An Investigation of Best-practices for the Establishment and Effectiveness of Youth Garden Programs

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Abstract

Urbanization and technological advancement has caused communities at large to reduce their exposure to the natural environment, contributing to a rise in lifestyle related disorders associated with inadequate nutrition and physical exercise. In an attempt to reverse this pattern, the establishment of youth gardening programs is gaining popularity throughout communities in the US. There currently is a great deal of momentum promoting the importance of the natural environment and physical activity – there are youth gardening programs being set up in locations such as local schools and local churches in an effort to help to educate the younger generation about the importance of the sustainability of natural resources and the food cycle to the continuing prosperity of Society.

This master's project examines the factors related to the establishment and effective operation of youth gardening programs. Open-ended interviews were conducted with administrators, founders and coordinators of 7 gardening programs in North Carolina and Utah that have a focus on the youth and/or community. All but one of the interviews was conducted face to face and each interview lasted between 1-2 hours. Key ideas and patterns from the interviews were identified through a standard qualitative data analysis method of classification and coding and categorizing the data. Principal themes from the interviews were recorded and cross-referenced with findings from the literature.

Results highlight that gardening programs targeted at the youth population are important in promoting environmental sustainability. Program structures range from an association with a school through to entrepreneurial initiatives targeting the teen population. Funding, staffing considerations, bureaucracy, establishing community partnerships and using appropriate engagement strategies are the main challenges limiting the success of programs. These issues can be addressed through appropriate planning, community engagement and 'learning' through accessing publicly available resources. There is definitely a place for youth gardening programs within Society and at the end of the day the success of these programs is due to the underlying enthusiasm and passion of the coordinators and all stakeholders associated with the project.
# Table of Contents

## Section 1. Overview

1.1. Introduction  
Pg. 4

1.2. Purpose  
Pg 7

1.3. Literature Review  
Pg 8

## Section 2. Methods

2.1. Empirical Interviews  
Pg 16

2.2. Background on Programs Interviewed  
Pg 19

## Section 3. Findings

Pg 26

## Section 4. Conclusion

4.1. Best Practice Recommendations  
Pg 44

## References

Pg 53

## Appendix

Pg 55
Section 1 – Overview

1.1 Introduction

Urbanization has had a conflicting influence on Society. On the one hand, it has led to great lifestyle advancements; however it has caused Communities at large to sever connection with the natural environment. Consequently this facilitated the prolific development of lifestyle related disorders associated with inadequate nutrition and physical exercise, which is contributing to a reduction in life expectancy (Centers of Disease and Control, 2009). This disturbing trend is most profoundly reinforced by the results from a US based obesity study conducted by Olshansky et al. (2005). This research concluded that ‘unless effective population-level interventions to reduce obesity are developed, the steady rise in life expectancy observed in the modern era may soon come to an end and the youth of today may, on average, live less healthy and possibly even shorter lives than their parents’.

In an attempt to reverse this concerning trend, the development of youth gardening programs is gaining popularity throughout communities in the US. There currently is a great deal of momentum promoting the importance of the natural environment and physical activity – led by initiatives such as the ‘Let’s Move’ (Let’s Move, 2010) campaign headed by First Lady Michelle Obama. In addition to this Federal movement, there are programs being set up in locations such as local schools and
local churches in an effort to help to educate the younger generation about the importance of the sustainability of natural resources and the food cycle to the continuing prosperity of Society.

Arguably the most prominent school-based gardening program in the US is the Edible Schoolyard program, developed by Alice Waters which uses gardens to educate middle school aged children about the origin, cultivation and cooking of food (The Edible Schoolyard, 2010). Another successful program is the Berkley Youth Alternatives Community Garden Patch in California (Lawson & Mmacia, 1995). This program uses employment to attract teens to assist in the maintenance of urban space providing at risk teens with income, job training, safe after school activity and increased self-esteem.

There are a number of innovative youth gardening programs operating throughout the US today, many of which focus on fostering life skills such as decision-making and independence. That being said, there are many challenges that can ultimately undermine the success and ability of a youth based gardening program to achieve outcomes. Hence, overcoming obstacles such as funding, stakeholder commitment, seasonality and staff management should not be underestimated and resolving these is vital to the sustainability of any program.

Youth gardening programs play an important role in addressing key issues associated with the sustainability of the quality of life of the human population.
Therefore, it is imperative that there is a clear commitment within the academic, political, commercial and environmental landscape to understanding the best practice of delivery of youth gardening programs in communities throughout the US.
1.2 Purpose

The main objective of this Master’s Project is to examine factors related to the establishment and effective operation of youth gardening programs. The broader purpose is to help facilitate increased establishment and improved management of these programs that offer increased youths’ understanding and appreciation of the natural environment.

Specifically, this objective will be achieved by:

- Consulting existing literature associated with youth gardening and community gardening programs;

- Conducting interviews with individuals associated with youth and community operated gardening programs in North Carolina and Utah: and

- Identification of ‘critical factors’ of youth based garden programs used to guide the development of a set of “best-practice” recommendations for youth garden programs in the U.S.
1.3 Literature Review

In general, the current lifestyle of individuals within the US and increasingly around the World has resulted in reduced exposure to the natural environment. This is strongly related to urbanization. Statistics from the 2006 US Census report revealed 83% of the US population lives in metropolitan areas. (Blair, 2008). Although there has been significant migration to urban districts, large segments of the population still experience levels of poverty and hunger. In addition to these historical issues, increased urbanization has brought about new concerns such as reduced community participation, resource constraints and an increasing disassociation with the natural environment, affecting children through to adults (Moore, 1995). The deficit of socio-environmental factors is thought to be a major contributing force for rising rates of ‘lifestyle related’ disorders such as obesity (Olshansky et al., 2005). The incidence of overweight and obesity related disorders is growing at alarming rates in the Western World, particularly amongst school-aged children. The occurrence of overweight children between the ages of 6-19 years has more than quadrupled since 1980 – increasing to 16% (National Center for Health Statistics, 2006).

Considering this context, there has been an escalating focus on re-educating individuals about the importance of the natural environment – linking this with good nutrition and physical activity. One of the leading examples of this is the recent nation-wide campaign ‘Let’s Move’ (Let’s Move, 2010) led by the current First Lady,
Michelle Obama. A small component of this initiative involves convincing local chefs to donate their time and expertise to assisting schools in creating healthy, cost effective and appealing food choices for young students.

