
Contributions of Leisure Studies and Recreation and Park Management Research to the Active Living Agenda

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Abstract: Although the fields of leisure studies and recreation and parks were founded on addressing health and wellness needs of people, only recently have these needs been addressed by major, systematic research efforts. This paper examines the origins of leisure studies and the study of recreation behavior and park use and their potential contribution to active living research. Over the past 2 decades, leisure studies research has generated a body of literature pertinent to understanding and increasing active living, including studies on time use, motivation for initiating and maintaining activity, influence of user fees, and urban park use. Environmental, transportation, and public recreation policy and management practices also are important considerations in recreation and parks research. This article concludes with a list of recommendations to integrate these and other considerations into transdisciplinary research on active living. Opportunities for leisure studies/recreation and park research on active living include studies of environmental, life span, and motivational influences; greater use of objective measures of physical activity; and forming partnerships with allied industries to study physical activity. Among suggestions for facilitating such studies are training seminars for leisure studies and recreation researchers in active living research methods, changes in point allocation on grant proposals, providing incentives for transdisciplinary collaboration, and special journal issues.

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Introduction

This paper interprets the origins, concepts, and research in the areas of leisure studies and parks and recreation management as it pertains to the goals of the Active Living Research program, sponsored by The Robert Wood Johnson Foundation. We review the origins of these academic areas; the public provision of recreation and park services; the relationship of transportation design and policy to recreation and parks; concepts and methods used in these fields of study; and environmental, policy, and design correlates related to these fields of study. Finally, we propose ways of further integrating leisure studies and recreation and park management into transdisciplinary research to increase active living.

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Origins of Leisure Studies and Parks and Recreation

The intellectual content of leisure studies and recreation and park management evolved from different, but related, perspectives. Recreation and park management, which emerged from various movements to shape and reform recreation during periods of industrialization and urbanization in the late 19th century,^{1,2} was rarely interested in recreation or leisure per se. Rather, interest focused on the ability of nonwork activity to improve the health, education, social adjustment, and life chances of poor people, children, the elderly, handicapped, and others who had few resources to help them replace the recreation patterns of agriculture-based peasant life. These movements also sought to re-make the peasant mentality by improving their character and making them more malleable in their roles as industrial workers.^{1,3} Recreation and leisure, among such movements, were examined not only intellectually but also morally and strategically.

The various movements to establish parks centered on adjustment to urbanization, preservation of nature, and opportunities for wholesome recreation. Most of the activity promoted by the recreation and park movement was physically active, including sports, exercise, outdoor recreation, dance, and supervised play. A major focus was to use selected forms of recreation to

promote physical activity, character development, socialization skills, education, and exposure to nature. The goals of these movements were congruent with the current goals of various active living campaigns.²

Leisure studies emerged from a different, but related, set of traditions. First developed within sociology departments of European universities, it was concerned with the social problem of increasing free time in industrial societies. Inquiry first focused on work-leisure patterns in everyday life, time use, suburbanization, and industrial work. Subsequent topics of inquiry included effects of social class, impacts of technology, community life, organized leisure, and work arrangements on leisure behavior.^{4–6} Since the 1980s, leisure studies have increasingly adopted a social psychological framework.

In North America, university curricula devoted to these subjects began in the 1940s. While single academic departments dealt with both leisure studies and recreation and park management, most were concerned primarily with preparation of students for careers as leaders in organizations concerned with public recreation and parks, therapeutic recreation, and outdoor recreation. Faculty scholarship focused on issues surrounding the provision of recreation and park services as well as understanding leisure in contemporary society. The major journals that evolved exhibit this wide range of interests and began publication as early as 1969: *Journal of Leisure Research* (1969), *Leisure Sciences* (1977), *Leisure Studies* (1982), *Journal of Park and Recreation Administration* (1983), and *Therapeutic Recreation Journal*.

