

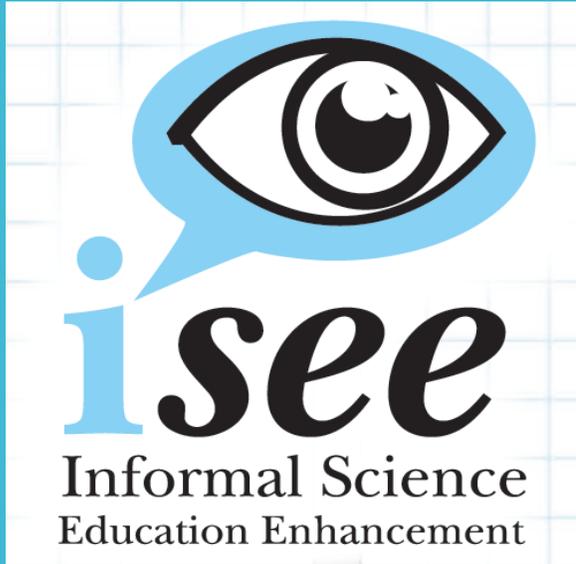


Sarah Young, STEM Liaison for USOE and STEM Action Center



Program Overview

- Informal Science Education Enhancement (iSEE) seeks to spark students' natural curiosity and wonder by providing exciting opportunities to experience science.
- iSEE Program Benefits:
 - Provide unique opportunities not typically available in the classrooms
 - Supports the Utah State Science Core Standards
 - Reach every elementary school within the state of Utah every year



Program Overview

- **iSEE Programs include the following services:**
 - Outreach Programs
 - iSEE organizations bring innovative and educational programs into schools, linking educators and scientists with classroom teachers and students. Assemblies and hands-on classroom experiences inspire students to learn about the wonders of science.
 - **Field Trip Programs**
 - iSEE organizations offer unique educational opportunities at each facility with live animals, museum specimens, interactive environments and multimedia programs.
 - **Teacher Professional Development**
 - iSEE organizations provide teacher workshops that include current science content, practical teaching techniques and materials.
 - **Teacher Resources**
 - iSEE organization provide critically needed activities, equipment and specimens for classroom use. These educational tools allow teachers to transform their classrooms into exciting learning laboratories.



Program Overview

- iSEE Institutional Requirements:
 - Must match the funding 1:1 toward educational iSEE services (*The average match last school year across all iSEE intuitions was 1:1.2 match*)
 - Must service all students in the targeted grade range once every three years across the state of Utah
 - Must align directly to the Utah Core Standards in Science for the specific targeted grade level
 - Have demonstrated a three-year track record for service and excellence in the provisional program before being approved by the Utah State Board of Education for statewide implementation.
 - Attend monthly meetings with USOE state coordinator
 - Provide annual reports to USOE and site visits as requested
 - Reapply for funds every four years



Clark
Planetarium



801-580-3398 | djohnson@slco.org | www.clarkplanetarium.org

Outreach Programs

- The AstroVan brings demonstrative multi-grade science assemblies to elementary schools. Topics include: Physical & Chemical Changes, Heat, Electricity, Magnetism and Sound.
- In-depth sessions covering 6th grade Core Curriculum Astronomy Standards I-IV. Topics include: Moon Phases, Seasons, Planets/Solar System and Distance/Scale

Field Trips

- Students journey through the Universe in immersive Digital Dome Theatre Programs.
- Exhibits encourage exploration of the solar system, galaxy and Universe.

Teacher Professional Development

- Regional teacher workshops explore astronomy-based Core Curriculum Standards for 3rd, 6th, and 9th grade teachers.

Teacher Resources

- Web-based resources enhance classroom teaching and provide pre-visit and post-visit activities, scavenger hunts, etc.
- Staff available to answer questions via email or phone.



discovery gateway

the children's museum of utah



801-456-5437 x137 | lfletcher@discoverygateway.org | www.discoverygateway.org

Outreach Programs

- Reaction Time is a hands-on kitchen chemistry program that provides engaging, interactive instruction for 5th grade students.
- Includes a 45-minute assembly presentation with the entire 5th grade, followed by a 30-minute hands-on lab, one class at a time. Topics : Matter, Physical Changes and Chemical Reactions.

Field Trips

- Students discover, explore and create with hundreds of interactive, hands-on exhibits appropriate for grades K-6th.
- Exhibits address various science Core Curriculum Standards.

Teacher Professional Development

- Chain Reaction, a three hour workshop for teachers, presents inquiry-based teaching and classroom management methods for hands-on science instruction. All participants receive curriculum materials and a resource kit. Topics include: Matter, Physical Changes and Chemical Reactions

Teacher Resources

- Teachers who participate in Reaction Time and Chain Reaction receive curriculum materials and science equipment for further hands-on classroom science exploration.



