Lessons Learned from Leading an Interdisciplinary Research Funding Program: From Teams to Studies to Application

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UC San Diego. Australian Catholic University
For Science of Team Science Conference. May 2018.
Outline

• Purpose and goals of Active Living Research (ALR)
  – What does “interdisciplinary” mean in ALR?
• ALR Activities
  – Recruiting and supporting interdisciplinary teams
  – Supporting interdisciplinary research
  – Translation of research to practice and policy
• Selected results
  – Building interdisciplinary teams
  – Research outcomes
• Lessons learned
PA Context in Late 1990’s

- Physical inactivity contributes to 200,000 US deaths annually
- 1996 Surgeon General’s Report proposed actions
- Recommendations for environment & policy change, but little relevant evidence
- RWJF determined they could fill major gaps & supported “active living” programs in research, practice, and policy
Global Burden of Disease from Inactivity

- 6-10% of chronic diseases worldwide is attributable to physical inactivity

- 5.3 M deaths/y worldwide may be avoided by eliminating inactivity

- Report from CDC estimates 9-11% of US health care expenditures are due to adults not meeting guideline of 150 minutes of PA per week. Carlson, 2014

Lee et al, Lancet 2012;380:219-29
Promoting exercise has not worked

Trend in Recommended Physical Activity for U.S. Overall

Source: Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System
Walking for Transport Is Declining

Based on data from the Nationwide Personal Transportation Survey and the Centers for Disease Control and Prevention.
“Psychosocial” Models of Health Behavior

Social/Cultural

Individual
- Biological
- Psychological
- Skills
An Ecological Model of Health Behavior

Policy Context

Physical Environment

Social/Cultural

Individual

Biological

Psychological

Skills
An Ecological Model of Health Behavior

Policy Context

Physical Environment

Social/Cultural

Individual

Biological

Psychological

Skills

Reach

Permanent
Have land use and transport policies greatly reduced whole domains of PA?
Active Living Research
Goals: 2001-2015

• Establish a strong research base
  – Administer a $28 million research budget
  – Contribute to healthy weights for all children
  – Focus on ethnic, racial, & income groups at highest risk of obesity

• Build a transdisciplinary & diverse field of researchers

• Stimulate & inform policy change
Elements of An Active Living Community

Comm Design Destinations

School & Preschool

Transportation System

Home

Park & Rec
Sallis et al,
Annual Review of Public Health, 2006
ALR’s Disciplinary Scope: Cultivating New Relationships

- Landscape Architecture
- Parks & Recreation
- City Planning & Urban Design
- Transportation
- Architecture
- Environment & Behavior
- Geography
- Criminology
- Economics/Law/Policy
- Advocates/Policymakers
Conceptual Model for the Active Living Research Transition from ALR1 to ALR2

Target groups for ALR1:
- Active Living Leadership Partners
- Media
- Architects & Builders
- State & Local Governments
- Real Estate Industry
- Parks & Recreation
- Urban Planners
- Public Health & Practitioners
- Transportation Planners

Groups to be added for ALR2:
- Latino New Urbanism
- Race & Ethnic specific health groups
- Advocacy groups for low-income communities
- Environmental justice groups
- Health disparities groups
- Obesity groups
- Pediatric groups

End-users of ALR Products

Translating research into policy and practice changes

Evaluate Interventions, Correlates Research, Policy & Legal Analyses, Economic Analyses, Media Strategies, Case Studies, Database of Studies

Knowledge Base for Active Living Policy & Environmental Change

Calls for Proposals topics for ALR2:
- Improve quality of evidence
- Identify policy & environmental correlates of child physical activity
- Build on evaluations of community initiatives
- Improve understanding of policy change process
- Diversity Partnership Grants
- Dissertation studies

Partnerships built in ALR1

Ethnic Studies, Urban Studies, Pediatrics, Child Development, Education, Obesity research organizations, African American Collaborative Obesity Research Network (AACORN)

Field Building:
- Annual Conference
- Journal special issues
- Technical Assistance
- Seminars
- Presentations at Professional Meetings
- Commissioned Papers

Partnerships to be built in ALR2

Policy Briefs
Press Releases
Targeted Communications
Professional Journals
Building Evidence

• Calls for proposals 1-10 & Rapid Response
  – 240 projects funded. Almost 400 papers published as of 2016

• Conference
  – Only venue for all relevant disciplines to come together
  – Highly competitive abstract selection
  – Best papers in journal supplement, with wide distribution

