

# An Active Living Perspective on Recreation Research: Examples of Urban Trail Use and Suggestions for Further Involvement

Paul H. Gobster<sup>1</sup>

In this paper I examine recreation and leisure research within the context of “active living,” and highlight an apparent gap between our current involvement and the potential of what recreation and leisure researchers have to offer to this important and expanding area of inquiry. To illustrate this potential, I look at two previous studies of mine that focused on the recreational use of urban trails, and reanalyze the data from an active living perspective. Findings from these and other outdoor recreation studies can help inform active living research, and I conclude by discussing how recreation and leisure studies can provide leadership and interdisciplinary understanding of the individual, social, and environmental aspects of active living.

## Introduction

By now the statistics are all too familiar: rates of obesity and incidents of related diseases such as diabetes, heart disease, and depression have reached epidemic proportions among US adults and children. These conditions have been linked along with other factors such as nutrition to our increasingly sedentary lifestyles brought on by changes in technology in our homes and workplaces, urban sprawl, and the perceived and actual safety of our communities (Jackson & Kochtitzky, 2002). The consequences of physical inactivity have been estimated to be responsible for more than 200,000 deaths annually (McGinnis & Foege, 1993) and to result in treatment costs of at least \$37 billion per year (Colditz, 1999). These devastating facts have spurred government groups such as the Centers for Disease Control and Prevention and private concerns such as the Robert Wood Johnson Foundation to mount major research initiatives and interventions to understand how more Americans can better integrate physical activity into their everyday life, a concept that is coming to be known as “active living” (Active Living Research, 2003).

While this physical activity, which for an average adult amounts to 30 minutes of moderate to vigorous movement per day (CDC, 2001), can come from a variety of sources, parks and other outdoor recreation environments are increasingly being cited as a critical contributor (Frumkin, 2003; Goodman & Miller, 2003). There are several reasons why. Many kinds of active recreation activities that take place in outdoor settings are seen as enjoyable and can be freely engaged in by a wide range of people in their leisure time (Henderson & Ainsworth, 2002). Additionally, these activities and the settings in which they occur require little outlay in costs for participation or visitation, and can be readily adapted to suit different ages, skill levels, and interests. Accessibility, however, is a key limiting factor, and new research focused on active living has shown that use of and physical activity in parks and other outdoor settings is closely tied with how close people live or work to them (e.g., Troped et al., 2001). In addition, this new body of research is also working to uncover how individual, social, and environmental factors influence physical activity, with the goal of developing guidelines and policies for design, planning, and management (Giles-Corti & Donovan, 2002).

If much of this “new” work sounds strangely familiar, it may be because recreation and leisure researchers have for years been studying such ideas and concepts in the context of participation, satisfaction, and similar dependent variables. Yet our direct involvement as a community in active living research is noticeably underrepresented in the literature.

**Table 1** - Active living articles published in the recreation-leisure research journals, 1999-2003.

| Publication                                   | # articles |
|---|------------|
| Journal of Leisure Research                   | 1          |
| Leisure Sciences                              | 3          |
| Leisure Studies                               | 0          |
| Journal of Park and Recreation Administration | 4          |
| Therapeutic Recreation Journal                | 0          |
| Parks and Recreation                          | 11         |

<sup>1</sup> USDA Forest Service North Central Research Station

Instead, attention to the issues of physical activity, including its relationship to outdoor recreation settings, is strongly being driven by researchers in the health sciences in such fields as epidemiology, public health, behavioral and preventive medicine, and sport and exercise physiology. An examination of recent theme issues from journals in these fields shows a concerted effort is being mounted to approach active living problems from an interdisciplinary perspective (e.g., Jackson, 2003; Killingsworth et al., 2003). But while urban planning, land use law, environmental psychology, and architecture and landscape architecture are visible in this mix, recreation and leisure studies are not. Even within our own journals, papers dealing directly with the topic are rare. In a review of all published articles in the 5 main recreation and leisure research journals over the last 5 years, I found that only 1-2% dealt explicitly with active living and physical activity issues (Table 1). Awareness of the issue is not lost on the profession, however; over the same period Parks and Recreation magazine had published more articles in this area than all of the journals combined.

Despite this lack of attention and visibility, recreation and leisure research appear to have a great deal of relevance to active living issues. The same journals that I reviewed had much to say about participation and demand, constraints and motivations, crowding and conflict, gender and ethnicity, and environmental preferences, all topics of potentially considerable utility to active living research. For these reasons, recreation and leisure researchers need to become more involved in this area of critical importance, for we have much to contribute.

