

June 2019



Research Success Story

University of Fribourg

Image credit: Timothée Brüttsch, Université de Lausanne

HOW ANT COLONIES FIGHT EPIDEMICS

The Horizon 2020 ERC projet "DISEASE" is led by Prof. Nathalie Stroeymeyt from the Department of biology of the University of Fribourg.

Her team is studying the social strategies used by ants to fight epidemics in their colonies.

Nathalie Stroeymeyt joined the University of Fribourg in 2019 to establish her own research group with the help of an **ERC Starting Grant** and an SNSF Professorship.

From 2010 to 2018, she worked in the ant studies group established by Laurent Keller at the University of Lausanne, renowned for its groundbreaking work in the field, such as using novel techniques to track large numbers of individual ants in a colony. "We were gluing a kind of QR Code on the back of garden ants (*Lasius niger*) in order to identify them," explains Nathalie Stroeymeyt. "With the help of a camera, we then recorded their position twice a second."

Simple individual behaviours can now be

connected to collective behaviours. An unimaginable feat less than a decade ago!

Society vs disease

Professor Stroeymeyt's project is to study how ants defend themselves as a group against epidemics, by rearranging their "social network" and adapting their immune response. Her group will map the social network of ant colonies in the same way that data scientists map human networks on social media.

"This research could have implications for human societies."

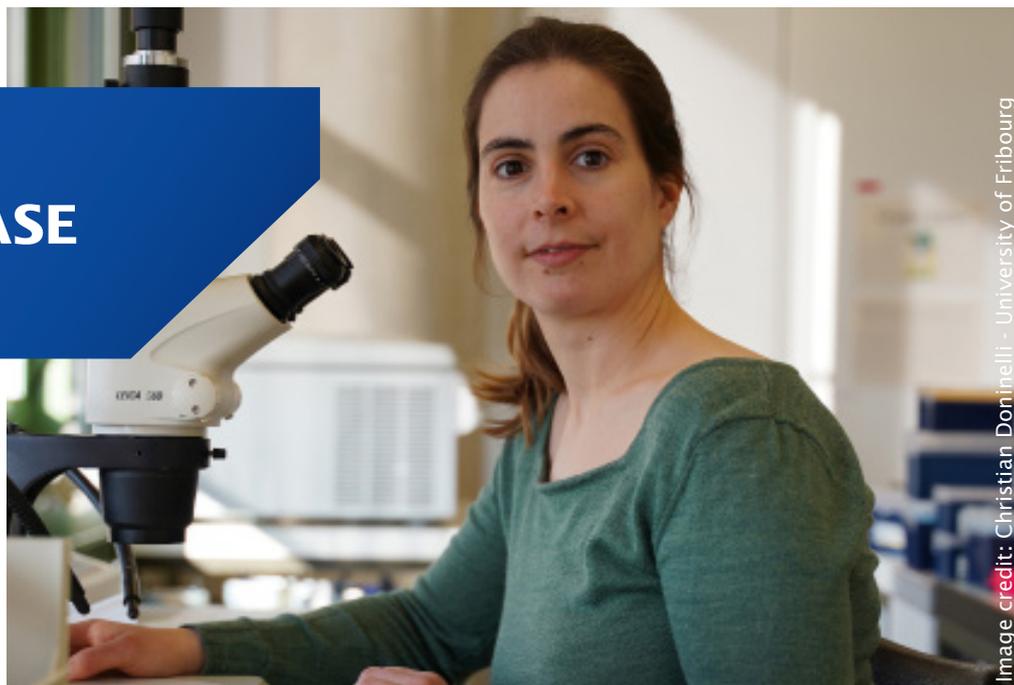
Professor Stroeymeyt does not shy from comparison with humans. "With ants, we can study the spread of epidemics

experimentally, which is not possible on humans for ethical reasons". The big question is to find out what tools evolution has developed for social species to counter epidemics favoured by their high rate of social interactions.

An impressive first grant

The ERC Starting Grant allows the biologist to hire two doctoral students and two postdoc researchers, a rather impressive team at this stage of her career. "I was in a state of disbelief for a few weeks after getting the positive answer from the ERC" she says. "This is a big step, it allows me to really do what I want as a researcher for the next 5 years".

About DISEASE



“The ERC Starting Grant gives me the opportunity to start my own independent research group at an early stage in my career, and investigate the topics I want with a strong team.”

Prof. Nathalie Stroeymeyt
Department of Biology,
University of Fribourg

CONTENT SUMMARY

The Horizon 2020 project DISEASE aims at understanding how ant societies fight epidemics. With a wide variety of experiments, the project will determine whether ant societies respond to epidemics by modifying their social networks. This will constitute a significant advance in our understanding of the complex feedback between sociality and health.

FACTS AND FIGURES

Project Name
DISEASE

Research Area
Biology

Organisation
University of Fribourg

Start Date – End Date
01.04.2019 - 31.03.2024

Duration
5 years

Project Cost
€1.5 million

Project Funding
€1.5 million

Programme
Horizon 2020 Excellent Science: ERC Starting Grant

More Information
stroeymeyt-lab.ch

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