
The Active Living Research Program

Six Years of Grantmaking

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Abstract: Changes in policies and built environments are advocated as part of efforts to increase physical activity, but in 2001 the knowledge base to inform these changes was limited. The Robert Wood Johnson Foundation addressed this deficit by initiating Active Living Research (ALR). The mission of ALR was to stimulate and support research that could guide the improvement of environments, policies, and practices to promote active living. The program's goals were to (1) build the evidence base about environmental and policy factors related to physical activity, (2) build the capacity of researchers in multiple fields to collaborate, and (3) inform and facilitate policy change.

To build the evidence base, 121 grants were supported with \$12.5 million. Efforts were made to support new investigators, fund investigators from numerous disciplines, and increase the demographic diversity of researchers. Activities to build capacity to conduct collaborative research included annual conferences, journal supplements, seminars for multiple disciplines, and the posting of environmental measures. Coordination with Active Living Leadership was a primary means of communicating research to policymakers. Other activities to facilitate the application of research included research summaries written for nonresearchers, collaborations with Active Living by Design, several components of the website (www.activelivingresearch.org), and using policy relevance as a funding criterion. Two independent evaluations were accomplished, and they concluded that ALR made progress on all three goals. ALR has been renewed through 2012. The new mission is to use a \$15.4 million research budget to contribute to reversing the childhood obesity epidemic, especially among youth in the highest-risk groups.

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Introduction

The severe health and economic consequences of the epidemic of physically inactive lifestyles are well-documented.^{1–3} The rapid rise in obesity over the last 2 decades⁴ and the failure to increase low levels of physical activity in leisure time⁵ indicate the inadequacy of responses to these public health challenges. It is highly probable that reductions in physical activity for occupational and transportation purposes over the past few decades^{5,6} are exacerbating inactivity-related diseases.

Several scientific and public health groups recommended environmental and policy interventions as essential components of comprehensive approaches for improving physical activity in populations,^{7–10} but the evidence base to guide such interventions was very limited until recently. For example, a 1999 review estimated that there were 300 studies of psychosocial correlates of recreational physical activity among adults,¹¹ but a 2002 review of the health literature identified only 17 studies of environmental and policy correlates of recreational physical activity among adults.¹² By the early 2000s, there was a separate small literature in the transportation and urban planning fields documenting the association of community design variables with walking and cycling for transportation.^{13,14} All the reviews supported the general conclusion that environmental factors are related to physical activity, but the studies did not provide either sufficient quality of evidence to motivate policy change or detail of evidence to guide specific policy solutions. These reviews also did not reflect other lines of evidence, such

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as qualitative research or studies of the characteristics of parks and greenways.

In the late 1990s, as described by Orleans and colleagues¹⁵ in this supplement to the *American Journal of Preventive Medicine*, staff at the Robert Wood Johnson Foundation (RWJF) identified the potential of environmental and policy changes to increase active living, help control the obesity epidemic, and improve public health. They recognized the need to build the evidence base and the capacity of researchers in a variety of fields to conduct the needed studies and developed a program to meet these needs. The Active Living Policy and Environmental Studies National Program was created in 2001, and the name was changed to Active Living Research (ALR) in 2003.

The purpose of this paper is to report the methods used by ALR to contribute to developing a new field of research and building an evidence base that can inform policy and environmental change to increase physical activity. An overview of the grants made during the first 6 years is presented, and goals for the renewal phase are described.

Mission and Goals

The mission of ALR was to expand knowledge by stimulating and supporting research that guided improvements of environments, policies, and practices to promote active living. Active living was considered the integration of physical activity of all types and purposes into daily routines. The program emphasized the communication of research findings to policymakers and others in a position to create change. To accomplish the mission, program activities were designed to achieve three goals:

1. to build the evidence base about environmental and policy correlates and determinants of physical activity through the identification of a research agenda, selection of studies, and support of the teams conducting the studies;
2. to build the capacity of researchers in a wide variety of fields to collaborate to conduct the highest-quality studies to understand links among environments, policies, and active living; and
3. to inform and facilitate policy and environmental changes to promote active living.

RWJF committed \$12.5 million to support research projects and dissertation grants, with additional funding to operate the National Program Office (NPO). The ALR program began in mid-2001 and was initially funded through 2007.

Figure 1 illustrates the conceptual framework that guided how, in partnership with investigators from multiple disciplines, ALR planned to fund studies and support the growth of a new research community. From the beginning it was expected that a wide range of study

topics and types was needed to produce the evidence to fully inform end-users in a position to act on the findings, such as practitioners and policymakers from multiple sectors of society.¹⁶

Calls for proposals (CFPs) operationalized the research agenda, and key steps are listed in the bottom-left panel of Figure 1. The research agenda was based on information needs identified by end-users and scientists from multiple fields. To conduct research on the prioritized topics required the integration of concepts, methods, and skills from multiple disciplines, and such combined approaches defined a transdisciplinary field that created new ideas and methods.^{17,18} The bottom-middle panel lists the disciplines most involved in active living research. Many investigators with relevant skills did not consider their work to be related to physical activity or health and had not collaborated previously with other disciplines on the list. Thus, there was a substantial burden on investigators to learn new concepts, terminology, methods, and skills, and to develop effective working relationships with colleagues in unfamiliar disciplines. To address this, ALR engaged in the field-building activities listed in Figure 1.

To study the variety of topics relevant to active living required multiple research designs and approaches, as indicated in the middle section of Figure 1. The research agenda determined the backgrounds and skills investigators needed to conduct the studies as well as the methods ALR used to fund the studies and support researchers.