Discovery
Gateway



the Leonardo

JHT LEONARDO™



801-531-9800 | kperko@theleonardo.org | www.theleonardo.org

Outreach Programs

- The Leonardo on Wheels-Science includes 15 interactive science exhibits that tie directly to the Core Curriculum Standards for 7th through 9th grades. The exhibits and two members of The Leonardo on Wheels-Science staff stay at a school for three to five days depending on the size of the school's student body.
- Each science class at the school works with the exhibits twice during the week, once for a 45-minute Free Explore session and again for a 45-minute Guided Discovery session.
- Topics include: Electricity, Frequency and Amplitude, Light, Velocity, Energy Use, Microscopy and Anatomy.

Teacher Resources

- The Leonardo on Wheels-Science provides pre-visit and post-visit activities to all participating schools.
- Teachers are encouraged to visit The Leonardo website for lesson plans and activities.



Natural History Museum of Utah



**NATURAL HISTORY
MUSEUM OF UTAH**

Rio Tinto Center | The University of Utah



801-585-1832 | outreach@umnh.utah.edu | www.umnh.utah.edu/teach

Outreach Programs

- Museum on the Move brings hands-on, inquiry-based experiences into 4th grade classrooms.
- Teachers may choose from one of four programs: Rocks and Minerals, Utah Animals, Fossils, the Great Salt Lake.
- Scientist in the Classroom allows scientists to mentor students throughout the school year.

Field Trips

- Junior Science Academy offers engaging inquiry-based programs that use the Museum's learning labs and exhibits.
- Teachers may choose from one of four different programs: Geology, Biology, Anthropology and Traits
- Gallery guides based on the Core Curriculum Standards

Teacher Professional Development

- Digging Dinosaurs: Discovering Utah's Fossils provides training, one-of-a-kind specimens, lessons, and other resources.

Teacher Resources

- Teaching Toolboxes provide educators across the state with Museum specimens, activities and information.
- Ask the Scientist lets teachers and students interact with experts on a variety of topics.



Red Butte
Garden



801-587-9722 | outreach@redbutte.utah.edu | www.redbuttegarden.org

Outreach Programs

- The Grow Lab program is a statewide outreach program that offers a hands-on plant science project aligned with the Core Curriculum Standards for second-grade students.
- The Grow Lab program includes teacher training, seven lessons, and a classroom visit.
- This cost effective science lab is self contained with all materials and lessons, and is reusable by teachers every year.

Field Trips

- Students experience Utah's native landscapes and participate in hands-on activities during a two-hour field trip designed to meet standards and objectives of the Core Curriculum Standards at each grade level.

Teacher Professional Development

- Teacher Workshops are scheduled throughout the year at Red Butte Garden in Salt Lake City and all over the state.

Teacher Resources

- Teachers who participate in the Grow Lab program receive a grow lab light frame kit, planting materials and Brassica rapa seeds, seven lesson plans, materials for hands-on activities, and a classroom germination poster.



The Loveland Living Planet Aquarium



THE LIVING PLANET
AQUARIUM



801-495-4448 x209 | outreach@thelivingplanet.com | www.thelivingplanet.com

Outreach Programs

- Utah Waters Van utilizes working models and live animals to teach 4th grade students about water and wetlands. Topics: the Water Cycle, Water Use, Conservation, Utah's Wetlands.
- The Rainforest Van allows 2nd and 3rd grade students to interact with a variety of exotic animals including tarantulas, pythons, and parrots. Topics include: Biology, Weather, Animal Interactions, and Geography.

Field Trips

- Our naturalist onboard the Sunken Ship welcomes students in grades K-6 as they become naturalists for a day, helping to gather data lost during the shipwreck.
- Topics for each grade are based on Core Curriculum Standards.

Teacher Professional Development

- Teacher workshops are offered for teachers about Utah environments and include content, inquiry-based lessons, and materials for the classroom.

Teacher Resources

- Both our outreach programs and field trips provide pre- and post-visit activities and information for use in their classroom.



Hawkwatch
International



HAWKWATCH
INTERNATIONAL



801-484-6808 | nwayment@hawkwatch.org | www.hawkwatch.org

Outreach Programs

- Raptor Biology Through the Seasons: Fall Migration, Winter Survival, and Spring Nesting (Middle and High School)
- The program includes a hands-on data element, utilizing real HWI data gathered from Goshute Mountains raptor migration research site. Examples include comparing numerical and categorical data to evaluate correlation, relativity, variables.