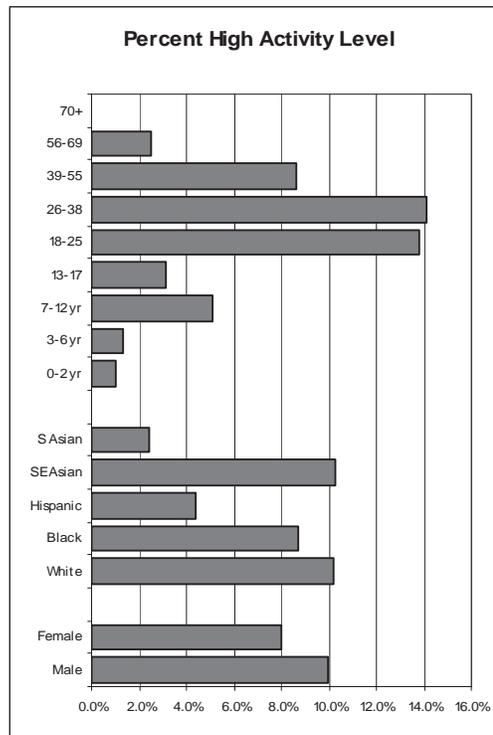
To illustrate this potential utility, I looked at two previous studies I conducted that focused on the recreational aspects of urban trail use in Chicago, and re-examined the data from an active living perspective. Along with urban parks, urban bicycle and pedestrian trail systems have been identified as important outdoor settings for active living for a number of reasons: They cater to physical activities that can be adopted and adhered to by a broad spectrum of the public (Sallis et al., 1998), their typical off-street and natural location in parks and greenways provide safe and attractive environments that further encourage use (e.g., Humpel et al., 2002), and their length and the modes of movement (walking, jogging, bicycling, cross country skiing, and in-line skating) for which they are designed facilitate use for both leisure and utilitarian purposes (Shafer et al., 2000).

### **Individual, Social, and Environmental Aspects of Physical Activity in a Diverse Population**

The purpose of this research was to examine individual, social, and environmental factors associated with urban trail users exhibiting low, moderate, and high levels of physical activity. Use of a 1.2 mile loop trail in Chicago's Warren Park was observed over 9 months in 1989. Information was collected on individual (sex, age, race/ethnicity, activity), social (group size, composition), and environmental (time, day, temperature, precipitation, location on trail) characteristics related to use (see Gobster, 1992; 1998 for details). Observed activities were reclassified to examine use patterns as a function of physical activity levels: High=fast walking, running, calisthenics, roller-skating, skateboarding, roller skiing, skiing; Moderate= walking, slow walking, bicycling; Low=standing, sitting, riding in a stroller, picnicking, laying down.

5,496 trail users were observed during 151 observation periods. When classified by activity level, high, moderate, and low activity level users accounted for 9%, 65%, and 26% of the total sample of observations, respectively. In terms of individual factors, men were slightly more likely than women to be highly active users (Fig. 1).

**Figure 1** - Proportion of trail users engaged in high activity level trail use, by age, race/ethnicity, and gender.

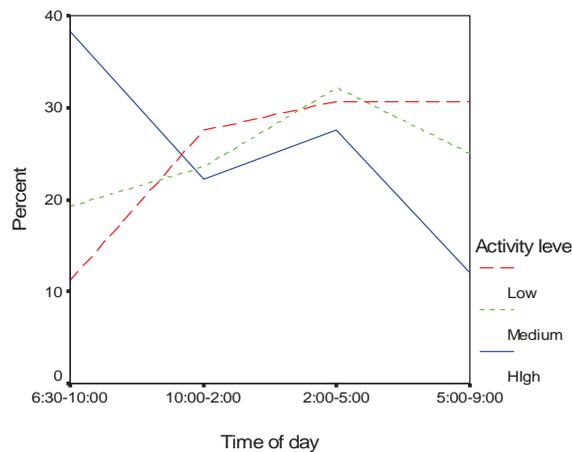
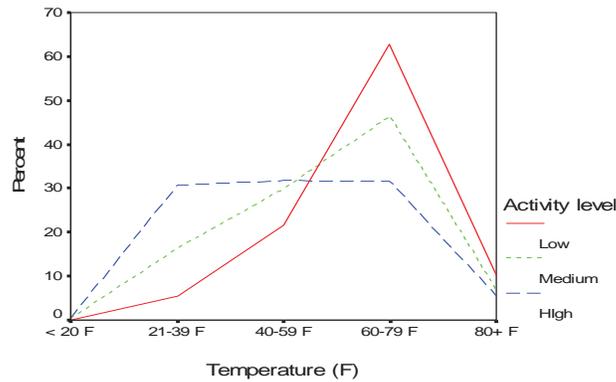