• Website
  – Free access to journals
  – Conference slides from all years
  – Measurement tools
Building a Transdisciplinary Field

- Multidisciplinary advisory committee
- Recruiting non-traditional partners through talks at conferences (“academic diplomacy”)
- Broad distribution of Calls for Proposals
- Seminar Program with many organizations to bring speakers from other fields
- Principal Investigators from 30+ fields
Table 2. National Advisory Committee members and senior advisors (2007–2012)

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Department</th>
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<tbody>
<tr>
<td>William Ascher</td>
<td>Claremont McKenna College</td>
<td>Government and Economics</td>
</tr>
<tr>
<td>Robert Cervero (chair)</td>
<td>University of California, Berkeley</td>
<td>City and Regional Planning</td>
</tr>
<tr>
<td>Cecilia A. Conrad</td>
<td>Pomona College</td>
<td>Economics</td>
</tr>
<tr>
<td>Carlos J. Crespo</td>
<td>Portland State University</td>
<td>Community Health</td>
</tr>
<tr>
<td>Karla A. Henderson</td>
<td>North Carolina State University</td>
<td>Parks, Recreation, and Tourism Management</td>
</tr>
<tr>
<td>Ming (Frances) Kuo</td>
<td>University of Illinois, Urbana-Champaign</td>
<td>Natural Resources and Environmental Sciences</td>
</tr>
<tr>
<td>Anne Vernez Moudon</td>
<td>University of Washington</td>
<td>Urban Design and Planning</td>
</tr>
<tr>
<td>Wendell C. Taylor</td>
<td>University of Texas Health Science Center at Houston</td>
<td>Health Promotion and Behavioral Sciences</td>
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<tr>
<td><strong>Senior Advisors</strong></td>
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<tr>
<td>Richard Catalano</td>
<td>University of Washington</td>
<td>School of Social Work</td>
</tr>
<tr>
<td>Kevin Patrick</td>
<td>University of California, San Diego</td>
<td>Family and Preventive Medicine</td>
</tr>
<tr>
<td>Thomas L. Schmid</td>
<td>CDC</td>
<td>Physical Activity and Health Branch</td>
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Building a Transdisciplinary Field: Walk the Talk

- Need for transdisciplinary teams highlighted in Calls for Proposals & pre-application calls
- Proposals reviewed by multiple disciplines
- Academic (and personal) diversity considered in
  - Funding recommendations
  - Conference committee & chair
  - Sponsored publications & symposia
  - Staffing
- Annual Review of Public Health 2006 paper on new transdisciplinary field
Multidisciplinary ALR Staff

- Public health
- Psychology/exercise science
- Sociology
- Law
- City planning
- Parks and recreation
- Communications
Building a Transdisciplinary Field: Annual Conference

- ALR Conference is only venue for all disciplines to interact on equal footing
- Teaches concepts & methods from multiple disciplines & stimulates relationship-building
- 1st conf: Dan Stokols presented on transdisciplinary research teams
- 3rd conf: panel of editors from multiple fields
- Journal supplements & free-access articles extend value of conference
15 Seminars held with professional organizations

- National Recreation and Parks Assoc
- The Obesity Society
- Policy Studies
- American Educational Research Assoc
- American Society of Criminology
- Society for Prevention Research
- Environmental Justice Conference
- American Planning Assoc
- Institute of Transportation Engineers
- Transportation Research Board
- American Academy of Pediatrics
Commissioned Paper Topics

Goal for most is to introduce a field to a broader audience
Published in ALR journal supplements

• Health roots of zoning (city planning)
• Economics
• Architecture and environmental design
• Leisure studies, recreation, parks management
• Transdisciplinary research
• Policy research
• Environmental justice
• Crime prevention
• Media environments
• Environmental psychology
Almost all were in health-related journals.

Journals in planning, transport, recreation, geography fields were generally unwilling to consider papers outside their topic area.

- Not considered of interest to their audience.

