CURRICULUM VITAE

Filip Husník

CONTACT INFORMATION

EMBO postdoctoral fellow, laboratory of Patrick Keeling
University of British Columbia, Faculty of Science, Department of Botany
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EDUCATION

2012-2017
Ph.D. (cum laude), **Molecular and Cell Biology and Genetics**
Department of Molecular Biology and Genetics, Faculty of Science, **University of South Bohemia** & Institute of Parasitology, **Czech Academy of Sciences**, Czech Republic. Thesis: *Genomic and Cellular Integration in the Tripartite Nested Mealybug Symbiosis.* Supervisor: John McCutcheon (University of Montana). University guarantor: Miroslav Oborník

2012
RNDr., Parasitology
Faculty of Science, **University of South Bohemia**, Czech Republic

2010-2012
M.S., Parasitology
Department of Parasitology, Faculty of Science, **University of South Bohemia**, Czech Republic. Thesis: *Evolutionary origins of intracellular symbionts in arthropods.* Supervisors: Tomáš Chrudimský, Václav Hypša.

2007-2010
B.S., Biology
Department of Parasitology, Faculty of Science, **University of South Bohemia**, Czech Republic. Thesis: *Molecular phylogeny of intracellular symbiotic Gammaproteobacteria in insects.* Supervisors: Tomáš Chrudimský, Václav Hypša.

PROFESSIONAL EXPERIENCE

Employment:

2017-2019
EMBO postdoctoral fellow, University of British Columbia, Faculty of Science, Department of Botany, **laboratory of Patrick Keeling**

2012-2017
Graduate student, Institute of Parasitology, **Biology Centre of the Czech Academy of Sciences**

2010-2015
Research worker, Faculty of Science, University of South Bohemia

Research stays:
2016
Visiting Student (03/07-14/07)

Anna Michalik, **Jagiellonian University**, Krakow, Poland

2015

Visiting Student (06/10-31/10)
Laura Ross lab, **University of Edinburgh**, Edinburgh, UK

2014-2015

Fulbright Visiting Student Researcher (18/08-25/05)
John McCutcheon lab, **University of Montana**, Missoula, USA

2012-2013

Erasmus Visiting Student Researcher (31/10-04/02)
Alistair Darby lab, **University of Liverpool**, Liverpool, UK

2011

Visiting Student (03/06-17/08)
John McCutcheon lab, **University of Montana**, Missoula, USA

PEER-REVIEWED PUBLICATIONS

Husnik F, McCutcheon JP: Repeated replacement of an intrabacterial symbiont in the tripartite nested mealybug symbiosis. ***Proceedings of the National Academy of Sciences of the United States of America*** 2016, 113(3): E5416-5424.

Nováková E, Hypša V, Nguyen P, **Husník F**, Darby AC: Genome sequence of *Candidatus* Arsenophonus lipopteni, the exclusive symbiont of a blood sucking fly *Lipoptena cervi* (Diptera: Hippoboscidae). ***Standards in Genomic Sciences*** 2016, 11: 72.

Kyselková M, Chrudimský T, **Husník F**, Chroňáková A, Heuer H, Smalla K, Elhottová D: Characterization of tet (Y)-carrying LowGC plasmids exogenously captured from cow manure at a conventional dairy farm. ***FEMS Microbiology Ecology*** 2016, 92(6): fiw075.

Nováková E, **Husnik F**, Šochová E, Hypša V: *Arsenophonus* and *Sodalis* symbionts in louse flies: an analogy to the *Wigglesworthia* and *Sodalis* system in tsetse flies. ***Applied and Environmental Microbiology*** 2015, 81 (18): 6189-6199.

Duncan RP, **Husnik F**, Van Leuven JT, Gilbert DG, Dávalos LM, McCutcheon JP, Wilson ACC: Dynamic recruitment of amino acid transporters to the insect/symbiont interface. ***Molecular Ecology*** 2014, 23(6): 1608-1623.

Husnik F, Nikoh N, Koga R, Ross L, Duncan RP, Fujie M, Tanaka M, Satoh N, Bachtrog D, Wilson ACC, von Dohlen CD, Fukatsu T, McCutcheon JP: Horizontal Gene Transfer from Diverse Bacteria to an Insect Genome Enables a Tripartite Nested Mealybug Symbiosis. ***Cell*** 2013, 153(7): 1567-1578.

Chrudimský T, **Husník F**, Nováková E, Hypša V: *Candidatus* Sodalis melophagi sp. nov.: phylogenetically independent comparative model to the tsetse fly symbiont *Sodalis glossinidius*. ***PLoS ONE*** 2012, 7(7): e40354.