In addition to national strategies, the construction of local gardens within communities is now gaining significant traction. Research suggests that community gardens enhance nutrition and physical activity and promote the role of public health in improving quality of life. (Twiss, et al., 2003). Additionally community gardens can also be used as a form of civic agriculture proving an alternative supply of food to lower socio-economic groups. (Saldivar-Tanaka & Krasny, 2004). In other words, increasing access to the natural environment helps to address several of the determinants associated with obesity.

As one of the main objectives of community gardens operating today is to curb the advancement of obesity across generations, structured youth gardening programs are currently being created to specifically target young children through the age of 18. The theory underwriting the use of the natural environment as a youth based educational tool was first widely voiced by Montessori in 1912. Montessori wrote that ‘gardening leads children to the intelligent contemplation of nature, as well as an awareness and appreciation for their environment’ (in Rahm, 2002). Blaire (2008) extends this philosophy by relating this theory to the inactive lifestyle of many children in the 21st century. He believes that enriching childrens’ exposure to the natural environment and the seasonality of food broadens childrens’
perspectives of food beyond the pre-packaged fatty, salty food often served today. The flexibility of the garden lends itself to the application of a multi-targeted approach, which can incorporate gardening, nutrition, cooking and education into an interactive program (Lautenschlager & Smith, 2006).

There are a wide number of youth-based garden programs in existence within the US and abroad, specifically focused around increasing the connection between the natural environment and children. A common strategy is to build a direct relationship with a local school with the aim of incorporating the garden into the school environment. Lyle (1994) believed that the redesign of environments must be orientated around educational enterprises with larger stakeholder participation including users, clients, organizations, government officers and political representatives. This educational requirement fits nicely within schools and youth programs, targeting the generation that needs to grasp the importance of sustainable development

Successful youth gardening programs include the US based Edible Schoolyard program developed by Alice Waters (The Edible Schoolyard, 2010) and the Stephanie Alexander School Garden Program in Australia. Both of these programs incorporate elements requiring the cultivation, maintenance and harvesting of a garden (Stephanie Alexander Kitchen Garden Foundation, 2010). The idea is to establish a connection between the environment, food and the child – changing the perceived ‘value’ of the natural environment, the garden and food in the child’s
mind. Kransy & Dolye (2002) believes that gardening facilitates learning about science and seeing real life applications helps to consolidate what children learn in the classroom. The success of programs such as these is largely due to the underlying model of ‘social change’ upon which it is constructed.

A Garden for Life (GFL) project run between January 2004 to December 2006 involving children and teachers in Kenya, India and England (Bowker & Tearle, 2007) further emphasizes the use of combining gardens and schools. This study found that school gardens facilitated a more ‘active’ learning environment by which knowledge is socially constructed through the interaction between the experience with the environment and discussion with peers and teachers. This can help foster an appreciation for ecology and awareness of environmental conservation practices and issues within a local, national and global context. (Bowker & Tearle, 2007).

Therefore, research in general suggests that gardens in schools can act as a good setting for integrating the general curriculum with ‘active learning’.

An alternative model that has had success is an adolescent employment gardening program model. There are many inner city youth gardening programs run across the US in areas such as New York and Los Angeles. These programs are not aligned with a school but rather organizations that target at risk youth groups. The success of these programs is essentially reliant on the interaction and support of the Community (Rahm, 2000). An example is the Berkley Youth Alternatives Community Garden Patch in California (Lawson & Mmacia, 1995). Programs such as these use
employment to attract teens to assist in the maintenance of urban space providing at risk teens with income, job training, safe after school activity and increased self-esteem.

There have been various studies conducted on youth based gardening programs within the US to measure benefits and evaluate outcomes. Identified benefits to the youth target group include the development of gardening skills, learning from gardeners, building an interest in and appreciation of gardening, understanding the role of gardens in their Community and the broader environment and increased knowledge about plants and soils (Krasny & Doyle, 2002). Additional outcomes include the advancement in youths’ leadership skills, including communication, critical thinking, problem solving, decision-making and cooperation (Jayaratne et al., 2009). Interestingly, research has found that gardening programs provide an avenue for the development of life skills that are often absent from generations that have been brought up in the late 20th and early 21st century. Alexander et al. (1995) concluded that by becoming involved in gardening programs, children have the opportunity to learn about ‘values’, delayed gratification, independence, co-operation, self-esteem, enthusiasm/anticipation, nurturing living things, motivation, pride in their activities and exposure to role models from different walks of life.

An important outcome from youth gardening programs that is consistently found throughout the literature is the empowerment of youth. The importance of
empowerment should not be underestimated as a successful driver for youth and adolescent gardening programs. The research demonstrates that empowering youth to take responsibility in independent tasks increases feelings of competence, improves visibility in Society, development of decision-making and critical thinking skills (Lekies et al., 2007). In the majority of studies, adolescents involved in garden employment programs valued the opportunity to feel in control of something important and enjoyed collaborating with peers, establishing a sense of belonging and community (Lakin & Mahoney, 2006).

Participation in youth gardening programs also delivers benefits to adults and the Community in general. Many adults involved in such programs have reported enhanced ability to develop partnerships with urban audiences and with other organizations and satisfaction from working with children and gardeners (Krasny & Doyle, 2002). Additionally the central location of gardens within neighborhoods contributes to the development of communities, increasing the availability of fresh fruit and vegetables (Jayaratne et al., 2009).

Although there are many successful youth gardening programs, there are common challenges experienced by program operators. Financial instability is a widespread issue. In general, program development and expansion is restricted by the irregularity of donations and funding support. Many programs rely on donations, in-kind contributions and many volunteer hours (Lawson & Mmacia, 1995). Funding is made up of government, business and philanthropic money (Brown & Jameton,
2000) of which specific examples include the cooperative extension grants/loans provided by the USDA and funding made available through the Health and Human Services Development block grants. In addition to funding, another prevalent barrier to success is the effective management of staff. A youth garden program must involve volunteers, staff, parents and teachers/educators working together with clearly defined roles. Developing partnerships is especially beneficial when programs do not have enough individuals to take responsibility for the entire spectrum of roles that must be fulfilled. To minimize interpersonal issues spanning from lack of communication and irresponsibility, all partnerships and volunteers must understand expectations. This helps to strengthen programs and fill deficits.

