PAST InnovationLab
access through education

Growing SOIL

Quarterly Report

October 30th, 2014

THE PAST FOUNDATION

Growing STEM Outdoor Innovation Lab
October 30th Quarterly Report
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Growing SOIL (STEM Outdoor Innovation Lab)

Growing SOIL scales the innovative blend of STEM curriculum development, teacher professional development, and student field experiences (Kelleys Island, Spring 2014), alongside the strategic development of STEM Outdoor Innovation Labs (SOIL) by growing the shared use of the resources and curriculum.

Building from the existing 9 SOILabs to 15 SOILabs Growing SOIL will

1. Expand and elevate the reach of SOIL to K-16,
2. Engage community and industry partners,
3. Increase the number of Transdisciplinary Problem-Based curricula modules (TPBL) as well as provide teachers with open access to these resources, and
4. Utilize existing resources developed in Straight A Fund I by partnering with other programs like Mobile Fab Labs.

Growing SOIL is in the first quarter of the project and has just begun to help Cohort 1 begin planning for expansion through partnerships while introducing Cohort 2 to the process.

Synopsis of Growing SOIL Activities
Dates Ranging From September 1, 2014 to October 24, 2014

COHORT 1

Event	Day and Time	Location	Major Goals	Additional Notes/Process planning for SOIL design team planning
Growing SOIL Cohort 1 Orientation Workshop	Saturday, September 20th 10am – 4pm	PAST Foundation	• Assessment of SOIL program Round 1, where is each school at? • Usage of teacher produced modules, and PD work. • Introduction of Community Partners and SOIL Programming	1) Herb Broda presented on status of all 9 SOIL Labs, highlighting progress, setbacks and future goals. 2) Matthew Broda presented about strategically aligning community partnership with current school goals. 3) Staff from COSI was present to brainstorm with teachers about potential collaborations
Growing SOIL Cohort 1 Site Visits	Multiple dates in September	At school sites	• Meet at school sites to discuss status of lab development • Review plans for continued development • Provide guidance about engaging community partners	1) Most sites have made significant progress since June and have developed a list of goals for the 2014-2015 school year.

Growing SOIL Cohort 1 Community Partner Planning	Saturday October 18th, 2014 10AM-2PM	PAST Foundation	• Introduce Buddy / Community Partner • Planning with the partner and use of the SOIL space	RESCHEDULED for virtual meetings on Monday, October 27th and Thursday, October 30th. Many teachers were unable to attend meeting as previously scheduled.

Cohort 2:

Event	Day and Time	Location	Major Goals	Additional Notes/Process planning for SOIL design team planning
Growing SOIL Cohort 2 Orientation	Wednesday, October 1st 4:00pm – 5:30pm	Fairfield Education Service Center	• Meet PAST Staff, Sign up for P3 in October & November • Scheduling your site visit • Brief overview of the Round 2 Growing SOIL Grant	1) SOIL staff presented about outdoor site development, field programs and professional development opportunities 2) All schools received important date information and Herb Broda's book "Moving the Classroom Outdoors"
Growing SOIL Cohort 2 Site Visits	Multiple dates in October	At school sites	• Meet at school sites to complete initial site visits • Introduce teachers to site assessment mapping • Talk with teacher team about whole school engagement and planning	1) All schools hosted a site visit and are completing a site assessment map 2) Administration and faculty are working to gather a design team and teacher planning committee.

Appendices A-C

A: Agendas

- Sign –In Sheets
- Important Deadlines Cohort 1
- Important Dates Cohort 2

B: Materials Developed for Growing SOIL Teams and Programs

- Grant Information Sheet
- Initial Brainstorm Cohort 1
- Initial Orientation Cohort 2
- Community Brainstorm
- Internal SOIL Project Planning Sheet
- Participants Contact List
- Cohort 2 Participant Attendance Matrix
- Cohort 1 Site Visits
- Cohort 2 Initial Site Visits

C: Professional Developments

- Presentation Cohort 1 from Sept. 20th, 2014

GROWING SOIL | STEM OUTDOOR INNOVATION LAB | PAST InnovationLab | Fairfield County Educational Service Center | HOCKING COLLEGE

GROWING SOIL Orientation

Saturday, September 20th
(10am - 4pm @ PAST FOUNDATION)

10:00 -10:15	Welcome and Introductions of new staff Overview of Dates
10:15 -11:00	SOIL Lab Check In
11:00 - 12:00	Focus Group
12:00 -12:30	Lunch
12:30 - 1:30	Module Development Review
1:30 - 3:50	Houses and Utilities Simulation Outdoor Lab Community Involvement
3:50 - 4:00	Wrap up

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GROWING SOIL Orientation

Wednesday, October 27th and 30th , 3:00-4:30

Virtual

Agenda Items

Welcome and Introductions

Review “Working with Community Partners” - Matthew Broda

Update from schools on SOIL Projects

Information about new budget form

Any questions?

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GROWING SOIL Orientation

Wednesday, October 1st, 4:00-5:30pm

Fairfield Education Service Center

Agenda Items

Welcome and Introductions

"What is SOIL?" Explanation / Project Overview

Overview of Important Dates

Basecamp Introduction

P3 – How to sign up

Outdoor Lab Introduction & Site Visits

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Growing SOIL Cohort 1 - Sign-In Sheet

Date: September 20th, 2014

Name	School	Grade	Email
Jim Dvorsky	PAST		eaglejim31@columbus.rr.com
Megan Hinz	West		mhinz2342@columbus.k12.oh.us
Jordan Walker	Metro		walker@themetroschool.org
Kris Stevens	Metro		Stevens@themetroschool.org
Chris Justiss	NIHF STEM Akron	7	cjustiss@akron.k12.oh.us
Sam Crews	NIHF STEM Akron	6	ccrews@akron.k12.oh.us
Joe Wood	COSI		jwood@cosi.org
William Dofman	Starling	PK-8	
Andrew Bloom	Starling	PK-8	abloom6445@columbus.k12.oh.us
Leonard Sparks	COSI		lsparks@cosi.org

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Growing SOIL Cohort 2 - Sign-In Sheet

Date: October 1st, 2014

Name	School	Grade	Email
Mathew Roberts	Fed Hock	7-12	mat.americorps@gmail.com
Matthew Destadio	FUHS	9-12	mattdestadio@fairfield-union.k12.oh.us
Eric Vivian	FUHS	9-12	eric.vivian@fairfield-union.k12.oh.us
Judd Baker	FUHS	9-12	judd baker@ " " "
Lisa Ruff	FU. Bremen	1st	lisaruff@fairfield-univ.k12.oh.us
Jim Hmwood	FURMS	Principal	lrichenwood@fairfieldunion.org
Steve Harris	Millersport HK	10-12	sharris@walnuttsd.org
CLIFF BONNER	Federal Hocking	7-12	cbonner@fedhock.com
Jeff Stought	millersport	7-12	jstought@walnuttsd.org
Rachel Thomas	FURMS	5-8	jrthomas9159@gmail.com
Nathan Conrad	LHS	9-12	nathan.conrad@lancasterk12.oh.us
Jon Markwood	FURMS	7-8	jonmarkwood@fairfield-union.k12.oh.us
Caitlin McClurg	Millersport	9-12	Cmcclurg@walnuttsd.org
Jenny Sponsellor	Millersport	7-8	jsponsellor@walnuttsd.org
Chad Rice	Lancaster	6-12	c-rice@lancaster.k12.oh.us
J.B. Dick	Millersport	k-12	jdick@fairfieldesc.org

Growing SOIL (STEM Outdoor Innovation Labs) Important Dates for 2014-2015 (Cohort 1)

GROWING SOIL Orientation Workshop			
DATE	LOCATION	ATTENDEES	NOTES
Saturday, September 20th	PAST Foundation 1003 Kinnear Rd Columbus, OH 43212	Administrator Lead Teacher Co-teacher	*Lunch will be provided
Charrettes (Site Visits)			
DATE	LOCATION	ATTENDEES	NOTES
October (*Each school schedules individually)	Your School	Administrator Lead Teacher Co-teacher	SOIL staff visits your site to check progress and provide support
SOIL Community Partner Meetings			
DATE	LOCATION	ATTENDEES	NOTES
Saturday, October 18th	Virtual or In person	Lead Teacher Co-teacher Buddy Partner	Meet virtually or in person with SOIL staff and community partner to plan

Presentation			
DATE	LOCATION	ATTENDEES	NOTES
Saturday, December 6th	COSI	Administrator Lead Teacher Co-teacher Buddy Partner	Share your school's plans for outdoor lab improvements, examples of student work in the lab, and plans for community partner engagement
SOIL Order Requests **Round 1 Submission Forms Due: Friday, October 24th** **Round 2 Submission Forms Due: Friday, February 20th**			
Celebration Gala			
DATE	LOCATION	ATTENDEES	NOTES
Saturday, June 6th	COSI	Open to public	A gathering of Cohort 1 and Cohort 2 schools to celebrate all of your hard work!

Growing SOIL (STEM Outdoor Innovation Labs) Important Dates for 2014-2015 (Cohort 2)			
GROWING SOIL Orientation			
DATE	LOCATION	ATTENDEES	NOTES
Wednesday, October 1st	Fairfield Education Service Center	Administrator Lead Teacher Co-teacher	Orientation to Growing SOIL
Charrettes (Site Visits)			
DATE	LOCATION	ATTENDEES	NOTES
October (date scheduled at orientation)	Your School	Administrator Lead Teacher Co-teacher	SOIL staff visits your school for outdoor lab consultation
P3 Online Class			
DATE	LOCATION	ATTENDEES	NOTES
October or November Session	Online	Teachers	Classes will meet online once per week for one month
Cohort 1 Presentation			
DATE	LOCATION	ATTENDEES	NOTES
Saturday, December 6th	COSI (333 W Broad St, Columbus, OH 43215)	Administrator Teachers	You are cordially invited to attend the final presentations for schools in Cohort 1

Outdoor Innovation Lab Planning			
DATE	LOCATION	ATTENDEES	NOTES
Friday, January 23rd and Saturday, January 24th	Fairfield Education Service Center	Administrator Teachers	Meet with colleagues to work on outdoor lab plans and share resources
Outdoor Lab & Field School Planning			
DATE	LOCATION	ATTENDEES	NOTES
Friday, February 20th and Saturday, February 21st	Fairfield Education Service Center	Administrator Teachers	Continue planning your labs and learn about the Hocking College Field Experience
Outdoor Lab Presentation			
DATE	LOCATION	ATTENDEES	NOTES
Saturday, March 21st	Fairfield Education Service Center	Administrator Teachers	Present your plans for your outdoor lab
Hocking College Field Experience			
DATE	LOCATION	ATTENDEES	NOTES
May	Hocking College Field Experience	Teacher and 20 students	A weeklong overnight field experience for students at Hocking College.

GROWING SOIL | STEM OUTDOOR INNOVATION LAB | PAST InnovationLab | Fairfield County Educational Service Center | HOCKING COLLEGE

Growing SOIL - Grant Information

Growing SOIL scales the innovative blend of STEM curriculum development, teacher professional development, and student field experiences (Kelleys Island, Spring 2014), alongside the strategic development of STEM Outdoor Innovation Labs(SOIL) by growing the shared use of the resources and curriculum. Building from the existing 9 SOILabs to 15 SOILabs , Growing SOIL will 1) expand and elevate the reach of SOIL to K-16, 2) engage community and industry partners, 3) increase the number of Transdisciplinary Problem-Based curricula modules (TPBL) and provide teachers with open access to these resources, 4) utilize existing resources developed in Straight A Fund I by partnering with other programs like Mobile Fab Labs.

What does this mean for your school?

Cohort 1 (original 9 SOIL schools) Receive:

-$4,500 to expand your STEM Outdoor Lab!

-$1,600 to facilitate programs with a community partner of your choosing (more information will be provided on Sept 20th)

-CEU credits for participation in workshops (see important dates below)

Save the Dates:

Date	Topic	Time	Location
Saturday, September 20th	Welcome Back/Planning	10am-4pm	PAST Foundation
Saturday, October 18th	Community Partner Planning	10am-2pm	PAST Foundation *(virtual option available)
Saturday, December 6th	Presentation of SOIL Lab Improvements	10am	PAST Foundation
Saturday, June 6th	Celebration Gala	Time TBD	COSI (Center of Science and Industry)

Growing SOIL Program Initial Brainstorm for Events

COHORT 1

Event	Day and Time	Location	Major Goals	Additional Notes	Professional Development Staff	Knowledge Capture Staff
Growing SOIL Cohort 1 Orientation	Saturday September 20th, 2014 10AM-4PM	PAST Foundation	• Assessment of SOIL program Round 1, where is each school at? • Usage of their modules, and PD work. • Introduction of Community Partners and having a buddy for your SOIL Programming	1) Make a intro teacher letter, make it clear that there is no stipend, but their work is all going to benefit their SOILab 2) Principal letter as a reminder for explaining the upcoming program and expectations	KP, BW, SOS Consultants/Contractors: Herb Broda Mattew Broda Darin Hardinger Jim Dvorsky COSI Staff Members: Joe Wood Leonard Sparks	Focus Group Interview
Growing SOIL Cohort 1 Buddy and Project Planning	Saturday October 18th, 2014 10AM-2PM	PAST Foundation	• Introduce Buddy/Community Partner • Planning with the partner and use of the SOIL space • Maintenance of a buddy	1) Is it possible to have this as a virtual meeting? 2) Can these be focused individual meetings with the school team and the partner?	KP, BW Consultants/Contractors: Herb Broda Mattew Broda Jim Dvorsky COSI Staff Members:-On Schedule will revise with Kurt Huffman to another day/project	Observation

				3) Can those occur during the week? 4) Brainstorming with the partners for an additional 5hrs to make these pieces come together.		
Cohort 1 Project Presentations	Saturday December 6th, 2014 10AM-2PM	COSI, Invite Cohort 2 and District Admin.	• Planning for your remaining funds and next steps • Project Presentations • February Orders for Cohort 1	1) Also a virtual possibility for Akron? Other members? 2) Other needs for this program…	KP, BW Consultants/Contractors: Herb Broda Mattew Broda Jim Dvorsky COSI Staff-Kurt Huffman (Observer)	Observation Survey-Post
9 School Site Charrettes	October 6th-10th, 2014 Time varies based on school	At school location				

COHORT 2

Event	Day and Time	Location	Major Goals	Additional Notes	Professional Development Staff	Knowledge Capture Staff
Growing SOIL Cohort 2 Orientation/Kick off	Wednesday October 1st, 2014 After School-4PM-5:30PM	Fairfield ESC	• Meet PAST Staff, Take P3in October & November • Scheduling your site visit/Charrette • Brief overview of the Round 2 Growing SOIL Grant	• Habits information • Book-buy for Cohort 2 • Calendar Visits • Link to P3	KP, BW Consultants/Contractors: Herb Broda Darin Hadinger Jim Dvorsky COSI Staff-Erica Prange (Observer) Robin Dungan (Observer)	
Growing SOIL Cohort 2 Orientation and Planning	Originally a 2 day program Friday and Saturday January 23 & 24 Program. 9AM-3PM both days? Or Friday school day?	Fairfield ESC	DAY 1 Goals: • Team Building • Overview of the program • Design Cycle and the process • Outdoor Labs/Outdoor Ed/Designing a Lab DAY 2 Goals: • Blueprint of the space • How to bring	1) Can and/or should this be structured as a 1-day event? 2) What do we need to be mindful of in terms of substitutes/stipends		Survey

			SOIL back to your schools			
Growing SOIL Cohort 2 Project Planning	2 day programming planned? Originally from SOIL1 a single day event Friday and Saturday February 20th & 21st Program. 9AM-3PM or Friday School Day	Fairfield ESC	• Intro to field schools and work with Hocking College • Budgets and how to structure this for Growing SOIL Cohort 2 and the 6 new schools for this round	1) Can/should this be a 1-day event? 2) Exploring how this effects the substitute/stipend issue for this round		
Growing SOIL Cohort 2 Project Presentations	Saturday March 21st, 2014 9AM-3PM	Fairfield ESC	• Project presentations • Next Steps • Money for their SOIL Programming			
6 School Site Charettes	Time TBD, hopefully in	At school location				Observation Key Informants

						Focus Groups
	fall of 2014	Time TBD, in May of 2015	On Hocking College Campus			
	Time varies based on school	Time varies based on school				
	6 School Bridge Programs					

Growing SOIL - "Community" Involvement Buddies (CIB)
Planning for Collaborative Work

School:
Team Members:
Proposed CIB:

Objective #1 - Increasing "Community" Buy-In of Your S.O.I.L.

School-Based Buy-In	District-Based Buy-In	Greater Community Buy-In
In your **own school**, which teachers or groups might have a vested interest in the resources your S.O.I.L. offers? **Consider the following:** • Can this relationship provide sustainability and/or funding for SOIL? • Can you make the relationship reciprocal? • Can you build to a long term relationship (A Four-Season Program)? **1.** Possible Interest: Sustainability? Reciprocal? Long-Term? **2.** Possible Interest: Sustainability? Reciprocal? Long-Term? 3. Possible Interest: Sustainability? Reciprocal? Long-Term?	In your **school district**, which teachers or groups (i.e. science clubs) might have a vested interest in the resources your S.O.I.L. offers? **Consider the following:** • Can this relationship provide sustainability and/or funding for SOIL? • Can you make the relationship reciprocal? • Can you build to a long term relationship (A Four-Season Program)? **1.** Possible Interest: Sustainability? Reciprocal? Long-Term? **2.** Possible Interest: Sustainability? Reciprocal? Long-Term? **3.** Possible Interest: Sustainability? Reciprocal? Long-Term?	In your **local community**, which people, groups, or organizations might have a vested interest in the resources your S.O.I.L. offers? **Consider the following:** • Can this relationship provide sustainability and/or funding for SOIL? • Can you make the relationship reciprocal? • Can you build to a long term relationship (A Four-Season Program)? **1.** Possible Interest: Sustainability? Reciprocal? Long-Term? **2.** Possible Interest: Sustainability? Reciprocal? Long-Term? **3.** Possible Interest: Sustainability? Reciprocal? Long-Term?

Growing SOIL - "Community" Involvement Buddies (CIB)
Planning for Collaborative Work

School:
Team Members:
Proposed CIB:

Objective #2 - Increasing Participation/Usage of S.O.I.L.

Increase the Number of Students that Use S.O.I.L.	Increase Amount of Time Students Use S.O.I.L.	Increase BOTH Number of Students and the Time Students Use S.O.I.L.
Partnership Options: **1.** Projected Increase: Anticipated Costs: **2.** Projected Increase: Anticipated Costs: **3.** Projected Increase: Anticipated Costs:	**Partnership Options:** **1.** Projected Increase: Anticipated Costs: **2.** Projected Increase: Anticipated Costs: **3.** Projected Increase: Anticipated Costs:	**Partnership Options:** **1.** Projected Increase: Anticipated Costs: **2.** Projected Increase: Anticipated Costs: **3.** Projected Increase: Anticipated Costs:

Growing SOIL - "Community" Involvement Buddies (CIB)
Planning for Collaborative Work

School:
Team Members:
Proposed CIB:

Objective #3 - Increasing the Visibility of Your S.O.I.L.

Targeted Public Relations (Local Media)	**S.O.I.L. Blog**	**Static Web Page**
Brainstorm a list of the local media outlets that you could engage in regular intervals. What key moments would you be interested in sharing broadly? **PR Possibilities:**	How could you, and your CIB leverage a blog site as an interaction point between partners, but also as a larger scale visibility campaign? Since blogs are updated regularly, what posts could you envision? **Blogging Ideas:**	As a means for featuring your S.O.I.L. work and your CIB collaborations, what sorts of content would you want shared specific to your site and program? **Web Site Options:**
S.O.I.L. Twitter Feed	**This Could Be Cool #1 _____**	**This Could Be Cool #2 _____**
As a form of micro-blogging, how could you and your CIB engage this form of social media to generate interest and bring life to the S.O.I.L. for the greater community. Who could be the "voice" of you project/partnership? **#PossibleAwesomness:**	What other avenues could you explore for increasing the visibility of your S.O.I.L. project and partnership? What modes of communication are central to your school/community culture?	Stretch yourself! Come up with one more option to explore.

Growing SOIL - "Community" Involvement Buddies (CIB)
Planning for Collaborative Work

School:
Team Members:
Proposed CIB:

Objective #4 - Organizing the Expansion of Your S.O.I.L.

New Tasks	Building the Team
As your S.O.I.L. grows, you will need to consider the expansion of tasks that will inevitably result from increased usage and visibility. What are some anticipated growing pains that could occur (i.e. scheduling trips, training student leaders. etc.)? **New Things to Do:** 1. 2. 3. 4. 5.	For each of the possible tasks you itemized to the left, identify those individuals you feel would have the skill set or influence to accomplish what would be needed. **Matching People to Task:** 1. 2. 3. 4. 5.

Growing SOIL - "Community" Involvement Buddies (CIB)
Planning for Collaborative Work

School:
Team Members:
Proposed CIB:

Objective #5 - Tracking Your Planning

As a best practice, and a manner for archiving the work you and your buddy will accomplish, we ask that you keep a meeting log and journal to record the progress of your partnership. We ask that between now and October 18, 2014 you commit a minimum of five hours of planning in a face-to-face setting with your identified CIB. This journal, as well as the planning materials above, will be utilized throughout the second phase of the Growing S.O.I.L. program. In addition, other cohort schools will be visiting your documents to gain inspiration and validation for their own collaborative work.

