



# URBAN HEALTH AND SOCIETY

Interdisciplinary Approaches  
to Research and Practice

NICHOLAS FREUDENBERG • SUSAN KLITZMAN • SUSAN SAEGERT EDITORS



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**NICHOLAS FREUDENBERG**  
**SUSAN KLITZMAN**  
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*Editors*

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# PREFACE

In this volume, we seek to bring together two emerging fields of study. The first, urban health, asks how city living shapes health and how researchers, policymakers, health professionals, and others can contribute to healthier cities around the world. The second, interdisciplinary research, seeks to transcend the limitations of research approaches informed by a single discipline. As more of the world's populations move to cities and as urban areas face more complex health problems, improving the health of urban populations has become a central challenge for public health professionals, government officials, researchers, and urban dwellers. More than ever, understanding and solving problems like obesity, depression, diabetes, heart disease, pollution-related diseases, violence, and infant mortality will require researchers who can investigate health at individual, family, community, and policy levels and integrate theories, methods, and analytic techniques from a variety of disciplines.

We wrote and edited *Urban Health and Society: Interdisciplinary Approaches to Research and Practice* to prepare researchers and practitioners to be better equipped to meet the challenges of improving the health of urban populations in the coming decades. Our intended audience is researchers and graduate students in public health, social sciences, nursing, social work, and other related fields. In Part One of the book (Chapters One and Two), we introduce the central themes of the book and highlight the connections between population health and social justice. In Part Two (Chapters Three through Seven), interdisciplinary researchers who have studied food access in low-income urban neighborhoods, child development and poverty, asthma and air pollution in New York City, the impact of social policy on the health of African Americans, and the health consequences of the recent housing foreclosure crisis explain how they studied the causes of these problems using a variety of disciplinary, conceptual, and methodological approaches. Part Three (Chapters Eight to Eleven) focuses on creating interventions to solve urban health problems. In each chapter, authors from two or more disciplines analyze the contributions their approach offers to solving a particular problem, including teen tobacco use, responses to natural and human-origin disasters, healthy aging for immigrants in urban areas, and reducing the epidemic of diabetes in African American communities. In Part Four (Chapter Twelve), we suggest how readers can use the insights from previous chapters to bring interdisciplinary approaches to research and intervention into their own work settings.

To assist faculty and students who use this book in graduate courses, we have included objectives and discussion questions at the end of each chapter and, in the back of the book, a glossary that defines the key concepts the authors discuss.

Our work as teachers, researchers, and policy advocates motivated us to compile this book. At City University of New York, we have worked together to develop interdisciplinary approaches to teaching and research, created new courses on interdisciplinary approaches to urban health for masters and doctoral students in public health and the social sciences, and collaborated on research projects aimed at understanding how housing policies and practices influence the health of urban populations. Separately, we have each worked for decades in university, municipal government, and community settings to study and develop interventions to reduce a variety of urban health problems. While we have benefited from the growing body of literature on the theoretical foundations of interdisciplinary approaches to health research, our focus is more practical. We want to help our colleagues and students to use these methods to improve their work and increase its relevance to improving the health of urban populations.

We were fortunate to have the support of numerous individuals and organizations to complete this volume. A Collaborative Incentive Grant from the Chancellor's Office of City University of New York (CUNY) helped us get started on this work. A Roadmap Curriculum Development Award to Nicholas Freudenberg from the National Institute of General Medical Sciences (1 K07 GM72947) supported our work on creating an interdisciplinary doctoral curriculum in urban health at CUNY and supported some of the authors of the chapters in this volume. This award also supported a faculty seminar on interdisciplinary research that served as a valuable forum for developing this volume. In June 2006, we convened a workshop of faculty from eight U.S. and Canadian universities to discuss research and teaching in urban health. These discussions informed this volume and especially our observations in Chapters One and Twelve.

Many colleagues were kind enough to read chapters and provide helpful suggestions to authors and editors. These include Tom Angotti, Mimi Fahs, Sandro Galea, Mary Clare Lennon, Shirley Lindenbaum, and Amy Schulz. Several students also helped to compile literature reviews, prepare manuscripts, and assist in other ways. We thank Tracy Chu, Zoe Meleo Erwin, Lauren Evans, and Rachel Verni. At Jossey-Bass, Andrew Pasternack and Seth Schwartz provided encouragement and helpful suggestions for improving the manuscript. Finally, we thank our students and our community and municipal agency partners in research, who continually challenge, amplify, and enrich our understanding of urban health, interdisciplinary research, and the links between public health and social justice. We gratefully acknowledge the help we have received from all these sources but of course accept full responsibility for the content of this volume.