Other common obstacles include managing community relationships such as businesses, farmers, social service providers and educators; land tenure as land for urban gardens is often leased free of charge by a City Government or an individual property owner, there is a risk that the land will be repossessed at any point in time (Lawson & Mmacia, 1995); lack of resources such as water, tools, soil and plant and building materials and security issues, especially gardening tools – however this has improved over recent years. (Saldivar-Tanaka and Krasny, 2004)

In summary, youth based gardening programs deliver a number of tangible and intangible benefits to children and the community at large that assist with reducing lifestyle related issues that are becoming increasingly common in the 21st century. The challenge faced by environmental enthusiasts involved in youth based
gardening programs is to ensure sustainability by securing neighborhood support, achieving adequate staff levels, developing firm partnerships and using effective engagement strategies. This research will further explore these critical factors identified in this literature.
Section 2 – Methods

The following section outlines the methodology used for data collection and includes a brief introduction to the garden programs that were interviewed for this project.

2.1 Empirical Interviews

To gain first hand insight into critical factors related to the establishment and effectiveness of youth gardening programs operated in the USA, this investigation focused on established garden programs in North Carolina (Durham and Greensboro) and Utah (Moab).

Open-ended interviews were conducted with administrators, founders and coordinators of:

- youth gardening programs
- combined kitchen and gardening programs
- community gardening programs

The scope of interviews was deliberately wider than programs only offered to children, due to limitations associated with the number of specific youth orientated gardening programs and availability of other similar programs in Durham, NC.
Informal interviews were conducted with coordinators involved with seven gardening programs of which four identify children as part of their target group. Respondents were asked questions covering the following themes:

- Professional Background
- History of Program
- Engagement strategies
- Consideration of target audience
- Community support
- Funding
- Environmental challenges – seasonality
- Staffing
- Perceived challenges/failures

A formal interview protocol was developed and reviewed by the Institutional Review Board associated with Duke University (see Appendix for detailed list of interview questions). Identifying information was restricted to the following:

- Organization
- Coordinator’s name
- Identification of key stakeholders involved in program
Note for the purpose of this report some stakeholder names are withheld to prevent any undue harm that could result from disclosure of this information.

Interviews lasted between 1-2 hours and often included a site visit to the gardens. Six of the seven interviews were conducted face-to-face with the remaining interview completed by phone. All program coordinators were recruited via formal request either by e-mail or phone call. The interviews were not formally recorded however detailed hand written notes were taken which included the documentation of individual quotes.

Key themes and patterns from the interviews were identified through a standard qualitative data analysis method of classification and coding and categorizing the data (Coffey, & Arkinson, 1996). Common thoughts, subject matter and ideas from each interview were grouped together under determined subject headings. These subject headings were developed from important threads from existing literature. Common terms and/or ideas from each interview were collated by a coding system, i.e. a code heading was ‘empowerment technique’. Each time a particular term was mentioned in an interview, it was placed under the relevant code/heading. At the end of the collation process, the spread and diversification of themes from interviews was recorded and cross-referenced with findings from the literature review.
2.2 Background Information on Programs Interviewed

**SEEDS (SEEDlings and DIG)**

SEEDS is a non-profit organization located in Durham, North Carolina. The overriding goal is to ‘teach people to care for the earth, themselves and each other through a variety of garden-based programs’ (NEEM, 2010). In general this organization has helped to facilitate the creation of sustainability community gardens within Durham. Historically SEEDs has been involved in the reclamation of land, transforming unused plots into ‘edible gardens’. The main focus is on planting produce for a functionary process that benefits the community, i.e. that can be eaten. The flagship garden is located at the SEEDs premises in Durham.

SEEDS offer two ‘gardening’ programs directly at youth, defined as children under the age of 18. Both of these programs were the main focus of interviews.

**DIG**

Durham Inner-city Gardeners (DIG) is a program that aims to empower teenagers. This program uses ‘experimental style’ learning techniques to teach adolescents concepts and skills relating to organic gardening, sound business practices, healthy food choices and food security values. DIG youths are effectively treated as employees and are paid a stipend to take responsibility for the maintenance and selling of garden produce.
SEEDlings

Seedlings is a 7 year old program that is offered to children from 1st to 5th grade.

This program is presented in two forms, either as an afterschool program or as a summer camp. This program essentially provides a fun and engaging opportunity for children to become involved with their community learning in an ‘educational environment with a focus on gardening, nature, exercise, and nutrition’.

Youth Garden Project in Utah

The Youth Garden Project is located in Utah. This program was originally set-up in the backyard of Sarah Hefron, a gardening enthusiast, who created an opportunity for ‘at-risk’ children to complete court mandated community service. Over the years this program has grown exponentially and now targets children of all ages, providing the opportunity to be involved in various gardening and kitchen programs. This program’s goal is to ‘cultivate personal growth, self responsibility and community awareness in youth through organic gardening, experiential education programs and community service’ (The Youth Garden Project, 2010).

The garden site is on two acres of land next to Grand County High School. Examples of programs offered include: High School Science Classes, Apprenticeship Program,
Classroom fieldtrips, After-school programs for elementary students and Summer Day Camps.

**Edible Schoolyard Program in Greensboro**

The Greensboro Children's Museum located in North Carolina is the first childrens’ museum in the country to offer an adapted version of the Edible Schoolyard program created by Alice Waters and the Chez Panisse Foundation in Berkley, California. Historically this program operated by incorporating gardening and cooking into the core academic curriculum of a school.

The program attached to the Museum has an expanded audience. It offers a teaching environment located in a purpose built half acre garden and kitchen where children and their families can learn ‘how to grow healthy food, create delicious snacks and meals using fresh, local, organic ingredients’ (reference website) whilst connecting with the natural world.

**St Phillips Episcopal Community Garden**

St Phillips Episcopal Parish is located in Durham, North Carolina. Recently, select members from the Parish worked together to start a community garden within the grounds of the Church. This was due to an interest in building a community in a neglected part of Durham. The goal is to foster an unthreatening environment in
which community members can work ‘side by side’. The garden was also set up to help address the issue of hunger within Durham.

There are opportunities each month for members of the community to work in the garden. Volunteers are also working to initiate a Summer Camp directed at school-aged children and offer community dinners for members of the neighborhood that may have limited access to nutritious food.

**NEEM**

The Natural, Environmental and Ecological Management Corporation (NEEM) is a non-profit organization located in Durham North Carolina. The main focus of this organization is the promotion of sustainable-community development.

