Senior Capstone
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Abstract

1. **Introduction**: explanation of how gardening and food production related to agriculture has affected me personally and how that motivated me to choose this topic.
2. **Literary review**: gardening as we know it – This section will cover what we know about gardening and urban agriculture and how it can benefit the health of people and communities.
3. **Literary review**: Limits to gardening – This section will begin to discuss the limits and questions the capstone discusses about gardening that has been addressed in literature. What types of people participate in gardening? Why do those people garden? What does it require to garden?
4. **Data collection & Results:** This section will discuss in principle the collection of data to make a conclusion about gardening and how it affects the population that participate in it and how those can help define how to provide its benefits to more people. This will be structured in three ways, a firsthand analysis of the Community Gardens of Tucson as an intern, an interview with a garden manager with the community gardens, and a case study of a garden there. The interview will focus on what can be done about the population of people that use the gardens and how to recruit would-be gardeners as well as other barriers and challenges to community gardening. The case study will focus on the specific situation that an individual garden may go through.
5. **Proposal**: This section will discuss a possible way of recruiting more people into the realm of gardening, using the context from data collection and the current literature about the topic.
6. **Limitations & Conclusion:** This section analyses how the data collected can be used in a practical manner to better the practice of community gardening.

Introduction

Food is simultaneously the most revered and neglected necessity in the modern American lifestyle. The obesity epidemic grows larger every year, and within our 9 to 5 lifestyles we have chosen to sacrifice our health in the name of convenience. While people continue to eat more and more, they feel more sluggish and exhausted every day. Even still the knowledge of health in our modern interpretation of it is convoluted. Every week it seems a contradictory series of statements about diets seem to promise immediate changes in health: low-carb, high-carb, low-fat, keto, paleo, and so on. What ever happened to the mantras that parents told their children: to go outside and to eat their fruits and vegetables? Clearly something is amiss here, and while it is clear that the miracle diet is still contested over, what is known are several things that can assist in a healthier lifestyle. In this report, what will be argued is that gardening is exactly what can provide the answers to the words that parents tell their children every day, to go outside and eat their fruits and vegetables.

Community gardens will serve as a focal point of my own experience and show a way to address and identify problems with the gardening solution. In a gardening event while I was interning with the Community Gardens of Tucson, I had met another person that worked for the gardens that had expressed what the challenges are in the grand scheme of similar community initiatives. Since the event was planned around the continued community involvement and recruitment for the gardens, I decided to ask him what his thoughts are around getting new people to get involved with gardening. In a sense he said that Tucson was an interesting spot for community involvement due to demographics: specifically the elderly, students, and the poor. In regards to the population of those people with lower incomes or the unemployed in the city of Tucson and elsewhere, one should be hopeful. It would have previously been easy to assume a

sense of indifference or inability from those that have found themselves in financially difficult times to something like the community gardens due to its cost and time investment. However, at this event I had witnessed a conversation between someone working with the gardens and a man who was passing through the event I was at. This man explained that he had been left unemployed for some time, despite his skill set as a civil engineer. With his spare time he decided to take back his health with bicycling and diet. He spoke of his change in perception about the city due to changing his mode of transportation, saying that his car had made it all too easy to distance himself from the state of infrastructure and communities within Tucson. It seemed he wanted to help and we explained how he could join the gardens though a program at a reduced price due to unemployment or donate his time. This shows what the people see in the city: how events like this and organizations like the community gardens help people within communities. Getting more unemployed people or those in poverty involved within the community can benefit everyone though exchanges in opportunities and information. The real difficult part of all this is getting community involvement started. It is easy to write off the development of more public transportation or bike paths as easing the burden of people who use those systems, but the effects of such can trigger much more vibrant communities by absolving our illusions about modern living. Ultimately, this is the real challenge moving forward with a gardening based approach: getting more people involved, but it is clear that community initiatives are interconnected. Community gardens are simply one proposed way to kick-start vibrant built environments made for people.

In order to facilitate greater general health within a community and promote empowerment, small local gardens can improve the interconnectedness and quality of what would otherwise exist as an unhealthy and fractured community. This is because a garden is not

only a source of food but also a way to encourage discourse between people and in the process establishes their involvement in a democratic society and empowers those whom would have less of a voice because of their evidently anti-social neighborhoods (Ghose 2014). This is not to say community gardens do not have their challenges: clearly, a problem persists that the most affected communities with food scarcity and food deserts are in need of not only food sources but also personal education. The challenge begins when thinking of how to incorporate more diverse demographics into such a system. Through research, it can be addressed who gardens and for what reasons. From the previous examples, it is known that gardening can vastly improve the knowledge of health and diet but do those with the worst health think first to get involved with a community garden? More knowledge is needed in this subject to properly address how and why people not only garden but chose to participate with a community or not. The ever present issue of health in America is staggering but with initiatives within the communities where it most affects, many of these people can change their lives to be healthier and to promote the health of their communities.