Field Trips

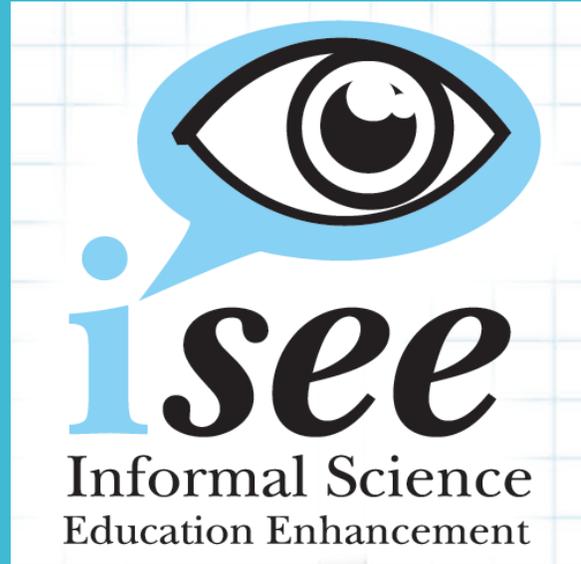
- Students cover topics such as predator-prey relationships, adaptations, conservation, and data collection. Topics are reinforced using didactic materials, including GIS maps, geolocators and geolocator data, satellite telemetry units and data, taxidermied specimens, skulls, bones, and feathers.

Teacher Professional Development

- HWI offers opportunities for middle and high school math and science teachers focusing on statistics in the new Utah Common Core, and an integration of math and science in the classroom.

Teacher Resources

- All participating teachers receive lesson plans and real data collected by HWI scientists.



Thanksgiving
Point



THANKSGIVING
POINT



801-768-7417 | jbrown@thanksgivingpoint.org | www.thanksgivingpoint.org

Outreach Programs:

- Tulips Journey North provides a hands on, inquiry based approach to 3rd grade science. Students take part in an international citizen scientist project tracking plant growth and seasonal change.
- Includes all materials to participate in the project, a fall planting visit, provided in-classroom winter activity, spring visit, and a field trip scholarship to Tulip Festival.

Field Trips:

- Students in grades K-6 can discover, wonder, and inquire at each venue: the Museum of Ancient Life, Farm Country, Estate Gardens, and the Museum of Natural Curiosity (Fall 2014).
- Topics for each grade are based on Core Curriculum Standards as well as Next Generation Science Standards and may be facilitated or self-guided.

Teacher Professional Development:

- Teacher workshops are offered periodically throughout the year on topics associated with our field trip and outreach offerings and include content, inquiry-based lessons.

Teacher Resources:

- Both our outreach programs and field trips provide pre- and post-visit activities and information for use in the classroom.
- In partnership with Utah State University Extension 4-H, we offer "kits for checkout" program to all educators.

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Provisional Program – Hogle Zoo

- Hogle Zoo joined the provisional program for iSEE in fall 2016.
- They are working on developing and scaling their programs around animal adaptations and Utah environments for Utah students in second grade.
- They utilize both on-site and virtual classroom engagement.
- They attend all iSEE meetings and work with the collective group to learn best practices in outreach, teacher professional development, and field trips.
- They will be eligible for full iSEE program approval for fall 2019.

iSEE Fiscal Allocations for FY 2016

Project	Outreach	RFP	Enhancement	New Facility	Facility Total
Coding	3942 PCA 015 94201	3941 PHB 015 94101	3943 PHC 015 94301	3944 PHD 015 94401	
Allocation	\$ 3,697,900	\$ 225,000	\$ 417,100	\$ 50,000	
Clark Planetarium	\$ 735,582		\$ 104,275		\$ 839,857
Discovery Gateway	\$ 173,943		\$ 104,275		\$ 278,218
Hawkwatch	\$ 100,000				\$ 100,000
Leonardo	\$ 474,940			\$ 25,000	\$ 499,940
Living Planet	\$ 570,665		\$ 104,275		\$ 674,940
Museum of Natural History	\$ 595,350		\$ 104,275	\$ 25,000	\$ 724,625
Red Butte	\$ 297,420				\$ 297,420
Thanksgiving Point	\$ 750,000				\$ 750,000
Hogle Zoo		\$ 225,000			\$ 225,000



Impacts of iSEE

2013/2014 Impacts

Outreach

291,409 Student Experiences
10,923 Teacher Experiences

Field Trips

292,804 Student Experiences
14,913 Teacher Experiences

Teacher Resources

55,938 Student Experiences
5,724 Teacher Experiences

Total Student Experiences **640,151**
Total Teacher Experiences **31,560**

Public Investment **\$2,600,240**
Private Match **\$3,612,335**

Projected 2015/2016 Impacts

Outreach

397,020 Student Experiences
14,235 Teacher Experiences

Field Trips

378,178 Student Experiences
17,421 Teacher Experiences

Teacher Resources

86,500 Student Experiences
7,079 Teacher Experiences

Total Student Experiences **861,698**
Total Teacher Experiences **38,735**

Public Investment **\$4,165,340**
Private Match **\$4,375,375**



Questions?

- iSEE Institutions provide a vital support for bringing science to the classroom for students across the state of Utah.
- They are partners and leaders to science and STEM personnel at the schools, LEA's, and the state office of education.
- For additional questions and data, you are welcome to contact me:

Sarah Young, STEM Liaison

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