Results of the studies were disseminated to a variety of audiences. Traditional academic presentations and publications were used to communicate with scientific audiences and to advance the research field. Additional efforts were made to communicate results directly to the end-user groups listed at the top of Figure 1. End-user groups were broadly considered to be policymakers at all levels of government, decision makers in schools and industry, practitioners in numerous fields, advocacy groups, and interest groups. Communication strategies included press releases, written communications targeted to specific groups, presentations at meetings, and partnerships with other organizations.¹⁵

Methods for Accomplishing Goals

Building the Evidence Base

Identifying research priorities. One of the first tasks of the NPO, working in concert with RWJF program and research officers, was to develop a research agenda. Because the number of potential research questions was large, the decision was made to identify specific priority-topic areas judged to have good potential for advancing science and informing policies that could affect large populations.

The agenda development process was aided by literature reviews.^{13,14,19-21} These reviews provided general support for the association of environmental variables with physical activ-

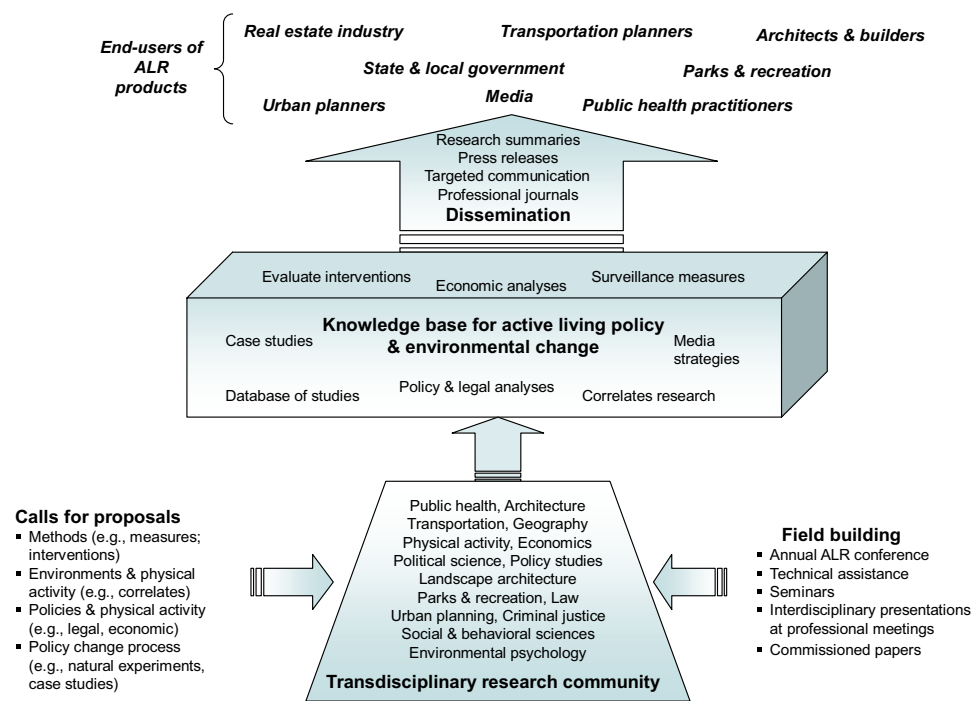


Figure 1. Conceptual model for Active Living Research program

ity but highlighted the scarcity of data on specific environmental characteristics and the lack of consensus on research needs. Interviews and focus groups were conducted with professionals from a wide range of backgrounds to obtain their input on the research agenda and methods of communicating with and involving various disciplines. Researchers from multiple disciplines; advocates from land use, transportation, public health, recreation, and environmental protection sectors; and leaders from policy organizations were identified and consulted individually or in groups. Researchers and practitioners were convened in focus groups in conjunction with organizations such as the American College of Sports Medicine, the American Planning Association, and the Association of Public Policy Analysis and Management. The participants were generally enthusiastic to contribute their views, and they offered both broad perspectives and specific recommendations. There was general agreement that research conducted by interdisciplinary teams would advance knowledge and be feasible. Input was summarized and consulted by those developing the research agenda.

Calls for Proposals

The result of this process was the research-agenda framework shown in Table 1 that guided the sequence and content of seven CFPs over 6 years. Because it was clear that the research budget was not sufficient to support the full range of studies identified by informants, the framework represented the settings and types of studies that were prioritized. Rather than focus funding to create a critical mass of evidence in a few areas, the choice was made to seed multiple new areas of research in the hope that other funders would support second-generation studies. Multiple settings and policy areas were identified as central to active living, but under-studied. For most topics, it was possible to apply a variety of study types. Although populations could have been considered a

third dimension of the framework, a specific study type was identified to focus on understudied populations. The schedule for CFPs is indicated by Rounds 1–7. Some core topics, such as the environmental correlates of physical activity, were targeted in several CFPs so that studies funded later could fill gaps in knowledge left by the studies funded earlier.

Rows in Table 1 refer to the study types. Because of the field's infancy, measurement studies needed to precede investigations of policy and environmental correlates of physical activity and evaluations of interventions. Thus, a portfolio of measures was created by the first round of ALR grantees, and grantees in later rounds developed additional measures. Correlate studies were expected initially to examine a wide range of variables and then narrow the focus to a

limited number of environmental and policy variables that would inform case studies, investigations of the policy-change process, and assessments of people's perceptions of selected environmental attributes. Although the limitations of cross-sectional studies are well-known, ALR supported many studies of the environmental correlates of physical activity. This is because such studies can build an evidence base quickly, randomized studies are rarely feasible for studying environmental changes, and grant-funding limits (a maximum of \$600,000) were not generally adequate to support prospective studies. Several quasi-experimental evaluations of environmental and policy changes were supported because they were among the strongest designs feasible. Barriers to funding additional quasi-experimental evaluations included uncertainty about whether changes would be implemented, the long timeline for built-environment changes, and concern that the scope of some proposed changes (i.e., building sidewalks, a short trail segment) would not be sufficient to stimulate measurable physical activity change. Case studies consisted of qualitative examinations of the policy-change process. Policy studies funded in Round 5 had a variety of aims, although some evaluated outcomes of policies and could have been categorized as evaluations of interventions.

