

Invitation

# Symposium

## Understanding and monitoring insect diversity: the environmental DNA revolution

Insights from the Insect Biome Atlas project

When: Tuesday, 29th October, 8.30 - 14.00

Where: The Museum of Natural History in Stockholm, *Small Auditorium, (lower level floor)*



Stockholm  
University



Welcome to a symposium:

# Understanding and monitoring insect diversity: the environmental DNA revolution

Insights from the Insect Biome Atlas project

Insect diversity science is undergoing transformative changes thanks to the introduction of cheap and effective DNA-based methods (so-called DNA metabarcoding) for species identification. This symposium highlights the new insights into the structure of insect communities generated by these methods and the new opportunities for biodiversity monitoring that they open up!

Our focus will be on the results generated by the Insect Biome Atlas project – funded by the *Knut & Alice Wallenberg Foundation*—in which the insect faunas of Sweden and Madagascar and their associated microbiomes were analyzed in some of the most ambitious inventory projects using these methods to date.



Coffee and lunch is included. Registration is mandatory and the number of participants is limited; first come first serve!  
**Scan QR-code to register**

## Program

Tuesday, 29th October

- 8:30 - 9:00 FIKA
- 9:00 - 9:15 The Insect Biome Atlas (IBA) project: surveying the insect faunas of Sweden and Madagascar; *Andreia Miraldo*
- 9:15 - 9:30 From samples to species counts using DNA; *Ela Iwaszkiewicz-Eggebrecht*
- 9:30 - 9:45 Separating signal from noise in metabarcoding data; *Fredrik Ronquist*
- 9:45 - 10:00 Diversity and composition of insect faunas: insights from IBA, *Fredrik Ronquist*
- 10:00 - 10:15 What drives ecosystem functions in a temperate and tropical region; *Ayco Tack / Laura van Dijk*
- 10:15 - 10:30 Examining the environmental drivers of insect diversity; *Robert Goodsell*
- 10:30 - 11:00 FIKA
- 11:00 - 11:15 Using IBA data to train ML algorithms to link earth observation data to insect diversity; *Tobias Andermann*
- 11:15 - 11:30 Metagenomic analysis of IBA samples; *Samantha López Clinton*
- 11:30 - 11:45 Evaluating methods for measuring biodiversity impact using IBA data; *Fredrik Ronquist*
- 11:45 - 12:00 How microbial symbionts can shape insect populations and communities; *Piotr Łukasik*
- 12:00 - 12:15 The future of global biodiversity monitoring; *Tomas Roslin*
- 12:15 - 14:00 Lunch at Museum



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# Speakers



**Fredrik Ronquist** is a professor at the *Department of Bioinformatics and Genetics, Swedish Museum of Natural History* and an affiliate professor at the *Department of Zoology, Stockholm University*. His research focuses on statistical phylogenetics, and on insect systematics, evolution and diversity.



**Tomas Roslin** is a professor of insect ecology at the *Department of Ecology, Swedish University of Agricultural Sciences (SLU, Uppsala)*. He is particularly interested in the processes structuring insect communities around the world – including both their species contents and the interactions between these species.



**Ayco Tack** is as an associate professor at the *Department of Ecology, Environment and Plant Sciences at Stockholm University*. He is broadly interested in how ecological and evolutionary interactions between plants, insects and microbes play out in a spatial setting.



**Andreia Miraldo** is the IBA research manager leading the operational, logistics and administrative tasks, managing work and overseeing the research. She is also a founder and director of a consultancy company *Biodiversity and Sustainability Solutions (BaSS)*, based in Lisbon, Portugal- dedicated to guiding organizations through the complex landscape of environmental sustainability.



**Piotr Lukasik** is an assistant professor at *Jagiellonian University* in Kraków, Poland. He is interested in the diversity, evolution, and functions of insect-associated microorganisms, as well as high-throughput methods of biodiversity study.



**Ela Iwaszkiewicz-Eggebrecht** is a researcher at the *Swedish Museum of Natural History*. Her work focuses on developing and implementing molecular and bioinformatic protocols to describe the insect faunas. Her work involves metabarcoding as well as individual insect barcoding and development of insect abundance quantification methods.



**Robert Goodsell** is a postdoctoral researcher at the *Swedish Museum of Natural History*. He is interested in the processes that drive population dynamics, community structure, and species richness across regions. He combines novel technologies to collect data over large spatial scales, and develops empirically backed ecological models.



**Laura van Dijk** is a postdoctoral researcher at the *Swedish Museum of Natural History*. Her work focuses on describing the composition of insect communities through space and time, the effects of environment and climate on insect communities, as well as the consequences for ecosystem functioning.



**Samantha López Clinton** is a PhD student at the *Swedish Museum of Natural History*, *Stockholm University* and the *Centre for Palaeogenetics*. She is part of the research group led by Tom van der Valk. In her work she develops new computational pipelines for biodiversity monitoring with both contemporary and ancient mixed samples.



**Tobias Andermann** is an assistant professor at *Department of Organismal Biology, Uppsala University*. He is working at the intersection of molecular biology, spatial ecology, and machine learning, with the mission to provide a more comprehensive view on the distribution of biodiversity, including hidden diversity of inconspicuous and even undescribed species through the use of environmental DNA.

[Read more about the Insect Biome Atlas project here](#)