Literary Review

This report will discuss community gardening in extensive detail, so as to avoid confusion, it is important to clearly define community gardening before explaining its benefits. Community gardening as defined by the Community Gardens of Tucson, which makes up much of the data sourced in the research section of this report, is when an organization owns land and rents that land out to prospective gardeners (Community 2016). This land costs a fee and the individual gardeners gets to keep whatever they grow on the plot for themselves. This fee covers the cost of the land while the community garden organization also allows gardeners to use the garden's tools and sets up irrigation for all of the plots (Community 2016). This in theory sets up

a scenario where it would be easier to garden for those people where other limitations apply. Such limitations might be not owning suitable or any land to garden on, circumventing the need to set up your own irrigation system, and not having to maintain raised beds or broken pipes. On top of this is, even unexperienced gardeners can benefit from a community gardening system because of the network of gardeners at any given garden. If an inexperienced gardener at any garden has problems growing anything, usually a more experienced gardener can guide them along. In this way knowledge of gardening allows for people who have no experience gardening to become successful gardeners.

Not to be confused with community gardening are the concepts of sharecropping and local produce delivery systems and farmer's markets also known as "farm-to-table". Farm to table is a loose term where locally sourced produce is bought by a consumer through no middle man. This can take the form of farmer's markets where farms will sell their produce directly to consumers at an event, or through a CSA (Watson 2017). A CSA is program where an individual can buy a "share" of the crop from an individual farm to be delivered monthly (Watson 2017). These CSA's are sometimes referred to by the unbeknownst as "sharecropping" but that term defines an older system of agriculture. Sharecropping is when a land owner and a farmer make an agreement, where the landowner allows the farmer to farm on his land and pay for a portion of the costs to farm there in return for a share of the profit from selling the crops (Mitchell 2014). These terms get thrown around when talking about community gardening and urban agriculture. Many community gardeners often do a CSA program or buy crops from farmer's markets. The reasoning behind this may be involved with the demographics of gardeners and their interconnectedness with the community or value given to good food.

Clearly, Gardening and agriculture when ingrained into a local area or community is distinctly different from getting produce and other food items from a supermarket. Assumptions can be made about the quality of the produce and how that affects the body, but the benefits from community gardening and local agriculture go beyond just that. Following the tenants of sustainability, analyzing these forms of gardening and agriculture can be summarized by their social, environmental, and economic effects. More specifically, gardening has the most dramatic affects in the categories of personal health, equitable economics, health education, and improved communities.

Possibly the most well know aspect of the benefits of gardening is the effects it has on health. Going back to the mantra of "go out side" and "eat your vegetables", clearly personal gardening can benefit people by getting them outside working in the dirt and to get them to eat more fresh food. More specifically, the Community Gardens of Tucson states about community gardening that "Joining a community garden is good for your health, your spirit, and your community. Community gardeners eat healthier diets, with freshly grown, pesticide-free produce; they get exercise and spend more time outdoors; and they make lifelong friendships." (Community 2016). While those claims are great, what is important is what the academic community has to say about gardening and its health benefits. One Australian study found when studying elderly gardeners that gardening was not only a leisure activity for them, but was vital to the physical and mental wellbeing (Scott 2015). These gardeners stated that gardening in and of itself is associated with a greater connection to nature, achievement, and physical and mental health (Scott 2015). Following this line of logic where gardening is directly related to the physical and mental health of individuals, what of that associated in America's obesity epidemic? Another study may shine light on that, stating that those who participate in

community gardening have on average a lower BMI of -1.84 for women and -2.36 for men (Zick 2013). This trend also followed between siblings where one was a gardener and another was not, showing that the gardeners had a lower BMI. Clearly gardening has both mental and physical benefits on people and can be used as a tool to combat the obesity epidemic in America.

Combating this obesity epidemic in America is not only a physical issue but an economic one as well because the most affected populations of the obesity epidemic are those with the least amount of funds to spend on food. One study found that "The highest rates of obesity in the United States occur among population groups with the highest poverty rates and the least education" (Drewnowski 2004). What proliferates this issue is a phenomenon called food deserts where in an area will not have access to a competent grocery store or access to healthy foods within a given area (Popejoy 2013). The obvious solution to this is to provide more access to grocery stores, but that can take a long time to develop and a grocer chain would be hard pressed to build in a neighborhood that might be riddled with crime and whose residents cannot pay more for their food like rich neighborhoods can.

