

The Active City:

Recreation Programs, Public Health & Environmental Justice



Nicholas Dahmann, Jennifer Wolch,
Pascale Joassart-Marcelli, Kim Reynolds
and Michael Jerrett

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Rates of Obesity by Age

Age Group	Percentage Obese (1976-80)	Percentage Obese (2003-4)
2-5 years	5.0%	13.9%
6-11 years	6.5%	18.8%
12-19 years	5.0%	17.4%
20-74 years	15.0%	32.9%

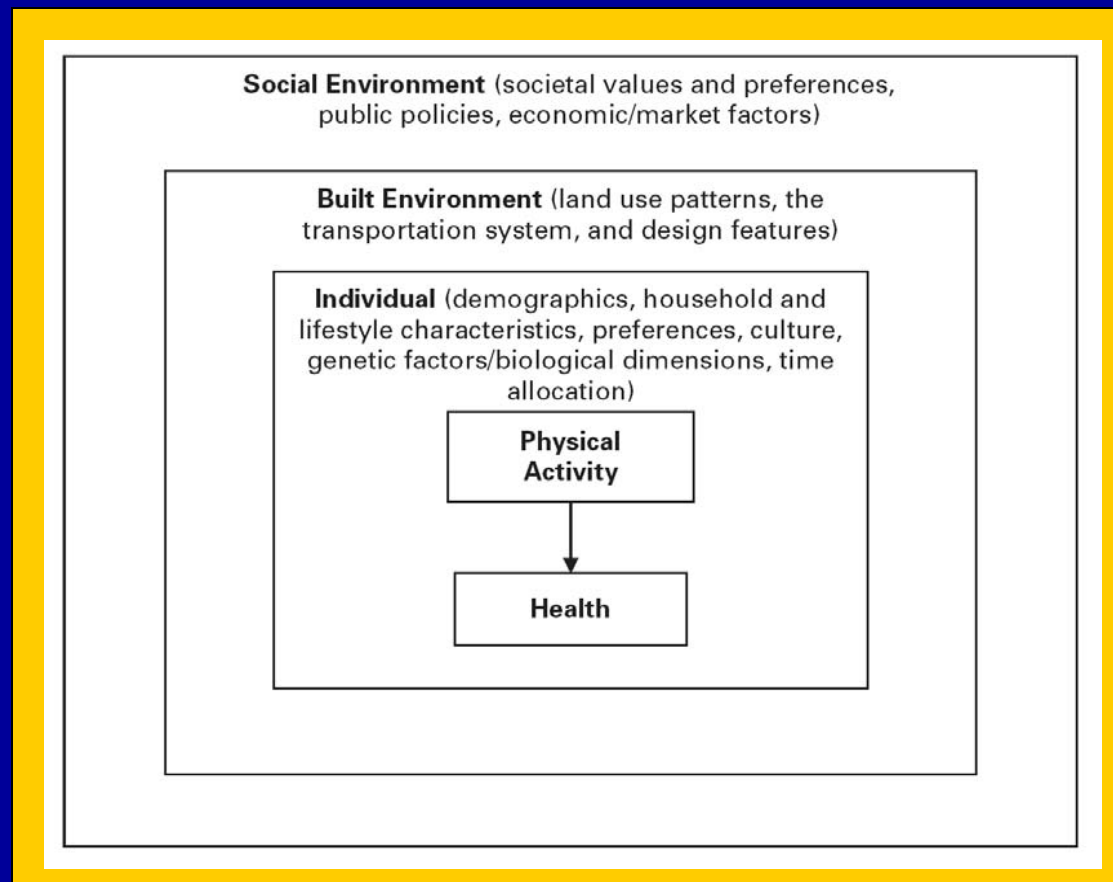
(Source: Physical Activity and Good Nutrition: Essential Elements to Prevent Chronic Diseases and Obesity 2007, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and Coordinating Center for Health Promotion.)



The “Active Living” Paradigm

- Focus on how city’s built environment may influence individual physical activity and health status
- Spotlight on specific urban land uses, as promoting physical activity or ‘obesogenic’
- Parks as providing opportunities for physical activity

Framework for Built Environment-Physical Activity Links



(Source: National Research Council (U.S.), 2005, *Does the built environment influence physical activity?: examining the evidence*. Washington, D.C.: Transportation Research Board, p, 4



Where is Recreation?

