

Building gardens, rebuilding a city: Baltimore's Community Greening Resource Network

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Abstract

Vacant spaces in urban areas are agents of blight and are prevalent in impoverished neighborhoods with high incidences of food insecurity. However, residents in many cities are reclaiming such spaces and converting them into community assets by installing community gardens. This article describes a program in Baltimore, Maryland, that has enabled low-income citizens to become involved in gardening. Modeled after Detroit's Garden Resource Program Collaborative, Baltimore's Community Greening Resource Network (CGRN) provides gardening resources and materials by coordinating

the efforts of multiple partner organizations. By making such resources readily available, CGRN removes barriers that otherwise discourage residents from reclaiming open spaces. In this tangible way, CGRN empowers low-income residents to actively revitalize their own communities. Since its development in 2008, CGRN has served an ever-increasing membership, delivering resources to a steadily expanding community of urban gardeners. Despite these successes, challenges remain with respect to funding and staff retention. Our experience replicating the resource network model from Detroit to Baltimore can provide guidance for other groups interested in implementing similar programs.

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Keywords

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Introduction

Community gardens are emerging in postindustrial cities across the United States. Studies have shown the significant role that green spaces, particularly in

the form of urban agriculture and urban gardening, can play in food security and community renewal. As Brown and Carter (2003, p. 3) note, “economic development and community revitalization are achieved when neighborhoods take pride in a community garden [and] when inner-city residents gain the ability to grow and market their own food.... Individual health and a sense of empowerment are enhanced when urban dwellers have access to and greater control over their own food system.” In addition, community gardens are a powerful tool for creating good dietary practices among low-income gardeners, as they provide an accessible source of affordable, culturally appropriate food (Brown & Carter, 2003). In many areas where neighbors interact with each other only infrequently, gardens also provide an opportunity to build strong community ties (Teig, Amulya, Bardwell, Buchenau, Marshall, & Litt, 2009). Empowering low-income communities to improve and maintain their community gardens can increase property values, improve community food security, offer job-skills development, provide safe outdoor spaces for play and interaction, and connect individuals and community groups to other community-supporting organizations, all of which contribute to bringing communities out of poverty. However, without equitable, consistent access to those resources crucial to maintaining successful community green spaces, citizen involvement can be severely inhibited. One method of addressing this challenge is to develop a capacity-building program that enlists the resources of multiple organizations.

The Community Greening Resource Network (CGRN), based in Baltimore, Maryland, is one such program. CGRN was established in 2008 by a local nonprofit organization, the Parks & People Foundation (Parks & People), and the Baltimore City office of the University of Maryland Extension (Extension), and currently involves more than 26 partner organizations. CGRN aims to unite people of all ages and socioeconomic backgrounds through gardening and greening. In the course of its work, more than 20 new gardens have been developed in Baltimore City and more than 4,000 people are now benefiting from naturally grown food. In this case study we reflect on our

Established in 1984, Parks & People hosts a wide range of recreational and educational programs, creating and sustaining beautiful, lively parks, and promoting a healthy natural environment for Baltimore. Parks & People staff organize and assist community members in implementing greening and gardening projects in vacant lots, schoolyards, public housing projects, streetscapes, and other neighborhood open spaces.

The University of Maryland Extension (Extension) assists citizens in developing, implementing, and maintaining neighborhood beautification projects, community gardens, and vegetable gardens. Extension currently provides two programs in Baltimore that support community greening activities as a way to alleviate the consequences of poverty. Through its Master Gardener program, Extension provides technical support and education to urban gardeners through a “train the trainer” internship and mentorship program. The Gardening for Nutrition initiative builds gardens at schools, recreation centers, and senior centers, serving low-income communities by providing spaces for nutrition education, horticulture training, and local sources of fresh produce.

experience adapting Detroit’s highly regarded community garden development program, the Garden Resource Program Collaborative, to the city of Baltimore, and offer recommendations for other communities considering a similar strategy.

The Setting

Over the past several decades, Baltimore has experienced steep population decline, resulting in rampant poverty, reduced access to healthy and affordable food, and an abundance of vacant properties. Baltimore City’s current population is 636,919 (U.S. Census Bureau, 2009), a decline of 33% from its largest recorded population in 1950 (U.S. Census Bureau, 2010a). Approximately 22% of Baltimore City’s population lives in poverty, compared to just 8.3% in the state of Maryland as a whole (U.S. Census Bureau, 2009). Baltimore’s

high poverty rate is comparable to that of Pittsburgh and Detroit (U.S. Census Bureau, 2010b), two other postindustrial cities with which it is often compared.

In Baltimore, as in many other postindustrial cities, the phenomena of urban depopulation, food insecurity, and blight are linked. Over 13,000 vacant lots in Baltimore (Parks & People Foundation, 2002a) are concentrated predominantly in neighborhoods where poverty rates are high. Within such neighborhoods, the challenges of poverty are compounded by weak housing markets and severely depressed physical, social, and economic conditions (Project Locus, 2005). Under such conditions, vacant lots and other open spaces often become agents of blight, further depressing property values as they become refuse-dumping sites and havens for illicit activity. In addition to blight, food insecurity is also directly tied to the prevalence of poverty.¹ It is estimated that one in eight low-income families in Baltimore City is food insecure. Twenty-two percent of these families have children who do not eat adequate amounts of food (Black, 2008). In 2007–2008, 30.9% of Baltimore's children were found to be living in poverty, and 73% received meals through the National School Lunch Program (Goldson, 2008).

On the other hand, Baltimore boasts a rich public history of protecting and supporting public green spaces. In 1904, Frederick Law Olmsted Jr. and John Charles Olmsted, sons of the famed landscape architect Frederick Law Olmsted, presented their plan for Baltimore's park system (Olmsted & Olmsted, 1904). This far-reaching city plan envisioned a network of interconnected greenways throughout the city, including parks, playgrounds, stream buffers, tree-lined streets, and verdant residential districts. Such amenities reflected the philosophical belief prevalent at the time that all citizens, regardless of occupational or socioeco-

¹ Food insecurity is characterized by a limited ability to secure sufficient food (Holben, 2010) and has been defined as "limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways" (Anderson, 1990, p. 1598).

omic standing, should enjoy equitable access to public green space (Nicholson, 2004). Through their visionary plan for Baltimore's park system, the Olmsted brothers preserved the possibility for future development of community gardens and green spaces within the fabric of the city.

