Duffy's Hope Inc. Youth Garden
Initial Pollinator Assessment

E. 9th and N. Church Sts., Wilmington DE
http://duffyshopeinc.org/about-duffys-hope/

Duffy's Hope, Inc. manages and owns a Youth Garden on Wilmington's Eastside that provides fresh fruit, vegetables, herbs and cut flowers to youth and their families involved in Duffy's Hope programs. In addition, people in the Eastside Community in the area of the Garden are engaged in many activities that contribute to the Garden success resulting in a strong Duffy's Hope-Eastside Community relationship. Overall, the project encourages Duffy's Hope youth and the surrounding Community to live healthier lives through the proactive benefits of gardening.

The Delaware Department of Agriculture is interested in identifying sites throughout Delaware that provide habitats with a diversity of sustainable forage pollinators to thrive. Thalia Pappas and David Clarke visited the Duffy's Hope Youth Garden to document what pollinators were attracted to the numerous species of flowers and vegetables grown in the garden. From a first look, David was able to photograph and identify 4 species of native bees present in the flowers during the visit. He has also provided background on the biology of the species he photographed.

Our hope is that this initial look at pollinators visiting the garden serves as an inspiration to show that it is possible to attract and create an environment for a diversity of pollinating insects in an urban setting by establishing a garden of flowering plants, vegetables and herbs. These pollinators, in turn, will provide essential pollination services for the plants so that they can set fruit and seed for human and wildlife consumption.

For more information on DDA's Pollinator Protection Plan visit:
http://dda.delaware.gov/pesticides/pollinatorplan.shtm

A First Look at the Bee Pollinators in Duffy's Hope Youth Garden

Photos taken by David Clarke at Duffy's Garden July 11, 2017, from ~10:00am-11:30 am. Notes on the Bee Close-ups (Most of the information given here is derived from, The Bees in Your Backyard: A Guide to North America's Bees, by Joseph S. Wilson.)

Leafcutter bee (genus Megachile) on Gaillardia flower.

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Leafcutter bees are solitary nesters, making their nests in tiny cavities in dead trees or man-made wood structures, or in rock crevices.

The genus gets its common name (leafcutter) from the way it uses cut pieces of leaf to line its nests. In preparation for egg laying, the female bee lands on the narrow tip of a leaf and, by chewing with her mandibles, detaches the very piece of leaf she is standing on. In midair she then grasps that cut-away piece with her legs and flies it back to her nest. Using saliva to soften the piece of leaf, she forces it into the nesting cavity to line its interior like wallpaper, thus creating an open-ended capsule. Into that she deposits her eggs, along with pollen and nectar, after which she seals up the capsule using additional leaf material glued together with saliva.

Female bees in this genus, and the family to which it belongs, collect pollen on their bellies rather than with their hind legs, which is the method used by most other bees.

The bee in my photo is apparently a male, as it lacks hair on its belly with which to carry pollen. Note how its abdomen slants upward, another characteristic unique to bees of this genus, whether male or female.

Sweat bee (genus Halictus) on Gaillardia flower.

Sweat bees make their nests in vertical tunnels they dig in the ground, sometimes as deep as 3 feet. They are semi-social, meaning they can behave cooperatively if required by circumstances. They produce several generations in a season, and so are generalists, meaning they subsist on nectar from wide variety of flowers.

Note that the bee in this photo has some grains of pollen sticking to its hind legs, which indicates it is a female. Once she has collected a sufficient amount of pollen, she will combine it with nectar to form a tiny loaf (called "bee bread") that will be consumed by her growing larval offspring.

The genus Halictus is one of several in the family Halictidae that are called "sweat bees," due to a fondness for landing on the skin of humans so as to lick their sweat. (Biologists are not sure what benefit the bees derive from human sweat.)

In this photo the image of the bee is too small within the frame to know its identification for sure. It may be **Lasioglossum,** another sweat-loving genus of the family Halictidae.

Bumblebee on Gaillardia flower.

Most of us are familiar with bumble bees (genus Bombus, of the family Apidae) because they are so large and so prevalent. Like honeybees, they are fully social, meaning they consist of colonies of female worker bees that arise from one queen.

The queen, who is the only member of the colony to overwinter, emerges in the spring to find a nesting site, usually in cavities near the ground or between rocks. Colonies average around 200 members, but can range up to 1000.