

## **ESS 305 Environmental Education (with a 4<sup>th</sup> Service Learning credit)**

This four-credit environmental service learning class is an exploration of environmental education in the U.S., as well as the various pedagogical tools, programs, and resources that are available for the global dissemination of environmental education. Students completed at least 30 hours of environmental service learning with community stakeholders (community schools, nonprofit organizations, and nature centers) and over the course of the semester designed and taught original and replicable experiential EE curriculum lessons for stakeholder staff and community members, at:

- [Wilton Wildlife Preserve and Park/BOCES](#)
- Capitol Roots
- Apple Blossom Bunch
- Saratoga Independent School
- St. Mary's School
- Saratoga High School
- Schuylerville Elementary School
- Hudson Alternative High School
- Lake Avenue Elementary School
- Ndakinna Native Skills Center
- [Hudson Crossing Park](#)
- CAPTAIN Youth and Family Services for homeless teens
- The City of Saratoga Springs
- Camp Skidmore
- Caroline Street Elementary School
- Skidmore College Environmental Studies and Sciences
- Wellesley Community Center (adult EE)
- The Latino Community Advocacy Program (LCAP, a program of the Saratoga County EOC) – Alternatives to toxic cleaning products and cosmetics
- Home School Moms (and students) of Saratoga County
- Greenburg Childcare Center
- Skidmore College Early Childcare Center

EE students examined innovations and philosophies behind experiential and authentic environmental education; sustainability education; research on environmental education (pro-environmental knowledge, attitudes, and behaviors); adventure education; garden-based learning, and place-based learning. in community schools, nonprofit organizations, and nature centers delivering environmental education lessons.

Every semester the EE course is offered, students utilize our new Skidmore Community Garden as a teaching and learning space to teach *Farm Based Education*. Skidmore students utilize Shelburne Farm's (VT) *Fabulous 5* to introduce young students (3-12 yrs. old) to the necessary components that plants need to survive in a garden (sun, space, soil, light, water), and have a

food tasting party that incorporates new and exciting fruit and vegetable options. Groups that visited the Skidmore Community Garden for this curriculum included The Apple Blossom Bunch, Malta Montessori School, and the Home School Moms of Saratoga Springs.

Skidmore College's Environmental Studies and Sciences Program requires that all students complete a year-long community based research project in Saratoga County. To date, seven Capstone groups (20 students total), have developed year-long EE investigation research projects as a direct result of taking ESS305. One research group that investigated the outcomes of using hydroponics and aquaponics in the formal curriculum, published a peer reviewed manuscript with two Skidmore College professors, in Applied Environmental Education and Communication (below)

**A Case study of indoor garden based learning with hydroponics and aquaponics: Evaluating pro-environmental knowledge, perception, and behavior change. Applied Environmental Education and Communication. 14(4), 256-265.**

**Schneller, A.J., Schofield, C., Frank, J., Hollister, E., & Mamuszka, L. (2015)**

**<http://ajschneller.org/wp-content/uploads/2015/12/Schneller-Schofield-Frank-Hollister-Mamuszka-hydroponics-2015.pdf>**

**The six other EE Senior Capstone projects included:**

**Growing Good Habits: A Garden-Based Approach to Fourth & Fifth Grade Learning  
Haley Duncan, Anna-Beth Lawler, and Duke Yun (2013)**

Today, children face deprivation from nature, unhealthy eating habits, and limited physical activity. Garden-based learning can address all of these issues, while also enhancing science classes. We developed a 5-week indoor, garden-based, after-school program with fourth and fifth graders from St. Mary's elementary school in Ballston Spa to measure their effectiveness. Successful gardening programs must create allies within the school and ultimately influence in-classroom curriculums.

**Breaking In: Educating Prisoners Through Environmental Literacy**

**Sondra Lipshutz, Kristen Stearns, and Sarah LaBella (2013)**

How can the impact of the environmental movement reach underserved communities? Our project involved seeking nontraditional allies in prisoners, working with Mt. McGregor Correctional Facility in Wilton, NY to implement an environmental literacy program for inmates. Literature, film, and interactive activities introduced inmates to topics from climate change to green jobs. We used pre- and post-surveys to evaluate the program and made suggestions for future Skidmore/prison collaboration in the field of environmental studies.

