

STEM Learning and Research (STELAR) Center @  
Education Development Center

# Digital Badging in ITEST Projects



Tuesday, March 28, 2017

# Who We Are

- Innovative Technology Experiences for Students and Teachers (ITEST) Program
- STEM Learning & Research Center (STELAR)
- Located at Education Development Center
- Supporting the ITEST program and its grantees since 2003
- Available to assist those considering submitting an ITEST proposal

# What We Do

- Facilitate projects' success through **technical support** with a focus on synthesis of findings
- Inform and influence the field of STEM stakeholders by **disseminating** project findings nationally
- Deepen the impact and reach of the ITEST program by **broadening participation** in the ITEST portfolio



# Some of Our Activities

- **Webinars:** Effective Dissemination, Designing Research for ITEST Projects, Mentoring Models
- **Monthly Newsletter:** Information to stay updated on all things STEM and ITEST
- **Project Specialists:** A STELAR staffer who works directly with each project to provide resources and make connections
- **Regional and Thematic Meetings:** A way for current projects to network with each other
- **Management Information System (MIS):** Annual collection of project information about what projects do, who they work with, what they have achieved

# Find Resources on the STELAR Website



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[Home](#) [About](#) [News](#) [Events](#) [Opportunities](#) [Projects](#) [Resources](#)

## FEATURED POST

### ITEST PROJECTS ADDRESS NSF PRIORITIES ON YOUTH PARTICIPATION, TEACHER PD & BROADENING PARTICIPATION

Read about the new ITEST syntheses!

[Learn More »](#)



*Helping prepare a diverse, skilled, and innovative STEM workforce.*

TEXT SEARCH 

[ADVANCED SEARCH](#)



**How STELAR Can Help You**



**ITEST Program Findings**



**ITEST Proposal Development**



**STELAR Materials**

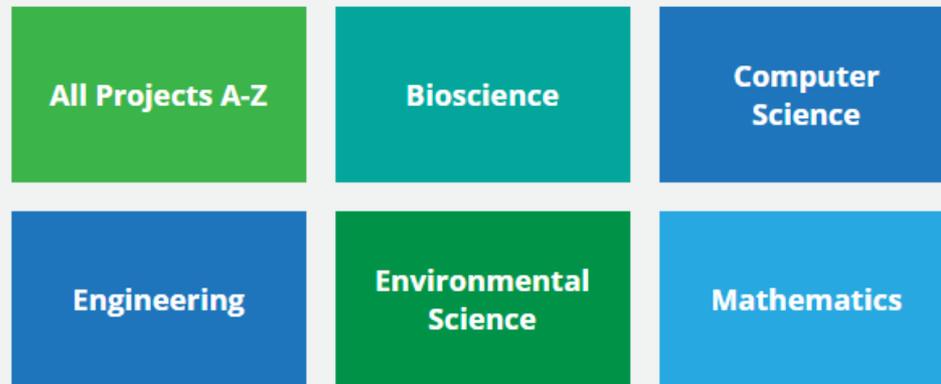


**Join Our Mailing List**

# Explore Project Profiles

1 - 8 of 312

[Download Results](#)



## Opportunities to Learn: Creative Science Through Inquiry, a Middle Grades Teaming Framework

2016 - 2019

This project will develop opportunities for students to learn creatively in science through inquiry. The project will prepare 72 middle school teachers to work with approximately 1800 students from economically disadvantaged schools who have had...

### SEARCH FOR PROJECTS

Multiple criteria within a field is an OR condition. Multiple fields are AND conditions.

- + DISCIPLINE(S)
- + PROJECT PARTICIPANT(S)
- + PROJECT GRADE SPAN(S)
- + PROJECT SETTING(S)
- + STATES WHERE WORK OCCURS
- + PROJECT STATUS

Apply Filters

# Resource Library – Publications, Curricular Materials & Instruments

1 - 8 of 629

[Download Results](#)

Events

News

Instruments

Publications

Opportunities

Curricular Materials

## STELAR ITEST PI & Evaluator Summit 2017 - Save the Date

Thursday, June 15, 2017 - 8:00am to Friday, June 16, 2017 - 5:00pm

Event at Westin Arlington Gateway

Save the date for the 2017 STELAR ITEST PI & Evaluator Summit! The summit is an opportunity for ITEST Principal Investigators (PIs) and evaluators to come together and share successes, challenges, and lessons learned from the ITEST...

[READ MORE »](#)

## SEARCH FOR RESOURCES

Multiple criteria within a field is an OR condition. Multiple fields are AND conditions.



