

Jury report

Bate from the Pieter Langerhuizen Lambertuszoon Fonds 2022

This year the *Pieter Langerhuizen Lambertuszoon Fonds* allocated funding to support activities in the discipline of geological and environmental sciences. Eighteen proposals for research funding were received. The funding is mainly requested to join larger research programs or add additional experiments to larger projects. The proposals were very different in nature and of high quality. After careful on-line deliberations, the jury unanimously decided to award Dr. M.C. (Carina) Hoorn, Associate Professor at the Institute for Biodiversity and Ecosystem Dynamics of the University of Amsterdam, with the 2022 *Pieter Langerhuizen Lambertuszoon bate* of € 25.000.

Carina Hoorn is a geologist, palynologist and paleoecologist studying the history of Amazonia with the aim to broaden our knowledge on how landscape and vegetation evolve during tectonic and climate change. She obtained her PhD in 1994 at the University of Amsterdam on a thesis related to the geological and ecological development of the Amazonian basin in the last 20 million years. After the PhD her research kept focused on the Amazonian basin but got expanded with her interest in the interaction between geological climate change and plant speciation in central Asia.

She is a principal investigator in the transamazon drilling project, which is collecting fossil records from a large amount of soil cores (up to 2 km depth) taken all over the Amazon region. The overarching goals of this project are to document the evolution of biodiversity of the Amazon forest across most of its entire reach throughout its entire history, and to determine how the evolution of the physical environment (e.g. tectonics, climate, geomorphology) has shaped the generation, distribution, and preservation of the biodiversity of this tropical rainforest.

The availability of the core samples opens the door for extra studies on the collected material. The western Amazon basin has in geological terms been either rainforest or an inland sea. This gives interesting interactions between fresh water and marina ecosystems, which has influenced the evolution of especially the evolution of the mangrove trees. With the Pieter Langerhuizen Stipendium Carina will investigate the impact of the geological dynamics on the evolution and development of these mangrove trees. Hereto the different plant pollen in the drilling cores will be characterized and quantified. The obtained data will help in the overarching questions "*How did past sea-level and global climate change shape the biodiversity of the modern Amazon*". This information might help in better understanding the impact of current climate change on the natural ecosystems.

The jury found this a very original approach, well aligned with opportunities the transamazon drilling project brings. The required funding makes it possible to make efficient use of the obtained samples from the Amazonian fossil records. The scientific research has a direct link with societal discussions around climate change and biodiversity.

The jury would like to encourage Dr. Carina Hoorn to continue on her original path and hopes that this award will stimulate her in the scientific research and also to continue her public engagement with the insightful books she has been writing based on her research.

The jury congratulates Dr. Hoorn with the award and wishes her success with achieving her ambitious research goals.

Prof. dr. J.C.J.H. (Jeroen) Aerts, hoogleraar water en klimaatrisico's Vrije Universiteit Amsterdam

Prof. dr. ir. M.C.M. (Mark) van Loosdrecht, hoogleraar milieubiotechnologie Technische Universiteit Delft

The jury met on March 17, 2022 under the leadership of KHMW-director Mr. M. (Mieke) Zaanen, in the presence of Prof. dr. A.P. (Ad) IJzerman, secretary for natural sciences, KHMW, and Drs. S. (Saskia) van Manen, secretary, KHMW.