In the situation of America's health and in particular its poorest, gardening can be a way to not only bring together communities that would otherwise remain distant but also provide a reliable source of food and a way to improve those communities in a significant way. One study had found that educating disenfranchised children in food desert communities about gardening and taking them through the process showed a newfound sense of health and understanding of healthy food (Fournet 2014). While planning as like the grocery stores mentioned earlier are the obvious way of providing better neighborhoods, a grassroots approach can benefit because it can be enacted immediately. Moreover, it has been shown that development of grocery stores within affected neighborhoods of food scarcity goes deeper than simple generalized development.

Smaller grocers and particularly health oriented local stores have been proposed to combat this problem in the long term (Raja 2008). Even still, there would be no motivation to encourage people in these affected neighborhoods to go to these small grocers and change their previous habits. Most of these people have been shown to have an incomplete knowledge of health and diet and it is proliferated by the fact that this knowledge is taken directly from family members (Davis 2013).

To combat this issue, many gardening organizations have taken to another tactic in the form of school gardens. One study found that school gardens are a way of educating youth about the importance of healthy food and being involved in a community (Brendamour 2015). As mentioned earlier, bad eating habits are often passed down through families, and much of this can be helped through initiatives like school gardens as it provides a platform for education about health at an age where these habits begin to form (Brendamour 2015). In theory this could also translate back into the families when the child reintroduces their family to more healthy eating habits. The only barrier for these people of often low income is the economic barriers or the perceived barriers around healthy foods. In truth, community gardening can economically benefit communities with high rates of crime and low income levels the most. One study found there were positive correlations with community gardens and "Home vacancy rates, labor force participation rates, poverty rates, and the number of healthy food stores in a census district" (Garret 2015). The same paper went on to state that community gardens provide the most benefit to the working poor and immigrants. Economically, it seems that community gardening and initiatives towards more urbanized agriculture are equitable in nature.

What is clear concerning gardening as a whole are the benefits associated with the health of individuals, education of health (particularly in children), and that of the economic viability of

a community. However, more so than all of this, the most prolific benefit of gardening, in particular community gardening, is the affect it has in establishing a more interconnected social network of individuals within a community. That said, there are several challenges to gardening as a whole when put into a social benefit context. Most notably, age is a dominant factor for determining who gardens. One article referencing the national gardening survey, conducted annually, reports that the highest spending on gardening form any age group is that of the older baby boomer generation ("survey says…" 2016). While the largest group of gardeners present is of an older age, which lines up with the older statistics from the same survey, made publicly available stating that the 18 to 24 age group had the lowest participation levels of any age group asked in the survey (Relf 1992). Perhaps times have changed however, as the coming of age millennial age group has presented an interest in gardening. That said, many challenges present themselves to this age group as barriers of entry. Notably, the economic barriers present in America at the time prevent the millennial group from buying homes, and having available land to garden on (Mangles 2017). The same article goes on to state that a survey had been conducted stating that 75% of people aged 14-24 desired to grow plants but noted that they did not have the available space. This interest can be seen in the national gardening survey that said that 5 out of the 6 million new gardening households were in the millennial age group ("survey says…" 2016).

This predicament presents itself with a few unanswered questions. If millennials have no space to garden, then why is there's substantial increase in the young population participating in gardening? Moreover, perhaps the public is unaware of the ways around not having private space to garden in the form of community gardening. If space is a perceived barrier of entry rather than an actual one, how can the perception of gardening change to accommodate this new young

group of potential gardeners? It seems that the mindset of the millennial group is in line with the benefits and lifestyle aspects of gardening, be that in health, social connection, or establishing a community. If perception and awareness are the true barriers for millennials and community gardening, then perhaps establishing a presence of community gardens within spaces where younger people are likely to congregate is a foreseeable option for establishing more young people into gardening.

Methods

In attempt to understand the issues associated with gardening and how to address them, observing the practice of gardening is real life is vital. The questions that are most pertinent to this include: why are gardeners predominantly elderly? What prevents young people from entering gardening? And what makes a site for a garden succeed or fail?

Through gathering data, hopefully these questions will be answered or at least better understood. The methods of data collection include exclusively qualitative methods, through observation of gardeners with Community Gardens of Tucson, a casual interview with a garden manager, and a case study on one garden that had failed.

The first source of data: the analysis of gardeners and staff at the Community Gardens of Tucson is gathered throughout an internship and volunteer hours at said organization. This includes observations on who the gardeners are; their age, racial background, and income levels. This data is important to categorizing who gardeners are and for framing the context in which the next form of data collection will take place.

The next form of data collection includes an interview with the garden manager, Jessica Paul with the Community Gardens of Tucson. Questions asked in the interview will be formed

by queries raised by the analysis and observation of gardeners at CGT and their backgrounds. Questions will also be asked about her context in the realm of gardening. Such questions include but are not limited to: How did you get involved with CGT? What is the appeal CGT has to potential gardeners? And what is the main reason for why gardens are dominated by the elderly? This interview is important because it can help contextualize not only the scope of the barriers to gardening but also how to address it from the perspective of someone who has been involved with community gardening for years. A more complete list of questions asked can be found in the data collection section of this report.