While African Americans, Anglos, and Southeast Asians had a larger proportion of individuals categorized as highly active users than Hispanics or South Asians, African Americans also had proportionately more low activity level users than other groups. Consistent with the literature (Ainsworth et al., 1999; Eyler et al., 2002), I also found evidence of an interaction effect between gender and ethnicity; in particular showing that African American females were significantly less likely to be highly active than either African Americans or females when looked at as individual groups. The highest proportions of highly active users were 18-25 and 26-38 year-olds, with the percent of highly active users dropping off sharply as age increased or decreased.

In terms of social groups, I generally observed that the bigger the group was, the slower it moved along the trail. Bigger groups also exhibited greater age and gender diversity than smaller groups. A larger proportion of highly active users tended to be solo trail users than were those who used the trail in groups of two or more. Highly active twosomes tended to be either all-male or all-female, while groups larger than two more often included members of both sexes. Beyond these distinctions, highly active groups were quite homogeneous with respect to race/ethnicity and age.

As for environmental factors, highly active users tended to be less inhibited by early hours, cold temperatures, or precipitation than moderately or minimally active users (Figs. 2-3). Exceptions to this pattern were minimally and moderately active trail users walking dogs-- their indifference to environmental extremes equaled or exceeded highly active users. Finally, low activity users tended to be clustered within a small number of locations along the trail at benches and other amenities, while moderately and highly active users were more evenly distributed along the trail.

**Figures 2-3** - Activity levels as a function of temperature and time of day



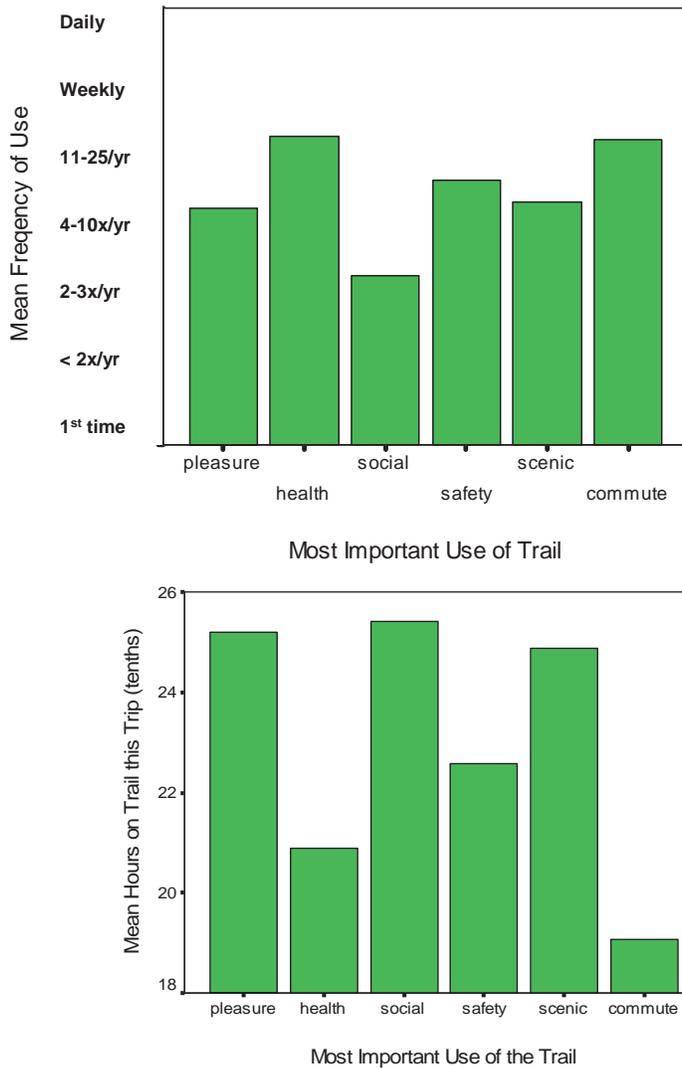
### Use Patterns and Preferences among Health Motivated Users of a Metropolitan Trail System

Through the use of an on-site survey instrument, 2,873 individuals who used a diverse sample of 13 trails in the Chicago metropolitan areas were asked about their use of the trail that day and other questions related to their trail use patterns and preferences (see Gobster, 1990; 1995 for details). A forced-choice question asking respondents’ “most important reason for using the trail that day” was used to compare health motivated users with other trail user types.