Meeting Date	Hours	Focus of Meeting	Action Items	Next Meeting

PAST Project Planning Sheet

Project Name/Title	**Growing SOIL – Cohort 1**
Team Members and Contact Information for any partner organization members	**Sheli Smith, sheli@pastfoundation.org** **Ketal Patel, kpatel@pastfoundation.org** **Beth Witte, bwitte@pastfoundation.org** **Keisha Slaughter, kslaughter@pastfoundation.org** **Kat Deaner, kdeaner@pastfoundation.org** **Jim Dvorsky, eaglejim31@columbus.rr.com** **Darin Hadinger, hadingerd@hocking.edu** **Herb Broda, hbroda@ashland.edu** **Matthew Broda, matthew.broda@gmail.com** **COSI Staff**
Team Lead and Back-Up Team Lead	**Beth Witte, Contact Person** **Kat Deaner, Back Up**
Project Timeline	**September 2014 – June 2016**
Major Dates and events and staff involved for each event in this Project	**Welcome Back/Planning - September 20th 2014 @ PAST Foundation 10-4pm** **Community Partner Orientation- October 18th @ PAST Foundation/Virtual, 10am-2pm** **Presentation- December 6th @ PAST Foundation, 10am** **Celebration Gala- June 6th @ COSI, Time TBD**
Agendas to be created for each event and by whom.	**September 20th – BW: Agenda** **October 18th – BW: Agenda** **December 6th – BW: Agenda**
Materials and or supplies needed for each event or session (PD Packets, copies of certain handouts, pens, etc….)	**September 20th** **-Agenda** **-Packet** **-Order Lunch** **-Copies/Pens** **October 18th** **-Agenda** **-Order Lunch** **December 6th** **-Agenda**

PAST Project Planning Sheet

	- Morning Snacks
	Do the supplies need to travel? (Yes/No) NO
	If so, Where?
	By what date?
	Supply orders need to be submitted to: Beth By what date? 1 week prior
Is there traveling involved with the project?	How? (i.e. car, plane, etc.)
	When: (Date range)
	Where:
	Will a rental car be necessary? (Yes/No)
Project Partners (Existing, and anticipated)	COSI, plus any school partners
Does the project require additional resources? (i.e. materials, manpower, etc.)	How can we obtain these? (i.e. Donations, volunteers, etc.) No
Final Debrief meeting date at the conclusion of the project.	In JUNE!!!
Additional Notes:	Include KC Team for September 20th (focus group) and October 18th (survey)

SOIL Schools Contact List

School	Administrator	Administrator Email	Lead Teacher	Lead Teacher Email	Co-Teacher
National Inventors Hall of Fame School...Center for STEM Learning	Amanda Morgan		Christine Justiss	cjustiss@akron.k12.oh.us	Sam Crews
Metro Early College High School	Meka Pace	pace@themetroschool.org	Andrew Bruening	bruening@themetroschool.org	Jordan Walker
Metro Early College Middle School	Meka Pace	pace@themetroschool.org	Annie DeWitt	dewitt.2@themetroschool.org	Kris Stevens
Reynoldsburg eSTEM	Scott Bennett	sbennett@reyn.org	Madeline Schultz	mschultz@reyn.org	Michelle Jago
West High Scool	Lucas Cech	lcech8871@columbus.k12.oh.us	Megan Hinz	mhinz2342@columbus.k12.oh.us	
Starling Pre K-8	Bill Doerman	wdoerman@columbus.k12.oh.us	Andrew Bloom	abloom6495@columbus.k12.oh.us	Anita Cornwell
Bio-Med Science Academy STEM School	Stephanie lammlein	slammlein@biomedscienceacademy.org	Ryan Willard	rwillard@biomedscienceacademy.org	Matt MacKeown
STEM Middle @ Baldwin Road	Chelle When		Jen Mox	jmox@reyn.org	Dustin Few
Westmoor Middle School	Paul Bailey	pbailey5748@columbus.k12.oh.us	Sue Robbins	srobbins@columbus.k12.oh.us	

Cohort 2 Participants
GROWING SOIL
Created 6Oct14

School	Adiminstrator	Lead Teacher	Co-Teacher	Additional Teachers	Additional Participants
Federal Hocking	Cliff Bonner	Keith Macartney	Doug Brooks	Sarah Russell	Mat Roberts
				John Wryst	
				Julia Olson	
				Eric Anderson	
Lancaster HS	Nathan Conrad	Brian Griffin	Natalie Bargo	Shannon Fish	Chad Rice (Curriculum Coord)
				Mont Goss	
Fairfield Union	Elizbeth Henwood	Matt Destadio	Eric Vivian	John Markwood	
				Rachel Thomas	
				Lisa Ruff	
				Judd Baker	
Walnut Township	Jeff Stought	Jenny Sponseller	Carrie Grown	Steve Harris	
				Caitlin Mclurg	

Growing SOIL Cohort 2: Participant Attendance Info: Fairfield Union

			Orientation	Charette	Orientation		Outdoor Lab & Field Scho		Outdoor Lab	Final Presen	P3	Hocking College
Name	Title	Email	10/1/14	10/22/14	1/9/15	1/10/15	2/20/15	2/21/15	3/21/15	6/6/15		May-15
Mathew Destadio	Science 9-12	mattdestadio@fairfield-u	x									
Eric Vivian	Science 9-12	ericvivian@fairfield-unio	x									
Judd Baker	Industrial Technology 9-12	juddbaker@fairfield-unio	x	X								
Lisa Ruff	1st grade	lisaruff@fairfield-union.k	x									
Liz Henwood	Principal- Rushville	lizhenwood@fairfieldunio	x	X								
Rachel Thomas	8th Grade Science/7th grad	rachelthomas@fairfield-u	x									
Jon Markwood	7th & 8th grade science	jonmarkwood@fairfield-u	x	X								

			Growing SOIL Cohort 2: Participant Attendance Info: Federal Hocking								
			Orientation	Charette	Orientation	Outdoor Lab & Field Scho		Outdoor Lab	Final Presen	P3	Hocking College
Name	Title	Email	10/1/14	10/21/14	1/9/15	2/20/15	2/21/15	3/21/15	6/6/15		May-15
Mathew Roberts	7th-12th	mat.americo	x	X							
Cliff Bonner	HS/MS Princ	cbonner@fe	x	X							
Keith Macartney				X							
Doug Brooks											
Sarah Russell											
John Wryst				X							
Julia Olson											
Eric Anderson											

Growing SOIL Cohort 2: Participant Attendance Info: Lancaster City

Name	Title	Email	Orientation 10/1/14	Charette 10/21/14	Orientation 1/9/15	Outdoor Lab & Field Scho 2/20/15	2/21/15	Outdoor Lab 3/21/15	Final Presen 6/6/15	P3	Hocking College May-15
Chad Rice	Sec. Curriculum Coord	c_rice@lancaster.k12.oh.us	x	X							
Nathan Conrad	Assistant Principal- Hi	n_conrad@lancaster.k12.oh.us	x	X							
Brian Griffin	Science Teacher	b_griffin@lancaster.k12.oh.us	/	X							
Mont Goss	Science Teacher	m_goss@lancaster.k12.oh.us	/	X							
Shannon Fish	Art Teacher	s_fish@lancaster.k12.oh.us	/	X							

			Growing SOIL Cohort 2: Participant Attendance Info:Walnut Township Local								
			Orientation	Charette	Orientation	Outdoor Lab & Field School P		Outdoor Lab F	Final Presen	P3	Hocking College
Name	Title	Email	10/1/14	10/22/15	1/9/15	2/20/15	2/21/15	3/21/15	6/6/15		May-15
Steve Harris	Science- 10-12	sharris@walnuttsd.org	x								
Jeff Stought	Principal- Jr/Sr High S	jstought@walnuttsd.or	x								
Caitlin McClurg	Math 9-12	cmcclurg@walnuttsd.o	x	X							
Jenny Sponseller	7/8 Science	jsponseller@walnuttsd.	x								
J.B. Dick	k-12	jdick@fairfieldesc.org	x	X							

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab | Kelleys Island School

TPBL Final Site Visit
School: Baldwin Road Middle School
Address: 2300 Baldwin Pl, Reynoldsburg, OH 43068
Date: 10/6/2014
Committee Members & Community Partners Present: Jim Bruner, Jen Mox
1. How has the lab been used? The water feature is in place and they are using the greenhouse and the attached science classroom extensively. The birdhouse tracking is not in use yet (will be in spring). They are also monitoring the weather via their weather stations.
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? Mostly the 6th and 7th graders
3. Have teachers used the TPBL modules developed in Spring 2014? Why or why not? They are not yet using the water quality module they developed for the SOIL program. It will be more easily introduced in the spring.
4. Additional staff development needs: Water control and conservation methods and how to maintain life through a winter in a green house environment.
5. Notes and observations:
6. Attachments:

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab | Kelleys Island School Lake Erie Field Station

TPBL Final Site Visit
School: Biomed Academy High School
Address: 4209 Ohio 44, Rootstown, OH 44272
Date: 9/24/2014
Committee Members & Community Partners Present: Jim Bruner, Herb Broda, Jim Dvorsky, Meghen Matta, Beth Witte, Stephanie Lammlein, Ryan Willard
1. How has the lab been used? The track is being used extensively by the High School and by College students from NEOMED. They expect to use the site more during the spring when the low ropes course will be installed. When we visited the welcome center had not yet broken ground.
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? All grades.
3. Have teachers used the TPBL modules developed in Spring 2014? Why or why not? They are not yet using the water quality and pollution module they developed for the SOIL program. It will be more easily introduced in the spring.
4. Additional staff development needs: More attention needs to be paid to the fact that the site is hard to get to and there is an issue with standing water and mosquitoes.
5. Notes and observations: The track needs to be extended to access the proposed location of the low ropes course and there needs to be more seating in the outdoor classroom. There is ample material to make more benches but there is no expertise on site.
6. Attachments:

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab | Kelleys Island School Lake Erie Field Station

TPBL Final Site Visit
School: eSTEM Academy High School
Address: 8579 Summit Road. Reynoldsburg, OH 43068
Date: 10/6/2014
Committee Members & Community Partners Present: Jim Bruner, Madeline Schultz
1. How has the lab been used? The track is being used extensively by the High School track team, some 9th grade biology classes and students from the elementary school as well. The shelter has been a very welcome addition to the site. They intend to use the shelter and the track a good deal during the spring biology experiments. The science lab at the attched nature center has not been improved at all.
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? All grades.
3. Have teachers used the TPBL modules developed in Spring 2014? Why or why not? They are not yet using the water quality module they developed for the SOIL program. It will be more easily introduced in the spring.
4. Additional staff development needs: More attention needs to be paid to the science and nature center. The mission of the SOIL implementation would be greatly extended if this was done.
5. Notes and observations: The track needs to be extended to cover the east end of the ponds complex. The track that is already in place was improperly packed and beginning to show wear and tear and already. The first real freeze-thaw cycle will be very damaging as a result.
6. Attachments:

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab | Kelleys Island School

TPBL Final Site Visit
School: Metro Middle School
Address: 1929 Kenny Road, Columbus, OH 43212
Date: 9/22/2014
Committee Members & Community Partners Present: Jim Bruner, Herb Broda, Jim Dvorsky, Meghen Matta, Beth Witte, Andy Bruening, Meka Pace
1. How has the lab been used? The Metro School's Middle School implementationis mostly in place. It does face two important issues: The first is that the bulk of their funds went into infrastructure (a shed, supplies, an arc welder and the like) the second is that there is an outdoor classroom in place but very little evidence that it is being used regularly and no evidence that it is being used in support of modular curriculum.
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? 6-8 spottily
3. Have teachers used the TPBL modules developed in Spring 2014? There is no evidence to suggest that any implementation of the modules will be implemented at all.
4. Additional staff development needs: They will need to revisit their plan for using the outddor classroom. There just doesn't seem to be a great deal of activity around this resource.
5. Notes and observations: Not much activity.
6. Attachments:

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab access through education | Kelleys Island School Lake Erie Field Station

TPBL Final Site Visit
School: Metro Early College High School
Address: 1929 Kenny Road, Columbus, OH 43212
Date: 9/22/2014
Committee Members & Community Partners Present: Jim Bruner, Herb Broda, Jim Dvorsky, Meghen Matta, Beth Witte, Andy Bruening, Meka Pace
1. How has the lab been used? The Metro School's High School implementation has been plagued with two kinds of issues: The first is that the bulk of their funds went into infrastructure (a shed, supplies, an arc welder and the like) the second is that there is an ongoing dispute with OSU about how the indoor science labs will be implemented. So nothing ahs been done on that front and the materials puchased to implement them is in storage.
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? 9-12 spottily
3. Have teachers used the TPBL modules developed in Spring 2014? There is no evidence to suggest that any implementation of the modules will be implemented at all.
4. Additional staff development needs: They will need to revisit their ideas for the indoor science and biology labs. The area where they were to exist is now being used to hold the Metro Middle School. Darin Hadinger may be a critical resource for this.
5. Notes and observations: Not much activity.
6. Attachments:

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TPBL Final Site Visit
School: National Inventors Hall of Fame Middle School
Address: 199 S Broadway St, Akron, OH 44308
Date: 9/24/2014
Committee Members & Community Partners Present: Jim Bruner, Herb Broda, Jim Dvorsky, Meghen Matta, Beth Witte, Christine Justiss
1. How has the lab been used? The NIHF gardens are a huge success. The hoop house is not being used as much as they had envisioned, but they do need tables for the interior. The gardens are a sanctuary for native plants, insects, and birds. They are using the weather station and bird cameras to great ffect. The "garden chia head" is a great attention getter and the parents and students have rallied behind it as the symbol of the NIHF SOIL lab. I would call it a model application of creating a
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? All grades.
3. Have teachers used the TPBL modules developed in Spring 2014? Why or why not? They are actively integrating their SOIL lesson plans and creating new ones as well.
4. Additional staff development needs: Theuy need some training on water conservation and the hazards of installing a water feature ina poorly accessible location.
5. Notes and observations: I think we are all pleased with the success of the NIHF SOIL facility.
6. Attachments:

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab | Kelleys Island School Lake Erie Field Station

TPBL Final Site Visit
School: Starling K-8 School
Address: 120 South Central Ave, Columbus, OH 43222
Date: 9/22/2014
Committee Members & Community Partners Present: Jim Bruner, Herb Broda, Jim Dvorsky, Andrew Bloom
1. How has the lab been used? The Starling facility is terrific. The P2 (Physics Playground) is a great success and the track makes a great difference in access and excitement for the school and community. The outdoor classrooms are being used (mostly by art classes and younger students) and the outdoor habitat has not yet been instituted.
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? Mostly the3rd, 5th, 6th and 7th graders
3. Have teachers used the TPBL modules developed in Spring 2014? Why or why not? They are not yet using the water quality module they developed for the SOIL program. It will be more easily introduced in the spring. The habitat is not yet in place.
4. Additional staff development needs: Water control and conservation methods, outdoor management of grasses around the track and Physics Playground and access to the P2 stations (steps maybe?)
5. Notes and observations:
6. Attachments:

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab | Kelleys Island School

TPBL Final Site Visit
School: West High School
Address: 179 S Powell Ave, Columbus, OH 43204
Date: 9/22/2014
Committee Members & Community Partners Present: Jim Bruner, Meghen Matta, Jim Dvorsky, Megan Hinz
1. How has the lab been used? The West High School Hoop House facility is underused. There were plants in the beds and evidence that students had been in, but the urban nature of the site demands that the hoop house be locked to avoid vanadlism and this greatly decreases access to the facility.
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? Unclear.
3. Have teachers used the TPBL modules developed in Spring 2014? Why or why not? Their module was on food deserrts, but the fact that Ms. Hinz was surprised that the plants in the hoop house were still alive was an indicator of the fact that the module is not being used.
4. Additional staff development needs: Water control and conservation methods, rainwater cachement and management, and techniques for repairing vandalism.
5. Notes and observations: This is not off to a great start. Perhaps a buddy will make better use of the facility.
6. Attachments:

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab | Kelleys Island School Lake Erie Field Station

TPBL Final Site Visit
School: Westmoor Middle School
Address: 3001 Valleyview Dr, Columbus, OH 43204
Date: 9/22/2014
Committee Members & Community Partners Present: Jim Bruner, Meghen Matta, Jim Dvorsky, Paul
1. How has the lab been used? The Westmoor atrium has been transformed but there is no evidence that it is being used. Our site visit occurred after school hours, and the two teachers who were involved with the development have resigned their positions in the SOIL curriculum. Mr. Bailey was actively seeking a teacher to step up.
2. What grades have utilized the Outdoor Lab? Have any other schools used your Outdoor Lab? Unclear.
3. Have teachers used the TPBL modules developed in Spring 2014? Why or why not? There is no evidence to this fact.
4. Additional staff development needs: None
5. Notes and observations: This is not off to a great start. Perhaps a buddy will make better use of the facility.
6. Attachments:

SOIL STEM OUTDOOR INNOVATION LAB

Final Site Lab Builds

Metro Middle School and Early College High School




National Inventors Hall of Fame Middle School

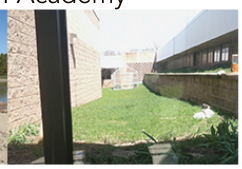



Starling K-8 School




Baldwin Road Middle School and eSTEM Academy





West High School




Westmoor Middle School

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Initial Site Visit

School: Fairfield Union

Address: 6675 Cincinnati Zanesville Rd NE, Lancaster, OH 43130

Date: October 22st 2014

Committee Members & Community Partners Present: Elizabeth Henwood, John Markwood, Judd Baker

1. Has this project been presented to the entire staff and what was the feedback/response? The staff are aware they have received a grant but are not yet engaged in the planning process. The school already uses some outdoor spaces but would like to increase usage and improve functionality.

2. Are there any intital questions or concerns? There were some general questions but overall teachers were confident in moving forward.

3. Has your design team registered for P3 online class? Some are already signed up- will work to get m

4. Notes and observations: The school is looking to utilize four main areas onsite.
1. Old land lab- incredibly beautiful open space with trail and buildings already existing. Needs some rehab work and possibly a new structure.
2. Wooded area between high school and middle school
3. Green space outside of middle school
4. Courtyard area inside of middle school

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Initial Site Visit

School: Federal Hocking MS/HS

Address: 8461 Ohio 144, Stewart, OH 45778

Date: October 21st 2014

Committee Members & Community Partners Present: Cliff Bonner, Keith Macartney, John Wryst, Mat Roberts, Doug Brooks

1. Has this project been presented to the entire staff and what was the feedback/response? Yes, the staff at the school is aware of the project and excited to move forward on many new initiatives.

2. Are there any intital questions or concerns? There were some questions about signing up for the P3 class but those were easily addressed

3. Has your design team registered for P3 online class? No, will spread the word!

4. Notes and observations:

1. The team is very engaged and have already started many projects on their own.

2. Looking at key areas:
   a. Front of school near busses
   b. Back of middle school
   c. Existing gardern area
   d. pond area/ natural wooded space

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Initial Site Visit

School: Lancaster High School

Address: 1312 Granville Pike, Lancaster, OH 43130

Date: October 21st 2014

Committee Members & Community Partners Present: Nathan Conrad, Brian Griffin, Shannon Fish & Chad Rice

1. Has this project been presented to the entire staff and what was the feedback/response?
Lancaster has a very large teacher staff. Administrators have indicated to the entire staff that the school has receieved multiple grants and more infomration would be forth coming. The design team is looking to strategically engage more staff members and gather feedback from the whole school.

2. Are there any intital questions or concerns? The design team is earger to utilize outdooor spaces. Their only concern is in length of class periods (42min) being enough time to get outside, start gathering data,
clean up and go back in.

3. Has your design team registered for P3 online class? Yes, all design team members have signed up.

4. Notes and observations:
1. The team is looking to start with a small group and then expand overtime. This seems like a good strategy in a building that has many new initiatives going at the same time.
2. Eager to engage scouts and 4H groups to help with the build
3. Possibily looking to combine some FAST funds to help with SOIL project
4.Looking at key areas: Pond area in front of building, stream area on side of building, courtyard off of

SOIL | STEM OUTDOOR INNOVATION LABS | PAST InnovationLab | Kelleys Island School Lake Erie Field Station

Initial Site Visit

School: Walnut Township

Address: 11850 Lancaster St, Millersport, OH 43046

Date: October 22st 2014

Committee Members & Community Partners Present: Randy Cotner, Steve Harris, Jenny Sponseller, JB Dick

1. Has this project been presented to the entire staff and what was the feedback/response? The staff are aware they have received a grant but are not yet engaged in the planning process.

2. Are there any intital questions or concerns? We spent most of our time with the Superintendent who is very excited about the project. I think more questions will arise from staff once they are engaged in the process.

3. Has your design team registered for P3 online class? Some are already signed up- will work to get m

4. Notes and observations:

1. The Superintent is very much leading the project at this point. Staff seemed disengaged or atleast unaware of thier role in the project.
2. The school is excited to partner with the DNR to utilize space near Buckeye Lake. This project will need to be explored further as transportation and usage may become an issue.
3. There is some space near the school that can also be enhanced. The SOIL team would like to have more conversation about that area as well.


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SCHOOL

Today's Major Objectives

- To recap what has happened, and what needs to be done regarding SOIL I
- To see how others plan to use the additional funding
- To provide a template for the buddy selection and implementation process
- To leave today with a specific plan for Phase II


YSI

What has been completed so far?

Akron NIHF STEM

- Native garden;
- hoop house;
- bird houses;
- wild life spy cam;
- biotic sculpture;
- mini cell totem poles;
- seating in outdoor lab

What has been completed so far?

Metro Early College High School/Middle School

- Built and planted our raised beds;
- Spread mulch. Materials are ready to build our aquaponics system;
- raised garden beds, tables indoors, trees planted

What has been completed so far?

Metro Early College High School/Middle School

- Created an outdoor learning space in the PAST courtyard.
- Mulch, picnic tables and supply benches Indoor/Outdoor Classroom Space- Kidney shaped tables with trees in-between .
- Garden Beds- 9 beds built and filled. We currently have tomatoes, herbs and mums planted.

What has been completed so far?

Starling K-8

We have built our outdoor classroom spaces and designed a trans-disciplinary unit that used the physics station that was created.

What has been completed so far?

Biomed Science Academy

Cleared and laid mulch down on a classroom in our space.

Cleared a trail and have started mulching that.

What has been completed so far?

- Reynoldsburg eSTEM

Trail, shelter, and classroom areas

Storage boxes for lab materials are purchased.

Potential Uses for the $4,500 new funding

- ***Akron NIHF STEM***

Seating by biotic sculpture; tool shed;

hoop house tables & gardening supplies (pots; planting top soil; plants etc.)

electric garden tools- weed eater; leaf blowers; mulch; weed killer & pesticide;

hedge trimmers etc. ;

additional spy cams***;***

Potential Uses for the $4,500 new funding

- ***Akron NIHF STEM*** (continued)

rain collection system;

field manuals (birds; wildlife; plants; insects);

Wind chimes;

poetry boards;

paint,

Plants to attract butterflies; shoe cleaners (like at Kelleys island).

Potential Uses for the $4,500 new funding

Metro Early College High School/Middle School

Umbrellas for the tables

Expand the aquaponics system and watering systems.

Addition of a weather station and additional field sampling equipment.

mulch and some bushes in the outdoor spaces

heartier trees for the indoor/outdoor classroom space

Outfit school partner outdoor classroom spaces or bring their students to our spaces to experience the curriculum that was written.

Potential Uses for the $4,500 new funding

- A walkway around to the front of the building.
- A labyrinth or maze built using smooth stones decorated by the students.
- A real butterfly and toad garden off the walkway
- Permanent steps from the path to the physics station.
- Different seats built by the students from "recycled" materials gathered in the neighborhood.
- A tree dedicated to one of our former students who lost her life recently.

Potential Uses for the $4,500 new funding

- ***Biomed Science Academy***

Finishing the Trail

Low ropes initiatives

An apiary

Picnic Tables

Seating for our classroom

Potential Uses for the $4,500 new funding

Reynoldsburg eSTEM

Signage

Lesson materials

Field equipment

P3 Participation

P3: Problems, Projects, Products; An Introduction to Transdisciplinary Problem-Based Learning is a hybrid online course, which consists of podcasts, videos, virtual discussions, and weekly assignments. This approach provides the opportunity for teachers to learn about the instructional strategy, Transdisciplinary Problem-Based Learning (TPBL) at their own pace without having to physically attend class. TPBL is an approach to engage learners by bringing relevance to learning.

