

PHD STUDENT POSITION in MARINE ECOLOGY

The Marine Biology Research Group at Ghent University (Flanders, Belgium) is recruiting a PhD student (M/F/X) who will be engaged in the project PERSUADE (ExPERimental approaches towards Future Sustainable Use of North Sea Artificial HarD SubstratEs, 2017-2022) funded by the Belgian Science Policy. The research will be conducted in close collaboration with the Netherlands Institute for Sea Research in Yerseke and the Royal Belgian Institute of Natural Sciences (RBINS).

CONTEXT

Future coastal ecosystems will be challenged with a multitude of ecosystem-level stressors, resulting from both *local* anthropogenic activities and environmental change acting at the *global* scale. The installation of offshore wind farms (OWFs) is currently a major human activity in the coastal North Sea area, resulting in the introduction of large surfaces of artificial hard substrates (AHSs) in an otherwise sandy environment. These AHSs are rapidly colonized by large quantities of fouling fauna, leading to local changes in food-web structure and affecting the general cycling of nutrients, which can have important consequences for the air-sea exchange of greenhouse gases in coastal areas. In addition, space at sea is limited, and multiple use of some areas is considered beneficial. In Belgium, aquaculture activities (i.e. mussel farming) are allowed within areas designated for OWF development. These additional activities can affect the response of the marine ecosystem to the introduction of the AHSs.

The effect of local anthropogenic impacts on the coastal ecosystem should be investigated in the context of global impacts on the marine environment. Increased atmospheric CO₂ concentrations lead to global warming on the one hand, and on the other hand to a decrease in ocean pH (ocean acidification, OA). The limited studies available investigating the combined effect of OA and warming on an ecosystem-wide level reveal substantial, non-additive and complex changes in community dynamics, and in both pelagic and benthic nitrogen cycling.

JOB CONTENT

The focus of the PhD student will be on experimental research, statistical processing of the data and modeling of the biogeochemical response of the benthic environment to the mentioned cumulative local and global stressors. The research will include (1) detailed behavioral experiments with benthic model species (mainly bivalves and polychaetes) under natural as well as stressed (for instance by ocean acidification) conditions; (2) experiments to investigate how the behaviour and activity of these model species affect the benthic biogeochemistry, in particular the release of N₂O, under various scenarios of disturbance; (3) community-level experiments investigating the benthic C- and N-flows under different climate/multi-use scenarios; and (4) diagenetic modeling to integrate the obtained data in an ecosystem context.

The PhD student will work at, and be affiliated to Ghent University. For the experimental work, there will be a close collaboration with Dr. Jan Vanaverbeke at RBINS. The modeling work will be done in close cooperation with Prof. Dr. Karline Soetaert at the Netherlands Institute for Sea

Research in Yerseke (The Netherlands). As such, several research stays in Yerseke are planned for this PhD research.

PROFILE

- Master in Sciences or Bio-engineering Sciences (within the field of Biology, Biochemistry, Oceanography or equivalent)
- Strong interest in multidisciplinary research in relation to marine ecology
- Open, collaborative attitude
- Prepared to take initiative, but also to work in close collaboration with other team members
- Prepared to participate in sampling campaigns at sea
- Prepared to participate in (inter)national conferences and symposia

SKILLS

- Excellent organisational, communication (both oral and written) and social skills
- Capable of planning and organizing your own work and meeting deadlines imposed by the project
- Strong interest in experimental work
- Good insights in analysing and interpreting data
- Knowledge of statistical processing of data
- A good knowledge of R is an asset
- Excellent knowledge of English (written and spoken)

WE OFFER

- A full-time 2-year position as a PhD-student at Ghent University, with a good chance of a 18 - 24-month contract extension pending positive evaluation
- A dynamic, challenging, varied and stimulating research environment
- An internationally competitive salary
- Free public commuting and/or bike fee

START

- November 2017

CONTACT DETAILS

If interested, please send your motivation letter, CV and a copy of the Master Degree diploma, with reference "**PERSUADE**" before 5 September 2017 to Prof. Dr. Tom Moens (tom.moens@ugent.be).

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For more information:

- Concerning the job content or working conditions: Dr. Carl Van Colen (carl.vancolen@ugent.be), Prof. Dr. Tom Moens
- Concerning UGent in general: <http://www.Ugent.be> and the Marine Biology Research group in particular: <http://www.marinebiology.ugent.be>
- Concerning RBINS in general: <http://www.naturalsciences.be>

- Concerning NIOZ: <http://www.nioz.nl>

Interviews with the top candidates will take place in the week of 11 – 15 September 2017.
Only applications that meet the profile and that are received in time will be taken into consideration.