Lastly, a case study on the Blue Moon garden with CGT was taken place as an example of a garden, its benefits, challenges, and how it interconnects with the built environment. Blue Moon is connected with a high-rise apartment complex that now exists as public housing, the Tucson House. This combined with the garden's proximity to a major highway and travel corridor through Tucson connecting to downtown make it important to study to better define the practices within community gardening. The data gathered was through meeting with the sight co-coordinator for the garden and an onsite survey. The goal of this case study is to better understand how a garden can be successful and how even with perfect conditions in the built environment how social aspects can affect the success of community gardens as a whole.

Data Collection

- **Observation of gardeners at the Community Gardens of Tucson**

The portion of the data collected purely from passive observation of community gardening comes from my internship with the Community Gardens of Tucson. While most of the

qualitative discretions from this portion are merely conjecture, they set a framework for the other two points of data and help provide context for the challenges of community gardening. This section is split between two points, the first section about my broad experience with CGT and another analyzing a dialogue between a potential new gardener and a community organizer with the program.

Firstly, from observation, the gardens are organized through a series of volunteers and organizers stringing together a network of individuals. Namely, there is the Board of Directors that oversees the entirety of the community gardens including the executive director and chair of the board, in the case of CGT being Elizabeth Smith and Bruce Plenk respectively as well as a few other key figures. Some of the jobs the board has to oversee include maintenance of the gardens and opening or closing new and existing gardens. The last of these tasks is directed to the members of the board directly and has happened recently with the closing of the Benedictine garden and opening of a new garden around the Rita ranch area. Maintenance of each individual garden is fronted by volunteers called site coordinators who organize communities of gardeners who buy plots as well as look after the physical maintenance of the garden. When a garden's maintenance issue is beyond the expertise of the site coordinator, the garden manager is called in. Jessica Paul, who also looked over my internship with CGT, is the garden manager; whose responsibility is to make sure the health of each garden is upheld. Jessica is technically an independent contractor that works with CGT, which is another necessary class of individuals for a community garden group, professionals. These professionals are often volunteers or independent contractors that serve as a vital connection point between the practical knowledge of the infrastructure of a community garden and volunteers and gardeners. When a problem is too physically intensive for just the garden manager, often the site coordinator will ask for the help

of gardeners for the task. Any task larger than that will divert to the board of directors to look for larger groups of volunteers outside of the community gardens for assistance. That's happened several times for the construction of the Ace acre garden, which will be discussed further later.

This system of organization is vital for the connection of individuals to the skills and knowledge of maintaining and construction a community garden. This is important as the community garden initiative surpasses the gardening aspect, it exists as a community initiative as well. It is not as though community gardening is simply a service for people to garden, as gardening with others entails social aspects that contribute to the overall health of a community. In this sense, gardeners themselves are vital actors in this model; providing the funding basis and the purpose the whole endeavor.

Of gardeners within community gardening, two things must be taken note of, firstly that of their demographics and that of what they want out of the gardens. While working with gardeners in CGT, I noticed a focus on the gardeners on their desire for gardening as a hobby rather than a practical application of urban agriculture. This is explained partially by the demographics of the gardeners, consisting of largely elderly people, with many being retired. This means that a large portion of the gardening population has the factors of the cost of a plot and the time to garden solved. What question is most pertinent of this population of gardeners is their motivation to garden: do they garden for the practical aspect of growing one's own food, to become engaged in one's community, or to maintain their health? It would be assumed all of these would be answered yes, but with a caveat. Many of these gardeners have used the community gardens outside of growing food, instead opting to grow flowers or herbs. This is illustrated by the construction of the Ace acre garden, the new 21st garden with CGT which is still under construction as of March of 2018. This garden is being constructed with entirely raised beds.

This is somewhat of a problem, as raised beds are very labor intensive to construct and are less practical in the desert as it requires more irrigation due to the water lost in drainage. In this, it seems that the community gardens, or at least the potential gardeners, prioritize the community garden's aesthetics; although it is important to note that raised beds are easier for people with physical handicaps to use. The gardens exist as a model due to gardeners, and if the gardeners want raised beds, they will flock to the gardens with raised beds.

