



Welcome to the FindingPheno newsletter!

Dear FindingPheno friends!

Welcome to the FindingPheno December Newsletter! With 2022 coming to a close, we wanted to share with you some recent project highlights!

In this newsletter you will discover:

- an overview of our 1st Project Review Meeting
- new publications in the project
- promotion and dissemination actions by partners
- other project-related news
- upcoming events

Stay tuned to our website and social media platforms for more updates!

- The FindingPheno team

REPORT: Periodic Review Meeting

On 24 October 2022, partners of the EU-funded **FindingPheno** project engaged in its first project review meeting with our EU project officer and an external reviewer.

The premise of **FindingPheno** is to combine biological knowledge with novel mathematical and machine learning approaches taken from evolutionary genomics, collective behavior analysis, ecosystem dynamics, statistical modelling and applied agricultural research to improve how we understand and utilize functions provided by microbiomes to combat human diseases and the ways we produce sustainable food for future generations.

Our eight project partners range in expertise from statistics and machine learning, ecology and evolutionary genetics to industrial food production systems experience and developers of world class genomics software. **FindingPheno** was launched in spring 2021 and received over EUR 5M in funding through Horizon 2020.

All partners attended the Review Meeting chaired by the coordinator, Shyam Gopalakrishnan and project manager, Marie Sorivelle from the **University of Copenhagen**. During the day-long meeting, leaders of the project's eight work packages summarized activities and major achievements over the first 18 months, and highlighted upcoming next steps. Dissemination and communication activities was presented, including three publications in high-impact peer reviewed journals and a pending new publication. Attention was also given to computational and AI developments, including presentation of the project's landing page on MGnify, an automated pipeline hosted by partner **EMBL-EBI** to analyse and archive microbiome data useful in determining taxonomic diversity and functional & metabolic potential of environmental samples.

The reviewer and project officer lauded **FindingPheno's** efforts in both technical and outreach aspects of the project. Feedback focused on technical progress made in the first 18 months, highlighting novel aspects of the methods in using multi-omics data. Also, they stressed the importance of moving beyond European borders when identifying potential stakeholders, particularly focusing on stakeholders in Asia and the Americas.

DISCOVER MORE about these and other developments from **FindingPheno** via the link below

[DISCOVER MORE](#)

PUBLICATIONS

Frontiers Ecology and Evolution

"Investigating the role of microbial cooperation in forming higher levels of organization"

Researchers at the Center for Ecological Research (CER) investigated the role that intercellular cooperation plays in forming higher levels of organization in microbial communities. In the study, selection forces were identified that promote or inhibit the recovery, reproduction and possible formation of higher levels of organization of microbial communities.



The Evolution of Microbial Facilitation: Syntrophism, Symbiogenesis, and Transition to Individuality

April 2022 | Frontiers in Ecology and Evolution | Volume 13 | Article 833343 | DOI: 10.3389/fecol.2022.833343

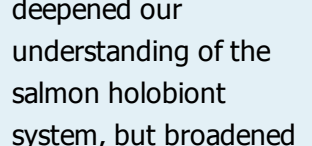
Dr István Scheuring
Center for Ecological Research (CER)

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Frontiers in Microbiology

"A win-win for mathematicians, statisticians, bioinformaticians and biologists"

Recent publication by the Center for Evolutionary Hologenomics (CEH) and CER allowed experts to join forces and create a strategic model of a host-microbe-microbe system showcasing the importance of a host immune response and microbial communities to combat stress-induced gut dysbiosis. The resulting novel mathematical model not only complemented and deepened our understanding of the salmon holobiont system, but broadened application to a novel holobiont system.



A strategic model of a host-microbe-microbe system reveals the importance of a gut leak-microbe immune response to combat stress-induced gut dysbiosis

April 2022 | Frontiers in Microbiology | Volume 13 | Article 833343 | DOI: 10.3389/fmicb.2022.833343

Dr István Scheuring
Center for Ecological Research (CER)

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PLOS Computational Biology

In this publication, project partners from CER and the University of Turku (UTU) use modeling to investigate how system memory can influence the dynamics, composition, and stability landscape of ecological communities.

Quantifying the impact of ecological memory on the dynamics of interacting communities

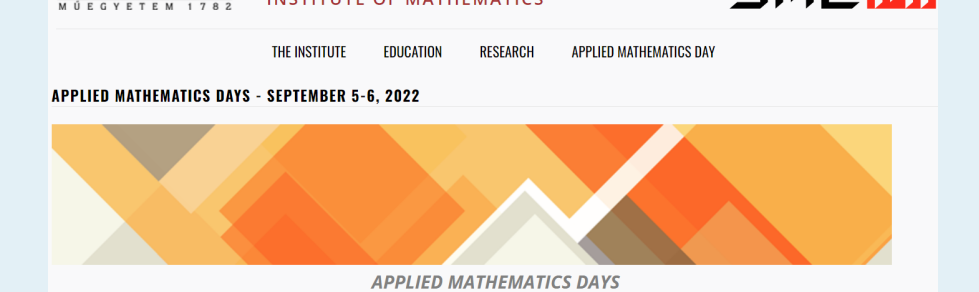
June 2022 | PLOS Computational Biology | Volume 17 | Article e1009588 | DOI: 10.1371/journal.pcbi.1009588

Dr István Scheuring
Center for Ecological Research (CER)

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Outreach

Explore our internal & external activities...



