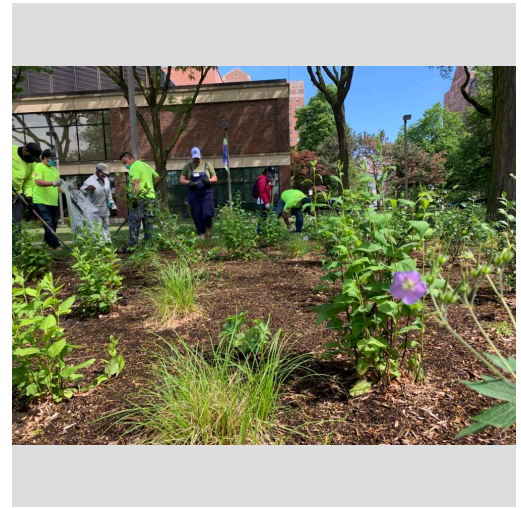


# Bee Campus USA - University of Illinois at Chicago

Report on 2021

## Pollinator Habitat Creation & Enhancement

STEM Scholar Internship and El Paseo Community Garden At the pollinator habitat events held on our campus for the Pilsen Project and El Paseo Community Garden, students have been volunteering at the community gardens once a week. The students tend to focus on weeding in the garden and learning about plant identification but they have participated in various activities around the garden such as mowing the grass, raking through the soil, and cleaning up the garden and picking up trash. The students are at the garden from 10 am – 2 pm and towards the end of each activity, the students observe the milkweed plants around the garden and record monarch eggs or caterpillars that they observe. The monarch butterfly monitoring activity is part of the Field Museum's Community Science program. Hands On Maintenance Workday During May 2021, there was a Native Prairie Garden Hands-On Maintenance Workday event to educate the UIC community about how to maintain a native garden and pollinator habitats. The participants learned how to differentiate between a native plant and a weed and were able to pull weeds and invasive species from the newly established native rain garden at Arthington Mall and the pre-existing Little Prairie on Campus. Both of these habitats expand pollinator habitats on campus, and the new Arthington Mall project installed over 21,000 square feet of native plants/pollinator friendly plants. Prairie Planting Event Fall 2021 In October 2021, there was another weeding and planting event which occurred at the Little Prairie on Campus. Participants learned which invasive species to pull from the garden, were able to plant new native prairie plants in the spaces where weeds used to be and learned how to scatter the seeds of native plants to encourage more prairie plants to become established in the garden.



STEM Scholars clean up the El Paseo Community Garden in the Pilsen neighborhood in Chicago..

UIC student and staff volunteers stand in front of the 2,000 square foot native plant garden, known as the Little Prairie on the Campus, during the prairie planting event in October 2021

Volunteers from the University of Illinois Extension, Master Gardeners, UIC students and Grounds staff remove weeds and invasive plants from the native plant garden and bioswales from Arthington Mall in May 2021.

## Education & Outreach

### Native Prairie Garden Hands-On Maintenance Workday

<https://sustainability.uic.edu/news-stories/native-plant-garden-weeding-event/> During May 2021, The Office of Planning, Sustainability and Project Management (PSPM) and the UIC Bee Campus USA (UIC BCUSA) Committee hosted a Native Prairie Garden Hands-On Maintenance Workday event that educated the UIC community about how to maintain a native garden and pollinator habitats. The participants learned how to differentiate between a native plant and a weed and were able to pull weeds and invasive species from the newly established native rain garden at Arthington Mall and the pre-existing Little Prairie on Campus. Both of these habitats expanded pollinator habitats on campus, and the new Arthington Mall project installed over 21,000 square feet of native plants/pollinator friendly plants in 2020. Prairie Planting Event Fall 2021 <https://www.facebook.com/photo/?fbid=270995305031524&set=pb.100063631685435.-2207520000..> In October 2021, there was another weeding and planting event hosted by UIC BCUSA and PSPM at the Little Prairie on Campus. Participants learned which invasive species to pull from the garden, were able to plant new native prairie plants in the spaces where weeds used to be and learned how to scatter the seeds of native plants to encourage more prairie plants to become established in the garden. Plants were donated by the UIC Plant Research Laboratory, Department of Biological Sciences. Volunteer Days at the UIC Heritage Garden <https://diversity.uic.edu/events/hgvolunteer1112/> The UIC Heritage Garden is a key member of the UIC Bee Campus USA Committee and on three different days in the Fall 2021 semester, they hosted a hands-on gardening event. Volunteers learned how the Heritage Garden interns are connecting horticulture with environmental sustainability, cultural diversity, and social justice alongside basic gardening including harvesting and preparing the garden for the winter. Volunteers were offered a free plant for their help. STEM Scholars program at El Paseo Community Garden A summer of STEM education The UIC Energy Resource Center is a key member of the UIC Bee Campus USA Committee for their Sustainable Landscapes research cluster work. In the summer of 2021, they hosted more than 20 students from nine Chicago public high schools as paid interns in the UIC Energy Resources Center's STEM Scholars program. STEM Scholars completed a free after-school program, then continued on to the summer internship by participating in the Field Museum Community Science program, where they help monitor monarch butterflies by observing milkweed plants around the El Paseo Community Garden and record any eggs or caterpillars found. Before they could observe the butterflies, the students had to build the garden. Once a week over the course of the summer semester, students weeded, mowed the grass, raked through the soil, and cleaned up the garden – including trash removal – all while learning about plant identification. Towards the end of each day, the students observe the milkweed plants around the garden and record monarch eggs or caterpillars. Heritage Garden Harvest Festival [https://latinocultural.uic.edu/event\\_categories/civic-cinema/](https://latinocultural.uic.edu/event_categories/civic-cinema/) The Heritage Garden Internship Program also hosted the Harvest Festival in the Fall of 2021, which was an event discussing the questions “How does planting seeds of knowledge