Environmental enthusiasts promote the benefits of the by-products of the NEEM tree, an evergreen tree native to India, Burma, Bangladesh, Sri Lanka, Malaysia and Pakistan. In Africa, this tree is know as ‘the tree of 40’, as it is used to treat up to 40 different diseases. The multiple uses of this tree allow it to assist with the creation of sustainable economies in local, regional, national and international markets for NEEM commodities. This organization has had significant success in creating community gardens within Durham and encouraging neighborhood volunteers to take ownership of the maintenance of the garden.
Anonymous School Garden

An interview was conducted with a respondent who had a prior association with a donated garden in an elementary school within the Durham community. To respect privacy, details of this school are not provided. Although this source remains anonymous, the information obtained from this interview is considered important in gaining and insight into why certain aspects of gardening programs may not be as successful as others.
Section 3 - Findings

The following section highlights the major themes drawn out by the interviews conducted with administrators, founders and coordinators of youth and community gardening programs. Themes were identified through a count system whereby common ideas were bundled into the following category headings.

1. Program Focus/Goals

There are many reasons why gardens within a community, particularly those that directly target the youth, are set-up. This is evidenced by common elements found between information provided by the interviewees and discussion in the literature.

Out of all interviews approximately:

- 100% sited a desire to reconnect people with their natural environment;
- 71% expressed the desire to re-educate communities about the function and importance of the food cycle;
- 57% expressed the importance of addressing poverty concerns through the distribution of produce from the garden: and
- 57% sited the reclamation of unused land
It is apparent that largely the target audience shapes the design and focus of these investigated gardening programs. Discussion generally indicated that community gardens key focus is to foster greater community relationships and address food resource issues. Community gardens, such as those set up by NEEM ultimately want to address issues affecting the general population. Goals may include growing produce for the farmer’s market, exciting communities to grow produce that can be harvested and then eaten directly at the dining table, empowering communities to behave in a democratic way and bringing people back in touch with food.

Although gardening programs targeting youth have similar goals, they often have a broader focus encompassing the development of life skills such as independence and decision-making. SEEDS is an example of an organization that has a dual community/youth focus. It has overriding organizational goals however does have clearly defined foci for it’s youth target market. This division is consistent with the other two multi-focus gardening programs that were interviewed. Goals of youth gardening programs include the development of gardening skills, a focus on healthy eating and a respect for nature by learning how to propagate seeds, weed, water and harvest. Interestingly many programs also have a strong focus on life skills. Coordinators of youth gardening programs who were interviewed, made it very clear that they take some effort to ensure the promotion of their programs goes beyond gardening. Programs such as Seedlings are marketed as an ‘after school’ program that contains gardening’ rather than just a gardening program. Other interviewees agreed voicing that it is important to communicate to the public that
the main goal is ‘not necessarily to teach gardening but to teach life skills through gardening’.

2. **Audience/Target Group**

Examined programs ranged in audience profile from school-aged children, at-risk teenagers, parishioners, museum attendees, low socio-economic groups and general community members.

Generally, programs that had a segment of their target audience as kindergarten and elementary aged children had some alignment with schools. This is manifested in either physically locating themselves within school grounds, marketing ‘after-school’ programs or organizing summer camps. Programs investigated tend to be class/participatory driven and have a repetitive audience.

Alternatively, the Edible Schoolyard has a much wider audience market, essentially capturing all potential children and visitors that come to the Greensboro Children’s Museum. Although generally a sporadic audience, this program is already putting in place some strategies to encourage a repeat audience. This includes accepting school groups (maximum of 3 visits per year) of Kindergarten through 3rd graders in addition to capturing the teenage market by providing the opportunity to incorporate food science classes in the garden.
In contrast, programs such as DIGS have been able to successfully attract their target audience by remaining relatively unattached from an existing community structure, such as a school. This program is a semi training/work program specifically targeting teenagers 14 and older. Each potential participant must apply to the program and pass an interview process. Teens must demonstrate a willingness to work and pay attention to work assignments as the program is dependent on paying teens a stipend to ‘work’ within SEEDS.

**Parental Involvement**

Unfortunately, due to multiple issues, there was little parental involvement reported in any of the programs discussed in this report, apart from the Edible Schoolyard which should be sidelined as an anomaly due to it’s purpose and location.

The main reasons sited for little involvement from parents include:

- Lack of time due to working 3 to 4 jobs ~57%
- Timing of programs during the working day ~ 42%
- Lack of interest ~ 29%
- Preference for parents not be involved - generally voiced by teenagers ~14%

One interviewee commented that it was not uncommon that the ‘only time parents are seen is-when they pick and drop off their children’. 

3. Program Structure

The programs focused in this paper had a diversity of program formats which is reflective of the variety of youth gardening and community gardening programs that operate through the US and the World,

Three quarters of the Youth orientated programs specifically design the structure of their programs around schools. This includes encouraging field trips at least twice per annum. One coordinator of a school program emphasized that they have devoted a large amount of energy to incorporate and complement the core curriculum standards for state of Utah, believing that designing field trips around the curriculum provides incentive for teachers to visit the garden.

Of all programs interviewed, approximately;

- 5 programs offer or are working to offer a ‘summer camp’;
- 4 programs have introduced or are going to introduce ‘after school programs’ to attract children of working parents: and
- 2 programs have specifically coupled with local high school to allow science classes to be conducted in the garden.
The number of participants in these structured youth programs accepted is dependent upon the capacity of the organization but tends to consist of up to 20 children. School based programs tend to run for about two thirds of the year whilst summer camps generally run for 6-9 weeks of the summer for up to 5-6 hours of the day.

Alternative program structures include the actual employment of teenagers, transferring the responsibility of the maintenance and sustainability of the garden to adolescents. This ideally requires a commitment from teens of approximately 12 hours during the school year, divided between a Friday afternoon and a Saturday morning. The structure of programs such as these is deliberately semi-formal with a greater focus on individual responsibility rather than teaching from a preset curriculum.

Programs that have a wider audience are generally structured around generally perceived convenient times. This includes providing Saturday demonstrations and workshops – which often require a fee, or weekend ‘work days’ in the garden, which may include volunteering to prepare dinners from garden produce for disadvantaged members of the community.

4. Engagement Strategies
A garden is generally best located outside in the natural environment and therefore generally requires the expenditure of physical energy to maintain. Consequently, many of the engagement strategies employed by programs are driven by physical participation.

Programs with a focus on a younger audience generally design all activities to be hands on. One interviewee noted that they are always looking for creative opportunities that extract an ‘ahah moment’ from the children as they explore and discover. Strategies employed range from games, scavenger hunts, planting and weeding, contributing to garden design, preservation and memory and recognition activities. There is often a lot of repetition and consistency within the program to facilitate skill and knowledge adoption by the children. Although age consideration does to some extent limit the use of strategies, programs still encourage a degree of independence in children.

