urban advantage

science initiative

Urban Advantage Professional Learning Catalog
for
Alumni Teachers

In years 6 and above

2019-2020

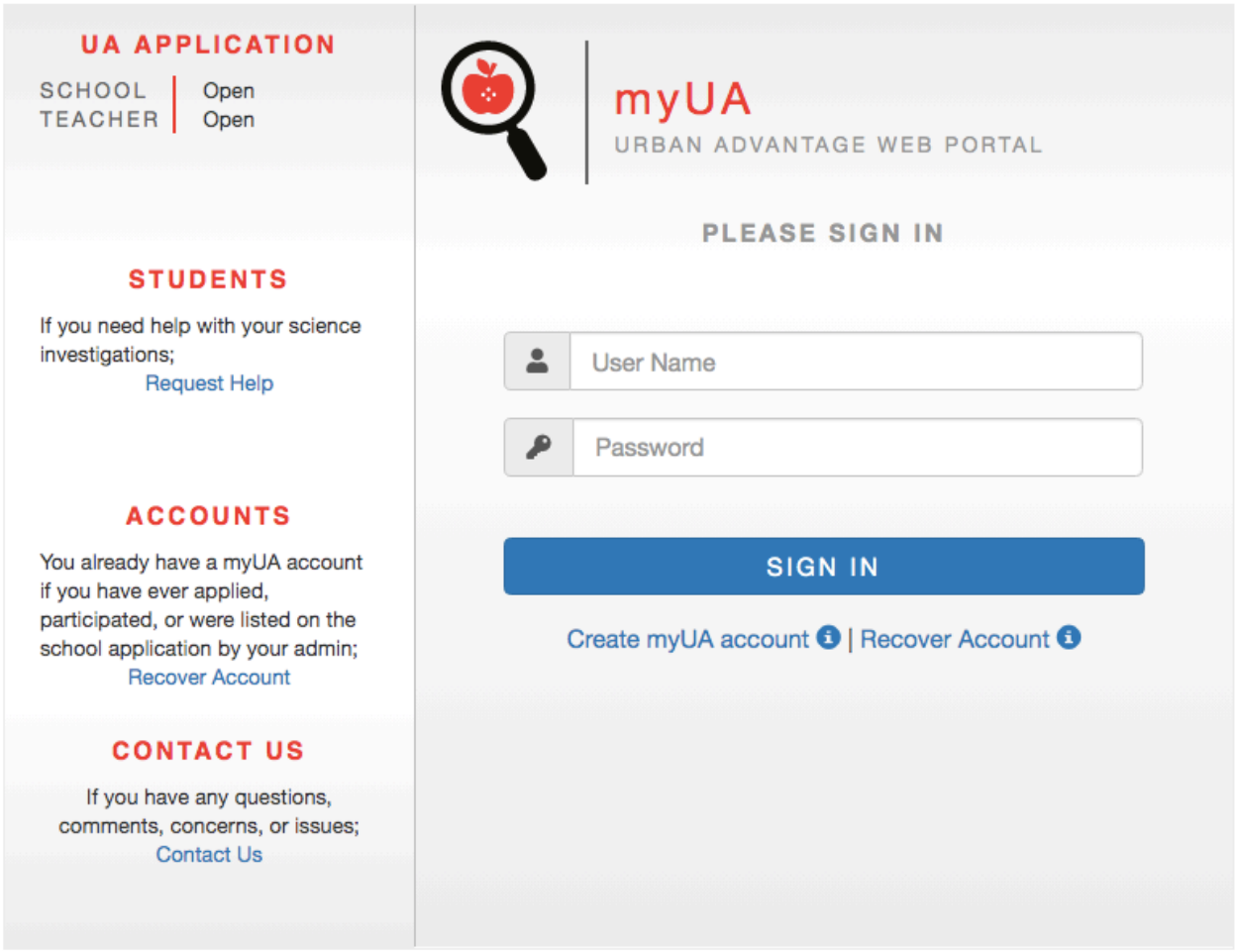
version 1.2
10/16/19

American Museum of Natural History | Bronx Zoo, A Wildlife Conservation Society Park | Brooklyn Botanic Garden | New York Aquarium, A Wildlife Conservation Society Park | NYBG | nysci, New York Hall of Science | Queens Botanical Garden | Zoo Staten Island