rooted in social justice foster inclusion?” and “How can our collected remembering be a tool of resilience?” The festival included a take home kit for participants which consisted of plant seeds and the connections that seeds have to different cultures, teaching participants the tools to grow guerilla gardens in their neighborhood and passing out skull-shaped seed bombs to help preserve monarch butterfly habitats and honor loved ones who have passed away through storytelling. Additionally, the interns hosted another program titled “Building Self-Determination: Growing Gardens of Resistance”, which featured a panel discussing the intersection between the natural environment and activism/the fight for communities to have the right to self-determination. Different artists performed at the events, and members of the organizations Marimacha Monarca Press, Love Blooms Here, and the Cicero Community Farm participated in the conversation.



Volunteers help with weeding and plant maintenance at Arthington Mall during May 2021.



Heritage Garden show off plants available for volunteers to take home as a thank-you for their service during the Harvest Festival (November 2021) outside of the Rafael Cintrón Ortiz Latino Cultural Center



A STEM Scholar intern helps weed the garden at the El Paseo Community Garden to prepare a monarch habitat

## Courses & Continuing Education

The for-credit courses which teach pollinator conservation are Bios 120, Bios 340, Bios 294, Bios 431, Bios 305, and Bios 365, as well as one Art class, ART 460. In Bios 120, a for-majors, required, undergraduate course, which includes about 1200 students a year, there is a lecture on the Biology of Pollinators. This covers pollination syndromes, the basics of how pollination works, and the major groups of pollinators – including several families of bees, naturally. In Bios 340, Environmental Physiology, students read a paper on the thermal ecology of neotropical stingless bees. There is also some lecture material dedicated to the physiology of insects, and the chemical ecology of deceptive pollination. In Bios 294, Insect Evolution and Biodiversity, there is a two week unit on the biology of pollinators, extensive readings on pollinator conservation, including the threatened Aztec bee and the non-honeybee *Apis*, and some new readings on how honeybees harm native pollinator networks. In Bios 431, Plant-Animal Interactions, there is a two week unit on the biology of pollinators (not the same material), a lot of discussion of how pollinator networks function, and some new reading about how native honey bees in natural areas negatively impact biodiversity. In Bios 305, Plant Evolution and Ecology, there is a fair amount of material on the history of pollination. Next year, the James Woodworth Prairie will be open to the public for



a Bee Tour. In Bios 365, Human Ecological Systems, there is a week and a half which covers urban pollinators. Finally, Art 460 uses plants for photography at the UIC Plant Research Laboratory where students receive pollinator background, a new course for fall 2021.

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## Service-Learning

**Heritage Garden Internship with the UIC Latino Cultural Center** The Heritage Garden Internship cares for the on-campus satellite gardens. Satellite gardens all have plants meant to enhance pollinator habitats. The Heritage Garden has also provided seeds to at least one other unit who wanted to create a garden in the front of their office and have provided contact information to some of the people that have reached out to us about increasing pollinator habitat.

**STEM Scholars Program with the UIC Energy Resources Center** The STEM Scholars internship has been working to support pollinator habitat at a community garden in the Pilsen area. There are 20 high school interns working on the project. Interns are also involved in a community science project through the Field Museum monitoring monarch butterfly eggs and larvae. The UIC greenhouse grows 4000 plants for the Field Museum who uses these plants for education programs and community outreach/distribution.