As part of Growing SOIL teachers new to Cohort 1 and teachers from the Buddy Schools or Programs are eligible to take P3 in any of the upcoming P3 scheduled courses.

Growing SOIL Cohort 1 & 2 teachers enrolled in the course have the opportunity to participate in a weekly discussion on topics around engaging students in the 21st century and implementing TPBL into the classroom and SOILabs. The eight-week (Spring 2014) or four-week course (2014-2015 school year) prepares teachers to build relevant TPBL modules that align to curriculum standards and directly relate to the SOILabs. Teachers can elect to receive continuing education units and/or university credit for completing the course.

Cohort 1:

Growing SOIL Cohort 1 participated in the online course, *P3: An Introduction to Transdisciplinary Problem-Based Learning*, during spring 2014. The PD culminated in a two-day, June workshop, in which PAST STEM Coordinators worked alongside the SOIL teachers to build rigorous and relevant modules that can be implemented at their SOILabs. The completed modules were shared digitally via Basecamp across all nine Growing SOIL Cohort 1 schools and were included in the final report. The anticipated goal is Growing SOIL Cohort 1 will implement the TPBL modules built in spring 2014 during the first and second quarter of the 2014-2015 school year.

Many schools have started to implement the teacher-developed modules.

- Biomed in Rootstown, Ohio reported they have begun implementing their TPBL modules in the first quarter of the 2014-2015 school year. Students have identified insects and plant species as part of a biology unit.
- Teachers at National Inventors Hall of Fame used the outdoor lab space to help transition 5th grade students into the building. Students from local elementary schools visited the lab this past spring as part of a 5th grade orientation session. During the session, students painted bird feeders designed and built by 7th graders.

When students arrived this fall, they hung their decorated bird feeders in the outdoor lab representing they are now part of the school community. Teachers at Starling Middle School have also started using their developed modules. Students participated in a water balloon contest

The current TPBL curriculum implementation has helped to inform the needs and improvements of the SOILab for the second phase in Growing SOIL. The table below identifies the teachers who have completed P3 and built modules, as well as the number of teachers from the participating schools and their buddies who are eligible to take P3 this coming year.

School	Number of Teachers who Completed the P3 Course	Number of new Teachers eligible for P3 in Growing SOIL	Completed TPBL Modules (Backmap, Two-week planner, and Snapshot)
Baldwin Road Junior High	2	3	✓
Bio-med Science Academy	2	3	✓
eSTEM High School	1	3	✓
Metro Early College High School	2	3	✓
Metro Early College Middle School	1	2	✓
National Inventors Hall of Fame School Center for STEM Learning	2	4	✓
Starling K-8	-	3	✓
Westmoor Middle School	2	4	✓

Cohort 2:

Growing SOIL Cohort 2 will take P3: An Introduction to Transdisciplinary Problem-Based Learning in November 2014 or January 2015. Curriculum integration with the SOILabs is an important aspect of the outdoor learning spaces, therefore the goal is to have all Growing SOIL Cohort 2 teachers complete the online course before the January workshops. The January workshops will focus on the design and building of SOILabs. Complete TPBL modules tied directly to the SOILabs will be built during November and January's P3: Intro to TPBL course. Teachers will have the opportunity to modify their final TPBL modules during spring 2015.

School District	Number of Teachers Registered for November's P3 Course	Number of Teachers Registered for January's P3 Course
Fairfield Union	7	0
Federal Hocking	1	0
Lancaster City Schools	5	0
Walnut Township Schools	3	0

Appendices D-E

D: P3 Information

- Syllabus
- Credit Options Flyer
- Information Sheet

E: P3 Course Schedule 2014-2015

P3: Introduction to Transdisciplinary Problem-Based Learning
Course Overview

Dates: Four Weeks

Delivery: Online

Instructor: Kat Deaner, PAST STEM Coordinator
Kdeaner@pastfoundation.org

Overview: This introductory course provides an overview of the instructional strategies associated with Transdisciplinary Problem-Based Learning, a 21st century model used to deliver instruction. This course covers the antecedents of the process as well as the innovative system used to develop a culture of learning that resonates with the specific community in which the instruction is delivered. The process explores all components of building TPBL from establishing school habits which impact a school's instructional climate to demonstrating gained knowledge, to benchmarking progress, which defines success for students and teachers.

Format: We will use Basecamp™ as our online platform and each of you will be invited to join. If you do not have an account, it is free and easy to create. Directions to create a Basecamp™ account will be emailed to you along with the invitation to join. Each weekly module includes the following: 1) watch podcasts, 2) complete extension activities which will include viewing additional videos and answering 2-3 discussion questions, 3) complete the corresponding templates/deliverables, and 4) participate in a live weekly virtual discussion.

Schedule: Links to the modules and extension activities will be posted on Basecamp™. You will have one week to watch the podcasts and extension videos and complete the deliverables. We will have a virtual orientation meeting via Zoom™ for an overview of the course. Additionally, there will be four weekly virtual discussions using the same Zoom™ link (see link and schedule below). During the weekly virtual discussions, we will have discussion topics and each participant will present their work.

Login to Virtual Weekly Brainstorm Meetings via Zoom™
Time:
Link:
Join by phone:
Meeting ID:

P3 PROBLEMS PROJECTS PRODUCTS PAST InnovationLab access through education

Credit Options through P3

CEU (Ohio Continuing Education Unit) Option

2 CEUs [Free]

- Reviewing the specified modules and resources in the time allotted
- Participating in the weekly Virtual Brainstorms
- Completing the specified deliverables plus 1 Backmap, 1 2wk Planner & 1 Snapshot

Must apply for CEUs at beginning of course

Collegiate Credit: Ashland University Option

1-3 Credits @ $185/credit

- Reviewing the specified modules and resources in the time allotted
- Participating in the weekly Virtual Brainstorms
- Completing the specified deliverables associated with number of credit hours

Must register and pay for course in the first week of course
Contact Ellen Cahill Ph.D. - ecahill@fairfieldesc.org

Collegiate Credit: Dakota Wesleyan University Option

2 Credits @ $70/credit (total $140) [599 TPBL Course for Accreditation Renewal]

- Reviewing the specified modules and resources in the time allotted
- Participating in the weekly Virtual Brainstorms
- Completing the specified deliverables throughout plus 1 Backmap, 4 2wk Planners, & 4 Snapshots.

Must register and pay for course in the first week of course
Contact Kat Deaner - kdeaner@pastfoundation.org

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Looking to Engage Your Students?

Need Ideas to Designing 21st Century Curriculum?

Want to Bring Passion to Your Classroom?

PAST's Online Professional Development for Educators

P3 PROBLEMS PROJECTS PRODUCTS

Introduction to Transdisciplinary Problem-Based Learning

This **four** week, online introductory course provides an overview of the instructional strategies associated with TPBL, a 21st century model used to deliver instruction that engages students and develops a culture of learning that resonates with your community.

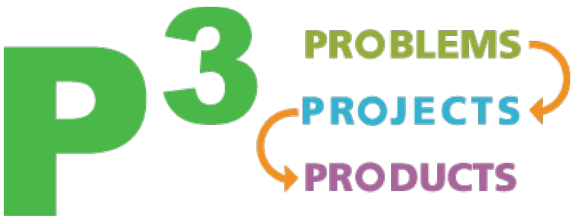
Delivered through a combination of podcasts, virtual synchronous discussions, and conception homework, P3: Introduction to TPBL prepares teachers to begin implementing TPBL in your classrooms.

Topics covered:

- Habits of Mind
- Principles of Design
- Building TPBL Modules
- Rubrics for Today's Classroom
- Short Cycle Assessments

Enroll Today!! Courses run monthly. **FAST and Growing SOIL participants**, to register and for additional information please visit: http://pastinnovationlab.org/?p=5304

Visit the PAST Innovation Lab web site | www.pastinnovationlab.org



P3 Flex
A hybrid, 4 week course online that combines the flexibility of exploring pre-set modules at your convenience as well as allowing you to participate in real time, online, weekly discussions with a Master TPBL STEM Instructor.

Current Course Schedule 2014-2015

- November 3 – November 27th, 2014
- January 5 – January 30, 2015
- February 2 – February 27, 2015
- March 2 – March 27, 2015
- March 30 – May 1, 2015
- May 4 – May 29, 2015

Summer Schedule Posted in March

Register online for courses: http://pastinnovationlab.org/?p=5304

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Growing SOIL Cohort 1 Narrative Content per school:

Baldwin Rd Jr High

This fall teachers at Baldwin Rd. Middle School were participating in a district strike and were out of the building for three weeks at the start of the school year. As a result, no movement has occurred on SOILab development since last spring. Plans are in the works to reengage the Baldwin staff, after teachers have settled back into their classrooms. An initial planning meeting will take place in early November.

2014 - 2015 Baldwin Rd Jr High Academy Design Team		
Name	**Content**	**Returning or New to Team**
Chelle When	Administration	New to Team
Jen Mox	Administration	Returning
Dustin Few	Teacher	Returning

Community Partner Identified: TBD

Goals for 2014-2015:

Goals have not yet been identified for Baldwin Rd MS. The Growing SOIL project team is ready to work with teachers to clarify goals in November.

Bio-Med Academy

Bio-Med Academy has a strong teacher team supported by a very engaged administrator. The school has experienced some transition this year as the school moved to a new building on the NEOMED campus. In general, NEOMED has been very supportive of the school's plan to develop outdoor space for instruction. Last spring, the students and teachers made great progress on creating a trail and developing an outdoor seating area. The school experienced some delays in building a welcome center/pavilion as the contractor backed out at the last minute. The welcome center was completed this fall and teachers are moving forward with plans to use the new structure.

Bio-Med Academy Design Team		
Name	Content	Returning or New to Team
Stephanie Lammlein	Administration	Returning
Ryan Willard	9-12 Science	Returning
Matt MacKeown	9-12 Science	Returning

Community Partner Identified: Rootstown Elementary School, Rootstown, OH

Goals for 2014-2015:

1. Design and build low ropes course.
2. Engage Entrepreneur Class in managing low ropes course as a business venture for other area schools
3. Partner with Rootstown Elementary third grade teachers to teach life structures class
4. Create a butterfly garden

eSTEM High School

This fall teachers at eSTEM were participating in a district wide strike. No further movement has occurred on lab development since last spring. Lead teacher, Madeline Shultz is eager to begin working on the lab again and has started communicating with teachers at Summit Road Elementary to create a new student learning partnership.

2014 - 2015 eSTEM Design Team		
Name	**Content**	**Team Transition**
Scott Bennett	Administrator	Returning
Madeline Schultz	Teacher- Science	Returning
Michelle Jago	Teacher- English	New to team

Community Partner Identified: Summit Road Elementary School

Goals for 2014-2015:

1. Engage with Summit Road Elementary School teachers to create student-learning partnership. Teachers are exploring the possibility of students at eSTEM in AP Environmental Science teaching elementary school students at Summit Road.
2. Continue to expand trail work and engage more students.

Metro Early College Middle & High School

Metro Early College Middle and High School partnered with Ohio State University's Aquaponics class. The college students plan to work with Metro High school students to plan and design a working Aquaponics system, then going forward Metro students from both the Middle and High Schools will build and manage the system. Metro is also working with the Growth program to plan for the spring planting season.

2014 - 2015 Metro Early College Design Team		
Name	**Content**	**Returning or New to Team**
Meka Pace	Administration	Returning
Andrew Bruening	Teacher	Returning
Jordan Walker	Teacher	Returning
Annie DeWitt	Teacher	Returning
Kris Stevens	Teacher	New

Community Partner Identified: Hubbard Elementary School, Columbus, OH

Goals for 2014-2015:

1. Continue the development the outdoor space outside PAST
2. Continue to develop community partnerships
3. Facilitate visits with buddy schools

National Inventors Hall of Fame (NIHF)

NIHF has transformed the outdoor balcony space above the parking structure into a beautiful outdoor lab space. There are three huge garden beds along with a green house structure and weather lab available for student use. The science department and visual arts department have partnered to create a beautiful space for student exploration. NIHF has multiple community partners engaging in the project: NOVA Foundation, Cuyahoga Falls National Park, and Helen Arnold Elementary School.

2014 - 2015 Inventors Hall of Fame Design Team		
Name	**Content**	**Returning or New to Team**
Amanda Morgan	Administration	New
Christine Justiss	Teacher- Science	Returning
Sam Crews	Teacher- Science	Returning

Community Partner Identified: Helen Arnold CLC Elementary School

Goals for 2014-2015:

1. Continue expanding garden area and fill in with more native species
2. Set up video feed towards bird house
3. Continue to teach biology lessons outside
4. Create more seating in hoop house area
5. Put in weather station near garden area

Starling Middle School

Starling Middle School is actively using the Outdoor Lab in many unique ways. The 8th grade team utilized the Physics Station to launch water balloons and analyze the forces at play. The lower elementary school teachers used the lab space to explore animal habitats and the whole school has enjoyed the new seating area outside the entrance of the building. This school year, Starling is planning to partner with the Center of Science and Industry (COSI) and the Columbus Historical Society.

2014 - 2015 Starling K-8 Design Team		
Name	**Content**	**Returning or New to Team**
Bill Doerman	Administration	Returning
Andrew Bloom	Teacher - Science	Returning
Anita Cornwell	Teacher	New

Community Partner Identified:

Columbus Science and Industry Museum (COSI)
Columbus Historical Society

Goals for 2014-2015:

1. Partner with COSI to create 'Science in the Streets' program
2. Expand trail on site
3. Create another outdoor seating area on site
4. Reengage all teachers and provide professional development opportunities for teachers to learn about new spaces and equipment

West High School:

West High School has made significant progress on their outdoor lab since last spring. The school has partnered with the Green Building Council and sponsored a volunteer workday in late September. During the workday, volunteers installed two new raised beds, and additional large bed outside the green house, a compost bin and gravel pathway and patio area. Students have created an *Instagram* and *Twitter* account to document the lab improvements and uses.

2014 - 2015 West High School Design Team		
Name	**Content**	**Returning or New to Team**
Lucas Cech	Administration	Returning
Megan Hinz	Teacher	Returning
TBD		

Community Partner Identified: Green Building Council

Goals for 2014-2015:

1. Put in new raised bed
2. Install compost pile
3. Create gravel pathway and patio area
4. Create student blog to update public about Outdoor Lab Improvements
5. Engage new departments in lab usage
6. Expand access to community partners and engage local restaurants in food production project

Westmoor Middle School

This fall, Westmoor completed a lot of the work on the outdoor lab site that had been pushed off last spring. They installed outdoor lab tables, moved in new seating areas, painted the scrabble forms on the playground and overall, improved the aesthetics of the courtyard area. This school will transition the project to a new team of teachers. The special education department in the school will now be leading the SOIL project for this building.

2014 - 2015 Westmoor Middle School Design Team		
Name	**Content**	**Returning or New to Team**
Paul Bailey	Administration	Returning
Sue Robbins	Teacher- Special Education	New to team
TBD		

Community Partner Identified: Valleyview Elementary School, Columbus, OH

Goals for 2014-2015:

1. Create sensory area designed for special education students
2. Engage guidance counseling staff in thinking about using outdoor space for de-escalation purposes
3. Find new uses for outdoor planter boxes near entrance of school

Growing SOIL Cohort 2 Narrative Content per District:

Fairfield Union

Fairfield Union hosted an initial site visit on Wednesday, October 23rd. The school already uses the outdoors for some instructional purposes and is excited to expand and improve its use. The school is looking to enhance three main areas: a courtyard area in the middle school building, a wetland located between the middle school and high school buildings and an already existing land lab in great need of upgrades and repair. The school already has plans to reach out to a few community businesses to ask for in-kind donations as well as other services and expertise. The school planning team will meet again before the next SOIL meeting in January.

Fairfield Union Design Team	
Name	Content
Elizbeth Henwood	Middle School Administrator
Matt Destadio	Teacher
Eric Vivian	Teacher
John Markwood	Teacher
Lisa Ruff	Teacher
Rachel Thomas	Teacher
Judd Baker	Teacher

Federal Hocking

Federal Hocking hosted a site visit on October 22nd. SOIL Staff met with the principal and 5-6 other teachers from multiple disciplines. The school previously started an outdoor lab but has not found ways to enhance the site or integrate it into the regular curriculum. A large garden with hoop house was created last spring but is in need of many improvements to make it more suitable for student use. Many teachers from different departments participated in the site visit and the project seems to have lots of support within the building.

Federal Hocking Design Team	
Name	Content
Cliff Bonner	Administrator
Keith Macartney	Teacher
Doug Brooks	Teacher
Sarah Russell	Teacher
John Wryst	Teacher
Julia Olson	Teacher
Eric Anderson	Teacher
Mat Roberts	AmeriCorps Member

Lancaster City Schools

Lancaster High School hosted a site visit on October 22nd. The school had a wide range of staff participate from administration, curriculum coordinators to teachers. The school is looking to transform three main areas on the school site. The first is a pond area about 300yards in front of the school building, could be used for multiple research projects as well as general nature observation. The second area is a courtyard space that already contains a greenhouse that is mostly used for storage. The teachers are interested in reclaiming the courtyard space but would have to make some decisions about the green house in terms of rehab or demolition. Lastly, there is a small stream located on site. The art teacher would like to create a sculpture garden outside as well as engage the industrial arts teachers in building seating near the stream.

Lancaster High School Design Team	
Name	**Content**
Nathan Conrad Brian Griffin	Assist. Principal
Natalie Bargo	Teacher
Shannon Fish	Teacher
Mont Goss	Teacher
Chad Rice	Curriculum Coordinator

Walnut Township Schools

Walnut Township schools hosted a site visit on October 23rd. The Superintendent is very excited about the opportunity to create an outdoor learning space for students. He is eager to form a partnership with the DNR and utilize space at the Buckeye Lake State Park, which is only minutes from the main school campus. The project seems to be led by the administration at this point and teachers appear fairly disengaged from the planning process.

Walnut Township Design Team	
Name	Content
Jeff Stought	Administration
Jenny Sponseller	Teacher
Carrie Grown	Teacher
Steve Harris	Teacher
Caitlin Mclurg	Teacher

Marketing

Growing SOIL continues in Marketing the SOILabs from Straight A: Round I with an introductory marketing flyer. PR will be built around the upcoming presentation to invite partners and community participants to the presentations.

PAST InnovationLab News Release

For Immediate Release

Fairfield County ESC and PAST Innovation Lab Partnership Awarded 3 Straight A Grants

Fairfield County ESC was recently awarded three grants from the Ohio Department of Education Straight A Fund, and is collaborating with PAST Innovation Lab to develop and implement programing for all three projects. These grants will bring over $17 million to Fairfield County ESC to improve educational services in their communities by bringing innovative, cost-effective student learning approaches to the classroom. With just 37 of 340 grant requests approved, the Fairfield County ESC and PAST team is a leader in the number of grants awarded in this round of funding.

The grants will provide funding for 3 specific projects:

Growing SOIL
The PAST Foundation's Growing Soil grant responds to the need to increase students' applied learning and critical thinking skills. STEM Outdoor Innovation Labs (SOIL) capitalize on school property to expand learning without expanding the physical school building.

Growing SOIL builds on the program SOIL, a partnership between PAST and Kelleys Island first implemented in Spring 2014 in nine Ohio schools and funded by a first round Straight A grant. Based on SOIL's success and measured by meaningful educational outcomes, experience and engagement of students, Growing SOIL will expand the reach of the first nine labs to 30 additional Ohio schools.

Project FAST Forward: Fairfield Advancing Students and Teaching
Project FAST Forward will transform the educational systems in Fairfield County by providing multiple college and career pathways to students while significantly reducing district costs. Among other initiatives, the project will convert a closing school building to become the Fairfield County Student Success Center, which will provide rigorous STEM education to 300 at-risk youth to prepare them to enter high-demand careers such as IT and construction.

PAST will provide professional development in STEM education for teachers in eight school districts, teaching transdisciplinary problem-based learning concepts for classroom instruction. The PAST Knowledge Capture team will conduct initial and on-going evaluation, ensuring reporting on training and measuring program results.

Math Matters: Transforming Math Education for 21st Century Success
Math Matters will involve a consortium of nine school districts in two counties to transform math education. The project will use a tool that personalizes math instruction through online and in-person instruction. Students receive immediate feedback that deepens problem-solving and reasoning skills. Through professional development, ongoing partner collaboration and digital tools, teachers will build skills to help students have a greater understanding of math concepts. The program to be used is proven to engage students, particularly those with low reading proficiency or for whom English is a second language

The PAST Knowledge Capture team is charged with initial and on-going evaluation, ensuring reporting on training, and measuring other critical program outcomes.

Learn more about the our work with Fairfield County ESC right here!

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About PAST
PAST Innovation Lab is a leader in redesigning and improving education for grades K thru 16, sharing transdisciplinary problem-based learning (TPBL) with educators and experiential programs for students.

PAST professional development online courses and in-person workshops offer teachers exciting ways to bring TPBL to their classrooms. Student programs and workshops link STEM education and life-long learning to prepare students for 21st century careers.

PAST Innovation Lab is a part of PAST Foundation, a 501(c)3 organization. PAST Foundation's work includes extensive Knowledge Capture within schools and districts, research, educational resources and publications.

Learn more about PAST Innovation Lab at www.pastinnovationlab.org, call 614/ 340-1208 or email publications@pastinnovationlab.org.

GROWING SOIL
FORMATIVE EVALUATION

The Knowledge Capture (KC) Program has engaged with the first quarter of implementation for the Growing SOIL Project in completing the following work. Formative evaluation activities conducted through October 17th are presented in this report. The first section of the evaluation will provide an overview of work conducted to support evaluation of the Growing SOIL Cohort 1 (9 School Districts) and the second section will address work completed for Cohort 2 (6 Districts). Additionally, a Knowledge Capture Formative Evaluation Plan is presented in the Knowledge Capture Appendix based on the current schedule for implementation through June 30, 2015. A table of KC fieldwork chronology for all work conducted is also presented in the Knowledge Capture Appendix organized by cohort activities.

COHORT 1

The work completed through October 30th includes the Cohort 1 Orientation held on September 20th at the PAST Foundation. As part of the Orientation, attendees were invited to participate in a Focus Group, providing opportunity for an open discussion regarding views of the different school teams about the status of work, challenges encountered and overcome, and expectations for the second phase of work to occur through June 2015. Seven individuals participated, including two members of the COSI staff. Additionally, we interviewed an administrator. The analysis of the focus group issues follows and incorporates the views of the administrator.