Taking an example from Seedlings, each child is given his/her own plot to tend, plant and maintain through their life within the program. The incorporation of animals was an additional element featured in at least two of the programs investigated. Animals are purposefully bred to help to consolidate the conception of food (both animal and vegetables) in the minds of children. Interviewees reported that the ‘kids love the animals’ and it is always a wonderful moment when they ‘realize animals are connected to the food cycle’.
Although those involved in gardening projects view themselves as *life educators*, programs targeting teenagers are generally more holistic than those specifically targeting younger children. Adolescent based initiatives tend to use the garden as a medium to teach life skills. These programs focus more on an ‘experimental’ learning design. In some instances there may be no set curriculum or a focus on theory. Alternatively teens are encouraged to explore, research, ask questions and help each other out. This approach is grounded by the idea of empowerment, capitalizing on the mental-development process and using it as an opportunity to couple life education with gardening. Eleanor Farlow from the Edible Schoolyard Program considers that it is natural for adolescents to want to be ‘able to be competent and therefore in general respond well to empowerment’.

Lucy Harris from Seeds believes that ‘empowerment’ is a ‘crucial component to the success of the DIGS program. It instills a sense of pride and ownership in young adults. A critical element is that the teens play an essential decision making role, including being involved in the hiring of fellow teenage participants. There is also an entrepreneurial focus to the program. As an example, teens are encouraged to sell their garden produce at the local farmer’s market. To earn income the teens are required to have an understanding of the garden produce and how to use it (i.e. cook it) to help sell these items at the market. A final strategy, specifically utilized by DIGS includes encouraging teens to take turns to write an article every month for the local newspaper, not necessarily focused on gardening but on ‘teen-related issues.'
5. **Support and Funding**

All interviewees cited the establishment of initial funding and continuity of cash flow as a sizeable and ongoing challenge. Subsequently all programs reported seeking earned income and including at least one fee based option to assist with operational expenses.

Generally, interviewees regarded the actual set-up costs of a garden as negligible as the lots are often vacant and either privately or city owned. As a result, the space is generally provided for free and thus no rental payment is required. Additionally, the seeds are often donated or are of a relatively low cost.

Programs that are not connected directly with schools or a city based organization have struggled to attract regular funding resources. These organizations generally rely on government grants, church donations, family foundations, and community partnerships for funds in addition to a couple of fund raising events per year. A few of the coordinators interviewed specifically noted that they initially, and in some instances still, relied on donations and trading of garden produce for staff assistance and equipment sharing.

It was reported that fundraising events are often an opportunity to utilize mentors within the community and further encourage commercial relationships. One such
example includes organizing dinners, which allowed youth gardeners to work with local chefs to design a four-course meal around garden produce. Although the benefits of these fundraising events are not just pecuniary to these community organizations, the irregularity of funding sources remains a fundamental concern. Most interviewees believe that the level of fundraising is generally linked to the economic climate, and as Lucy Harris from SEEDS stated ‘some years are better than others’.

Due to the proliferation of youth garden programs in the US, self-sustaining funding measures are now being sought. A typical example includes using opportunities such as a local farmers’ market to sell garden produce. This not only earns revenue, it allows youth gardeners to increase their level of interaction with the community in situations outside their program and school. Alternatively, the introduction of fee-based initiatives is gaining traction. Given that many of these gardening programs are set up to address underlying issues stemming from poverty concerns, a sliding price scale is often used in an attempt to address equality considerations. Taking the programs interviewed in this study as a cohort, the average fee per child for an after school program ranged from $15-$180 per 4 month term. Generally this fee helps to cover the largest operating cost, which is staffing.

Although these programs are fee based they are being priced so that even with the introduction of a fee, they are often still cheaper than after school program. Some
also believe that the introduction of a fee may help to add value to the perception of
the program within a community.

6. Staffing Considerations

The main challenges associated with staffing of programs stems from concerns with
limited funds and resource constraints. Generally youth organized programs such as
DIG, Seedlings, the Edible Schoolyard and the Youth Garden Project, employ paid
coordinators for their programs – generally ranging between 1-2 people. Depending
upon the structure of each program (i.e. incorporation of a kitchen component),
these coordinators responsibilities include format development, operational
oversight, and volunteer coordination. Programs such as the Edible Schoolyard and
the Youth Garden Project, direct most of their resources to conducting gardening
and cooking classes directed at school-aged children. In these instances, the
program coordinators by and large make the decisions relating to garden produce.
In contrast, programs such as DIGS, are more free-flowing and not organized around
structured classes, lending the opportunity to incorporate this decision making
process into the program. The coordinators in programs such as these tend to act
more as mentors.

Due to financial limitations, paid employees are generally restricted to coordinators,
leaving these programs very dependent on the commitment of volunteers. This
creates additional concerns such as staff turnover. There was a general consensus
amongst interviewees that volunteers tended to not be as reliable as staff. Many of
the garden programs that were interviewed sourced volunteers from AmeriCorps
and the National Service Program. This is generally thought to be a ‘great thing’ as
AmeriCorps tends to attract younger and energetic candidates. However, this
results in additional considerations as these service volunteers can only serve for
two years. Programs have addressed issues associated with tenure and training by
developing and documenting program formats, organizing rosters and ensuring that
there is due recognition of the valuable time donated by volunteers. An effective
strategy used with summer camp programs is the rotation of volunteers according
to subject content, effectively managing valuable time by matching the skills of
volunteers with class content. An additional consideration in working with children
requires that all volunteers submit themselves to police checks to ensure the safety
and security of youth participants.

Interviewees noted that publicly available educational resources such as those
provided by the National Gardening Association (i.e. kidsgardening.com) have been
helpful in providing tested activities that can be integrated into programs. These
resources are helpful in overcoming the challenge of matching content of gardening
programs with State based curriculums. In addition to accessing external
educational resources, one youth gardening program sited that they have been able
to address this issue through significant time and effort devoted by stakeholders.
This interviewee noted that it is important to try to address the concerns of all
interest groups, particularly teachers, when designing the curriculum for school gardening programs.

7. Community Involvement

According to respondents, a community garden in a motivated community helps to bring the neighborhood together. Often these manifest in areas near a local Church, School or areas of a City that may appear to be neglected. The St Phillips Episcopal Church garden was specifically constructed to help address the issue of hunger within Durham and create an unthreatening environment in which community members could work ‘side by side’. However this program often struggles to get community members to actually get involved in the cultivation and maintenance of the garden.