Government Recreation and Park Services

Park and recreation services are an important function of government in all modern nations. Such services are found at the municipal, county, state and federal levels, as well as special park and recreation districts, which have taxing authority. While state parks and federal land managing agencies, such as the U.S. Forest Service and National Park Service, provide numerous opportunities for recreation, municipal recreation and park services have a much larger user base. A national study in 1992 found that four of five Americans make some use of them.⁷ (More recent national data do not exist.) Except for people aged ≥ 76 , one quarter of people surveyed indicated that they “frequently” used local parks. Occasional use ranged from 57% for younger adults to 29% for those aged ≥ 76 . Participation in recreation activities and programs sponsored by such agencies ranged from 39% among those aged 15 to 20 to 11% among those aged ≥ 76 .

Recreation and park services, as a percentage of local government spending, have remained constant during the last few decades.⁸ Fees and charges and other means of generating revenue have increased to com-

pensate for the decline in federal support to municipalities. Per capita expenditures for such services averaged \$74.58 in 1999–2000, of which about \$20 was for capital projects. Variation by state was dramatic. Self-generated revenues, in constant, inflation-adjusted dollars, increased substantially during this period. About one of three operating dollars came from users.⁹ Analysis of total local government expenditures on parks and recreation using constant, inflation-adjusted dollars reveals a slight decrease in total spending from 1976 to 1986 but, from 1993 to 2000 there was an unprecedented increase averaging \$595 million per year. Capital projects increased by 58% during this period.⁹

Federal spending for recreation and parks, while difficult to measure, has decreased since the 1970s. For instance, The Land and Water Conservation Act of 1965 provides funds for government at all levels to acquire, plan, and develop lands of public importance, including urban, state, and national parks and outdoor recreation areas. While in 1987 Congress authorized payments into the fund of \$900 million a year until the year 2015, appropriations were far below that amount during both the Reagan and Clinton eras.

Moreover, most federal funding does not provide for maintenance of outdoor recreation and park areas and facilities; thus, while many municipalities increased their recreation infrastructure during the last few decades, funding of maintenance has lagged behind. In addition, in the last decade, municipal recreation and park services have become more market driven. That is, although the majority of their funding still comes from taxes, they have been required to raise more revenue from fees and charges to participants; have treated citizens more like customers, responding to their identified recreation demands; and have used branding of services to identify their organization more specifically.

From the 1960s, some critics have charged that there has been a philosophical vacuum concerning what purpose parks serve. Park design became standardized “with little living relation to particular cultures, climates or people.”^{10,11} Although there continues to be little innovation concerning design of parks, playgrounds, and other recreation areas and facilities in the United States to reflect such diversity, public recreation and park organizations have become more involved with health promotion and disease prevention, particularly in the areas of physical activity promotion and stress reduction. The repositioning of recreation and parks as a health and wellness service has been fueled by the National Recreation and Park Association (NRPA), which has initiated numerous partnerships with organizations such as Centers for Disease Control and Prevention (CDC), National Cancer Institute, and others. Since the launch of *Healthy People 2000*, NRPA has been an active participant in the national dialog of ways to increase active living. For example, NRPA leveraged

the support of over 1200 park and recreation agencies to spread messages contained in the 1996 Surgeon General's report on physical activity.¹² In 2000, NRPA developed the "magnet center" model to build a focus on health that was not annually dependent on sponsorship resources. Between 2000 and 2003, nearly 60 park and recreation agencies have been designated as magnet centers for health through a partnership between NRPA, and the National Heart, Lung, and Blood Institute. A notable outcome of this partnership is the Hearts 'N' Parks program, a national, community-based program to reduce obesity and coronary heart disease. It was the first initiative to be successfully developed and field tested using the magnet center model. Today, Hearts 'N' Parks magnet centers can be found in 15 states spanning 56 locations.

Since 1991, NRPA has received numerous research and demonstration project grants from the National Recreation Foundation to build capacity for innovation and research to contribute to the NRPA health agenda. Many of these initiatives have been strategically allied with CDC and the National Institutes of Health. Within universities, recreation and parks faculty have recently participated in research training seminars sponsored by the Active Living Research program. Concurrent with these developments is the formation of more partnerships at the local and state level between recreation and park organizations and a wide variety of health and medical organizations.

Concepts and Methods in Leisure Studies and Recreation and Park Management

Among scholars, numerous theories and concepts have been examined in parks, recreation, and leisure studies that connect with active living and health. Humans are motivated by the ability to self-regulate their actions and construct meaningful experiences.¹³

They are also motivated by social interaction and personal competence.¹³ No other life domain provides these opportunities more readily than leisure. Understanding active living from a leisure perspective may shed light on O'Donnell's¹⁴ observation that although opportunities for fitness and amateur sports have increased in the United States, there has been a huge increase in rates of obesity and physical inactivity.

