

9:00 am - 5:00 pm

**Board of Directors Meeting**

Grand B

**Cyberlearning at Community Colleges (C3) Workshop**

Newport Beach/Rancho Las Palmas • Symposium • Instructional Strategies & Technologies • 2C

This invitation-only workshop is designed for community college biologists to learn about using and developing cyberlearning resources.

- Samuel Donovan, University of Pittsburgh, Pittsburgh, PA; Kristin Jenkins, NESCent, Durham, NC; Colleen McLinn, Cornell Lab of Ornithology, Ithaca, NY

11:30 am - 12:45 pm

**Rapid Immunology based ELISA**

Grand K • Exhibitor Demonstration • HS 2C 4C

Students will learn the ELISA (Enzyme Linked Immunosorbant Assay) "sandwich" effect by applying antigens, antibodies, and a substrate solution to microtiter wells. This simple and foolproof exercise can be completed in one class period and can be analyzed qualitatively by visual inspection or quantitatively with a microplate reader. This simple and foolproof exercise can be completed in 40 minutes and analyzed by visual inspection.

- Jack Chirikjian, Edvotek; Khuyen Mai, Edvotek

12:00 pm - 4:00 pm

**Workshop 17: Using 21st Century Skills to Enhance Your Biology Teaching**

Grand G • Special Workshops • Teacher Preparedness • Cost: \$55 • GA

Share, contemplate, and actively engage in this innovative workshop developed to

enhance classroom biology inquiry (MS - Under graduate) with the new 21st Century Skills for Science. Participants are asked to bring a laptop. Electronic "handouts" will be available and a social site will be created to extend workshop interaction and sharing.

- Teddie Phillipson-Mower, University of Louisville; Kerry Cheesman, Capital University, Columbus, OH; Tom Lord, Indiana University of Pennsylvania, Indiana, PA; Laurie Henry, University of Kentucky, Lexington, KY

12:00 pm - 5:00 pm

**Understanding K-12 Science Learning Progressions and Accessing Online Resources: The NSDL Science Literacy Maps**

Orange County 3 • Focus Group

Strand maps take all of the learning goals (from kindergarten through high school) on a particular topic and put them together on one page that shows how they relate to each other and build upon one another. They provide an easy way to envision how students' understanding can be expected to progress over the course of their education. Digital versions of the maps are available through the National Science Digital Library (NSDL), a national network of digital environments dedicated to fostering STEM education. With just a click or two, users of the Science Literacy Maps on nsdl.org can quickly move from one map to another, see summaries of research on student learning (including misconceptions), and find a list of relevant STEM resources in the NSDL digital collection.

- Francis Molina, AAAS

1:00 pm - 2:00 pm

**Workshop 13: Free Stem Cell Curriculum Can Cover Many Standards**

Gold Key 1&2 • Special Workshops • General Biology • Cost: Free • HS

**ABBREVIATION KEY**

- GA = General Audience
- E = Elementary
- JH = Middle School/Jr. High
- HS = High School
- 2C = Two-Year College
- 4C = Four-Year College

Free, internet accessible stem cell curriculum includes two modules for basic biology and three for AP biology. Each has robust sets of teacher and student resources and is tethered to the California state guidelines covering basics from fertility and development to homeostasis and immunology.

- Don Gibbons and Lonnie Simonson, California Institute for Regenerative Medicine, San Francisco, CA

1:00 pm - 2:30 pm

**Experimental Design and Technology Integration Across the AP® Biology Curriculum**

Grand A • Exhibitor Demonstration • Instructional strategies/technologies • HS GA

Work with A+ College Ready to learn how PASCO's AP® Biology solutions can help you create a classroom environment that facilitates authentic student inquiries across all levels of biological organization. This session will focus on a proven model for promoting experimental design and technology integration in the context of the current required AP® Biology labs and the recommended redesigned labs.

