

**Professional Development Seminars (PDS)**

are designed for staff, volunteers and other professionals from science, environmental, natural history, technology, art, history and other cultural institutions and centers in New England. PDS are designed as professional development opportunities to provide content and teaching resources for your staff as well as networking opportunities for professionals in informal education settings. Each PDS is a full day session. The mornings are spent exploring STEM content areas with scientists and policy makers. Afternoon sessions are skill-based, focusing on turning real-life science into exciting, inquiry-based, minds-on, hands-on lessons and activities for K-8 students and teachers based on state frameworks. All 3 sessions promise to provide an exciting, hands-on professional development opportunity for you and your staff.

For more information contact MITS:  
1354 Hancock St., Suite 302,  
Quincy, MA 02169  
617-328-1515

mits@mits.org

www.mits.org.

Registration is required. Please detach and return form below with check or purchase order payable to **MITS, Inc.**

**PDS Registration Form**  
(Please print)

\_\_\_\_\_  
Name

\_\_\_\_\_  
Organization

\_\_\_\_\_  
Address

\_\_\_\_\_  
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Address

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Phone

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Email

Please check the seminars you will attend:  Feb 28 \$25  Mar 27 **FULL - check here to be added to waiting list**

Total Amount Enclosed: \_\_\_\_\_

*Registration fee includes lunch*

*Inquiry, Science and You: How to Successfully Implement Science Practices into Your Teaching*

*Biomimicry: Natural Inspirations for Engineering Solutions*

*Exploring the Design Process Using Inquiry-Based Investigations*

*Engineering Crossroads: Engineering, Design and Science*

*Learning in Museums: Investigating How Visitors Learn in Informal Settings*



The Museum Institute for Teaching Science  
1354 Hancock Street, Suite 302  
Quincy, MA 02169

**MITS 2012**

**Professional Development Seminars**

**January 24, February 28  
March 27**

9:30 a.m. - 3:30 p.m.

**Explore! Investigate! Invent!  
Science and Engineering**



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Museum Institute for Teaching Science  
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Tuesday, January 24th

### Biomimicry: Natural Inspirations for Engineering Solutions

Anamarija Frankic, Assistant Professor, University of Massachusetts Boston and Fellow, Biomimicry Institute

What do termite mounds, kingfisher bills and gecko feet have in common? Participate with Professor Anamarija Frankic as she unfolds the cutting edge field of biomimicry. Biomimicry inquires of natural processes and structures to develop innovative and sustainable engineering solutions leading to the creation of new structures, materials and products. Natural systems and organisms provide stunning examples of effective communication, resource production and storage and energy efficient design. Animals, plants and microbes are consummate



engineers; they've found what works and can direct us to solutions for human-scale problems. Discover how to bring novel ideas about nature and engineering together and present them to your students and audiences.

### Inquiry, Science and You: How to Successfully Implement Science Practices Into Your Teaching

Charlene Tuttle, 4th Grade Teacher, Melrose Avenue School, Jamestown RI and Instructor, University of Rhode Island

Sharpen your inquiry skills with Charlene Tuttle as she facilitates an active and engaging workshop on inquiry design and implementation. During the session, you will experience inquiry as a learner, using a 3 phase model. We'll deconstruct your experience and analyze different components of inquiry. Discussions will include how you could use this model in your own instruction and apply these ideas to your own teaching situation. Please bring a lesson or idea that you'd like to implement using inquiry methods. We'll work together to mold elements of inquiry into your lesson or idea to cap off the workshop.

Tuesday, February 28th

### Engineering Crossroads: Engineering, Design and Science

David Kazmer, Assistant Dean of Engineering, University of Massachusetts Lowell

What's engineering? What do engineers do? What's the difference between an engineer conceptualizing and designing a product or project and a scientist developing and carrying out an experiment or research project? Join Professor David Kazmer as he explains the essentials of engineering in today's world and examines the ways engineers solve problems, create innovative materials, products and structures. Gain insight on how engineering differs from science as well as where science and engineering intersect. This is an opportunity to broaden your knowledge of these important topics and bring new insights to your students and visitors.



### Exploring the Design Process with Inquiry-Based Investigations

Dr. Rudolf Kraus, Assistant Professor, Coordinator for Science Education, Rhode Island College  
Dr. Charlie McLaughlin, Coordinator for Technology Education, Rhode Island College



How do you define and model inquiry investigations that teach the scientific process? How do you adapt the inquiry process to teach engineering design? Dr.

Rudolf Kraus and Dr. Charlie McLaughlin will discuss and demonstrate methods that can be used to teach both. Gain an understanding of the different definitions of inquiry and the challenges of using inquiry to teach scientific processes and engineering design. Dr. Kraus and Dr. McLaughlin will engage participants in a variety of hands-on activities which showcase a learning-through-doing approach and draw from their experience teaching in both formal and informal settings.

Tuesday, March 27th

### Learning in Museums: Investigating How Visitors Learn in Informal Settings

Joe E. Heimlich, Professor, Ohio State University, Specialist, Institute for Learning Innovation  
Jessica Stickler, Institute for Learning Innovation

In museums, we often talk about learning, but rarely do we really think about "learning" as much as we do about "teaching". This full day workshop takes a fascinating, fun look at the ways people learn in museums - and challenges us about being learning institutions. Without getting theoretical, the workshop reveals the myriad learning theories that underpin our work and challenge us to apply these grounded ideas into our practice in meaningful ways. This workshop is offered by MITS and provided by the Institute for Learning Innovation (ILI). ILI is a not-for-profit research institute that studies and evaluates learning in free-choice settings - and this workshop is provided by ILI for the purpose of enhancing museum education in the U.S. MITS is pleased to be one of the first outreach sites for Learning in Museums and cordially invites you to come, to bring others, and to explore the exciting world of understanding the complex, fascinating and wonderful world of learning in our settings.



**Location:** Clark University, Higgins University Center Worcester, MA

**Dates:** Tuesday, January 24th  
Tuesday, February 28th  
Tuesday, March 27th

**Time:** 9:30 a.m. - 3:30 p.m.

**Cost:** \$25 per seminar; \$60 if attending all three sessions.