

## **TWO LEADING RESEARCH POSITIONS IN AQUACULTURE IN WAGENINGEN**

### **Aquaculture and Fisheries**

At present, aquaculture and fisheries provide 3.2 billion people with 20% of their animal protein. In low-income and food-deficit countries, fish is often the cheapest and most accessible source of animal food. Yet, despite an equal primary biological production of ocean and land, only 2% of the world's food supply comes from the ocean, which covers 70% of the earth surface. Capture fisheries supplies most of the fish consumed in much of the developing world but sustainable exploitation of natural stocks is reaching its maximum. This means that to fulfil the world's current and future needs for nutritious food from the marine environment, the increase in consumption of fish and shellfish products required can best be realized by a further expansion and refinement of aquaculture. To meet the future demand for fish, aquaculture production will need to double by 2030. The scale of this challenge requires research innovations across the whole spectrum of aquaculture production systems. At present, disease is a major constricting factor for expansion of the aquaculture industry.

### **Wageningen University offers two tenure track positions (Assistant Professors) in Aquaculture**

The Aquaculture and Fisheries (AFI) group of the Department of Animal Sciences is looking to appoint two new staff members, to be appointed in 'tenure track'. AFI aims to be leading in academic research and education on sustainable Aquaculture and Fisheries, with a focus on society-relevant questions and interactions between aquatic organisms and their environment. Our education, offered to BSc, MSc and PhD students is closely aligned with our research. Our aquaculture research is focused on fish nutrition and health in aquaculture production systems.

Tenure Track is without doubt an excellent stepping stone to further develop yourself and your academic career: you build your own line of research within the scientific boundaries set by the chair group. Wageningen University is looking for scientists who can excel in both, education and research and offers talented scientists a challenging tenure track career trajectory: depending on your experience, you will start as an Assistant Professor and will grow into the position of Associate or Full Professor over a period of six to twelve years. This challenging career path can lead to a permanent position at Wageningen when you meet the quality criteria, evaluated by independent assessment teams. During the entire trajectory you will be intensively supervised and coached.

### **We are looking for someone to lead our research on fish nutrition and health (position 1)**

You are a fish physiologist with a strong interest in gill functioning and curious about the interaction between nutrition and health. You approach your research questions at cellular and organismal level but use the newest molecular, microbial and (immuno)histological read-outs when relevant. You have an open eye for the needs of the industry. You have a PhD in Biology, Animal Sciences, Veterinary Sciences or alike and preferably have some years of post-doctoral experience. You are proactive, eager to learn and like to work independent as part of the team. You enjoy research as well as teaching. You communicate well, written and orally, in English.

We consider the gills a crucial organ maintaining fish health. Fish gills are unique organs and well-known as the major site for physiological exchanges with the surrounding environment, extremely important for oxygen and carbon dioxide gas exchange but also ion acquisition, acid-base regulation and nitrogenous waste excretion. Gas exchange is structurally facilitated by thin epithelial layers at gill filaments that form the basic functional units with rows of plate-like lamellae, creating a typically large surface area under influence

of beneficial but also pathogenic microbes. These characteristics place fish gills central to maintaining fish growth in (recirculating) aquaculture systems but also make fish gills highly vulnerable to water-borne infectious agents, many of which can pose threats to fish health in aquaculture, with gill-associated immune tissue playing a defensive role, maintaining gill health.

### **We are looking for someone to lead our research on aquaculture production systems (position 2)**

You are an aquaculture systems expert with a strong interest in recirculating aquaculture systems (RAS) and the effects thereof on culture animals. You are curious about the functioning of freshwater ecosystems and build on your knowledge of physical-chemical-biological parameters of water quality. You approach your research questions at organismal and system level but use the newest microbial and other read-outs when relevant, to answer questions that can also be of interest to industry. You have an open eye for the effects of fish nutrition on system functioning and thereby on health of fish in aquaculture systems. You have a PhD in Biology, Animal Sciences, Veterinary Sciences or alike and preferably have some years of post-doctoral experience. You are proactive, eager to learn and like to work independent as part of the team. You enjoy research as well as teaching. You communicate well, written and orally, in English.

Fish in aquaculture (eco)systems are critically dependent on water quality parameters such as dissolved oxygen, carbon dioxide and different nitrogen species, parameters influenced by host-microbe interactions. Central to aquatic ecosystems functioning is management of the main biological processes affecting water quality. This holds true for all aquaculture systems, ranging from small pond systems to intensive recirculating aquaculture systems (RAS) which provide exciting developments to modernize aquaculture. Successful aquaculture systems integrate biological, physical and chemical insights in water quality with optimal effects on fish growth, health and performance.

