

Curriculum Vitae

Frederiek - Maarten Kerckhof

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1 Personalialia

- Last name: Kerckhof
- First name: Frederiek - Maarten
- Current adress: Egidius van Bredenestraat 6, 8340 Sijsele (Damme)
- Mobile phone: +32477/98.13.12
- E-mail: frederiekmaarten.kerckhof@gmail.com
- Date of birth: 14 November 1988

2 Research interests

I would very much like to conduct a research-oriented task in the environmental biotechnology domain. Due to my personal interests and training as a bioscience engineer option cellular and genetic biotechnology I consider myself qualified for a function in research and development. My social and organisational skills make me a good collaborator in a research team in which, if necessary, I can take a coordinating task. My main interests in environmental biotechnology lie in unravelling microbial interactions that underly the major reactions in nutrient cycling. In my belief the deeper understanding of these complex multicellular behaviour of unicellular organisms will reveal interesting perspectives in engineered ecosystems. The understanding of the operation of a microbial metabolic network as opposed to the black-box catch-all term 'biomass' that is performing the reactions in e.g. denitrification could allow for steering of denitrification rates and outcome. I hope that I can perform state-of-the art research contributing microbial ecological knowledge on important nutrient cycles in a world where this understanding is becoming increasingly important.

3 Education

- **2006-present: Bioscience engineering in cellular and genetic biotechnology, major computational biology at Ghent University.** Masters degree expected July 2011.

- Bachelorpaper: 'Competition and diversity: apparent opposites?'. About (mathematic modelling of) ecological competition on both macro- and micro-ecological levels and possible applications (preemptive colonisation, pre- and pro-biotics).
- Combined project statistics for genome analysis and bio-informatics: analysis of 454-pyrosequencing metagenomics data
- Masters thesis: 'The impact of the physical state of electron donors and acceptors on microbial physiology and morphology'. Fundamental research concerning microbial electron metabolism in bio-electrochemical systems (microbial fuel cells).
- 2000-2006: Latin - Mathematics, Onze-Lieve-Vrouwecollege Assebroek

4 Work experience

- Volunteer work
 - 2006-2010: Scout leader.
 - 2007-2009: Equipment manager in the scouts.
- Extracurricular activities
 - 2004-2006: Editorial and technical staff at OINC-TV (secondary school).
 - 2004-2006: Chosen representative in the student council, work group coordinator.
 - 2009-present: Chosen year-representative cellular and genetic biotechnology (arranging exam schedule, have a seat in the faculty's student council).

5 Skills

5.1 Informatics

As a major in computational biology I sure know my way around computers, below are listed some of the specific software applications that I am familiar with.

- R and bioconductor for statistical analysis.
- The Mathworks Matlab and simulink for modelling and advanced mathematics.
- Perl and bioperl for scripting.
- ImageJ and comstat for bio-imaging.
- Basic knowledge of Bionumerics, Wolfram Mathematica, Java, HTML and Visual Basic.

5.2 Lab skills

During my master's thesis at LABMET I had the opportunity to be introduced to many methods in microbiological research.

- Common chemical analysis techniques (VSS/TSS, Kjeldahl-N, COD, CDW, GC-VFA, ...).

- Common molecular techniques (PCR, DGGE).
- Use of a flowcytometer and confocal microscopy.
- Biosafety training for a BSL-3 laboratory.