Indeed, over the years, many organizations around the city have worked to further this vision of a verdant, healthy, urban environment. In recent years, much effort has been targeted toward assisting citizen-led greening projects,² including community gardens. However, such support is often limited by individual organizational capacity and geographic focus. Several gardens have failed as program funds ended, gardeners moved on, or resources became more difficult for residents to secure. Other threats to garden existence include loss of land due to redevelopment of city-owned parcels, soil contamination by lead and other toxins, and perceived lack of safety at garden sites.

History of the Community Greening Resource Network

Community-led greening projects existed in Baltimore well before the establishment of CGRN. A 2002 inventory and survey of community-managed open spaces in Baltimore (Parks & People Foundation, 2002b) found evidence of 60 active citizen-led greening projects within the city.³ In a subsequent survey (Parks & People Foundation, 2003), representatives of 50 such projects were asked to provide additional information about their gardens. Nearly half of survey respondents (46%) characterized their greening projects as flower gardens or beautification projects, while a smaller percentage (28%)

² Such greening projects take a variety of forms, but are all characterized by citizen-initiated efforts to enhance, restore, or beautify urban landscapes through the installation of plants. Examples of greening projects include street-tree plantings, vacant-lot reclamation projects, curbside flowerpots, and community gardens.

³ This inventory used a mixed-methods research approach consisting of site visits, telephone interviews, written surveys, and information-sharing among local organizations. As with any inventory effort, it is likely that not all existing project sites were captured.

indicated that they were growing vegetables. These greening projects were located throughout Baltimore and were supported by a wide variety of organizations, including Parks & People, Extension, local nonprofits, community associations, and the city Department of Recreation and Parks.

In addition to providing basic information about citizen-led gardening projects, both surveys offered insight into the challenges faced by community greeners. Participants in the 2002 inventory cited their top five challenges as: (1) lack of a committed volunteer base, (2) water scarcity, (3) lack of equipment, (4) infrastructure needs, and (5) training needs. In response to these findings, Parks & People convened a forum of 70 urban gardeners to discuss the components of long-term project success. Attendees highlighted two such components: training opportunities, and material and infrastructural resources.

Having established baseline data regarding local greening projects and initiated a citywide dialogue with gardeners, staff at Parks & People began seeking a means of providing sustainable long-term support for urban greening initiatives. In 2007, staff from Extension and Parks & People attended the American Community Gardening Association annual conference in Boston and heard a presentation by the founder of Detroit's Garden Resource Program Collaborative (GRPC). The Detroit-based program was actively addressing many of the same needs and concerns expressed by Baltimore community gardeners. Moreover, numerous similarities between Detroit and Baltimore (e.g., socioeconomic characteristics, level of community gardening activity, high land vacancy rates, and pervasive food insecurity) suggested that the GRPC model could be successfully adapted to Baltimore. Parks & People and Extension staff interviewed program representatives from Detroit and developed a proposal to adapt Detroit's model for use in Baltimore. This proposal was then presented to Baltimore stakeholders, including members of the city's greening community, garden advocates, nonprofit organizations, and resident groups. Response to the proposal was enthusiastic, and Parks & People and Extension began making

plans to develop and implement a garden resource network in Baltimore.

The Community Greening Resource Network (CGRN) was developed in fall 2008. A three-year plan was drafted and Parks & People and Extension recruited an AmeriCorps*VISTA member to implement the plan. The VISTA member researched and communicated with several community garden support programs around the country. Continued contact with Detroit-based GRPC staff and stakeholders was very instrumental in informing CGRN development plans.

Additional momentum for establishing CGRN came from within Baltimore City government itself. In response to an October 2006 City Council resolution (City of Baltimore, 2006), the Baltimore City Council Task Force on Childhood Obesity was formed to assess the childhood obesity crisis. The resulting task force report drew attention to neighborhood-based food production as a possible means of improving childhood nutrition, and stated that "gardens should be developed on vacant city-owned lots and can be organized by neighborhood groups or non-profits" (Garrett, Gittelsohn, & McGill, 2007). The Baltimore City Food Policy Task Force, jointly established by the Health Department and the Department of Planning in 2009, identifies means for Baltimoreans to access affordable healthy food and highlights community gardens as one such food source (City of Baltimore, 2009a).

CGRN's Organizational Infrastructure

The Model: Detroit's Garden Resource Program Collaborative

Detroit's Garden Resource Program Collaborative (GRPC) is a multitiered, decentralized, stakeholder-driven program that coordinates numerous state, city, neighborhood, and individual initiatives to combat poverty through community gardening. The GRPC supports over 500 family, school, and community gardens in Detroit and Highlandtown, Michigan, by providing resources and information that empower residents to grow, harvest, prepare,

and preserve food (Atkinson, 2009). Through the large network, participating gardeners receive basic resources, including seeds and locally grown transplants, garden-based education, and opportunities to connect with other growers.

Detroit's program consists of a basic framework of opportunities for gardeners to access resources. Evaluation is integrated directly into every aspect of the program, allowing the quality and quantity of resources delivered to change based on evolving needs. Multiple entry points enable people to become involved in individualized capacities. Core partners include a local nonprofit and Michigan State University. A number of other organizations also contribute in a variety of ways.

CGRN's Structure: A Partnership-Based Approach

The Community Greening Resource Network provides an organized system by which community gardeners and greeners can access educational and material resources. A written memorandum of understanding between Parks & People and Extension lays the foundation for collaborative oversight of the program. Parks & People houses CGRN at its headquarters and provides administrative and funding support; Extension provides access to research and evaluation tools, a skilled volunteer base, and connections to the University of Maryland and the state of Maryland. Through the first two years of the program's operation, 2008–2010, both organizations jointly supervised the CGRN coordinator, facilitated development of the CGRN advisory committee, promoted CGRN membership and programs to respective constituencies, and developed strategies for acquiring and distributing resources to CGRN members.