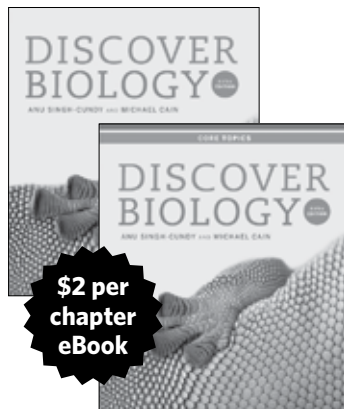
- Ryan Reardon, Pasco Scientific

1:00 pm - 4:00 pm

**Workshop 9: DNA Barcoding in Your Classroom**

Grand C • Special Workshops • Biotechnology & Evolution • Cost: \$25 • HS 2C 4C

# From Science to Scientific Literacy



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(with physiology chapters)

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**Discover Biology was written with one goal in mind, to show students why biology matters to their lives.**

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## Discovering Biology in the Lab

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**Discovering Biology in the Lab cultivates the critical-thinking skills of non-science majors by constantly asking them to consider:**

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1:00 pm - 4:00 pm

continued

DNA barcoding is a technique that uses DNA sequences to identify organisms. The procedure is simple and very straightforward and engages students in their own learning - about molecular biology, evolution and the environment they live in. Workshop participants will learn everything they need to know to guide their students in DNA barcoding projects, including extracting DNA from organic materials, amplifying DNA that will provide the "barcode," analyze amplified DNA via gel electrophoresis, submit the DNA to a commercial sequencing facility and, finally, analyze DNA barcodes using the DNALC's bioinformatics platform DNA Subway. Participants are encouraged to bring their own samples (such as leaves, muscle tissue, food, etc.) and/or use samples provided.

– Uwe Hilgert, Jason Williams, Jermel Watkins, & Bruce Nash, Dolan DNA Learning Center, Cold Spring Harbor, NY

**Workshop 16: Teaching Evolution: Successful Strategies for Challenges in the Classroom**

Grand D • Special Workshops • Evolution • Cost: \$45 • JH HS

Evolution, stem-cell theory, climate change – these are the focus of recent state resolutions and bills designed to undermine science education. Are these topics really scientifically controversial? How can teachers address these "controversial topics" within the framework of science and modern biology? We provide hands-on activities and role-play opportunities designed to address the nature of science and evolution, and provide additional resources from and the BEACON Center for the Study of Evolution in Action, SETI Institute The National Center for Science Education, The National Academy of Sciences, and UCMP.

– Louise Mead, BEACON Center for Study of Evolution in Action, East Lansing, MI, and Pamela Harman, SETI Institute, Mountain View, CA

1:00 pm - 5:00 pm

**Workshop 1: Wolf to Woof: A Non-confrontational Strategy for Teaching Evolution**

Orange County 1 • Special Workshops • Cost: \$70 • HS

Looking for an alternative to teaching evolution as a war against creationism? Learn how to use dogs as your teaching focus for this important subject.

– Susan Crockford, University of Victoria, BC, Canada

**Aquarium of the Pacific**

Field Trip • Cost: \$40  
 Visit the Long Beach Aquarium of the Pacific, one of the premier public aquariums in the Western United States. Go behind the scenes with aquarium staff for a sneak peak into the daily operations of AOP. Learn what it takes to maintain a world-class aquarium, from water filtration to animal care and feeding. Specializing in marine life of the Pacific Ocean, AOP is home to over 12,000 animals (550+ species).

**Outreach Coordinator & Informal Educator (OCIE) Symposium**

Grand H • Symposium • E HS

Join other "teachers without classrooms" for this networking and professional development workshop! Entitled "Marketing 101 for OCIE Members: How to put your best foot forward following these expert strategies," this symposium will help your program stand out!! Hear about advertising, marketing, and recruiting strategies from an expert museum and exhibit designer, Ben Dickow, the Creative Director and Content Developer from Lexington Design/Fabrication.

