birth	[Day, month, year] 08/01/1985

PRESENT OCCUPATION

Appointment	Structure
Scinetist	Thünen Institute of Biodiversity

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	Biologist	Eötvös Loránd University	2009
Specialization			
PhD	Soil Science	University of Kentucky	2015
Master			
Degree of medical specialization			
Degree of European specialization			
Other			



REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

FOREIGN LANGUAGES

Languages	level of knowledge
Hungarian	Native
English	Full proficiency
German	Advanced
Italian	Intermediate

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award

TRAINING OR RESEARCH ACTIVITY

I'm a microbiologist with a research focus on the microbial ecology of soil and plant-associated environments especially in agroecosystems. In the past four years, I've been part of the group of Christoph Tebbe at the Thünen Institute of Biodiversity (Braunschweig, Germany), where I've been working on the concept of studying the soil microbiota at the spatial scale of individual soil aggregates to reveal heterogeneity and co-occurrence patterns (manuscript under review: www.biorxiv.org/content/10.1101/2020.06.24.169037v1). In parallel, I've been participating in the VIROPLANT project (<https://www.viroplant.eu>) directed by Massimo Turina in the work package led by Rob Lavigne. My task is to develop a strategy for the environmental risk assessment of bacteriophages used as biocontrol agents in agriculture. I've been using field trials and developed a microcosm system to assess the off-target effects of bacteriophages on the soil- and plant microbiota. Previously in Christoph Tebbe's group, I worked on several research projects characterizing microbial communities in agroecosystems addressing e.g. how climate change (Microbiology Open. 2017; e462.), land use and soil organic matter quality (FEMS Microbiology Ecology. 2017; 93:fix146.), GM crops (PLoS ONE. 2019; 14(12):e0222737), or saline water irrigation (Scientific Reports. 2019; 9:9795) influence microbial diversity in the rhizosphere. I'm also responsible for keeping the bioinformatical and statistical toolset of the group up to date, supporting students and visiting scholars, and overseeing the work of technicians.

I've obtained my PhD in soil science at the University of Kentucky. As a graduate student, it was my responsibility to establish the use of next generation sequencing in the laboratory of my PI, Luke Moe, and then coach members of our lab in applying NGS in their research. My work focused on plant-



microbe interactions in the rhizosphere. I studied how the domestication of corn influenced the structure and activity of the soil microbiota (Soil Biology and Biochemistry. 2015; 80: 34-44.) and used a root exudation model system to investigate the effect of root exudate flavonoids on the soil bacterial community (PLoS ONE. 2016; 11:e0146555.). I performed growth chamber and greenhouse experiments, and also laboratory experiments under sterile conditions with *Medicago truncatula*.

Before pursuing a PhD I worked as a clinical microbiologist in a hospital lab in Budapest. I performed diagnostics of aerob and anaerob bacterial pathogens from various clinical samples coming from four hospitals using cultivation, microscopy, and biochemical tests. After this, I was granted a short-term stay at the Helmholtz Centre for Environmental Research in Leipzig to work with Kathleen Schleinitz. I have a diploma with master degree from the Eötvös Loránd University where I focused on molecular biology and microbiology. As an MSc student in the laboratory of Erika M. Tóth, and later working with Kathleen Schleinitz, I've gained experience in various aerob and anaerob cultivation techniques and microcosm experiments to enrich, isolate, and characterize bacteria.

PROJECT ACTIVITY

Year	Project

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place
2019	Developing an environmental risk assessment strategy for phage biocontrol in agriculture	4 th Thünen Symposium on Soil Metagenomics, Braunschweig, Germany
2018	The effect of genetic modification of maize on soil fungi, bacteria, and bacterial denitrifiers at different field sites across Europe	Annual Conference of the Association for General and Applied Microbiology, Wolfsburg, Germany
2017	Implications of land use change on soil bacterial diversity and association networks	2 nd Global Biodiversity Conference, Nanjing, China
2017	The effect of soil organic carbon fractions and land use on the composition of microbial communities in European soils	BAGECO 14 th Symposium on Bacterial Genetics and Ecology, Aberdeen, Scotland