NYC Department of Education | The Council of the City of New York | NYC Office of the Mayor

This document is subject to revision; for the most current version consult the Alumni Forum in the UA Portal:

http://myUA.urbanadvantagenyc.org



Sections:

1. General descriptions of the four types of Professional Learning opportunities.
2. Table of Professional Learning courses offered this year
3. Detailed Descriptions of each Professional Learning offering

Category 400: Courses on Reflective Practice

Course descriptions:
Using protocols for reflecting on teaching practices, participants will engage in opportunities to discuss (or address) key questions around student learning of science content and science practices. Teachers will engage in collaborative, critical and supportive dialogue using methods that may include examinations of student work, lesson plans, a puzzle of practice and/or video of classroom teaching.

Note: These are 3-day professional development sessions

Prerequisites:
Available to teachers who have completed 2 or more years of Urban Advantage. These courses are intended for teachers who have been implementing UA tools in their classroom for 2 or more years and are ready to reflect on their teaching and student learning, and refine their teaching practice.

Learning goals for this course type:

- Develop and deepen teachers' capacity to design various types of investigations (field study, controlled, design and secondary research), and the teachers' ability to structure learning experiences for all students that support the design of rigorous investigations.

- Deepen teachers' capacity to reflect on and improve their pedagogical practice around supporting students in science.

- Deepen teachers' capacity to share with, collaborate and seek assistance from their UA community.

Participation in this course will include one or more of the following activities:

- Participants, with the support of protocols and community building exercises, will examine and reflect on student work with the goal of surfacing student thinking.

- Participants will engage in a collegial and collaborative learning experience where teachers will identify and develop opportunities to provide additional supports and scaffolds to their students.

- Participants will present a puzzle of practice related to science investigations and engage in a protocol to think about ways to improve their work.

- Participants will use video of themselves teaching to provide feedback to each other through protocols about specific instructional practices related to science investigations.

Category 430: Courses on Science Content, Science Practices & Reflective Teaching Practice

Course description: Participants will reflect on how research on learning can inform their teaching practice around supporting students' science investigations. Using research on teaching and learning, and UA Partner exhibits, participants will explore a given science topic and/or science practice, including:

- the development of science concepts across grade levels (learning progressions)
- common misconceptions
- related science practices (inquiry)

Following a variety of strategies to explore science content, we will utilize diverse resources, including the AAAS Atlas for Science Literacy, other references, and exhibits, to explore these topics.

Note: These are three-day professional development courses
The third day will revolve around using protocols for reflecting on teaching practices, participants will engage in opportunities to discuss (or address) key questions around student learning of science content and science practices. Teachers will engage in collaborative, critical and supportive dialogue using methods that may include examinations of student work, lesson plans, or a puzzle of practice. Participants will bring in examples of their own student work related to the first two days of the course.

Prerequisites: These courses are intended for teachers who have been implementing UA tools in their classrooms, and are ready to take a deeper look at current research on teaching practices, learners' needs and goals in particular science content areas.

Learning goals for this course type:

- Improve teachers' ability to leverage NYC's Science-Rich Cultural Institutions and other resources outside the classroom, especially NYC's natural setting, to support and deepen students' science literacy.

- Deepen teachers' understanding of science - both science content knowledge and the practice of science.

- Deepen teachers' capacity to share with, collaborate and seek assistance from their UA community.

Participation in this course will include one or more of the following activities:

- Participants may read from a variety of references on topics such as developmental sequences, common misconceptions, and what a scientifically literate adult should know about a content area.

- Participants may utilize resources of Science Rich Cultural Institutions to explore science content, for example doing activities in the AMNH Birds of the World Hall to explore concepts around adaptation.