RESOURCE TYPE



DISCIPLINE(S)



TOPIC(S)

Apply Filters

Clear Filters

# Get Ideas for Designing ITEST Proposals

ITEST Proposal Development: <http://stelar.edc.org/proposal-development>

- + GET TO KNOW ITEST
- + PREPARE YOUR PROPOSAL FOR SUBMISSION
- + DEVELOP A ROBUST RESEARCH DESIGN
- + CREATE AN EFFECTIVE EVALUATION STRATEGY
- + CONNECT WITH PARTNERS
- + REACH UNDERSERVED POPULATIONS
- + DEVELOP THE WORKFORCE OF THE FUTURE

# Connect with others via the People Connector

<http://stelar.edc.org/opportunities/people-connector-directory>

People Connector Form

People Connector Directory

**STELAR People Connector Directory - Add your Information**

The purpose of this directory is to connect individuals looking for partners or tools for their ITEST proposals with those who can provide partnership or tools (e.g., a school district looking for a research methodologist, a community-based organization looking for an external evaluator).

Please complete this form if you are looking for or can provide specific expertise for ITEST proposals. The information you provide will be publicly available and accessible via the STELAR website.

\* Required



STEM Learning and Research Center

First name \*

Last name \*

Email \*

Organization / Institution \*

City \*

State \*

Website

Listing Type \*

Select one listing type for this submission. If you are both LOOKING FOR and PROVIDING expertise, please complete this form for one, and then submit an additional form for the second.

I am LOOKING FOR expertise

I can PROVIDE expertise

STELAR People Connector Directory

File Edit View Insert Format Data Tools Form Add-ons Help All changes saved in Drive

Comments Share

fx

The purpose of the People Connector Directory is to connect individuals looking for partners or tools for their ITEST proposals with those who can provide partnership or tools (e.g., a school district looking for a research methodologist, a community-based organization looking for an external evaluator). The information provided is publicly available and accessible via the STELAR website. You can get notified of additions to the Directory by clicking on 'Tools' and 'Notification Opportunities' above (you must sign in to a google account in order to access the Tools).

Note: STELAR and NSF do not endorse the credibility or expertise of any specific individuals on the compiled list.

Timestamp	First name	Last name	Email	Organization / Institution	City	State	Website	Listing Type	Type of Expertise	Expertise Details	
14	9/8/2014 16:42:48	Anita	Krishnamurthi	akrishnamurthi@altersch	alterschool Allian	Washington	DC	<a href="http://www.altersc">http://www.altersc</a>	I can PROVIDE expertise	Researcher, Informal ed	Please reach out if you're looking f
15	9/9/2014 9:07:53	Bonnie	Swan	bonnie.swan@ucf.edu	University of Cent	Orlando	Flord	<a href="http://education.u">http://education.u</a>	I can PROVIDE expertise	Evaluator, Researcher	Program Evaluation and Education
16	9/9/2014 9:19:45	Cynthia	Tanaris	tanaris@pitt.edu	University of Pitts	Pittsburgh	PA	<a href="http://www.ceac.p">http://www.ceac.p</a>	I can PROVIDE expertise	Evaluator, Researcher, E	Cynthia A. Tanaris, Ed.D., founde
17	9/9/2014 12:09:42	Amy	Grack Nelson	agnelson@smm.org	Science Museum	St Paul	MN		I can PROVIDE expertise	Evaluator, Evaluation ins	Expertise in the development and v
18	9/9/2014 17:00:08	Troy	Sadler	sadlet@missouri.edu	University of Miss	Columbia	MO	<a href="http://education.m">http://education.m</a>	I can PROVIDE expertise	Evaluator	The ReSTEM Institute: Reimagin
19	9/10/2014 18:56:16	Vega	Vanessa	vanessa@rockman.com	Rockman et al.	San Francisco	CA	<a href="http://www.rockman.c">www.rockman.com</a>	I can PROVIDE expertise	Evaluator, Researcher, F	Can provide expertise on: evaluatio
20	9/16/2014 10:00:21	Kevin	Glass	glass@educationconnect	Center for Resear	Litchfield	CT	<a href="http://www.education.co">www.education.co</a>	I can PROVIDE expertise	Evaluator	We can provide both internal and e
21	9/16/2014 13:14:04	Juan	Concepcion	rubricsolution@gmail.com	Concepcion-Card	Manati	Puert	<a href="http://www.rubric-solutio">www.rubric-solutio</a>	I am LOOKING FOR expertise	Evaluator, Informal educ	Proven educational STEM practice
22	9/17/2014 15:21:28	Kristin	Bass	kristin@rockman.com	Rockman et al	San Francisco	CA	<a href="http://www.rockman.com">www.rockman.com</a>	I can PROVIDE expertise	Evaluator, Evaluation ins	Rockman et al is an independent r
23	9/17/2014 10:39:14	Karen	Yanowitz	kyanowitz@astate.edu	Arkansas State U	Jonesboro	AR		I can PROVIDE expertise	Evaluator, Researcher	I have two ITEST grants and am ve
24	9/18/2014 16:41:00	Jared	Ozga	jozga@wcs.org	Wildlife Conservat	New York	NY	<a href="http://wcs.org">wcs.org</a>	I am LOOKING FOR expertise	Informal education site,	Looking to forge partnerships with
25	9/22/2014 15:26:32	Robinson	Robinson	ronrobinson@lewislatimer	Lewis H. Latimer	Chelsea	Mass	<a href="http://www.lewislatimer">www.lewislatimer</a>	I can PROVIDE expertise	Informal education site	I can provide information on how to
26	10/22/2014 16:12:12	Teresa	Reagan	treagan@ncat.edu	NC A&T State Uni	Greensboro	NC		I am LOOKING FOR expertise	Evaluator	We are searching for an external e
27	11/12/2014 21:47:15	Aaron	Parker	Aaron.T.Parker@gmail.c	University of Guan	ASAN	Guam		I am LOOKING FOR expertise	Evaluator, Formal educa	Looking for help putting together a
28	2/17/2015 12:30:42	Jana	Craig-Hare	janach@ku.edu	University of Kans	Lawrence	KS	<a href="http://www.altec.org">www.altec.org</a>	I can PROVIDE expertise	Evaluator, Researcher, Evaluation instrument	
29	2/17/2015 16:23:36	Jaclyn	Ocuppaugh	jo2424@tc.columbia.edu	Teachers College,	New York	New York		I can PROVIDE expertise	Evaluator, Researcher, Evaluation instrument	