*New York City  
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February 2009*

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# URBAN HEALTH AND SOCIETY



PART

**1**

**INTRODUCTION**



# CHAPTER

# 1

# FRAMEWORKS FOR INTERDISCIPLINARY URBAN HEALTH RESEARCH AND PRACTICE

**NICHOLAS FREUDENBERG, SUSAN KLITZMAN, SUSAN SAEGERT**

## **LEARNING OBJECTIVES**

- Offer three reasons why interdisciplinary research approaches are especially suitable for investigation of urban health problems.
- Explain the characteristics of cities that affect the public health challenges they face and that make urban health problems particularly appropriate for interdisciplinary study.
- Compare and contrast unidisciplinary and interdisciplinary research from the point of view of both substance and the processes involved, as well as the challenges inherent in interdisciplinary research.

## 4 Frameworks for Interdisciplinary Urban Health Research and Practice

- Describe approaches to overcoming interdisciplinary challenges related to assumptions, methods, institutional settings, and the focus of interventions.

### INTRODUCTION

For the past two centuries, cities and urbanization have been a dominant influence on health and disease, and today, more of the world's population lives in cities than ever before. In 2007, half of the world's population lived in urban areas, and by 2030, three-quarters will live in cities.<sup>1,2</sup> For health researchers and practitioners, understanding how the urban environment influences health and well-being will determine how successful we are in caring for individuals and families, in promoting population health, and in achieving local, national, and global health goals.

More broadly, as the United Nations *State of the World's Cities* report noted in 2001, "For better or worse, the development of contemporary societies will depend largely on understanding and managing the growth of cities. The city will increasingly become the test bed for the adequacy of political institutions, for the performance of government agencies, and for the effectiveness of programmes to combat social exclusion, to protect and repair the environment and to promote human development."<sup>3</sup>

As the urban population grows and as cities become more diverse and complex, it becomes increasingly difficult for any single individual, academic discipline, profession, institution, or agency to develop the insights and skills needed to improve the health of urban populations or to create healthier cities. Despite the growing recognition that only interdisciplinary research and practice can solve the health challenges facing cities today, most universities still train health researchers and professionals in a single discipline, teach them only a few research methods, and do not acquaint their students with the growing literature on interdisciplinary approaches to health. In this volume, we seek to remedy this problem by introducing students, researchers, and practitioners in public health, medicine, social work, nursing, sociology, anthropology, psychology, urban planning, geography, and other disciplines to the concepts of interdisciplinary approaches to urban health research and practice. Our goals are to familiarize readers with the emerging concepts and principles that characterize interdisciplinary urban health research, to provide case studies of interdisciplinary health research within cities, and to prepare readers to work more effectively within interdisciplinary research and intervention teams.

This volume grows out of our own experiences as researchers and teachers, from our reading of several bodies of literature, and from recent calls for more emphasis on interdisciplinary education and research. Since the early 1980s, we have separately and together studied, developed, directed, and evaluated interventions to address several quintessential urban social, health, and environmental problems: childhood lead poisoning, asthma, deteriorated housing, HIV infection, reentry from jail, violence and crime, mothers' and children's mental health problems, and obesity and diabetes. In each of these cases, our efforts to understand and reduce the health problems facing



urban neighborhoods forced us to transcend the disciplinary boundaries of our professional training and to learn new languages, concepts, and methods.

As teachers at City University of New York (CUNY), the largest urban public university in the nation, and Vanderbilt University, we also bumped against disciplinary boundaries. Our graduate students in psychology, public health, environmental health, health education, nursing, public policy, and sociology—many of them working in the health field during the day—wanted to take courses, learn skills, and integrate methods from different disciplines to succeed in solving the problems they faced in their own research and in jobs at the municipal health department, in voluntary health agencies, or with community organizations. Too often, however, the requirements of accrediting agencies, the curriculum or departmental structure of our universities, or our own limitations as disciplinary researchers made it difficult for our students to achieve their interdisciplinary objectives. Recently, we have worked to develop at CUNY a variety of interdisciplinary approaches to graduate education for social science and public health students interested in urban health. These experiences have reinforced our view of both the potential and the obstacles facing interdisciplinary study.

As social scientists and health researchers, we are influenced by several emerging bodies of literature on urban health, on social determinants of health, on social support and health, on health inequities and disparities, on various participatory research methods, and on human rights, social justice, and health. Each of these fields has been developed by investigators from several disciplines, and each has begun to establish an interdisciplinary foundation that can guide future research and intervention. Although these new developments have informed our research and teaching, we have also been frustrated with the difficulty of developing for ourselves and our students a user-friendly synthesis of these emerging principles, theories, and methods that can guide research and practice. Once again, our own and our colleagues' disciplinary roots make it difficult to integrate new scholarship across levels and disciplines.

