Maaike Fonsine Sangster

Name	Maaike Fonsine Sangster
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Date of birth	02/04/1995
Nationality	Dutch

Research

09/19 – current PhD-position at **INRIA Grenoble – Rhône-Alpes** and **LIPhy Grenoble**

Topic: Development, characterization and control of *E.coli* communities on an automated experimental platform

- *In vivo* implementation of an *in silico E.coli* community using Molecular Biology techniques
- Testing of the community using a variety of measurement techniques (spectofluorometer, plate reader, flow cytometry, enzyme assays)
- Development of an experimental platform consisting of a set of bioreactors
- Validation of the *in silico E.coli* community using Python (data parsing, ODE model solving, model fitting)

Education

01/21 – 03/21 Forum on Microbial Metabolism by the **Kavli institute for Theoretical Physics** (followed online)

09/19 - current 147 hours of courses followed for my PhD, among which:

- Advanced Lecture Course on Computational Systems Biology (21 hours) by **CNRS, Lyon**
- Issues in Philosophy of Memory (24 hours) by **Centre for Philosophy of Memory, Grenoble**
- eX Modelo Summer School (35 hours) by **Institut des Systèmes Complexes Paris**
- 25 hours of individual French cours offered by **ADISCOS, Paris**

12/18 – 07/19 Research internship at **Rijksuniversiteit Groningen** in Evolutionary Systems Biology

Topic: Quantifying the consequences of metabolic suboptimality in a dynamic community context

- Developing small kinetic models of bacterial communities using C++
- Analyzing different ways of modelling microbiota (Flux Balance Analysis vs. kinetic modelling)

02/18 – 10/18 Research internship at **Rijksuniversiteit Groningen** in Molecular Systems Biology
Topic: Prediction of thermodynamically constrained intracellular fluxes in *Saccharomyces cerevisiae*

- Analyzing big data sets from Flux Balance Analysis
- Use of R programming language
- Performing lab experiments independently: constructing growth curves using flow cytometry, taking growth parameters from yeast populations

09/17 – 07/19 Master Molecular Biology and Biotechnology at **Rijksuniversiteit Groningen,** Netherlands
Thesis: Obesity and the gut microbiome: diet, metabolites and species involved
Average grade: 8.0/10

09/13 – 06/16 Bachelor Liberal Arts and Sciences at **Amsterdam University College,** Netherlands
Main focus: Molecular Biology
Thesis: Adapting expression systems in cyanobacteria to produce biofuels

- Reviewing the availability of tunable promoters in cyanobacteria
- Assessing the range of Synthetic Biological possibilities to produce biofuels

Average grade: GPA 3.93 (Summa Cum Laude)

06/15 Research Internship at the **Synthetic Organic Chemistry** department, University of Amsterdam
Synthesizing an enantiomerically pure thioester

09/15 – 01/16 Erasmus Exchange at **Bilkent Universitesi** Ankara, Turkey

2007 – 2013 Highschool **Stedelijk Gymnasium Leiden,** Netherlands
Average grade: 8.7 (Cum Laude)

2011 – 2013 **Pre-University College** Leiden, Netherlands
Extracurricular program for excellent high school students

Social Engagement

11/20 – current PhD representative in the **Laboratory Council of LIPhy**

10/18 – 04/19 Mentor for refugees at **Refugees@campus,** Groningen, Netherlands
Helping with refugees with study choice and the Dutch Language

01/18 – 07/18 Language coach for refugees at **Humanitas,** Groningen, Netherlands
Helping refugees with the Dutch Language

09/14 – 06/16 Member of **Science Focus Group,** Amsterdam University

College
Suggesting developments of and additions to the curriculum, such as the addition of a practical organic chemistry course

Teaching Experience

09/21 – 12/21 Teaching Assistant Cell Biologie practical at **Université Grenoble-Alpes**
Leading a practical for 2nd year bachelor students: extraction of chloroplasts, cell culture and staining, protein isolation

01/15 – 06/19 Assistant teacher of Physics at **Stichting Studiebegeleiding Leiden**
Preparing high school students for the final exam

09/14 – 09/19 Private tutor
Helping high school students with Mathematics, Physics, Biology, Chemistry

09/16-12/17 Student assistant organic chemistry at **Amsterdam University College**
Helping 2nd and 3rd year bachelor students with basic Organic Chemistry experiments (separation of compounds, nucleophilic substitution, Zyban synthesis)

Publications

Popovic, S. , Wijsman, L. , Landman, I. R., **Sangster, M. F.**, Pastoors, D. , Veldhorst, B. B., Hiemstra, H. and van Maarseveen, J. H. (2016), Fine-Tuning the Balance between Peptide Thioester Cyclization and Racemization. *Eur. J. Org. Chem*; 2016: 443-446, doi: 10.1002/ejoc.201501366

Presentations

Sangster M. , de Jong H. , Cinquemani E. , Geiselmann J. Development, characterization and control of *E.coli* communities on an automated experimental platform. Presentation at: CompSysBio; November 2021; Aussois

Sangster M. , de Jong H. , Cinquemani E. , Geiselmann J. Conditions and trade-offs to enhance protein production in synthetic bacterial communities. Poster presented at: SMEEB; June 2021; Venice (online)

Sangster M. Development, characterization and control of microbial communities on an automated experimental platform. PhD seminar LIPhy; October 2020; Grenoble

Sangster M. , de Jong H. , Cinquemani E. , Geiselmann J. Development, characterization and control of *E.coli* communities on an automated experimental platform. Poster presented at: BioSynSys; November 2019; Bordeaux

Languages

Dutch	Native
English	Fluent
French	Advanced
Italian	Intermediate (listening, reading, speaking); basic (writing)
German	Intermediate (listening, reading); basic (speaking, writing)
Farsi	Beginner (listening, speaking)