**Public Participation in the Saratoga Springs Household Hazardous Waste Collection Program: Community Based Action Research and Educational Recommendations  
Jennifer Garvin, Faith Nicholas, and Lauren Schilling (2014)**

We examined the current household hazardous waste (HHW) program of Saratoga Springs in the hopes of enhancing participation and expansion. We researched other municipal HHW programs in New York State and surveyed Saratoga Springs residents. Our study led us to the following recommendations: utilize permanent facilities within the community, hold collection days

multiple times a year, and provide substantial educational material within public schools and the community.

### **Environmental Education and Interpretive Trailblazing at the Saratoga Independent School**

**Katie Cuthbert, Emma Ottenheimer, Kylie Rosabal (2016)**

With stakeholders at the Saratoga Independent School, we implemented an afterschool club and constructed an interpretive nature trail on their property. Lessons used in the after school program (for students age 8-11) consciously engaged the pedagogies of place-based education, nearby nature and experiential learning as a measure of environmental knowledge, behavior and values. We planned and constructed the trail, adding interpretive elements such as stations and activity suggestion for teachers at the Saratoga Independent School.

### **Pitney Meadows Community Farm Summer Curriculum: Action Research on Effective Farm Based Education Curriculums**

**Sydney Randall, Sarah Hooghuis, Jerry Lerman**

Forthcoming in May 2017

### **Environmental Art and Muralism for Increasing Awareness of Hudson River Ecosystem Restoration: Knowledge, Attitude, and Behavioral Outcomes of a Place-based Environmental Art Curriculum**

**Julia Adelman and Shannon Post**

Forthcoming in May 2017

The midterm examination for this course incorporates advanced writing skills to promote civic engagement, public participation in educational policy decisions, and public education. Students are required to write and submit a 300-word *Letter to the Editor* for publication in a regional newspaper, as well as a 1000-word formal letter to both their Secretary of Education and Congressperson. Topics in the past have included promotion of the No Child Left Inside Act (HR882), promotion of funding for school gardens and curriculum, expansion of experiential EE in public schools, and healthy school lunch programs. On average 9 students every semester have their Letters to the Editors published (we've published over 40 LTEs in total). Appendix A incorporates five of these published LTEs from regional periodicals.

Last but not least, Heliospectra Grow Systems of Sweden allowed our students to highlight our classroom/educational applications of their LED energy saving indoor gardening technology and awarded us with a \$5,000 unit for research purposes. A description of the partnership is located here:

#### **LED Grow Lights in the Classroom - Cultivating Hands-On Learning**

[http://snip.ly/jTOw?utm\\_source=apsis-anp-3&utm\\_medium=email&utm\\_content=LEDsintheClassroom,NASAUses%20LEDGrowLights,MillionPrivatePlacement&utm\\_campaign=Newsletter12#https://www.heliospectra.com/blog/led-grow-lights-classroom-cultivating-hand%E2%80%99s-learning](http://snip.ly/jTOw?utm_source=apsis-anp-3&utm_medium=email&utm_content=LEDsintheClassroom,NASAUses%20LEDGrowLights,MillionPrivatePlacement&utm_campaign=Newsletter12#https://www.heliospectra.com/blog/led-grow-lights-classroom-cultivating-hand%E2%80%99s-learning)

## Appendix A

**A Case study of indoor garden based learning with hydroponics and aquaponics: Evaluating pro-environmental knowledge, perception, and behavior change. Applied Environmental Education and Communication. 14(4), 256-265.**

**Schneller, A.J., Schofield, C., Frank, J., Hollister, E., & Mamuszka, L. (2015)**

<http://ajschneller.org/wp-content/uploads/2015/12/Schneller-Schofield-Frank-Hollister-Mamuszka-hydroponics-2015.pdf>

**Use Restore Protect: How Humans Interact with the Land (A three-part curriculum for 4<sup>th</sup> – 8<sup>th</sup> Grades visiting Hudson Crossing park)**

<http://www.hudsoncrossingpark.org/userstoreprotect/files/Download/HudsonCrossingLandUseLesson.pdf>

**Environmental Service Learning at Wilton Wildlife Preserve & Park (A story about environmental education for Saratoga Life Magazine, April, 2014)**

