



## EDITORIAL

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## Earth's Future: Navigating the science of the Anthropocene

Guy P. Brasseur<sup>1</sup> and Ben van der Pluijm<sup>2</sup><sup>1</sup>Founding Editor-in-Chief; Climate Service Center, Helmholtz-Zentrum Geestacht, Hamburg, Germany,<sup>2</sup>Editor-in-Chief; Department of Earth & Environmental Sciences, University of Michigan, Ann Arbor, Michigan, USA

**Summary** Understanding and managing our new and future relation with the Earth requires research and knowledge spanning diverse fields. *Earth's Future* will explore and foster interactions among the Earth and environmental sciences, ecology, economics, the health and social sciences, and more. Its mission is to focus on the Earth as an interactive, evolving system to help researchers, policy makers, and the public navigate the science.

During the last decades, decision makers in public service and private sectors have increasingly realized that the major challenges facing human society in the 21st century will be related to the evolution of the Earth system. Among the global challenges are the limitation of available natural resources, the rapid population growth and its concentration in large urban areas, climate change with its impacts on the environment and society, the human and economic impacts of hazards such as earthquakes and extreme weather, air and water quality, sea-level rise, reduction in biodiversity, and so on. International organizations, national, regional, and local governments, and private corporations will have to address these issues and, specifically, find appropriate approaches, such as fundamentally modify our energy supply system; preserve the biosphere from anticipated degradations; adapt to unavoidable effects of climate change and geohazards; provide sufficient and healthy food as well as clean water; improve access to education, medical, and welfare services; and ultimately improve the level of human well-being and development of the world's population. All such decisions will have to be based on scientific knowledge and understanding of the governing processes. It is, therefore, the responsibility of the scientific community to develop programs that will help society address these key challenges in the decades ahead.

Many of the questions posed by stakeholders require interdisciplinary approaches. They will not be left to individual scientists nor even to scientific teams, but will often require a close dialogue with various players in society and the co-production of knowledge involving different partners. Disciplinary science will remain extremely important to build the pillars of the "science temple," but at the same time, there will be a need to develop more holistic approaches that will integrate knowledge from individual disciplines and produce the roof of this temple.

About 2 years ago, the American Geophysical Union (AGU) constituted a task force to assess new journal concepts for the Union. The task force noted that the scientific landscape has been evolving toward more integrated, transdisciplinary science and toward more societally relevant research that is geared toward solutions to coupled human and planetary challenges. The task force noted that AGU has produced many successful journals in the past decades that cover a large spectrum of geophysical disciplines, but that there is a recognized need to better link these disciplines with, when appropriate, economic and social processes. We are pleased to introduce the first issue of *Earth's Future*, the new AGU journal that aims to address these issues and should become a primary tool for lively dialogue between a large multidisciplinary research community and stakeholders representing a broad spectrum of societal sectors.

*Earth's Future* deals with the state of the planet and its expected evolution. It publishes papers that emphasize the Earth as an interactive system under the influence of the human enterprise. It provides science-based knowledge on risks and opportunities related to environmental changes. *Earth's Future* is a transdisciplinary, open-access journal that is published electronically. The journal will

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include regular research papers, review papers, commentaries, and essays in support of its stated goals.

The journal has been launched by one of us (GPB) who acted as Founding Editor-in-Chief for the initial period of its existence and worked closely with Associate Editors, Michael Ellis and Anthony Del Genio. A permanent editorial team led by the new Editor-in-Chief (BvdP) is being constituted and will assume responsibility for future issues of the journal.

Both of us would like to thank all the colleagues and the AGU staff members who have contributed to the launch of *Earth's Future* and have steadied the first steps of this new journal. We look forward to an exciting (Earth's) future.