Over 26 partner organizations are involved in CGRN. Partners include community organizations, watershed protection groups, afterschool providers, for-profit and nonprofit greening groups, charitable foundations, city agencies such as the Office of Sustainability, and volunteer organizations. These groups support urban gardeners by providing education, funding, plant material, or tools. Each participating organization completes an annual partnership agreement with CGRN (see

appendix A) detailing what the organization will contribute to the network over the course of the year. Their partnership in CGRN allows all CGRN members access to their resources; in return, their programs are advertised to CGRN's citywide audience. This collaboration among existing organizations has allowed project partners, in many cases, to better serve their constituencies. By amplifying partners' ability to reach intended audiences, and providing an array of opportunities for public participation, CGRN ensures that collaborating organizations derive institutional benefits from their affiliation with the network. The problem of "slippage," a disparity between policy and practice that occurs in community collaboration when individual organizations try to protect their interests (White & Wehlage, 1995), is thereby avoided.

Stakeholder-Led Advisory Committee

Hardy (1998) states that an effective advisory committee should work within "mutually-agreed upon directions and boundaries." The 15 member CGRN advisory committee includes gardeners enrolled in the program, community leaders, and representatives from school gardening programs, greening organizations, and city agencies. The advisory committee meets quarterly, evaluating and modifying program practices in order to ensure that CGRN continues to meet the needs of low-income community gardeners.

Program Goals and Activities

According to Ecotrust (2010), fair access to knowledge and resources, full participation in one's community, and self-determination in choosing a life path build local assets and result in reduced socioeconomic disparities. By supporting community gardens and encouraging citizen involvement in neighborhood revitalization, CGRN seeks to achieve such a transformation in Baltimore. Specifically, CGRN aims to effect long-term changes in the availability of healthy food sources and to increase self-reliance in Baltimore's population by promoting community gardens as a system for local food production, amplifying people's exposure to healthy food and gardening practices, and encouraging positive social inter-

action between people of diverse backgrounds and interests. The program’s goals, objectives, activities, and 2010 outcomes are summarized in figure 1 (next page).

CGRN membership is open to all members of the public. A tiered system of membership categories, with corresponding fees and benefits, enables members to select the level of involvement and the types of services that best suit their needs (see figure 2). Figure 3 displays CGRN’s 2010 members by membership type. Grant funding has enabled CGRN to keep membership fees for community gardens very low; at present, a community garden pays \$10.00 in annual fees. This modest fee ensures that financial status does not serve as a barrier to participation. It also supports the philosophy of “cross-fertilization” between gardens: when money is not a deciding factor, people may be more apt to share their resources, trade a skill, or volunteer time in exchange for another resource needed in the garden. Enrollment for all membership types is available year-round; the membership fee, a member enrollment form, and garden site photos are submitted annually. Gardens also agree to participate in an annual site visit through CGRN’s Site Share program.

CGRN’s members live and garden in diverse neighborhoods and vary in income level, ethnic background, educational attainment, gender, and age. Parks & People and Extension constituencies were initially targeted as the primary beneficiaries of the program. The program was advertised to the constituencies of all partners,

promotional brochures were distributed, staff attended many community meetings, and listings were posted with various newspapers. Figure 4 (page 10) displays a map of all CGRN Community Garden and Schoolyard Garden members in Baltimore City during 2010–2011. As the map demonstrates, member sites are distributed across the city. Many are located in neighborhoods characterized by limited access to forest patches and parks, suggesting that they are providing valuable green space in heavily urbanized areas.

Figure 2. CGRN Membership Categories, Annual Fees, and Benefits

Membership Category	Annual Fee (USD)	Benefits
CGRN Advocate	\$5.00	Subscription to quarterly newsletter, events calendar, and monthly email blasts Access to members-only areas of CGRN website Discounts on workshops and educational programs Invitations to CGRN members-only events
Private/Family Garden	\$15.00	All above benefits Free plants and supplies at CGRN Give-Away Days
Community Garden	\$10.00	All above benefits Free tool loans at Community Tool Banks Technical assistance and consultation
Schoolyard Garden	\$20.00	All above benefits Curricular resources for schoolyard gardening programs

Figure 3. 2010 CGRN Members by Membership Category

Membership Category	2010 Members	Percentage of Total Membership
CGRN Advocate	29	14.8%
Private/Family Garden	36	18.4%
Community Garden	93	47.4%
Schoolyard Garden	38	19.4%
Total members	196	

Figure 1. CGRN Goals, Objectives, Program Activities, and Measurable Outcomes in 2010

Overarching Goals	Program Objectives	Program Activities	2010 Measurable Outcomes
Increase access to healthy food for Baltimore residents, prioritizing low-income communities with limited access to sources of affordable, healthy food.	Increase both the number of community gardens in Baltimore City and the total number of residents involved in community gardening.	Assist city residents in developing new community gardens.	2 community gardens and 1 schoolyard garden established with CGRN assistance.
		Assist gardens with recruiting new participants by publicizing garden-based volunteer opportunities, special events, and news items.	10 CGRN volunteer workdays engaged 270 volunteers, providing 550 hours of service. 225 events publicized through quarterly newsletters and events calendars, member website, and monthly email blasts.
		Inform constituents of grant opportunities to fund citizen-led greening and gardening projects.	CGRN members applied for and were awarded grants from Parks & People, Baltimore Community Foundation, and Chesapeake Bay Trust.
Improve the quality of life in Baltimore by transforming vacant lands into productive, safe green spaces, thereby enhancing the city's green infrastructure and reducing urban blight.	Increase the quantity and accessibility of material and educational resources for community gardeners, thereby increasing the capacity of existing gardens and supporting the success of newly established projects.	Distribute garden supplies to CGRN members through regular Give-Away Days.	Approximately 5,300 seedlings, 3,800 seed packets, compost, wood chips, and other supplies distributed to 100 gardens.
		Operate 5 Community Tool Banks in geographically distributed areas of Baltimore City, providing free loans of hand tools for community projects.	Approximately 50 gardens borrowed tools from Community Tool Banks.
		Host free or low-cost skill-building workshops on gardening topics.	Over 100 CGRN workshops held over the course of the year.
		Provide curricular materials for teachers operating schoolyard gardening programs.	38 School Garden members used CGRN resources.
Build the capacity of citizens to participate actively in the revitalization of urban neighborhoods; build sense of community and shared purpose among residents.	Engage CGRN partners and members in all aspects of program management and operations, contributing to long-term program sustainability.	Host quarterly advisory committee meetings to guide policies, procedures, and program offerings.	Representatives of 15 partner organizations participated in 4 advisory committee meetings.
		Host annual focus group sessions to solicit evaluation from CGRN members.	Over 40 CGRN members attended 4 focus group sessions; their evaluations were used to plan programming for 2011.
		Host annual CGRN Summit to engage partners and members in strategic planning process.	20 CGRN partners and members attended CGRN Summit.
		Through Site Share program, engage members in visiting and collecting data from other CGRN gardens.	20 volunteers completed site visits of CGRN member sites.
		Recognize and celebrate member accomplishments at Parks & People's annual Community Greening Celebration.	Over 100 people attended the Community Greening Celebration; 15 CGRN members and gardens were nominated for or received greening awards.

