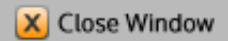




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**CONTROL ID:** 1501842**TITLE:** Integrating Sustainability Science with the Sciences of Human Well-being to Inform Design and Planning in an Urbanizing World**PRESENTATION TYPE:** Assigned by Committee (Oral or Poster)**CURRENT SECTION/FOCUS GROUP:** Global Environmental Change**CURRENT SESSION:** GC052. Toward a Sustainable Human Future**AUTHORS (FIRST NAME, LAST NAME):** Marina Alberti<sup>1</sup>, Lisa J Graumlich<sup>2</sup>, Howard Frumkin<sup>3</sup>, Daniel Friedman<sup>4</sup>**INSTITUTIONS (ALL):** 1. Urban Design and Planning, University of Washington, Seattle, WA, United States.  
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**ABSTRACT BODY:** A sustainable human future requires both healthy ecosystems and communities in which people thrive, with opportunities for health, well-being, happiness, economic prosperity, and equity. To make progress towards this goal, two largely disparate communities of scholars and practitioners must come together: sustainability science needs to be integrated with the sciences of human health and well-being. The opportunity for such integration is particularly ripe for urbanizing regions which not only dominate energy and resource use but also increasingly represent the human habitat. We present a conceptual framework that integrates sustainability science with the sciences of human health and well-being to explicitly articulate testable hypotheses on the relationships between humans and their habitat. We are interested in human behaviors and metrics of health and well-being in relationship to the characteristics of the built environment at various scales from buildings to metro regions. Focusing on the U.S. Pacific Northwest (PNW) as a testbed, we are building on our current empirical studies on urban sprawl and ecosystem function including biodiversity, air quality, hydrological, biogeochemical, and human health to develop formal hypotheses on how alternative urban design and development patterns may influence health outcomes and well-being. The PNW is an ideal setting for this work because of the connected metropolitan areas within a region characterized by a spectacular diversity of aquatic and terrestrial ecosystems and deeply held cultural and political aspirations towards sustainability. The framework also highlights opportunities for translation of knowledge to practice in the design and planning of built environments. For example, understanding these associations is critical to assessing tradeoffs in design and planning strategies and exploring potential synergies that optimize both sustainability and human well-being. In complex systems such as cities, managers need to make decisions in the face of uncertainty and limited resources and provide essential human services (e.g., clean water, clean air, protection from diseases etc.) to diverse population groups (e.g., vulnerable populations). We believe that research that advances empirical knowledge at the human well-being -- ecosystem interface will be critical to expanding sustainability science and its effective application to practice in designing buildings, neighborhoods and metropolitan regions that are simultaneously healthy and sustainable.

**INDEX TERMS:** [1600] GLOBAL CHANGE, [1632] GLOBAL CHANGE / Land cover change, [1630] GLOBAL CHANGE / Impacts of global change, [6334] POLICY SCIENCES / Regional planning.

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