**Biodiversity Internship with the UIC Office of Planning, Sustainability, and Project Management** The Office of Planning, Sustainability, and Project Management hosts a Biodiversity Internship, in which the student intern tends to the native pollinator habitats on campus, including the Little Prairie on Campus and Arthington Mall. The intern is responsible for weeding invasive species and other unwanted plants, as well as planting new native plants to maintain the gardens.

**Cultural Immersion in Monarchs and Milkweeds Advancing Science Education** UIC hosts a National Science Foundation funded Research Experience for Undergraduates (REU) called Cultural Immersion in Monarchs and Milkweeds Advancing Science Education which investigates the reasons behind the decline of monarch butterflies by testing how different habitats are utilized by monarch butterflies across Chicago. Research activities involved in this project include experimental milkweed plantings and field sampling of milkweed and other plants. This project employed 6 student interns during the summer of 2021.

**James Woodworth Prairie Scientific research continues at the James Woodworth Prairie.** Kevin Yu completed his master's thesis work, on isotopic ratios, during 2020 and 2021. This work clearly illustrates that subtle anthropogenic factors influence isotopic ratios for carbon and nitrogen, though much more work is necessary to get a clear picture.



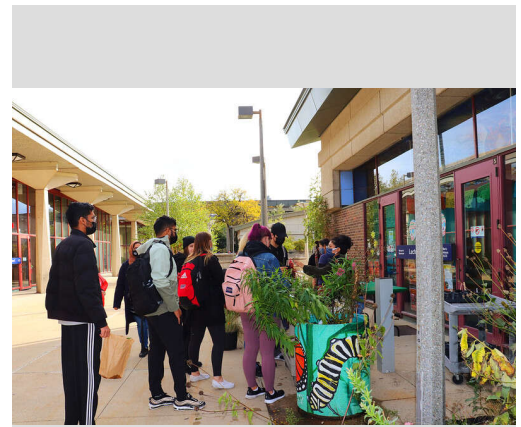




A Heritage Garden Intern tends to one of the eight satellite gardens in September 2021



The 2021 STEM Scholars cohort stand in front of mural at the El Paseo Community Garden in the Pilsen neighborhood of Chicago.



Heritage Garden interns host a plant giveaway as part of Harvest Festival 2021

## Educational Signage

A total of four educational signs were installed in 2021 at the newly renovated outdoor landscape Arthington Mall Plaza project, each included in the "Sustainable University" group of signage at UIC. Each sign corresponds to the site's different approaches to stormwater management and biodiversity protection under the topics of rain gardens, permeable pavement, pollinator habitats, and mature trees. By coordinating the sign's locations with the corresponding features of the site, the descriptions and illustrations allow visitors to gain a better understanding of what is going on underground at Arthington Mall. All four signs, utilize sectional drawings to visually describe the systems taking place in each feature, allowing viewers to gain an otherwise-impossible perspective. The Pollinator Habitats sign uses playful illustrations to help visitors identify several of the common native plants and insect species that can be found on site. By providing a sense for what these species look like along with their common and scientific names, it encourages people to notice and appreciate the biodiversity of Arthington Mall, and challenges them to identify various plants and insects for themselves. It also helps to explain why a diverse selection of native pollinators is important for the health of our cities and community.







UIC Sustainable University sign near one of the native plant gardens at Arthington Mall. The sign reads: Established native plants are great for urban ecosystems! They do not require any additional water as rainfall is enough to give plants what they need. They also create a perfect habitat for local pollinators, helping to increase their populations and overall biodiversity.

## Policies & Practices

The UIC Heritage Garden manages 8 satellite garden sites on UIC's east campus. From tilling the soil to collecting seeds, interns are involved throughout the entire process of maintaining the gardens every season. They use mechanical removal (for example knocking aphids down), crop rotation (since some insects that like to eat the plants put in the soil like the squash vine borer), and interplanting (where we plant/leave different plants that attract pollinators and are habitat for



insects that are predators to the other insects in the garden in between or close to the sections of vegetables). They also leave some plant material behind in the winter to help insects overwinter, as well as seeds that even though will germinate and we may have to remove later, to provide food for the insects and other animals we share the space with. The Office of Planning, Sustainability and Project Management's (PSPM) Sustainability Internship Program (SIP) employs a Biodiversity intern each year which helps the UIC Grounds Department in the gardens funded by grant awards and uses IPM practices in those areas. These management practices include pruning off leaves showing symptoms then attempting to locate the source of the issue and consulting Pest Management for The Home Landscape for solutions. If these issues persist or the issue cannot be identified, interns contact the University of Illinois Extension for assistance. Details of the native garden maintenance is detailed here:

<https://sustainability.uic.edu/green-campus/grounds/pollinator-habitats/prairie-garden-maintenance-guide/>

**Integrated Pest Management Plan:**

<https://uofi.box.com/s/m1k45b5y1goizabx6q0ny95puo6rfbrc>

**Recommended Native Plant List:**

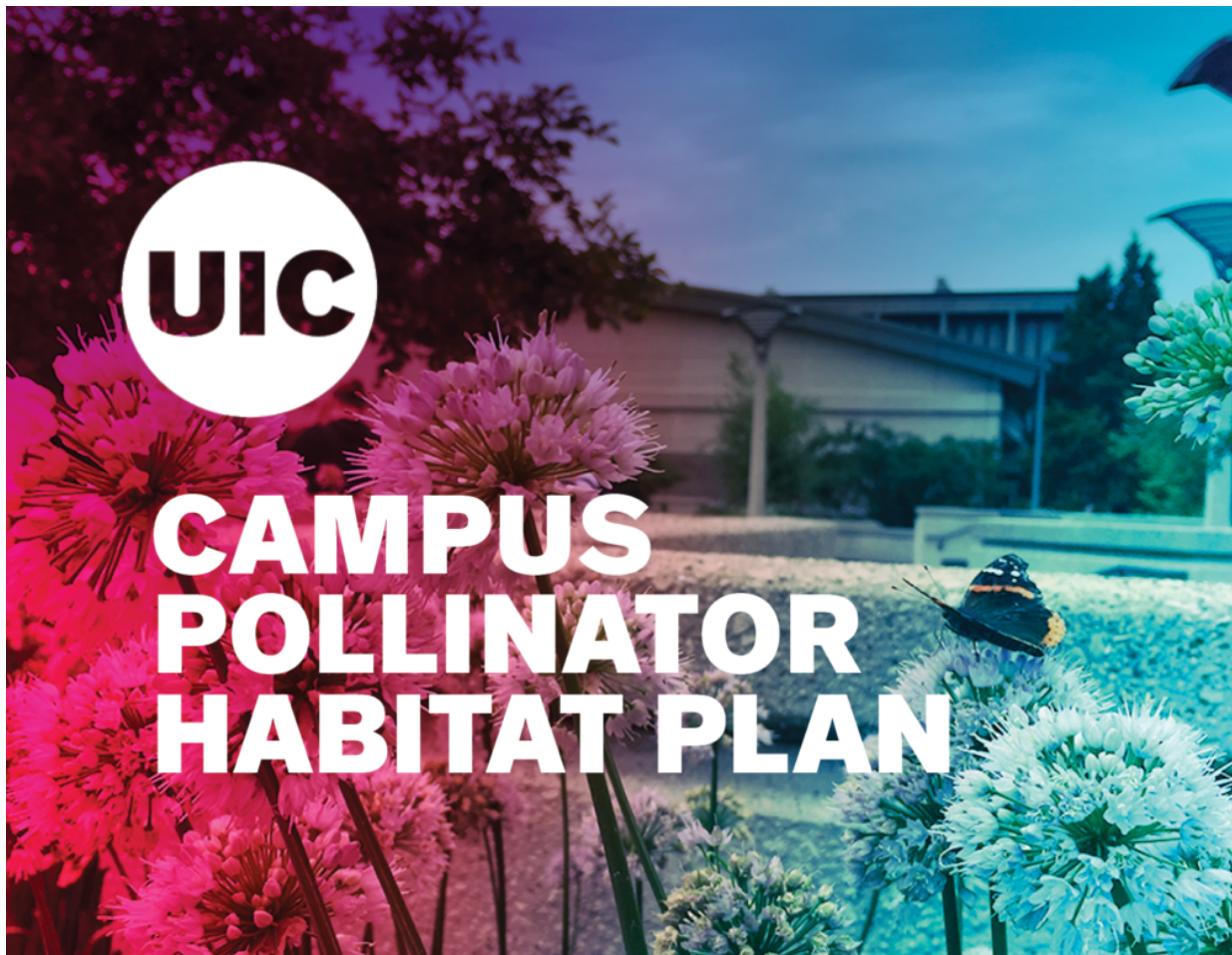
<https://uofi.box.com/s/m1k45b5y1goizabx6q0ny95puo6rfbrc>

**Recommended Native Plant Supplier List:**

<https://uofi.box.com/s/m1k45b5y1goizabx6q0ny95puo6rfbrc>







The cover of UIC's Energy Resource Center's POLLINATOR HABITAT ESTABLISHMENT & MANAGEMENT GUIDELINATOR  
Habitat Plan

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