Focus Groups
Thematic analysis of the focus group discussion is organized by seven issues:

- Student Engagement
- Community Involvement
- Curriculum
- School Culture
- Sustaining Involvement
- Safety Issues
- Recommended Actions

Student Engagement

A common aspect of student engagement concerned the observation that students engaged with the project in diverse ways, creating a sense of ownership. Related to ownership, students are voluntarily working to maintain the outdoor learning areas (weeding, etc.), displaying a sense of community service. Some teachers are engaging students in working on the design for the outdoor space. Other teachers reported they are working to engage all grade-levels through partnerships across elementary, middle and high schools. Additionally teachers noted that the outdoor learning lab reduces the need to bus students to areas where they can experience outdoor learning. Linked to this is the idea that curriculum development for the outdoor lab is being implemented, giving students 'hands-on' experience.

Community Engagement

All Schools reported progress with exploring partnerships ranging from universities to community groups, park staff, and local businesses. These include:

- *Building a partnership that involves graduate student mentors for high school students*
- *Bringing graduate students and Ph.D. candidates to the school as Teaching Assistants*
- *Business sponsor supporting two engineering teachers and one engineer in residence for the outdoor lab program*
- *Boy Scouts potentially engaging in various ways, including building an aquaponics system as an Eagle Scout Project*
- *Working in partnership with neighbors with adjoining walls to the school to design and paint murals on exterior walls that face the school outdoor areas*
- *Working with the local park on removal of non-native invasive species*
- *Growing native plants in the school lab for planting in park areas and throughout the community public spaces*
- *Educating the community about the importance of native plants and native habitat in response to community concerns about the appearance of native plants and green space*
- *Inviting the community into the school, including parents, local groups and private schools to tour the outdoor lab and see the way the school is using the new learning areas*
- *Reaching out to master gardener organizations for involvement and potential teaching assistance*

Curriculum

One school reported that the art teacher had joined in creating curriculum for students to use the outdoor lab. Additionally, some school teams reported offering a school-wide design challenge to explore 'real world' issues and encourage other disciplines to consider potential uses of the new outdoor learning area. The opportunity to build mentoring by older students of younger students is also seen as a way to integrate grade level involvement.

School Culture

Comments on changes in the school culture were highly positive, with a common view of the opportunity presented by the outdoor lab to create a "new" culture of learning. One school has experienced changes in the way instruction is occurring within the school as teachers and students integrate the outdoor learning experience into the classroom experience. Particular comments about the value of creating school-wide challenges and the value of integrating involvement of different grade levels and mentoring for students were also identified as important aspects of shifts in the school culture. Fostering integration of disciplines has provided a framework for lower grade teachers to work with upper grade level teachers, which is a new dynamic in building social relationships among the teaching staff, encouraging collaboration across grade levels.

Creating a sense of ownership for both students and teachers contributes to defining the school as a whole, building a sense school identity and community. One school reported that a local resident had voluntarily maintained the outdoor lab area during the summer, signaling the importance and value of the neighborhood school to the larger community. Finally, some teachers observed they saw value in the outdoor lab as a focal point on the school grounds, providing opportunities for teachers to learn to enjoy the use of the outdoor lab.

Sustaining Involvement

Building partnerships among teachers offers the opportunity to make connections across disciplines, such as geology, that can benefit from the outdoor lab and a 'hands-on' learning experience. The teachers also noted that enthusiasm is growing as use of the lab spreads among teachers and students. Different ideas for future ways to build interest and enhance use of the outdoor lab were raised including the following ideas:

- *Inviting the foreign language teacher to develop a student project to produce multilingual signage for the outdoor area*

- *Encouraging teachers to move lectures outdoors to initiate awareness of the experience of learning outdoors that may lead to other ideas to build curriculum specific to the outdoor lab*
- *Continuing to use a school-wide design challenge approach that expand to other disciplines over time*
- *Providing flexibility in the way the space is used in order to accommodate different teacher preferences for instruction*

A major challenge identified by teachers primarily concerned lack of common planning time that generally constrains ways in which teachers can collaborate in building ideas about common use of the outdoor lab space. These include:

- *Gaining suggestions from teachers who have not used the space*
- *Incorporating feedback from teachers who are using the space to make it more functional to meet distinct needs*
- *Without common planning time, it is very difficult to build multidisciplinary curriculum and plans for integrated use of the space*
- *Lack of opportunity to talk with senior staff, to encourage interest in shifting from indoor instruction to outdoor learning experiences*

Safety Issues

Some of the issues raised concerned constraints associated with the school facility and grounds that present challenges for the outdoor lab design, including particular issues that affect urban school settings. However, the issue of awareness of lock-down procedures when student are outside the school building in the outdoor lab area was discussed at length. Security procedures involve maintaining good communication with the building administration about when particular class groups will be outdoors (scheduling so that there is knowledge in the building about time of day when particular classes will be out of the building). One school requires teachers to carry radios with them at all times when using the outdoor lab, and another noted there are security guards on the grounds. Most teachers stated they felt safe using the outdoor areas, but also acknowledged that they feel a sense of caution are alert to unexpected developments. One school found their students had little or no experience with bees and other beneficial insects. Increasing handicap access is a priority at one school that may be resolved with the assistance of a community partner in order to make the space safer for all students.

Recommended Actions

Teachers talked about the importance of building interest by the non-science teaching staff. Also, increasing communication with parents and others in the community were cited as an important next step. Teachers also talked over ideas for potential new partnerships, sharing ideas about plans for future outreach to particular groups. These include:

- *Other neighborhood schools (both pubic and private)*
- *Master Gardner Associations*
- *Local community beautification groups*
- *State and Metropolitan Parks*
- *Boy Scout/Girl Scout troops, including attracting other senior scouts who could conduct different project in after-school use*

COHORT 1 SCHOOL SITE VISITS

Cohort 1 school site visits were conducted by the PAST Implementation Team and were scheduled to occur after the Orientation Workshop of September 20th. The site visits were scheduled in coordination with the school design teams by the PAST team. Note that the Westmoor team and the Metro team requested two different days to conduct their site visits in order to include all members of their team in the on-site discussion. The KC team participated as observers, noting significant issues addressed during the tour and discussion among the school design team and the PAST team.

Bullet Point Reports were created for each school site and are presented in the Knowledge Capture Appendix. The major areas of discussion centered on five main themes:

- Student Engagement
- Teacher Engagement
- Community Engagement
- School Culture
- Sustainability

The school design team and the PAST implementation team also discussed potential next steps that are shown under the title "Recommendations," and are further identified as potential actions for the school Design Team and/or the PAST Implementation Team.

In the table below, site visit observations are listed by date and school:

Growing SOIL Cohort 1 - School Site Observations		
Date		School
September	22nd	Starling
		West High School
	25th	National Inventors Hall of Fame Middle School
		BioMed Academy
		Metro High School/Middle School
		Westmoor Middle School
	30th	Metro High School/Middle School
		Westmoor Middle School

Bullet Point Reports were generated for each individual school and provide specific details about the individual school site planning issues, including accomplishments and planning for continued work on the outdoor lab.

COHORT 2

The Growing SOIL Cohort 2 group was invited to attend an Orientation on October 1, 2014. The KC Team conducted observation of the day's events. The event was organized to provide information to the six new districts joining the project slated to initiate the planning process in January 2015. The event was facilitated by six Growing SOIL implementation team members, including COSI staff and expert outdoor education specialists. The KC Bullet Point Report is presented in the Knowledge Capture Appendix.

Site visits were conducted following the October 1, 2014 Orientation as follows:

- October 21st – 1) Lancaster, 2) Federal Hocking
- October 22nd – 3) Fairfield Union, 4) Walnut Township

The site visit KC Bullet Point Reports listed above will be included in the January 30, 2015 grant report.

Knowledge Capture
APPENDIX
Growing SOIL

1.1 Formative Evaluation Work Plan

2.1 Fieldwork Chronologies Cohort 1

2.2 Fieldwork Chronologies Cohort 2

3.1 Growing SOIL Cohort 1 Orientation – September 20, 2014
Workshop Observation Bullet Point Report
Focus Group Bullet Point Report
Focus Group Question Set

4.1 Cohort 1 Site Visit Bullet Point Reports (6)
September 22 – West High School
September 22 – Starling K-8
September 25 – National Inventors Hall of Fame Middle School
September 25 – BioMed Academy
September 30 – Westmoor Middle School
September 30 – Metro High School/Middle School

5.1 Fieldwork Observation BP Report – October 1, 2014
Growing SOIL Cohort 2 Orientation

GROWING SOIL - Implementation Plan 9/2014 to 6/2015

KNOWLEDGE CAPTURE (KC) Formative Evaluation Work Plan

Activity	Projected Dates	Location	KC Evaluation	Product
SOIL COHORT 1 (9 School Districts)				
Growing SOIL Cohort 1 Orientation	Sept. 20 [Sat.]	PAST Foundation	Observation & Focus Groups	Bullet Point Report
6 School Site Visits	Sept. 22, 25, 30	At school location	Observation	6 Bullet Point Reports
Growing SOIL Cohort 1 Buddy and Project Planning	Oct. 27	Virtual	Observation	Bullet Point Report
Cohort 1 Project Presentations	Dec. 6 [Sat.]	PAST Foundation	Observation & Post-Survey	Bullet Point Report
Growing SOIL Project Presentations	June 6 [Sat.]	TBD	Observation & Focus Groups	Bullet Point Report

SOIL COHORT 2 (6 School Districts)				
Growing SOIL Cohort 2 Orientation/Kick off	Oct. 1 [Wed.]	Fairfield ESC	Observation	Bullet Point Report
Growing SOIL Cohort 2 Site Visits [initial]	Oct. 20-24	At school location	Observation	6 Bullet Point Reports
Growing SOIL Cohort 2 Orientation and Planning	Jan. 9-10 [Fri-Sat.]	Rushville Middle School	Observation & Pre-Survey	Bullet Point Report
6 School Site Visits	Feb. 2-5 [Mon-Thurs]	At school location	Observation	6 Bullet Point Reports
Growing SOIL Cohort 2 Project Planning	Feb. 21-22 [Sat.-Sun.]	Fairfield ESC	Observation & Focus Groups	Bullet Point Report
Growing SOIL Cohort 2 Project Presentations	March 21 [Sat.]	Fairfield ESC	Observation & Post-Survey	Bullet Point Report
Growing SOIL Project Presentations	June 6 [Sat.]	TBD	Observation & Focus Groups	Bullet Point Report

Growing SOIL Fieldwork Chronology 2014: Cohort 1

KC Staff	Date	Event Observed	MGC NOTES
MH/MGC/LB	9.20.14	C1 workshop	1 T from WHS; 1 T from Starling; 2 Ts from NIHF; 2 Ts from Metro. WHS T left and came back for the afternoon, was not in FG; Metro Ts left after lunch. Also attending were 2 educators from COSI, and Darren Hattinger from Hocking College [who will be working primarily w/cohort 2] and Herb and Matthew Broda. Brodas led workshop outlining strategies and objectives for establishing buddies, MB led activity re communication.
MH/MGC/LB	9.20.14	PR INT	W/BD of Starling. Brief interview [18 min] about his vision for SOIL--used as opportunity to build program in new schl w/new staff and develop schl culture; discussion on planning process; PR role; st outcomes; cmty engagement.
MH/MGC/LB	9.20.14	Teacher FG	5 Ts from 3 schls plus 2 COSI educators; identified 5 themes to structure the BP report around: St engagement; T engagement; Cmty engagement; Schl culture; and Sustainability. COSI added interesting dimension--asked Q about safety w/outdoor learning
MGC	9.22.14	Site visit: WHS	Visit to WHS w/JB and JD; met with Megan Hinz, who gave us tour of hoop house and spoke about how it is being used, plans, vandalism, cmty pships in place and that are getting started
MGC/MM	9.22.14	Site visit: Metro HS/MS	Ts were not available [note-- have SOIL proj mgr confirm visits]; quick tour of SOIL spaces by JB for JD, MGC and MM; introduction to school admin [protocols]
MGC	9.22.14	Site visit: Starling	Led by lead T AB; WD [PR] accompanied us for part of visit; saw Pine box derby inside; learning areas near school bldg and physics station near tree line further from school; disc. Of safety issues and bldg usage
MGC	9.22.14	Site visit: Westmoor	Ts were not available [Proj. mgr needs to confirm visit]; self-guided tour of inner courtyard; PR joined us at the end and discussed buy-in issues--new spec ed teacher will be taking on the project as the earlier ts had "poisoned the well"
MM	9.25.14	Site visit: NIHF	National Inventors Hall of Fame SOIL Cohort 1 Site visit and BP write up. Tour to garden center from PRN, and met with JB and teacher in garden area. Walked through nature path, insider Hoop House, and down to art chia head. Followed lead T to 3rd floor for areal shots with Jim Dvorsky. Teachers noted high level of student buy-in and engagement as caused by their direct work in planting garden/building bird houses. Sts wanted to cont work in garden during recess time. High lvl of partnership engagement with Park Rangers who donated plants and helped install, will donate more next season for secondary area.

Growing SOIL Fieldwork Chronology 2014: Cohort 1

MM	9.25.14	Site visit: BioMed	BioMed Academy SOIL Cohort 1 Site visit and BP write up. Tour began of school with secretary, met with PRN in science lab with outlook to outdoor space. Brief discussion of grants PRN is applying for, and work progress in space. PRN discussed senior research projects utilizing space. Tour and walk out to space with PRN and 2 teachers. Walked through and discussed progress, work day, and student engagement with space. Full school participation in 'work day' to clear brush. Also discussed constraints: IE, Neomed owning property, college students in dorms on campus nearby.
MM	9.30.14	Site visit: Westmoor	Westmoor Middle School Cohort 1 Site visit (new teacher meeting). We did not see the space in this visit. Discussing of SOIL and important dates with lead teacher. Teacher had great ideas for getting other teachers engaged, and utilizing space for their needs (student behavioral issues solved with Zen garden)
MM	9.30.14	Site visit: Metro HS/MS	Metro HS/MS site visit with teachers. Did not tour space, met with 3 teachers in their classroom to discuss how SOIL is going, and what to expect with dates, funds for future. Discussed student engagement, and plants for aquaponics system, paired with OSU students for senior projects using aquaponics, for GROWING SOIL.
MM	10.27.14	Online Community Partner Meeting	
MM	10.30.14	Online Community Partner Meeting	

Growing SOIL Fieldwork Chronology 2014: Cohort 2

KC Staff	Date	Event Observed	NOTES
MM	10.01.14	Cohort 2 Orientation	Teachers and administration attended, as well as some community resources (Americorps member). Teams were given books, information on P3, and overview of the grant. Herb Rhoda gave a talk on teaching in the out of doors. Plans were made for site visists, and getting participents on Basecamp.
MM	10.21.14	Site Visit: Lancaster	Met with PRN, Assistant PRN, and 3 Ts. All are signed up for P3 in Nov. Team is diserve and includes at least one art teachers. A site visit was done around the building. Ss are already engaged with courtyard area, and Ts wanted S involvment right away (first Q was about S development for project). Teachers have high level of buy-in
MM	10.21.14	Site Visit: Federal Hocking	Ts and PRN very enaged, currently doing a lot of work with students in garden, soil testing for Ag class, and taking students outside to pond area. They also have stonrg parternships in Athens with OU, Americorps and construction companies
MM	10.22.14	Site Visit: Fairfeild Union	Ts are very engaged and already aware of cmty partnerships (construction company, lumber supply comany). Ts have a strong sense of place and ownership of property. Asmin (assistant PRN) is highly engaged and supportive. Constraints include and expansive site that is several miles from school building, and therefore unreachable within 42 min class period
MM	10.22.14	Site Visit: Walnut Township	Issues rose with staff engagement, as lead Admin seems to take on too central of a role. Administration is highly engaged and euthusiastic. There is amble green space avalible. Admin is willing to allow overgrowth space adjacent to school. Staff is small enough for easy collaboration. Teachers are overwhelmed with other initiatives and activities. Admin (Super) wants critical piece to be on lake and ODNR property.

Growing SOIL Cohort 1 Workshop Observation [BP-LB/MGC]
September 20, 2014

Observation [Afternoon session]

A daylong workshop was conducted at the PAST Foundation with SOIL Cohort 1 school design team members. Cohort 1 teams were provided information about Growing SOIL (SAF Round 2). PAST Foundation implementation team members Dr. Herb Broda and Dr. Matthew Broda worked with school design teams to brainstorm ideas for Growing SOIL project goals of establishing and sustaining relationships with "buddy" schools or organizations to enhance the use of STEM Outdoor Innovation Learning Labs. Five objectives were put forth for teams to brainstorm. These include:

1. Fostering buy-in
    a. School based for sustainability
    b. District level
    c. Community at large
2. Increasing participation
    a. Number of students using outdoor lab
    b. Amount of time students use lab
    c. Both number of students and amount of time
3. Increasing visibility of the project
    a. Cultivating capacity of school and team to do PR
    b. Local media
    c. Blogging, etc.
4. Organizing Expansion of SOIL
    a. New tasks; building the team
    b. Analysis of human capital in school building and community
5. Tracking your planning

Ideas suggested by the Brodas and during the team brainstorming are outlined below:

Student Engagement

- Encourage student clubs to use or maintain the space
    - Clubs can make a garden
    - Student council can help to build or maintain the space
- Have students create material for the school's website
    - The students can make blogs about the project
    - Write news articles for the website
    - Make films for the site
    - Create different groups of students to take ownership of different parts of the website
- Find opportunities for real-world application
- Create test gardens based on student research and suggestions
- Students can be engaged in outdoor learning on their way to and from school
    - Create and "education alley" where students develop the markers
    - Use dynamic QR codes that change seasonally

Community Involvement

- Establish exchange relationships
    - Create checks and balances to ensure that buddies and partners are doing their part
- Metro Parks gave native species of plants to one school
    - Students also travel to the Metro Park to clear invasive species
- Increase visibility
    - Put a banner on the fence to draw attention to the project
        - Possible use as bird blind
    - Create Facebook pages or utilize the school webpage
    - Webcams in the garden
    - Donation button on the website
    - Create a "media plan" with timelines for releasing information to the public
- Tap local Boy and Girl Scout troops to help with maintenance and to create a sustainable maintenance plan
- Make strategic formal partnerships
    - Bluebird Society, Audubon Society, local garden clubs, book/reading clubs, art groups (photographers, wood carvers, painters), children's hospital, locally based major corporations
    - One school approached a Parks and Recreation Department
    - One concern with allowing external groups to use the space in off hours is scheduling and responsibility for scheduling use of the space
- Make a partnership with local restaurants to supply herbs and produce
- Make connections with the schools that are closest to your site even if they are not within your district
    - Consider working on a lab together with partner schools
- Buddies should have a concrete plan for use of the space and for what they are planning to do with Growing SOIL funds
    - Buddies can use their Growing SOIL funds to enhance the lab, for materials, busing, equipment
- Pursue variety when building partnerships and think about longevity
- Utilize people from the local universities and colleges
    - Recruit field experience interns from college (specifically future teachers) and provide lesson plans
    - Get professors at the local college to model lessons with future teachers
    - Get future teachers to design lessons to do with the kids
- Utilize local beautification organizations
    - Give them tours of the space
    - Plant beds of native plants around the city from plants cultivated at the school
- Create partnerships with the local zoo to talk about wildlife in the garden
- Donato's is committed to zero waste
    - Students could create plans to reduce waste and have them judged by Donato's
- Design team members expressed concern about getting too much visibility before project is complete

Safety Issues

- Handicap access is a concern

School Culture

- Create school-wide design challenges
- In order to encourage teamwork across classrooms, one class did soil testing and then another class had to figure out soil enhancements
- Extend outdoor space to other schools within the area and incorporate projects that can be done with both schools
- Middle school students could go into the outdoor space with elementary students
    - Older students can be mentors
- Students could create a field guide for the school environment
- Encourage non-education staff to get involved, including cafeteria workers
- Administration involvement can be challenging
    - Invite administration, superintendents, and district personnel to the school for a tour
    - Encourage administration to invite people into the space

Sustaining Involvement

- Figure out ways of creating a space that other teachers can use
    - Solicit ideas from other teachers about how to make the space functional for their needs will help to build involvement
- Engage new staff
- Find ways of encouraging other disciplines to use the space
    - Art classes can create science illustrations
        - Take pictures of birds and insects which the science class will then identify
    - Foreign language classes/clubs could make a garden with bilingual labels, plants from their countries, or using the gardening aesthetics of their country (Japanese or Chinese gardening styles)
    - Create fitness stations or a walking track for gym classes or fitness clubs
    - Language arts classes could use the space as story starters, for journaling, or for working on descriptive language skills
- Figure out ways of fostering relationships with the elementary school
    - Create a professional development activity in the garden
    - Create a lab that can be done at different grade levels
    - Fill a backpack with supplies that the teachers can use in their classrooms
- Connect grade levels to community resources
- Create a reading area
    - Student involvement encourages additional teachers to get involved
- Teachers who were not exposed to STEM are having trouble conceptualizing how to use the space effectively
- While some schools have excellent teacher buy-in with only a handful of holdouts, teacher engagement is an issue at other schools
- One school was concerned about buddy schools dropping out
- In many schools, PD does not support SOIL implementation
    - Need more planning time
    - Need to make outdoors about more than recess

Curriculum

- Create school-wide design challenges
- Create capstone projects around utilizing and developing the outdoor space

Design Team Recommendations

- Create an asset map of the neighborhood to engage community in "education alley"
- Make partnerships with local restaurants to supply herbs and produce might be an opportunity to tie economics classes into the outdoor space
- Use a whiteboard in the office to help facilitate scheduling classes for the outdoor space
    - Not a concern now, but may be a concern in the spring when teachers and students are eager to get out of the building

Growing SOIL Cohort 1 Teacher Focus Group [BP-LB/MGC]
September 20, 2014

A teacher focus group was conducted during the Growing SOIL Cohort 1 full-day workshop with five teachers from SOIL Cohort 1 schools. The focus group also included two staff members from COSI.