The column headers in Table 1 show the topics and settings relevant to active living research. The intent of the community design and transportation categories was to build on the existing strong evidence in these areas^{13,14,19,21} by examining more-specific environmental variables than had been studied to date. The *community environment* variables could be measured at the neighborhood, community, or regional level and could encompass social-environment variables such as crime, safety, and culture. The *transportation facilities* category included roads, sidewalks, street-crossing aids, and bicycle facilities. Many studies examined both community design and

Table 1. Research priorities used to guide calls for proposals for Active Living Research

Study type and number funded	Topics and settings ^a						
	Community design	Transport facilities	Public recreation facilities	Private recreation facilities	Schools	Building design and siting	Media
Environmental and policy measures <i>n</i> =20 studies funded <i>n</i> =4 formative or conceptual studies	1	1	1				
Environmental correlates <i>n</i> =49 cross-sectional studies <i>n</i> =1 prospective study	2, 3, 6	2, 3, 6	2, 3, 6		3, 6	6	
Policy analysis <i>n</i> =16 studies	5	5	5	5	5	5	5
Correlates in special populations <i>n</i> =7 studies	3	3	3	3	3	3	3
Opportunistic evaluation of interventions <i>n</i> =13 studies	2, 3, 6	2, 3, 6	2, 3, 6	2, 3, 6	2, 3, 6, 7	2, 3, 6	3, 6
Environmental- and policy-change process <i>n</i> =13 case studies	4	4	4		4	4	
Environmental perceptions <i>n</i> =5 studies	7	7	7		7	7	7

Note: A total of 121 grants were funded, including dissertations. Each grant was coded in only one category.

^aNumbers in cells represent the call-for-proposal round

transportation attributes. *Public recreation facilities* included characteristics and policies related to parks, trails, and recreation centers that are publicly owned, and this category was judged a higher priority than *private recreation facilities*, such as health clubs and dance studios, that are accessible to a smaller population.

Characteristics of *schools* could include facilities on site, policies related to physical education and recess, policies governing the community use of facilities, and the relationship of schools to surrounding communities. The *building design and siting* category could include the examination of how factors such as stair design, the arrangement of functions, and the relationship to the surrounding neighborhood related to physical activity in and around buildings, particularly those that serve large numbers of people on a frequent basis. Initial plans to study *media* environments and how they might be related to physical activity were not realized, but studies of perceptions of environmental and policy variables were supported to complement studies using objective measures. Other settings and topics, such as worksites, healthcare policy, and public health infrastructure, were discussed but not targeted by ALR because studies in these areas were considered likely to be supported by other funders.

Although having a framework allowed ALR to support a range of study types on settings and topics determined to be of highest priority, potential disadvantages of the approach included a missed opportunity to develop substantial bodies of knowledge on a few topics and the possibility that several research areas would not receive support for follow-up studies. Obtaining early and ongoing input from diverse expert informants was useful, but judgment was required to select from among the many proposed priorities. CFPs broadly

defined the topics of interest, and investigators proposed the specific variables and procedures, so it did not appear that the CFPs were overly prescriptive. Two risks of supporting a wide range of study topics and types were that individual study budgets were limited, so results were not likely to be definitive, and that other funders were needed to support subsequent studies. A disadvantage of requesting different types of studies in each successive CFP was that investigators had little opportunity to revise and resubmit proposals.

Diversity-partnership grants. These grants were made available in 2005 to achieve two aims: (1) to enhance the quality and scope of existing ALR grants by expanding data collection or analyses of funded studies and to add an investigator to the existing team with special background and understanding of under-studied populations, and (2) to diversify the field and enhance the careers of qualified investigators from under-represented groups committed to active living studies. Six grants were awarded to added investigators, instead of the existing grants being supplemented.

New investigators and dissertations. Investing in promising new investigators was seen as an effective method of building this new field. Thus, special consideration was given to new investigators who applied, and funding was set aside to support dissertation studies in most funding rounds.

Commissioned papers. Leading scholars were invited to write papers on specific topics judged to be closely related to meeting program goals. Legal analyses and literature reviews were well-suited for commissioned papers, and other commissioned papers introduced this field of study to a broader audience, examined specific topic areas, and recommended

research priorities used to guide CFPs. Commissioned papers were published in peer-reviewed journal supplements or special issues sponsored by ALR and are listed in Table 2.²²⁻³³

Special projects. There were opportunities to advance the field that needed to be acted on quickly and could not be accommodated in the CFP mechanism. A small number of such special projects were supported with funds outside the research authorization, often with relatively small budgets in collaboration with other funders.

Grant application and review process. ALR accepted proposals in response to CFPs that were usually released annually. Each CFP defined the priority topics and detailed the application requirements. Proposals that passed an initial screening were sent for formal reviews by ALR staff (including senior advisors); RWJF research and program officers; National Advisory Committee members; and external reviewers from multiple disciplines. The National Advisory Committee made funding recommendations to the RWJF, so advisors were carefully selected to represent a wide range of expertise. Table 3 lists advisors, their disciplines, and their terms of service. Consistent with RWJF policy, written feedback was not provided to applicants, but verbal feedback was available on request. Requests for feedback were more common in early CFP rounds, and input from applicants indicated general dissatisfaction with the proposal-feedback policy.

Technical assistance was offered by ALR to applicants via the website (www.activelivingresearch.org), telephone, and e-mail. Applicant teleconferences were held to explain the goals for each round of funding and to answer applicants' questions.

Successful proposals tended to be distinguished by these elements: a focus on modifiable environmental characteristics and policies with the potential to affect large numbers of people, multidisciplinary teams whose expertise was well-matched with study aims, the use of objective measures of physical activity and environments, and the substantial inclusion of diverse and disadvantaged populations. The small number of grants funded in each cycle usually meant that final selections were made on the basis of scientific merit, fit with program priorities in terms of topics and populations, and balance across funded studies.

