



**University of
Zurich** ^{UZH}

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Towards a holistic understanding of the system Earth and strengthening predictions of global change

Better predictions of global change and its drivers – this is the goal of the Geneva based International Center for Earth Simulation and the University of Zurich’s Research Priority Program on Global Change and Biodiversity. Thus the two institutions have agreed to join forces. The combined forces will allow impacting educational strategies, new science approaches and policy drivers.

There is an increasing demand in educating the next generation of science professionals in the domain of Earth System Science. The University of Zurich has recently decided to establish a new Bachelor, Master and PhD Curriculum on Earth System Science (<http://www.ess.uzh.ch>), in combination with its University Research Priority Program on ‘Global Change and Biodiversity’ (<http://www.gcb.uzh.ch>). The aim of this activity is to improve our understanding of how the Earth System works and how the various Earth sphere’s interact with each other, thereby enabling us to solve many of today’s interdisciplinary challenges, including the interaction of the Earth System with human activities.

Similarly, the mission of ICES is to integrate the vast pools of knowledge contained within today’s multitude of scientific and socio-economic specializations and to develop next generation ‘holistic’ modeling, simulation and visualizations that accurately depict the medium and long term future direction of planet Earth. ICES will further combine science, supercomputing and simulation to better understand and protect our planet and its many life forms. The ICES Foundation was formed in January 2010 and seeks to operate as a Public-Private-Partnership with close cooperation between multiple domains of society: government, academia, industry, NGO’s, and private enterprise.

Toward a better understanding global change drivers and biodiversity

“Fully understanding the complexities of the Earth System is a high priority for our modern society, especially in a fast changing world. It is a great privilege for ICES to work with the URPP GCB in this common endeavor to bring about the necessary talent and skills”. *Dr. Robert Bishop, President & Founder, ICES Foundation.*

“ICES is a perfect partner complementing the goals of the ‘Global Change and Biodiversity’ program at the UZH, allowing to combine aspects of education, science, and policy in a coherent fashion. With this perspective, we can provide the skills, competencies and

knowledge required to understanding and promoting a more synergistic approach to Earth System Science.” *Prof. Dr. Michael Schaepman, Professor of Remote Sensing at UZH.*

“While we’ve made great strides in understanding global change, Earth System Science is still a young field dependent on advances in both, computing platforms and simulation software. The computer industry has many reasons to develop faster and more effective and efficient systems, but we must nevertheless train young scientists with the advanced skills to program these bleeding edge machines so as to enhance the field as rapidly as possible in this time of accelerated Earth changes. The cooperation with ICES will further advance these important topics.” *Prof. Dr. George Lake, Professor of Computational Science at UZH.*

“To explore and understand all the complexities of Global Change and Biodiversity, young researchers need to possess skills relevant to the use of modern computational tools and methods, and they need guidance and education in their usage to achieve the necessary level of proficiency for their research. In a tight collaboration between scientists, professional science IT supporters and research software developers, we intend to further advance our understanding to the limits and extend our research software accordingly. ICES is a strategic and important addition, allowing us to achieve our goals!” *Dr. Peter Kunszt, designated director ScienceIT at UZH.*

An important goal of the cooperation between ICES and the University of Zurich is to provide further proof of concept of the value of holistically integrated scientific resources and models. Ultimately, this will allow a more comprehensive understanding of our system Earth.

Contact

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The ICES Foundation is a not-for-profit foundation for the purpose of attracting finances to build and operate a Swiss-based International Centre for Earth Simulation.

<http://www.icesfoundation.org>

The University Research Priority Program on ‘Global Change and Biodiversity’ is a long term program of the University of Zurich aiming at better understanding interactions of global change drivers and biodiversity using mechanisms of feedback, interactions and scale.

<http://www.gcb.uzh.ch>