

## Reply to Knecht: Achieving sustainable health

We wholeheartedly agree with Knecht's (1) assessment and comments on our recent article (2). Current worldviews, institutions, and technologies (WITs) have created an unhealthy lifestyle for many in the developed world.

Global warming, peak oil, and loss of biodiversity threaten socio-ecological systems, including food and medicine. Under the current WIT, the medical industry is as dependent on business-as-usual as any other. In the United States, health care is a for-profit industry. Insurance companies fail to fund cost-effective preventive medicine. Per capita medical expenditures in the U.S. are twice those in other wealthy nations, yet health outcomes are far worse.

Reducing societal complexity could decrease the material and energy inputs available for high-cost medical care. But there are opportunities for improved health if we can mount an appropriate response in time. For example, local food systems would use far less fossil fuel inputs. Food processing, transportation, and packaging would be reduced. Diet and

exercise habits would improve. Diseases related to environmental toxins would decrease. In a new WIT where prevention enjoys a much higher priority, we can overcome roadblocks to sustainable health and improve overall quality of life.

**Rachael Beddoe<sup>a</sup>, Robert Costanza<sup>a,b</sup>, Joshua Farley<sup>a,c</sup>, Eric Garza<sup>a,b</sup>, Jennifer Kent<sup>d</sup>, Ida Kubiszewski<sup>a,b</sup>, Luz Martinez<sup>a,b</sup>, Tracy McCowen<sup>c</sup>, Kathleen Murphy<sup>a</sup>, Norman Myers<sup>e,1</sup>, Zach Ogden<sup>c</sup>, Kevin Stapleton<sup>c</sup>, and John Woodward<sup>c</sup>**

<sup>a</sup>Rubenstein School of Environment and Natural Resources, George D. Aiken Center, <sup>b</sup>Gund Institute for Ecological Economics, and <sup>c</sup>Community Development and Applied Economics, University of Vermont, Burlington, VT 05405; <sup>d</sup>Independent Environmental Researcher, Oxford OX4 3SE, United Kingdom; and <sup>e</sup>21st Century School, Oxford University, Oxford OX3 8FS, United Kingdom

1. Knecht S (2009) Overcoming systemic roadblocks to sustainable health. *Proc Natl Acad Sci USA*, 10.1073/pnas.0902558106.
2. Beddoe R, et al. (2009) Overcoming systemic roadblocks to sustainability: The evolutionary redesign of worldviews, institutions, and technologies. *Proc Natl Acad Sci USA* 106:2483–2489.

Author contributions: R.B., R.C., J.F., E.G., J.K., I.K., L.M., T.M., K.M., N.M., Z.O., K.S., and J.W. wrote the paper.

The authors declare no conflict of interest.

<sup>1</sup>To whom correspondence should be addressed. E-mail: myers1n@aol.com.