After funding, ALR provided technical assistance to grantees. Technical assistance included referral to resources, encouraging the use of common measures, arranging consultations with experts, facilitating collaboration with other grantees, and coordinating the communications of grantee results.

Building the Field

Research on environmental and policy aspects of physical activity was a new field of study, and the need for collaboration with partners from unfamiliar disciplines was a source of additional complexity. This field was referred to as transdisciplinary because concepts and methods from many fields needed to be combined to create truly new approaches to research.^{17,18} An example of a transdisciplinary study would be to combine measures of community design, transportation facilities, and park qualities to explain the public health

Table 2. Journal supplements and special issues based on Active Living Research conferences and the commissioned papers published in each

Supplements and Special Issues	Commissioned papers
<i>American Journal of Preventive Medicine</i> , 2005 Guest co-editors: Sallis JF, Vernez Moudon A, Linton LS, Powell KE	Schilling J, Linton LS. The public health roots of zoning: In search of active living's legal genealogy. ²² Sturm R. Economics and physical activity: a research agenda. ²³ Godbey GC, Caldwell LL, Floyd M, Payne LL. Contributions of leisure studies and recreation and park management to the active living agenda. ²⁴ Zimring C, Joseph A, Nicoll GL, Tsepas S. Influences of building design and site design on physical activity: Research and intervention opportunities. ²⁵ Robinson TN, Sirard JR. Preventing childhood obesity: a solution-oriented research paradigm. ²⁶ Stokols D, Harvey R, Gress J, Fuqua J, Phillips K. In vivo studies of transdisciplinary scientific collaboration: lessons learned and implications for active living research. ²⁷
<i>Journal of Physical Activity and Health</i> , 2006 Guest co-editors: Kraft MK, Sallis JF, Vernez Moudon A, Linton LS	Schmid TL, Pratt M, Witmer L. A framework for physical activity policy research. ²⁸ Taylor WC, Poston WSC, Jones L, Kraft MK. Environmental justice: obesity, physical activity, and healthy eating. ²⁹
<i>American Journal of Health Promotion</i> , 2007 Guest co-editors: Cardinal BJ, Day K	Maibach E. The influence of the media environment on physical activity: looking for the big picture. ³⁰ Loukaitou-Sideris A, Eck JE. Crime prevention and active living. ³¹ Spengler JO, Young SJ, Linton LS. Schools as a community resource for physical activity: legal considerations for decision makers. ³²
<i>American Journal of Preventive Medicine</i> , 2008 Guest co-editors: Floyd MF, Crespo CC, Sallis JF	Nasar JL. Assessing perceptions of environments for active living. ³³

outcome of total physical activity. This type of study required the input of multiple disciplines in its conceptualization, implementation, analysis, interpretation, and communica-

tion. Thus, a major goal of ALR was to encourage leading investigators from many fields to participate in the research, support the formation of effective collaborations, and enhance the capacity of investigators to conduct excellent studies. Several methods were used for field building.

Presentations at professional meetings. An early goal of field building was to inform professionals in various disciplines about the need for environmental and policy research on physical activity and to highlight the contributions that could be made by their fields. This was accomplished by ALR staff and advisors, as well as RWJF research and program officers, making presentations at professional conferences. Sometimes advisors would submit symposia related to active living research; at other times, ALR staff would lead symposium or workshop submissions or organize focus groups at conferences.

Active Living Research seminars. No single investigator was skilled in all the concepts, research designs, measures, and statistical techniques from the multiple disciplines that are relevant for active living research. The seminar program was envisioned as a mechanism to recruit investigators from a variety of disciplines and organizations and to provide targeted learning experiences. In August 2003 an invited group of leisure researchers and academic landscape architects participated in a 3-day seminar. Participants judged the seminar to be valuable, but it was difficult for ALR staff to anticipate what content would be valuable to investigators from diverse fields. To reach wider audiences and to allow investigators to tailor workshops to meet their needs, beginning in 2004 the seminar program funded mainly professional organizations to implement interdisciplinary workshops or symposia for their members. Organizations and leading researcher-members were invited to organize a session at a regular professional meeting designed to build skills among members of the organization to conduct active living research. Seminar programs brought in nonmembers from other disciplines as presenters or trainers to advance transdisciplinary collaboration.

From 2003 to 2007, ALR supported 15 symposia or workshops. Examples of the subjects covered were methods for observing physical activity in homes, schools, and park settings; tools for observing built environments; statistical approaches for built-environment research; making transdisciplinary teams work; policy-research methods; and using GIS methods in obesity research.

Table 3. National Advisory Committee members for Active Living Research

Name	Institution	Discipline(s)	Term of service
Robert Cervero, PhD, Chair	University of California Berkeley	City and regional planning; transportation	2001–present
William Ascher, PhD	Claremont McKenna College	Government and economics	2004–present
Carlos J. Crespo, DrPH	Portland State University	Public health; minority health; obesity	2008–present
Karla Henderson, PhD, CPRP	North Carolina State University	Parks; recreation; leisure studies	2004–present
Frances Kuo, PhD	University of Illinois Urbana-Champaign	Cognitive psychology; environmental psychology	2005–present
W. S. Carlos Poston II, PhD, MPH	University of Missouri Kansas City	Health psychology; obesity research	2004–present
Wendell Taylor, PhD, MPH	University of Texas–Health Sciences Center at Houston	Public health; environmental justice	2001–present
Anne Vernez Moudon, PhD	University of Washington	Architecture; urban design; planning	2001–present
Adrian Bauman, MD, PhD	University of Sydney	Public health; health promotion	2001–2004
Don Chen	Smart Growth America (now Ford Foundation)	Environmental studies	2001–2003
Harriet Tregoning	Maryland Office of Smart Growth (now Office of Planning, Government of the District of Columbia)	City planning; engineering; public policy	2001–2003

