

2011 NABT ANNUAL UNDERGRADUATE FACULTY PROFESSIONAL DEVELOPMENT SUMMIT

International Programs: Biology Around the World

Friday, October 14 • 9:30 am - 3:30 pm • Orange County 1

Instructional Strategies & Technologies • 2C, 4C

Faculty Development Members:

Jacqueline McLaughlin and Kim Cleary Sadler (co-chairs)
 TJ Bliss
 Beverly Glover
 Tom Lord
 Kerry Cheesman
 Robert Loeb
 Anneke Metz

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Moderator: Jacqueline S. McLaughlin, Pennsylvania State University - Lehigh Valley, Center Valley, PA

SCHEDULE	
9:30 am - 10:00 am	Kerry L. Cheesman and Alan C. Stam, Capital University, Columbus, OH Value-Added International Biology Programs: Adding Research, Presentation, and Service Components to Undergraduate Field Courses Abroad
10:00 am - 10:30 am	Kim Cleary Sadler, Middle Tennessee State University, Murfreesboro, TN and Thomas Lord, Indiana University of Pennsylvania, Indiana, Pennsylvania Two Perspectives on Biology Abroad: Hosting an International Biology Faculty Member and Being Hosted as a Biology Faculty Member at an International School
10:30 am - 11:00 am	John R. Jungck, Beloit College, Beloit, WI International Union of Biological Sciences Commission for Biology Education
11:00 am - 11:30 am	Beth Ann Krueger, Central Arizona College - Aravaipa Campus, Aravaipa, AZ Adventures in Research Paper Writing: 6000+ Miles from Home
11:30 am - 1:00 pm	Lunch
1:00 pm - 1:30 pm	George Karleskint, Jr. and Jody Martin de Camilo, St. Louis Community College at Meramec, St. Louis, MO Developing an International Experience for a Field Biology Course
1:30 pm - 2:00 pm	Jacqueline S. McLaughlin, Pennsylvania State University - Lehigh Valley, Center Valley, PA Organizing your "Embedded" International Field Course On-line
2:00 pm - 2:30 pm	John M. Moore, Taylor University, Upland, IN and Gustavo Chacón, Universidad del Azuay, Cuenca, Ecuador Establishing Academic Partnerships for Semester Abroad Programs
2:30 pm - 3:00 pm	Professional Development Summit Meet and Mingle – Sponsored by Holbrook Travel. Enjoy afternoon refreshments with colleagues to discuss collaborations and plans for courses, fieldwork, and other student experiences abroad!
3:00 pm - 3:30 pm	James J. Krupa, University of Kentucky, Lexington, KY Four-Year College & University Section Biology Teaching Award Winner Scientific Method, Evolution, and the Ivory-billed Woodpecker

Join us for the 2011 AIBS/NESCent Symposium on Human Evolution Changing Humans in a Changing Environment



Hear directly from the researchers who are adding to our growing understanding of human origins and learn how the dynamic interplay between the environment and our evolving species drives change. The 8th annual Evolution Symposium and Workshop organized and sponsored by the American Institute of Biological Sciences and National Evolutionary Synthesis Center.



SYMPOSIUM: Friday, October 14, 1:30-5:30 pm Platinum Ballrooms 1 & 2 at the Anaheim Marriott

1:30 pm Introduction – James P. Collins, AIBS President, Arizona State University, AZ

1:45 pm Rick Potts, Human Origins Program, Smithsonian Institution, Washington DC

The challenges of becoming human: Evolution in an era of dramatic climate change

How have humans today become one of the most adaptable species on Earth? In this talk, Dr. Potts will illustrate the evidence of extinctions and the emergence of adaptations over the past 6 million years of human evolution, one of the most dramatic eras of environmental change in Earth's history.

2:30 pm Jill Pruetz, Department of Anthropology, Iowa State University, IA

What can chimpanzees tell us about human evolution?

Studying chimpanzees living in a savanna environment in Senegal allows Dr. Pruetz to assess what is most limiting to apes in this harsh environment, similar to the habitat of the earliest bipedal apes. Comparing the behavior of savanna chimpanzees to those that live in forests allows her to pose hypotheses regarding what may have influenced the behavior and ecology of our earliest relatives.