CGRN's support framework includes three basic components: materials (seeds, plants, hand tools, and other supplies), education (workshops and trainings), and connections (tours, celebrations, and meetings).

Materials — Seeds, Plants, and Tools

At least four times per year, CGRN hosts a Give-Away Day at a partner organization or garden. Representatives from member gardens pick up a share of plant materials and other supplies. Plants and seeds are donated from area nurseries and garden stores, other member gardens, youth programs, seed-donation programs, and from seed-growing workshops. Businesses have been very supportive; in return for donations, they receive a tax deduction, advertising space, and the positive regard of donation recipients. One local business provided samples of a soil amendment product in 2010 and has since increased its customer base. These items are augmented by vegetable seedlings that CGRN arranges to grow specifically for distribution to members. Attendees are also encouraged to bring surplus plants and supplies to Give-Away Days to trade with other gardeners. In addition to providing gardeners with necessary resources, Give-Away Days are intended to nurture a culture of mutuality among members, building a sense of shared purpose and ultimately contributing to the long-term viability of the program.

CGRN also provides free loans of hand tools for members through its Community Tool Bank initiative. CGRN currently coordinates tool banks at five host organizations and is planning additional tool banks in underserved areas of Baltimore. Host organizations make their tools available for use by community-based greening groups; in exchange, CGRN provides a tool inventory, specialized training for tool bank managers, and administrative support. While many tools have been purchased through grant funding, others have been secured through in-kind donations from individuals and local businesses. To date, tool theft has been virtually nonexistent, demonstrating the effectiveness of CGRN's membership-based system. The

tool sign-out system permits members to borrow tools free of charge for up to one week and requires that the borrower replace any broken or misplaced items. Due to maintenance costs and potential liability issues, power tools are not currently available for loan. However, CGRN is considering establishing a power-tool lending cooperative, whereby gardens with access to tillers and other power tools would make these implements available for use by other CGRN members. In exchange, borrowers would be required to provide reciprocal support to other gardens within the network.

Education — Workshops and Trainings

More than 15 organizations in Baltimore City provide education on gardening topics throughout the year. Monthly CGRN news blasts and a quarterly newsletter advertise upcoming citywide workshops, funding opportunities, member highlights, and other pertinent garden-related information. The quarterly shared calendar of events is color-coded by topic and month. By aggregating information about upcoming events and opportunities, CGRN provides an important service for Baltimore residents. Reminders are sent out regularly, and some members are telephoned on a regular basis to let them know about events on topics of special interest.

In addition to providing information to CGRN members, the shared events calendar serves two internal purposes. First, it enables participating organizations to coordinate their schedules so that event topics, locations, and times are distributed throughout the year, ensuring that offerings from different organizations complement, rather than compete against, one another. This strategy ensures that city residents are presented with a wide variety of educational opportunities and helps boost attendance at events. Second, having a shared events calendar enables participating organizations to determine gaps in programming. CGRN itself then develops programming to fill any gaps. Workshops and trainings are developed based on CGRN member feedback, and each new workshop is

The seemingly intractable challenges of urban blight and pervasive food insecurity may be successfully combated by effective community revitalization efforts, like those employed by CGRN. For example, the Whitelock Community Farm (figure A) occupies a formerly vacant lot in Baltimore's Reservoir Hill neighborhood, while at the Montessori Public Charter School garden (figure B), vegetables, fruits, bees, and chickens are raised in a schoolyard setting.



Figure A. Whitelock Community Farm was established in 2010 with the goal of providing fresh produce for residents in Baltimore's Reservoir Hill neighborhood.
Photograph courtesy of Whitelock Community Farm.



Figure B. The Baltimore Montessori Public Charter School has established a schoolyard garden that includes vegetable beds (pictured above), a fruit tree orchard, honey bee hives, and a flock of heritage chickens. Garden activities are linked to the school's educational curriculum, and students play an active role in garden management and maintenance.
Photograph courtesy of Parks & People Foundation.

taught and hosted by a different garden, partner organization, or volunteer. Past workshops have included Raised Bed Construction at the Remington Village Green, taught by an experienced gardener; Community Organizing 101 at a community church, taught by a regional nonprofit organization; and Growing in Greenhouses, presented by an Extension agent at a schoolyard garden site.

Connections — Tours, Celebrations, and Meetings
CGRN provides members with many opportunities to share experiences and learn from each other. Volunteer Work Days, for example, occur one day per month during the growing season and rotate among different member gardens. Volunteers typically include members of other community gardens, interested citizens, school groups, and

one-time volunteer groups in search of service opportunities. Celebrations provide opportunities for members to share, and be recognized for, their efforts. For example, the spring Urban Agriculture Gala features speakers, local musicians, and food grown in Baltimore City, and the fall Parks & People Community Greening Celebration includes an awards ceremony to honor the achievements of Baltimore gardeners.

