

Teacher Professional Development



Ignite Your Students' Interest in Science through Field Trips to the **BELLE ISLE AQUARIUM**

ALL 5th Grade Teachers in DPSCD are Invited to Participate: 4-Day Summer Teacher Institute, Class Field Trips, and Follow-up Activities

APPLICATION DEADLINE:

June 15, 2017

ALL 5th Grade teachers in DPSCD are encouraged to participate!

SIGN UP NOW

even if you can't participate in this summer's institute.

ON-LINE REGISTRATION:

www.BIAquariumSTEM.org



4-Day Summer Teacher Institute

You will be randomly selected to attend one 4-day Institute in 2017, 2018, or 2019, taking into account your availability.

This year, the institute will be held **8:30am-4pm, M-Th, July 17-20, 2017.**

Participating in a Summer Institute is required before bringing your class to the Belle Isle Aquarium.



National Science Foundation
WHERE DISCOVERIES BEGIN

For more information, contact:

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Subject line: BIA NSF Project

Sandra Yarema, co-Project Director
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Join a 3-year National Science Foundation program to achieve your Curriculum Goals and Excite Your Students' Interest in Science and STEM Careers. The program focuses on **Michigan 5th Grade Science & Social Studies Standards** and how the Belle Isle Aquarium can help you meet these through class field trips and place-based learning activities.

How Teacher Participants Will Benefit:

1. Participate in a 4-day Summer Teacher Institute on Belle Isle.
 - a. Participants will gain new knowledge and skills through lectures, hands-on activities, field trips, and lesson plan development.
 - b. The Institute will address Michigan 5th Grade Science & Soc. St. Standards.
 - c. Receive classroom supplies and activity guides for field trip follow-up.
 - d. Receive **\$500 for attending a summer institute**, and **up to \$900 total** in stipends for participation over 3 years.
 - e. Choose to earn **24 SCECHs OR 2 graduate credits** from Michigan Technological University at no additional cost, with completion of course requirements (preparation of lesson plans).
2. Bring your class on a field trip to Belle Isle Aquarium & work with Aquarium educators to engage students in scientific investigations, science career explorations, and other activities at the Aquarium.
3. Opportunity to apply for **\$500 grants** to develop student-led class projects

Program Requirements of Teacher Participants:

- Attend one 4-day Summer Institute on Belle Isle in 2017, 2018, or 2019. The NSF project will assign which year; however, we need you to sign up for the program NOW in 2017. You can indicate your preference for which year to attend the Institute.
- Bring one or more classes on a field trip to the Belle Isle Aquarium.
- Pending approval by the DPSCD Office of Research, Evaluation, Assessment and Accountability of this Summer Institute as part of a Wayne State University education research project, additional activities may be included after the Summer Institute to evaluate teachers' and students' STEM interest, knowledge, and behavior. You may choose not to participate in the research activities.



Michigan
Technological
University



sponsored by the Erb Family Foundation

Register on-line at **www.BIAquariumSTEM.org**

Register before June 15, 2017



This National Science Foundation Project includes funding for:

- ◇ Teacher Professional Development (4-day Summer Institute & 1-day Fall workshop)
- ◇ Class Field Trips to Belle Isle Aquarium (BIA)
- ◇ Place-based learning activities related to the Aquarium, grants for projects, Professional Learning Communities, and more.
- ◇ Research to determine changes in teachers and students relating to science and STEM career attitudes, behavior, and knowledge.

Register for the Summer Teacher Institutes at www.BIAquariumSTEM.org

4-Day Summer Institute at Belle Isle Aquarium

These 4-day Summer Institutes are designed to enhance knowledge, confidence and pedagogy skills of educators to teach about aquatic systems (e.g., the lakes, ponds, streams, & wetlands on Belle Isle and at the Belle Isle Aquarium) via field trips, hands-on data collection and analysis activities, and experiments. The Institute will incorporate pedagogy, designing hands-on activities, teaching in informal educational settings, lesson-writing, and natural resource careers. Math; life, Earth and physical sciences; technology; and social studies standards will be woven into the Institute, including discussions with scientists, aquarium managers, and educators from museums, zoos, government, business, aquaculture, and academia.

Teacher participants will:

- ◆ Investigate aquatic ecosystems; sample water chemistry, zoo- and phytoplankton, and benthic organisms;
- ◆ Sample invasive species & see impacts on biodiversity;
- ◆ Monitor organisms as environmental health indicators;
- ◆ Develop lesson plans that incorporate 5th grade Science and Social Studies Standards for classroom use that will be disseminated on <http://detroitaquarium.weebly.com>
- ◆ Work with expert teachers, scientists, and resource managers.
- ◆ Participate in Professional Learning Communities.

Grant Opportunities

Information about grants and other opportunities will be provided to all registered participants.

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Field Trips to the Belle Isle Aquarium

The Summer Teacher Institute is part of an integrated process that prepares you and your class to achieve the best educational impact from a class field trip to the Belle Isle Aquarium (BIA).

These Grade 5 field trips to the BIA are much more than a regular field trip; they are a classroom extension in a very unique setting. Your students will dive into the 5th grade Science Standard "Matter and Energy in Organisms and Ecosystems" both in our gallery and our ecosystems lab. The science practice of using models to understand relationships arises naturally when students design food webs utilizing our exhibit animals and explore the phenomena of energy transfer through matter in food webs. Students will get their hands wet and dirty, literally, as they meet scavengers, decomposers and invasive species.

In the ecosystems lab, students will work in teams to build a variety of food webs. This activity concludes with students presenting to their classmates how energy moves through their food webs and designing possible solutions to the detrimental effects of invasive species and human influences on their food web. The geography, history, and citizen involvement in the spread of invasive species will help your students progress with Social Science Standards.

As we wrap up, we remind them all the ways in which scientific tools, processes and ways of thinking were incorporated into our day. We conclude by personally introducing them to current STEM scientists here at the aquarium, plus others on the Island and around Detroit.

For more information about the Summer Institutes & Field Trips, contact:

Summer Institute Coordinator:

Joan Chadde, Michigan Technological Institute
jchadde@mtu.edu



Michigan Technological University

Belle Isle Aquarium

Field Trip Program Coordinator:

Amy Emmert, Belle Isle Conservancy
emmerta@belleisleconservancy.org



or visit our website at www.BIAquariumSTEM.org