Movement may be divided by function as follows: (1) physical activity necessary to fulfill obligations of paid work, household work, personal care, and child care; (2) physical activity undertaken as a specific means to improve health or to escape negative health consequences; and (3) physical activity that is inherently part of pleasurable leisure experience.¹⁵ In the next few decades, the greatest potential to increase movement in daily life will be by increasing participation in physical activity which has meaning aside from

exercise—leisure, play, recreation, sport, and contact with nature. Leisure studies is centrally involved in the study of such behavior.

While leisure theory draws heavily from other disciplines, their application to leisure reflects its uniqueness. Leisure is often social and primarily characterized by feelings of enjoyment, relative freedom, and intrinsic motivation. It is best understood from an ecologic systems approach.^{16,17} Foremost are leisure theories that address human autonomy and agency. Self-determination theory (SDT)¹⁸ is helpful in understanding intrinsic motivation, as well as how and why external rewards (e.g., incentives) become internalized to produce behavior that is more intrinsic. SDT also helps explain how leisure behaviors are initiated and maintained over time, despite constraints. Theories about leisure constraints and negotiation are useful in understanding active living.^{19,20}

Constraints are generally conceptualized in three ways.¹⁹ Intrapersonal constraints are psychological conditions that are internal to the individual, such as personality factors, attitudes, and self-efficacy. Interpersonal constraints arise from interaction with others such as family members, friends, and co-workers. Structural constraints include such factors as the lack of opportunities or cost of activities that arise from external conditions in the environment. Another self-regulatory theory, selective optimization with compensation,²¹ provides an important meta-theoretical framework from which to examine goal-directed leisure behavior. The process of selecting leisure goals (e.g., gardening or trail riding), overcoming constraints to the activity (compensating), and optimizing one's experience is well informed by this theory.

Csikszentmihalyi's²² theory of flow assumes that behavior is performed and maintained because there are clear salient goals, feedback on performance is easily self-assessed, and one's skill level is adequate to meet the challenge of the activity. When flow is achieved, one experiences intense enjoyment and satisfaction, thus facilitating continued participation. This theory helps to understand both boredom and anxiety in a leisure context.

The concepts of specialization in leisure behavior, "serious leisure," and the "amateur" all recognize that many leisure behaviors possess the same properties as work careers. Participants may become more skilled; exhibit increased commitment to the activity; become specialized in language, equipment, and technique; and incorporate such participation into their self-concept.^{23,24}

Leisure socialization is an important concept with strong relevance to active living research.²⁵ Leisure studies research has addressed how leisure activity repertoires are initiated, sustained, and restricted over the life span. Prominent models of socialization focus on the dominant role of childhood experiences or adult and later-life experiences in shaping leisure preferences.

Another set of leisure-related constructs is more applied. Their examination usually translates directly

into management policy and practice. Theories about social groups, such as crowding and conflict, are important to understanding social carrying capacity and intragroup conflicts. Crowding, examined mostly in outdoor recreation settings, is grounded in normative theory (i.e., people have standards by which behavior is judged). Norms are generally influenced by the personal characteristics of visitors, characteristics of those encountered during the experience, and situational factors such as park quality and characteristics. Crowding is typically perceived as a negative phenomenon in which the presence of too many people negatively affects a user's experience.²⁶ However, perceptions of crowding may vary depending upon experience, motivations, and expectations.^{27,28} Conflict is a related concept that results from "goal interference that is attributed to another's behavior."²⁹ Conflict can arise from incongruity in motivations, expectations, values, and adherence to norms between one or more persons. Crowding and conflict have important implications for active living research, since they can shape people's decisions to participate in physical activities. For example, older people may be deterred from using a multi-purpose trail due to perceived crowding or conflict that surfaces between in-line skaters and walkers.

