

Unit Name

Model-Based Evolutionary Genomics Unit

Collaborations

Frank O Aylward, Virginia Tech, USA, Viral contributions to Eukaryotic evolution
Bastien Boussau , CNRS UMR 5558, Lyon, France, Using machine learning to model coevolution
Zachar István, Institute of Evolution, HUN-REN, Hungary, Theoretical models of Eukaryogenesis
Imre Derényi, Eötvös University, Hungary, Somatic Evolution
Tom Williams, University of Bristol, United Kingdom, Reconstructing the Tree of Life
Phil Hugenholtz, University of Queensland, Australia, Prokaryotic evolution
Ben Woodcroft, Queensland University of Technology, Australia, Machine learning in genomics
Eduard Ocaña-Pallarès, The Institute of Evolutionary Biology (IBE), Spain, Gene transfer in eukaryotes
Davide Pisani, University of Bristol, UK, Early Animal phylogeny and SOTA phylogenomics models
Mathieu Groussin, University of Kiel, Germany, Evolution of the Human microbiome
Anja Spang, University of Amsterdam, The Netherlands, Eukaryogenesis and evolutionary genomics of Archaea
Philip C. J. Donoghue, University of Bristol, UK, Dating the Tree of Life

Research Personnel

Joao Henrique Diniz Brandao Gervasio, Postdoctoral Scholar
Lenard Szantho, Research Unit Technician
Oliver Schick, Research Unit Technician
Anzhelika Koldaeva, Research Unit Technician (SA)
Olga Evgenyevna Bagrova, Research Intern
Noah Ares Wahl, Visiting Research Student
Lenard Lajos Szantho, Visiting Research Student
Wencong Huang, Visiting Research Student

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. Williams, Tom A., Adrian A. Davin, Lénárd L. Szánthó, Alexandros Stamatakis, Noah A. Wahl, Ben J. Woodcroft, Rochelle M. Soo, et al. 2024. "Phylogenetic Reconciliation: Making the Most of Genomes to Understand Microbial Ecology and Evolution." *The ISME Journal* 18.
2. Moody, Edmund R R, Sandra Álvarez-Carretero, Tara A. Mahendrarajah, James W. Clark, Holly C. Betts, Nina Dombrowski, Lénárd L. Szánthó, et al. 2024. "The Nature of the Last Universal Common Ancestor and Its Impact on the Early Earth System." *Nature Ecology & Evolution* 8:1654–66.

3. Morel, Benoit, Tom A. Williams, Alexandros Stamatakis, and Gergely J. Szöllősi. 2024. "AleRax: A Tool for Gene and Species Tree Co-Estimation and Reconciliation under a Probabilistic Model of Gene Duplication, Transfer, and Loss." *Bioinformatics* (Oxford, England) 40.
4. Derényi, Imre, Márton C. Demeter, Mario Pérez-Jiménez, Dániel Grajzel, and Gergely J. Szöllősi. 2024. "How Mutation Accumulation Depends on the Structure of the Cell Lineage Tree." *Physical Review. E* 109:044407.

Poster Presentation at Conference

1. Szöllősi, Gergely J. 2024. "A Geological Timescale for Bacterial Evolution." *SMBE* 2024, July.

Presentation at Conference

1. Szöllősi, Gergely J. 2024. "Genomes as Documents of Evolutionary History." *From Solid State to Biophysics XI*, June.

Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title	Outlet
Olga Bagrova	Poster Presentation at Conference	Analysis of Secondary Structure Distribution Across Functional and Homologous Groups of Proteins	Computational & Physical Understanding of Biological Information Processing
Lenard Szantho	Poster Presentation at Conference	A geological timescale for bacterial evolution and oxygen adaptation	the 3rd Joint Congress on Evolutionary Biology 2024
Anzhelika Koldaeva	Poster Presentation at Conference	A Deep Learning Framework for Ancestral Gene Content Denoising	TSVP Symposium: Computational and Physical Understanding of Biological Information Processing
Lenard Szantho	Presentation at Conference	Compositionally Constrained Sites Drive Long-Branch Attraction	the 3rd Joint Congress on Evolutionary Biology 2024
Lenard Szantho	Seminars	Towards better phylogenetic models of evolution by accounting for compositionally constrained sites	OIST Internal Seminar
Joao Henrique Diniz Brandao Gervasio	Seminars	Phylogeny Reconciliation of Giant Virus	Evolution Seminar
Anzhelika Koldaeva	Seminars	Learning gene context with Transformer-based models	The Translational Research Institute (TRI), Brisbane, Australia
Anzhelika Koldaeva	Seminars	Learning gene context with Transformer-based models	The University of Queensland, Brisbane, Australia

Honors, Awards & Fellowships

2024 - Ongoing	Pierre-Gilles de Gennes Prize, ピエール＝ジル・ド・ジェンヌ賞, 2024, Organising Committee of Solid State to Biophysics XI
2024 - Ongoing	Physics Prize of the Hungarian Academy of Sciences, ハンガリー科学アカデミー物理学賞, 2024, Hungarian Academy of Sciences

External Service

2024 - Ongoing	Brett Babec's thesis committee , Queensland University of Technology, I am part of Brett Babec's thesis committee
----------------	---

Other Institutional Service

2024 - Ongoing	Living on Mars, (University)
----------------	------------------------------

Outreach Activities (For Unit Members Only)

2024	Olga Bagrova, OIST Science Festival
2024	Oliver Schick, Score!
2024	Oliver Schick, Motobu Science Festival
2024	Oliver Schick, OIST Science Festival
2024	Lenard Szantho, Score!
2024	Lenard Szantho, Motobu Science Festival
2024	Lenard Szantho, OIST Science Festival
2024	Oliver Schick, Campus tour for high school students
2024	Lenard Szantho, Naha Science Festival