Notwithstanding the motivational issues underlined above, 80% of all community gardens placed by NEEM are still functional today. Jeff Ensminger considers this is because of his stipulation that gardens should only be placed if there is a definite and clear commitment from the community. He believes a ‘community garden can only be successful if there is layered ‘buy in’ from the community. Furthermore, Mr Ensminger identifies three main areas that need to be looked at to assemble community networks and build relationships: -
1. ‘Bottom up’ – Approach local members within the community to create functional foundations. Raising awareness helps to secure a moral commitment from these members helping to create a self-sustaining base as the community are going to use produce from the garden.

2. Target organizations within the community – This is integral to long-term support. Important groups to consider include start-ups, non-profits, Church groups, schools etc.

3. ‘Top down’ – Network directly with community decision makers such as Government Department heads, securing political capital and support for the project.

Once there is a level of excitement from a community about partnerships and networks, a garden can act as a central point of connection between community members. The garden operates as a meeting point, igniting discussion amongst members of a Church, School or any other organization that is attached to the garden. Organizers believe that gardens help to break down perceived barriers.

8. **Relationship between Garden and Nutrition**

Food and nutrition are two issues that are of growing concern due to the prevalence of obesity largely in Western Society and poverty/hunger all over the Globe. The prominence of these issues has in part led to the increasing number of
gardening/environment related programs being set up within the US and abroad.

One very famous program is the ‘Let’s Move’ Campaign initiated by the current First Lady, Michelle Obama. The focus on the ‘food cycle’ in gardening programs is logical, as it provides participants, including youth with an opportunity to experience the ‘seeds to table’ evolution

The majority of organizers of gardening programs agreed with the logical ‘fit’ of using gardens as an opportunity to facilitate good nutritional practices. A respondent noted that being involved in the process of gardening provides ‘a chance for people to have a conversation about food in a real and immediate way and provides a unique occasion to reconnect with natural food origins’. Many programs, particularly those associated with schools, are building on the use of gardens by including opportunities to cook the produce. The Youth Garden Project in Utah and the Edible Schoolyard are great examples, using both a community garden and kitchen to educate school aged children about the food cycle.

Interviewed experts believe that the natural relationship between gardening and cooking allows participants to use all senses to experience the origin and transformation of food, culminating in using the wonderful sensation of taste. Although there may be a perception that children in kitchen present a safety concern, it is proven that this concern can be managed well by proper consideration of age appropriate education on safe ways to use implements through
demonstration. Teaching children to use kitchen utensils and equipment adds to the food creation experience and consolidates the ‘life skills approach’.

The education of good nutritional practices is not just limited to the garden and the kitchen. DIG currently uses incentivized initiatives successfully to encourage the adoption of healthy food choices. Such established initiatives include the ‘Healthy Foodathon’ in which participants are encouraged to go 30 days without eating fast food. Prior to the start of the initiative, teens learnt about what unhealthy food is and how it affects the body. This competition focuses on the type of food rather than branded food – for instance participants can eat at Subway as long as their choice is considered healthy. Last year 13 out of 15 teens made the competition raising $4000. This enabled all DIG teen volunteers to attend the ‘Rooted in Community Conference’, a conference held every year where teens around the US present workshops on gardening. In 2010 DIGS teens hosted the conference at the NC Central University.

9. Indirect Benefits of Programs

Although the direct results from gardening programs is the improvement in plant/gardening knowledge, development of gardening skills and a greater appreciation of the food cycle, there are additional benefits that have been observed by interviewed experts.
Information collated from interviews suggests that youth programs, particularly those set-up in low socio-economic communities and those targeting ‘at risk’ teenagers, allows children to help support their families. This may include the children being able to assist with the cooking of meals, purchase of low cost healthy food and the construction and maintenance of gardens at home. Further, teenagers are able to use their stipend to contribute to paying household expenses.

10. Seasonality

All programs tend to navigate seasonality by shifting the focus of activities and program offerings depending on the season. Most programs believe that it is important for participants to have a year around connection to the garden as this provides the opportunity to experience and observe the evolution of a garden from planting, harvesting, selling and/or cooking.

Most school field trips and after-school programs tend to end in mid November and start up in February, which means children are working with a garden or garden produce for at least two thirds of the year.

The majority of the summer months are spent in the garden whilst during winter there is generally a larger concentration on planning, cooking, crafts and environmental observation. At least 4 of the youth gardening programs interviewed...
sited allocating a large amount of time in the winter months to learning and cooking with preserved summer produce.

11. Background of Organizers/Founders/Coordinators

The backgrounds of interviewees involved in the organization of the garden programs are varied. However, one third of organizers did come from an educational background. Not surprisingly, all of these individuals are involved in the programs that have a strong association with schools or school aged children.

Additional experience included a history of working with non-profit organizations – not necessarily environmental and a Culinary Institute of America qualified Chef. Interestingly only one individual is a trained Gardner (qualified Master Gardener) indicating that ‘gardening skills’ are not the most important quality in a Coordinator of a gardening program – leadership, passion, understanding of audience and organizational experience appear to be more imperative skills.

12. Security

Security does not rate as a significant concern amongst coordinators of gardening programs. The view of most interviewees was that there was generally no issue with theft of small amounts of produce. Rationales provided were that individuals who steal the produce have few other options and a community garden’s most important
goal is to 'look after members of the community.' Specific community gardens tend

to operate on the basis that members of the public come and harvest their own fruit

and vegetables; there is no permission or payment system.

Some programs reported that they don’t make any effort to keep people out and that
tends to deflect vandalism. One particular garden is organized in a circular mould
and is surrounded by an unlocked fence. The garden was originally meant to be
locked however has remained unlocked since conception. There has been no issue
with security. It is believed that the symbolism of the unlocked gate shows trust in

community

13. Obstacles and Failures

Although there are many success stories, all interviewees sited obstacles and in
some instances failures which they have had to overcome. Many voiced that the
hardest part of a community garden is not the set up but the sustainability.
Programs required a long-term commitment from the community. One particular
organization found that community gardens that were set up failed after the 2nd
year of implementation due to lack of involvement/support from community.

Also, programs set up specifically in or around schools found navigating
bureaucracy and lack of involvement and support from decision makers within
school systems as big issues. Failures often resulted where there was little guidance
as to how to construct garden classes so they complemented what was taught in the classroom. However, not all teachers and schools are motivated to get involved with the garden or see the benefits it can provide – hindering the penetration of a garden program. This reluctance is mainly due to feedback citing existing pressure to fit the curriculum into a functioning school week, in addition to budget constraints. More successful programs use a better system, which includes the involvement of volunteers and outsourced organizers that work with teachers in the garden.