In order to foster further connections among members, CGRN maintains an interactive web-based map showing garden locations. When a user clicks on a garden location, additional information is presented, including site images, garden contact information, and visiting hours. This map also allows CGRN to schedule tours highlighting specific neighborhoods or types of gardens. Recently, it was used as a primary planning tool for the Charm City Garden Tour, which introduced

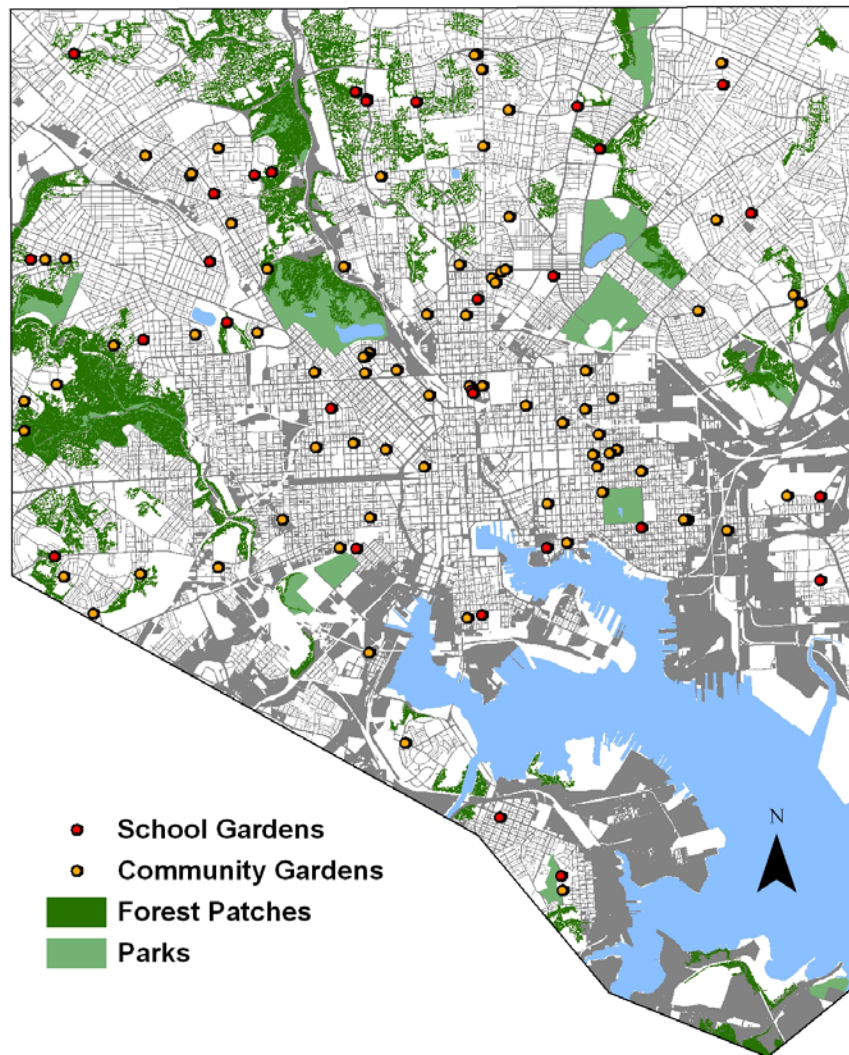
participants to several community gardens in one subwatershed within Baltimore City. CGRN also publishes an annual membership directory that is distributed to all members and partners.

While CGRN's organizational partners provide many of the resources made available through the network, CGRN members themselves are frequently engaged as partners in the development and implementation of the program. Members contribute by participating in seasonal focus groups, conducting garden site visits, hosting workshops, volunteering at plant distribution days, and growing seedlings for other gardens. The CGRN Summit, an annual strategic planning meeting, engages all program constituents in evaluating the past year's progress and planning for the future.

Ongoing Program Evaluation

CGRN is designed to continually adapt and expand based on data and qualitative member feedback. Rather than offering a static

Figure 4. Map of 2010-2011 CGRN Community and Schoolyard Garden Sites, displaying locations of affiliated community and schoolyard gardens in Baltimore City. As the map indicates, these garden sites are distributed geographically throughout the city.



Map by A. Reddy, Parks & People Foundation, 2011.

portfolio of programs and resources, CGRN is flexible, providing diverse points of entry that allow participants to determine their own level of participation. Using a logic model (see appendix B), staff members from Parks & People and Extension have developed measures and tools for program evaluation. Staff members from both organizations meet once per year to interpret data and determine whether objectives have been met. An extensive Microsoft Access database is used to track site and gardener information, volunteer hours, workshop attendance, and recommendations from feedback sessions. Additional data is collected through workshop evaluations and the CGRN membership enrollment form, which provides valuable information about member characteristics.

This information has been made available to individuals and organizations researching food security, urban revitalization, and other relevant topics. CGRN data was used by city government staff to define vacant-lot redevelopment policies and assist with citywide sustainability goals (City of Baltimore, 2009b). The Johns Hopkins University's Center for a Livable Future, a research center focused on public health matters, has overlaid community garden data with health statistics to direct funds to the neediest neighborhoods. Data collected by CGRN has played a role in preventing the sale and redevelopment of parcels occupied by community gardens.⁴ CGRN has also been discussed and cited in a number of recent masters' theses.⁵

⁴ For example, CGRN and its partners assisted members of the Ash Street Community Garden to successfully retain access to two adjacent parcels that, though legally under the garden's care through Baltimore's Adopt-a-Lot program, had been mistakenly made available for purchase by developers. Since securing long-term access to these parcels, the Ash Street Community Garden has been able to significantly expand its activities. In addition to providing both individual and cooperatively run garden plots, the group now hosts workshops and special events and has become a community hub.

⁵ For example, in: Corrigan, M. P. (2010). *Growing what you eat: Developing community gardens and improving food security*. Thesis presented to the faculty of College of Arts and Sciences of Ohio University.

At this early juncture, it is not possible to know whether the program will be successful over the long term. At present, however, only three years since CGRN was initiated, we are meeting and in many cases far exceeding our initial goals. Between 2009 and 2010, community garden membership in CGRN increased by 38.8% and schoolyard garden membership increased by 100%. Resource distribution has kept pace with membership numbers. For example, participation in monthly Volunteer Work Days increased by 95% from 2009 to 2010, enabling CGRN to provide greater labor support for garden projects. The volume of plants and supplies distributed at Give-Away Days, the number of tools loaned through Community Tool Banks, and the number and range of CGRN-sponsored workshops and special events also increased during this period.

Though we may have to wait several years for conclusive data to demonstrate the connection between CGRN's work and reduced poverty levels or health impacts, gardeners and other residents are nevertheless benefiting from the collaborative efforts of this program. Each year, representatives from member gardens have actively participated in feedback sessions and garden site visits. At the 2009 member focus groups, one participant expressed appreciation at being "part of a large, useful, and active network and community." Martha Barss, a CGRN member who manages a vegetable gardening program at a low-income school, said, "We are definitely benefitting from belonging to CGRN. Not only are the tools a great benefit...but we also connect to others in the community who support the same initiatives we do." The Unity Community Garden, established with CGRN's assistance in a neighborhood whose three public schools receive Title 1 services (Baltimore City Public Schools, 2009), has reported increased homeownership in its neighborhood. As a member of the Unity Community Garden noted, "A couple came up to me and said that they are seriously considering buying a house on the block even though there are several abandoned properties, because they saw a garden work day and look forward to living across from the green space."