“Health-physical training” was cited as the “most important reason” for using Chicago metropolitan trails by 28% the sample, overshadowed only by “pleasure-recreation” (38%). Four other stated reasons for using trails each received less than 10% mention as being the most important for an individual (social, safety, scenery, commuting). In terms of use patterns, health motivated trail users lived closer to the trail, used it more often (Fig. 4), and were more likely to walk or run on the trail than other types of users. Health motivated users were also more likely to use the trail alone than were other groups. On many use dimensions, health motivated users were more similar to those who used trails for commuting than those who used trails for other reasons: both groups used trails for a shorter period of time (Fig. 5), were less likely to drive to the trail, and showed a high “brand loyalty” in terms of sticking to the same trail rather than diversifying their choices between different trails.

There were few differences in perceived trail problems or preferences between health motivated users and most other groups, particularly compared to those using the trail for pleasure-recreation. Like most other users, health-motivated trail users appreciated the natural beauty of the setting and a well maintained trail environment, were concerned about crowding and the general lack of trailside facilities such as bathrooms and drinking fountains, and even though they tended to stick to a single trail and use it for a shorter period of time, they rated more trails and longer trails as important trail.

**Figures 4-5** - Frequency and duration of trail use, by trail user type.



## Conclusions and Implications

The results from this re-analysis of Chicago urban trail data showed some significant differences among users with respect to physical activity measures. In looking across the findings of the two studies, the classifications of highly active and health motivated trail users tended to identify those who walked or ran on a trail on a relatively short but frequent basis. This is consistent with definitions for recommended levels of physical activity, and worked to separate these individuals from those who used trails for other purposes or at lower activity levels. While many studies of physical activity rely on more intensive measures such as the use of monitors (Mahar & Ainsworth, 2000), it appears from these studies that some relationships among users types can be discerned using relatively simple self-report measures and observations.

While highly active, health motivated trail users may tend to be less sensitive to cold temperatures or poor weather conditions than most other groups, they may be more distance-sensitive in that they are less likely than other groups to drive to or diversify their use of different trails. This sensitivity may make local neighborhood trail users more vulnerable to management decisions. For example, in a cold winter climate such as Chicago's, snow plowing could keep trails open to those who might not otherwise travel elsewhere to get their walk, run, or ride in. The Warren Park observational data hint at this, showing that 50% more people used the trail in January and February on days when it was clean and dry than on days when the trail was covered with light or heavy snow. While this particular example can be seen as an issue of physical safety, other management decisions such as lighting and policing trails could affect perceptions of personal safety.

Findings from the two studies differed with respect to the significance of demographic variables. However, Warren Park, where the observational study took place, had a very demographically diverse population of users compared to the sample of metropolitan trail users, which may account for the differences in results as a function of gender, ethnicity, and age variables. Studying these differences, and in some cases the interactions between variables, can help managers target particular populations with programs or interventions aimed at encouraging more active use of trails and other outdoor settings.

Extending beyond the direct implications of this work, recreation and leisure research as illustrated by these two studies can be of value to those concerned with active living issues in a number of ways. First, it can help jumpstart the search for individual, social, and environmental variables relevant to physical activity, as many of these independent variables have already been studied and linked to dependent variables such as participation and environmental preference. Second, recreation and leisure concepts and measures such as those relating to constraints and barriers to participation (e.g., Jackson & Scott, 1999) may help further develop the theoretical orientation of active living research, to help build models and explanations of relationships that have greater utility and generalizability. Finally, the methodological approaches and field expertise in recreation research developed over the past four decades are formidable and in many cases transferable to the questions and issues being dealt with in the context of active living.