### **The Aquaculture and Fisheries (AFI) group**

People at the AFI chair group teach in many of the courses shaping the programme of the Master of Science Aquaculture and Marine Resources Management (MAM). This education programme aims to train academic professionals at MSc level in the field of sustainable use, conservation and restoration of marine and aquatic ecosystems and resources. MAM attracts some 40 students per year and has recently started a broadening of its programme. Research training and education at PhD level is integrated in the research program of the Graduate School 'Wageningen Institute of Animal Sciences' (WIAS), which aims to contribute to the sustainability of livestock and fish production through fundamental and strategic research. Relevant post-doctoral training also is embedded in WIAS and comprises well-known international events such as the Fish Vaccination and Recirculating Aquaculture Systems Workshops.

AFI has full access to the University's 1900 m<sup>2</sup> aquatic research facility and laboratories. At AFI, our aquaculture experts study fish nutrition and health in aquaculture production systems, be it recirculating or ponds. We believe that much of the future demand for fish will need to be achieved via understanding of nutritious ponds concepts and land-based recirculation aquaculture systems (RAS). Our aquaculture experts in fish immunology (prof. Geert Wiegertjes), fish nutrition (dr. Johan Schrama), recirculation aquaculture systems (Ep Eding) and nutritious ponds (dr. Marc Verdegem) work closely together on fish nutrition and health in aquaculture production systems. Next to our aquaculture experts, we have fisheries experts studying the eco-morphology of native and invasive fish species (dr. Leo Nagelkerke), fisheries in Asia and Africa (Paul van Zwieten) and population ecology of marine fish species (dr. Jan Jaap Poos).

## **Wageningen University & Research (WUR)**

Wageningen University and Research delivers a substantial contribution to the quality of life, as stated in its mission 'To explore the potential of nature to improve the quality of life'. Within our domain, healthy food and living conditions, we do not just develop top-quality expertise; we also help translate our knowledge into practice worldwide. Every day, at WUR, over 6,500 employees work on 'the quality of life', turning ideas into reality.

The role of WUR is to contribute to global agendas such as the overarching Sustainable Development Goals (SDGs) of the United Nations. WUR is committed to contributing to the SDGs of zero hunger; good health and well-being; quality education; clean water and sanitation; sustainable cities and communities; responsible consumption and production; climate action; life on land and life in the water. Respecting earth's finite resources, WUR strives to fulfil the world's current and future needs for nutritious food by research on and development of circular, healthy, resource-efficient agri-food systems, both on land and in the marine environment.

According to the Times Higher Education World University Rankings, Wageningen University is the best university in the Netherlands with about 12,000 students from over 100 countries. Internationally, it is No. 1 in agriculture and forestry according to the QS World University Rankings charts for 2017. Wageningen University is one of the pillars of Wageningen University & Research (WUR), a collaboration between the University and the Research foundation with a mission 'to explore the potential of nature to improve the quality of life'.

### **We offer**

We offer you a challenging and meaningful career trajectory called Tenure Track within the AFI Group. This challenging career path starts at the level of assistant professor, from which you can grow into an associate professor and obtain us promovendi. There is also the possibility to grow to personal professor. Depending on your experience and track record, you can enter at the level of Assistant or Associate Professor. Of course, you will receive training and mentorship and interdisciplinary (international) cooperation is stimulated. As we will only be selecting excellent the best talent to take part in Tenure Track, this will be a good stepping stone to a further career within Wageningen University & Research or elsewhere.

We offer a temporary contract with the possibility of extension and finally a permanent position. Your salary will depend on expertise and experience. Gross salary for Assistant Professors is from €3,637 to €5,656 per month and for Associate Professors from €5,039 to €6,738 per month based on full time employment.

In addition, we offer an attractive benefits package

- 8% holiday allowance
- 8.3% fixed-year allowance
- Applicants from abroad moving to the Netherlands may also qualify for a special tax relief, in which 30% of their salary is exempt from tax.
- Excellent training opportunities and secondary working conditions;
- Flexible working hours and vacations in consultation with colleagues is possible so that an optimal balance between work and private is possible;
- An excellent pension scheme via ABP;
- 232 holiday hours, the ability to purchase and good supplementary leave arrangements and an individualized model to compose part of your working conditions and a bicycle plan;
- Make use of the sports facilities available on campus for a small fee

We stimulate internal growth opportunities and mobility with an active and internal recruitment policy. There are ample opportunities for own initiative in a creative learning environment.

**Contact information**

This is a preliminary text for the final advertisement which will be opened in June, 2019. For more information about these positions, please contact prof.dr.ir. GF Wiegertjes (chair AFI Group) via [office.afi@wur.nl](mailto:office.afi@wur.nl).

If you would like to receive an alert when the final advertisements for these positions will be opened please indicate your interest by email to [office.afi@wur.nl](mailto:office.afi@wur.nl).