In addition to bureaucracy and funding issues, working with low-income and multi-ethnic communities can result in further challenges. Children were sometimes reluctant to get involved with gardening due to fear of dirtying clothing (costly to wash clothes). These issues can and have been easily addressed through placing mats and cloths to reduce the risk of getting dirty.

In summary, setting up a youth gardening program requires thoughtful consideration of a multitude of factors. Ultimately, the success of any one program is going to be dependent on the specific characteristics of the community – however it was the general consensus of all interviewees that one of the most important determinants of success is the underlying passion and enthusiasm of coordinators.
Section 4 – Conclusion

4.1 Best Practice Recommendations

The following section sets out guidelines outlining 10 ‘best-practice’ recommendations that can best lead to a successful youth gardening program.

A review of the current literature and collation of interviews conducted with individuals associated with the coordination of gardening programs in both North Carolina and Utah has highlighted critical elements that, where possible, should be considered when creating a youth gardening programs.

1. Understanding the target audience

It is important to have a clearly defined target audience, as the spectrum of the youth population is very broad. Understanding the market assists with organization of effective educational strategies and member enrolment. It is imperative that the right strategies are employed to educate key audience members; otherwise the program will ultimately fail due to a lack of motivation from participants.

2. Association with a pre-existing community structure
When starting up a youth gardening program within a community, it is beneficial to build a visible connection with incumbent community groups. Programs that have attached themselves to structures such as schools and churches have been able to capitalize on pre-existing social capital and use this to market their youth gardening programs. Although coupling a garden with schools has been successful, in some cases, it should be emphasized that a significant amount of energy is required to ensure that there is consideration of existing school staff, infrastructure, dynamic teacher involvement and curriculum. A successful example demonstrating a successful school/garden initiative has been dovetailing the science curriculum to garden activities. This consolidates students understanding of concepts and helps to get teacher buy in.

3. Importance of empowerment

The importance of promoting empowerment in youth gardening programs was a common theme throughout the literature and interviews. It is noted that adolescents in particular respond very well to responsibility and stepped decision-making. Gardening programs can effectively be used for the development of life skills through simple strategies such as making children responsible for their own garden patch, selling produce at the local farmers market and choosing what produce to plant.

4. Setting holistic goals
Ultimately, the outcomes of youth gardening programs should be much broader than the development of gardening skills. It was found that programs that promoted themselves as a multi-faceted program were much more likely to attract participants than one that advertised itself as just a gardening program. Having a broader definition of success allows youth gardening programs the scope to deliver a fun and existing experience to children, incorporating gardening, nutrition, cooking and education into an interactive program.

5. Effective staff management

As a consequence of resource constraints, there is often limited opportunity to employ paid staff. Research suggests in these instances it is optimal to direct funds to recruiting experienced program coordinators who can take responsibility of operational considerations. The background of these coordinators can be relatively broad. The programs investigated here included staff with gardening, education and culinary experience. Generally, it was reported that the important characteristics that a coordinator should have include leadership, passion, understanding of audience and enthusiasm about food (i.e. gardening, food preparation etc).

Additionally, the involvement of volunteers is crucial to the sustainability of programs. Volunteers play an important supportive role in assisting with the daily execution of the program. Successful youth gardening programs have sourced
volunteers from AmeriCorps and ‘expert’ members of the communities – using a rotation system where by individuals from the community elect to participate in subject matter relating to their experience/background.

6. Consideration of key stakeholders

A youth gardening program cannot function in isolation from the community. A successful program requires the commitment and partnership of various key stakeholders from the community including political representatives, educators, local businesses, families, farmers etc. Effective and continual feedback between all parties is required to ensure that there is a clear understanding of the role of each stakeholder in the success of a youth gardening program. Additional considerations should include the development of effective oversight systems and valuable utilization of local businesses and farmers. Successful programs have navigated resource limitations through establishing trading networks such as sharing garden produce and equipment.

7. Program Structure

There is a variety of structures of youth gardening programs in existence, however there are definitely four common formats that have achieved success. These programs are generally arranged around key community features -- the school, the local farmers market or the church. Popular formats include:
• Direct school association: field trips, combined gardening/science/cooking classes.

• Indirect school association: after-school programs and summer camps. These programs tend to operate for approximately two thirds of the year (Generally resting December through to February).

• Employment programs: Adolescent programs that specifically employ participants to take responsibility for the maintenance and selling of garden produce.

• Church groups: Building a garden in an existing community parish, organizing community dinners and garden work days.

8. Seasonality considerations

Generally, gardens provide the best learning environment during the spring and summer months, as this is when most of the garden produce is ‘in season’. Although the most productive gardening months may only be for half of the calendar year, youth gardening programs tend to operate over the fall and some of the winter months. To ensure that the engagement from participants is maintained during the ‘off season’, a shift in focus is required. The most effective strategy has been to change emphasis from the use of fresh produce to the important role of ‘preservation’, during the colder months.
9. Security of funding

Financial security is an issue faced by many community organizations and youth gardening programs are no different. Although it is important to continue to lobby for publicly available grants and philanthropic donations – establishing self-sustaining revenue sources is more likely to insure the longevity of programs. There are two effective revenue options employed include:

- Selling garden produce: Children and adolescents can take responsibility for selling either fresh or preserved garden produce though outlets such as the local farmers’ market, Church, school fair etc.
- Fee-based initiatives: Programs can introduce fees to offerings such as after-school programs. A sliding price scale can be used to navigate issues such as affordability.

10. Utilization of existing garden education literature

There is a significant amount of existing educational gardening resources available via the Internet and published literature. A successful characteristic of youth gardening programs is efficient time management, i.e. not *re-inventing the wheel*. Organizations such as the National Gardening Association have a wide body of material that can be used to help design program segments and subject material.
Additionally, these resources include avenues for administrative support such as suggestions for funding etc.
4.2 Summary

Currently in the US and other developed countries there is an escalating anxiety over rising 'lifestyle' related diseases such as obesity and related concerns over the sustainability of resources for future generations. There are many determinants that have led to this state, however the most prolific has been the exponential rate of urbanization and technological advancement that has occurred over the last half a century.

To address these issues, there is a movement to re-establish community awareness of the importance of sustaining the natural environment. The numerous community and youth gardening programs that are being set-up throughout the Country demonstrate that there is a general demand from individuals seeking to increase their knowledge of the ‘roots to table’ heritage of the food they consume.