Related References:

NSDL Strand Maps: http://strandmaps.nsdl.org/

American Association for the Advancement of Science
Benchmarks for Science Literacy & Science for all Americans

Curriculum Topic Study Project: https://www.curriculumtopicstudy2.org/

Diver, Rosalind et al., Making Sense of Secondary Science, Routledge, 1993

A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas (2012)

Surrounded by Science: Learning Science in Informal Environments (2010)

Teaching for Conceptual Understanding in Science, NSTA (2015)

Coming Soon – Additional Resources to be incorporated in the NEW CTS:

Mapping the NGSS – An NSTA Atlas –in press
Disciplinary Core Ideas – Reshaping Teaching and Learning
Next Generation Science Standards
NSTA Quick Reference Guide to the NGSS

- Elementary
- Midle School
- High School
- K-12

Uncovering Student Ideas series

Urban Advantage Alumni Teacher Professional Learning for the 2019-2020 School Year	
	Category 400 & 430 Courses
Location	Reflective Practice
AMNH	**Examining Student Work** Course Number 409AL (Tuesday 1/28, Wednesday 2/12, and Thursday 2/27)
BBG	**Examining Student Work & Thinking at BBG** Course Number 401AL (Saturdays: 2/8, 2/29, 3/21)
BZ	**Reflecting on embedding literacy strategies in science curriculum** Course Number 453AL (Online between: 1/3 and 2/1)
NYAQ	**Teacher Practice in Guiding Investigation Design** Course Number 408AL (Sunday: 3/1, Online 3/15, Sunday: 3/22) (3 day equivalent)
NYBG	**Examining Student Work at NYBG: Special Ed Focus** Course Number 406AL (Sundays: 10/20, 11/17, 12/8)
NYSCI	**Developing Design Investigations** Course Number 431AL (Tuesday: 12/3, Thursday: 12/19, Wednesday: 2/12)
QBG	**Examining Student Work at QBG** Course Number 403AL (Sundays: 3/1, 3/15, 3/29)

PD Type:	Workshops on Reflective Practice Category 400
Title:	Examining Student Work and Thinking at BBG Course number 401AL
Location:	Brooklyn Botanic Garden
Dates:	Saturdays, February 8th, 29th, and March 21st, 2020 (Note: This is a **three** day session)
Time:	10:00 AM to 3:30 PM (Breakfast 9:30, 30 minute lunch)
Instructors:	Partners: Candyce Johnson, Lauren Tecosky, and Barbara Kurland Lead Teachers: TBD

Workshop descriptions:

Using protocols, participants will have opportunities to reflect together on key questions centered around teaching practice and student learning involving long-term investigations, as well as science content and practices. Teachers will engage in collaborative, critical, and supportive dialogue as they examine authentic aspects and examples of teacher and student work.

Please note, as this is a highly collaborative and teacher-driven workshop, it is expected that all teachers will share some aspect of her/his practice in either partner or small group protocols.

Prerequisites:

Available to teachers who have **completed five or more years of Urban Advantage**, and are considered **alumni**. This course is intended for teachers who have been implementing UA tools in their classroom for five or more years and are ready to reflect on student work and refine their integration of UA within their teaching practices.

Learning goals for this workshop:

- Familiarize teachers with the use of protocols to have managed, focused conversations about teachers' assignments and student work
- Engage teachers in reflective practice through sharing teacher and student work and collaboratively examining student thinking
- Deepen teachers' knowledge and ability to teach students to apply the tools, techniques, and critical thinking skills of science practitioners

PL Type:	Courses on Reflective Practice Category 400
Title:	Examining Teacher and Student Work at the Queens Botanical Garden Course number 403AL
Location:	Queens Botanical Garden
Dates:	Sunday, March 1, 2020 Sunday, March 15, 2020 Sunday, March 29, 2020
Time:	9:30 – 3:00pm (Breakfast at 9:00 AM)
Instructors:	Partner Staff: Marnie Rackmill, Miranda Gray

Course description:

Using resources from National School Reform Faculty (https://www.nsrfharmony.org/) and other strategies, teachers will engage in opportunities to reflect together on key questions around teaching practice and student learning. Teachers will share their work and the work of their students to engage in collaborative, critical and supportive dialogue around focused examination of that work.

Prerequisites:

Available to teachers who have **completed five or more years of Urban Advantage**, and are considered **alumni**. These CFG or PLC groups are intended for teachers who wish to discuss and examine student work and pedagogical strategies at use in their classroom.

Learning goals for this CFG:

- Teachers, with the support of protocols and community building exercises, will examine and reflect on student work with the goal of surfacing student thinking. Each teacher will present work, in a small group, supported by a facilitator and a protocol.