Student Engagement

- Some students who might be interested in staying after school or coming in on weekends to help set up the SOIL spaces are unable to because of the distance they have to travel to get to school
- Students who were able to help build the space learned the value of community service and gained a sense of ownership
- Some teachers are attempting to build partnerships with all grade levels from elementary school to high school
- SOIL gives schools an opportunity to bring the outdoors to students in an urban landscape
    - Reduces the need of arranging for buses
- Building hands-on experiences into the curriculum has been a great opportunity for students
- Many of the teachers are using student input to determine how the space is designed
    - Providing opportunities for students to develop ideas, operationalize them, and create real world products
- Students feel ownership of the spaces they helped to create and have been self-policing the gardens and volunteering to do maintenance during recess

Community Involvement

- Creating partnerships with local universities
    - Partnering high school students with graduate students
    - Graduate students and PhD candidates work as Teaching Assistants
- One school created a partnership with a Metro Park
    - They visit the park with the students and help to clear out invasive species.
    - They were also given native plants to grow in their raised beds; when they are mature, native plants will be planted in the Metro Park
    - Native plants being grown in the school gardens are also going to be planted around the city in cooperation with a local beautification organization
    - Using "green tours" sponsored by a locally based major corporation to raise awareness about native species and the value of green spaces
    - Educating locals about native species and their value beyond appearance following complaints about native species
- Major tire manufacturing corporation sponsors two engineering teachers and one engineer in residence at one of the schools
- The Boy and Girl Scouts may be a potential resource
    - At one school, a Boy Scout volunteered to build an aquaponics system for his Eagle Scout project
- Getting permission from neighbors to paint murals on their walls to help beautify the outdoor space

- Inviting neighboring schools to use the space, even if they are not within the district (charter schools or religious schools)
- Developing multi-district summer camp opportunities
- Tap master gardener associations to help maintain the space and to potentially serve as guest educators
- Find ways of informing parents and the community about the great work and projects happening in the school

Safety Issues

- Finding locations on the school ground for greenhouses is a challenge
    - Setting up a greenhouse on the roof creates different safety issues than setting up a greenhouse on the lawn
- Many schools have established clear lockdown procedures, procedures for maintaining contact with the school building, and systems for making sure that the main office knows where the teachers are
    - One school requires teachers to take a radio with them when they go into the outdoor space, and another has a security guard or police officer available to accompany classes in the space
- Most teachers do not feel unsafe in the outdoor space but are reasonably cautious
- Vandalism has been an issue at one school
- Some students previously had limited contact with bees and other beneficial insects and are unaware of how to behave around bees
    - Growing flowering plants increases the activity of bees; It is important to address this with students so they do not overreact when faced with the bees
    - Some teachers bring Epipens in case of emergencies
- Students at one school have to cross a busy road to get to their outdoor space
- Increasing handicap accessibility has been a priority at one of the schools
    - A community partner will help them in this endeavor
    - Handicap accessibility would also make the space safer and more accessible for all students

School Culture

- SOIL project is opportunity to shape school culture in new school
- Teaching in ways that the teachers enjoy can benefit the school as a whole
- Creating an opportunity to create a new learning community
- Planning full-school, multi-grade design challenges gives opportunities for the co-mingling of different grades and the opportunity for older students to mentor younger students

Sustaining Involvement

- Teacher buy-in has primarily been driven by the enthusiastic teachers who have been spearheading the project
- Some teachers are attempting to build partnerships with teachers in other subjects like geology where there is a more direct connection between classroom learning and hands on outdoor activities
    - It is more difficult to make partnerships with teachers in language arts

- Leaving flexibility in the space gave more options for other teachers to use the outdoor learning space
- Integrating school-wide design challenges allows the incorporation of multiple content areas and grade levels
- Lack of planning time makes it difficult to lay out the plan for the space, hear suggestions from other teachers, and incorporate feedback to make the space more functional for other subject areas
- Lack of planning time makes it difficult to build multidiscipline curriculum plans for using the space
- It has been a challenge to encourage some of the more senior teachers to use the outdoor space. Some teachers are not seeing the connection between integrating hands-on activities and student engagement and success
- Finding common planning time has been a challenge
- Student enthusiasm has helped with teacher buy-in
- Moving regular classroom activities such as lectures or presentations into the outdoor space may be a small step towards integrating outdoor learning spaces into the curriculum
- Spanish teachers could create multilingual signage for plants

Curriculum

- Art teacher using the space to teach observational drawing
- Building full-school design challenges to incorporate all disciplines
- Building curriculum which integrates the mentorship of older students
- One school is trying to make the space more handicap accessible
    - They are creating design challenges to give the students more real world challenges

Recommendations

- Potential resources to tap
    - Local Boy and Girl Scout Troops who could use the space, or have senior scouts who are planning their capstone activities
    - Metro Parks
    - Local beautification organizations
    - Staff members
    - Neighboring nursing homes
    - Neighboring schools
    - Master gardener associations
- It is important to find new ways to incorporate non-science disciplines such as language arts
- Find ways of informing parents and the community about the great works and projects happening at the school

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SOIL Focus Group Questions: Teachers

September 20th 2014

1. What did you first envision for this project?
   a. Has anything changed from your original vision?

2. How do you see outdoor learning now that you've gone through this process?

3. How have you integrated outdoor learning into your curriculum?

4. How will you work with other teachers to help to integrate outdoor learning curriculum and use of the outdoor learning lab?

5. What do you anticipate to be opportunities for expanding usage of the outdoor lab?

6. Have you noticed any benefits for students since implementing SOIL?

7. How will you sustain student engagement in the lab?

8. Have you reached out to the community or to other schools in your district to get involved with use and ongoing sustaining strategies for the outdoor learning lab?

Growing SOIL Site Visit [BP-MGC]
September 22, 2014

West High School

PF Participants: Jim Bruner, Jim Dvorsky, Maria Green Cohen
SOIL Teacher: Megan Hinz [MH]

PF team found MH in her classroom, and she led us to the outdoor hoop house. MH described repairs that needed to be made as a result of vandalism; MH also spoke about as other set-backs, as well as plans for plans to further development of the hoop house. Also discussed were community partners and supplies promised.

Student Engagement:

- MH has plans to involve students in creating mural on outbuilding nearby the hoop house
- Working with eco-friendly pesticides in class
- Engages her own students with SOIL space
    - One class comes in three times a week
    - Other class is too large to bring in [45 students with inclusion]
    - MH reported that the students enjoy coming out to the SOIL lab

Teacher Engagement:

- MH unclear if other SOIL 1 teacher [Dave] will be coming back as partner in process
    - Lucas Cech wants to expand it to other teachers
- On date of site visit, MH was hoping to get time during the staff meeting that afternoon to see if she could speak about SOIL to other staff
- Lead teacher seems to lack empowerment/skills to encourage teacher buy in

Community Engagement:

- Green Building Council will be coming
    - MH gave them a "wish list"
- Doug Schwartz integral to WHS getting business partners, including Local Matters
- Trying to get more partners

[Note: "Partners" seem to be more like donors]

School Culture:

- Middle school students cut into hoop house and also destroyed air vents on side facing the alley [and have been identified]
- MH discusses buying a repair kit to do patches
    - JB informs MH that hoop house is under warrantee for 18 months

Sustainability:

- MH discussed plans to develop beds alongside hoop house to deter vandals from getting too close to the plastic walls
- Plans for creating a "living wall" along alley to deter vandalism
    - Issue with grounds and spraying

- Working with grounds staff and janitors to use part of storage shed for storing SOIL supplies
- CCS District Superintendent for Grounds [Doug Schwartz] has offered $ and other kinds of support, spurred head PR into offering matching funds
- Looking at buying camp stools
- Issue with water supply, hoses reach hoop house but it are pressurized
- MH believes Lucas Cech is still administrator involved in SOIL, but also new 10th grade administrator Wisnewsky [new to WHS] has been participating
    - Wisnewsky helped with mowing and participated in building day
    - Cech helped last year by going to presentations and checking in with her
- Negotiating space with school groundskeeper for storage

Recommendations—Implementation team:

- Follow up with MH re new co-teacher
- Follow up with MH re which administrator

Growing SOIL Site Visit [BP-MGC]
September 22, 2014

Starling k-8

PF Participants: Jim Bruner, Jim Dvorsky, Maria Green Cohen
SOIL Teacher: Andrew Bloom [AB]

AB met the PF team in the building lobby at the appointed time. He and the principal, Bill Doerman, led us through the atrium to the rear of the building. AB pointed out the Pinewood Derby set-up in the atrium, explaining that part of the SOIL funds went to setting it up. At the rear of the building, AB showed the PF team the different classroom stations near the school, and then led us to the field where the physics station was installed.

Student Engagement:

- Students will be renaming the Pinewood team as "Starling Spartans" was deemed "lame"
- Incorporating textures and visual stimulus in the SOIL areas to engage students at different times of the year
- Considering the idea of using the outdoor permanent seating areas as a reward for good behavior [i.e., small groups of students can eat their lunch outside or do projects]
- The SOIL areas closer to the school are better for the younger students than the physics station
- Students have been weeding around the areas without prompting
- Students really excited about the novelty of being outdoors

Teacher Engagement:

- Design plan included multiple areas created outdoors near the rear of building so more than one teacher can bring classes outdoors at a time
    - Can also split classes into smaller groups
- Teachers are partnering older grades with younger grades for reading buddies
    - AB plans to work with teachers to use outdoor space for this purpose
- Special Education teachers use the outdoor space frequently

Community Engagement:

- 50 City Year Volunteers participated in creating path to the physics hill
- AB considering idea of a walking pathway from the rear of the building [where there is parking] to the front [the visitor entrance] with billboards designed by local artists
- Parents had the opportunity to see the evolution of the SOIL areas nearest the building and ask about SOIL-related activities
- AB plans to see if Audubon would like to be involved

School Culture:

- Evident pride in the outdoor area
- Renaming Pinewood Derby opportunity to create school spirit
- Starling is new building with new teachers—opportunity to use SOIL as a focal point

- Last year the assistant principal was fully engaged in the design team, collaborating and brainstorming ideas that were appropriate for the range of students ages at Starling
- Building principal very supportive of SOIL and students—"if it engages them, he'll make it happen'

Sustainability:

- Issues of vandalism prevalent
    - Originally considered building a greenhouse, but concerns re keeping it safe led to different direction for SOIL at Starling
    - Bird houses were vandalized
    - Challenge of working with CCS Grounds, who maintain field and physics station area
        - AB wants to let the grass grow as buffer to discourage vandalism and block access to homeless camp and cheap hotels [human traffic] abutting the field, as well as encourage animal traffic in the area so students can study them
        - AB got large logs from Columbus Parks Dept. and placed them in grassy area to deter mowing, CCS Grounds rolled them out of the way
- Plans to add permanent seating and/or picnic tables with Growing SOIL funds
- AB's father is a landscaper, so he is familiar with appropriate and available materials
- Plans to put in permanent steps from the path to the physics hill and also make it a fitness trail
- AB bought a weed whacker and leaf blower so building staff would maintain the area near the building
- AB waiting to put out bird houses again, considering putting them closer to the primary classrooms so students can observe birds year round

Recommendations—Design team:

- JD considering getting Eagle Scouts involved for service hours
    - JD will contact the BSA district office to inform them of the Columbus SOIL schools
        - Will encourage the schools to make connections

Growing SOIL Site Visit [BP-MJM]
September 25, 2014

National Inventors Hall of Fame Middle School

PF Participants: Meghen Matta
SOIL Teacher: Chris Justiss

The site visit initiated by Principal Amanda Morgan and Chris Justiss (lead teacher). The school used native plants vertical growth to create a real outdoor feeling when stepping into the garden. The space is immersive, and has an "outdoor classroom" adjacent to the garden and hoop house area.

Student Engagement:

- Students were very excited and engaged about garden. On the first day of school, students asked if they could use their recess time to weed/rake the garden
- Native plant 'tags' were lost and students used problem-solving skills to find a solution. In science class students are creating a key of native plants inside their habitat
- Students have a sense of pride and ownership of garden space

Teacher Engagement:

- Teachers from multiple content areas are actively utilizing space for curriculum and projects
    - Examples include social studies using area for 'plants around the world', Health class wanting to grow for food, Art class teaching the color spectrum through rock garden creation and creation of bird houses
- Classroom natural environment is hub for collaboration. Lead teacher has a half opened collapsible wall between her room and her neighboring teachers room
- So far 7th grade science, arts, and social studies students have worked directly in the garden space in creating it 5th graders coming in for a 'field day' at the school painted birdhouses, and it gave them as 6th graders a sense of ownership of their new space

Community Engagement:

- NIHOF partner with NOVA Foundation (who is a school partner) and Lowe's for additional grant dollars, National Park and Rangers donated time (in planting) and 600 native plants for garden
- Local health resource department is putting their Weather Station in adjacent space next to garden NIHOF will work with them for a few lessons for students about weather station, as well as ideas to create 'student' weather stations based off of Health Departments Weather Station

School Culture:

- Students are extremely proud of garden and feel a real ownership
- "Chai head" was in a potentially sensitive area for vandalism, as homeless used to stay in bushes in the area. However after clearing there have been NO issues of vandalism or destruction of property

Sustainability:

- Park Rangers and schools additional partners will be longstanding Native plants that were added are perennial so should stay in good condition for years and years to come
- Continued grant dollars will be used to put benches/desk in hoop house

Recommendation- Design Team

- Students could use their technical drawing class to create signage for outdoor space
- Vector blending mapping could be potential student project
- Students could face video cameras toward birdfeeders to capture wildlife

Growing SOIL Site Visit [BP-MJM]
September 25, 2014

BioMed Academy

PF Participants: Meghen Matta
SOIL Teacher: Ryan Willard, Matt MacKeown

The site visit started with a tour of the building from secretary. Principal Stephanie Lammlein, in an adjacent classroom, met PAST staff to be shown site from building. We were then met by lead teacher from Cohort 1, Ryan Willard and walked with him, another additional teacher (also from Cohort 1), Matt MacKeown.

Student Engagement:

- School wide participation on two work days to clear forested area during site construction
- Several students outside of the KI group and planning group are highly engaged and take advantage to utilize and improve upon outdoor space: including weeding, putting down mulch

Teacher Engagement:

- Full school engagement, including teachers, during construction and work days
- Art teacher utilized space for sketches

Community Engagement:

- A loose partnership exists between BioMed and Neomed, the facility in which their school is located
- Parents of a student donated time and use of their farming equipment including a bush
- A partnership will be formed with Rootstown Elementary (buddy for GROWING SOIL)
- The Davey Tree Expert Company donated mulch
- Fundraiser was held by parents for an outside organization utilizing BioMed space

School Culture:

- High level of Admin engagement. Admin is actively seeking additional grant dollars for projects utilizing bee hives and aquaponics
- Internships are available for senior year. Admin is working with teachers to get a list of 'potential' senior projects and internships to utilize green space

Sustainability:

- Low ropes course planned for second round of funding

Recommendations – Design Team

- Find adjustments in schedule to allow for student work time in outdoor space, currently takes 10+ minutes for travel to and from site
- More seating for around fire pit

Growing SOIL Site Visit [BP-MGC, MJM]
September 22, September 30, 2014

Westmoor Middle School

September 22nd
PF Participants: Jim Bruner, Jim Dvorsky, Maria Green Cohen
No teachers available, principal came out to courtyard approx. 20 minutes after our arrival

September 30th
PF Participants: Jim Dvorsky, Ketal Patel, Beth White, Meghen Matta
SOIL Teacher: Sue Robbins

The Westmoor site visit included a representative from the Knowledge Capture team (Meghen Matta), two PD staff from the Past Foundation (Ketal Patel and Beth Witte) and Project Manager Jim Dvorsky. We met with the new lead teacher, Sue Robbins. The site visit was used as an introduction to SOIL and GROWING SOIL for the new lead teacher, Sue Robbins, who is also new to CCS as of this school year. PAST PD staff went over important dates, and overview of the SOIL grant, and allocation of grant monies with new lead teacher.

Student Engagement:
- PR said that students have been out in the courtyard "doing things and working on stuff"
- Gateway to Technology class picked up using/maintaining the space
- PR has observed lots of classes using the space since the beginning of the school year
- Change from last year evident
    - Lots of activities have been observed

Teacher Engagement:
- Low teacher engagement throughout the building
- Lead teacher is new to building, CCS, and SOIL
- SOIL lead teachers from round 1 are no longer participating in GROWING SOIL
- Lead teacher have a high level of buy-in, especially in regards to problem based, hands on education
- Lead teacher wants to incorporate multiple disciplines into outdoor space including music (whistle system), science (simple machines)
- PR has a new [to school and district] MD teacher taking over SOIL
    - PR used the expression "the well has been poisoned" to indicate that more experienced teachers are unwilling to take on SOIL
    - Previous SOIL teachers not happy with the amount of work involved
    - PR expects to get other MD [Multiple Disabilities] teachers involved as there are 9 adults [3 teachers, each with 2 aides] to supervise
    - PR has asked new teacher to find out where SOIL is leaving off and think about what she wants her students to do

Community Engagement:

- Lead teacher has potential partnerships with neighboring school (Valleyview Elementary) and YMCA
- Partnerships between YMCA and Westmoor are already in existence, and can be easily bridged for a new building teacher

School Culture:

- Systematic lack of engagement from teachers and students
- Zen Garden in outdoor space can be used to relieve discipline and behavioral problems with students
- Lead teacher is working with a 'mentor' teacher who is also connecting her to new teachers within the building
- New teachers and 'mentor' teacher are highly engaged
- Did not use SOIL space for summer school
- Schools and teachers were not necessarily from Westmoor
- When the schools are mixed there are too many social issues
- PR shared that he is targeting MD and/or High Incidence teachers to be involved with SOIL
    - Opportunity to build a sense of connection to the school
    - Those teachers work well together as a team

Sustainability:

- Paul Bailey, a new principal at Westmoor, is highly engaged with SOIL project and with adjusting school culture
- PR discussed plans to use the space during summer school
    - SIG grant will fund summer school dedicated to Westmoor students and teachers
    - Teachers will know the students
    - Two teachers per grade level will cut down on discipline issues

Recommendations- Design Teams

- Focus on early adopters from staff
- Utilize current space and resources

Growing SOIL Site Visit [BP-MGC, MM]
September 22 and September 30, 2014

Metro [HS&MS]

September 22nd
PF Participants: Jim Bruner, Jim Dvorsky, Maria Green Cohen, Meghen Matta
SOIL Admin: Meka Pace

PF team were unable to meet with teachers, Meka Pace offered to arrange for an after-school meeting. Jim Bruner led PF team through the two schools and outside to see the beds along the rear wall of the high school. MGC brought PF team back into building to make introductions with key Metro administrators.

September 30th
PF Participants: Jim Dvorsky, Meghen Matta
SOIL Teacher: Andy Bruening, Annie DeWitt, and Kris Stevens.

MM met with Jim Dvorsky at front desk, to give introductions to secretary and building staff. The meeting was informal and held in Annie Dewitt's room, giving general updates and overview of Growing SOIL grant.

Student Engagement:
- Students have been actively engaged in the creation of the outdoor learning space, especially the outdoor classroom
- Students will have freedom to decide how to best use their outdoor classroom, and what to do with garden bed
- Students will design bird and bat houses
- Students will print out designs and construct at FAB lab

Teacher Engagement:
- Teachers switch rooms frequently allowing for any teacher to utilize the dedicated room whenever it fits their lessons

Community Engagement:
- Partnership with OSU, that is strong standing in the school, will continue with senior capstone projects involving the SOIL lab. OSU and Metro students will work together to create aquaponics system for Growing SOIL
- Parents have donated time and plants to the outdoor garden beds for student use
- Working with a partnership with Hubbard Elementary

School Culture:
- Both partnerships and students are excited and engaged, especially for aquaponics system – "Your project is the only one that excited people" – from OSU student

Sustainability:

- Students and teachers want to harvest fish from aquaponics system for profit, to help sustain aquaponics system
- Insects have been an issue with outside garden
- Trees were also an issue as they died over the summer when no one was there
- Rain collection system in place and awaiting complete assembly

Recommendations-Design Team

- Kidney shaped tables were not used as originally intended due to space constraints, plan out special/room/building concerns before purchasing/find alternative use or room for tables
-

Recommendations--Implementation team:

- Protocols for PF SOIL teams working in school buildings must be clearly laid out for new project staff coming in
    - Email confirmation with teachers regarding appointed time and day for visits
    - Proper identification and sign-in protocols for entering school buildings
    - Introduction to key administrative staff
        - Collection of relevant email and telephone numbers

Growing SOIL Cohort 2 Orientation Observation [MM]
Fairfield Educational Service Center
October 1, 2014

Facilitators: Sheli Smith, Beth Witte, Ketal Patel, Ellen Cahill, Robin Dungan, Erica ?, Jim Dvorsky

Participants: A number of participants were in attendance from each district including Federal Hocking, Fairfield Union, Millersport (Walnut-Township), and Lancaster.

[Cohort 2 Teachers: Approx. 15]

PAST Agenda Items

1. Welcome and Introductions
    a. Full staff introductions from PF, COSI, Herb, Jim)
2. What is SOIL? - Explanation and Project overview
    a. Overview of SOIL first steps, grant, Herb
    b. Site Visits will be earlier – learning from last years mistakes
    c. P3 is offered for teachers
    d. Hocking Hills Immersive Experience offered for students and lead teachers
    e. Now will have 15 Labs to collaborate together
3. Overview of Important Dates
    a. 20th, 21st, 22nd – Herb and Jim available for initial site visits
    b. 4 Sites here, in 2 days (half days)
    c. Open to see Cohort 1 Presentations
    d. Focus is Jan-June
    e. Saturday June 6
4. Basecamp Introduction
5. P3 – How to sign Up
6. Outdoor Lab Introduction and Site Visits

PAST Presentation of SOIL

- PD
- Structure, construction of Lab
- Experience of students

Basecamp:

- Overview and projection for Basecamp – Online collaborative space.

P3

- Registering for p3 course
- There are dates for October and November 1 hour at a time, with 10 min modules. TPBL process.

Introduction of Outdoor Learning

<u>Site Survey</u>

- Requests

1. Share this book with members on your team (in your building)
2. Movingtheclassroomoutdoors.com

- Do not decide (final verdict) before January. Always focus on possibilities. Before the 24th of January

From Jim Dvorsky:

- Learn from the obstacles from Cohort 1. He will post things onto Basecamp, and it can show some diversity within the various regions to spark some brainstorming ideals.

Site Visits

-Districts took time to sign up for AM and PM site visit sessions with the PAST Foundation staff.

Teacher Engagement

- Room is fully engaged in each speaker
- Room changed with engagement, lots of smiles after the Hocking trip was announced for 1 week.

Administrative Support

- 2 Principal and 1 Assistant principal, Coordinator for Lancaster City
- Admin asked several questions (assistance principal) , showing high level of attention and engagement

Community Support

- Coordinator for Lancaster City, as well as Americorps member from Federal Hocking

Recommendations

- Lost time due to off topic discussion (GPS System discussion for several minutes)

Questions Asked amongst facilitators

- January outdoor lab – Dates are 23rd and 24th
- February, 20th, 21st is a Friday, Saturday
- Subs are provided for Friday's – Order the sub and let EC (reimbursed)
- For our proposal meeting (March) invite community partners, administrators, legislators, specialists, etc. Will confirm in February.

- How long are the classes in October and November?
    - 1x a week for 1 hour

- Are those during school day?
    - After school

- Place orders, do you have a vendor list?
    - Use whoever you want
    - Workshops will help you choose a proper workshop, for who could be used for the best efficacy

- Is it the same p3 of FAST forward?

Knowledge Capture
APPENDIX
Growing SOIL IRB

The Knowledge Capture Program initiated preparation for work to support implementation of three Straight A Grant Projects awarded to the Fairfield Educational Service Center in August 2014, including FAST Forward, Growing SOIL, and Math Matters. A major component of preparation to engage in formative evaluation activities consisted of submitting a research application seeking approval for human subjects research. Three separate applications were submitted and approved by the PAST Foundation Internal Review Board. Additionally, a document providing basic information about the Knowledge Capture formative evaluation process was also prepared and submitted to each of the participating districts involved in the Straight A Projects. The IRB Application and the Knowledge Capture document, "Formative Evaluation for Districts," are included in this appendix.