3:30 pm Susan Antón, Department of Anthropology, New York University, NY

*Becoming human in a changing world: the early evolution of *Homo*.*

The fossil discoveries of the last decade have radically altered our view of the early evolution of our genus. Dr. Antón's research has led to an understanding of the connection between the changing world of the Pleistocene, dietary resources, and small changes in teeth and jaws that increased survival rate, shaping the origin and early evolution of *Homo*.

4:15 pm John Hawks, Department of Anthropology, University of Wisconsin-Madison, WI

New discoveries from ancient genomes

The DNA from Neandertals and other ancient people is yielding a new understanding of their biology and relationship to living humans. Many of us carry genes from these people. Dr. Hawks and other scientists are beginning to find out which ones, and what they may do.

5:00 pm Closing Remarks – Brian Wiegmann, Assoc. Dir. of Education & Outreach, NESCent, Durham, NC

WORKSHOP: Saturday, October 15, 9:30-11:30 am Orange County 1 Ballroom at the Anaheim Marriott

Interested in receiving teaching materials and learning about strategies to teach human evolution in your classroom? Join us to engage in hands-on activities, explore the teaching resources that accompany the symposium content, and learn about the Smithsonian Institution's Human Origins Program educator resources.

Image: Luna04

**7:00 am - 8:00 am****Two-Year Section Breakfast**
Newport Beach/Rancho Las Palmas
• Cost: \$35.00

Join the members of the Two-Year College Section for breakfast and a discussion of the Section's activities for 2011. The business meeting will occur immediately following the breakfast and all two-year and community college educators are welcome to attend.

Four-Year College & University Section Breakfast
Grand E • Cost: \$25.00

Get to know the Four-Year College & University Section over breakfast. The breakfast will include a Section Business Meeting and a special presentation of the Four-Year College & University Biology Research in Teaching and Four-Year College & University Biology Teaching Awards. The winners of the Student Research Award and Student Travel Award will also be announced.

9:30 am - 10:00 am**International Programs: Biology Around the World- Value-Added International Biology Programs: Adding Research, Presentation, and Service Components to Undergraduate Field Courses Abroad**
Orange County 1 • Undergraduate Faculty Professional Development Summit • 2C 4C

We have added a variety of components to our Field Biology courses that increase value and increase learning opportunities for students, including student-generated research projects.

- Kerry Cheesman, Capital University, Columbus, OH; Alan Stam, Capital University, Columbus, OH

Introductory Biology: It's Just Not Sexy Enough!
Grand C • Paper • General Biology • 4C GA

Over 2500 students have taken "The Evolution and Biology of Sex" an

ABBREVIATION KEY

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

introductory biology course "with lab" designed for non-majors at the University of Minnesota discuss the lab and lecture syllabus, address student performance and perception data collected over the past three years, and emphasize successful elements of the curriculum that are applicable to any introductory biology course.

- Sehoya Cotner, University of Minnesota-Twin Cities, Minneapolis, MN

Introducing Translational Research through Role Play

Platinum 9 • Paper • Bioethics • HS GA

Using a case study involving Pompe disease, students assume the role of multiple stakeholders and decide the fate of a gene therapy treatment under review.

- Julie Bokor & Houda Darwiche, University of Florida, Gainesville, FL

Using Case Studies to Teach Evolution

Grand K • Paper • Evolution • 4C GA

Students often have alternate conceptions about evolution that are difficult to overturn with traditional pedagogies. Case studies help students recognize these alternate conceptions. Examples provided.

- Kathy Gallucci, Elon University, Elon, NC

Student Centered Methods for Learning Body Systems

Elite 1 • Demonstration • Physiology • HS JH

This presentation will demonstrate student centered methods of facilitating the learning of the basic anatomy and physiology of the reproductive, circulatory and digestive systems.

- Christina Palfy, Brandi Argentar & Abbie Lueken, Adlai E. Stevenson High School, Lincolnshire, IL

General Session
8:15 am - 9:15 am

Platinum 5 & 6

Kellar Autumn, Ph.D.