# Stay in Touch!

**Contact us:** [stelar@edc.org](mailto:stelar@edc.org)

**Facebook:** <https://www.facebook.com/stelarctr>

**Twitter:** [https://twitter.com/STELAR\\_CTR](https://twitter.com/STELAR_CTR)

**LinkedIn:** <https://www.linkedin.com/groups/STELAR-Center>

**Find resources:** <http://stelar.edc.org/>

# Today's Presentations:

## Kids as Urban Scientists: Mapping the Biodiversity of the Philadelphia Promise Zone

- Project Co-PI **Winifred Black** of the Pennsylvania Statewide Afterschool Youth Development Network, Project Accelerate
- **Andy Stutzman**, Project Director of Digital On Ramps at Drexel University

## Investigating Digital Badges as Alternative Credentials to Broaden STEM Participation Among Underrepresented Youth

- Project PI **James Diamond**, Senior Research Associate in the Center for Children & Technology at Education Development Center

pennsylvania statewide

**afterschool**

**youth development**  
network

# PA OSTs Involvement in Badging

PHILLY  
SCIENTISTS

exploring our city



Dr. Winnie Black  
Special Projects Coordinator  
717763-1661 X151  
[wblack@csc.csiu.org](mailto:wblack@csc.csiu.org)

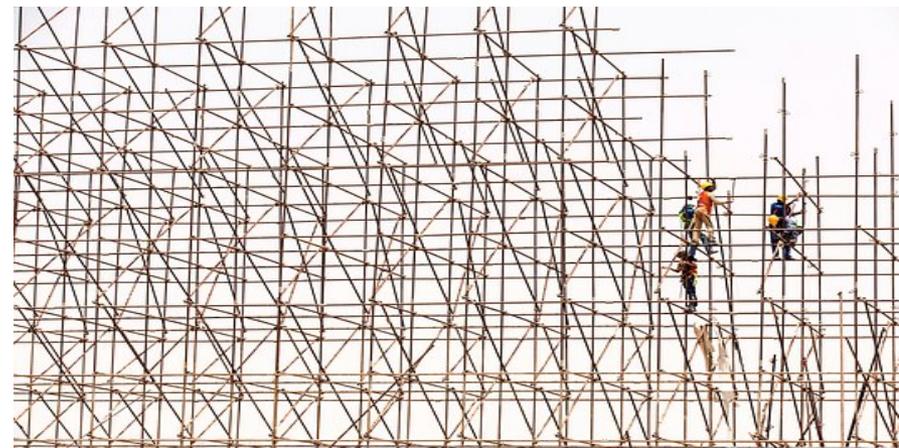


# PSAYDN

**“All children and youth deserve access to high quality out-of-school time programs that promote positive youth development and support the successful transition to adulthood”.**

# STEM Badging Project Phase III

- **Partnership with PSAYDN, National Afterschool Association, and Pennsylvania School-Age Child Care Alliance**
- **3<sup>rd</sup> pilot beginning – Scaffolding of badges into credentials**
- **Development of Coach/Trainer Manual**