2017	The effects of seawater irrigation and inoculation with <i>Azospirillum brasilense</i> on the rhizosphere prokaryotic community of two wheat cultivars	BAGECO 14 th Symposium on Bacterial Genetics and Ecology, Aberdeen, Scotland
2016	Assessing the variability of the rhizomicrobiome of maize across Europe	3 rd Thünen Symposium on Soil Metagenomics, Braunschweig, Germany
2015	The effect of root exudate 7,4'-dihydroxyflavone and naringenin on soil bacterial community structure	7 th Annual Argonne Soil Metagenomics Meeting, Lisle IL, USA
2013	Getting to the root of corn domestication: comparing root system architecture and rhizosphere processes of Balsas teosinte and domesticated corn cultivars	American Society for Microbiology KY-TN Branch Meeting, Bowling Green KY, USA
2008	Study of bacterial biofilms in an ultra pure water industrial system using cultivation	Congress of the Hungarian Society for Microbiology, Keszthely, Hungary

PUBLICATIONS

Books
[title, place, publishing house, year ...]
[title, place, publishing house, year ...]
[title, place, publishing house, year ...]

Articles in reviews
Under review: Márton Szoboszlay, Christoph C. Tebbe. Hidden heterogeneity and co-occurrence networks of soil prokaryotic communities revealed at the scale of individual soil aggregates. www.biorxiv.org/content/10.1101/2020.06.24.169037v1
Márton Szoboszlay, Astrid Näther, Ewen Mullins, Christoph C. Tebbe. Annual replication is essential in evaluating the response of the soil microbiome to the genetic modification of maize in different biogeographical regions. <i>PLoS ONE</i> . 2019; 14(12):e0222737.
Márton Szoboszlay, Astrid Näther, Bei Liu, Angel Carrillo, Thelma Castellanos, Kornelia Smalla, Zhongjun Jia, Christoph C. Tebbe. Contrasting microbial community responses to salinization and straw amendment in a semiarid bare soil and its wheat rhizosphere. <i>Scientific Reports</i> . 2019; 9:9795.
Christopher Poeplau, Mirjam Helfrich, Rene Dechow, Márton Szoboszlay, Christoph C. Tebbe, Axel Don, Bärbel Greiner, Dorit Zopf, Ulrich Thumm, Hein Korevaar, Rob Geerts. Increased microbial anabolism contributes to soil carbon sequestration by mineral fertilization in temperate grasslands. <i>Soil Biology and Biochemistry</i> . 2019; 130: 167-176.
Andrea Čerevková, Dana Miklisová, Márton Szoboszlay, Christoph C. Tebbe, Ludovít Cagáň. The responses of soil nematode communities to Bt maize cultivation at four field sites across Europe. <i>Soil Biology and Biochemistry</i> . 2018; 119: 194-202.



Márton Szoboszlay, Anja B. Dohrmann, Christopher Poeplau, Axel Don, Christoph C. Tebbe. Impact of land-use change and soil organic carbon quality on microbial diversity in soils across Europe. *FEMS Microbiology Ecology*. 2017; 93:fix146.

Editor's Choice article for issue 93/12 of FEMS Microbiology Ecology.

Márton Szoboszlay, Astrid Näther, Esther Mitterbauer, Jürgen Bender, Hans-Joachim Weigel, Christoph C. Tebbe. Response of the rhizosphere microbial community of barley (*Hordeum vulgare* L.) to elevated atmospheric CO₂ concentration in open-top chambers. *Microbiology Open*. 2017; e462.

Márton Szoboszlay, Alison White-Monsant, Luke A. Moe. The effect of root exudate 7,4'-dihydroxyflavone and naringenin on soil bacterial community structure. *PLoS ONE*. 2016; 11:e0146555.

Qingxinag Yang, Ruifei Wang, Siwei Ren, Márton Szoboszlay, Luke A. Moe. Practical survey on antibiotic-resistant bacterial communities in livestock manure and manure-amended soil. *Journal of Environmental Science Part B*. 2016; 51:14-23.

Márton Szoboszlay, Julie Lambers, Janet Chappell, Joseph V. Kupper, Luke A. Moe, David H. McNear Jr. Comparison of root system architecture and rhizosphere microbial communities of Balsas teosinte and domesticated corn cultivars. *Soil Biology and Biochemistry*. 2015; 80: 34-44.