Recreation and leisure researchers can become fuller participants in active living research in a number of ways. One unique and potentially valuable way is by looking backward. In the case of my own work this meant looking at old data sets with fresh eyes, reinterpreting earlier questions about recreation use from an active living perspective. Many other data sets like this may be lying around ripe for mining and potentially capable of producing valuable information with a minimal outlay in time and expense. In addition to re-classifying park activities as "high-moderate-low," estimates might also be made to convert activity codes to energy expenditure rates or metabolic equivalents (e.g., Sallis & Owen, 1999). Among this older data there is the possibility of conducting longitudinal analyses, reclassifying participation variables to uncover trends and patterns of physical activity over time. In this respect, State Comprehensive Outdoor Recreation Plan (SCORP) or federally collected data sets might be good candidates for looking at with active living ideas in mind. Going even further back, the parks and recreation movement in Europe and the U.S. has had a long and intimate tie to public health and physical activity issues, and historical analyses of park development during the Romantic and Progressive eras, the Neighborhood Parks Movement, and programs such as the President's Council on Physical Fitness may yield insights and hypotheses for current work (e.g., Cranz, 1982).

But to make our rightful contribution to active living research, recreation and leisure researchers also need to look forward. One sure way for this to happen is to incorporate more explicit and objective physical activity measures into our studies. For example, we might include self-report measures for activity participation that are commensurable with current health guidelines for physical activity (e.g., CDC, 2001). Beyond this, health science researchers have refined observational measures and make regular use of objective instruments such as accelerometers to measure various aspects of physical activity (Mahar & Ainsworth, 2000). Even though these may not be of central interest in a particular recreation study, they may provide valuable data to potential partners who are interested.

This connection with the broader community of active living researchers points to the opportunity for involvement in interdisciplinary research initiatives. Programs sponsored by the Robert Wood Johnson Foundation through Active Living Research, as well as through the Centers for Disease Control and Prevention and other government agencies, are currently providing attractive opportunities for collaboration and funding. The Active Living Research program is a good case in point; it has recently added leisure studies professor Karla Henderson to its board of advisors, and at its recent annual research conference commissioned a paper by leisure-recreation researchers Geoff Godbey, Linda Caldwell, Laura Payne, and Myron Floyd (Godbey, et al., 2004) that was well-received by the interdisciplinary audience in attendance.

Submission to Active Living Research's \$12.5 million grants program is also drawing considerable interest among recreation and leisure researchers. While the past two funding cycles dealing with measurement and the environmental correlates of physical activity have so far included few individuals from the recreation and leisure fields, future cycles dealing with special populations and policy initiatives are ripe for involvement (Active Living Research, 2003).

Finally, the recreation and leisure field can do much on its own to demonstrate leadership in active living studies. Prominence given to this theme in Rene Dahl's welcoming address and in papers in the "Links Between Healthy People and Public Lands" session at this conference are evidence of growing concern and commitment among recreation and leisure researchers. Special theme issues of journals (one on "leisure and active lifestyles" is now in the works for *Leisure Sciences*), the inclusion of active living themes in undergraduate and graduate coursework, and greater involvement of recreation and leisure researchers in the area are three additional ways in which leadership can happen.

Recreation and leisure research has a rich legacy of historical involvement, concepts, and methods relevant to the growing area of active living. As the two urban trail studies in this paper illustrate, greater involvement can both contribute to this agenda and add to the body of knowledge for improving linkages between people and the outdoors.

## Acknowledgements

Support for this work came from the USDA Forest Service and the Farrand fund of the Department of Landscape Architecture and Environmental Planning at the University of California-Berkeley. Thanks to Myron Floyd, Monika Stodolska, and Greg Lindsey for their helpful comments on an earlier draft of this paper.