Annual meetings and conferences. All RWJF national programs hold annual meetings for grantees, but because active living research was such a new field, the ALR staff organized annual conferences to benefit a larger audience and contribute to building the field and disseminating the growing body of evidence. The 2003 grantee meeting was held jointly with the CDC's Active Community Environments grantees. The 2004 grantee meeting was held with the first annual ALR conference and was open to the research community at large. The conference included ALR grantee reports, invited keynotes, commissioned papers, and oral presentations and posters selected from submitted abstracts. Subsequent annual conferences were similar in format but included special panels. The 2005 conference featured a panel of policymakers from federal, state, and local governments and an advocacy organization to discuss how they use research. The 2006 conference included a panel of editors of leading journals from a variety of fields discussing the challenges of interdisciplinary publication. The 2007 conference featured a panel on active living in Latino communities and a panel of policymakers commenting on presentations of policy studies. Slide presentations from conferences are available on the ALR website (www.activelivingresearch.org).

Conference attendees were asked to complete evaluation surveys, and the results are summarized in Table 4. The percentage of attendees responding ranged from 52% to 69%. Evaluations were extremely positive, with >93% of respondents giving high ratings (defined as 4 or 5 on a 5-point scale) to the conferences overall. Although it is not possible to compare these results to other conference evalu-

Table 4. Evaluation of Active Living Research annual conferences, based on participant surveys

	2004	2005	2006	2007	2008
Number of attendees (excluding program staff)	138	187	223	285	320
Response rate to evaluation (%)	69	67	62	64	52
Overall: 4 or 5 on a 5-point scale (%)	97	96	97	93	96
<i>Meeting stimulated new ideas that are likely to lead to changes in my research or practice (%)</i>	86	88	74	81	82
<i>I learned new concepts/ideas from another discipline that are likely to enhance my future work (%)</i>	89	79	84	84	82
<i>The meeting provided an opportunity to make new contacts that might lead to future collaborations (%)</i>	94	91	93	92	84
Success in meeting goals of conference: 4 or 5 rating (%)					
To provide an opportunity for researchers from multiple fields to present and hear the latest studies on environmental and policy issues related to physical activity (%)	96	94	93	93	92
To allow ALR grantees to present new and continuing studies to a broad audience (%)	91	90	93	91	90
To build the network and capacity of researchers to conduct excellent transdisciplinary studies on active living (%)	93	93	88	92	92
To explore how current and future research can be used to shape policy decisions (%)	74	84	67	85	89

ations, the outcomes were relatively specific. From 74% to 94% of respondents agreed that the conference led to changing their research or practice, learning new ideas likely to enhance their work, and making new contacts that might lead to collaborations. Attendees strongly agreed conference goals were achieved, with lower ratings given to exploring how research can shape policy.

Journal supplements and special issues. ALR sponsored journal supplements and special issues based on the best abstracts submitted to each conference and the commissioned papers. Journal theme issues, especially needed in a field that cuts across so many disciplinary boundaries, made it efficient for investigators to access relevant articles, and contributors gained unusually high visibility for their work. The supplements and special issues from 2005 to 2008 are listed in Table 2 along with guest co-editors. To ensure the easy accessibility of information for researchers and research end-users, ALR negotiated legal rights to post this copyrighted material on its website. In addition, ALR partially supported special issues of *Leisure Sciences* (Fall 2005); *Journal of the American Planning Association* (Winter 2006); and *Journal of Health Policy, Politics, and Law* (Summer 2008), with the latter containing policy case studies funded by ALR.

Coordination with other funders. The long-term viability of environmental and policy research on physical activity depends on funding from multiple sources. Both the RWJF and the CDC are supporting networks of researchers, public

health practitioners, and policymakers to enhance communication and collaboration regarding transdisciplinary research and practice on active living. Several institutes of the NIH are funding environmental studies of physical activity, nutrition, and obesity, and related research has been supported in other nations. ALR, in collaboration with the NIH, offered a competitive round of funding to grantees funded in the Obesity and the Built Environment initiative led by the National Institute of Environmental Health Sciences. These supplemental grants supported the adoption of common measures used by ALR grantees and observational measures developed by ALR grantees.

Supplements were funded by ALR to grantees of the RWJF's Healthy Eating Research program. Grantees of Healthy Eating Research Round 1 were supported to extend studies of school-nutrition wellness policies to include physical activity policies. Grantees of Healthy Eating Research Round 2 were supported to extend evaluations of day care and preschool

nutrition policies to include physical activity policies.

Research synthesis. ALR has played a role in advancing the science by compiling the results of studies published in a wide variety of disciplines. A categorized list of relevant publications was posted on the ALR website and regularly updated to assist researchers in locating studies from multiple fields. Several indexes and search strategies were used with as much consistency as possible across years, but as new topics emerged, search terms were updated. The searches were systematic, although the focus on multiple disciplines required the use of different terms for the same concept in various databases. The databases and search terms were reported for each search. Final categorized lists were reviewed by two staff members. There were an average of 93 downloads per month across the literature search documents.

A detailed, searchable database of studies on environmental and policy factors related to physical activity and obesity, summarizing study characteristics and findings, was posted on the website in 2008 and is updated regularly. This database is freely available to investigators to help them with literature reviews and is expected to facilitate meta-analyses.

Grantees are encouraged to adopt a core set of measures that will facilitate the comparisons of findings across studies. In the future it is likely that data sets from several studies will be combined for pooled analyses. As studies accumulate on specific topics, ALR expects to support formal meta-analyses.