Finally, this book is a response to several recent calls for more attention to interdisciplinary research and education. In its report *The Future of the Public's Health in the 21st Century*,<sup>4</sup> the National Academies Press emphasized the importance of interdisciplinary education in health. It called on universities to “increase integrated interdisciplinary learning opportunities for students in public health and other related health science professions . . . and interdisciplinary education and appropriate incentives for faculty to undertake such activities.” The 2003 National Academies Press report *Who Will Keep the Public Healthy?*<sup>5</sup> also stressed the need for more interdisciplinary education for biomedical and social science researchers. In its 2005 report *Facilitating Interdisciplinary Research*,<sup>6</sup> the National Academies Press suggested that graduate students should explore ways to broaden their experience by gaining “requisite” knowledge in one or more fields in addition to their primary field. They also suggested that researchers and faculty members desiring to work on interdisciplinary research, education, and training projects should immerse themselves in the languages, cultures, and knowledge of their collaborators.

In its effort to chart a “road map” for medical research in the twenty-first century, the National Institutes of Health observed that “the scale and complexity of today’s biomedical research problems increasingly demand that scientists move beyond the confines of their own discipline and explore new organizational models for team science.”<sup>7</sup> As urban health researchers and teachers, we support these calls for new paradigms but note the lack of practical tools for achieving these ambitious aims. We hope this volume will help to fill this gap.

Finally, the Institute of Medicine, the Council on Education for Public Health, and other bodies have called on schools of public health to strengthen preparation of students in interdisciplinary collaboration and communication. Most faculty and researchers agree in principle with this call, but few have developed practical strategies for meeting this new mandate or found ways to equip students with the competencies to defuse the land mines one encounters when crossing disciplinary boundaries. This book hopes to meet that need.

In sum, we hope this collection of essays will help to educate health professionals and researchers who can transcend the limitations we have faced. By introducing students early in their careers to the concepts and methods of other disciplines, by describing the benefits but also the real-world challenges that interdisciplinary researchers face, and by presenting case studies from the interdisciplinary front lines of public health and social science research and practice, we hope today’s students will be better prepared to accept interdisciplinary approaches as the norm rather than the exception. In this chapter, we introduce several themes that are developed in subsequent chapters.

### **THE IMPLICATIONS OF URBAN LIFE FOR HEALTH**

One recurring theme is that interdisciplinary research and the field of urban health are good partners for a lasting relationship. What makes the health of urban populations especially suitable for these interdisciplinary approaches?

First, like coral reefs or tropical rain forests, cities are complex biological, social, and physical systems in which organisms (in this case, humans are our main interest) interact with each other and their environment at the molecular, local, and global levels. No single discipline can capture the complexity of these interactions, and only interdisciplinary methods can consider these dynamics at several levels simultaneously.<sup>8,9</sup>

Second, cities have diverse populations. Population heterogeneity sets the stage for a variety of biological, cultural, political, and social encounters among and within the various subpopulations. For example, understanding the health implications of the food practices of urban ethnic groups and their varying interactions with the urban food system requires nutritional, anthropological, sociological, and psychological expertise,<sup>10</sup> as Zenk and her colleagues describe in Chapter Three.

Third, cities have dense populations. Sociologists, economists, and biologists have studied the consequences of population density for more than 200 years, and more recently, epidemiologists and psychologists have also taken on this issue. Some research suggests that density contributes to negative effects on physical and mental health, but

other studies document increased access to health services, close knit subcultures, and greater freedom of choice and personal development. By integrating the findings on density from these various disciplines, it may be possible to develop a more nuanced view of the various ways that density influences health. More pragmatically, understanding the complex ways that density affects health can assist urban planners to design cities and neighborhoods that better promote well-being. In Chapter Nine, Hadley and colleagues examine how urban density shapes the health consequences of disasters such as earthquakes, tsunamis, or terrorist attacks.

Fourth, because most cities are characterized by high levels of inequality, interventions—even beneficial ones—run the risk of reinforcing or even widening disparities in health.<sup>11</sup> Thus, opening new municipal fitness centers may exacerbate the gap in physical activity levels between the poor and the better off unless the poor have what Paul Farmer has called a “preferential option” for the new services.<sup>12</sup> What is beneficial at the individual level may be harmful to population health and to social justice. To avoid this unintended effect, urban public health planners need to define disparity reduction as an explicit goal. This requires thinking across levels and considering technical and ethical concerns; both tasks are suited to interdisciplinary research. In Chapter Six, Geronimus and Thompson examine the multiple pathways by which public policies have often undermined the health of African American communities.