- Common assumption: Parks=Rec
- Recognized gap in research on recreation facilities/programs (public or private)
 - Distribution of recreation opportunities
 - Disparities in access
 - Physical activity potential of recreation programs

Enhanced Framework for Active Living Research

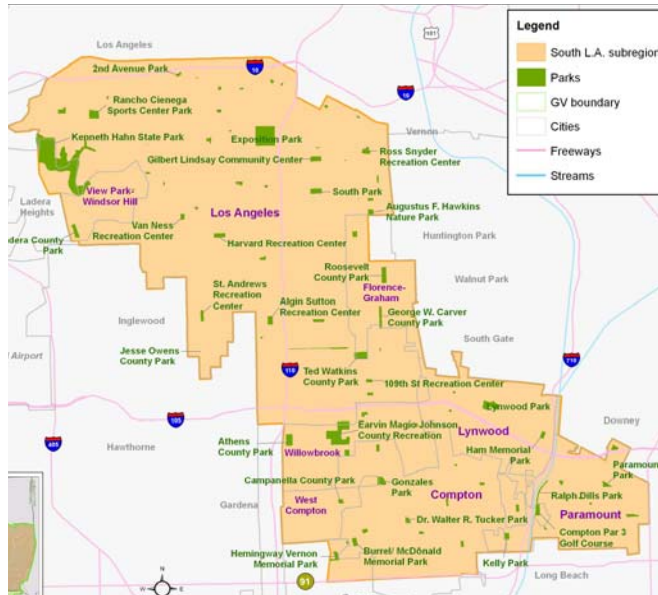
- Highlights urban context
- Parks as subset of recreation
- Distinguishes active vs. passive, formal vs. informal recreation
- Public vs. private opportunities





Research Questions

- What public recreation opportunities are available in metropolitan regions?
- Where are they located?
- What factors influence disparities in access?



Southern California Context

- Increasing densities
- Social polarization
- Race/ethnicity diversity
- Inequitable park access and many park-poor areas
- Sharp intra-metropolitan fiscal disparities
- 25% uninsured in 2003
- Prevalence of diabetes 9%, especially high among Latinos
- 35% adults overweight in 2002
- 19% adults obese in 2002
- 15% children/youth overweight in 2002

Research Methods



- GIS database on city-level characteristics
 - Socio-demographics and housing (Census 2000)
 - Park space (GVP)
 - Institutional characteristics of municipality
 - Fiscal capacity (2000)
 - Expenditures on recreation and parks (State of California, 2000)
 - Number/expenditures of nonprofit park/recreation organizations (2003)
- Web audit of all municipal recreational programs (summer 2006)
 - Location
 - Number & type
 - Cost & duration
 - Target age
- Descriptive statistics and multiple regression analysis

Key Descriptive Statistics

- Recreation courses per thousand population
 - Average: 2.15
 - Minimum: 0.03
 - Maximum: 8.2
- Per capita total fiscal capacity
 - Average: \$1,273
 - Minimum: \$457
 - Maximum: \$3,559
- Per capita nonprofit park/recreation expenditure
 - Average: \$16
 - Minimum: \$0
 - Maximum: \$423

Top 10 Grouped Activity Types

Activity Summary	Courses	Percent of Total
1) Dance	1851	23
2) Team Sports	1347	16
3) Swimming	1067	13
4) Tennis	765	9
5) Miscellaneous	594	7
6) Martial Arts	590	7
7) Multi-Sport	366	4
8) Gymnastics	358	4
9) Yoga / Pilates	312	4
10) Aerobics	293	4

Recreation Courses by Site

Sites	# of Locations	% of Total	# of Classes	Mean/Site
Off Park	489	53	3804	7.78
On Park	380	41	3896	10.25
Missing Address	59	6	447	n/a