## Literature Cited

- Active Living Research. (2003). **What is active living?** Available on-line at:  
[http://www.activelivingresearch.org/index.php/What\\_is\\_Active\\_Living/103](http://www.activelivingresearch.org/index.php/What_is_Active_Living/103).
- Ainsworth, B. E., Irwin, M. L., Addy, C. L., Whitt, M. C., & Stolarczyk, L. M. (1999). **Moderate physical activity patterns of minority women: The Cross Cultural Physical Activity Participation study.** *Journal of Women's Health*, 8, 805-813.
- Cranz, G. (1982). *The politics of park design: A history of urban parks in America.* Cambridge, MA: The MIT Press.
- Centers for Disease Control and Prevention (CDC). (2001). **Increasing physical activity: A report on recommendations of the Task Force on Community Preventative Services.** *Morbidity and Mortality Weekly Reports* 2001, 50 (RR-18).  
<http://www.cdc.gov/mmwr/PDF/RR/RR5018.pdf>
- Colditz, G. A. (1999). **Economic costs of obesity and inactivity.** *Medicine & Science in Sports & Exercise*, 31(11 Supplement), 663-667.
- Eyler, A. E., Wilcox, S., Matson-Koffman, D., Evenson, K. R., Sanderson, B., Thompson, J., Wilbur, J., & Rohm-Young, D. (2002). **Correlates of physical activity among women from diverse racial/ethnic groups.** *Journal of Women's Health & Gender-Based Medicine*, 11(3), 239-253.
- Frumkin, H. (2003). **Healthy places: Exploring the evidence.** *American Journal of Public Health*, 93(9), 1451-1455.
- Giles-Corti, B., & Donovan, R. J. (2002). **The relative influence of individual, social, and physical environment determinants of physical activity.** *Social Science and Medicine*, 54, 1793-1812.
- Gobster, P. H. (1990). **The Illinois statewide trail user study.** Springfield, IL: Rails to Trails Conservancy.
- Gobster, P. H. (1992). **Urban park trail use: An observational approach.** In: Proceedings of the 1991 Northeastern Recreation Research Symposium (General Technical Report GTR NE-160, pp. 215-221). Radnor PA: USDA Forest Service Northeastern Forest Experiment Station.
- Gobster, P. H. (1995). **Perception and use of a metropolitan greenway system for recreation.** *Landscape and Urban Planning*, 33, 401-413.
- Gobster, P. H. (1998). **Urban parks as green walls or green magnets? Interracial relations in neighborhood boundary parks.** *Landscape and Urban Planning*, 41, 43-55.
- Godbey, G., Caldwell, L., Payne, L., & Floyd, M. (2004). **Implications from leisure studies and recreation and parks management research for active living.** Paper presented at the Active Living Research Annual Conference, Del Mar, CA, January 30-31, 2004.
- Goodman, R. A., & Miller, M. L. (2003). **Public lands for the public's health.** *Environmental Law Reporter*, 33, 10217-10223.
- Henderson, K. A., & Ainsworth, B. E. (2002). **Enjoyment: A link to physical activity, leisure, and health.** *Journal of Park and Recreation Administration*, 20(4), 130-146.
- Humpel, N., Owen, N., & Leslie, E. (2002). **Environmental factors associated with adults' participation in physical activity.** *American Journal of Preventive Medicine*, 22(3), 188-199.
- Jackson, E. L., & Scott, D. (1999). **Constraints to leisure.** In Jackson, E. L., & Burton, T. L. (Eds.), *Leisure studies: Prospects for the twenty-first century.* State College, PA: Venture Publishing Co.
- Jackson, R. J. (Ed.). (2003). **The impact of the built environment on health: An emerging field.** *American Journal of Public Health* (Special Issue), 93(9).
- Jackson R. J., & Kochtitzky, C. (2002). **Creating a healthy environment: The impact of the built environment on public health.** Retrieved February 26, 2002 from <http://www.sprawlwatch.org/health.pdf>.
- Killingsworth, R., Earp, J. A., & Moore, R. (Eds.). (2003). **Health promoting community design.** *American Journal of Health Promotion* (Special Issue), 18(1).
- Mahar, M. T., & Ainsworth, B. E. (Eds.). (2000). **Measurement of physical activity: The Cooper Institute Conference Series.** *Research Quarterly for Exercise and Sport* (Supplemental Issue), 71(2).
- McGinnis, J. M., & Foegen, W. H. (1993). **Actual causes of death in the United States.** *JAMA: The Journal of the American Medical Association*, 270(18), 2207.
- Sallis, J. F., Bauman, A., & Pratt, M. (1998). **Environmental and policy interventions to promote physical activity.** *American Journal of Preventive Medicine*, 15(4), 379-397.
- Sallis, J.F., & Owen, N. (1999). *Physical activity and behavioral medicine.* Thousand Oaks, CA: Sage Publications, Inc.
- Shafer, C. S., Lee, B. K., & Turner, S. (2000). **A tale of three greenway trails: User perceptions related to quality of life.** *Landscape and Urban Planning*, 49, 63-178.

Troped, P. J, Saunders, R. P., Pate, R. R., et al. (2001). **Associations between self-reported and objective physical environmental factors and use of a community rail-trail.** *Preventive Medicine*, 32, 191- 200.