# Foundational STEM Credential

- **Creating STEM Learning Opportunities**
- **Enabling Active STEM Learning  
(formerly Embracing Active STEM Learning)**
- **Asking Purposeful Questions**
- **Creating an Inclusive Learning Space**
- **Connection to Prior Knowledge and Experiences**



# Core STEM Credential

- **Modeling Science Practices**
- **Modeling Engineering Practices**
- **Reflecting and Processing STEM Experiences**
- **Managing Groups During STEM**
- **Making Connections to STEM Careers**





[Animal Tracks](#)

# Advanced STEM Credential

## Supporting Documentation of STEM Learning

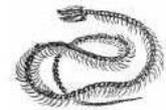
- Making Authentic Assessments
- Encouraging Collaborative STEM Work
- Developing a STEM Identity
- Giving Youth Control



[Things That Look Like Eggs](#)



[Bite or Chew Marks](#)



[Things Animals Leave Behind](#)

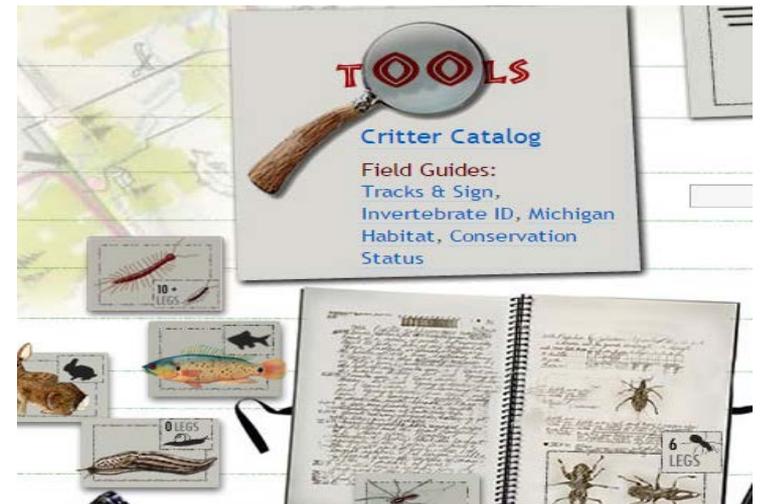
# Points of Evidence

- **Better Kid Care Certificate of Completion**
- **Knowledge Quiz**
- **Observation**
- **Badge Awarding**
- **Communication- Discussion Group**



# ITEST Grant- Philly Scientists – Exploring Our City

- Partnership with PSAYDN, Drexel University, Philadelphia Education Fund, and Academy of Science
- Badges for Youth and Teachers/Staff
- Focus on career readiness
- 21<sup>st</sup> century skills



# ITEST Grant- Philly Scientists – Exploring Our City



- Modeling Science Practices
- Reflecting and Processing STEM Experiences
- Focus on career readiness
- Encouraging Collaborative STEM Work
- Developing a STEM Identity
- Giving Youth Control



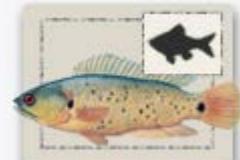
[mammals](#)



[birds](#)



[amphibians](#)



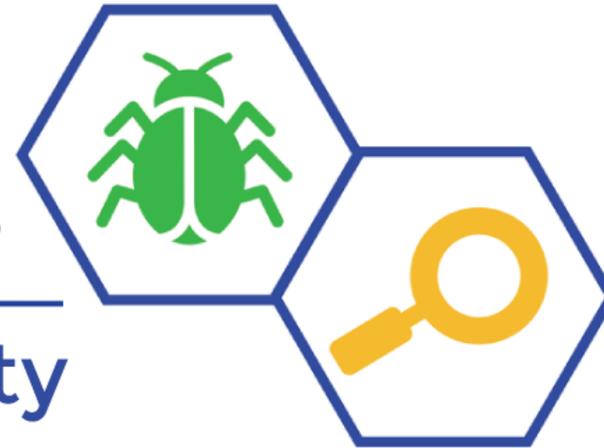
# ITEST – Philly Scientists

Digital Badges for Youth



**PHILLY  
SCIENTISTS**

**exploring our city**



**Andy Stutzman**

**Project Director - Digital On-Ramps**

**Drexel University**

**[astutzman@drexel.edu](mailto:astutzman@drexel.edu)**

# Digital On-Ramps



- Workforce development collaborative housed at Drexel University
- Focused on improving the system of training and workforce services in Philadelphia.
- Our work includes DOR ePortfolio tool, digital badge initiatives, and career pathways.
- Working citywide, in the Promise zone, and within Drexel itself.



