Contents

Lis	t of Tables t of Contributors	vii ix xi
	roduction: Science with the People ug Brugge and H. Patricia Hynes	1
SE	CTION A: HOUSING	11
1	Public Health and the Physical Environment in Boston Public Housing: A Community-Based Survey and Action Agenda H. Patricia Hynes, Doug Brugge, Julie Watts and Jody Lally	13
2	A Case Study of Community-Based Participatory Research Ethics: The Healthy Public Housing Initiative Doug Brugge and Alison Kole	33
3	The Seattle-King County Healthy Homes Project: Implementation of a Comprehensive Approach to Improving Indoor Environmental Quality for Low-Income Children with Asthma James Krieger, Tim K. Takaro, Carol Allen, Lin Song, Marcia Weaver, Sanders Chai and Philip Dickey	49
SE	CTION B: OPEN SPACE	79
4	Environmental Justice Across the Mystic: Bridging Agendas in a Watershed Julian Agyeman and Dale Bryan	81
5	A Program to Improve Urban Neighborhood Health Through Lead-Safe Yard Interventions Jill S. Litt, H. Patricia Hynes, Paul Carroll, Robert Maxfield, Pat McLaine and Carol Kawecki	101

vi	Community Research in Environmental Health	
6	"We don't only grow vegetables, we grow values": Neighborhood Benefits of Community Gardens in Flint, Michigan Katherine Alaimo, Thomas M. Reischl, Pete Hutchison and Ashley E. Atkinson	123
SE	CTION C: URBAN DEVELOPMENT AND TRANSPORTATION	143
7	An Environmental Health Survey of Residents of Boston Chinatown Doug Brugge, Andrew Leong, Abigail Averbach and Fu Mei Cheung	145
8	Traffic Injury Data, Policy and Public Health: Lessons from Boston Chinatown Doug Brugge, Zenobia Lai, Christina Hill and William Rand	169
9	Airborne Concentrations of PM _{2.5} and Diesel Exhaust Particles on Harlem Sidewalks: A Community-Based Pilot Study Patrick L. Kinney, Maneesha Aggarwal, Mary E. Northridge, Nicole A.H. Janssen and Peggy Shepard	187
SE	CTION D: ENVIRONMENTAL EXPOSURE	203
10	Environmental Justice and Regional Inequality in Southern California: Implications for Future Research Rachel Morello-Frosch, Manuel Pastor Jr., Carlos Porras and James Sadd	205
11	Participatory Research Strategies in Nuclear Risk Management for Native Communities Dianne Quigley, Virginia Sanchez, Dan Handy, Robert Goble and Patricia George	219
12	Social Responsibility and Research Ethics in Community-Driven Studies of Industrialized Hog Production Steve Wing	245

263

265

269

SECTION E: LESSONS AND CONCLUSION

H. Patricia Hynes and Doug Brugge

Afterword

Index

List of Figures

3.1	Organizational structure of SKCHH project	53
4.1	The Mystic River watershed	83
5.1	The major pathways of soil-lead exposures	106
5.2	The percent distribution of yards by lead concentration	113
5.3	Variation in lead concentration levels within each group	114
5.4	Statistical averages for lead concentrations in residential yards,	
	by distance categories	115
8.1	Distribution of pedestrian (open bars) and vehicle occupant (closed	
	bars) injuries by (a) day of the week and (b) month of the year	175
8.2	Distribution of pedestrian (open bars) and vehicle occupant (closed	
	bars) injuries by hour of the day	176
8.3	Distribution of pedestrian and vehicle occupant injuries by geographic location for (a) 1996, (b) 1997, (c) 1998	-178
8.4	Twenty-four hour vehicle volumes, normalized to percent total for six	
	locations in Chinatown	179
8.5	Association of modeled vehicle volume at intersections for weekdays at 4:00-6:00 PM and 7:00-9:00 AM with total injuries at (a) simple	
	intersections and (b) complex intersections from 1996-1998	180
9.1	Locations of four monitoring sites in the Harlem neighborhood of	
	Northern Manhattan	190
9.2	Average 10:00 AM to 6:00 PM weekday traffic counts at four sites in	
	Harlem: (a) heavy-duty trucks and buses, (b) cars and pedestrians	195
9.3	Scatterplot of mean elemental carbon concentrations and diesel	
	vehicle counts (heavy-duty trucks and buses) at four monitoring sites in	
	Harlem	196
9.4	Correlation between co-located elemental carbon concentrations,	
	measured on quartz fiber filters, and absorption coefficient, measured	
	on PM _{2.5} filters	199
0.1	Emission source contributions to air toxics concentrations and estimated	
	lifetime cancer incidence in the South Coast Air Basin	210
0.2	Estimated lifetime cancer risks from ambient air toxics exposures	
	by race, ethnicity and income (South Coast Air Basin)	211

viii	Community Research in Environmental Health	
10.3	High capacity hazardous waste TSDFs and ethnic churning, 1970–1990, southern Los Angeles County, California	212
10.4	Political economy of environmental inequality	213 215
	or on monate inequality	213
11.1	Native community-based infrastructure	236
12.1	Confined animal feeding operations in eastern North Carolina showing feeal waste pits in the foreground, confinement structures, spray fields, and neighboring homes	248