PAST FOUNDATION – KNOWLEDGE CAPTURE (KC) PROGRAM

The PAST FOUNDATION works with schools and districts to support school transformation in a range of ways. A key component of the work is conducted by the Knowledge Capture team, who document the unique challenges and successes of program implementation. The KC team works with educators within schools from district-level administration to the classroom.KC provides insight about implementation processes from the experience of program participants. KC data supports effective models of change for use within the educational system.

THE KNOWLEDGE CAPTURE PROGRAM

Tasked with supporting implementation

FAIRFIELD EDUCATION SERVICE CENTER STRAIGHT A GRANTS

GROWING SOIL

FAST FORWARD

MATH MATTERS

Knowledge Capture (KC) Field Observations

The field team will conduct observation of initial meetings, workshops and training sessions held during fall 2014 for all three projects. Through observation of the implementation process, the KC team will provide important feedback to the implementation team as work is underway. This feedback identifies effective processes to advance implementation that meets all aspects of program goals. Feedback empowers modification to better meet the needs of individual schools or districts in achieving strategic outcomes that fully maximize the success of the STRAIGHT A Grant Program.

Knowledge Capture (KC) Interviews, Focus Groups and Surveys

Assessing effectiveness of each grant's implementation design, the KC team will conduct focus groups and surveys with project teams at strategic points during the 2014-15 academic year. Additionally, one-on-one interviews may be conducted with administrators and others from within the district to gain insight on first-hand experiences with the implementation process. This type of 'formative evaluation' helps shape essential modification of implementation strategies in ways that better meet the needs of individual districts and schools involved in each project.

Knowledge Capture Protocols

Your district has received a packet of information regarding confidentiality protocols for conducting interviews, focus groups, and surveys. The packet includes essential information about the KC Program, 'informed consent' documents, a description of the purpose of the implementation evaluation, constraints on use of data, as well as important details about voluntary participation.

Institutional Review Board
SEPT 25, 2014

Dr. Monica Hunter
PAST Foundation
California Office

Dear Dr. Hunter:

IRB#: **2014-01-006ETH AMENDMENT**

TITLE OF PROPOSAL: **STEM Outdoor Innovation Lab — SOIL**

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) **AMENDMENT** for the Protection of Human Subjects. This project has been approved by the Unit Review Committee from your institution and sent to the IRB. It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study. Your proposal seems to be in compliance with the institution's Federal Wide Assurance 00002258 and the DHHA Regulations for the Protection of Human Subjects (45 CFR 46) and has been classified as exempt.

Date of EX Review of AMENDMENT REQUEST: September 24, 2014

You are authorized to implement this study as of the Date of Final Approval: **09/25/2014**. This approval is Valid Until: **01/30/2020**.

This project should be conducted in full accordance with all applicable sections f the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project including changes in the research (e.g., recruitment procedures, advertisements, enrollment numbers, etc.) or informed consent process must be approved by the IRB before they are implemented (except where necessary to eliminate apparent

1003 Kinnear Road, Columbus, Ohio 43212 • Phone: 614-340-1208 www.pastfoundation.org

immediate hazards to subjects). You should report any unanticipated problems involving risks to the participants or others to the Board.

This approval is valid for one year from the date of IRB review when approval is granted or modifications are required. The approval will no longer be in effect on the date listed above as the IRB expiration date. A Continuing Review application must be approved within this interval to avoid expiration of IRB approval and cessation of all research activities. A final report must be provided to the IRB and all records relating to the research (including signed consent forms) must be retained and available for audit for at least 3 years after the research has ended.

It is the responsibility of the investigator to promptly report to the IRB any serious, unexpected and related adverse events or potential unanticipated problems involving risks to subjects or others.

If you have any questions, please contact Sheli O. Smith, IRB Administrator, at sheli@pastfoundation.org .

Sincerely,

Sandra A. Stroot, PhD.
Chair, for the IRB

Sheli O. Smith, PhD.
IRB Administrator

cc: Annalies Corbin, PhD., President & CEO

THE PAST FOUNDATION
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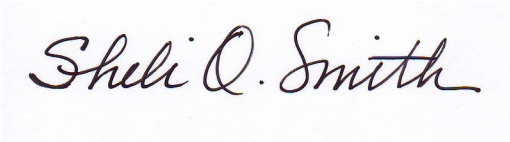
PAST Foundation IRB Application Amendment

Submitted September 5, 2014

Project Name: *Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)*

IRB Approval Number: IRB#: 2014-01-006ETH

I have reviewed the Amendment to Research under existing IRB #: 2014-01-006ETH and approve submittal to the PAST Foundation IRB Committee.



Sheli O. Smith, Ph.D.
PAST Foundation IRB Compliance Officer

THE PAST FOUNDATION
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IRB Approval Date: January 10, 2014
IRB Valid Until: July 30, 2015

PAST Foundation Human Subjects Institutional Review Board
AMENDMENT/CHANGES TO RESEARCH

1. Project Title

Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)
IRB#: 2014-01-006ETH

2. Principle Investigator

Name: Monica S. Hunter
Degree and Date: Ph.D. 2003
E-Mail: mhunter@pastfoundation.org
Phone: 614-340-1208

3. Additional Contacts

Name	Title	Degree and Date	E-mail
Maria Green Cohen	Senior Research Associate	M.A. 1990	mgreencohen@pastfoundation.org
Meghen Matta	Research Associate	B.A. 2012	mmatta@pastfoundation.org

Are there any changes in study personnel? ☐ Yes ☑ No

4. Proposed Changes

1. Funding Sources for Study:
   Marie Ward, Ph.D., Superintendent, Fairfield County Educational Service Center, 955 Liberty Drive, Lancaster, Ohio 43130, 740-653-4053

2. Duration of Project: September 15, 2014 to January 30, 2020

3. Addition to Location of Research:
   Six additional schools listed below:

Institution or Organization Name	Address
Rushville Middle School	6409 Cincinnati-Zanesville Road NE, Lancaster, OH 43130
Fairfield Union High School	6675 Cincinnati-Zanesville Road NE, Lancaster, OH 43130
Federal Hocking Middle School	8461 State Route 144, Stewart, OH 45778
Federal Hocking Secondary School	8461 State Route 144, Stewart, OH 45778
Lancaster High School	1312 Granville Pike, Lancaster, OH 43130
Walnut Township High School	11850 Lancaster St., Millersport, OH 43046

IRB Approval Date: January 10, 2014
IRB Valid Until: July 30, 2015

5. Revised Documents

☐ Yes ☑ No

6. Principal Investigator's Assurance

I agree to follow all applicable policies and procedures of the PAST Foundation, local, state and federal laws that guide and protect human subjects in research, as well as professional protocols, standards and ethics that are accepted by anthropologists and Human Services as good research practices including but not limited to the following:

1. Perform the research as approved by the PAST IRB under the direction of the Principal Investigator (or Advisor) utilizing trained and/or qualified personnel with adequate resources.

2. Initiate the research only after written notification of IRB approval.

3. Obtain and document (unless waived) informed consent from human subjects or their legal guardians prior to their involvement in the research using the currently approved IRB consent form and/or informed consent procedures.

4. Inform all key research staff and students assisting in the research of their obligations in meeting all the policies and protocols of the IRB approved research.

5. Promptly report to the IRB events that may represent unanticipated problems involving risk to subjects or others.

6. Provide significant new findings to IRB as an addendum for decision as to revising the informed consent for subjects.

7. Inform IRB of all changes in the project before implementing changes.

8. Provide regular reporting to IRB (at minimal annually), including but not limited to a final report of the research.

9. Maintain all research related documents in a secure location for the specified IRB amount of time, so that the validity of research and the confidentiality of the subjects are maintained.

10. At the end of the specified time for document retention (not to exceed three years) all documents containing confidential data are destroyed.

IRB Approval Date: January 10, 2014
IRB Valid Until: July 30, 2015

I verify that the information provided in this Amendment/Changes to Research form is accurate and complete. I will initiate changes to this research only after having received notification of final IRB approval.

Monica S. Hunter, Ph.D.

Signature of Principle Investigator (or Advisor) Date: September 5, 2014

Monica Hunter, Ph.D.

Printed Name of Principle Investigator (or Advisor)

PAST Foundation – December 18, 2013

IRB Application: *Kelleys Island STEM Outdoor Innovation Labs (SOIL)*

Project Title:

Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)

LIST OF DOCUMENTS

A. Cover Letter
B. PAST Foundation IRB Protocol
C. IRB Application: Date December 18, 2013
D. Knowledge Capture Bibliography
E. Knowledge Capture Data Management Protocol
F. Written Consent Adults: Audio, Observation and Written Notes
G. Written Consent Adults: Observation and Written Notes
H. Informed Consent Adults: Online Survey Anonymity Protocols (www.pastfoundation.org/xxx)
I. Informed Consent Adults: Website Statement on Participation in Anonymous Online Survey
J. Informed Consent Adults: Online Confirmation and Statement of Agreement to Participate in an Anonymous Online Survey
K. Written Consent Parents: Audio, Observation and Written Notes
L. Written Consent Parents: Observation and Written Notes
M. Written Assent Students
N. Verbal Consent Adults: Audio, Video, Observation and Written Notes
O. Appendix: Sample Interview/Focus Group Questions
    1. Sample Interview/Focus Group Questions: Administrative Staff
    2. Sample Interview/Focus Group Questions: Teachers
    3. Sample Interview/Focus Group Questions: Students
    4. Sample Interview/Focus Group Questions: Parents
    5. Sample Interview/Focus Group Questions: Community Partners
    6. Proposed Schedule of Survey Questions: Teachers

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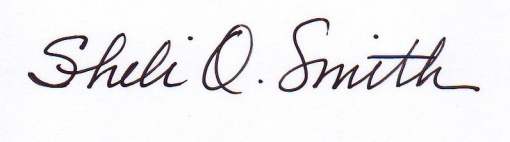
PAST Foundation IRB Application

Submitted December 18, 2013

Project Name: *Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)*

IRB Approval Number: IRB#: 2014-01-006ETH

I have reviewed the application for the Adult IRB and supporting consent documents, and have reviewed the application for this project and supporting documents and approve submittal to the PAST Foundation IRB Committee.



Sheli O. Smith, Ph.D.
PAST Foundation IRB Compliance Officer

PAST Foundation IRB Protocol

1. Dr. Monica Hunter and her staff will develop any IRB requests. Dr. Annalies Corbin and Dr. Sheli Smith cannot be involved in this process, with the exception of asking technical questions. Once a good clean and thorough draft is ready for "in-house" review, send the proposal/request to Dr. Smith, cc'ing Dr. Corbin.

2. Dr. Smith serves as "in-house" compliance IRB officer, keeping and maintaining current IRB training. Dr. Smith will complete a formal "Review" producing written comments, suggestions and required changes. These comments will be sent back to the applicant for the applicant to address.

3. In-house suggestions and changes are made by the applicant and the proposal will be resubmitted to Dr. Smith. The resubmission **must** include:
    a. The revised proposal
    b. Dr. Smith's original required changes document

4. Dr. Smith will review the revised proposal, and the revisions process will repeat itself until she is satisfied that the proposal will make it through external IRB review. Once Dr. Smith is satisfied, the complete final proposal and **all** required written changes and modifications will be sent to Dr. Corbin in a single PDF file, who will then forward it to the sitting chair of the PAST Foundation IRB committee. The committee consists of PAST Foundation Board members and outside university-accredited researchers. The composition of this committee is subject to change.

5. The PAST Foundation IRB committee will render the final decision on all Human Subject matters.

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PAST Foundation Human Subjects Institutional Review Board
Application For Review

1. Project Title

Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)

2. Principle Investigator

Name: Monica S. Hunter
Degree and Date: Ph.D. 2003
E-Mail: mhunter@pastfoundation.org
Phone: 614-340-1208

Co-Investigators

Name	Title	Degree and Date
Maria Green Cohen	Research Associate	M.A. 1990

4. Key Personnel

Name	Title	Degree and Date
Meghen Matta	Research Assistant	B.A. 2012
Emily Proctor	Programs Assistant	B.S. 2010
Kat Deaner	STEM Coordinator	M.S. 2011
Beth Witte	Programs Coordinator	B.S., B.A. 2007
Josh Federer	Tech Support	B.S. 2007
Vincent Blake	Tech Support	B.S. 2009

5.Financial Conflict of Interest

☐ Yes ☑ No

6. Funding Sources for Study

Source	Contact	Percentage of Overall Budget
Straight A Grant	Phil Thiede, Superintendent, Kelleys Island School, 528 Division St., Kelleys Island, OH 43438, (419) 746-2730	10%

7. Location of Research

Institution or Organization Name	Address
Kelleys Island School District	528 Division St., Kelleys Island, OH 43438
West High School	179 S. Powell Ave., Columbus, OH 43204
Starling Middle School	120 S. Central Ave., Columbus, OH 43222
Westmoor Middle School	3001 Valleyview Dr., Columbus, OH 43204
Reynoldsburg High School eSTEM Academy	8579 Summit Rd., Reynoldsburg, OH 43068
Reynoldsburg STEM Middle School	2300 Baldwin Rd., Reynoldsburg, OH 43068
Metro Early College High School	1929 Kenny Rd., Columbus, OH 43210
Metro Middle School	1929 Kenny Rd., Columbus, OH 43210
National Inventors Hall of Fame Middle School	199 S. Broadway St., Akron, OH 44308
Biomed Science Academy	4209 State Rd. 44, Rootstown, OH 44272
PAST Foundation	1003 Kinnear Rd., Columbus, OH 43212

8. Expedited Review

☑ Yes ☐ No

9. Project Summary

Conduct ethnographic research with teachers, students, administrators, parents, and/or community partners engaged in *STEM Outdoor Innovation Labs* to document challenges and achievements during program implementation.

10. Research Objectives

Develop qualitative and quantitative ethnographic analysis of the experience of teachers, students and others engaged in *STEM Outdoor Innovation Labs* to systematically document the experience of program participants including understanding fundamental aspects of the program identified by administrators and program partners as key to meeting program goals and objectives. Research may involve defining characteristics of a number of elements of the program that include: 1) improved student achievement and teacher growth; 2) challenges of transitioning to transdisciplinary learning; 3) factors associated with adapting to the use of new learning technologies; and, 4) underlying cultural shifts that are occurring among student and teacher cohorts.

11. Research Methods and Activities

Primary ethnographic data will be collected utilizing standard ethnographic methods that may include open-ended, one-on-one interviews; written and online surveys (e.g., www.surveymethods.com) or questionnaires; group discussions in the form of focus groups or facilitated “breakout” groups; or observation of various activities such as

classroom visits or program strategy meetings. Primary research may also be developed utilizing web-based interactive communication modes such as GoToMeeting™ that support one-on-one or group discussions with the research team. Research may also involve collaboration with graduate student researchers from college programs in anthropology and in education that may be recruited to join the PAST Foundation research team to participate in specific future phases of field research. All observations will be documented with written notes taken at the time of the observation (utilizing a notebook and pen, smartpen, or laptop) and may also involve audio or video recording.

12. Types of Data Collection

☑ Audio Recordings

☑ Video Recording

☐ Still Images

☑ Data not publically available

Repository	Contact Number
PAST Foundation	614-340-1208

☑ Data, publically available

☐ Deception (if yes, explain in attachment)

☑ Focus Groups

☑ Internet or e-mail data collection

☐ Material that may be considered sensitive, offensive, threatening or degrading

☑ Observation of participants

☐ Oral history

☑ Surveys, questionnaires or interviews (one-on-one)

☑ Surveys, questionnaires or interviews (group)

☑ Other: Please specify: Web-based meeting platforms that are designed for interactive one-on-one, or group discussion.

13. Describe Precautions for Anonymity

Study participants will be assigned an identity code number at the onset of research (at the initial participation point). Once assigned a code number, study participants will only be identified by that code number and not by name or affiliation to a specific institution by name in any study documents including transcribed notes, reports or publications. All original research data will be managed by the PAST Foundation ethnographic Knowledge Capture Program staff, and will remain secured under lock and key. In the case of digital data, all electronic files will be maintained by the PAST Foundation and archived in passcode protected files. Acccess to primary data records will be restricted to the project Co-PIs and PAST Knowledge Capture Program research staff that includes the research associate and research assistant.

14. Duration of Project

January 10, 2014 to July 30, 2015

15. Date for destruction of private information

All private information on paper and all audio- or video-recorded private information will be destroyed three years from completion of the study and final report publication.

16. Number of Participants

Up to 900 individuals.

17. Participant population

Age Range: 14 to 70

☑ Adults

☑ Minors

☐ Non-English Speaking

☑ Students

☐ Unknown

18. Are participants likely to be vulnerable to coercion or undue influence?

☐ Yes ☑ No

19. Describe Participant Recruitment Techniques

Ethnographic study participants will be invited through a voluntary self-selection

process conducted by SOIL program administration and other staff including school principals and/or STEM coordinators or STEM lead teachers. Study participants will include administrators, students, teachers, parents and other community members engaged with school classroom and program activities. Other study participants may be invited to participate through a self-selection process to include STEM partners from the surrounding community or region. The research design will follow the protocol for engaging a minimum of three participants ("rule of three") requiring that at least three individuals participate in an ethnographic study from each group or sub-group of individuals involved with STEM education implementation (e.g., teachers, administrators, community partners, parents, students, etc.)

20. Incentives for Participation

Study participants will be invited to contribute their views and experiences on STEM program implementation in ways that will help to improve implementation design based upon their feedback to the ethnographic research team. The value of this research is intrinsic to the collaborative nature of STEM program and network development and implementation.

21. Procedures for withdrawing from Study

Participants will be provided with information in writing decribing a procedure to request withdrawal at any time from the research study while the project is underway, including the option to request removal and destruction of all ethnographic documentation for that specific individual. Appropriate contact information for direct request to withdraw from the study will be included in the written information provided. The PAST Foundation IRB Officer will be the main contact person for requests to withdraw from the ethnographic study at any point in the project.

22. Type of Informed Consent

☑ Informed Consent Form; signature required (please attach)

☑ Informed Consent Verbal Script; verbal consent required (please attach)

☑ Parental/Guardian Permission Form; signature required (please attach)

☐ Parental Permission Verbal Script; verbal consent required (please attach)

☑ Student Assent Permission Form; signature required (please attach)

☑ Informed Consent to Participate in Research, Online Survey (please attach)

☑ Online Survey Anonymity Protocols (please attach)

23. Describe Consent Protocol

Participants will be given written consent for ethnographic observation and documentation, as well as for participation in audio and video recorded interviews, discussions and classroom activities. Study participants may also be provided the opportunity to complete pre- and post-training online surveys. All study participants will be provided with a scope of work and objectives of the study in a written descriptive statement provided to them. The information provided will include a description of the use of any primary data developed, and restrictions on use of the data for the stated goals and objectives of the ethnographic research study for this project. The document will also include the IRB approval number and effective study period and will provide contact information of the PAST IRB Officer for study participants should questions or concerns arise.

When audio or video recording is involved, study participants will be informed prior to initiating recording and will be asked to give their consent prior to initiating recording. Once recording commences, study participants will be asked to repeat their consent at the onset of recording so that the recorded information includes each participant stating their verbal consent for the use of recording equipment.

Protocols for online survey participation will be provided in written format prior to survey administration to all potential survey participants via an online link to the PAST Foundation website (www.pastfoundation.org). As with all components of the research, potential survey participants will have the option to consent or decline participation in anonymous surveys conducted by the research team. The online survey process will require each participant to confirm their voluntary participation and that they have reviewed the research protocols and information regarding the purpose of the research, restrictions on use of the data collected, and anonymity protocols prior to completing the online survey.

No other uses of primary ethnographic data will be permitted unless specific permission is sought from a project manager or from a study participant. In either event, all ethnographic study participants involved would be contacted and informed of the request for use of the data, and each individual would be required to agree to a different use of the data beyond the original consent given by each ethnographic study participant.

24. Describe Provisions for Insuring Participant Privacy

All research information will be coded for anonymity, and will be held under lock and key for the purpose of completing this project. No information will be provided reqarding study participant identity for any reason at any time during the study or at any period following conclusion of the study except as required by law pertaining to human subjects research. If a study participant wishes to release a transcript of their one-on-one interview for use by another entity, the study participant will be required to submit a written request to the PAST Foundation for release of the specific data, and identify the entity or researcher that should receive the original interview transcript. In this case, no other data other than that of the individual study participant would be released and the data would only be released to the individual or institution specified in the written request.

25. Describe Confidentiality Procedures

All research information will be coded for anonymity, and will be held under lock and key. Only the PI, research associate, and research assistant will have access to primary data. Core project staff will have access to the research materials developed and presented in aggregate form for the period of the study. Additionally, all project research staff will be required to review and follow a written protocol for data management and will observe the confidentiality protocols including maintaining assigned code identities during all phases of research. (See attached document, "Ethnographic Data Management Protocol.")

26. Does this research require HIPAA authorization?

No.

27. Describe Anticipated Benefits of the Project

Documentation of STEM program development and implementation at *STEM Outdoor Innovation Labs* will provide critical understanding of successful and evolving design and implementation processes that can inform others on best practices to support administrator, teacher, student and community transition to STEM education. This research can also inform best strategies for broader stakeholder involvement, including teachers and students. The research is also intended to inform a model for potential K-12 STEM public/private partnerships with higher education and STEM industries.

28. Describe Risks or Harms for Project Participants

None.

29. Does this research involve greater than minimal risks to participants?

☐ Yes ☑ No (If yes, please describe how research will be monitored to insure low as possible risk or harm)

30. Will there be any reimbursements to participants?

No reimbursement will be issued to study participants by the PAST Foundation.

31. Dates for Interim and Final Reports

Final Report due by July 30, 2015.

32. List all Appendices by Title

Appendices will include: 1) a copy of the the written consent forms; 2) sample questions for interviews, focus groups and surveys.

33. List Synergistic Projects

PROJECT 1 TITLE: **The Linden Feeder System Transformation Report 2011 (95p.)**
PROJECT 1 LOCATION: Columbus, Ohio.
PROJECT 1 RESEARCH FOCUS: Teacher professional development program evaluation and ethnographic study of teacher and administrator views on STEM transition program achievements for the 2010-2011 school year

PROJECT 2 TITLE: **Knowledge Capture: Documenting "College Ready" Concepts and Goals at Two Ohio STEM Schools**
PROJECT 2 LOCATIONS: Dayton and Columbus, Ohio.
PROJECT 2 RESEARCH FOCUS: Gathered data on perceptions of what college readiness involves from the perspective of students and adults engaged in various ways with the schools.

PROJECT 3 TITLE: **Metro High School: An Emerging STEM School Community**
PROJECT 3 LOCATION: Columbus, Ohio.
PROJECT 3 RESEARCH FOCUS: Systematically explored principles, processes and expectations associated with the Metro High School networked community.