Professor and Chair of Biology, Lewis and Clark College, Portland, OR

How geckos stick and why we care

Geckos can run up smooth vertical surfaces. These lizards have millions of microscopic hairs on their toes, each with hundreds of nanoscale split ends. Until recently, no one knew how these hairs function as a reversible adhesive. By measuring the tiny forces involved, Prof. Kellar Autumn and his team cracked the secret of gecko adhesion and showed that the foot hairs stick by physics, not chemistry. This discovery led to the development of the world's first adhesive that is dry, self-cleaning, reversible, and can even work in the vacuum of outer space. Designs based on gecko feet are being used to create robots that can run up walls, and this adhesive could bring changes to the manufacture of everything from home electronics to car brakes.

Kellar Autumn's research focus lies at the interface of biology (biomechanics), engineering (contact mechanics and materials science), and physics (intermolecular and interfacial forces). In his lab he and his students study the mechanisms and evolution of animal locomotion and develop biologically inspired materials and machines. Kellar has received worldwide acclaim for his research on adhesion in geckos and the discovery of the world's first dry self-cleaning adhesive, and his work has appeared in hundreds of newspaper, magazine, and internet articles worldwide, as well as textbooks, encyclopedias and television features.



9:30 am - 10:00 am

continued

Dynamic Strategies for Student Engagement in the Community College Classroom and Laboratory

Elite 2 • Paper • Instructional Strategies/Technologies • 2C 4C

Emphasize student engagement and retention with dynamic teaching methods and schedules that meet the demands of students seeking alternative learning environments.

- Elizabeth (Betsy) Ashcraft & Larissa C. Clark, Arkansas State University-Newport, Newport, AR

9:30 am - 10:45 am

The Making of the Fittest: HHMI's Night at the Movies in Your Classroom

Platinum 1&2 • Demonstration • Evolution • HS 2C 4C

Everyone attending the star-studded red carpet release of HHMI's new movies is now a part of history. Continue to make history by becoming one of the first ever to receive the brand new, classroom-ready resources designed to help you connect these films to your existing curriculum. Teacher-developed lessons, tips and activities addressing concepts such as natural selection, ecological genetics, and the evolution of genes, will be demonstrated and distributed.

- Ann Brokaw & Mary Colvard, Howard Hughes Medical Institute, Chevy Chase, MD

AUTOPSY: Forensic Dissection Featuring Carolina's Perfect Solution® Pigs

Grand A • Exhibitor Demonstration • General Biology • HS 2C

Are you ready for a forensic dissection activity that is on the cutting edge? Engage students and revitalize your instruction of mammalian structure and function with a "real" classroom autopsy! Participants, working in pairs, dissect a Carolina's Perfect Solution® pig by modeling the autopsy protocols of a forensic pathologist.

- Carolina Teaching Partner, Carolina Biological Supply Company

Biotechnology and Spectroscopy with Vernier

Platinum 3 • Exhibitor Demonstration • Biotechnology • HS 4C

In this hands-on workshop, you will learn how easy it is to integrate Vernier tech-

nology into the cellular and molecular biology components of your curriculum. Experiments from our Advanced Biology with Vernier lab book will be performed using SpectroVis Plus spectrophotometer/fluorometer and our Digital Bioimaging Systems. You will also learn how easy it is to analyze gels using our award-winning Logger Pro software.

- Mike Collins & John Melville, Vernier Software & Technology

Getting Ready for the Changes in AP Biology

Platinum 4 • Hands-On Workshop • Teacher Prep/Professional Development • GA HS

Bring your current AP Biology textbook and other instructional materials to this session to learn how to identify (or create) a story line for your course. We'll also identify opportunities to improve the instruction and assessment opportunities for better alignment with the new framework.

- April Gardner, BSCS, Colorado Springs, CO

Let's Get Things Rolling! Forming and Maintaining NABT State Affiliates!

Grand J • Symposium • GA

If you have a state NABT affiliate, please come and share - so we all can learn from your experiences. Those interested in forming affiliates - come and learn and prepare for action.