- Participants will engage in a collegial, collaborative and supportive experience to identify and develop opportunities to provide additional supports and scaffolds to students.

PD Type:	Courses on Reflective Practice Category 400
Title:	Examining Student Work at NYBG: Special Education Focus Course number 406AL
Location:	The New York Botanical Garden (Bronx)
Dates:	Sunday, October 20, 2019 Sunday, November 17, 2019 Sunday, December 8, 2019 (This is a three-day course)
Time:	9:30 AM to 3:30 PM (Breakfast at 9:00 AM)
Instructors:	Partners: Mona McNamara, Shannon Haas Lead Teachers: Deborah Sarria, Cristine Maisano

Workshop description:

Using professional learning protocols, participants will engage in opportunities to reflect together on key questions around teaching practice and student learning in Special Education contexts. Teachers will share their students' work and engage in collaborative, critical and supportive dialogue around focused examination of that work.

Prerequisites:

Available to teachers who have **completed five or more years of Urban Advantage**, and are considered **alumni**. These courses are intended for teachers who have been implementing UA tools in their classroom for 2 or more years and are ready to reflect on student work and refine their teaching practice.

Learning goals for this workshop:

- Participants, with the support of protocols and community building exercises, will examine and reflect on student work with the goal of surfacing student thinking.

- Participants will engage in a collegial and collaborative learning experience where teachers will identify and develop opportunities to provide additional supports and scaffolds to their students.

PD Type:	Courses on Reflective Practice Category 400
Title:	Teacher Practice in Guiding Investigation Design Course number 408AL
Location:	Blended - Face-to-face at the New York Aquarium plus online
Dates:	Sunday, March 1, 2020 (at New York Aquarium) Sunday, March 15, 2020 (ONLINE) Sunday, March 22, 2020 (at New York Aquarium) (This is a "3-day" course, with one day of online work between the first and second in-person course)
Time:	For in-person days, 9:30 AM - 3:00 PM (breakfast at 9:00 AM). Online work will be asynchronous, with a due date prior to the second in-person session.
Instructors:	Partner Staff: Daniel O'Shoney Lead Teacher Staff: Sarah Rosenblum and Catherine Calogero

Course description:

Teachers will engage in a blended professional development course centered on teacher-led coaching and questioning that will lead students to create rigorous and scientifically supported long term investigations. This course emphasizes teacher collaboration and support from lead teachers in order to improve the implementation of science investigations in the classroom. Teachers will engage in collaborative, critical and supportive dialogue as they examine the strategies and artifacts they use to guide and support students in the design of their investigations.

Prerequisites:

Available to teachers who have **completed five or more years of Urban Advantage**, and are considered **alumni**. These courses are intended for teachers who have been implementing UA tools in their classroom for 3 or more years and are ready to reflect on and refine their teaching practice with regard to the guidance and coaching of students during a long term science investigation.

Learning goals for this course:

- Participants, with support from lead teachers and community building exercises, will examine and reflect on student work with the goal of developing effective coaching strategies to strengthen student investigation design

- Participants will reflect on their own practice in regards to the initial introduction of long term science investigations in their classroom

- Participants will engage in a collegial and collaborative learning experience where teachers will identify and develop opportunities to provide additional supports and scaffolds to their students

PD Type:	Courses on Reflective Practice Category 400
Title	Examining Teacher and Student Work at AMNH Course number 409AL
Location:	American Museum of Natural History
Dates:	**Three Weekdays:** Tuesday, January 28, 2020 Wednesday, February 12, 2020 and Thursday, February 27, 2020 (This is a 3-day course. All 3 days are required for course credit)
Time:	8:30 AM - 2:30 PM (Breakfast at 8:00 AM)
Instructors:	Partner: Tina Glover Lead Teachers: Lauren Couto, Jon Franks

Course description:

Using resources from National School Reform Faculty (https://www.nsrfharmony.org/), teachers will engage in reflection on key questions around teaching practice and student learning. Teachers will share their work and the work of their students to engage in collaborative, critical and supportive dialogue around focused examination of teacher and student work.
This course is not building a CFG (Critical Friends Group) but, rather, providing a space to learn about the steps needed to build a CFG and an opportunity to engage, as a community, on deepening our teaching practice. All those participating will present teacher or student work and will also be an active participant in supporting a teacher in their work.