PROJECT 4 TITLE: **Morriss Math And Engineering Elementary School: A Case Study of K-5 STEM Education Program Development**
PROJECT 4 LOCATION: Texarkana, Texas.
PROJECT 4 RESEARCH FOCUS: Focused on development process of STEM school program with attention to professional development and partnership with higher education.

34. Bibliography (please attach)

I verify that the information provided in this review of human subject research is accurate and complete.

Monica S. Hunter, Ph. D.

Signature of Principle Investigator Date: December 20, 2013

Monica Hunter, Ph.D.

Printed Name of Principle Investigator

Knowledge Capture Program Bibliography

1. (2013) Africentric, Linden, and West Feeder Systems Transformation. PI, Sheli Smith; Co-PIs, Monica Hunter and Annalies Corbin; Research Associate, Maria Green Cohen; Research Assistant, Meghen Matta; PAST Team, Kat Deaner, Elliot Mork, Brian Coffey, Beth Witte, Lori Trent.

2. (2013) Clean Energy Sustainable Industries Early College High School [ECHS] Summary Overview Year Two. PI, Monica Hunter; Research Associate, Maria Green Cohen; Research Assistant, Meghen Matta.

3. (2013) Transforming the Schoolhouse: Roadmap to Community Engagement. PI, Monica Hunter; Co-PIs, Annalies Corbin and Sheli Smith; Research Associate, Maria Green Cohen; Research Assistant, Meghen Matta.

4. (2012) Ballston Spa Central School District Clean Technologies and Sustainable Industries Early College High School Program (ECHS) Ethnographic Study. PI, Monica Hunter; Research Associate, Maria Green Cohen; Research Assistant, Meghen Matta.

5. (2012) RAMPING UP: Action Lab 1 STEM Guaranteed Transfer Student Program Partnerships Interim Report. PI, Monica Hunter; Research Associate, Maria Green Cohen

6. (2011) The Linden Feeder System Transformation Report. Lead Author, Sheli Smith; PI, Ethnographic Research, Monica Hunter, Research Associate, Maria Green Cohen.

7. (2011) Learn and Earn: Lessons Learned Report. PI, Monica Hunter; Co-PI, Annalies Corbin, Research Associate, Maria Green Cohen

8. (2011) College Readiness: Documenting “College Ready” Concepts and Goals at Two Ohio STEM Schools. PI, Monica Hunter; Co-PI, Sheli Smith; Research Associate Maria Green Cohen.

9. (2010) Executive Summary: California STEM Innovation Network Summit. PI, Monica Hunter; Co-PI, Sheli Smith.

10. (2010) Dayton Regional STEM School 2010 Knowledge Capture Project:

Social Science Observation & Ethnographic Knowledge Capture of the 9th Grade Global Climate Change Project. PI, Monica Hunter; Co-PI, Sheli Smith; Research Associate, Maria Green Cohen.

11. (2009) Ethnographic Analysis of the 2009 Empire State STEM Educational Initiative: Engaging Communities in a 21st Century Approach to Learning in New York State. PI, Monica Hunter; and Co-PIs, Annalies Corbin and Sheli Smith.

12. (2009) Morriss Math and Engineering Elementary School: A Case Study of K-5 STEM Education Program Development. PI, Monica Hunter; Research Associate, Maria Green Cohen.

13. (2008) Metro High School: An Emerging STEM Community, Volumes I and II: Research Data. Co-PIs, Monica Hunter, Robert Agranoff, Michael McGuire, Jill Greenbaum: Research Associates, Maria Green Cohen and Jing Liu.

PAST FOUNDATION
KNOWLEDGE CAPTURE PROGRAM
ETHNOGRAPHIC DATA MANAGEMENT PROTOCOLS

The following information provides detailed instructions for data management of all transcribed interviews and observations for the Knowledge Capture Program. Remember that anonymity of study participants is the highest priority and the following measures are intended to assure that all information is systematically recorded and coded as required by *human subjects* guidance. The following information also provides a method for uniform identification of primary data files and transcripts.

At all times, refrain from speaking about interviews or observations among the Knowledge Capture staff in areas where others **may** be present. This includes the PAST office and the common meeting areas within the PAST office where discussions may be overheard by visitors or others not associated with a given research project.

Project work sessions that involve discussion and review of interview data or observation data will be held in a closed session open only to the core ethnographic research staff. Discussions that include review of the content of interviews and observations may also need to be scheduled offsite in order to assure that working sessions are conducted in such a way that no information about specific interviews or observations of research activities are inadvertently discussed where others may overhear specific comments about a student, teacher or other individual participants who are involved in a PAST Knowledge Capture ethnographic study.

This guidance is intended to assure that the *human subjects protocols* are met in every instance and in every way possible. Please direct questions to the Knowledge Capture Program Director, or to the Project PI regarding *human subjects* concerns.

B. STUDY PARTICIPANT CODES

All study participants will be assigned a multiple-digit code that will identify interviews and observations associated with a particular individual. The code categories will be developed as a unique set of identity codes for each individual research project. As an example, codes may be assigned that reflect distinct stakeholder groups or STEM program group codes as in the following example:

Code Categories (example)

Key Informant Interviews	101-199
Administrators and staff	201-299
Teachers	301-399
Parents	401-499
Community Partners	501-599

C. INTERVIEW AND OBSERVATION TRANSCRIPTS - commonly used words

The following abbreviations can be used in transcribed notes:

ABBREVIATIONS	
ADV	Advisory
C	Counselor
G	Graduate Student
KI	Key Informant
LP	Learning Partner
MT	Mentor
P	Parent
PG	Parent group
ST	Staff
S	Student
T	Teacher
T1	Teacher 1
T2	Teacher 2
TU	Tutor
V	Visitor

Revised 11.8.11

Other abbreviations may be developed as necessary to meet research priorities for maintaining privacy and anonymity of all individuals represented in interview transcripts, including those individuals who are referred to by name, but who may not be directly involved as a participant in the ethnographic research study.

D. FILE NAME FORMAT

Please use the following format to name electronic interview transcription files. This will facilitate retrieval of information and specific files during the course of the study.

File names should appear as follows:

(EXAMPLE) "OH 1001 KI INTV 2/08/08 JL"

State Code (e.g., Ohio)	Informant Code Number	Key Informant	Type of transcript **INTV** – Interview **OBSV** – Clsroom Observation **ADV**- Advisory **CLUB** **FM –** Faculty Meeting **TH** – Town Hall Meeting **WKSHOP –**Workshop **FT** – Field Trip		Transcript produced by KC staff or other project team member
OH	1001	KI	INTV	DATE	INITIALS

E. Archival file system description:

1. All electronic files will be named following the format above.
2. The original interview transcript file will be generated and reviewed for identifying information (e.g., individuals named in the interview, school or organization name) and codes will be assigned, removing all identifying references to specific individuals by name.
3. If an observation of a class or a club involves two different teachers, create one transcript file for each teacher. The header in the transcript document should identify the code number for T1 and T2, etc., as "T1=3001" and "T2=3015"
4. The final archival interview files will be kept on the PAST server in a passcode protected master file accessible only by the Knowledge Capture Program staff.
5. All records except the FINAL Archival PAST electronic files will be destroyed at the completion of the project at a point in time determined by PAST policies.

F. Transcribed Interview/observation documents

Please follow the format below in providing identifying information for all transcription documents:

INTERV TEAM (identify interviewer, note taker, observer)
DATE
INFORMANT CODE NUMBER (ALSO ID any student or teacher entering the scene by designating as T1, T2, or C1, C2, etc. see list of abbreviations for terms).
BEGINNING AND ENDING TIME
LOCATION

PAST Foundation Consent to Participate in Research

(Adult Audio Recording, Observation and Written Documentation)

Study Title:	***Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)***
Researchers:	**Monica S. Hunter, Ph.D. and Maria Cohen, M.A.**
Research Organization:	**PAST Foundation, Columbus, Ohio**
Sponsor:	**Straight A Grant**

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.

Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:

The study is intended to provide an understanding of the development of transdisciplinary (TPBL) education in the **STEM Outdoor Innovation Labs (SOIL).** The STEM Outdoor Innovation Labs**, which** began implementation in January 2104, provide an excellent opportunity to conduct research that will document and analyze key factors associated with goals for STEM education for K-12 students. The study may also explore aspects of the school and/or community development and partnerships that support networks working collaboratively to develop STEM education. This project will combine the expertise of a team of anthropological ethnographers and educators to insure that variable components of the study are included. The information generated by this study will inform future STEM education studies and will help identify key factors associated with academic excellence, as well as critical information for policy makers and educators engaged in creating new STEM based educational opportunities.

Procedures/Tasks:

The study will involve several methods to gain information about SOIL, including one-on-one interviews, group discussions, and observations of school activities. Study participants will include teachers, students and others engaged in SOIL implementation to systematically document the experience of first-year program participants and organizational partners. Ethnographic Research Team members conducting interviews, group discussions, or observations will record these activities by **audio recording and/or hand-written notes**. You may be asked to complete a written questionnaire or survey as part of the study. The

information gathered for this study will not be utilized for any purpose other than to contribute to the completion of this research project.

Duration:
The study will be conducted **during the 2013-2014** school year and will **conclude at the close of the 2014-2015 school year**. If you agree to participate in the study, you may elect to leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with the PAST Foundation, the **SOIL schools** or any other organization involved with the study.

Risks and Benefits:
You will not benefit directly from participating in the study.
There are no risks associated with participation in this study.

Confidentiality:
All study records will be maintained by the Ethnographic Research Team in a secure location, and access to research files will be strictly limited to the Ethnographic Research Team. All data provided to the Project will be coded utilizing a system that will assure anonymity of study participants and will not carry identifying information including the names of individuals participating in the study. While the results of the research may be presented at conferences and/or in published papers, all individual responses will remain confidential. Following completion of the study, all original hard copies of study records will be destroyed after three years. A single copy of all study materials will be maintained in electronic format by the PAST Foundation. If at any time there is a request to utilize this data as part of a following study, such as use as part of a larger research project to compare STEM education implementation activities with other schools, you will be contacted and asked to give specific permission for use associated with the data request at that time.

The PAST Foundation will observe strict protocols to keep your study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by *state law or federal law*.

Incentives:
You will not be compensated in any way to participate in the study.

Participant Rights:
You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you are an employee at the PAST Foundation or at the **SOIL schools**, your decision will not affect your employment status.

If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights you may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at The PAST Foundation reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and PAST's policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
For questions, concerns, or complaints about the study you may contact the Human Subjects Institutional Review Board at the PAST Foundation at 614-340-1208 and the appropriate person will respond to your questions and/or concerns.

Signing the consent form

I have read (or someone has read to me) this form and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form**.**

Printed name of subject	**Signature of subject**
	AM/PM
	Date and time
Printed name of person authorized to consent for subject (when applicable)	**Signature of person authorized to consent for subject (when applicable)**
	AM/PM
Relationship to the subject	**Date and time**

Investigator/Researcher or SOIL Implementation Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent	**Signature of person obtaining consent**
	AM/PM
	Date and time

PAST Foundation Consent to Participate in Research
(Adult Observation and Written Documentation)

Study Title:	***Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)***
Researchers:	**Monica S. Hunter, Ph.D. and Maria Cohen, M.A.**
Research Organization:	**PAST Foundation, Columbus, Ohio**
Sponsor:	**Straight A Grant**

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.

Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:
The study is intended to provide an understanding of the development of transdisciplinary (TPBL) education in the **STEM Outdoor Innovation Labs (SOIL).** The STEM Outdoor Innovation Labs**, which** began implementation in January 2104, provide an excellent opportunity to conduct research that will document and analyze key factors associated with goals for STEM education for K-12 students. The study may also explore aspects of the school and/or community development and partnerships that support networks working collaboratively to develop STEM education. This project will combine the expertise of a team of anthropological ethnographers and educators to insure that variable components of the study are included. The information generated by this study will inform future STEM education studies and will help identify key factors associated with academic excellence, as well as critical information for policy makers and educators engaged in creating new STEM based educational opportunities.

Procedures/Tasks:
The study will involve several methods to gain information about **SOIL**, including one-on-one interviews, group discussions, and observations of school activities. Study participants will include teachers, students and others engaged in SOIL implementation to systematically document the experience of program participants and organizational partners. Ethnographic Research Team members conducting interviews, group discussions, or observations will record these activities by **hand-written notes only**. You may be asked to complete a written questionnaire or survey as part of the study. The information gathered for this study will not be utilized for any purpose other than to contribute to the completion of this research project.

Duration:
The study will be conducted **during the 2013-2014** school year and will **conclude at the close of the 2014-2015 school year**. If you agree to participate in the study, you may elect to leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with the PAST Foundation, the **SOIL schools,** or any other organization involved with the study.

Risks and Benefits:
You will not benefit directly from participating in the study.
There are no known risks associated with participation in this study.

Confidentiality:
All study records will be maintained by the Ethnographic Research Team in a secure location, and access to research files will be strictly limited to the Ethnographic Research Team. All data provided to the Project will be coded utilizing a system that will assure anonymity of study participants and will not carry identifying information including the names of individuals participating in the study. While the results of the research may be presented at conferences and/or in published papers, all individual responses will remain confidential. Following completion of the study, all original hard copies of study records will be destroyed after three years. A single copy of all study materials will be maintained in electronic format by the PAST Foundation. If at any time there is a request to utilize this data as part of a following study, such as use as part of a larger research project to compare STEM education implementation activities with other schools, you will be contacted and asked to give specific permission for use associated with the data request at that time.

The PAST Foundation will observe strict protocols to keep your study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by *state law or federal law*.

Incentives:
You will not be compensated in any way to participate in the study.

Participant Rights:
You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you are an employee at the PAST Foundation or the **SOIL schools**, your decision will not affect your employment status.

If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights you may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at The PAST Foundation reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and PAST's policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:

For questions, concerns, or complaints about the study you may contact the Human Subjects Institutional Review Board at the PAST Foundation at 614-340-1208 and the appropriate person will respond to your questions and/or concerns.

Signing the consent form

I have read (or someone has read to me) this form and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form**.**

Printed name of subject	**Signature of subject**
	AM/PM
	Date and time
Printed name of person authorized to consent for subject (when applicable)	**Signature of person authorized to consent for subject (when applicable)**
	AM/PM
Relationship to the subject	**Date and time**

Investigator/Researcher or SOIL Implementation Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent	**Signature of person obtaining consent**
	AM/PM
	Date and time

PAST Foundation Informed Consent to Participate in Research

(Adult Online Survey)

Study Title:	***Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)***
Researchers:	**Monica S. Hunter, Ph.D. and Maria Cohen, M.A.**
Research Organization:	**PAST Foundation, Columbus, Ohio**
Sponsor:	**Straight A Grant**

Purpose:
The survey is intended to assess professional development needs for teachers engaged in the implementation of the STEM Innovation Outdoor Labs Program, as well as to provide an understanding of the development of STEM education in the **SOIL schools.** The STEM Outdoor Innovation Labs**,** which began implementation in January 2104, provide an excellent opportunity to conduct research that will document and analyze key factors associated with goals for STEM education for K-12 students. The information generated by this study will inform future STEM education studies and will help identify key factors associated with academic excellence, as well as critical information for policy makers and educators engaged in creating new STEM based educational opportunities.

Procedures/Tasks:
You will be asked to complete a survey, which should take approximately 10-15 minutes to complete; however, you will have the opportunity to respond to open-ended questions and you will have the option to take more time to respond these questions if you so desire. You will be answering questions about your experience as an educator, challenges you have faced during the transition, and your opinions on areas of additional training that you feel would enhance the transition process for you, or for your school as whole.

Duration:
Surveys will be conducted **during the 2013-2014** school year and may continue through **the close of the 2014-2015 school year**. If you agree to participate in the study, you may elect to leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with the PAST Foundation, the **SOIL schools,** or any other organization involved with the study.

Risks and Benefits:
You will not benefit directly from participating in the study.
There are no risks associated with participation in this study.

Confidentiality:
Your responses will be completely anonymous and confidential. The survey will be administered online through a SurveyMethods© link in a **SurveyMethods.com Certified Anonymous Survey**. This means that your email ID and IP address associated with your survey response are not visible to PAST Foundation researchers. All survey records will be maintained by the Ethnographic Research Team in a secure location, and access to research files will be strictly limited to the Ethnographic Research Team. While the results of the research analysis may be presented at conferences and/or in published papers, all individual responses will remain confidential.

Incentives:
You will not be compensated in any way to participate in the study.

Participant Rights:
You may refuse to participate in this survey without penalty or loss of benefits to which you are otherwise entitled. If you are an employee at the PAST Foundation or at the SOIL schools, your decision will not affect your employment status.

Once you initiate the online survey, you will be asked to confirm that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

An Institutional Review Board responsible for human subjects research at The PAST Foundation reviewed this research project and found it to meet strict requirements to protect confidentiality of the data collected for this study, and are consistent with applicable state and federal regulations and PAST's policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
You may review information about these protocols on the PAST Foundation Basecamp© website. You may also direct your questions, concerns, or complaints about the study to the Human Subjects Institutional Review Board at the PAST Foundation at 614-340-1208 and the appropriate person will respond to your questions and/or concerns.

The PAST Foundation
Parent/Guardian Permission
For a Minor's Participation in a Research Study

Study Title: ***Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)***

Researchers: Monica S. Hunter, Ph.D. and Maria Cohen, M.A.

Research Organization: PAST Foundation, Columbus, Ohio

Sponsor: **Straight A Grant**

This is a parental permission form for research participation. It contains important information about this study and what to expect if you permit your minor to participate.

Your minor's participation is voluntary.

Please consider the information carefully. Feel free to discuss the study with your friends and family and to ask questions before making your decision whether or not to permit your minor to participate. If you permit your minor to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:

The study is intended to provide an understanding of the development of of transdisciplinary (TPBL) education in the **STEM Outdoor Innovation Labs (SOIL).** The STEM Outdoor Innovation Labs**, which** began implementation in January 2104, provide an excellent opportunity to conduct research which will document and analyze key factors associated with the school and/or community development and partnerships that support networks working collaboratively to develop STEM education. This project will combine the expertise of a team of anthropological ethnographers and educators to insure that variable components of the study are included. The information generated by this study will inform future STEM education studies and will help identify key factors associated with academic excellence, as well as critical information for policy makers and educators engaged in creating new STEM based educational opportunities.

Procedures/Tasks:

The study will involve several methods to gain information about your child's experience during the transition to STEM education at the **STEM Outdoor Innovation Labs**. The research may include one-on-one interviews, group discussions, questionnaires, surveys and

observations of school activities. Ethnographic Research Team members conducting interviews, group discussions or observations will record these activities by **audio recording and/or hand-written notes.** Your minor may be asked to complete a written questionnaire or survey as part of the study. Access to study documents will be limited to the Ethnographic Research Team. The information gathered for this study will not be utilized for any purpose other than to contribute to the completion of this research project.

Duration:

The study will be conducted **during the 2013-2014** school year and will **conclude at the close of the 2014-2015 school year**. Your minor may elect to leave the study at any time. If you or your minor decides to stop participation in the study, there will be no penalty and neither you nor your minor will lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with the **SOIL schools**.

Risks and Benefits:

There are no risks to participation for any individual minor. The benefit may derive from increased understanding of student experiences of STEM education programs from the perspective of the student.

Confidentiality:

Efforts will be made to keep your minor's study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your minor's participation in this study may be disclosed if required by state law. Also, your minor's records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The PAST Foundation Institutional Review Board;
- The sponsor, if any, or agency (including the State Department of Education or federal agency such as the Department of Education or the National Science Foundation) that may be supporting the study.

All study records will be maintained by the PAST Foundation Ethnographic Research Team in a secure location, and access to research files will be strictly limited to the Ethnographic Research Team. All data provided to the Project will be coded utilizing a system that will assure anonymity of minor participants and will not carry identifying information including the names of individual minors participating in the study. While the results of the research may be presented at conferences and/or in published papers, all individual responses will remain confidential. Following completion of the study, all original hard copies of study records will be destroyed. A single copy of all study materials will be maintained in electronic format by the PAST Foundation. If at any time there is a request to utilize this data

as part of a following study, or as part of a larger research project to compare STEM education implementation activities with other projects, you will be contacted and asked to give specific permission for use associated with the data request at that time.

Incentives:
No payment is offered for participation in the study. Participation is strictly on a voluntary basis.

Participant Rights:

You or your minor may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you or your minor is a student or employee at a SOIL school, your decision will not affect their grades or employment status.

If you and your minor choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights your minor may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at the PAST Foundation reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
For questions about your minor's rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Institutional Review Board at the PAST Foundation at 614-340-1208 and the appropriate person will respond to your questions and/or concerns.

If your minor is injured as a result of participating in this study or for questions about a study-related injury, you may contact Phil Thiede, Superintendent of Kelleys Island School, at (419) 746-2730.

Signing the parental permission form

I have read (or someone has read to me) this form and I am aware that I am being asked to provide permission for my minor to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to permit my minor to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form**.**

Printed name of subject	
Printed name of person authorized to provide permission for subject	**Signature of person authorized to provide permission for subject**
Relationship to the subject	**Date and time** **AM/PM**

Investigator/Researcher or SOIL Implementation Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent	**Signature of person obtaining consent**
	Date and time **AM/PM**

STEM Outdoor Innovation Labs Pre-Survey 2014

THE PAST FOUNDATION

Welcome to our PAST Foundation STEM Outdoor Innovation Labs Pre-Survey

This survey has been designed to help us understand your views about transdisciplinary problem based learning (TPBL) and the professional development that has been initiated at your school. Information disclosed in this survey will be anonymous, and has been certified for anonymity by SurveyMethods©, which means that your email ID and IP address associated with your survey response are not visible to the PAST Foundation. You can click on the "lock" icon below for more details about Survey Methods Certification for Anonymity.

There are 13 questions. Some of the questions are open-ended and you may respond with 1-5 sentences, though feel free to answer more fully as needed. You should be able to complete this survey in approximately 10-15 minutes, but have the option to take longer if you so desire. Your completed survey will help inform our professional development efforts during this school year, and also contribute to ethnographic analysis conducted by our Knowledge Capture team to help identify important program achievements and challenges you have encountered in the transition to TPBL.

Please click the link to the PAST Foundation website to review the anonymity protocols that describe the confidentiality of all research data (www.pastfoundation.org/xxx). This information will be available to you on the PAST Foundation website at any time you wish to review our research protocols. Should you have any questions concerning your participation in this study, please contact Monica Hunter directly at mhunter@pastfoundation.org or at 614-340-1208.