Informing Policy

The third objective of ALR was to ensure that funded research was effectively communicated to policymakers and practitioners whose work can change environments and policies. There is not a well-established procedure for bringing research results to those who can act on them,³⁴ so specific communication activities were planned. The following strategies were used to make research findings accessible to multiple groups of end-users.

Research summaries. Executive summary–style reports were written for decision makers and practitioners, translating the current state of the science into less-technical language. Separate reports on environmental correlates of recreational physical activity, active transportation, and youth physical activity and healthy eating were written for use by policymakers. In addition to highlighting findings from consensus panels^{14,35,36} and systematic reviews,^{12,13,36,37} the research summaries presented the results of representative studies, including graphs. Areas of inconsistency and gaps in research also were covered. The summaries did not recommend specific policy actions because there could be several policy options for achieving environmental changes consistent with the available evidence. The RWJF's Active Living Leadership program (now Leadership for Healthy Communities) provided guidance on the development of the summaries and distributed them to elected and appointed officials at all levels of government. At least 16,000 hard copies of research summaries were distributed, and many others were downloaded from the website. Updated summaries were reorganized to separately report built environment and policy factors related to physical activity for youth and adults.

Case studies. Case studies of policy change funded under Round 4 were designed to be of value to policymakers as well as scientists. Thus, one-page summaries of 11 case studies were published together in a special section of *Planning Magazine* (February 2007) that was distributed to >40,000 subscribers and made available on the ALR website. Additional hard copies were distributed to interested groups.

Website. The program website (www.activelivingresearch.org) included several sections of value to decision makers, such as downloadable copies of research summaries, introductory information about active living, notices about conferences and upcoming events, descriptions of active and past grants and grantees, an archive of press reports on related studies, and links to active living partner projects.

The ALR website contributed to all program goals. The extensive information on the website generated substantial use, and in 2008 (through August 31) there were an average of 3870 visits (which can include multiple page views) per month. For the introductory pages of the website and each of five major tabs, the average visits per month were: home page, 2316; about ALR, 297; grants and results, 462; tools and resources, 506; conference, 334. Although all the major sections were used regularly, the most-visited sections were tools and resources, which includes Research Summaries and measures, and grants and results, which includes both application materials and information about grantees and their projects.

Communications training and support for grantees. Grantee annual meetings and conferences have included sessions to prepare researchers to communicate their findings to research end-users and to inform policy change. Activities have included role-plays of researchers presenting results to policymakers; policymakers commenting on research presentations; panels of policymakers, advocates, and practitioners telling how they use research; and presentations on designing research to enhance relevance to policy. RWJF communications officers and consultants helped plan and lead these events.

Coordination with other RWJF active living programs. ALR participated in activities such as meetings and conference calls to coordinate with other RWJF active living programs. The most extensive relationship was with the former Active Living Leadership, an RWJF program that supported government leaders to create and promote policies, programs, and places that enable active living. Grantees included such groups as the National Governors' Association, the National Conference of State Legislatures, the International City and County Managers' Association, and the Local Government Commission. Coordination with Active Living Leadership was viewed as a primary strategy for communicating research to policymakers and using research to guide policy change. ALR regularly surveyed Active Living Leadership grantees to identify areas of research that would be useful in bringing about change in government policies. ALR staff updated Active Living Leadership grantees about research findings, and Active Living Leadership grantees were primary distributors of research summaries. The current Leadership for Healthy Communities program works with government leaders to prevent childhood obesity through environment and policy changes (www.leadershipforhealthycommunities.org).

Active Living by Design was a demonstration program designed to promote physical activity in 25 diverse communities across the U.S. and based on a multilevel intervention model that included preparation, partnerships, promotion, projects, and policy. In this program, communities were defined geographically, in classifications ranging from neighborhoods to metropolitan areas. ALR and Active Living by Design collaborated by mutually participating in each other's annual grantee meetings. A major goal of this collaboration was to inform Active Living by Design grantees about research they could use in the community-change efforts. At the ALR conferences, researchers were able to discuss research needs identified by Active Living by Design staff and grantees. In Round 7, two grants were supported to conduct in-depth evaluations of two Active Living by Design community coalitions.

The Active Living Network and the Active Living Resource Center (National Center for Bicycling and Walking) were active in disseminating evidence-based information to broad audiences. The Active Living Network facilitated interaction and information exchange among diverse groups of organizations, practitioners, and policymakers, and ALR participated in their activities.

The participation of CDC staff as senior advisors provided ALR with linkage to CDC-supported practitioners (i.e., state physical activity coordinators) and researchers (e.g., prevention research centers). ALR grantees and staff participating in

Table 5. Active Living Research grants (including dissertations and supplements) categorized by environmental setting and target population

Population	Parks and recreation		Community design	Building	Schools
	Trails	facilities	and transportation	design	
			facilities	and siting	
Not applicable	3	3	25	1	1
Youth	3	6	32	0	27
Adults	5	5	31	2	1
Older adults	0	1	6	2	0
People with physical challenges	0	0	1	0	0
Low income	0	3	14	0	13
Racial/ethnic groups	—	—	—	—	—
African American	1	4	16	0	7
Latino	1	5	7	0	7
Asian	0	0	0	0	1
American Indian	0	0	1	0	0

Note: Grants could be coded as applying to more than one setting and population.

the CDC-sponsored physical activity and public health courses for practitioners and researchers were able to communicate findings to these groups.

National Program Office Organization

The core staff of program director, deputy director, research coordinators, and administrative staff was supplemented with senior advisors who contributed to strategic planning and grant reviews. The National Advisory Committee reviewed proposals, advised on strategic planning, and made funding recommendations to the RWJF. The initial advisory committee represented the fields of urban planning and transportation, public policy, state government, advocacy, behavioral science, and public health. The composition of the National Advisory Committee changed to reflect the evolving research agenda, and experts from the fields of leisure studies, political science/policy research, and environmental psychology were added. Members are identified in Table 3, and biographies are available on the ALR website.