Recreation Courses by Duration

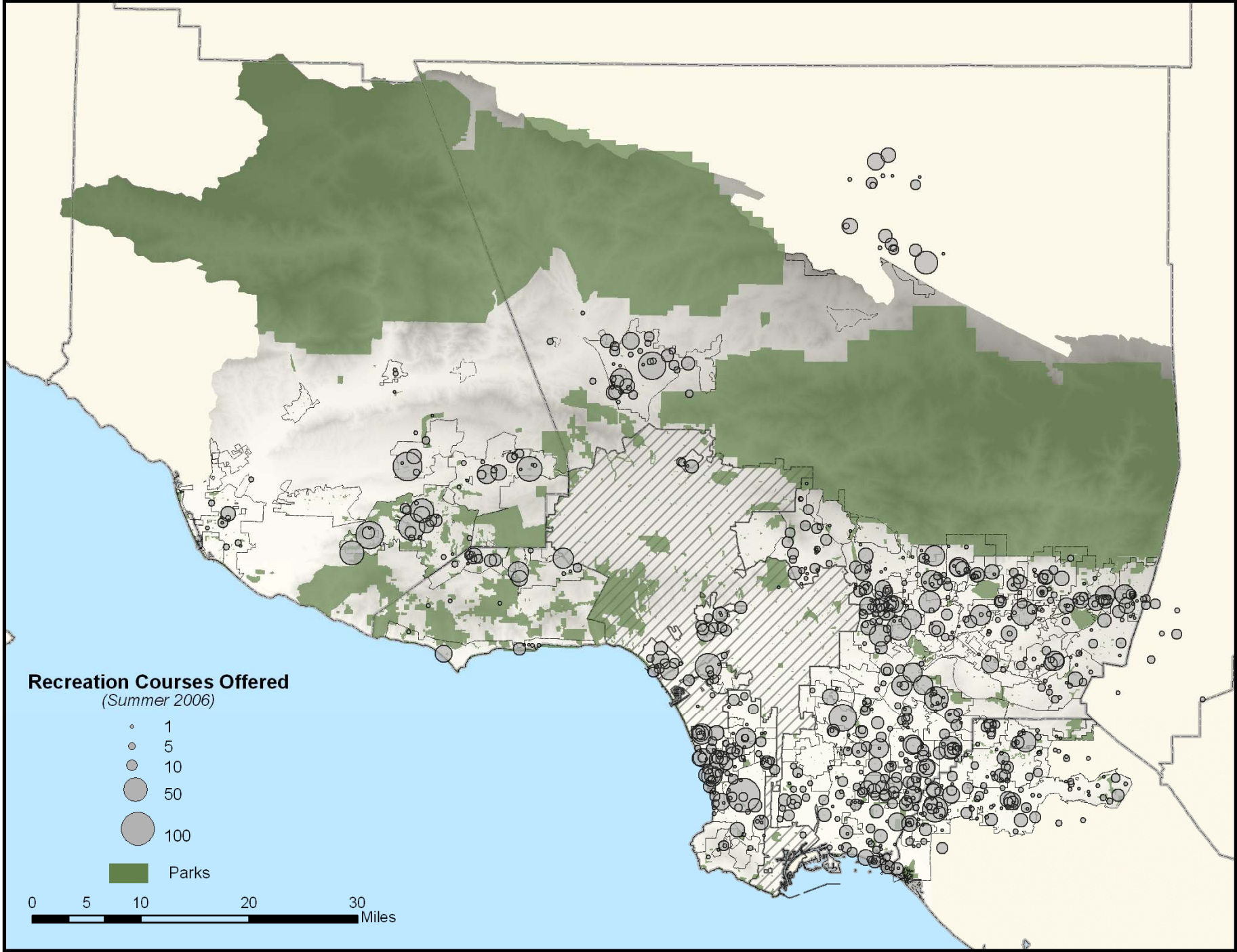
Class Length	Courses Offered	Percent of Non Missing Total
1) Less than 30 minutes	924	13
2) 30 to 60 minutes	3886	54
3) 60 to 90 minutes	802	11
4) 90 to 180 minutes	1008	14
5) More than 180 minutes	522	7
6) Missing	1032	NA