Theories of race/ethnicity, social justice, and culture are also important factors in an ecologic understanding of leisure behavior, and have been implicated in understanding levels of leisure-based physical activity.³⁰⁻³² For example, research indicates that generally, African-Americans, compared to whites, prefer environments that are open, well-groomed, and have more structured or built amenities (e.g., ball fields, paved trails, pavilions), as opposed to wildland recreation areas.^{33,34}

Leisure Studies Research

Historically, leisure studies have employed small-scale, survey-based methods, although there have been some experimental studies. A failure of some of this research has been to neglect the impact of cognitive dissonance on the reliability of both self-reported leisure behavior and the relation between attitudes and behavior. That is, the congruence of attitudes, opinions, and values, and self-reports of leisure behavior with actual behavior is often obscured. Specifically, awareness of discrepancies between attitudes and behavior produces dissonance. Being psychologically uncomfortable, dissonance motivates people to try to reduce it and achieve consonance.

Thus, people tend to believe that they exercise or are more physically active than they actually are because they believe doing so is a good thing. A study by Chase and Godbey,³⁵ for example, found that members of a tennis club and a swim club vastly overestimated their use of both clubs when estimates were compared to registration data. Objective measures including the use of instruments such as pedometers and accelerometers,

as well as triangulation of methodologies including direct observation and videotape, may help overcome this problem.

Over the past decade, larger-scale and longitudinal studies have been undertaken. As well, the field has become sophisticated in its use of qualitative research methods, but more field research and action research studies are needed. Experience sampling methods, as well as single-subject designs, have also been used frequently in leisure studies.³⁶⁻³⁸

Of interest to this paper is the extensive series of large-scale surveys conducted by the federal government. The 1999-2000 National Survey on Recreation and the Environment (NSRE) (www.srs.fs.usda.gov/trends/Nsre/nsre2.html) is the latest in a series of national surveys that began in 1960 by the Outdoor Recreation Resources Review Commission (ORRRC). ORRRC initiated the National Recreation Survey (NRS) to assess outdoor recreation participation in the United States. Since 1960, six additional NRSs have been conducted. The NSRE 2000 is a phone survey of 50,000 households across all ethnic groups throughout the United States. Questions from NSRE 2000 broadly address such areas as outdoor recreation participation and patterns, demographics, household structure, lifestyles, environmental attitudes, constraints to participation, and attitudes toward management policies. The NSRE provides the only periodic national assessment of the nation's recreation participation.

Studies of use of time have also contributed to the understanding of people's use of leisure and involvement in physical activity. Over the last several decades, time diary studies have consistently found that, while Americans average 35 to 40 hours of free time per week, only a fraction of such time is used in physically active forms of leisure. Television viewing dominates. Such diaries also show that the majority of free time comes on weekdays, not weekends, and is experienced in numerous small intervals of free time averaging 1 or 2 hours each. Such increments are ideal for television but not for many forms of active leisure. Diary studies and experience sampling ("beeper") studies, in which respondents are paged or otherwise contacted at random intervals to determine their behaviors, produce comparatively reliable estimates of behavior.^{39,40}

Review of Research on Urban Park Use

Few studies have attempted to quantify physical activity in parks. This omission probably reflects the a priori assumption that people visiting parks and other outdoor recreation areas are physically active. A few studies, however, have quantified physical activity in urban parks. Hutchison⁴¹ recorded over 3000 observations yielding information on 18,000 activity groups in 13 Chicago public parks. Forty-one percent of the activity groups were engaged in mobile activities (e.g., walking,

biking, jogging), and 14% were engaged in sport activities. Gobster's⁴² survey of Chicago's Lincoln Park found 45% of the park's users participating in "active-individual activities" (e.g., walking, jogging), and 23% in active team sports during their visits. Scott⁴³ found that 44% of users of Cleveland Metroparks reported walking or hiking as their primary activity. This ranked second behind "relaxing" (49%). Walking for pleasure or exercise is a common activity for older adults. Payne et al.⁴⁴ found that park visitors, aged ≥ 50 , walked for almost 1 hour on average while visiting Cleveland Metroparks. Raymore and Scott⁴⁵ found that 55% of Cleveland Metroparks users participated in walking and hiking, 12% in dog walking, and 4% in running or jogging. The study of Chicago's Lincoln Park by Tinsley et al.⁴⁶ found that 43% of users aged ≥ 55 used bicycle and footpaths and perceived exercise as an important benefit of park use. Godbey and Blazey⁴⁷ examined park use in five major U.S. cities and found that 31% of people aged 55 to 65 were engaged in an exercise or sport activity, while 25% of people aged ≥ 66 participated in such activity. These studies offer some evidence of the capacity of public parks to support active living.