Securing Long-Term Membership

Each year, CGRN members are presented with additional ways to become involved in and benefit from the program, encouraging membership renewal. For example, second-year members may apply to work with a skilled group of volunteers who assist with garden infrastructure. Third-year members may apply for partial scholarships towards advanced horticultural training courses. These opportunities, as well as continued access to CGRN's basic array of program features, build the capacity of long-term members, thereby contributing to the stability and success of individual greening projects. CGRN itself also derives benefits from the long-term participation of its members. Long-term members frequently serve as unofficial program ambassadors, promoting CGRN to potential participants as well as to the general public. As members gain gardening expertise, they also give back to CGRN by teaching workshops and mentoring newer gardeners. Finally, CGRN is able to collect longitudinal data on its long-term members, enabling staff to evaluate the program's impact and develop an accurate picture of community gardening in Baltimore.

Securing Long-Term Staff Funding

Thus far, CGRN has subsisted on a relatively modest operating budget (figure 5), capitalizing on existing resources and securing additional resources through donations. The key to CGRN's initial development has been the recruitment of a series of three AmeriCorps*VISTA volunteers, each of whom has served a year-long term as full-time program coordinator. The CGRN coordinator is responsible for all aspects of program administration, including

membership coordination, database management, Community Tool Bank oversight, volunteer training and recruitment, special event coordination, and fundraising. Without the dedicated service of our AmeriCorps*VISTA volunteers, initial development of CGRN would simply not have been possible.

Continued staff funding is necessary, however, to ensure future program operations. Detroit's program is partially supported by its host organization, The Greening of Detroit, and also by the AmeriCorps State program and federal grants. Many of CGRN's programmatic components feasibly could be funded by local sources. However, such local grants are often not large enough to support staff time and the myriad overhead costs associated with program administration. As is true for many nascent nonprofit initiatives, staff funding currently presents one of CGRN's largest challenges.

Future Directions and Additional Partners

As participation in CGRN grows, program staff,

Figure 5. CGRN Summary Program Budget, 2009–2011

	2009	2010	2011
Income			
Nongovernment Grants	\$8,333	\$10,000	\$18,155
Government Grants	\$19,467	\$19,467	\$12,978
In-Kind Contributions	\$7,000	\$7,000	\$10,000
Program Fees	\$1,500	\$2,000	\$2,500
Special Event Revenue (net)	\$200	\$200	\$200
Total Income	\$36,500	\$38,667	\$43,833
Expenses			
Salaries	\$27,466	\$27,466	\$30,000
Benefits	\$6,084	\$6,084	\$6,645
Program Expenses	\$2,600	\$4,567	\$6,438
Publicity, Fundraising and Printing	\$150	\$250	\$350
Travel	\$200	\$300	\$400
Total Expenses	\$36,500	\$38,667	\$43,833

members, and collaborators are actively seeking opportunities to expand offerings and develop new partnerships. Accurate information about soil fertility and toxicity, community leadership training, and GPS-coordinated garden maps are member-generated ideas for future expansion of the program.

Developing our partnership with the University of Maryland, United States Forest Service, United States Geological Survey, and the Baltimore Ecosystem Study will give us access to detailed soil and other environmental information. Lead and arsenic levels in urban gardens are a source of concern, and with accurate knowledge about the safety of each garden location, we can prevent unnecessary risks. Partnerships with community resource centers will allow us to schedule leadership trainings. Developing effective leaders in each of Baltimore's neighborhoods will help prevent garden collapse and has been shown to increase the overall capacity of a neighborhood. One of CGRN's current partners, Baltimore Green Space, is spearheading a community action program to map Baltimore's gardens and link them to lot and parcel numbers, providing information that will aid us in protecting gardens from redevelopment. Also planned for 2011 is a welcoming committee to introduce new members to CGRN. These and other ideas for future directions were generated and discussed at the annual focus groups and strategic-planning meeting.

Furthermore, far-reaching changes to Baltimore City's zoning code set to take effect in 2011 will permit community gardens and urban agriculture projects in most areas and will allow on-site farm stands for the first time in the city's history (City of Baltimore, 2010). These zoning changes have the potential to bring community-grown fruits and vegetables to an unprecedented number of residents in Baltimore's low-income communities.

Finally, CGRN hopes to contribute to the establishment of successful garden resource networks in other cities. Staff from Grassroots Gardens of Buffalo and Brooklyn Greenbridge, both in New York state, have sought advice recently in

replicating "CGRN on a smaller scale" and working with their local Extension coordinator and Master Gardener programs.

Recommendations

Based on our experience in implementing the CGRN program, the authors would like to offer the following recommendations for groups interested in establishing similar resource networks:


1. **Evaluate the level of community need and interest.** Convene a meeting of community members and leaders to discuss current needs and identify gaps in existing support for citizen-led greening initiatives. Use the data generated by these conversations to identify the role a resource network might play in meeting current needs. In addition to helping you plan your program's offerings, a firm statement of need, supported by measurable data, is an essential aid in securing financial support.
2. **Garner meaningful support from project partners and clearly define all partners' roles.** Engage nonprofit organizations, government agencies, private businesses, educational institutions, and other service providers in your area to discuss how existing services could be better coordinated in response to identified community need. Establish what resources each partner will make available through the resource network, and secure written partnership agreements or memoranda of understanding from primary partners.
3. **Establish shared governance and program oversight.** Establish a program advisory committee and invite partners and community members to play an active role in guiding program policies, procedures, and overarching goals. Hold advisory committee meetings in a convenient location and invite partners to host certain meetings at their own headquarters. To the extent possible, decentralize procedures so program activities are not reliant on one organization. Solicit the input of the program's general membership through annual focus

group sessions, planning meetings, and membership surveys.

