Spatial Distribution of School Gardens in Allegheny County
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Abstract
Pittsburgh schools have hosted gardens for their students to work and learn in since the early 1900s. One of the goals of these early gardens was to reconnect students and their families with nature during Pittsburgh’s industrialization. As the gardens became productive, harvested crops were used in the children's school lunches, and excess crops were sold to local merchants or donated to local food kitchens. Currently, there are about 40 school gardens in Allegheny County. The primary objective of this study was to determine if and how the goals of school gardens have changed since the early 1900s. Another objective of the study was to determine the spatial distribution of the school gardens in Allegheny County. Information about the gardens was collected from Grow Pittsburgh’s Growers Map. We found that school gardens still have the goal of giving children an outdoor classroom where experiential learning can occur. Students are usually allowed to take their harvests home to eat or they are incorporated into their school lunches. Just like early gardens, the excess is sometimes donated to local food pantries. Although the goals of the gardens have not changed over the years, the need for the gardens has as Pittsburgh is struggling with food insecurity. School gardens may prove to be a multifaceted tool in bettering the educational experience and dietary health of Pittsburgh school children.

Background
- Pittsburgh area schools began opening gardens in the early 1900s to allow students to gain a hands-on learning experience with agriculture and the environment (1).
- These gardens not only interested students but encouraged parents to start gardens at home, allowing Pittsburgh families to reconnect with nature (1).
- These early school gardens were very successful with large yields that could be served to the students and sold in the community (2). Many of these gardens dwindled in the 1950s and the programs were discontinued.

Purpose
- Recent initiatives have revived school gardening in Allegheny County.
- This study was conducted to see if modern school gardens serve the same role of education and food production as the gardens in the 1900s.
- The spatial distribution of the gardens was also studied along with median household income from Census data to determine if any patterns were present.

Methods
• Grow Pittsburgh’s Growers map for garden addresses
• School websites for individual garden information
• Gardens mapped with ArcMap 10.7.1
• Income data obtained from Census

Results
- Most of the school gardens were established between 2011 and 2014 (Fig 1).
- Most of the gardens were implemented to use the produce grown to serve students attending the schools (Fig. 2).
- Most of the gardens are serving the produce to kindergarten and elementary students (Fig 3).
- One of the schools sells their produce and one other school donates the produce to a local food bank (Fig 2).
- Several schools are using gardens to educate students on agriculture and STEM (Fig. 2).
- Of the 38 gardens, half of them are in Central Pittsburgh (Fig. 4).
- Garden locations span across all income ranges (Fig. 5).

Discussion
- The schools are supplementing their food supply by serving the garden yields to the students.
- The garden programs seem to focus on the youngest children in the most urban part of Pittsburgh. These children may have the least access to agricultural educational opportunities because they are deeper in the city.
- Students participate in the gardens and learn how food is grown and placed on the table.
- Grow Pittsburgh’s plethora of teaching resources and the 2018 USDA Farm to School Grant Program may provide for an increase in school gardens in the future.

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References
http://www.brooklineconnection.com/history/Schools/Brook16.html
https://www.pasda.psu.edu/cgi/DataSummary.aspx?dataset=72