Sybil Seitzinger, Professor in the School of Environmental Sciences University of Victoria and Executive director of the Pacific Institute for Climate Solutions.

Honorary Supervisor Jack Middelburg, Professor of Earth Sciences, Geochemistry

The Earth is a special planet because there is life, water and a reactive atmosphere with oxygen. The rocks, water and the atmosphere have provided the conditions for life to develop and evolve, and the organisms have shaped the surface of the earth and the composition of rock, water and air. The living world (biosphere) and dead world (geosphere) are connected in multiple ways and have to be studied together, in particular since one single species on this earth is causing unprecedented changes at the global scale, including climate change.

Prof. Sybil Seitzinger has shown worldwide scientific leadership to integrate physical, chemical and biological approaches to elucidate environmental processes and how humans have changed these. In her early career she has pioneered studies on denitrification and the production of nitrous oxide, a climate-active gas, in aquatic systems: from small streams to large rivers and estuaries. Denitrification is now widely recognized as a natural ecosystems function that humans should value and preserve.

Eutrophication, the perturbation of aquatic systems due to human-derived nutrients, was already recognized as an important environmental problem in the middle of the last century, but was primarily considered a local problem. Prof. Seitzinger showed that nutrient release from sewage, land-use change and changing agricultural practices is a global problem. She was instrumental in the establishment and development of Global News, a UNESCO supported initiative to quantify the nutrient release to and transport by river to the sea at the global scale. This made us aware that human activities and policy measures upstream have major consequences for ecosystem functioning downstream, for example excess nitrogen release in Iowa has consequences for low-oxygen conditions in the Gulf of Mexico.

Professor Seitzinger combines scientific excellence with outstanding scientific leadership skills and commitment to serve the scientific community and society at large. She has served 4 years as president of ASLO, the American Society for Limnology & Oceanography, and has been executive director of IGBP, the international geosphere-biosphere research program, from 2008-2015. In this function she has played a pivotal role to involve the global community in addressing global environmental processes such as climate change. She continues serving the community in her new role as director of the Pacific Institute for Climate Solutions in British Colombia.

With this honorary degree Utrecht University recognizes her landmark contributions to nutrient cycling in a changing world and her unselfish world-wide leadership in connecting fundamental science to pressing environmental issues.

Thank you.