ALR 101

• A few measurement issues
• Tools & resources
• Findings in the literature
• Grantee findings
Measurement issues

• Perceived vs objective environment
  – Built environment variables (e.g. distance) are usually moderately correlated
    • .09 - .36
  – Both explain variance in behavior
  – But sometimes perceptions are a stronger predictor of behavior (e.g. parental perceptions of safety)
Measurement issues cont.

- Objective or self report physical activity e.g. accelerometer or survey data
  - Objective is gold standard as self report is subject to over-reporting
    - NHANES accelerometer data indicate 5% meeting guidelines vs 50% by self report!
  - But accelerometer data can not show activity domains; e.g. walking for transportation, walking for recreation
    - Built environment walkability measures more likely to be related to walking for transportation
Specificity is important

- Specific environment attributes or policies tend to be related to specific PA domains
- Identify locations where physical activity occurs
  - GPS, Active Where survey
- Identify specific barriers in those locations
- Measure environments in detail using audit tools available on ALR website
  - In low income communities there may be parks available, but it may be the quality of the park that predicts use
Active Where? Example of specific measures

• Developed survey for adolescents and parents of younger children
  – 3 cities
  – N=200+

• Environmental barriers to activity in specific locations
  – In person interviews in place

• Test re-test reliability & validity

• Parent vs adolescent report
  – Rules
  – Safety
<table>
<thead>
<tr>
<th></th>
<th>overall activity</th>
<th>walk to school</th>
<th>walk to park</th>
<th>walk to shops</th>
<th>active in streets</th>
<th>active in parks</th>
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<tbody>
<tr>
<td>shop access</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>recreation facilities</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
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<tr>
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<td>+</td>
<td>+</td>
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<td></td>
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<td>+</td>
<td>+</td>
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</tr>
<tr>
<td>street connectivity</td>
<td></td>
<td>+</td>
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ALR Website Resources: www.activelivingresearch.org

- Conference slides
- Tools and measures
  - Reliable & valid
  - Best to use common measures across studies
- Annual reference lists
- Database of findings www.activelivingresearch.org/litdb
- Research summaries & briefs (for policy makers)
- Special issue journals
- Search resources & grants
Number of studies with findings significantly related to walking for transportation

- Number of studies related to walking
- Number of studies not related to walking

- Density
- Distance
- Land use
- Connectivity
- Parks
- Sidewalks
- Safety
- Traffic
- Aesthetics

Saelens & Handy MSSE in press
## Findings for adults

<table>
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<tr>
<th>Built Environment Attribute</th>
<th>Active Transport</th>
<th>Active Recreation or Total PA</th>
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<td>Walkability: mixed land use, street connectivity, residential density</td>
<td>++</td>
<td>0</td>
</tr>
<tr>
<td>Sidewalks</td>
<td>?</td>
<td>+</td>
</tr>
<tr>
<td>Proximity of recreation facilities (parks, trails, private facilities)</td>
<td>0</td>
<td>++</td>
</tr>
<tr>
<td>Aesthetics of recreation facilities</td>
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Findings for youth

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## Findings for older adults

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Special Issue Findings 2005: American Journal of Preventive Medicine

- Hoehner: Transport & recreational PA have different environmental correlates
- Frank: Accelerometer data - 37% met PA guidelines in high walk areas vs 18% in low walk
- Giles-Corti: Distance to park, attractiveness & size as important as # parks
Special Issue Findings 2006: Physical Activity & Health

• Norman: # nearby parks & rec centers positively related to accelerometer PA in adolescent girls, intersection density inversely related

• Cohen: for every mile girls lived from school, they engaged in 13 fewer MET minutes per week
Special Issue Findings 2007:
American Journal of Health Promotion

• Liu: Increased distance from supermarket related to increased risk of overweight in children; greener neighborhoods related to decreased risk of overweight.

• Rundle: Mixed land use, density of bus & subway stops, & population density related to BMI in adults
Special Issue Findings 2008: American Journal Of Preventive Medicine

- Miles: Parents 2x more likely to encourage their children to use local playground in neighborhoods with low vs high physical disorder (litter, graffiti, lack of greenery)
- Roman: Violent crime & gangs were related to fear of walking outside, but this was explained by concentrated poverty
Special Issue Findings 2008 CONT: American Journal Of Preventive Medicine

- Spivock: People with physical disabilities living in neighborhoods with more environmental buoys (e.g. access ramps, adapted transportation) more likely to report leisure time PA

- Kirchner: People with disabilities reported barriers to PA including sidewalk pavement problems, puddles/poor drainage, & curb cut problems
Building the Evidence: A Few Grantee Findings

- **New observational measures**
  - Parks, trails, streetscapes, urban design qualities
- **Trail characteristics & trail use**—Kim Reynolds
  - Streetlights, mixed views, good conditions, cafes, lack of dense vegetation related to trail use
- **Relation of land use & transport planning to PA**—Semra Aytur (dissertation grant)
  - Quality of local land use planning was related to leisure & transport PA
  - Low income residents of quality planning areas were 3 times as likely to do active transport
Building the Evidence: A Few Grantee Findings

• High- and low-income walkable neighborhoods are not the same—Xuimei Zhu (dissertation grant)
  – Low income neighborhoods were more walkable, but worse in safety, crime, aesthetics

• Low income women who move to new neighborhoods--Nancy Wells
  – African American women who moved to neighborhoods with fewer cul-de-sacs walked more
  – But moving to more mixed used was linked with lower PA
• Understand the background and basics of ALR
• Aware of the resources
• Enjoy the conference and don’t hesitate to ask questions, we all come from different areas of expertise

Questions?
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