Next

THE PAST FOUNDATION

STEM Outdoor Innovation Labs Pre-Survey 2014

* 1. **This is an anonymous survey. The PAST Foundation uses survey data to assess professional development needs in the transition to STEM TPBL education and the implementation of STEM Outdoor Innovation Labs. Completing this survey will give you the opportunity to share your insights and concerns anonymously.**

Your participation in this research is voluntary. You may choose not to participate. By checking the response below that states you agree to participate in this survey, you confirm that you have read and understand the PAST Foundation's Online Survey Anonymity Protocols provided for your review on the PAST Foundation website. You may review these protocols at any time on the PAST Foundation website (www.pastfoundation.org/xxx).

- ❍ I agree to participate in this anonymous survey

2. **How long have you been an educator?**
   - ❍ Student teacher
   - ❍ Less than 1 year
   - ❍ 1 to 5 years
   - ❍ 6 to 10 years
   - ❍ 11-15 years
   - ❍ 16-20 years
   - ❍ More than 20 years
   - ❍ If other, please describe

   _____

3. **What content area(s) are you currently teaching?**
   - ❑ Math
   - ❑ Science
   - ❑ Language Arts
   - ❑ Foreign Language
   - ❑ Social Studies
   - ❑ All subjects
   - ❑ Music
   - ❑ Art
   - ❑ Physical Education
   - ❑ Special Education
   - ❑ If other, please describe

   _____

4. **What content area(s) have you taught in your career?**
   - ❑ Math
   - ❑ Science
   - ❑ Language Arts
   - ❑ Foreign Language
   - ❑ Social Studies

The PAST Foundation
Parent/Guardian Permission
For a Minor's Participation in a Research Study

Study Title: ***Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)***

Researchers: Monica S. Hunter, Ph.D. and Maria Cohen, M.A.

Research Organization: PAST Foundation, Columbus, Ohio

Sponsor: **Straight A Grant**

This is a parental permission form for research participation. It contains important information about this study and what to expect if you permit your minor to participate.

Your minor's participation is voluntary.

Please consider the information carefully. Feel free to discuss the study with your friends and family and to ask questions before making your decision whether or not to permit your minor to participate. If you permit your minor to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:

The study is intended to provide an understanding of the development of of transdisciplinary (TPBL) education in the **STEM Outdoor Innovation Labs (SOIL).** The STEM Outdoor Innovation Labs**, which** began implementation in January 2104, provide an excellent opportunity to conduct research which will document and analyze key factors associated with the school and/or community development and partnerships that support networks working collaboratively to develop STEM education. This project will combine the expertise of a team of anthropological ethnographers and educators to insure that variable components of the study are included. The information generated by this study will inform future STEM education studies and will help identify key factors associated with academic excellence, as well as critical information for policy makers and educators engaged in creating new STEM based educational opportunities.

Procedures/Tasks:

The study will involve several methods to gain information about your child's experience during the transition to STEM education at the **STEM Outdoor Innovation Labs**. The research may include one-on-one interviews, group discussions, questionnaires, surveys and

observations of school activities. Ethnographic Research Team members conducting interviews, group discussions or observations will record these activities by **audio recording and/or hand-written notes.** Your minor may be asked to complete a written questionnaire or survey as part of the study. Access to study documents will be limited to the Ethnographic Research Team. The information gathered for this study will not be utilized for any purpose other than to contribute to the completion of this research project.

Duration:

The study will be conducted **during the 2013-2014** school year and will **conclude at the close of the 2014-2015 school year**. Your minor may elect to leave the study at any time. If you or your minor decides to stop participation in the study, there will be no penalty and neither you nor your minor will lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with the **SOIL schools**.

Risks and Benefits:

There are no risks to participation for any individual minor. The benefit may derive from increased understanding of student experiences of STEM education programs from the perspective of the student.

Confidentiality:

Efforts will be made to keep your minor's study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your minor's participation in this study may be disclosed if required by state law. Also, your minor's records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The PAST Foundation Institutional Review Board;
- The sponsor, if any, or agency (including the State Department of Education or federal agency such as the Department of Education or the National Science Foundation) that may be supporting the study.

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as part of a following study, or as part of a larger research project to compare STEM education implementation activities with other projects, you will be contacted and asked to give specific permission for use associated with the data request at that time.

Incentives:
No payment is offered for participation in the study. Participation is strictly on a voluntary basis.

Participant Rights:

You or your minor may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you or your minor is a student or employee at a SOIL school, your decision will not affect their grades or employment status.

If you and your minor choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights your minor may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at the PAST Foundation reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
For questions about your minor's rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Institutional Review Board at the PAST Foundation at 614-340-1208 and the appropriate person will respond to your questions and/or concerns.

If your minor is injured as a result of participating in this study or for questions about a study-related injury, you may contact Phil Thiede, Superintendent of Kelleys Island School, at (419) 746-2730.

Signing the parental permission form

I have read (or someone has read to me) this form and I am aware that I am being asked to provide permission for my minor to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to permit my minor to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form**.**

Printed name of subject	
Printed name of person authorized to provide permission for subject	**Signature of person authorized to provide permission for subject**
Relationship to the subject	**Date and time** **AM/PM**

Investigator/Researcher or SOIL Implementation Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent	**Signature of person obtaining consent**
	Date and time **AM/PM**

The PAST Foundation
Parent/Guardian Permission
For a Minor's Participation in a Research Study

Study Title: ***Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)***

Researchers: Monica S. Hunter, Ph.D. and Maria Cohen, M.A.

Research Organization: PAST Foundation, Columbus, Ohio

Sponsor: Straight A Grant

This is a parental permission form for research participation. It contains important information about this study and what to expect if you permit your minor to participate.

Your minor's participation is voluntary.

Please consider the information carefully. Feel free to discuss the study with your friends and family and to ask questions before making your decision whether or not to permit your minor to participate. If you permit your minor to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:
The study is intended to provide an understanding of the development of transdisciplinary (TPBL) education in the **STEM Outdoor Innovation Labs (SOIL).** The STEM Outdoor Innovation Labs**, which** began implementation in January 2104, provide an excellent opportunity to conduct research which will document and analyze key factors associated with the school and/or community development and partnerships that support networks working collaboratively to develop STEM education. This project will combine the expertise of a team of anthropological ethnographers and educators to insure that variable components of the study are included. The information generated by this study will inform future STEM education studies and will help identify key factors associated with academic excellence, as well as critical information for policy makers and educators engaged in creating new STEM based educational opportunities.

Procedures/Tasks:
The study will involve several methods to gain information about your child's experience during the implementation of SOIL. The research may include one-on-one interviews, group discussions, questionnaires, surveys and observations of school activities. Ethnographic

Research Team members conducting interviews, group discussions or observations will record these activities by **hand-written notes only**. Your minor may be asked to complete a written questionnaire or survey as part of the study. Access to study documents will be limited to the Ethnographic Research Team. The information gathered for this study will not be utilized for any purpose other than to contribute to the completion of this research project.

Duration:

The study will be conducted **during the 2013-2014** school year and will **conclude at the close of the 2014-2015 school year**. Your minor may elect to leave the study at any time. If you or your minor decides to stop participation in the study, there will be no penalty and neither you nor your minor will lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with the SOIL schools.

Risks and Benefits:

There are no risks to participation for any individual minor. The benefit may derive from increased understanding of student experiences of STEM education programs from the perspective of the student.

Confidentiality:

Efforts will be made to keep your minor's study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your minor's participation in this study may be disclosed if required by state law. Also, your minor's records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The PAST Foundation Institutional Review Board;
- The sponsor, if any, or agency (including the State Department of Education or federal agency such as the Department of Education or the National Science Foundation) that may be supporting the study.

All study records will be maintained by the Ethnographic Research Team in a secure location, and access to research files will be strictly limited to the Ethnographic Research Team. All data provided to the Project will be coded utilizing a system that will assure anonymity of minor participants and will not carry identifying information including the names of individual minors participating in the study. While the results of the research may be presented at conferences and/or in published papers, all individual responses will remain confidential. Following completion of the study, all original hard copies of study records will be destroyed. A single copy of all study materials will be maintained in electronic format by the PAST Foundation. If at any time there is a request to utilize this data as part of a following study, or as part of a larger research project to compare STEM education

implementation activities, you will be contacted and asked to give specific permission for use associated with the data request at that time.

Incentives:
No payment is offered for participation in the study. Participation is strictly on a voluntary basis.

Participant Rights:

You or your minor may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you or your minor is a student or employee at the SOIL schools, your decision will not affect their grades or employment status.

If you and your minor choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights your minor may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at the PAST Foundation reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
For questions about your minor's rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Institutional Review Board at the PAST Foundation at 614-340-1208 and the appropriate person will respond to your questions and/or concerns.

If your minor is injured as a result of participating in this study or for questions about a study-related injury, you may contact Phil Thiede, Superintendent of Kelleys Island School, at (419) 746-2730.

Signing the parental permission form

I have read (or someone has read to me) this form and I am aware that I am being asked to provide permission for my minor to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to permit my minor to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form**.**

Printed name of subject	
Printed name of person authorized to provide permission for subject	**Signature of person authorized to provide permission for subject**
Relationship to the subject	**Date and time** **AM/PM**

Investigator/Researcher or SOIL Implementation Staff

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent	**Signature of person obtaining consent**
	Date and time **AM/PM**

The PAST FOUNDATION
Student Assent to Participate in a Research Study

Study Title: ***Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)***

Researcher: Monica S. Hunter, Ph.D. and Maria Cohen, M.A.

Sponsor: Straight A Grant

- **You are being asked to be in a research study. Studies are done to find better ways to treat people or to understand things better.**
- **This form will tell you about the study to help you decide whether or not you want to participate.**
- **You should ask any questions you have before making up your mind. You can think about it and discuss it with your family or friends before you decide.**
- **It is okay to say "No" if you don't want to be in the study. If you say "Yes" you can change your mind and quit being in the study at any time without getting in trouble.**
- **If you decide you want to be in the study, an adult (parent/guardian) will also need to give permission for you to be in the study.**

1. What is this study about?

The study will explore understanding of STEM education and early college programs through ethnographic research that will include discussion and/or participation through response to surveys or questionnaires with teachers, students, administrators, parents, and/or community partners engaged in the *STEM Outdoor Innovation Labs programs*. The purpose of the research is to document challenges and achievements of the program.

2. What will I need to do if I am in this study?

You may be asked to participate in a one-on-one interview, group discussions, and/or complete a questionnaire or survey.

3. How long will I be in the study?

The study will begin **during the 2013-2014** school year and will **conclude at the close of the 2014-2015 school year**.

4. Can I stop being in the study?

You may stop being in the study at any time. If you elect to withdraw from the study you may notify your teacher or Phil Thiede, Superintendent of Kelleys Island School, at (419) 746-2730.

5. What bad things might happen to me if I am in the study?

The study is intended to help document your experience in the STEM Outdoor Innovation Labs programs to inform program planning for future years. Your responses to interview questions, or comments made in group discussions will not be attributed to you by name, but will be recorded with a code number that will assure your name is not associated with your views and comments that may be reported in the study. There will be no negative consequences to your participation in this study.

6. What good things might happen to me if I am in the study?

You will help contribute to better understanding of the school's program elements and any challenges that may need to be addressed in future years. You will also help to inform program planning for the following school year regarding the achievements in meeting goals and objectives for STEM education that will benefit students including you if you continue enrollment in the *STEM Outdoor Innovation Labs programs* in future years. Though there may be no direct benefits to you, this research study will provide teachers and administrators with important information about the transition to STEM education and preparing students for successful academic careers.

7. Will I be given anything for being in this study?

You will not be compensated for your participation in this study.

8. Who can I talk to about the study?

For questions about the study you may contact: Phil Thiede, Superintendent of Kelleys Island School, at (419) 746-2730.

To discuss other study-related questions with someone who is not part of the research team, you may contact The PAST Foundation Internal Review Board at 614-340-1208.

Signing the assent form

I have read (or someone has read to me) this form. I have had a chance to ask questions before making up my mind. I want to be in this research study.

Signature or printed name of student	**Date and time** **AM/PM**

Investigator/Researcher or SOIL Implementation Staff

I have explained the research to the participant before requesting the signature above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining assent	**Signature of person obtaining assent**
	Date and time **AM/PM**

This form must be accompanied by an IRB approved permission form signed by a parent/guardian.

PAST FOUNDATION
Knowledge Capture Program
Verbal Consent for Audio Recording
Key Informant Interview Questions

Project Title:
Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)

We appreciate your interest in supporting the PAST Foundation's effort to provide an ethnographic understanding of the critical implementation period of the STEM Outdoor Innovation Labs Program. The following questions are provided as a guide for discussing your role and perspective on the SOIL Program. The interview will be conducted in a one-hour session that is designed to allow us to explore your views on the program including current goals and objectives for the of the program, as well as observations about important goals for future years. The information we gain through this interview process will be used as background to prepare for conducting ethnographic research with faculty and students, as well as others that may be invited to participate from the community.

All key informant interviewees will not be identified by name or affiliation with any specific program, school or department within the SOIL schools, and will be identified only by code number assigned to each interviewee to preserve anonymity. If you have any questions, or if you wish to withdraw from the study at any time, you may contact the IRB Officer at the PAST Foundation, 614-340-1208.

1. Please describe the STEM Outdoor Innovation Labs (SOIL) Program from your perspective.
2. What is your current role or interest in the SOIL Program?
3. How long have you been involved with the SOIL Program planning and implementation process?
4. In your view, what are the goals for the SOIL Program?
5. What achievements do you believe will be essential to the success in the implementation of SOIL?
6. What are the primary challenges to implementation of the SOIL Program in your view?
7. From your perspective, what are the goals and objectives of the SOIL Program over the next several years?
8. Who else needs to be involved to support achieving long-term goals and objectives?
9. How would you characterize the strategy for growing and sustaining the SOIL Program to include essential resources and partnerships?

PAST FOUNDATION

APPENDIX A:

Ethnographic Study of the STEM Outdoor Innovation Labs (SOIL)

Potential Interview/Focus Group Questions and Discussion Themes

1. Sample Interview/Focus Group Questions: Administrative Staff
2. Sample Interview/Focus Group Questions: Teachers
3. Sample Interview/Focus Group Questions: Students
4. Sample Interview/Focus Group Questions: Parents
5. Sample Interview/Focus Group Questions: Community Partners
6. Proposed Schedule of Survey Questions: Teachers

Proposed Schedule of Interview Questions:
Superintendent/Principal

1. How long have you been principal/superintendent in your district?
    a. For principal: How many teachers do you work with by grade?
    b. For superintendent: How many schools are in your district?
2. Tell us briefly about your school/district and any preparations or actions to support the implementation of the *STEM Outdoor Innovation Labs*. What do you perceive your role to be in the process?
3. In your view, what are the essential steps that need to be taken to support the implementation of the *SOIL Program*?
    a. What should the role be of the superintendent?
    b. What should the role be of the principal?
    c. What should the role be of the teachers?
    d. What should the role be of parents?
    e. Are there others who should play a role?
4. Have you been introduced in the past to STEM TPBL in your training and experience as an educator and leader?
5. Have changes occurred this year in the way that you have engaged in implementing the *SOIL Program* in your work with:
    a. Teachers?
    b. Parents?
    c. Community members?
6. What challenges have you encountered this year in implementing the *SOIL Program*?
    a. Were you able to address those challenges?
    b. If not, how do you think you might address those challenges in the future?
7. What type of outreach has the district conducted for the students and parents about the *SOIL Program* implementation?
    a. How would you characterize the response?
8. What type of outreach has the district conducted with others in the community?
    a. How would you characterize the response?
9. What are the strongest aspects of the *SOIL Program* in your view?
10. What are the weakest aspects of the *SOIL Program* in your view?
11. What are the main achievements this year in implementing the *SOIL Program* in your view?

Proposed Schedule of Interview/Focus Group Questions:
Teachers

1. How long have you been a teacher?
    a. Is this your first teaching assignment?
    b. If not, what grade(s)/subjects have you taught?
    c. Have you worked with students in other learning environments?
2. Prior to joining the faculty of your current school, where did you teach?
    a. What grade(s) and subjects did you teach?
3. How many classes/subjects do you teach at your school?
    a. Do you have assistance in the classroom?
    b. How so?
    c. Do you work in a grade level or content cohort with other teachers?
    d. Do you work with a curriculum specialist, and if so, how often?
    e. Do you work with others in the school district?
    f. Do you work with others outside the school district?
4. What was your idea of *STEM Outdoor Innovation Labs (SOIL)* before you became engaged in implementation?
5. What is your idea now of the *SOIL Program*?
6. What is your role during this year of the *SOIL Program* implementation?
7. What is the role of others in this year of the *SOIL Program* implementation?
    a. The principal?
    b. The superintendent?
    c. Students?
    d. Parents?
    e. Community partners?
8. What are the strongest aspects of the *SOIL Program* in your view?
9. What are the weakest aspects of the *SOIL Program* in your view?
10. What are some of the key differences between the *SOIL Program* and other learning environments where you have taught?
11. What are the main challenges that you have encountered in this year of the *SOIL Program* implementation?
12. Were you able to address those challenges:
    a. On your own?
    b. In collaboration with others?
    c. If so, who did you find helpful to you in developing solutions or strategies to meet challenges or solve problems that may have occurred?
13. In your view, what are the main achievements of this year of the *SOIL Program* implementation?

Proposed Schedule of Interview/Focus Group Questions:
Students

1. Are you aware of the implementation of *STEM Outdoor Innovation Labs (SOIL)* at your school?
    a. How did you become aware of it?
2. What courses are you taking?
3. How do you feel about your progress so far this year?
4. What was your initial idea of the *SOIL Program* before you began implementation?
5. What is your idea of the *SOIL Program* now?
6. What do you like most about the *SOIL Program*?
7. What do you like least about the *SOIL Program*?
8. Are your student's parents involved in the school's *STEM Outdoor Innovation Lab*?
    a. If so, how are they involved?
9. What are some of the key differences between the *SOIL Program* and other learning environments?
    a. What are some of the opportunities and experiences that you have had with the *SOIL Program* that may not have been offered to you before?
10. What other types of opportunities would you like to see offered at your school?
11. What are the main challenges that you have encountered this year in implementing the *SOIL Program*?
12. Were you able to help to find ways to overcome those challenges:
    a. On your own?
    b. In collaboration with others?
    c. If so, who did you find helpful to you in developing solutions or strategies to meet challenges or solve problems that may have occurred?
13. In your view, what are your main achievements this year at your school with the *SOIL Program*?
14. In your view, what are the main accomplishments of the school this year of the *SOIL Program*?

Proposed Schedule of Interview/Focus Group Questions:
Parents

1. Are you aware of the implementation of the *STEM Outdoor Innovation Labs (SOIL)* at your child's school?
    a. If so, how did you learn about the *Soil Program*?
2. What is your idea of the *Soil Program*?
3. What is your view on your child's progress so far this year?
4. Are you engaged in any way in the *Soil Program* implementation at your child's school?
    a. If so, how are you involved?
    b. If not, are you planning to get involved?
    c. What types of things would you be interested in doing to engage with the students, teachers and others at school?
5. In your view, what should be the role of school staff this year of implementing the *Soil Program*?
    a. The principal?
    b. The superintendent?
    c. Teachers?
6. What is the role of students?
7. What is your role as a parent?
8. Do you think there is a role to be played by community partners?
9. What are the strongest aspects of the *Soil Program* in your view?
10. What are the weakest aspects of the *Soil Program* in your view?
11. What are some of the key differences between the *Soil Program* and other learning environments your child has experienced?
12. What are the main challenges that your child has encountered this year during implementation of the *Soil Program*?
13. Were you able to help your child address those challenges:
    a. On your own?
    b. In collaboration with others?
    c. If so, who did you find helpful to you and to your child in developing solutions to challenges or problems that may have occurred?
14. In your view, have their been school achievements this year in implementing the *Soil Program*?

Proposed Schedule of Interview/Focus Group Questions:
Community Partners

1. What were the primary reasons you chose to become engaged with developing and/or implementing the *STEM Outdoor Innovation Labs (SOIL)*?
2. What was your idea of the *Soil Program* prior to becoming involved?
3. What is your idea of the *Soil Program* now?
4. What is your view on progress so far this year?
5. Are you engaged in any way in the everyday activities of the *Soil Program* implementation?
    a. If so, how are you involved?
    b. If not, are you planning to get involved?
    c. What types of things would you be interested in doing to engage with the students, teachers and others at the *Soil Program* schools?
6. What is the role of school staff in this initial year of implementation of the *Soil Program*?
    a. The principal?
    b. The superintendent?
    c. Teachers?
7. What is the role of students?
8. What is the role of parents?
9. Do you think there is a role to be played by community partners?
    a. If so, what role should they play?
10. What are the strongest aspects of the *Soil Program* in your view?
11. What are the weakest aspects of the *Soil Program* in your view?
12. In your view, what are some of the key differences between the *Soil Program* and other learning environments for students?
13. What are the main challenges that you believe have occurred this year in implementing the *Soil Program*?
14. Did you engage in any way in addressing those challenges:
    a. As an individual, were you able to marshal resources or other forms of support to address challenges or problems encountered?
    b. Did you engage in collaboration with others?
    c. If so, who did you find helpful to you in developing solutions to challenges or problems that may have occurred?
15. In your view, have their been school achievements this year in implementing the *Soil Program*?

Proposed Schedule of Survey Questions:
Teachers

1. How long have you been an educator?
    a. How long have you been a teacher at your school?
    b. What grade level(s) do you teach?
2. What content area(s) do you currently teach?
    a. What content areas have you taught in your career?
3. Do you work in teams with other teachers?
    a. If yes, how many teachers do you work with, and do you work in a grade-level team?
4. Do you work with a content area specialist(s), such as Special Education, Music, Art, etc., and if so, how often?
    a. Who else do you work with in your school?
5. Have you had any prior exposure to or experience with transdisciplinary learning? If so, please describe briefly.
6. Have you had experience working with other teachers collaboratively in grade level teams, or in content area teams? If yes, please describe briefly.
    a. How comfortable are you working in teams?
7. How do you currently communicate with other teachers?
    a. What are the most effective ways of communicating with others in the building?
8. How comfortable are you implementing STEM Outdoor Innovation Labs (SOIL)?
9. Please describe your top three priorities for implementing SOIL in your classroom this year?
10. What do you anticipate to be the top three challenges in implementing SOIL?
11. Please tell us briefly about any preparations or actions that have occurred at your school to support the implementation of SOIL. You may simply list actions taken as a way to keep your response brief.

- Yes, if you are in both grants. Process is the same, but how you apply it is different. Can be put K-12.

- Whole school district to sit together and watch it? At our leisure?
  - Watch it when it makes sense to you.
  - Monday at 4:00 you will all meet together anyway.

- SOIL and water conservation part of it?
  - Doesn't have to be? Discussion of Park rangers.
  - Soil and water conservation of Fairfield County.
  - They are willing to spend money if they see a plan.

- Will the schools do it at the same time? 1 week 100 kids?
  - No, it depends on Hocking College. When does their summer semester start? Goal for PAST would be 3 weeks, 2 schools at a time, 50 students. Tentative base don Dorm Schedule, MS and HS together.