While numerous studies exist concerning the role of environmental factors in shaping visitor satisfaction and onsite behavior in parks, few studies specifically examine relationships between environmental factors and objective measures of physical activity. Within the recreation and parks management literature, environmental factors are generally conceptualized as biophysical, social, and managerial in nature.⁴⁸

Several biophysical characteristics (natural conditions and degree of site development) correlate with park use. Studies in the 1960s and 1970s showed an inverse relationship between recreation participation and distance between a place of residence and a recreation opportunity.^{49,50} Schroeder and Anderson⁵¹ found that degree of naturalness and woody vegetation increased the perceived scenic quality of park environments. However, naturalness and vegetation correlated negatively with perceived safety, suggesting that while naturalness is important, open lines of sight are needed to enhance perceptions of safety.⁵²

The social setting encompasses social group composition and interaction characteristics involving other park users. Social variables studied in parks settings include perceived crowding and interactivity conflict. While crowding has been shown to correlate negatively with visitor satisfaction in backcountry areas, crowding is associated with safety, security, and positive visitor experiences in urban parks.⁵³ Of the few studies that have examined the effect of intra-activity conflict on urban park use, conflict does not seem to detract from park experiences.⁵⁴ However, perceptions of conflict appear to vary by activity group. For example, Moore et al.⁵⁵ found that greater proportions of walkers and runners than skaters

and bikers reported that their enjoyment was negatively affected by skaters and bikers than vice versa. In addition to these social variables, qualitative studies indicate that criminal activity such as the sale and use of drugs deters use of parks by children and adults.^{42,56} Use of urban parks can also be affected by having to traverse "gang territory."⁵⁷

The managerial setting refers to rules, policies, and other administrative activities. Since the mid-1990s, fees and charges have been implemented or increased at local, state, and federal recreation areas. Findings on the impact of pricing on recreation use are mixed. One study of six U.S. Army Corps of Engineers day use areas found that 40% of respondents would reduce their visits if fees were implemented.⁵⁸ On the other hand, studies from state parks indicate that pricing has little or no effect on recreation use levels.^{59,60} Pricing studies of local parks have focused more on citizen attitudes toward fees than on the effect of fees on park use. However, Scott and Munson⁶¹ noted that, among low-income households, reduced costs, in addition to increased public transportation, childcare arrangements, and increased safety, would cause residents to use parks more often. These findings are congruent with a national study that found that 50% of low-income respondents cite cost or affordability as barriers to physical activity.⁶² Fees have also been associated with perception of crime rates. Fletcher⁶³ suggested that some visitors avoid nonfee recreation areas because lack of controlled access is associated with higher crime rates.

Several public health studies offer empirical evidence of significant relationships between environmental variables and physical activity.⁶⁴⁻⁶⁹ Such studies have characterized the capacity of parks and recreation programs to support active living within an ecologic model. More research is needed to show how environmental factors relate to physical activity in parks and other outdoor recreation areas. Conceptualizing public parks in terms of their biophysical, social, and managerial characteristics appears consistent with ecologic models. Logical extensions of past research are investigations of whether and how parks contribute to recommended levels of physical activity. Further, studies focusing on how different types of parks (e.g., neighborhood, regional) and configurations of park settings (biophysical, social, and managerial) rank as sites for physical activity are needed.

