

Great Debate: Geoscience and societal leadership in support of planetary stewardship

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Since its emergence some 4.6 billion years ago, the Earth has experienced remarkable environmental changes. Life on this planet has adapted and evolved to these changes, maintaining itself despite several catastrophic perturbation events. Compared to the long history of the planet and life, humanity's brief history (*Homo sapiens*), about 300,000 years, represents a quasi-instantaneous event. Further, with the development of civilization and its agricultural and industrial revolutions, and in particular, since the 18th century with the use of fossil fuels as the primary energy source, the atmosphere, oceans, cryosphere, and biosphere have all changed at an unprecedented rate. This latter era—the Anthropocene—documents an epoch of change in the global system that is irrevocably recorded in the geological record of the planet. What will happen to our future, because the planet will continue to evolve? The geoscience community must continue and enhance its connections with society as it integrates fundamental knowledge into the stewardship of the Earth. Likewise, industrial leaders have a great responsibility in the stewardship of the planet, particularly in shaping policies and human response. The Great Debate session during the JpGU-AGU Joint Meeting 2020 will provide a range of viewpoints and disciplines the opportunities to discuss the global planetary stresses that are imposed on humans. We will address questions that focus on the role (code) of geoscience and society in planetary stewardship.

Keywords: Planetary Stewardship, Anthropocene, Geoscience, Sustainability, Resilience, Co-evolution