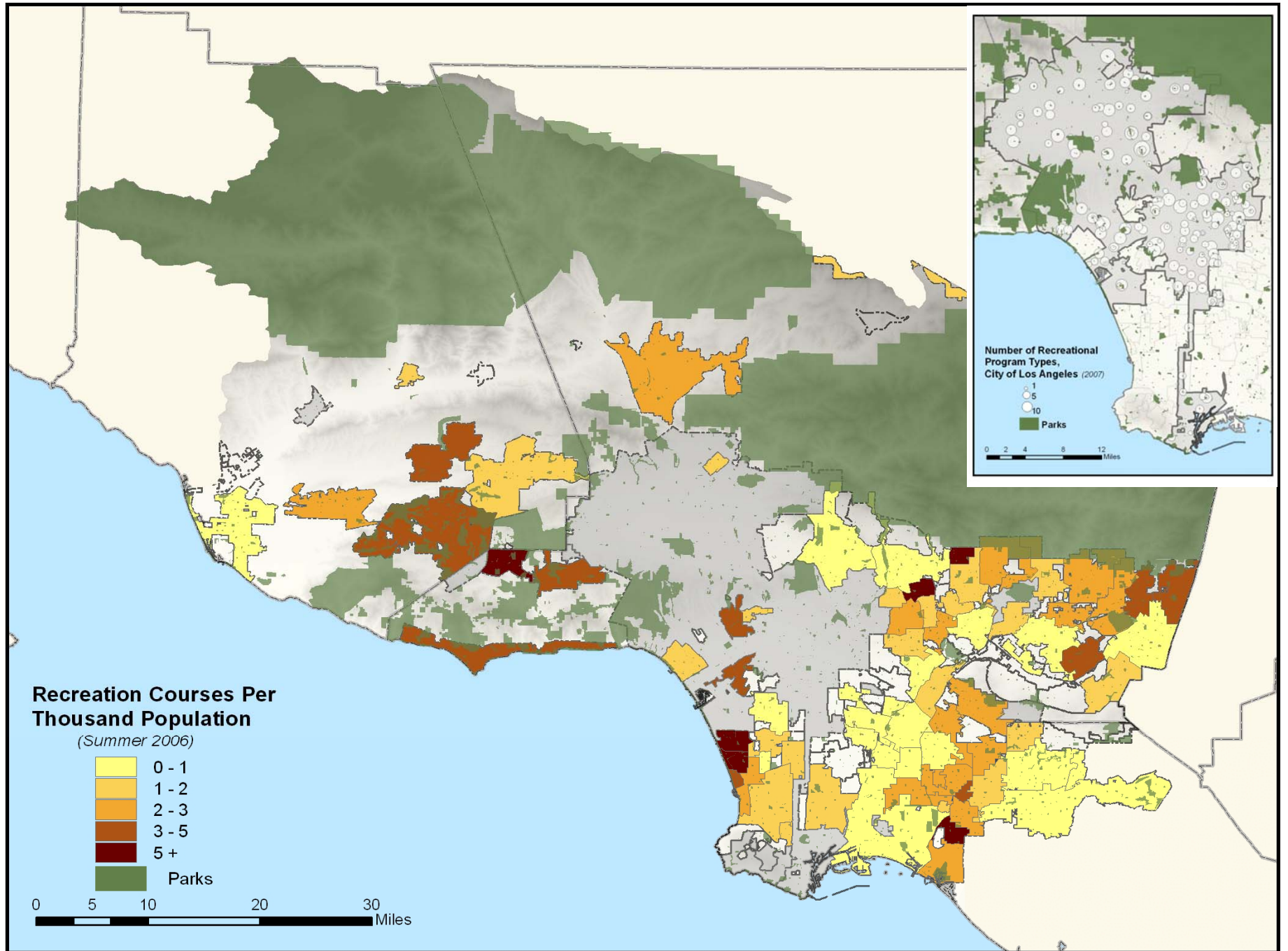
Recreation Courses by Age

Age	Courses	Percent of Non Missing Total
1) Ages 0-5	882	12
2) Ages 5-18	4509	62
3) Ages 18-50	1168	16
4) Ages 50+	389	5
5) All Ages	343	5
6) Missing	883	NA