List of Tables

 1.2 Summary of key health and safety findings 1.3 Association of symptoms and environmental conditions reported as crude prevalence odds ratios 2.1 Interview questions 3.1 Indoor asthma triggers 3.2 CHES visit schedule 3.3 Exposure reduction protocols used in Seattle–King County Healthy Homes project 4.1 Most intensively overburdened communities in Massachusetts 4.2 The four categories of "issues" 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender 7.3 Symptoms 	24 26 36 50 55 62 85
crude prevalence odds ratios 2.1 Interview questions 3.1 Indoor asthma triggers 3.2 CHES visit schedule 3.3 Exposure reduction protocols used in Seattle–King County Healthy Homes project 4.1 Most intensively overburdened communities in Massachusetts 4.2 The four categories of "issues" 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender	36 50 55 62 85
 2.1 Interview questions 3.1 Indoor asthma triggers 3.2 CHES visit schedule 3.3 Exposure reduction protocols used in Seattle–King County Healthy Homes project 4.1 Most intensively overburdened communities in Massachusetts 4.2 The four categories of "issues" 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender 	36 50 55 62 85
3.1 Indoor asthma triggers 3.2 CHES visit schedule 3.3 Exposure reduction protocols used in Seattle–King County Healthy Homes project 4.1 Most intensively overburdened communities in Massachusetts 4.2 The four categories of "issues" 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender	50 55 62 85
 3.2 CHES visit schedule 3.3 Exposure reduction protocols used in Seattle–King County Healthy Homes project 4.1 Most intensively overburdened communities in Massachusetts 4.2 The four categories of "issues" 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender 	55 62 85
 Exposure reduction protocols used in Seattle–King County Healthy Homes project Most intensively overburdened communities in Massachusetts The four categories of "issues" The "actions" suggested in the small group sessions at the Summit to support resolution of those issues The lead safe yard treatment measures Neighborhood survey completion and response rates Results from the linear and logistic regression analyses by categories Responses to survey teams by residents Age distribution by gender 	62 85
 Homes project 4.1 Most intensively overburdened communities in Massachusetts 4.2 The four categories of "issues" 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender 	85
 4.1 Most intensively overburdened communities in Massachusetts 4.2 The four categories of "issues" 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender 	85
 4.2 The four categories of "issues" 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender 	
 4.3 The "actions" suggested in the small group sessions at the Summit to support resolution of those issues 5.1 The lead safe yard treatment measures 6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender 	00
support resolution of those issues 5.1 The lead safe yard treatment measures 6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender	90
 5.1 The lead safe yard treatment measures 6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender 	
6.1 Neighborhood survey completion and response rates 6.2 Results from the linear and logistic regression analyses by categories 7.1 Responses to survey teams by residents 7.2 Age distribution by gender	91
 Results from the linear and logistic regression analyses by categories Responses to survey teams by residents Age distribution by gender 	111
7.1 Responses to survey teams by residents7.2 Age distribution by gender	130
7.2 Age distribution by gender	134
*	151
7.3 Symptoms	151
	152
7.4 Experiences with noise and air pollution	153
7.5 Rate differences for respondents who are "Often/Sometimes" bothered	
by pollutants compared to those who are "Rarely/Never" bothered by	
pollutants	155
7.6 Motor vehicle accidents, traffic and pedestrian safety	156
7.7 Open space and outdoor recreation	157
7.8 Knowledge about environmental risk factors and responsibility	158
7.9 Environmental priorities	159
8.1 Data used in the study	172

9.1	Mean and range (across days) of daily eight-hour weekday traffic counts at four sites in Harlem	194
9.2	Eight-hour average (10:00 AM-6:00 PM) PM _{2.5} and elemental carbon concentrations at four Harlem sites	196
		190
10.1	Logistic regression results for association between TSDF location and race/ethnicity, economic, and land use variables	200
10.2	Logistic regression results for association between TRI location and	208
10.3	race/ethnicity, economic, and land use variables Regression results on association between cancer risks associated with	209
	air toxics and race/ethnicity, economic, and land use variables	212