- Aleta Sullivan, Pearl River Community College, Raleigh, MS

The Power of Partnership: Lessons from Partnering Research Scientists and Secondary Science Teachers

Platinum 7 • Paper • Curriculum Development/Supervision • JH HS

Learn about the benefits of and experience lessons from partnering scientists with secondary science teachers to co-teach science lessons for middle and high school students.

- Andrew Grillo-Hill, Ben Koo & Jennifer Chu Kaelin, University of California, San Francisco, San Francisco, CA

Are Your Students Ready for the International Carbon Footprint Challenge?

Elite 3 • Hands-on Workshop • General Biology

Students use this student-centered *Carbon Footprint Calculator* developed to measure the impact of their transportation, home energy,

food, and personal purchase choices to calculate their own carbon footprint. Teachers can then share class data with classes around the globe and use a new communications tool, the *Einstein Knowledge Exchange*, to engage students in international conversations about carbon footprints and possible solutions to environmental problems. Scientists and educators who developed the International Student Carbon Footprint Challenge and those who created the *Einstein Knowledge Exchange* will show you how your classes can participate in this international program.

- Pam Miller, Jason Hodin, & David Epel, Hopkins Marine Station, Stanford University

Neurobiology and Drug Addiction

Grand F • Hands-on Workshop • General Biology • HS 2C

How do drugs of abuse affect brain function? Use models and simulated lab tests to illustrate the affects of drugs on synaptic transmission. Information provided on lab kit assembly and related activities.

- Dina Markowitz, University of Rochester, Rochester, NY

Student's Perceptions about Learning Science - A Case Study in Transforming Introductory Non-majors' Biology to Problem Based Learning (PBL)

Orange County 2 • Paper • General Biology • HS 4C

The seminar will present the results of a 4-year National Science Foundation sponsored project to infuse Problem Based Learning (PBL) and student-directed scientific inquiry into college non-science majors' general biology.

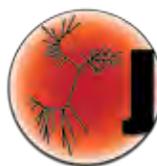
- John Peters, College of Charleston, Dept. of Biology, Charleston, SC

Realistic Science PD Reform in Title 1 Schools

Platinum 8 • Paper • Teacher Prep/Professional Development • HS GA

NCLB established science competency exams in American high schools. Are we ready? What approaches to professional development will help failing school districts succeed?

- Rebecca McLelland-Crawley, Perth Amboy High School/BTANJ, Piscataway, NJ



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Reviews

Reviews of books, journal articles, web, and teaching resources.

Abstracts

Abstracts presented at the 18th Annual ASM Conference for Undergraduate Educators (ASMCUE).

Upcoming Deadlines

Manuscripts are reviewed and accepted on a rolling basis. However, to be considered for each volume, the submission deadlines are:

**Deadline: December 1 for Volume 13, Issue 1
(published in May)**

**Deadline: July 1 for Volume 13, Issue 2 (published in
December)**

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A man in a brown fedora, sunglasses, and a light-colored trench coat stands on a train platform. He is looking down. The platform has a decorative metal railing. In the background, a train is visible on the tracks.

The French Connection

Body parts are piling up, and Ward's Natural Science needs your help.

Find **NABT President-Elect Don French**, and do it quickly. We've received a tip that he'll be at the Professional Development Conference in Anaheim. Only French can get to the bottom of this before the case goes cold. When you find him, he'll give you the clues you need to bust this thing wide open.

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9:30 am - 10:45 am

continued

Automated Methods to Extract Quantitative Data from Microscopic Images Using ImageJ

Grand D • Demonstration • Molecular & Cell Biology • 4C HS

ImageJ is an image analysis software available at NIH website. Participants will learn to process and analyze microscopic images using ImageJ and implement the lab activity in their classrooms.

- Sandhya Baviskar, Department of Biological Sciences, University of Arkansas, Fort Smith, AR

Shedding Some Light on DNA and Genetics

Grand G • Demonstration • Genetics • JH HS

DNA, DNA Replication and Protein Synthesis are just some topics that students struggle to learn. This session provides hands-on activities proven to engage learners at every level by using strands of holiday lights to simulate the Central Dogma of science.