[title of the article, review, place, publishing house, year ...]

[title of the article, review, place, publishing house, year ...]

Congress proceedings

[title, structure, place, year]

[title, structure, place, year]

[title, structure, place, year]

OTHER INFORMATION



Skills and expertise

microbiology, microbial ecology, soil science
high-throughput sequencing, bioinformatics
multivariate statistics, R, network analysis
molecular methods, DNA and RNA extraction from soil and plant tissue, qPCR, cloning
T-RFLP, FAME, PLFA
soil enzyme assays
cultivation and characterization of aerob and anaerob bacteria
microcosms and model systems
greenhouse and growth chamber experiments with plants
epifluorescence microscopy, DAPI cell counts
clinical bacteriology

Teaching experience

Microbial Metabolism in Natural and Artificial Environments – course for MSc students at the Braunschweig University of Technology

Lecture on molecular methods in microbial ecology

2017 and 2018 winter semesters

Fundamentals of Soil Science – undergraduate course at the University of Kentucky

Teaching assistant for the 2014 spring semester

Laboratory classes, field trips, and consultation to accompany lectures in introductory soil science

Food Microbiology – course for graduate and advanced undergraduate students at the University of Kentucky

Lecture on biofilms

Lecture on methods for investigating bacterial community structure

2013 fall semester

Microbial Structure and Function – advanced course for graduate students at the University of Kentucky

Lectures on microbial metabolism

2013, 2014, and 2015 fall semesters

Mentoring

Janet Chappelle

University of Kentucky, fall 2011, spring 2012.

I mentored Janet during her capstone research project in her senior year in the agricultural biotechnology BSc program. She went on to pursue a master degree in soil microbiology at North Carolina State University.



Christopher Will

University of Kentucky, 2014.

Christopher worked with me during his second and third semester in the agricultural biotechnology BSc program. I trained him in molecular biology and working with clone libraries.

Derek Law

University of Kentucky, 2012 – 2015.

Derek was a PhD student at the Department of Geography. He developed an interdisciplinary project linking physical geography and environmental microbiology. I taught him molecular methods used in environmental microbiology, helped him develop his project and analyze his data.

Naomi Oßwald

Thünen Institute of Biodiversity, November 2017 – February 2018.

Naomi pursued a BSc in biology at the Braunschweig University of Technology. I participated in designing the research project for her thesis and coached her during the analysis of the results.

Bei Liu

Thünen Institute of Biodiversity, February and March 2018.

Bei was an MSc student at Nanjing University. I coached her in bioinformatics and multivariate statistics during her visit at the Thünen Institute of Biodiversity.

Oluwaseun Olasinde

Thünen Institute of Biodiversity, from March to September 2018.

Oluwaseun was a visiting PhD student from the University of Ibadan. I trained her in statistics and in molecular methods used in microbial ecology.

Miscellaneous

Driver's license

2009, 2010, 2011, 2017: Voluntary worker at Bátor Tátor (Camp of Courage, member of the Serious Fun Children's Network), a therapeutic recreation camp for children living with cancer or other serious illnesses.

Referees

Christoph C. Tebbe

Head of the Microbiology and Molecular Ecology Group at the Thünen Institute of Biodiversity (Braunschweig, Germany)

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Rob Lavigne

Head of the Laboratory of Gene Technology at the Department of Biosystems, KU Leuven



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I'm passionate about team work and actively contribute to build a supportive atmosphere at the workplace. At the Thünen Institute, I help the PhD students in our group with experimental design and data analysis and assist members of our group, and occasionally others at our institute, with academic writing. I have supported the work of several guest researchers and students visiting our group and recently initiated and led weekly discussions in our group on presentation techniques. I put strong emphasis on transparency and clear record keeping in scientific work. Therefore, I keep regularly updated reports on my ongoing work available for all members of our group.

I hope my professional experience in three countries shows my competence in working in diverse, international teams, my willingness to travel, and ability to adapt. Thank you for considering my application!

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: _____ Braunschweig _____, _____ 14/07/2020 _____

SIGNATURE