This is a barrier to transdisciplinary research.
Supporting Transdisciplinary Teams

• Few evidence-based strategies available
• ALR Conferences included workshops & panels
• Grantee meetings had presentations and roundtable discussions
• Staff set up consultations with senior investigators for teams as needed
Leadership Development & Recognition

• Engagement of leaders from multiple disciplines essential for providing legitimacy for new field
• National advisors were leaders in their fields
• Conference co-chairs drawn from multiple disciplines and became journal guest editors
• More visibility via moderating sessions, leading workshops, hosting breakfast roundtables, reviewing grants, writing commissioned papers and briefs
“ALR has probably done more to move this whole field of active living forward than anything before or anything that has come since.”
Figure 3. Number of papers in ALR literature database
Evidence of Progress in Creating a Transdisciplinary Field

• Grantee PI’s from 31 disciplines
• 34% of PI’s were not doing active living research before ALR grant
• 57% of ALR grantees reported new cross-disciplinary collaborations within their institutions
• 71% of ALR grantees reported new cross-disciplinary collaborations outside their institutions
ALR Investigator Disciplines

- Physical Environment
- Social Science
- Health
- Nutrition
- Recreation/Leisure
- Policy Science
- Other
Growing Human Capital

• ALR attracted, nurtured new/young researchers
• 31% of PIs had 5 years or less research experience
• 77% of all investigators reported professional advancement
• Dissertation and other small grants led to pilot data, preparation for larger grants
In the 2006 evaluation, 26% of grantees were people of color.
In the 2011 evaluation, that increased to 34%

2011 Grantee Survey Respondents by Race/Ethnicity

<table>
<thead>
<tr>
<th>Grantee Race/ethnicity</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>American Indian/Alaska Native</td>
<td>2</td>
</tr>
<tr>
<td>African American</td>
<td>9</td>
</tr>
<tr>
<td>Asian</td>
<td>10</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>9</td>
</tr>
<tr>
<td>Multiple race/ethnicity</td>
<td>3</td>
</tr>
<tr>
<td>White</td>
<td>66</td>
</tr>
</tbody>
</table>
ALR Conference Evaluations:
75-95% rated 4 or 5 across several years

<table>
<thead>
<tr>
<th>Conference Goals</th>
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<tbody>
<tr>
<td>Stimulated ideas likely to lead to changes in my research</td>
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<tr>
<td>Learned new concepts from another discipline likely to enhance my work</td>
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<tr>
<td>New contacts might lead to collaboration</td>
</tr>
<tr>
<td>Builds capacity to conduct transdisciplinary studies</td>
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Figure 2. Cumulative academic products by ALR grantees
Cumulative amount for funds ALR helped grantees receive from other agencies. Based on $28M in grants

2007 -- 2011
Research is not easy to put into practice
Communicating Results: Getting the word out

• Website: about 12,000 visits per month
  – Research briefs are widely downloaded
  – Measures are very popular
  – Participate in MOVE! blog
• Infographics are widely used
• Webinar series: www.dialogue4health.org
• ALR Newsletter highlighted new results
• Facebook, Twitter, Youtube, LinkedIn
Translating Research into Policy

- Regular input from policy makers on research priorities & communication strategies
  - DO policy-relevant research
- Research briefs for policymakers & advocates
- Sessions at ALR Conference with policymakers
- Research Translation Grants to communicate results from ALR grants
- Lay summaries of ALR journal articles & grants
Conference Brings Together Researchers & Practitioners

• Presentations & workshops invited from practitioners & researchers

• Practice/policy and research presentations integrated in same sessions

• Goals
  – Practitioners & policy makers generate new research ideas
  – Researchers communicate useful findings
Lessons Learned

• The broader the range of participating disciplines, the more effort needed to recruit and build teams
• Supporting team functioning requires ongoing actions
  — Recent materials from SciTS would have been useful
• A private funder can take more risks than government
• Though health is driven mainly by forces outside of health, NIH has not fully embraced broad interdisciplinary approaches
Lessons Learned

• Highly interdisciplinary advisory group was critical to success
• Many types of evidence ALR had impacts on science, practice, and policy
  – Dramatic growth in publications
  – Strong citations of journal supplements
  – Professional & personal diversity of grantees
  – ALR grants leveraged funding
  – Health is more central concern to many disciplines now
  – WalkScore, “Building Healthy Places” (ULI), Safe Routes to School federal funding, Complete Streets policies, Community Guide recommendations, Surgeon General Call to Action on Walking and Walkability
• Culture of team science in active living is persisting after ALR funding
• Many methods and lessons of ALR should be applicable to other areas
  – ALR is well-documented and well-evaluated in two special issues of Am J Prev Med (2009; 2014)
Challenges Remain

• Government funders find it difficult to cross boundaries as much as needed for active living
• Team science is discouraged by several university policies
  – Who gets “indirects”?  
  – Are pubs outside of “home” field valued for promotion?
• Journals remain mostly parochial
• Distribution of “credit” across large and diverse teams is difficult
• www.activelivingresearch.org
• http://sallis.ucsd.edu