4. **Take advantage of opportunities to secure staffing support.** Establishing and administering a resource network takes time, and funding for staff salary can be difficult to secure. The AmeriCorps*VISTA program, operated by the Corporation for National and Community Service, places young adults in year-long, full-time positions at nonprofit agencies around the country. VISTA volunteers can play a major role in establishing new initiatives, and your organization may be eligible to host up to three VISTA volunteers.⁶
5. **Call on the expertise of others with experience in implementing such programs.** Staff members from the Greening of Detroit provided invaluable counsel during the early stages of CGRN's establishment, as did representatives of the Community Food Security Coalition. We encourage you to seek the guidance of those who have gone before you; the value of this advice cannot be overstated.
6. **Determine baseline indicators of poverty and health with which to evaluate the program.** Collecting accurate evaluation standards and linking your program's goals to measurable outcomes can be a great benefit in securing support from local government and financial sources. It might be helpful to partner with a local university or public research center to develop these indicators and to help measure the effect and impact of the program over the long term.

Conclusion

CGRN is an example of a stakeholder-driven coordinating program that identifies the needs of community gardeners and provides access to resources available from organizations, businesses, and peers within the gardening community. By


doing so, CGRN provides comprehensive, citywide support for community gardeners and empowers residents to play an active role in urban revitalization. Key program components include partner and member relationships; materials, education, and connections provided for and between gardeners; and ongoing program evaluation. By building citizen capacity to effect positive change, programs such as CGRN may enable cities to become beautiful, green, safe places where all residents enjoy the environmental, socioeconomic, and health benefits of a thriving green infrastructure. 

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⁶ For more information on the AmeriCorps*VISTA program, see http://www.americorps.gov/for_organizations/apply/vista.asp

Appendix A. Partner Agreement Form for the Community Greening Resource Network



UNIVERSITY OF MARYLAND EXTENSION Solutions in your community



PARKS & PEOPLE FOUNDATION

Partner Agreement Form

The Community Greening Resource Network (CGRN) brings together the resources of many organizations to more effectively and efficiently support Baltimore's community greeners. This Partnership Agreement Form is valid for one calendar year and will be reviewed annually.

CGRN Goals:

- Promote urban agriculture and greening in Baltimore as a tool for revitalizing communities and increasing access to healthy food and opportunities for outdoor recreation;
- Create an organized program through which community gardeners are provided with access to information, training, and material resources;
- Coordinate existing efforts of greening organizations to advertise and increase participation in educational activities;
- Increase the quantity of material resources available to community greening stewards;
- Promote the successful management of green spaces through regular site visits and provision of training opportunities; and
- Recognize and reward Baltimore's urban gardens for their commitment and dedication to their communities.

I, _____, on behalf of my organization _____,

agree that my organization will receive the following from CGRN:

<input type="checkbox"/> Space on the monthly calendar, distributed to all members, for relevant programming	<input type="checkbox"/> Direct input in CGRN's policies and procedures through the Advisory Committee
<input type="checkbox"/> Opportunities to have my events hosted at CGRN sites	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Name/logo on CGRN documents and at CGRN events	<input type="checkbox"/> Other: _____

In return, my organization agrees to provide or contribute the following to CGRN:

<input type="checkbox"/> Participate in regular calendar setting meetings and add events to the calendar	<input type="checkbox"/> Use the CGRN sign-in sheet and evaluation form at events
<input type="checkbox"/> Manage Community Tool Banks and facilitate tool rentals	<input type="checkbox"/> Provide space for workshops
<input type="checkbox"/> Complete Site Shares for new members	<input type="checkbox"/> Distribute CGRN membership forms and encourage membership
<input type="checkbox"/> Solicit and work with CGRN sponsors	<input type="checkbox"/> Donate plant material to the give-away days
<input type="checkbox"/> Solicit new CGRN partners	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Provide volunteers for program components	<input type="checkbox"/> Other: _____

Name: _____

Organization: _____

Signature/ Date _____

Appendix B. Logic Model for the Community Greening Resource Network

Situation	Inputs	Activities	Outputs	Outcomes		
<p>Access to education and resources</p> <ul style="list-style-type: none"> • Insufficient access to necessary gardening resources • Educational opportunities inaccessible <p>Public health</p> <ul style="list-style-type: none"> • High food costs • High quality food not sold in low-income neighborhoods • High risk of diet-related chronic disease among low-income residents • Increasing rates of obesity among low-income residents <p>Quality of life</p> <ul style="list-style-type: none"> • Vacant land creates blight • Insufficient green infrastructure in urban areas • Limited opportunities for neighbors to work together 	<p>For all objectives</p> <ul style="list-style-type: none"> • Understanding of requirements for successful urban food gardening • Infrastructure (platform for interorganizational communication and coordination, easily accessible material, and information-distribution sites) • Staff time • Federal, state, and private funds • Staff and community expertise • Resources contributed by businesses and organizations (plants, seeds, tools, volunteer time) • Stakeholder-led program evaluation and input 	<p>Access to education and resources</p> <ul style="list-style-type: none"> • Coordinate and provide material and educational resources for urban gardeners • Provide training and opportunities for low-income gardeners • Involve stakeholders in program operations, administration, and evaluation <p>Public health</p> <ul style="list-style-type: none"> • Make locally grown produce available to low-income residents via community and schoolyard gardens <p>Quality of life</p> <ul style="list-style-type: none"> • Encourage transformation of blighted vacant lands into productive, safe, and accessible urban green spaces • Provide opportunities for residents to work together to revitalize communities <p>Who we reach</p> <ul style="list-style-type: none"> • Low-income gardeners • Underserved neighborhoods • Baltimore City consumers • Volunteers • Educators • City government, nonprofit and community organizations, public agencies • Federal, state, and private funders • Private businesses 	<p>Access to education and resources</p> <ul style="list-style-type: none"> • Seed and plant Give-Away Days • Community Tool Banks • Public calendar of workshops and events offered citywide • Regular member communication with opportunities, information, and announcements <p>Public health</p> <ul style="list-style-type: none"> • Educational programming focused on gardening and nutrition • Material and technical support for urban food gardening activities <p>Quality of life</p> <ul style="list-style-type: none"> • Material and technical support for expansion of green infrastructure • Regular volunteer work days • Opportunities for positive social interaction 	<p>Knowledge and resources</p> <ul style="list-style-type: none"> • How to find plants, tools, and workshops • Low-cost methods for growing food <p>Public health</p> <ul style="list-style-type: none"> • Increased knowledge of positive life choices • New healthy food choices <p>Quality of life</p> <ul style="list-style-type: none"> • Improved gardening skills • How to gain access to vacant land for community use • How to connect with other gardeners 	<p>Actions</p> <p>Access to education and resources</p> <ul style="list-style-type: none"> • Adopt new skills and apply knowledge • Donate time working in other community gardens and contribute to program research • Participate in resource-sharing <p>Public health</p> <ul style="list-style-type: none"> • Involve low-income community members new to gardening • Choose and consume healthy, locally grown produce • Encourage healthy food choices among others <p>Quality of life</p> <ul style="list-style-type: none"> • Active stewardship • Start new gardens • Community engagement • Share garden experiences 	<p>Conditions</p> <p>Access to education and resources</p> <ul style="list-style-type: none"> • Higher productivity of urban food gardens • Increased opportunities for low-income communities to grow fresh food • Alleviation of poverty <p>Public health</p> <ul style="list-style-type: none"> • Reduced obesity and improved nutrition and health • Healthier, more accessible food supply <p>Quality of life</p> <ul style="list-style-type: none"> • Greener environment • Better quality of life in urban communities • Opportunities for underserved residents to contribute significantly in building public green spaces

