

West Chester University

Inventory of Academic and Campus / Public Engagement Uses of the Gordon Natural Area, Campus Grounds, and Campus Gardens and Outdoor Classroom

2018-2019

Robert B. Gordon Natural Area for Environmental Education

<https://www.wcupa.edu/gordonNaturalArea/>

Classes Utilizing the GNA

Based on a survey conducted by Dr. Jessica Schedlbauer in the spring semester of 2018, the GNA was utilized during the 2016-2017 academic year by 31 courses (64 sections), led by 18 faculty members. Approximately eighteen hundred (1,839) students were enrolled in those courses. Appendix I presents a summary of the courses utilizing the Gordon. Tours given to classes by GNA staff are included in the Appendix. Note that this list of courses is somewhat incomplete, and that actual student use of the GNA exceeds this estimate.

Tours of the GNA

July 2018 to June 2019

Class Tours

- ANT/DNT 277: Sustainable Food Systems [Dr. Monahan and Dr. Di Giovine]
- ANT352: Heritage and Preservation [Dr. Di Giovine]
- BIO454: Mycology [Dr. Turner]
- ESS102-04: Humans and the Environment [Dr. Helmke]

Other Tours

- Tour of the GNA Tour: Bhakti Yoga Festival
- Tour of the GNA: The WCU Manager's Community
- Tour of the Mushrooms of the GNA: Sustainability Research & Practice Seminar

July 2019 to December 2019

Class Tours

- ANT/NTD277: Sustainable Food Systems [Dr. Di Giovine]
- ENG392: Writing Methods, Secondary School [Dr. Buckelew]
- ESS102: Humans and the Environment [Dr. Helmke]
- WRT120: Effective Writing [Dr. Buckelew – 2 sections]
- 100X: First Year Experience [4 Sections]

Other Tours

- Geological Tour of the GNA [led by Dr. Srogj]
- GNA Tour: Sustainability Peer Educators' Training Group
- Master Naturalist Training for the Land Conservancy for Southern Chester County

- Tree ID Walk [led by Arborist Brice Dorwart]

Volunteers

Approximately 25 students, with some additional community members from West Chester Borough and other municipalities of Chester county, volunteer at the Gordon Natural Area each year. The greatest portion of this work involved tree planting and maintenance.

Outreach

WCU Homecoming

The GNA participated in 2017's and 2018's Homecoming activities. GNA staff and student interns prepared an exhibit and contracted with the Brandywine Zoo to have their 'travelling zoo' to be a part of the GNA exhibit.

Scent Dog Training

Beginning in the summer of 2016, the GNA has been used for scent dog training by the K9 Detection and Search Foundation (a local non-profit organization). During a subset of these training exercises training was held in conjunction with WCU's Animal Behavior Club.

Other Outdoor Living Classrooms / Laboratories

- Campus Urban Forest on North campus
- Outdoor Classroom of Native Plants with water feature, certified as Audubon backyard habitat
- Organic Demonstration Garden, north campus
- Tanglewood organic garden, north campus
- Organic Demonstration Garden, south campus
- Natural Pigments and Dyes garden, north campus
- Grounds Department green waste and composting facility, south campus

Activities 2018-2019

Campus Urban Forest: Since 2009, students from Geography and Planning, Ecology, and Public Health Departments have collected data on trees on north campus to create a Geographic Information System (GIS) database. The data are used with the U.S. Forest Service software iTrees to evaluate the ecosystem benefits the urban forest provides to the University.

Students continue to work with, maintain, and update the Green Legacy GIS database (<https://data1-wcupagis.opendata.arcgis.com/search?tags=greenlegacy>). Maintenance of the database includes field work on campus to collect or update data on tree species, height, diameter at breast height, canopy size,

and location attributes where the tree is found. The Green Legacy database provides students with instruction about ecosystem benefits provided by the urban campus forest including air pollution uptake, carbon sequestration, storm water management, energy savings, aesthetics, and habitat.

The data and projects related to the campus urban forest and including that of the surrounding Borough of West Chester have been incorporated into a Geographic Information System (GIS) urban forestry hub that is accessible to campus and the public as a resource through the Center for GIS and Spatial Analysis: <http://data1-b2fba-wcupagis.opendata.arcgis.com/>.

GE0205 and GE0230: classes are held in the Outdoor Classroom (FLD337) to learn about native landscaping that reduces water use, water pollution (through avoided use of fertilizers and pesticides on turf grass), and provides habitat for native animals such as threatened native pollinators.

The elementary education science general education class uses the Outdoor Classroom for observation of bird feeders and investigations of native plants and the animals they attract/support (Instructor Jamie Vann).

GE0205 (Geography of Agriculture, Food and Sustainability) holds class sessions in Tanglewood and north campus organic gardens to assist with compost bin rotation, harvesting, and maintenance of gardens. Students learn about local, seasonal and plant-based foods and learn to prepare foods harvested from the gardens.

GE0230 (Environmental Conservation and Sustainability) holds class sessions in the south and north campus organic garden to assist with establishing native wildflower communities around the campus gardens to aid in attracting and supporting native pollinators.

PSC – 354 Environmental Politics and Policy: Students from this course built the south campus garden in the Spring 2015 semester. They assisted with all aspects of the project from planting seedlings, to building the raised beds, and publicizing the garden. In subsequent semesters, students in the course have helped with ongoing tasks including: planting seedlings, weeding, mulching, etc. I also use the composting space to discuss sustainable practice of framing and food waste management.

