

Systems science and population health

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Abstrak

This book bridges the gap between systems science and population health science and brings together contributions from leading authorities in the field to describe how complex systems science contributes to population health and to demonstrate how methodological approaches in systems science can sharpen population health science. The book includes both theoretical and empiric illustrations from the emerging literature at the nexus between complex systems and population health. The first section, simplicity, complexity, and population health walks the reader through the intellectual and conceptual history of systems science as it intersects with population health. The second section, methods in systems population health, provides the reader with clear, concise overviews of several important and emerging systems science methodological tools, including systems dynamics, agent-based modeling, microsimulation, social network analysis, and machine-learning with relevant examples drawn from the population health literature. The third section, systems science toward a consequential population health, synthesizes the previous two sections to explore the implications of systems science for our understanding of broad issue areas in population health.