The ALR Funding Record

The \$12.5 million research authorization was distributed through 121 grants ranging in size from \$25,000 dissertation grants to multi-year grants of \$600,000. The funding process was extremely competitive, with the percentage of proposals funded varying across CFPs from 8% to 25%, with higher percentages for dissertation grants and special solicitations.

Table 5 presents a summary of the numbers of grants funded in Rounds 1–7 and special solicitations categorized by environmental setting and population. Some grants were relevant to multiple settings and populations, and studies coded *not applicable* for populations could include measurement development or observation of all people in the settings. The most commonly funded setting was the broadly defined *community* (which often included transportation and recreation facilities), with *schools* being the second-largest category, and the combination of trails and parks being a

substantial focus. Few studies of elements of buildings related to active living were funded.

Table 1 also includes the count of grants categorized by study type. About 45% of grants were correlational designs, reflecting both the early stage of the research field and the difficulty of conducting prospective or intervention studies of environments and policies. However, 13 intervention evaluations were funded, and these will enhance the rigor of evidence on which to base recommendations for

changes in policy and practice. The 13 case studies and 16 policy studies were intended to be particularly informative for policymakers. The large number of measurement grants mainly supported the development of objective measures, which should help enhance the quality of future research. Abstracts of funded grants and published grant products are posted at www.activelivingresearch.org.

As shown in Figure 2, the publication of environmental and policy research on physical activity and obesity has increased dramatically since the beginning of ALR. In 2000, the year before ALR began, only 45 relevant papers from all fields were found. This was a small literature, especially considering that not all the papers reported empirical studies. In 2007, about 300 papers were identified using similar methods. Although it cannot be determined the extent to which ALR contributed to the rapid increase in publications, the evidence base to guide policy and environmental changes to promote active living is now much more robust.

Efforts by ALR to build a transdisciplinary field and influence policy and practice were evaluated by two

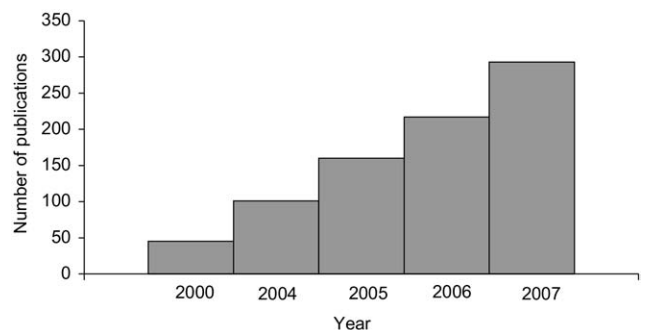


Figure 2. Trends in publications on environment and policy factors in relation to physical activity and obesity (methods described at www.activeliving.org)

independent groups. The results of the evaluations by Gutman and colleagues³⁸ and Ottoson and colleagues³⁹ are published in this supplement.

The Renewal of ALR

In December 2007, the RWJF renewed ALR through 2012, with a \$15.4 million research authorization. The new mission of ALR is consistent with the RWJF commitment to reverse the childhood obesity epidemic by 2015: to stimulate and support research to identify environmental factors and policies that influence physical activity for children and families to inform effective childhood obesity-prevention strategies, particularly in low-income and racial/ethnic communities at highest risk. The three program goals were modified to be consistent with this new mission:

1. to establish a strong research base regarding policy and environmental factors and interventions that influence physical activity and body weight in children, as well as effective policy and environmental strategies for reversing the childhood obesity epidemic;

2. to build a vibrant, multidisciplinary field of research and a diverse network of researchers; and
3. to ensure that findings are communicated effectively to inform policy debates and to guide the development of effective solutions.

Figure 3 illustrates the modified ALR model to guide the achievement of these new goals. New academic partnerships were needed to bring expertise to research teams targeting youth and families from communities of color and low-income populations. An expansion of types of studies was possible because of developments in the field. For example, the accumulation of findings makes meta-analyses possible. The focus on youth at high risk for obesity creates opportunities for partnerships with a wider range of research-user groups, which can include organizations with expertise in the high-risk racial/ethnic groups, advocacy for disadvantaged communities, environmental justice, and youth advocacy. The enhanced focus on diverse high-risk communities elevates the salience of social environments. Proposals will be invited that explore how broadly defined social environments might shape physical activity in specific communities and to examine how social environments