All in all, community gardening does not seem to be an ideal model to "feed the urban environment". In fact, it can be argued that it never was intended wholly to feed a larger area, but to facilitate a more connected community. Yes, gardening can be a great way to feed many people and provide healthy organic produce, but the other methods of receiving locally grown produce such as CSAs and farmer's markets. In understanding the benefits of the community gardening model, looking past the practical aspects of growing food is important because community gardening is not entirely based on growing food for people. Take for example the mission statement from CGT: "To create and support accessible community gardens with Tucsonans of diverse experience levels, abilities and cultures in order to educate, foster wellness, and enhance the environment for people, plants, and pollinators."(community… 2016). Nowhere does that statement include a desire to directly impact the food supply. This is because community gardening is based around the community first and the gardening second. Gardening is a tool used by the community, not a necessity.

The labeled issue with this is that gardening exists as a way to combat societal issues with those in lower income levels and impoverished areas. The greatest barrier to gardening in these populations is the lack of a strong community. With a community wracked with crime and

without the time and money needed for community gardening, how can the benefits of community gardening reach these populations?

The following is a blog post from my internship with the Community Gardens of Tucson. Analysis will be located after the excerpt. “As an intern with the Community Gardens of Tucson, my responsibilities are outlined by particularly what happens to be of need during the week. This is to say that the Community Gardens runs on a "what is needed at the time" basis. In the grand scheme of things, at the moment the work is often slow due to the season. That said, spring is just around the corner and that is often the busiest part of the year for the community gardens. As an update from the last post, a few community events have happened since then in an attempt to reach out to the communities for gardeners. In this event, I had met another person that worked for the gardens, AJ. Since the event was planned around the continued community involvement and recruitment for the gardens, I decided to ask him what his thoughts are around getting new people to get involved with gardening. In a sense he said that Tucson was an interesting spot for community involvement due to demographics: specifically the elderly, students, and the poor.

I have already discussed this question with our gardens manager, Jessica, and it seems that many of the garden's members are the elderly, seeking a place to garden away from their homes. This seems to be the same consensus with AJ, many of the gardens are populated disproportionately with the elderly due to factors of time, interests, and money. Even still during this time, outside of garden maintenance, my responsibilities have involved working with events and recruitment of new gardeners. Another point of interest was also about the fact that at the event, AJ had discussed students as being unreliable gardeners, despite the fact that student housing surrounded the community garden the event was at. This is understandable considering

that many students leave Tucson for the summer to go back home, unable to work at a garden to maintain any plants. To an extent it is worth mentioning that students, especially those who are most likely to move away from Tucson might feel like connecting with the community would be a waste of time or useless. Regardless, students make for a mixed bag of people that are hard to pin down and to get interested in gardening as a single population.

Lastly, in regards to the population of those people with lower incomes or the unemployed in the city of Tucson, I am hopeful. I would have previously assumed a sense of indifference or inability from those that have found themselves in financially difficult times to something like the community gardens due to its cost and time investment. This is until I had witnessed a conversation between AJ and a man who was passing through the event I was at. This man explained that he had been left unemployed for some time, despite his skill set as a civic engineer. With his spare time he decided to take back his health with bicycling and diet. He spoke of his change in perception about the city due to changing his mode of transportation, saying that his car had made it all too easy to distance himself from the state of infrastructure and communities within Tucson. It seemed he wanted to help and we explained how he could join the gardens though a program at a reduced price due to unemployment or donate his time.

This got me thinking about what the people see in the city: how events like this and organizations like the community gardens help people within communities. Getting more unemployed people or those in poverty involved within the community can benefit everyone though exchanges in opportunities and information. The real difficult part of all this is getting community involvement started. It is easy to write off the development of more public transportation or bike paths as easing the burden of people who use those systems, but the effects of such can trigger much more vibrant communities by absolving our illusions about modern

living. While spring may bring the opportunities for me to take on the responsibility to help with the construction of new gardens, what I look forward to most are the moments like this that bring to light the strength that a healthy community."

From this dialogue, what can be learned is that gardening can reach a wider audience. People with lower incomes living in areas with more social and economic hardships can benefit from community gardening. Clearly there is a lack of awareness of community gardening, not just my young people (expressed by the literary review of this report) but by populations removed from gardening as a practice as well. Reaching out with public events is perhaps the most important way of kick starting a gardening community. Furthermore, the initiatives of community gardening provide a way to interconnect people and provide a means to improve their lives. Perhaps with community gardens in lower income areas, it can alleviate the food deserts, and foster communities that can provide people with more opportunities in our modern society. After all, many people say that it's not what you know, but who you know that counts.

- **Interview with garden manager Jessica Paul**

With many assumptions made from the observations about community gardening, it is vital to run those ideas past someone with more experience with the community gardens. This is why an interview with Jessica Paul, the garden manager with CGT was conducted. Questions asked can be found at the end of the report.

During the interview, Jessica expressed a few key points, first was the importance of community leaders and site coordinators, explanation of the gardeners and their demographics and the moral imperative associated with community gardening.