Applied Mathematics Without Borders Celebrating the 60th birthday of Eötvös Loránd University, Budapest University of Technology and Economics, and Institute of Mathematics

Dr István Scheuring from CER was invited to speak at the Applied Mathematics Without Borders Days where he presented the Scheuring et al Front. in Microbiology 2022 paper.

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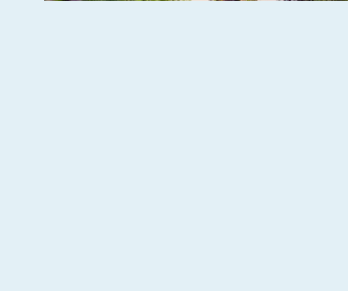


Dr István Scheuring from CER was invited to present a poster on the Scheuring et al Front. in Microbiology 2022 paper.

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OTHER NEWS: Vacancies

The **European Bioinformatics Institute (EMBL-EBI)** is recruiting to support a series of new grants, that will bring additional datasets to MGnify and FindingPheno. See below:



Bioinformatician

EMBL-EBI at its Hinxton UK site is currently recruiting a **Bioinformatician Leverhulme**.

Closing date: 6 January 2023
Contract duration: 3 years
Grading: Grade 5 (Monthly salary starting at £2,882 after tax) + other paid benefits

Reference number: EBI02101

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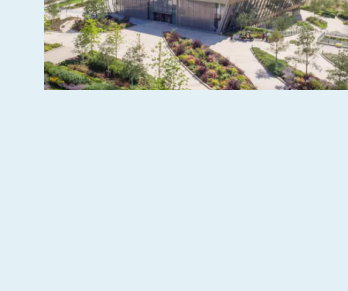
Bioinformatician

EMBL-EBI at its Hinxton UK site is currently recruiting a **Bioinformatician MGnify**.

Closing date: 6 January 2023
Contract duration: 3 years
Grading: Grade 5 (Monthly salary starting at £2,882 after tax) + other paid benefits

Reference number: EBI02102

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Web Developer

EMBL-EBI at its Hinxton UK site is currently recruiting a **Website Developer**.

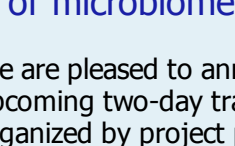
Closing date: 6 January 2023
Contract duration: 3 years
Grading: Grade 5 (Monthly salary starting at £2,882 after tax) or Grade 6 (monthly salary starting at £3,224) + other paid benefits

Reference number: EBI02100

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UPCOMING EVENTS

01 - 02 February 2023



TRAINING: Mechanistic models of microbiome dynamics

We are pleased to announce our upcoming two-day training organized by project partner, **CER!**

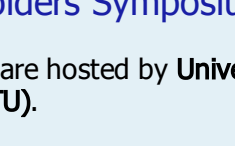
Course covers:

- basic Lotka Volterra model systems
- mathematical and numerical models for analysis
- macroecological and metabolism-based models
- agent based modelling techniques
- interactive tutorials for numerical analysis and visualization of dynamic systems, parameter estimation of models from real data and agent based modeling, and more.

Aimed at project partners and persons interested in the field.

Conducted online via Zoom. Registration for online attendance available early January 2023!

23 - 26 May 2023



Annual Meeting + Midway Stakeholders Symposium

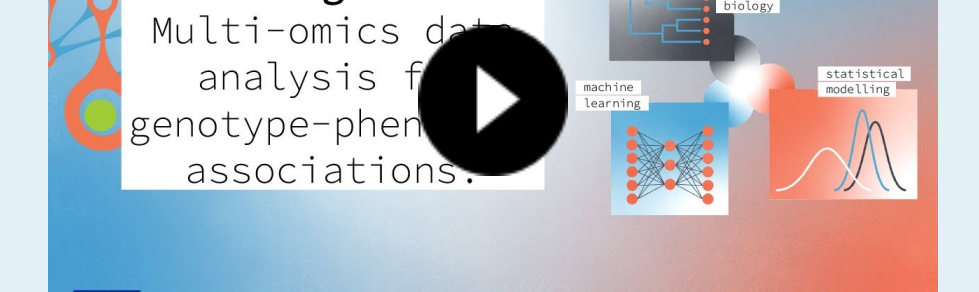
Both events are hosted by **University of Turku (UTU)**.

The Symposium is scheduled to occur on May 23rd

The **FindingPheno** internal meetings will take place on May 24th to 25th.

On May 26th, the **UTU and EBI-EMBL** will host a hackathon focusing on EBI's data resources and their use.

Have a look at our explainer video...



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