Environmental and Policy Factors Related to Physical Activity During Leisure

Environmental and policy factors at the local, state, and national level can influence specific managerial action to promote physical activity in public parks. For example, grounds maintenance and tree care can be designed to achieve and maintain the aesthetic appearance most conducive to park visitation and physical

activity. Lack of accessibility due to distance can be mitigated by locating facilities and program areas near high use areas, neighborhoods, or work sites where they are visible and easily accessible.^{70,71} Social interactions can be managed by imposing regulations on types of uses, equipment (e.g., motorized vs nonmotorized), and activities, as well as temporal spacing of activity types. Administrative decisions to support physical activity, such as changes in hours of operation, programming, pricing and marketing of opportunities, and increasing law enforcement surveillance to curb criminal activity should be made. Policy decisions that made these centers more accessible and attractive may serve to increase youth physical activity levels. For example, adolescents who used a community recreation center were more physically active than those who did not use such a center.⁷²

Physical activity and recreation and park management are also intersected by other sectors of policy formation. Federal policies in the United States have been the primary source of funding for parkland acquisition and facility development. For example, the Land and Water Conservation Fund (LWCF) provides grants for park land acquisition for federal, state, county, special district and municipal recreation and park agencies. Grants to states are determined by needs assessed through Statewide Comprehensive Outdoor Recreation Plans. State agencies in turn determine the amount available to local agencies. Since 1965, the LWCF has provided \$3.2 billion for local park development.⁶⁸ This and other federal grant programs are paramount to providing the basic infrastructure for municipal park and recreation systems.

Other policy interventions might emerge from partnerships between recreation and park department and other governmental or nongovernmental agencies. For example, partnerships with schools to use their facilities for programming during school and nonschool hours could be used to create opportunities for increased physical activity. A few major recreation equipment manufacturers and landscape architecture firms shape the design of recreation and park and equipment. Closer relationships and, eventually, formal partnerships must be established with such companies to increase awareness of how design issues can increase physical activity. Playworld Systems, Inc., for example, has already collaborated with recreation and park and kinesiology researchers to produce the LifeTrail, a series of stretching and strengthening stations designed to be retrofitted on existing trails, paths, and walkways.

Similarly, recreation and park researchers and the NRPA should pursue a partnership to identify park standards and design guidelines that promote physical activity. NRPA park and open space standards are widely applied across cities and municipalities.^{73,74} The most recent revision of these standards encouraged flexibility through greater consideration of local situa-

tions and preferences.⁷⁵ Researchers and practitioners should collaborate on how to apply emerging findings from active living studies to subsequent modifications of park and open space standards. Modifying park standards represents a clear mechanism to institutionalize “activity friendly” parks.

Intersection of Transportation and Recreation and Parks/Leisure Studies

Since public recreation and park departments are often responsible for the development of walking and bicycling trails, and walking is the most common form of active leisure among adults, the connection between transportation planning and recreation and park planning and design must be strengthened. Transportation design standards and policies directly impact the ability to use nonmotorized forms of transportation for active leisure. Unfortunately, federal transportation policy still favors design standards that emphasize automobiles. The major source of federal transportation funding (TEA-21) supporting bicycling and walking is constantly under threat of being significantly reduced. Currently, TEA-21 funding for biking and walking accounts for only about 1% of federal transportation funds.⁷⁶ Also, roadways have historically been designed to reduce automobile delay (e.g., stoplights), rather than to consider ways to reduce auto traffic and increase alternative modes of transportation. Since these issues are a major concern, transportation engineers and community leaders are developing innovative solutions to alter transportation design to make them more conducive to active living.

Several states and communities are beginning to use context sensitive design (CSD). CSD is an ecologic approach to developing transportation systems that accommodates multiple modes of use (i.e., walking, cycling, public transport, autos), and considers the environments adjacent to the roadway, access to nearby community assets (e.g., schools, parks, stores), and design principles that encourage walking and biking. CSD also recognizes that the aesthetics of the walking/biking route will encourage or discourage use. For example, a 6' bike lane and 6' curb-tight sidewalk constructed adjacent to a high-speed seven-lane arterial is not likely to attract users. CSD allows designers to construct integrated facilities such as combining the sidewalk and bike lane into an 8' combined path separated from the arterial by a 4' landscaped buffer strip. The more attractive and safe the environment is perceived to be, the more likely it will attract users. CSD also relies heavily on community input to develop effective transportation design strategies, resulting in enhanced neighborhood connectivity featuring safe, attractive walking/bicycling routes, while projecting density and traffic volumes.