Fifth, most cities organize the municipal services that affect health in sectoral programs: education, health care, sanitation, water, or housing. Each sector has its own experts, and rarely do policymakers or researchers consider the impact of developments in one sector (e.g., increasing rates of high school dropout) on outcomes in another (e.g., longevity or premature death). For urban residents, however, it is the totality of their environment and the services available to them that shape their living conditions. Interdisciplinary research can begin to examine these intersections across levels and sectors and analyze their impact on health. Saegert and her colleagues provide such an example in Chapter Seven in their analysis of the health consequences of housing foreclosures.

Sixth, compared to other areas, cities have a rich array of social and human resources—dense social networks, many community-based organizations, and diverse formal and informal service providers. These human resources and the social capital inherent within them constitute key assets for urban health promotion, and effective public health programs use these resources both to root interventions in a specific urban context and to reduce the need for external resources.<sup>13–15</sup> Recent work on social capital in psychology, sociology, and public health demonstrates the potential for both theory and research in this area and the value of investigating the dynamic interactions among different social levels.<sup>16–18</sup> For example, in Chapter Ten, Fahs and her colleagues assess the contributions that immigrant urban communities can bring to healthy aging, and in Chapter Eleven, Jones and Liburd describe some of the assets that African American communities can bring to the task of reversing the diabetes epidemic. Finding the right assets, mobilizing them, and ensuring their sustainability are important tasks for urban health interventionists.

Seventh, the development of modern cities and their impact on the health and well-being of their inhabitants are dynamic across time and place. For example, although many cities in North America and Europe began experiencing unprecedented population expansion during the latter half of the nineteenth century, it was not until a century later that many of their southern counterparts in Asia, Africa, and Latin America did so. Temporal and geographic differences are also manifest in disease patterns: Many northern cities have experienced significant overall declines in infectious diseases and subsequent increases in longevity, although these diseases continue to burden disproportionately disadvantaged subgroups in the population. Now, developed world cities are battling noninfectious diseases like cancer, diabetes, heart disease, and Alzheimer's disease that are associated with cumulative exposures, aging, and long latency periods. Meanwhile, in many developing world cities, infectious diseases like HIV/AIDS, tuberculosis, malaria, and dengue fever are still raging, shortening life spans, and imposing misery. To understand the growth and character of cities and their impact on health requires that we consider a myriad of historical, geographic, economic, political, and social forces. No single discipline possesses the framework and tools for such an analysis.

In sum, we seek to show that the *methods* of interdisciplinary research can help to understand better the outcome of the health of urban populations. The complex health conditions facing cities have determinants and consequences at multiple levels of biological and social organization, and they vary significantly across time and place. In addition, they often need to effectively address simultaneous changes in behavioral, community, organizational, and policy domains. No single discipline can provide the tools needed to operate in these many dimensions.

## LEVELS AND TYPES OF INTERDISCIPLINARITY

Our second theme is that interdisciplinarity is best considered a continuum rather than a polarity with disciplinary approaches. In our view, any specific research project, intervention, or program in urban health can be located along a continuum that begins with disciplinary approaches, proceeds to multidisciplinary, then to interdisciplinary, and finally to transdisciplinary. Examples of disciplinary approaches to the study of urban health abound in the peer-reviewed and popular literature—sociological studies of urban crime, psychological studies of population density and crowding, environmental health studies of urban noise, air pollution, or childhood lead poisoning, and clinical studies of anti-hypertension, cholesterol, or malarial drugs.

Multidisciplinary research joins investigators from different fields to bring their own methods and concepts to a common problem. As Stokols and others have noted,<sup>19</sup> fields such as public health and urban planning are inherently multidisciplinary in that they encompass several different disciplines whose perspectives are combined in analyses of complex topics, such as population health and urban development. For example, epidemiologists, environmental health researchers, pediatricians, housing specialists, and psychologists have studied the epidemic of childhood asthma in U.S. cities. Each researcher uses his or her analytic methods and concepts to examine the role of, say,

air pollution, quality of medical care, housing characteristics, diet, or parental management in the prevalence of asthma or the severity of symptoms. And as Fuqua and her colleagues show in Chapter Eight, reducing the toll from tobacco has forced researchers from many disciplines to form innovative research collaboratives. Occasionally, these investigators work together, and such efforts have led to a better understanding of asthma. Too often, however, multidisciplinary research resembles more the parallel play of toddlers than the collaborative work of a single team. Differences in language, methods, scale, and outcome make it difficult to integrate findings across disciplines and to develop science-based multilevel interventions to improve urban health.

