



IMPACT STORY

New Horizons and Opportunities thanks to Career Funding European Research Council (ERC) Consolidator Grant

Prof. Sonia Seneviratne of ETH Zurich is an impressive scientist with a promising future! Her recently completed “DROUGHT-HEAT” project, which yielded pioneering results on land-climate feedbacks controlling heatwaves and droughts, brings a new level of accuracy to models of future climate – and has also been a career changer for her.

An associate professor at ETH Zurich when she won an ERC Consolidator Grant, Sonia Seneviratne is now a full professor and regularly makes the international list of most highly cited researchers. During her 5-year DROUGHT-HEAT project, she was also a Lead Author on the Intergovernmental Panel on Climate Change (IPCC) Special Report “Global Warming of 1.5 °C”, and is now Coordinating Lead Author for the chapter on weather and climate extremes in the IPCC Sixth Assessment Report. “The ERC project allowed me to reach final conclusions on several topics I had

been studying for years and also to start new research into the questions of land-climate management, multivariate extremes and drought-carbon cycle feedbacks. Having such a large grant over several years was a great opportunity because it allowed me to focus on a single project and make very quick progress in my area. With an ERC grant, you can really push the research frontiers and take more risks.”

‘This grant is about pushing the boundaries of present-day science, so your project must be something truly innovative.’

In addition to its major impact on Seneviratne’s career, the project had great scientific value. Unprecedented in its breadth and scope, the project studied the relationship between drought and CO₂ levels on a global scale. “We found that drier years are characterised by a much stronger increase in CO₂ in the atmosphere because less CO₂ is captured by

plants,” explains Seneviratne. “This global effect of drought on climate, which is tied to lack of water in soils, had not been identified before. We also found that current climate models underestimate this relationship, so it is possible that future warming is also being underestimated.”

How Euresearch helped

“Euresearch gave me feedback on my proposal and organised a workshop where applicants could practice their presentations for the ERC interview. Of the dozen people I met at the workshop, 4 of us got ERC grants!” Asked for advice for future applicants, Seneviratne noted, “This grant is about pushing the boundaries of present-day science, so your project must be something truly innovative, not something close to the state of the art. It is important to think about what kind of skills you have, what is special about your expertise, and what you bring to the research area that is unique.”

“It was a privilege to advise a researcher who obtained a very prestigious career grant for herself and at the same time was so committed to serving the wider community of researchers through the Intergovernmental Panel on Climate Change” (Euresearch)



Prof. Sonia Seneviratne (©Keystone-SDA)

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Sarah Meyer de Stadelhofen for Euresearch

CAREER PATH

Sonia Seneviratne was an undergraduate at the University of Lausanne (Biology) and at ETH Zurich (Environmental Physics), did research at the Massachusetts Institute of Technology for her Masters thesis (1998-1999), and at ETH Zurich (1999-2002) for her PhD. In 2003-2004, she was a visiting researcher at NASA's Goddard Space Flight Center through a fellowship from the Swiss National Center of Competence in Research (NCCR) Climate. In 2005, she returned to ETH Zurich as a senior scientist and became an Assistant Professor in 2007. She became an Associate Professor in 2013 and Full Professor for Land-Climate Dynamics in 2016.

FACTS & FIGURES

Name Sonia Isabelle Seneviratne

Current Position Full Professor for Land-Climate Dynamics at ETH Zurich

Project/Grant DROUGHT-HEAT “Land-Climate Interactions: Constraints for Droughts and Heatwaves in a Changing Climate” / European Research Council (ERC) Consolidator Grant

Research Area Climate research

Budget €1 952 285

Project Dates 01.09.2014 – 31.08.2019 (5 years)

More information www.drought-heat.ethz.ch