DREXEL UNIVERSITY  
Office of  
**University and  
Community  
Partnerships**

## What's in your Portfolio?

The Digital On-Ramps ePortfolio system is an online tool for students and job seekers to display their accomplishments. It's free and easy to use! Here's how you can get started:



If you have questions about how to use the system, our website has you covered! Visit <http://digitalonramps.com/eportfolio>

If your class or organization doesn't have access to the ePortfolio system yet, then reach out to us and we'll make it happen!



## Digital Badges Show What You Know

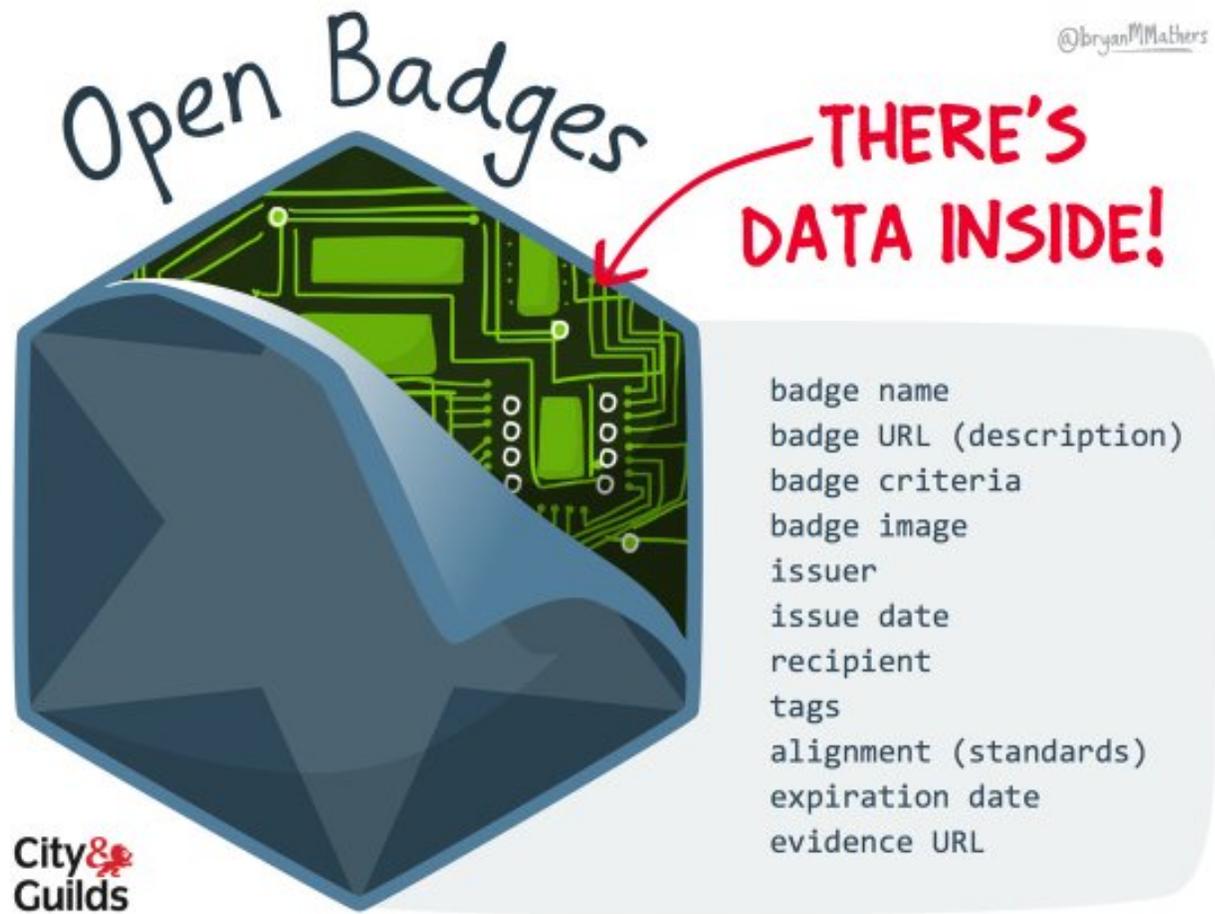
Available for students and learners of all ages, digital badges are clickable credentials that certify mastery of a skill, an accomplishment, or experience. Learners can discover their interests and unlock new opportunities by earning badges for demonstrating what they've learned.



Any learning activity can be badged! Contact Digital On-Ramps today to learn about our digital badging initiatives. Together we can badge your programs or activities, and help learners better understand and share the skills they've gained.



# Digital Badge Basics



- The detailed data behind a badge is what makes it more powerful than a certificate.
- Students can use the badge to better recognize the skills and competencies they gained through informal learning experiences.
- Linking to artifacts that were created as part activities in the program allows a student to show actual evidence of their learning.