When asked about the factors that play into the success of each individual garden, Jessica said good things about the community leaders and site coordinators. With an establishment between a community or group of individuals and a site coordinator, reliable and involved gardeners can exist. Clearly, there is no shortage of gardeners or potential gardeners, community gardening can fit in any location, but only if the site coordinator fits with the surrounding community. Perhaps this is the fault of trying to establish a community garden in areas with less strong community ties; if a site coordinator tries to recruit people for a community garden where there exists no community, when someone is recruited, they cannot establish a local community to facilitate a healthy community garden. This works in reverse as well; if a site coordinator does not reach out to a community, and then there is no possible way to recruit from that community, regardless of how strong it is. In the community garden model this is why the involvement of active site coordinators is so important to the health of individual gardens.

When asked about the demographics of gardeners, Jessica responded confirming previous assumptions. She said that she estimated that 75% of gardeners were over the age of 50 and 50% were in retirement age. She expressed a few reasons for this, namely the restrictions of time and money mean that retiaries were more likely to be active in gardening as a hobby. Moreover, she said that many gardeners in the baby boomer generation have a closer connection to nature. This has huge implications in the fact that the destruction of our environment can have impacts on the population, with less forest and natural spaces, losing a connection to nature can imply a connection lost between our communities. This sentiment can be applied to the notion of young people being fixated on technology and becoming socially isolated. That said, when I had expressed the concerns written in my literary review about millennials being more open to gardening, and the limiting factor being space, she seemed hopeful. This probably means that the

limiting factors of gardening are simply time and money, and that there may be a returned interest in nature among the millennial age group in America.

Lastly, Jessica expressed when asked for her personal reasons for being involved with CGT as that of a moral standing. Specifically, the question asked revolved around the reasons working people have for being involved with a community gardening, specifically in her case as a working mother in America. Rather than seeing gardening and living sustainably as a burden for her own interest, she expressed that gardening was a great way to connect with her children and to teach them the moral aspects of living a sustainable lifestyle. She felt a moral responsibility to pass down this respect for nature and the way of living a more sustainable lifestyle. Implications from this may mean that sustainable practices such as community gardening are taught behaviors passed down from parent to child. This is why school gardens are so important for the mission of community gardening as the next generation; despite their lives being surrounded by technology, if exposed to the benefits and reality of our natural environment, perhaps they will grow up with a more sustainably minded conscious.

- **Blue Moon community garden**

A short case study was done on the Blue moon garden, a community garden with the CGT. In this case study consisted of a site survey and a short interview with the site co-coordinator, Darrell. Questions were asked first to contextualize what defines the Blue Moon garden and its gardeners. The survey was conducted to understand how the shape of the garden took place, and how people interact and view the garden.

When the interview was conducted, the topic of the gardeners at Blue Moon was addressed. Consistent with the data gathered from the interview with the garden manager, the

majority of the gardeners were elderly, likely retired people with the time and money to garden at their leisure. This is congruent with the nearby public housing unit, the Tucson House, which houses many elderly and disabled people as part of the public housing program. Likewise, the garden holds by majority raised beds, a metal shade structure with benches, and a metal archway at the entrance provided by the Tucson House. There was also one bed dedicated to a homeschooling group, much in the way that school gardens operate. That said, only about half of the garden beds were occupied as of the time of the interview.

With the previous notion of the importance of site coordinators to maintain the numbers of gardeners at any given time, the challenges of recruiting new gardeners was of great importance because the garden was not full. When asked, Darrell stated that communication is not always easy and recruitment of new gardeners is often times slow. Limitations of communication exist as a large barrier when new action takes place to recruit gardeners. If a site coordinator at Blue Moon wanted to set up a table and spread word about the gardens at the Tucson House they would need approval, and there is no guarantee that gardeners would meet the time and monetary investments needed to garden. That said, it's likely that the lower numbers of the Blue moon Garden are due to slow outreach, since Darrell was added on so recently. Hopefully with some outreach to the surrounding communities, more gardeners will come to Blue Moon.

The site survey shows the quality of the Blue Moon garden the most and how it fits well

Figure 1:Blue Moon Garden, Taken by author

with the surrounding area. The raised beds have been constructed with various materials: metal, wood, and concrete. This choice makes the garden look varied and fits well with the surrounding natural vegetation. As far as the lot size is concerned, the area has enough space to at least double the amount of beds. While that is entirely possible to do, considering that the nearby disabled and elderly population would likely desire more raised beds, construction of new plots will require more labor than digging trenches for depressed beds. That does not even mention the current population of gardeners at the site not necessarily garnering an expansion at this point. Amenities at the site are top-notch, metal shade structures, serval benches, an artistic metal entranceway are among the list. Blue Moon certainly is one of the more beautiful gardens with TCG.