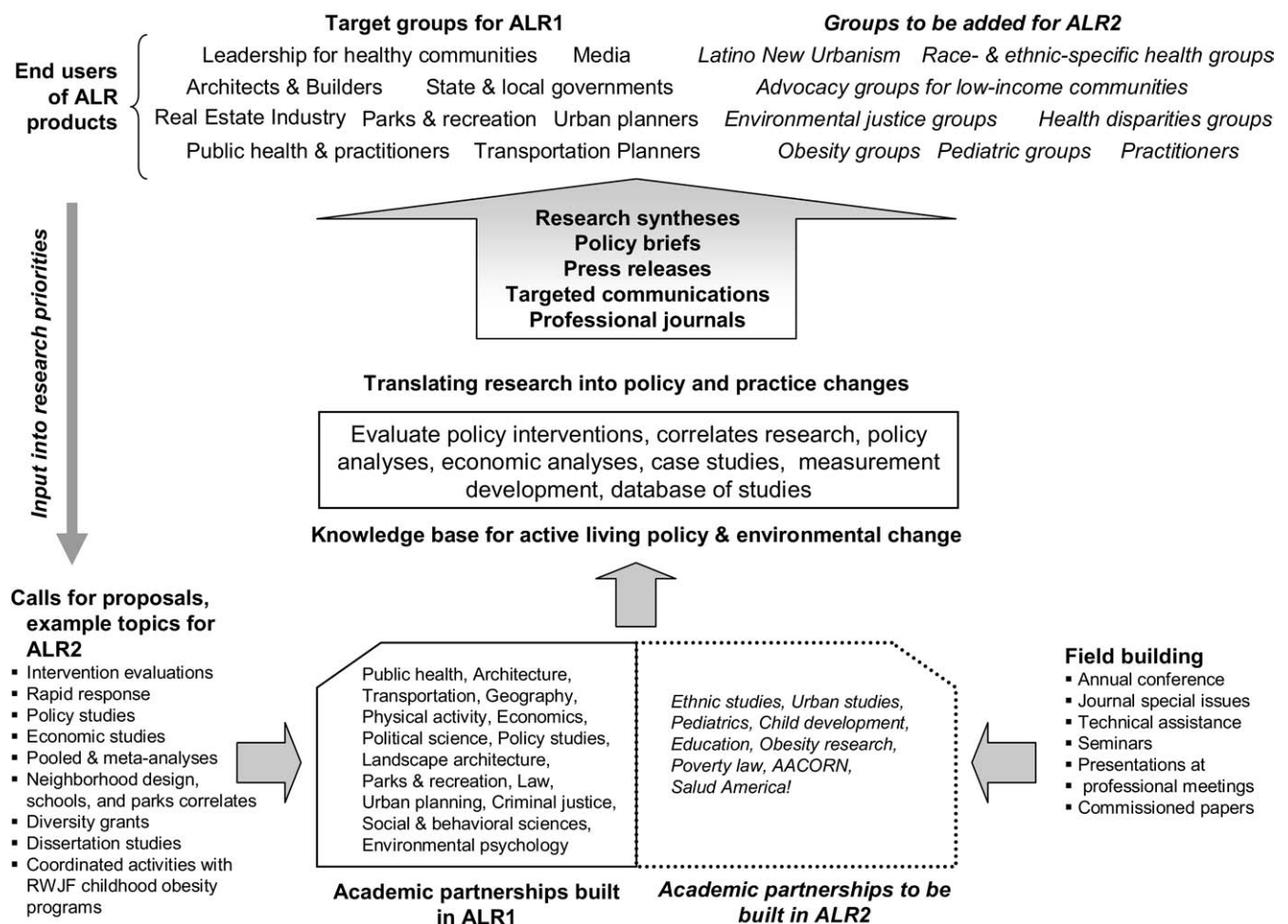


Figure 3. Conceptual model for the Active Living Research transition from ALR1 (2001–2007) to ALR2 (2007–2012)

can affect the use of built environments. For example, collective efficacy, culture, traffic, and crime may alter residents' use of parks, sidewalks, and school grounds for physical activity. ALR is committed to using the results from grantees funded to date to advance science and to inform policy debates.

However, the renewal phase of ALR will be different in several important ways that reflect both the new focus on preventing childhood obesity as well as the rapid progress of research. Special emphasis will be placed on research of direct relevance to youth aged 3–18 years from the groups at greatest risk for obesity: African-American, Hispanic, Native American, and Asian/Pacific Islander children, and children living in under-resourced and low-income communities. Societal concern about childhood obesity is stimulating many efforts to change environments and policies in schools and communities, and ALR will endeavor to support high-quality evaluations of these natural experiments. Because some initiatives target both energy intake and output, ALR will collaborate with the RWJF's Healthy Eating Research NPO on joint funding opportunities.

Greater emphasis will be placed on research with the highest likelihood of stimulating policy and environmental changes, including policy evaluations, economic studies, health impact assessments, and research on advocacy. To accelerate the translation of research into policy and practice, some grants will be required to have a policymaker or community representative as a team member or advisor.

Additional disciplines of particular relevance will be engaged by ALR to research youth from groups at high risk for obesity, as noted in [Figure 3](#). It is even more important to attract diverse investigators who can combine personal experience and professional preparation with high-risk populations to improve the relevance and the impact of the research on these populations.

Plans for the renewal of ALR were informed in many ways by the two independent evaluations described in the accompanying papers.^{38,39} These evaluations identified both strengths and weaknesses of ALR's work to date, and the thoughtful recommendations have led to changes. Examples include plans for funding more quasi-experimental evaluations of policy and environmental interventions, increased emphasis on economic research, additional outreach to policy researchers and economists, more emphasis on obtaining input on research priorities from representatives of high-risk communities and research end-users, and more intensive and deliberate strategies to communicate research to decision makers. ALR will pursue innovations in framing policy-relevant research questions, enhancing collaborations between investigators and users of research, and communicating research to maximize the impact on policy and practice that will contribute to

increased physical activity and reduced risk of childhood obesity.

Comments

At the beginning of ALR, there was limited evidence that built environments were related to physical activity for transportation and recreation purposes. During the 6 years covered in this report, the evidence base has grown dramatically in quantity and has improved in quality. The role of built environments in physical activity is now documented sufficiently to be accepted by authoritative groups,^{14,24} and evidence has expanded to indicate that built-environment attributes are related to total physical activity and obesity.^{40,41} Some progress has been made in expanding studies of youth and older adults, as well as understanding which environmental attributes seem to be most important for defining activity-friendly communities. Important areas for future study include the focused examination of low-income populations and communities of color, documenting the thresholds of environmental attributes needed to support physical activity in various populations, understanding the economics of active living environments and policies, and improving the ability to use research to inform policies.⁴²

This report of the methods used by ALR to contribute to the development of a new transdisciplinary field of research, in combination with the evaluations reported in this supplement, may be of value to other funding organizations as they design policy-relevant research initiatives. As the challenges faced by society become more complex, understanding the problems and implementing solutions are likely to require enhanced collaboration across sectors of society and academic disciplines. Strategies used by ALR to nurture interdisciplinary teams and enhance the use of research in decision making may be applicable to other issues.

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