Image courtesy of @bryanMMathers

# LRNG - Playlist

## Early Childhood Education - Health and Safety Basics

Philadelphia Academies, Inc.



Ages 13+

LRNG LVL: Level Up  
[Career]

Share

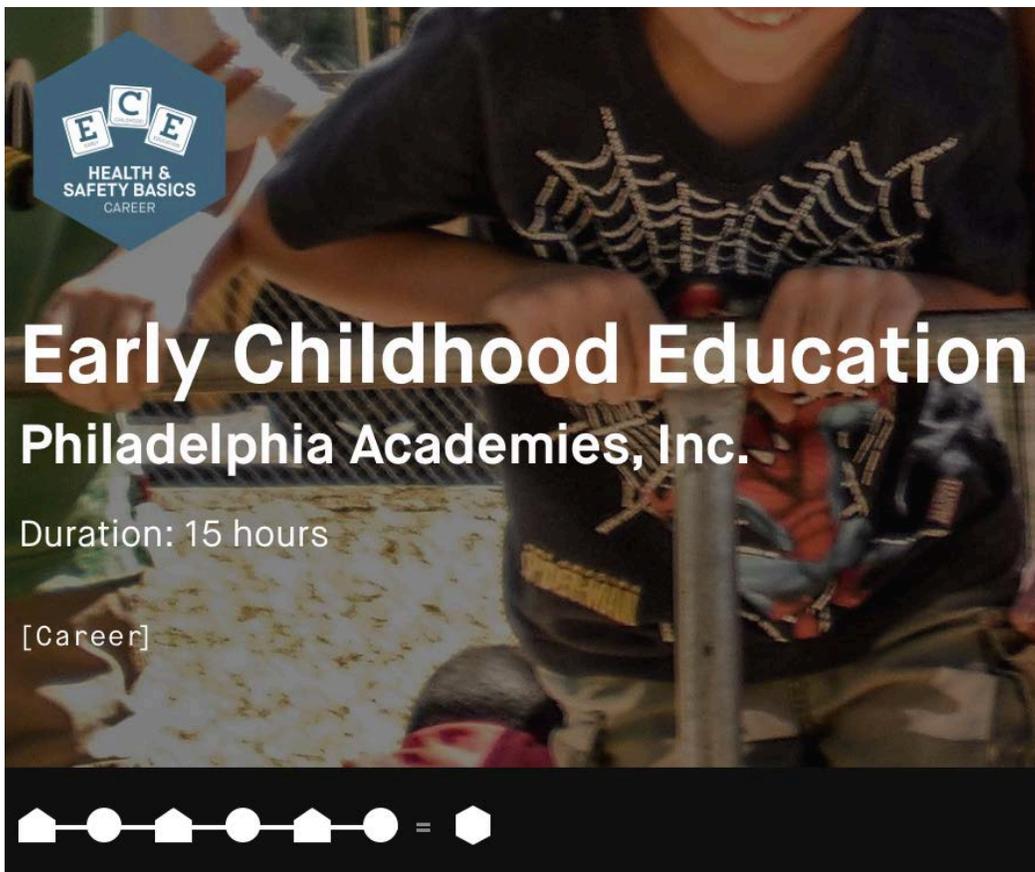


	<b>CPR Training and Certification</b> Duration: 3 hours
	<b>Hand Washing for Preschoolers</b> Duration: 2 hours
	<b>Fire Safety</b> Duration: 3 hours
	<b>FEMA Multihazard Planning for Childcare IS-36</b> Duration: 2 hours
	<b>Child Nutrition</b> Duration: 2 hours
	<b>Choking Hazards for Kids</b> Duration: 3 hours
	<b>Early Childhood Education - Health and Safety Basics</b>  <b>Description</b> Learn a variety of health and safety know-how and information to foster a safe, healthy learning environment for preschoolers.  <b>Opportunity</b>



- Playlists made of digital and local experiences, called XPs that lead to earning the badge.
- XPs can contain links to resources for the various activities and provide students to submit evidence of the activity. Evidence can be a simple writing exercise, uploading a completed worksheet, video, images, or links.
- All XPs are validated before issuing the badge.

# LRNG - Playlist



 HEALTH & SAFETY BASICS CAREER

## Early Childhood Education

### Philadelphia Academies, Inc.

Duration: 15 hours

[Career]

Progress indicator: 1 of 6 steps completed

## Early Childhood Education - Health and Safety Basics

Philadelphia Academies, Inc.



Ages 13+

LRNG LVL: Level Up  
[Career]

Share



### Description:

Learn a variety of health and safety know-how and information to foster a safe, healthy learning environment for preschoolers.