Husník F, Chrudimský T, Hypša V: Multiple origins of endosymbiosis within the Enterobacteriaceae (γ-Proteobacteria): convergence of complex phylogenetic approaches. ***BMC Biology*** 2011, 9:87.

PRESENTATIONS AT CONFERENCES

2016

XIV International Symposium on Scale Insect Studies, Catania, Italy (13-16/06). Talk presentation.

2015

8th International Symbiosis Society Congress. Lisbon, Portugal (12-18/07). Talk presentation.

2014

Symbioses becoming permanent: The origins and evolutionary trajectories of organelles. Irvine, CA, USA (15-17/10). Poster presentation.

8th International Wolbachia Conference. Innsbruck, Igls, Austria (06-11/06). Talk presentation.

2013

12th International Colloquium on Endocytobiology and Symbiosis. Dalhousie University, Halifax, Nova Scotia, Canada (18-22/08). Talk presentation.

2012

7th International Symbiosis Society Congress. Krakow, Poland (22-28/07). Poster presentation.

7th International Wolbachia Conference and Final Meeting of the EU COST Action FA0701 "Arthropod Symbiosis: from fundamental studies to pest and disease management". La Vieille Perrotine, Ile d'Oléron, France (07-14/06). Poster presentation.

OTHER LECTURES

2015

Charles University, Faculty of Science, Prague, Czech Republic (10/11)
University of Edinburgh, Institute of Evolutionary Biology, Edinburgh, UK (15/10)

2014

University of Ostrava, Faculty of Science, Ostrava, Czech Republic (18/02)

2013

Charles University, Faculty of Science, Prague, Czech Republic (28/11)

HONORS, AWARDS, AND FUNDING

2017-2019

EMBO long-term postdoctoral fellowship (laboratory of Patrick Keeling, University of British Columbia, Vancouver, Canada)

2015

30 Under 30, Forbes Czech Republic

2014-2015

Fulbright visiting student fellowship (laboratory of John McCutcheon, University of Montana, Missoula, USA)

2014-2015

Grant Agency of the University of South Bohemia (001/2014/P, PI: Filip Husník) *Evolution of intrabacterial symbiosis in mealybugs: from mosaic pathways to mosaic organisms.*

2012-2013

Erasmus visiting student fellowship (laboratory of Alistair Darby, University of Liverpool, Liverpool, UK)

2012

Dean's award for excellent research results presented in master thesis.

2009

Student Grant Agency of the University of South Bohemia (SGA2009002, PI: Filip Husník: *Molecular phylogeny of symbiotic Gammaproteobacteria in insects)*

ATTENDED WORKSHOPS

Workshop on Genomics, Český Krumlov, Czech Republic (08-21/01/2012).

Host-microbe symbioses – old friends and foes. Instituto Gulbenkian de Ciencia, Oeiras, Lisbon, Portugal (19-31/07/2015).

SKILLS

Laboratory methods: more than ten years of experience with basic molecular biology methods (incl. genomic and transcriptomic library preparations), microscopy methods (light, fluorescence/confocal, and TEM), and insect cell culture and symbiotic bacteria cultivation.

Bioinformatics: good knowledge of Unix and phylogenomics, genomics, and transcriptomics programs

Programming: basic experience in Bash, Perl, Processing/Java, Python, R, and C++.

Languages: English (full professional proficiency), French (limited working proficiency), Czech (native).

TEACHING AND STUDENTS

2016

Teaching assistant at the Workshop on Population and Speciation Genomics [http://evomics.org/], Cesky Krumlov, Czech Republic

Courses taught at the University of South Bohemia:

2014

Introduction to Genomics (selected lectures and exercises on Unix, databases and mapping, genomics, and transcriptomics)

2013

Biology of Parasites (selected lectures on phylogeny and evolution of parasites)

2012, 2013

Molecular Phylogenetics (selected lectures and exercises on probabilistic methods)

Mentoring students at the University of South Bohemia:

Kamila Machová, Bioinformatics cross-border B.S. student (University of South Bohemia/Johannes Kepler University of Linz). RNA biology of symbiotic bacteria in insects [defended in 2016].

Eva Šochová, Biology B.S. and Parasitology M.S. student. Genomics of symbiotic bacteria in bloodsucking insects [defended in 2014 and 2016].

PEER-REVIEW

Molecular Biology and Evolution, ISME J, Genome Biology and Evolution, Applied and Environmental Microbiology, PeerJ, PloS One, Physiological Entomology, Scientific Reports

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