Figure 2: Blue Moon Garden, taken by author

What can be surmised about the site survey is that the needs of the garden surpass its physical amenities. With the logic that the nearby population has many residents that are among those with the time and monetary requirements to be a gardener met, then with such a beautiful garden nearby why are people not flocking to the community garden? While the physical amenities are nice, the Blue Moon garden seems to need more than that to truly meet its full potential. Therefore, the social aspect of the garden must be brought to the front of the discussion. It seems that if a garden is to be successful then there must be enough awareness, that which surpasses proximity and visibility, instead through conversation and outreach. It is entirely possible that residents of the Tucson House are aware that the

community garden is there, but may not understand that they can garden there, let alone what community gardening means.

Figure 3:Blue Moon Garden, taken by author

Figure 4:Blue Moon Garden, Taken by author

Results

What can be learned from the data collection and literary review sections can be summarized into five points.

1. Community gardens require gardeners to function; those gardeners need to fit the criteria of time, money, and interest to pursue gardening. The elderly and retired fit these criteria better and thus have a bigger presence in community gardens.
2. Awareness of community gardens is vital to increase its use, and low awareness is a major factor in gardens that fail to establish themselves within a community. Site coordinators are the main facilitators in this endeavor, mainly through personal communication in order to clarify the purpose of a community garden.

3. Amenities of a garden are needed to make a garden seem more attractive; however the perceived attractiveness of a garden is not enough to attract gardeners alone. The success of a garden is dependent upon both the knowledge of community gardens and what they are within communities and their willingness to get involved, which is assisted by amenities.
4. Community gardening is perceived as a pastime and not a major approach to feeding populations. This is not bad as the purpose of community gardening surpasses food; community gardening establishes communities based around the health and betterment of all people involved. This is why programs such as school gardens are so important, as it establishes this connection with the next generation.
5. In areas where there is less strong of a community connection, especially in areas with severe poverty and crime, it is far more difficult to establish a community garden that is successful. If there is no strong community for a site coordinator to latch onto, then no new gardening community can be established. This is not to say that individuals are not interested in gardening if they are of low income levels, just that it may be more difficult given the limitation of time and money on those populations.

Proposal

Moving forward, the main challenges present in community gardening should be addressed passively rather than actively. Since areas with less tightly connected communities may find it hard to establish themselves in a community garden, then placing community gardens between established and floundering communities is a must. Since individuals from all walks of life are potentially interested in the benefits of community gardening; allowing for the proximity of a community garden to reach these less established communities while maintaining a

population of gardeners from those that are more so is a good strategy to reaching out to more disadvantaged populations. That said, this requires highly involved site coordinators in order to raise awareness of the gardens to a wider audience through locally held events. Even still, community gardens often have little say in where and how their gardens will be built in an area as the land is often given out by public institutions for that purpose. For this reason, perusing those areas where the next community garden will go is vital to establishing community gardening to a wider audience that can benefit from community gardening.

Limitations

The first limitation on this research is evident in the location of the gardens studied. Tucson is a unique climate and while the events and situations present there are parallel to community gardening as a whole in some aspects, although it is indeterminate if the information gathered can be applied to establishing a community garden everywhere. Moreover, each garden within the Tucson area has its own problems, highlighted by that of the Blue Moon garden case study. Ideally, several or all of the now 21 gardens with CGT should have a case study done on them to establish a comprehensive analysis of community gardening, at least in Tucson.