<http://ajschneller.org/wp-content/uploads/2014/03/Saratoga-Springs-Life-Service-Learning.pdf>

### **Student published Letters to the Editor:**

<http://www.saratogian.com/opinion/20161106/letters-to-the-editor>

Smart City effort good for students

I am writing to you about the Smart City Plan published in your article on October 15, 2016, by Travis Clark. He refers to the Smart City Road Map 1.0 that talks about a group of public and private partners citywide who are dedicated to and enthusiastic about Smart City improvements. The plan accounts for areas such as infrastructure and public services; however, I would like to focus this letter on the sections of Environmental Innovation, and Education and training.

The Road Map 1.0 defines Environmental Innovation as “coordination of government, private, and nonprofit organizations to develop a Climate Action Plan...” An example of this is the expansion in use of solar energy.

It would be nice to have the committee of the Smart City Plan, figure out a way of combining Environmental Innovation with Education and Training. Their plan is to “expand educational resources to help prepare students to go beyond the classroom to open opportunities in the community.” What better way to do this than to have K-12 students, for example, involved in innovative outdoor activities such as, the expansion of solar power.

This will reduce the fear of technology taking over student’s lifestyles, and disabling them from experiencing the outdoors. This idea goes hand in hand with the city school district assistant superintendent for information technologies, David L’Hommedieu’s statement, “It is not our goal to simply digitize instruction, but rather to explore why and how technology impacts instruction.” This way the two components of the plan would balance each other out.

*Ashley Saiwa*

*Saratoga Springs*



[http://www.newjerseyhills.com/observer-tribune/opinion/letters\\_to\\_the\\_editor/letter-chester-schools-should-develop-gardens-for-students/article\\_3352435c-4dd6-53f8-b19e-25ae4304e4a4.html](http://www.newjerseyhills.com/observer-tribune/opinion/letters_to_the_editor/letter-chester-schools-should-develop-gardens-for-students/article_3352435c-4dd6-53f8-b19e-25ae4304e4a4.html)

## LETTER: Chester schools should develop gardens for students

Nov 17, 2016  0

    

EDITOR: While studying environmental education and school garden projects at Skidmore College, I reflected back on my time in Chester public schools and was shocked to think that in a town with four booming farms, Chester schools have yet to set up any school gardens projects.

School gardens benefit students in every grade and as Black River was twice named a "School to Watch" the Chester schools should remain a role model in Morris County and adopt a school garden.

School garden projects have shown successes across the country by integrating the garden into core curriculum requirements. The Chester school system could easily benefit from a school garden project, especially with many local farms to get the project started.

One successful school garden was created by Alice Waters, owner of Chez Panisse, and founder of The Edible School Yard program at the Martin Luther King Jr. Middle School in Berkley, Calif. Her school garden teaches children how to incorporate math, language arts, science, and social studies into growing food, and the teachers have watched students flourish both academically and socially.

School garden projects teach students both how to plant and grow healthy food and also how to cook using measurements, learn biologic cycles of plants and understand historical uses of food around the world. School gardens create a space for social capital to blossom and for community and family members to work together with students.

I look forward to hearing your response on your thoughts on environmental education in Chester.

**JULIA ADELMAN**

*Route 24*

*Chester*

<http://www.timesunion.com/tuplus-opinion/article/Letter-Teach-children-to-respect-the-Earth-6608272.php>

## Letter: Teach children to respect the Earth

To the editor Published 4:20 pm, Tuesday, November 3, 2015



"Be sure to treat Earth as our home," Oct. 26, is right on in connecting our well-being to our relationship with the planet. To accomplish this relationship, I point to the importance of environmental education of our youngsters.

Research has shown that, when young people experience a place, they become committed to it. This sets them up for caring for larger areas as they grow. It is the way they become stewards of the Earth as they mature into adulthood. To ensure connections to the natural world, various sources promote place-based education and suggest nature activities leading to community actions. Students working and learning in the community develop connections, not only to the physical or biological place but to their entire community, which may be their school or neighborhood or town. In this way, students connect to the larger society and the larger society becomes invested in the education of the students. In addition, it has been shown that students who go outside and are active are healthier and better students.