### Criteria:

Understand and apply basic tenets of creating and fostering a safe, healthy learning environment for pre-schoolers, aligned with the Child Development Associate credential. Areas of knowledge include: handwashing for preschoolers, CPR certification, fire safety, FEMA hazard planning for childcare settings, child nutrition, and choking hazards.

### Competencies & Standards:

Child Development Associate (CDA) credential, Competency Area 1: Safe, Healthy Learning Environments, Functional Area 1: Safe and Functional Area 2: Healthy.

# Philly Scientist Badges

**PHILLY  
SCIENTISTS**  
exploring our city



## Student Badges

- Urban Scientist Badge
- Zoologist/Botanist Badges
- Biodiversity Badge
- Superstar Scientist Badge

## Teacher Badges

- Urban Scientist Badge
- Urban Scientist Pedagogy Badge
- Urban Scientist Technology Badge
- Superstar Teacher Badge

# How will the badges be used?



## Student Badges

- Illustrate Learning Pathways
  - Gamifying – awards the student along the way and let's them set their sights on future goals.
  - Shows progress through program
- Allows students to go back and easily see what skills they may have gained through informal learning.
- Built directly into the curriculum.
- May need to use bulk badge issuing for this audience and the type of curriculum.

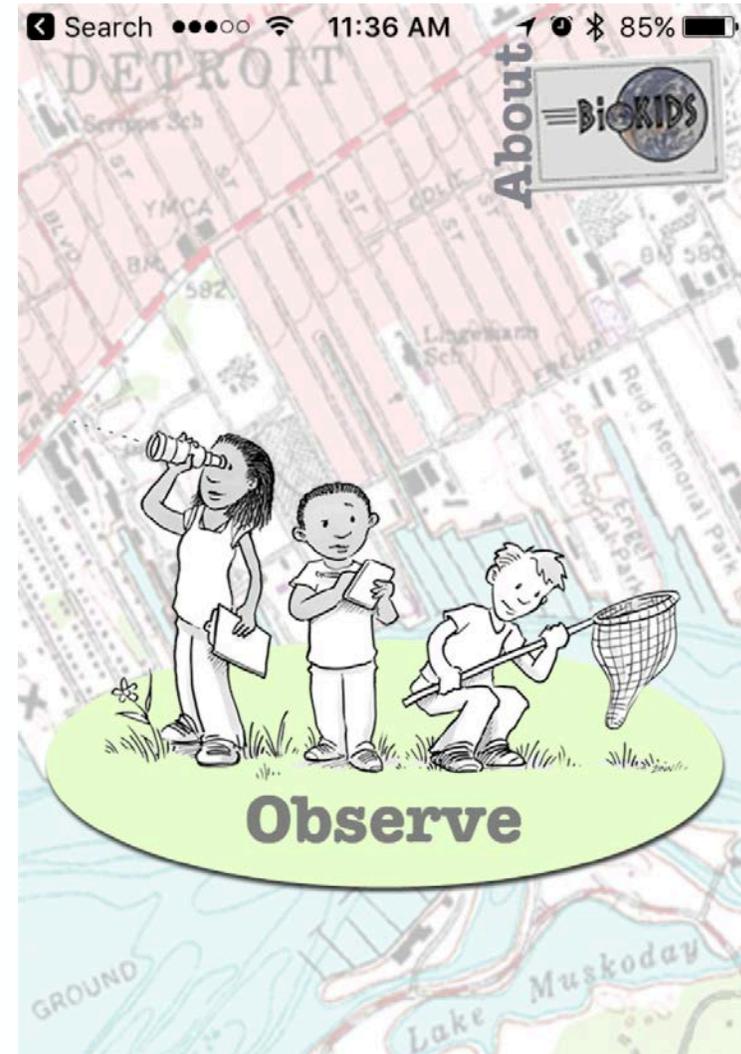
## Teacher Badges

- Illustrate Learning Pathways
- Professional Development
  - PD or Continuing Ed. hours requirements
  - Illustrates the learning accomplished to current employer and could be used on future job applications.
- Shared on social media, LinkedIn, electronic portfolio or in a traditional resume.

