

Max Planck Institute for Evolutionary Biology

Max Planck Research Group Dynamics of Social Behavior



MAX-PLANCK-GESELLSCHAFT

Our group explores under which conditions individuals cooperate. To this end, we translate social interactions into mathematical games. These games can then be explored analytically, with computer simulations, and with behavioral experiments.

We are looking for motivated researchers to join us.

PhD Position (3 years)

Mathematical models of cooperation among heterogeneous individuals

One key mechanism for cooperation is reciprocity. People are more likely to help somebody if they have received help in the past. Most existing models of reciprocity assume that all individuals are identical with respect to their cooperation costs, and in how they discount future interactions. The project aims to develop and to analyze models of reciprocity among heterogeneous individuals.

Applicants should have a degree in mathematics, biology, economics, physics, or another related field. They should be curious to describe social behaviors mathematically. Ideally, they are already familiar with the theory of Markov chains and stochastic processes. Good quantitative skills and interest in programming (e.g. Matlab, Python, ...) will be important.

Working environment

The Max Planck Research Group "Dynamics of Social Behavior" has been established in October 2019, and is led by Dr. Christian Hilbe. The group is a part of the Max Planck Institute for Evolutionary Biology in Plön, Germany. The institute has three departments (Evolutionary Theory, Microbial Population Biology, Evolutionary Genetics) and several additional research groups. It hosts several workshops per year and continuously welcomes international short-term and long-term visitors, creating a stimulating and positive research environment.

In addition, the research group maintains strong collaborations with external researchers, including researchers from Harvard University, IST Austria, and the University of Exeter.

Plön is a small town close to the Baltic Sea, embedded into a beautiful landscape with innumerable lakes. The area provides ample opportunity for free time activities such as swimming, canoeing, or biking in a stunning environment. The cities of Kiel and Lübeck ($\geq 200,000$ inhabitants) are only half an hour train ride away. Hamburg (Germany's second largest city) can be reached within 1.5h by train.

Application

Interested students should send their application (motivation letter, CV, copies of certificates, contact details of two references) by email to hilbe@evolbio.mpg.de. Please use the code PhD2019 in the subject line.

The Max Planck Society strives for gender and diversity equality. We welcome applications from all backgrounds. The Max Planck Society is committed to employing more disabled individuals and especially encourages them to apply. The Max Planck Society seeks to increase the number of women in those areas where they are underrepresented and therefore explicitly encourages women to apply.

For further questions, please get in contact with Dr. Christian Hilbe. The application deadline is December 15, 2019. However, the positions will remain open until filled by qualified candidates.

Contact:

Dr. Christian Hilbe

Research Group Dynamics of Social Behavior

Max Planck Institute for Evolutionary Biology, Plön, Germany

Website: web.evolbio.mpg.de/~hilbe

Email: hilbe@evolbio.mpg.de