

Dr A.H. Heineken Prize for Environmental Sciences 2020 awarded to **Corinne Le Quéré**



Corinne Le Quéré
Photo: Neil Hall/UJA

The Royal Netherlands Academy of Arts and Sciences has awarded the Dr A.H. Heineken Prize for Environmental Sciences 2020 to Corinne Le Quéré, Royal Society Research Professor of Climate Change Science at the University of East Anglia (Norwich, England). Le Quéré is receiving the prize for her interdisciplinary research on the interaction between climate change and the carbon cycle.

The Heineken Prizes are the Netherlands' most prestigious international science prizes. Every two years the prizes are awarded to five leading researchers. They were instituted in 1964 by Alfred H. Heineken in honour of his father Dr Henry P. Heineken. The 2020 laureates will be announced in the first week of June.

Le Quéré shows impact of climate change on CO₂ uptake in the oceans

Corinne Le Quéré has meticulously kept track of the role of the oceans in absorbing carbon dioxide (CO₂) by charting the processes involved. Human activities such as burning fossil fuels and deforestation now cause annual emissions of 43 gigatonnes of CO₂ into the atmosphere. About 30% of this is absorbed by trees and plants. The world's oceans absorb about 25% because CO₂ dissolves in water at the air-sea interface and is transported to the deep ocean by currents. The remaining 45% stays in the atmosphere and causes climate change.

Together with colleagues, Le Quéré has identified why the amount of CO₂ in the atmosphere varies on different timescales. Some of the variations are caused, for example, by changes in marine productivity during ice ages and by changes in oceanic CO₂ uptake from varying ocean currents. Le Quéré was the first to identify a possible weakening in CO₂ uptake in the Antarctic Ocean associated with ozone depletion, and to quantify the impact of climate change and variability on global CO₂ uptake in the oceans in recent decades.

Le Quéré is the Chair of France's High Council on Climate, an independent advisory body set up by President Macron to advise the French government on how to deal with climate change. During the corona crisis, the High Council presented eighteen recommendations to learn from the crisis, better prepare and reduce the risks of future health and climate crises. Le Quéré argues that the pandemic and climate change share common causes, in particular the untenable pressure we exert on the natural environment.

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About the laureate

Corinne Le Quéré was born in Canada in 1966 and holds British, French, and Canadian nationality. She graduated with a bachelor's degree in physics from the University of Montreal in 1990. She received her master's degree in Atmospheric and Oceanic Sciences from McGill University (Montreal) two years later. She completed her PhD research in oceanography at the Sorbonne University in Paris in just 2½ years. She conducted research at the Max Planck Institute for Biogeochemistry (Germany), then directed the Tyndall Centre for Climate Change Research before she was appointed Royal Society Research Professor of Climate Change Science at the School of Environmental Sciences at the University of East Anglia (Norwich, England) in 2019.

In 2004, Le Quéré initiated the annual publication of the *Global Carbon Budget*, an international initiative of the Global Carbon Project to provide up-to-date information on carbon emissions and their distribution among the atmosphere, land, and oceans, including their main drivers. These publications have a major impact on climate science and climate policy. Le Quéré is the author of the third, fourth, and fifth reports of the Intergovernmental Panel on Climate Change (IPCC).

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Note for editors

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About the Heineken Prizes

Over the past five decades, the Heineken Prizes have become an internationally renowned distinction. They are the Netherlands' most prestigious prizes in the arts and sciences. Every two years, five internationally renowned researchers and one artist, who lives and works in the Netherlands, are honoured. The work of the laureates offers new perspectives, achieves unexpected breakthroughs, and opens up new avenues for others. Since 2010 future generations are also celebrated. Four highly promising young researchers working at Dutch research institutes receive the Heineken Young Scientists Awards.

The laureates are selected by juries made up of members of the Royal Netherlands Academy of Arts and Sciences, the Young Academy, and international experts. The Heineken science prizes include a monetary reward of USD 200,000. The artist receives EUR 100,000, half of which is intended for a publication and/or exhibition. The incentive prizes for young scientists are EUR 10,000 each.

The Heineken Prizes were instituted in 1964 by Alfred H. Heineken (1923–2002) in honour of his father Dr Henry P. Heineken (1886–1971). In that year the Dr H.P. Heineken Prize for Biochemistry and Biophysics was awarded for the first time. It has since been joined by five other Heineken Prizes: the Dr A.H. Heineken Prize for Art (1988), for Medicine (1989), for Environmental Sciences (1990) and for History (1990), and the C.L. Carvalho-Heineken Prize for Cognitive Science (2006).

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Alfred Heineken's daughter, Charlene L. de Carvalho-Heineken (b. 1954), is continuing this tradition as chair of the Alfred Heineken Fondsen Foundation and the Dr A.H. Heineken Foundation for Art, which finance the prizes.

For more information, go to www.heinekenprizes.org