This project has highlighted that gardening programs specifically targeted at the youth population are important, as it is the younger generation that needs to address and understand the significance of environmental sustainability. Many programs throughout Durham and the wider US have been successful in targeting this cohort. Example programs range from those attached to schools through to entrepreneurial initiatives targeting the teen population.
Although there are a number of successful youth gardening programs in existence, there are daily challenges faced by co-coordinators, including funding, staffing considerations, bureaucracy, establishing community partnerships and using appropriate engagement strategies for the target audience. Ultimately, these issues can be overcome through patience, energy, community input and most importantly continually accessing public resources focused on youth gardening programs.

There is definitely a place for youth gardening programs within Society and at the end of the day the success of these programs is due to the underlying enthusiasm and passion of the coordinators and all stakeholders associated with the project.
References


Appendix

Interview Questions

Garden Program Leaders/Experts

Program Structure

1. Why did you start this program?  
   [Follow-up: Do you have any mentors/individuals that have motivated you to become involved in gardening?]

2. Tell me about your team? structure? Special interests? Special talents?

3. What are the specific roles of each team member? What does each team member do?

4. Are there any positions that you would like to see filled that are currently vacant?

5. Are the team positions generally full-time/part-time? Volunteers /paid? (Get ratios of each)

6. How do you recruit staff and volunteers to work here? Both paid employees and community volunteers.

Program Target Group

7. You have programs directly targeting the youth (<18 years)? Why target the youth of Durham?

8. Are there any particular sub-groups within the population that you specifically target (i.e. low socio-economic groups, homeless, etc).

9. What strategies do you use to specifically motivate participants? Are there particular strategies that have been very effective? Have not been effective?

10. What is the general attitude of participants to the program? Why do you think they become involved in the program (i.e. passion for gardening, financial incentive (selling produce at farmers market).

11. What level of parent involvement is there within the program? Do you believe that this is essential to the program?
12. Do you believe that participants need to feel as if they have a sense of ownership of the gardening program? If so, how does the program facilitate this? (i.e. selling produce at farmers market)

13. Does your program purposely link the work to nutrition? If so, how? E.g. Is general awareness of the natural foundations of food (i.e. recognition of types of vegetables, fruit etc) necessary for youth to participate successfully?

Community Involvement

14. Tell me about community partnerships you have? [Follow-up: If so, who? How did you build these partnerships] [Follow-up: Are these partnerships essential to the program?] [Follow-up: Are there others you would like to partner with?]

15. Does local government provide any support? [Follow-up: If so, tell me about that?] [Critical?]

16. Do you work with any schools? [Follow-up: If so, tell me about that?] [Critical?]

17. Does your organization rely on external funding? If so, from who? • Philanthropic donations • Commercial donations • Individual donations • School donations

18. What fundraising methods do you employ? Have there been any that have/have not been particularly effective?

Gardening Practices

19. Tell me about your main gardening practices? Would you describe these as sustainable agricultural methods?

20. How do you navigate seasonality? Does your garden have produce all year round?

21. Why are you located here? Was location of the garden a major decision? [Follow-up: What about this location (characteristics) was important to you?]

22. How do you work with/utilize the local climate conditions? Do you have good access to natural resources (i.e. water)? If not, how have you addressed this issue?
23. Do you experience any security issues (i.e. theft of produce)? If so, how have you addressed this?

**Education**

24. Is there any set curriculum that you use?  
   [Follow-up: If not why not? Is this something that you would like to incorporate? Into your program in the future?]

25. Is a main intent of your program to educate participants?  
   If so, how do you achieve this?

26. Have you yet had a chance to measure the outcomes of your program?  
   [Follow-up: If so, what were the main findings?]  
   [Follow-up: Any chance I could see your evaluation results?]

27. On average, what would be your general time commitment?
**Consent Form for Leaders and Experts:**

Leaders and Experts will be contacted via e-mail to ascertain whether they would be willing to give an interview regarding the gardening program that they are associated with. These interviews will be conducted either in person or over the phone. If Leaders and Experts give permission to be interviewed in person, this form will be signed; if they give permission for a telephone interview, they will give oral consent through the oral consent process scripted farther below.

Date __________

Dear (Leader/Experts name),

I am a current Masters of Environmental Management student at Duke University. As part of my Master’s Thesis, I am analyzing the essential elements of success in garden programs. The objective of this research is to develop a set of recommendations for the ‘best-practice’ design of gardening programs targeted at the youth population.

I will include your name in my research for the purpose of classifying your responses as ‘expert opinions’. My questions will be largely concerned with the organization of the program and your opinions relating to the critical elements of the design of gardening programs.

This interview could take from 25 to 50 minutes, depending on how much you would like to say in response to my questions. You are free to end the interview at any time.

I hope that you will agree to let me interview you about your role and association with the ________ ____ program. If you have any questions, please ask me now. You are also welcome to ask me questions during the interview and to contact me at any time via telephone on 919 491 2396 or e-mail at gemma.cooper@duke.edu. You can also contact my advisor, Professor Randall Kramer, at Kramer@duke.edu.

If you are willing to let me interview you, please write your name, signature, and the date below.

Name______________________________  Date __________________

Signature ________________________

**Leader/Expert Consent Process—Oral, if by telephone**

Hello, (Leader/Experts name),

My name is Gemma Cooper, and I am calling you because of your professional involvement in the ________ ____ gardening program. I am a current Masters of Environmental Management student at Duke University. As part of my Master’s
Thesis, I am analyzing the essential elements of success in youth garden programs. The objective of this research is to develop a set of recommendations for the ‘best-practice’ design of gardening programs targeted at the youth population.

To identify these critical elements, I would like to interview industry ‘experts and leaders’ associated with gardening programs and youth programs in Durham and the wider US. May I provide you with a little more detail?

In any interview I would confirm your name and include this in my research to classify your responses as ‘expert opinions’. My questions will be largely concerned with the organization of the program and your opinions relating to the critical elements of the design of gardening programs and/or youth programs.

This interview could take from 25 to 50 minutes, depending on how much you would like to say in response to my questions. You are free to end the interview at any time.

I hope that you will agree to let me interview you. Do you have any questions? If so, I would be happy to answer these now.

Would you be willing to let me interview you, either now on the phone or at another time that is convenient for you?

[If yes:] Great; thank you very much. [At time of interview, either immediately or later:] You are also welcome to ask me questions during the interview and to contact me or my advisor, Professor Randy Kramer, at any time later via telephone or e-mail. Do you have an e-mail address so that I can send you our contact information? Or would you like to just write it down as I tell it to you now?