Prerequisites:

Available to teachers who have **completed five or more years of Urban Advantage**, and are considered **alumni**. This work is intended for teachers who wish to discuss and examine student work and pedagogical strategies at use in their classroom.

Learning goals for this CFG:

- Teachers, with the support of protocols and community building exercises, will examine and reflect on student work with the goal of surfacing student thinking. Each teacher will present work, in a small group, supported by a facilitator and a protocol.
- Participants will, together, form a collegial, collaborative and supportive experience to identify and develop opportunities to provide additional supports and scaffolds to students.

PL Type:	Courses on Science Content and Science Practices Category 400
Title:	Developing Design Experiments Course number 431AL
Location:	New York Hall of Science
Dates:	Tuesday, December 3rd, 2019 Thursday, December 19th, 2019 Wednesday, February 12th, 2020 (This is a 3-day course)
Time:	9:00 AM - 2:30 PM (Breakfast at 8:30 AM)
Instructors:	Partner Staff: Deon Daniels Lead Teacher: TBA

Course description:

This professional development provides participants with the opportunity to deeply examine engineering design standards, engineering practices, and research on how students approach engineering and design. We will define "design" within the context of Urban Advantage through examination of standards, collaborative experience in NYSCI Design Lab, and exploration of the instructional sequence of an Urban Advantage design experiment.

Participants gain skills and strategies that will help them to scaffold the planning and pacing of their own design experiment instructional sequence in the classroom with a focus on defining the problem, developing possible solutions, and improving designs.

Prerequisites:

Available to teachers who have **completed five or more years of Urban Advantage**, and are considered **alumni**, and have explored design experiments during a previous NYSCI PL course. These courses are intended for teachers who have been implementing UA tools in their classrooms, and are ready to take a deeper look at current research on teaching practices, learners' needs and goals in particular science content or practices.

Learning Goals for this course:

- Strengthen teachers' ability to teach middle school science content and/or practices in a way that is consistent with current research on teaching and learning by:
  a. Provide opportunities for teachers to examine engineering design standards, engineering practices, and research on how students approach design. *(NGSS, Enhanced NYC Science Scope & Sequence, Benchmarks for Science Literacy)*
  b. Using research on teaching and learning to develop effective teaching strategies and activities that integrate UA partner institutional resources.

c. Develop an understanding of how protocols can help to support students learning in science classrooms

PD Type:	Courses on Reflective Practice Category 400
Title:	Reflecting on embedding literacy strategies in science curriculum Course number 453AL
Location:	This course is entirely online.
Dates:	Activities associated with this course are comparable to a three-day course and enrolled teachers who complete the course in its entirety will be paid a stipend for three days of professional development (15 hours).
Online sessions:	Online tasks must be completed between January 3rd and February 1st, 2020
Time:	Deadlines for assignments will be communicated prior to start date.
Instructors:	Partner Staff: Jeanie Yeo (BZ) Lead Teachers: Christopher Joya & Christine Abraham

Course description:

The purpose of this course is to help teachers reflect on their use of literacy strategies learned in previous PD. Participants will briefly review the strategies and corresponding resources and select the strategy which they would like to have more practice embedding as part of a long-term science investigation. Next they will discuss plans for implementation and get support and feedback from their peers and UA staff. They will modify and implement a lesson of their choosing with a selected literacy strategy. Finally, they will share an artifact of student work to analyze with the group. As this course is entirely online, a minimum number of posts will be required to receive credit for completion, including the posting of a student work artifact.

Prerequisites:

Available to alumni only. Available to teachers who have **completed five or more years of Urban Advantage**, and are considered **alumni** and who: 1) have been implementing UA tools in their classroom for two or more years; 2) are ready to reflect on and refine their teaching practice by sharing a lesson plan and a sample of student work to be analyzed with UA colleagues; and 3) are prepared to think deeply and critically when reviewing the lesson plans and student work of their colleagues in order to provide meaningful feedback.

Learning goals for this course:

- Deepen teachers' ability to reflect on and improve their use of literacy strategies by analyzing lesson plans and student work to better support students in science.

- Deepen teachers' capacity to share with, collaborate and seek assistance from their Urban Advantage colleagues.