May 4, 2016

Dear Dr. Vignieri

We wish to submit the manuscript “XXX” to be considered for publications as a Policy Forum in *Science*. We present a new way to quantify the adaptive potential of coupled natural-human systems and our work, which focuses on coastal communities on the US west coast, is directly aimed at advancing new policies for sustained economic growth based on the use of natural resources. This piece is a convergence of disciplines – ecology, economics, complex adaptive systems theory – and is the culmination of a NSF Coupled Natural-Human Systems project run out of Princeton University.

We believe this piece could change the way coupled natural-human systems are governed. The recognition that coupled natural-human systems are complex and adaptive comes with a requirement that we be able to systematically quantify these properties. Yet, even though policy makers have made great steps to measure and incorporate natural complexity, through food-web analyses, there is a gaping hole in our ability to do so for social-systems. We present a new method for quantifying the economic structure of coupled natural-human systems. This is analogous to the first depiction of a food-web by Darwin centuries ago. Now, we depict the “tangled bank” of socio-economic interactions, that are ultimately connected to the food-webs from which we extract living resources. In this piece, we use our novel research as a spring-board to discuss and design new policies aimed at sustainable natural resource use, accounting for the connectivity of socio-economic systems.

This piece is particularly suited to *Science* for several reasons. (1) At this time, **national and international policy efforts** are being redrawn, and our novel methodology and policy suggestions will directly engage these efforts. (2) Our methods for quantifying the connectivity of socio-economic systems, while new in approach, uses existing data. Hence it can be **quickly adopted** by NGO and government organizations tasked with policy design. (3) The **novelty** of this piece lies in the operationalization of decades-worth of Complex Adaptive Systems theory applied to coupled natural-human systems, moving beyond theory to practice in clear and targeted ways, aimed at improving the governance of social and ecological systems in the face of human population growth, technological advances and global climate change.

We hope that this brief introduction to our work will give us the opportunity to submit a manuscript for review.

Yours sincerely,

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