# How will the badges be used?

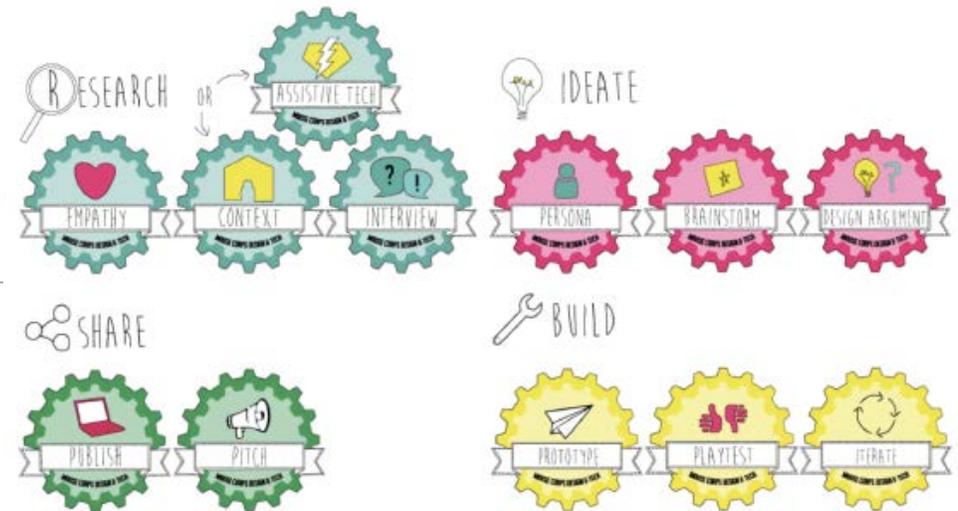
## Student Curriculum

- The 5 E's – BSCS 5E Instructional Model
  - Engagement, Exploration, Explanation, Elaboration, Evaluation
- Exploration
  - Worksheet Activities
  - Mobile Biodiversity app
- Evaluation
  - Self-evaluation validated by the teacher
  - Attendance and participation data based on mobile app groups.



# Design League Badges

INVESTIGATING DIGITAL BADGES AS ALTERNATIVE CREDENTIALS TO BROADEN STEM PARTICIPATION AMONG UNDERREPRESENTED YOUTH

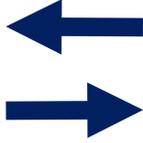
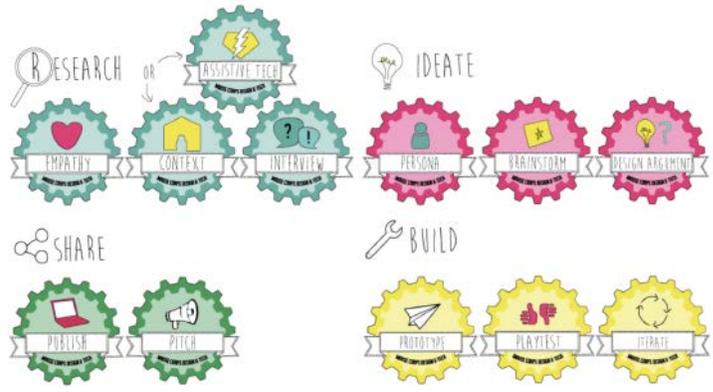


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Jim Diamond (EDC), PI  
Marc Lesser (Mouse), Co-PI  
Jaime Gutierrez, Wendy Martin (EDC)  
Jessica Walker (Parsons/New School)  
Hillary Kolos (DreamYard)  
Julie Poncelet (Action Evaluation Collaborative)

# Design League Badges

**mouse\_**  
**design league**



THE NEW SCHOOL  
**PARSONS**

**DreamYard**

## Design League Badges

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“ Mouse Design League is a year-long after school design and technology program for high school students who are self-proclaimed geeks, techies, artists, activists, innovators, and tinkerers. **Design League Members will achieve over 100 hours of applied design, technology, workplace and leadership experience.**

Over the course of the program, **students brainstorm, prototype, and present their Legacy Project, a new technology which addresses a social need, while building their skills and exploring career pathways with technology mentors** across diverse professional settings. ”

## Design League Badges

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**RQ1:** Does the Design League Badge Portfolio process support participant **engagement** by increasing their STEM and ICT self-efficacy and interest in STEM and ICT careers?

**RQ2:** What revisions have to be made to the existing Design League badge and Learning Portfolio systems to enhance participants' **capacity** to create Badge Portfolios that are personally meaningful and present their ICT capabilities to higher education admissions officers?

**RQ3:** What revisions have to be made to the existing Design League badge and Learning Portfolio systems to ensure the **continuity** of the process for recognizing and credentialing youth ICT ability across the partner organizations?

Design League Badges

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**Analytical Framework = ECC Trilogy**

## Design League Badges

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### **Products of the project =**

- a *Design League Portfolio Toolkit* to help other informal learning organizations and higher ed institutions form partnerships to initiate badge systems
- research findings describing the iterative design cycles of the badge system, the evidence generated regarding implementation feasibility and evidence of promise for impact on underrepresented youth persistence in STEM and ICT, and how that evidence influenced revisions of the badge system;
- a final version of the digital badge and portfolio system
- an evidence base with which to pursue a future ITEST SPrEaD project.