Grants are available from the [National Oceanic and Atmospheric Administration](#) for environmental literacy and the Environmental Protection Agency for science, technology, engineering and math education and there are after-school programs and other sources.

Utilizing such funding and including environmental literacy in our schools will help our young people make good decisions when it is their turn to manage Earth's resources.

**Louise Golub**

*Saratoga Springs*

[http://www.registerstar.com/opinion/letters\\_to\\_the\\_editor/article\\_f3202336-5fb6-11e4-bc9c-1734f1a007a7.html?mode=jqm](http://www.registerstar.com/opinion/letters_to_the_editor/article_f3202336-5fb6-11e4-bc9c-1734f1a007a7.html?mode=jqm)

**Register-Star**

## More than just a yard

By Natalie McKeon  
Red Hook | Posted Oct 30, 2014

Recommended by  Outbrain



There is a saying that goes “teach what you preach,” but in our current education system is this mantra followed? Topics on children’s health, school food, sustainable communities, and education have proliferated media coverage. Moreover, there is a growing push toward increased environmental education to create an ecologically literate and conscious generation. As these topics become more popular, schools, ironically enough, are forgoing the opportunity to become models of sustainable communities.

A much needed and feasible solution to this ideological disconnect is the implementation of School Garden Projects. Garden projects offer many educational, health, and environmental benefits and can be integrated into all disciplines.

Foremost, garden projects instill a sense of community and shared responsibility among children. When assigned a particular task, students recognize that one person’s actions can make a difference. The objective becomes nurturing a sense of shared culture while breeding a sense of care and respect for nature. Through an educational lens, the garden transforms into a lab for all subjects, an instrument for interdisciplinary learning.

As a byproduct, behavioral discipline, timeliness and higher testing results are produced. This has been documented in current garden projects, such as the “Edible Schoolyard” of Martin Luther King Jr. Middle School in Berkeley, Calif. (Stone, 2005).

Furthermore, the politics surrounding our current food system reflects a relentless trend of centralization, industrialization, and globalization. As such, the role of food in institutions must be redefined to align with a more biologically and culturally diverse, community-based economy. Schools in particular have the proper planning tools and the ability to shift perspectives through the use of hands on learning, professional development, community involvement, public informant and business plans, all of which are embodied in gardens projects.

Furthermore, children’s attitudes towards food systems can be reoriented to encompass notions of sustainability, tradition, and diversity (Stone, 2005). The old mindset in which “disposability” is okay, and food origin is of little importance, becomes replaced with alternative sustainable concepts. Ultimately, the garden unfolds into a place where work and play collide, leaving students with tangible experiences that will reside with them in later years. Such restructuring of our approach to teaching is imperative for both our future generations, and for our educational, economical, and political systems.

<http://www.metrowestdailynews.com/opinion/20161112/letter-value-of-school-gardens>



# Letter: The value of school gardens

Saturday

Posted Nov 12, 2016 at 11:40 PM  
Updated Nov 12, 2016 at 11:40 PM

Share



There is a growing disparity between the time our youth spend inside and the time they spend outdoors in nature. In order to reconnect Massachusetts' youth with the outdoors we must build school and community gardens that will serve as teaching spaces for progressive outdoor and environmental education. As our public education sways farther and farther towards the STEM disciplines it is vital that we not overlook the value of environmental literacy.

School gardens have the ability to promote environmental stewardship, a healthy lifestyle and community development. A garden space is a dynamic environment that can be yet another tool within an effective educator's arsenal. A school garden is a powerful environmental education tool. Through the framework of gardening, students evolve into responsible caretakers. They have the unique opportunity to participate in agricultural techniques on a micro scale while learning about the responsibilities and impacts of land cultivation.

Academic achievement has become the prime focus of public school education throughout the country. A school garden is an interdisciplinary tool that can be embedded in any core curriculum. Garden lessons will compliment the mandatory standards and prove that they merit the use of valuable classroom time. The implementation of educational gardens will revitalize our youth, educators and school districts.

Jerry Lerman

Wayland

**START SOMETHING NEW**  
SALES EVENT  
New 2017 Jeep Cherokee Latitude 4X4  
MSRP \$31,290  
36 month lease \$259/mo  
**COLONIAL**  
Jeep RAM