1:30 pm - 5:30 pm

**Wildlife & Beach Tide Pool Ecotour and Seal & Sea Lion Rescue Center – Laguna Beach and the California Riviera**

Field Trip • Cost: \$85

Explore the sea animals in the tide pools of famous Laguna Beach, and then visit the Pacific Marine Mammal Center for an exclusive tour of this seal and sea lion rescue center. Learn more about what's needed to save a seal's life and the rehabilitation process. Lastly, visit a wildlife

viewing cove overlooking the California Riviera. A photo of a seal or sea lion and conservation/environmental tip guide on making a difference are all included.

2:00 pm - 3:15 pm

**Achieving Conceptual Understanding: Strategies for Teaching AP Biology in a New Framework**

Grand J • Exhibitor Demonstration • HS

A concept-based approach need not neglect depth of topic coverage. BIOZONE's authors describe innovative approaches to teaching the four big ideas in AP Biology. A thematic, interdisciplinary approach utilizing contextual examples and case studies encourages understanding of core content and develops the inquiry based skills demanded of today's science students.

**Using Aplia for Biology: Developing Critical Thinkers for the Dynamic Science**

Orange County 2 • Exhibitor Demonstration

Improve outcomes and increase student engagement with Aplia for Biology. See how our online learning solution fosters student comprehension (not memorization) of life science concepts via focused assignments and interactive problem sets. Diverse, automatically graded questions feature multimedia resources and detailed student feedback.

– Tom Ziolkowski, Cengage Learning

2:00 pm - 3:45 pm

**Workshop 7: Teaching Nature of Science through Case Studies**

Gold Key 1&2 • Special Workshops • Instructional Strategies • Cost: \$55 • HS 4C

Experience a sample class that develops nature of science skills through an inquiry-styled case study. Afterwards, we'll detail the practical skills and teaching strategy for leading fruitful reflection and open-ended investigative discussions. Resource CD with over a dozen case studies included. Bring your thinking cap, skepticism and wonder.

– Douglas Allchin, Univ. of Minnesota, St. Paul, MN

2:00 pm - 4:00 pm

**Come and Learn How to Fingerprint Your Own DNA/Affordable Classroom PCR that works**

Grand K • Exhibitor Demonstration • HS 2C 4C

Participants will learn fundamentals of how to prepare their own DNA for fingerprinting, and how these procedures can be integrated into classroom experiments utilizing affordable Polymerase Chain Reaction (PCR) and electrophoresis. Teachers will prepare a PCR sample, separate amplified DNA by gel electrophoresis stain with InstaStain™, a safe, non-liquid method that reduces time and mess. Non-DNA based identification methods that are adaptable for classroom experiments will also be discussed.

– Jack Chirikjian, Edvotek; Khuyen Mai, Edvotek

2:45 pm - 4:00 pm

**Using Data Collection Technology to Achieve Authentic Inquiry Experiences in AP® Biology Lab 5, Cell Respiration**

Grand A • Exhibitor Demonstration • Instructional strategies/technologies • HS GA

Learn how PASCO's AP® Biology solutions can help you create a classroom environment that facilitates authentic student inquiries, and also save you time and money. This session will focus on promoting experimental design and technology integration in the context of the current required AP® Biology cell respiration lab and the recommended redesigned labs.

– Mark Little, Broomfield High School, Pasco Scientific

**NABT Meet-N-Greet**

Marriott Bar - Degrees

Join us at Degrees to kick back and kick off the 2011 NABT Conference. Greet old friends and meet new ones at this informal gathering. Talk with the movers & shakers of NABT and learn how to become one yourself. This is the perfect way to start having a great time as soon as you arrive in Anaheim.

6:00 pm - 8:00 pm

**HHMI Night at the Movies with Sean Carroll**

Marquis Ballroom North

You are invited to HHMI's Night at the Movies with Sean Carroll, featuring the premiere of *The Making of the Fittest*, a series of short films created to help your students get a firm grasp on core evolutionary concepts like natural selection, and to expose them to cutting-edge research on topics like how new genes evolve while other genes just fade away.

4:00 pm - 6:00 pm

**Four-Year Section Executive Committee Meeting**

Grand J

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