Assumptions: By providing material, technical, and educational resources for low-income gardeners, and by providing support for garden-related entrepreneurship, CGRN will improve food security, positively affect public health, enhance Baltimore's green infrastructure, and encourage community gardening activity among residents.
External factors: Presence and availability of vacant land for gardening use.

References

- Anderson, S. A. (1990). The 1990 Life Sciences Research Office Report on Nutritional Assessment. *Journal of Nutrition*, 102, 1559–1660.
- Atkinson, A. (2009). Garden Resource Program Collaborative. Retrieved from http://www.detroitagriculture.org/garden_resource_program.html
- Baltimore City Public Schools. (2009). *Title 1 Schools for 2009–2010*. Retrieved from http://www.baltimorecityschools.org/Departments/Chief_Academic_Officer/PDF/Title1SchoolsSY0910_Web.pdf
- Black, M. M. (2008). *Food Security: Ensuring the Health of Baltimore's Babies*. Baltimore, MD: Growth and Nutrition Division of the Department of Pediatrics at the University of Maryland School of Medicine.
- Brown, K. H., & Carter, A. (2003). *Urban agriculture and community food security in the United States: Farming from the city center to the urban fringe*. Retrieved from <http://www.foodsecurity.org/PrimerCFSCUAC.pdf>
- City of Baltimore. (2006). *City council resolution 06-0230R*. Retrieved from <http://legistar.baltimorecitycouncil.com/detailreport/?key=3173>
- City of Baltimore. (2009a). *Department of planning: Baltimore City's food policy task force*. Retrieved from <http://www.baltimorecity.gov/Government/AgenciesDepartments/Planning/FoodPolicyTaskForce.aspx>
- City of Baltimore. (2009b). *The Baltimore Sustainability Plan*. Retrieved from <http://www.baltimorecity.gov/LinkClick.aspx?fileticket=DtRcJL%2f1BcE%3d&tabid=128>
- City of Baltimore. (2010). *Baltimore Zoning Code: Draft 1.0*. Retrieved from <http://www.transformbaltimore.net/portal/zoning-apr-draft?tab=files>
- Ecotrust. (2010). *Reliable prosperity*. Retrieved from http://www.reliableprosperity.net/social_equity.html
- Garrett, A. Y., Gittelsohn, J., & McGill, A. (2007). *Report of the Baltimore City Council Task Force on Childhood Obesity*. Baltimore, MD: Baltimore City Council Task Force on Childhood Obesity.
- Hardy, C., & Phillips, N. (1998). Strategies of engagement: Lessons from the critical examination of collaboration and conflict in an interorganizational domain. *Organization Science*, 9(2), 217–230. doi:10.1287/orsc.9.2.217
- Holben, D. (2010). The concept and definition of hunger and its relationship to food insecurity. *Journal of the American Dietetic Association*, 110(9), 1368–1377. doi:10.1016/j.jada.2010.07.015
- Hunger Task Force. (2008). Retrieved from <http://www.hungertaskforce.org>
- Nicholson, C. (2004). Elegance and grass roots: The neglected philosophy of Frederick Law Olmsted. *Transactions of the Charles S. Peirce Society*, 40(2).
- Olmsted, F. L., & Olmsted, J. C. (1904). *Report upon the development of public grounds for Greater Baltimore*. Baltimore, MD: The Lord Baltimore Press.
- Parks & People Foundation. (2002a). *Neighborhood open space management: A report on the Vacant Lot Restoration Program in Baltimore*. Retrieved from http://www.parksandpeople.org/publications/special_reports/VLRP.pdf
- Parks & People Foundation. (2002b). *Community Garden Inventory*. Unpublished research; contact info@parksandpeople.org to receive manuscript.
- Parks & People Foundation. (2003). *Neighborhood open space management: Community greening survey and land trust strategies for Baltimore City*. Retrieved from http://www.parksandpeople.org/files/resources/2577_Neighborhood%20Open%20Space%20Management.pdf
- Project Locus. (2005). *Lively Stone Church of God in Christ and Community Center project description*. Retrieved from http://www.projectlocus.org/locus_stone%2001.htm
- Teig, E., Amulya, J., Bardwell, L., Buchenau, M., Marshall, J. A., & Litt, J. S. (2009). Collective efficacy in Denver, Colorado: Strengthening neighborhoods and health through community gardens. *Health & Place*, 15(4), 1115–1122. doi:10.1016/j.healthplace.2009.06.003
- Toldson, I. A. (2008). *Breaking barriers: Plotting the path to academic success for school-age African-American males*. Washington, DC: Congressional Black Caucus Foundation, Inc.
- U. S. Bureau of the Census. (2009). *State and County QuickFacts: Baltimore City, Maryland*. Retrieved from <http://quickfacts.census.gov/qfd/states/24/24510.html>
- U. S. Bureau of the Census. (2010a). *1960 census of population: Population summaries*. Retrieved from <http://www2.census.gov/prod2/decennial/documents/41983291.pdf>
- U. S. Bureau of the Census. (2010b). *State and County QuickFacts*. Retrieved from <http://quickfacts.census.gov/qfd/states.html>
- White, J. A., & Wehlage, G. (1995). Community collaboration: If it is such a good idea, why is it so hard to do? *Educational Evaluation and Policy Analysis*, 17(1), 23–38.