PSC – 399 Food Politics: Students from this course assisted with building the cold frames and new composting system in the garden during the Fall 2017 semester. We also visited the north campus garden and used both gardens as spaces to discuss sustainable farming, local food, and composting.

FLD339: Organic Garden north campus is a resource that is available to campus volunteers (students, staff and faculty) to learn about organic gardening. Volunteers participate in growing, maintaining, and harvesting seasonal, nutritious fresh vegetables, fruits and herbs from the north campus garden.

All organic vegetable gardens on campus, FLD339, Tanglewood, and south campus, provide fresh, seasonal produce to the Resource Pantry for food-insecure students at West Chester University. The Natural Pigments and Dyes garden provides

The north campus, Tanglewood, and south campus gardens were included in the first organic garden tour for the Borough of West Chester organized through the West Chester Green Team on Saturday, June 29, 2019.

The WCU student Wellness Ambassadors (<https://www.wcupa.edu/services/wellness/aboutUs.aspx>) received a working orientation to the north campus garden on August 22, 2019.

The Center for International Programs (<https://www.wcupa.edu/international/>) held barbeques using the grill in the outdoor classroom May 3, May 21, June 18, July 26, and August 23, 2019 from 1-4pm.

For the 2019 year, the north campus and Tanglewood gardens produced over 1,000 pounds of produce that went to students, the resource pantry, staff and faculty at WCU. The north campus garden engaged 115 student volunteer and 5 community member visits totaling 216 hours.

Student research projects include (partial listing):

- Nutrition student Tiffany Kennedy's research entitled "A Comprehensive Approach to Composting on Campus" (Faculty Mentor: Professor Ashlie Delshad, Political Science) which included initiation of nutrition laboratory food scraps composting at the south campus Grounds Department green waste and composting facility.
- Biology student Christopher Catranis's "Spotted Lantern Fly (*Lycorma delicatulus*) Surveillance of the Gordon Natural Area" (Faculty Mentor: Professor John Pisciotta, Biology).
- Biology student Sarah Polohovich's "A Five-Year Reassessment of the Carbon Distribution in the Gordon Natural Area and its Implications for Climate Change" (Faculty Mentor: Professor Jessica Schedlbauer, Biology).
- Geography and Planning students Jason Karian, Amanda Devers, and Genevieve Pomeroy's "Developing a Campus UAS (Unmanned Aerial Systems) Mapping Methodology" (Faculty Mentor: Professor Gary Coutu, Geography and Planning).
- Biology student Enrique Mentado Sosa's "Microbial Assessment of Rainwater Tanks and Runoff Retention Basins: A Pilot Study" (Faculty Mentor: Professor John Pisciotta, Biology).
- Geography and Planning students Alexis Bilsky, Garrett Sarlouis, Corinne Pealer, Marcus Owens, Emily Reilly, and Jacob Bashioum's "Mapping Observations of the Infestation of Spotted Lanternflies" (Faculty Mentor: Professor Gary Coutu, Geography and Planning).

Appendix I: Classes utilizing the Gordon Natural Area. Compiled November 2017 by J. Schedlbauer.

Faculty Member	Course #	Course	# of Students/Year	
			# of Sections/Year	
Anthropology & Sociology				
Heather Wholey	ANT 364	Archaeology of Ancient North America	1	15
	ANT 368	Archaeology Field School	1	10
	ANT 405	Seminar: Archaeology and the Environment	1	8
Art + Design				
Kate Stewart	ART 208	Drawing II	2	40
	ART 217	Painting II	1	15
	ART 317/18/19	Painting III/IV/V (combined sections)	2	30
Biology				
Anne Boettger	BIO 377	Entomology	.5	20
Greg Turner	BIO 435	Course Topics in Biology: Forest Biology	1	18
	BIO 454	Mycology	1	24
	BIO 475	Plant Communities	1	24
Harry Tiebout	BIO 270	General Ecology	2	130
	BIO 277	Vertebrate Ecology	1	14
Jessica Schedlbauer	BIO 315	Terrestrial Ecosystem Ecology	1	14
Sharon Began	BIO 485	Systematic Botany	.5	20
Earth & Space Sciences				
Cynthia Hall	ESS 102	Humans & the Environment	1	10
	SCI 101	The Carbon Cycle	4	140
Hal Bosbyshell	ESS 101	Introduction to Geology Lab	5	160
	ESS 422	Geophysics	.5	12
Jamie Vann	ESS 102	Humans & the Environment	1	20
LeeAnn Srogi	ESS 101	Introduction to Geology	2	192
	ESS 405/505	Petrology	1	34
Russel Losco	ESS 480/580	Special Problems: Urban Soils Classification	1	25
	ESS 480/580	Special Problems: Applied Soil Classification	1	12

Faculty Member	Course #	Course	# of Students/Year	
			# of Sections/Year	
	ESS 490/590	Fundamentals of Soils	.5	28
Tim Lutz	ESS 102	Humans & the Environment	6	192
Victoria Helmke	ESS 101	Introduction to Geology Lab	8	260
English				
Mary Buckelew	ENG 391	Teaching Writing in the Middle School	1	7
	ENG 392	Writing and Teaching Writing Secondary English	1	16
	LIT 165	Topics in Literature	2	50
	WRT 120	Effective Writing I	2	50
Geography and Planning				
Joan Welch	HON 314	Science, Technology & Environmental Systems	6	120
Joy Fritschle	GEO 402/585	Field Methods	1	9
Health				
Chuck Shorten	ENV 102	Humans & the Environment	2	70
	ENV 435	Environmental Health Workshop	1	25
	ENV 462/533	Water Quality and Health	1	25
Totals:			64	1,839