

The Jan Roelofs stipend

Jan Roelofs

Jan Roelofs' career is very special. He went through horticultural and higher laboratory education after which he started working as an analyst at the 'Laboratory for Aquatic Ecology' of the (then) Catholic University of Nijmegen. Here, he studied the relationship between the occurrence of aquatic plants and the quality of Dutch surface water. His research led to a number of important and at the time startling discoveries. Among other things, he discovered the acidification of weakly buffered surface waters, the negative effects of high nitrogen deposition on our natural areas and the internal eutrophication of surface waters as a result of the inlet of hard and sulphate-rich water in fens. All this led to a lot of new research from the 1980s onwards, financed from third-party funds. This made him a pioneer in applied biogeochemical and ecological research in Nijmegen. Jan Roelofs became a University Lecturer, obtained his PhD and ended his career as Professor of Aquatic Ecology at what is now Radboud University.

In 2002, Jan Roelofs was the initiator and one of the founders of B-WARE Research Centre. This spin-off of the then Department of Aquatic Ecology focuses on applied biogeochemical and ecological research for nature restoration and nature management. Ever since its establishment, B-WARE Research Centre has worked closely with the current RIBES and the Department of Ecology in particular.

During his long career, Jan Roelofs managed to enthuse many students, colleagues, nature managers and policy makers about applied scientific research. To honour him, B-WARE Research Centre established the 'Jan Roelofs Stipend'.

The stipend

Every year, a broad research question is formulated in the tradition of Jan Roelofs' work. Master students at Radboud University can submit a research proposal stating how they would try to answer this research question. Up to three applicants will be invited to present their proposal to the Stipend Committee using a PowerPoint presentation. Subsequently, the Stipend Committee will select one proposal to be carried out by the applicant. This will count as a master's internship. The research will be fully facilitated by B-WARE Research Centre. The Stipend recipient will receive 500 euros at the start of the internship and 1500 euros and a certificate after completion of the internship report.

Research question Jan Roelofs stipend 2025:

(Why) is Water soldier in decline in the Netherlands?

Water soldier (*Stratiotes aloides*) is a characteristic aquatic plant in Dutch fens where it plays an important role in the process of terrestrialisation, improving water quality and supporting biodiversity (including macrofauna). The species has a unique life cycle, where it lives on the bottom of a water body in winter and rises to the water surface in spring. At this point, plants root in the sediment and they can create dense floating vegetations. In autumn, the plants sink back to the bottom. After an earlier sharp decline in the 1960s, 70s and 80s, Water soldier had been doing well since the 1990s and the species was expanding rapidly. The last few years, however, there have been alarming reports of a new decline. Previous research (see also bibliography below) has already identified some possible stress factors, such as eutrophication, light limitation, sulphide toxicity, iron deficiency and ammonium toxicity. Other possible factors, still less studied, include carbon limitation, competition with invasive species, parasitic fungal infections and (herbivory) damage by (invasive American) crayfish. It is possible that a combination of factors (multiple stressors) is causing the recent decline.

The Roelofs Stipend gives the candidate the opportunity to devise and carry out their own research project to gain more insight into the reasons for the possible decline of Water soldier. Depending on the candidate's interest and background, this could include, for example, a field study in Dutch Water soldier populations, but also setting up a laboratory or greenhouse experiment with different stress factors, investigating physiological properties of the plant or carrying out meta-analyses based on existing datasets and literature. The candidate should also indicate in the proposal the time period during which they would like to conduct the research. The research should be conducted in 2025 or 2026.

Candidates must submit a research proposal including the research questions, hypotheses and an outline of the research approach to the Stipend Committee by 1 April 2025. The research proposal may be up to 3,500 words in length.

The proposal can be submitted to the Jan Roelofs Stipend committee via email to Ms Dr S.F. Harpenslager (s.f.harpenslager@b-ware.eu). Further information can also be obtained here.



Bibliography

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