Recreation Courses by Cost

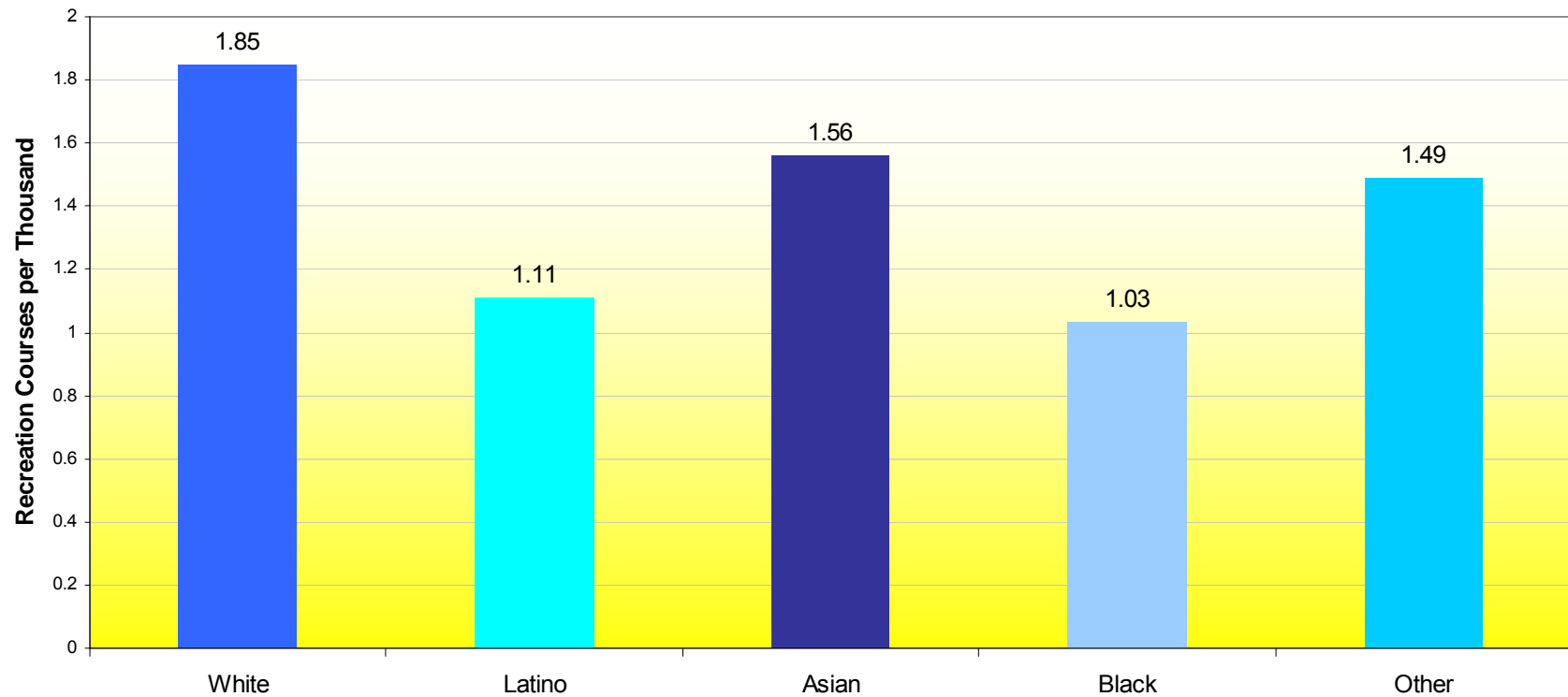
Cost Category	# Courses	Percent of Total
1) 1 - \$20	996	12%
2) \$21 – 40	2072	25%
3) \$41 – 75	2195	27%
4) \$76 – 105	774	9%
5) \$106 - 740	732	9%
6) Missing	956	12%
7) Free	449	5%