The National Academies Press has defined *interdisciplinary research* as “a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or field of research practice.”<sup>6</sup> The operative distinction with multidisciplinary approaches is the *integration* of perspectives from two or more disciplines. Several chapters illustrate this process, including Angotti and Sze in Chapter Two, who integrate urban planning with historical and environmental health approaches to the study of urban environmental hazards and Maantay and her colleagues, who in Chapter Five synthesize geographic and medical perspectives to better understand childhood asthma.

More recently, Stokols and others have proposed the term “transdisciplinary research,” which is characterized by a deliberate integration of concepts and methods from several fields to address a common problem. It results in “collaborative products” that “reflect an integration of conceptual and/or methodological perspectives drawn from two or more fields.”<sup>19</sup> Their work on tobacco control,<sup>19</sup> recent studies of the obesity epidemic,<sup>20–22</sup> and studies of child development in urban settings, described by Ferguson and colleagues in Chapter Four, illustrate transdisciplinary approaches. In some cases, transdisciplinary approaches lead to the creation of new discipline that integrates previously separate ones. For example, the new field of “cognitive science” brings together researchers and methods and concepts from anthropology, artificial intelligence, neuroscience, education, linguistics, psychology, and philosophy.<sup>6</sup> In Chapter Twelve, we consider the advantages and disadvantages of viewing urban health as a new transdisciplinary field.

To help readers locate their own efforts and the cases described in this volume on the disciplinarity continuum, it may be helpful to describe some of the characteristics that distinguished more unidisciplinary research from interdisciplinary research (IR). First, the starting point for IR is often a problem rather than a single hypothesis about the relationship between two variables. Second, IR often struggles to define a common language and concepts, a task not usually needed in disciplinary research. Third, IR often works at two or more levels of organization, requiring more sophisticated methods to account for the influences of one level on another. Fourth, IR is less often guided by theory, in part because theories often describe only one analytic level or are bounded by a single discipline. Finally, compared to the frequently incremental approach

of disciplinary research, in which each research finding contributes a small addition to a fuller picture of the question of interest, IR may take a more dynamic approach. Integrating findings across levels may lead to a reformulation of basic concepts and a reframing of research questions.

In our view, the important task is not so much how to create precise definitions that distinguish among the points on the disciplinarity continuum but rather to help researchers decide where to locate their own efforts. Our own experience and the chapters in this volume suggest that this decision is based on the nature of the problem under study and the specific research questions that drive this decision and not on inherent characteristics of the different degrees of disciplinarity. Although we appreciate the distinction between interdisciplinary and transdisciplinary research, in this volume, we generally use the more common term *interdisciplinary* for clarity and simplicity.

## CONUNDRUMS IN INTERDISCIPLINARITY

A third theme that emerges from this book is that interdisciplinary research is difficult. We resist the effort to paint it as the ideal solution to all complex problems and argue instead that researchers need to have a clear rationale for its use in any specific situation.

What makes interdisciplinary research so challenging? First, the value of disciplines—part of the reason they emerged—is to help focus attention on a defined set of variables, usually at a single analytic level and informed by a small number of relevant theories. Once researchers give up the disciplinary lens, they can be dizzied by choices—like looking through a microscope, binoculars, and a telescope simultaneously. And interdisciplinary approaches offer not only multiple ways of framing the problem but also multiple methods of collecting and analyzing data. Choosing this path significantly expands the number of choices a researcher needs to make.

A related challenge is integrating methods and theories from different analytic levels or different levels of social organization. In some cases, methodologies such as multilevel statistical models or structural equation modeling provide a framework for explaining the relationship among different levels, but the simplified assumptions these models require may limit the insights they can offer. In childhood lead poisoning, for example, the child's nutritional status, behavioral patterns, interactions with parents, and access to health care, as well as the living conditions inside the household, the building, the block, the neighborhood, and the policies of the city, state, and national government all influence the individual and population prevalence of elevated lead levels. How do we integrate findings from these different levels to develop more effective lead poisoning prevention policies and interventions? The practical difficulty explains why researchers often choose to focus on a single level using data and theories from a single discipline—even if such studies are of limited use in the development of effective prevention policies.

Another difficulty for the researcher considering interdisciplinary approaches is the sheer volume of knowledge needed to be effective in this task. The unread journals that pile up in our own offices show how hard it is to keep up with new findings and