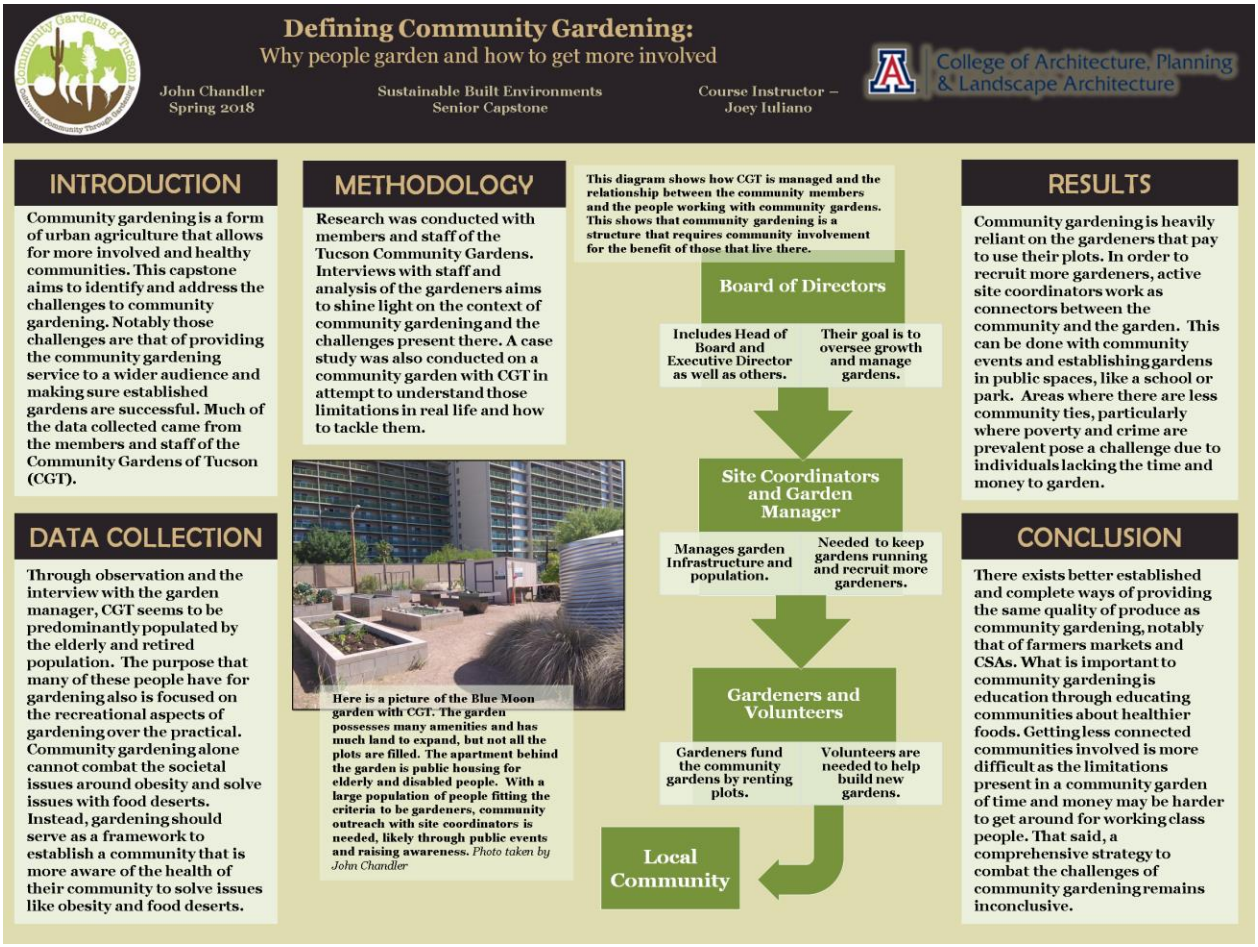
Moreover, data collection from community members outside of community gardening would better define the extent of awareness the community gardening movement and that of CGT in the general population. It is highly possible to ascertain that many people are completely unaware of the purpose of community gardening or that the majority of people are disinterested in gardening as a whole. This data could be collected in a quantitative manner, but asking each gardener in CGT in order to rule out any variables would be difficult or near impossible. Therefor a looser qualitative analysis is not ideal but is more available as a means to understand the types of people involved in gardening.

Time is a vital aspect to understanding gardening in the future. It is important to see the effects of community gardening in the populations of students where school gardens were present and seeing how their interest in gardening is affected as they become more involved in a broader society. This would be an interesting study ten years in the future, but the data would be vital to have today to set a framework to legitimize gardening further within governments for grants.

Conclusion

Community gardening holds many benefits for any population. Gardening is however more of a way to establish a community rather than a comprehensive way of combatting the obesity epidemic in America. There exists better established and complete ways of providing the same quality of produce for the masses, notably that of farmers markets and CSAs. What is important to community gardening is education through educating communities about healthier foods. Reaching populations which have the most been affected by the obesity epidemic, particularly those living in lower income areas within food deserts, presents itself as a barrier for community gardening. Getting those communities involved is more difficult as the limitations present in a community garden of time and money may be harder to get around for working class people. Perhaps creating more gardens between more established communities and those that need the benefits of community gardening more is a strategy to combat this, but a comprehensive strategy to combat the challenges against community gardening remains inconclusive.

Capstone Poster



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Questions asked in the interview with the gardens manager, Jessica Paul:

What led you to get involved with CGT?

What are the predominant demographic groups of gardeners at CGT? Why do you think that is so?

What are the challenges or barriers for groups like CGT?

What possible solutions are there to solving the age discrepancy with gardeners?

What do you think is the future for community gardening and urban agriculture as a whole?

Do you think modern development is shifting towards more sustainable practices in America and in Tucson in particular?

Given that gardening has sociological and physical benefits for a community, do you think that community gardening can alleviate poverty and other socio-economic issues?

What makes a garden at CGT successful or not?

Moving forward, how can community gardening address the challenges it has?

From the perspective of a mother and working American, why bother gardening when so much time is already taken up by work or raising children?

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