Average Recreation Course/1000 by Race/Ethnic Group

Average Recreation Course per Thousand, weighted by ethno-racial population



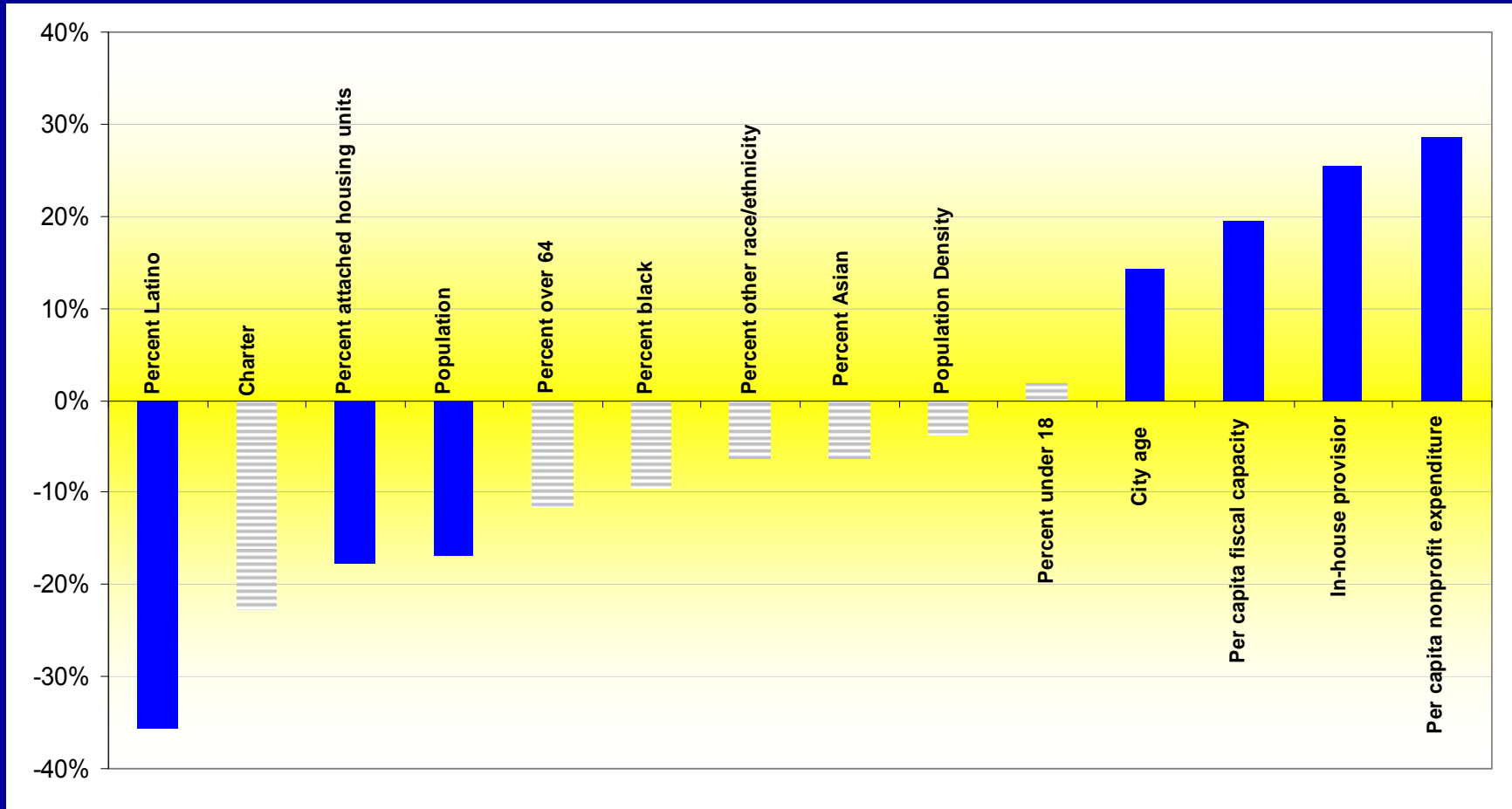
Regression Results: Models 1 & 2

- Model 1
 - Income (+)
 - Income squared (-)
- Model 2
 - City age (+)
 - In-house vs. contracted (+)
 - Race/ethnicity (ns)
 - “Need indicators” (Age and housing density) (ns)

Regression Results: Model 3

- Per capita fiscal capacity (property taxes, sales taxes, IGR, fees): (+)
 - Low household income
 - Limited ability to attract IGR or support nonprofits
- Per capita nonprofit expenditures (+)
 - Not necessarily in low-income cities
- Percent Latino (-)
- Housing density (-)
 - Less private outdoor space also

Simulated Effects of One Standard Deviation Change in Independent Variables on Mean Recreation Courses per Thousand





Discussion

- Deep disparities in access, disadvantaging residents of cities characterized as:
 - Older, Low-income, or Latino
 - Higher density
 - Low fiscal capacity
 - Weak nonprofit sector
- More ARL research on recreation warranted in light of findings
- Research on relationships between recreation opportunities and individual level outcome variables ongoing (TREC)



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- USC Transdisciplinary Research on Energetics and Cancer (TREC)



Policy Implications

- Equalization policies are needed to address lack of recreation resources in low income communities
- Since rec \neq parks, disparities in opportunities for physical activity can be addressed by offering recreational activities at lower cost locations such as schools