Integrating Leisure Studies and Recreation and Park Management Scholarship into Transdisciplinary Active Living Studies

Using an ecologic model to frame research about active living requires an inter- or trans-disciplinary perspective. An ecologic model^{77,78} suggests that personal, social, environmental, and cultural factors all shape opportunities for and personal choices about integrating physical activity into all aspects of daily living. This article has briefly highlighted a number of ways recreation and park and/or leisure studies research can contribute, from an ecologic perspective, to understanding (1) why people do or do not engage in physically active leisure; (2) how park and recreation design and aesthetics, including recreation-related transportation (e.g., biking, walking), can contribute to physical activity; (3) how policies shape opportunities for physical activity; and (4) how social groups and individuals can support or detract from one's ability to integrate physical activity into daily life.

By definition, the study of leisure and recreation is multidisciplinary. Therefore, fields such as social and developmental psychology, planning, geography, sociology, anthropology, and kinesiology contribute to the field's scientific inquiry. Thus, it is natural for leisure and recreation scholars to connect with scholars from other multidisciplinary fields such as public health, prevention science, planning, and education to work together to study and support active living through policy and design. The following are suggestions for future research and methodologic development that would benefit from participation of leisure researchers on transdisciplinary teams.

- Determine the effects of objective measures of aesthetics and scenic beauty on park use and physical activity levels.
- Examine the role and relative influence of park characteristics (e.g., size, type, features, location) and urban form characteristics (e.g., density, connectivity) on facilitating or limiting park use.
- Examine the effect of site design and facility placement on park use patterns and physical activity. For example, do multiple-use sites contribute to greater family physical activity than single-use sites?
- Employ experimental design to assess changes in onsite behavior in relation to varying design and facility placement.
- Examine the effect of social conditions such as crowding and conflict on levels of physical activity.
- Examine the geographic placement of parks and recreation areas to assess equity in park distribution, quality of facilities, and opportunity for physical activity.
- Life span, transition periods, and developmental issues also should be key areas of focus.

- Investigate effects of alternative policy, design, and social marketing strategies on increasing physical activity in the K through 12 student population.
- Examine factors related to initiation, maintenance and decline of physical activity in the transition to college and life after high school.
- Identify key factors in initiating and maintaining regular physical activity among middle-aged and older adults to initiate and maintain regular physical activity across the life span.
- Investigate the role of park and recreation access and service provision in increasing or maintaining physical activity among individuals with disabilities and chronic illnesses.
- Examine whether physical activity in parks varies significantly across racial/ethnic groups.
- From a social psychological perspective, key questions relate to the role of internalized motivation in initiating and sustaining physical activity.
- Do externalized forms of motivation work at all? What are the moderators of this relationship? For example, how effective are incentive-based, community physical activity campaigns in facilitating long-term changes in physical activity?

Researchers should be opportunistic and partner with allied industries. For example, travel is a large sector of the leisure economy. Rates of pet ownership are soaring. How can recreation and parks and leisure studies fields impact the hospitality industry to encourage physical activity among travelers on business and holiday trips? What is the role of companion animals in increasing physical activity?

Throughout the field there is a clear need to develop and validate multiple methods and employ objective measures to accurately measure physically active leisure. Long-term, sustained, and significant transdisciplinary studies will not be possible without the infrastructure, resources, and policies to support these larger-scale and more complex studies. Some suggestions for promoting greater levels of transdisciplinary studies that include recreation and park/leisure studies researchers include the following:

- Increased training of recreation, park, and leisure studies researchers in methods used by active living researchers.
- Leisure researchers should publish in journals other than recreation, park, and leisure-based outlets, and active living researchers should publish in recreation, park, and leisure-based outlets. Co-authored papers would be ideal.
- Research sponsors should allocate points for proposals from transdisciplinary teams.
- Increase publications outlets, conferences, and symposia for transdisciplinary research.
- Universities need to work out how to assign credit

for projects on large-scale projects with investigators from various academic units.

- Additional criteria could be proposed for park development grant programs like LWCF to include active living concerns.
- Researchers could collaborate with policymakers to develop health policy guidelines that would be reflected in new park standards to promote active living.
- Researchers could work with developers to incorporate design features in parks and commons areas in residential and commercial properties to support active living.
- Special issues in journals could be mounted; researchers from outside the “parent” field could be asked to provide editorial or feature articles. These special issues could focus on theoretical and methodological needs and advances.

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