- Valerie Smallbeck & Mike Bichler, Bismarck High School, Bismarck, ND

9:30 am - 12:00 pm

Protein Expression and Purification Series

Orange County 4 • Exhibitor Demonstration • Biotechnology • 2C 4C

From biomanufacturing industrial enzymes to cancer therapy – protein purification is essential! Make teaching the core process of protein expression and purification easy. Based on affinity purification, this new hands-on series provides an adaptable set of techniques and content to match the goals of the beginning protein educator up to an advanced college level course.

- Julie Mathern, Bio-Rad Laboratories

9:30 am - 4:30 pm

Exhibit Hall Open

Marquis Ballroom

10:00 am - 10:30 am

Incorporating Undergraduate Research in an Upper-Level Biology Course

Grand K • Paper • Molecular & Cell Biology • 4C 2C

An inquiry experiment provides an opportunity for students to engage in scientific research methods that mimic a graduate school experience. Using the soil nematode *Caenorhabditis elegans*, students proposed, conducted and presented a self-designed research project they completed in an upper-level Biology course.

- Melinda Pomeroy-Black, Nickie Cauthen & Sara Beth Mallory, LaGrange College, LaGrange, GA

Student-Created Video Content Breathes New Life Into Zoology

Elite 1 • Paper • Zoology • 4C GA

In Spring 2011, 105 students in General Zoology at the University of Minnesota participated in a new project – small-group production of five-minute video podcasts (or vodcasts). Our presentation will share sample vodcasts, discuss project assessment, and offer suggestions on how this activity could be incorporated into other classes.

- Joseph Kleinschmidt & Sehoja Cotner, University of Minnesota-Twin Cities, Minneapolis, MN

Teaching Through Diversity

Elite 2 • Paper • Instructional Strategies/Technologies • 2C HS

In this presentation I will describe the strategies I have developed in teaching through diversity in an introductory biology course at a community college.

- Jianyu Zheng & Cynthia Donaldson, Naugatuck Valley Community College, Waterbury, CT

Universal Science Literacy: The Benefit and Appeal of Biology Electives to Non-Science Majors

Grand C • Paper • Curriculum Development/Supervision • GA

A survey of students' assessment of their experiences in 2 non-science major courses at a community college indicated that students developed a positive

attitude towards science, while improving their scientific literacy.

- Carla Beeber & Carol A. Biermann, Kingsborough Community College/CUNY, Brooklyn NY

What is Buzzing in our Backyard?

Platinum 9 • Demonstration • Human Health & Public Issues • HS GA

Emerging pathogens are terrific interdisciplinary topics. This session highlights a high-school curriculum unit on Dengue fever, developed and classroom-tested by Florida teachers.

- Julie Bokor, University of Florida, Gainesville, FL

International Programs: Biology Around the World—Two Perspectives on Biology Abroad: Hosting an International Biology Faculty Member and Being Hosted as a Biology Faculty Member at an International School

Orange County 1 • Undergraduate Faculty Professional Development Summit • 2C 4C

The challenges and excitement of experiencing a different culture are shared as two professors offer their perspectives on study abroad.

- Kim Cleary Sadler, Middle Tennessee State University, Murfreesboro, TN; Thomas Lord, Indiana University of Pennsylvania, Indiana, PA

10:30 am - 11:00 am

International Programs: Biology Around the World- International Union of Biological Sciences Commission for Biology Education

Orange County 1 • Undergraduate Faculty Professional Development Summit • 2C 4C

The International Union of Biological Sciences (IUBS) Commission for Biology Education formulates, initiates, and facilitates effective methods of improving education in the biological sciences (<http://iubsbcbe.org/>).

- John Jungck, President, International Union of Biological Sciences Commission for Biology Education, Beloit College, Beloit, WI

10:45 am - 11:15 am

Please join us in the Exhibit Hall (Marquis Ballroom) for a coffee break.

11:00 am - 11:30 am

International Programs: Biology Around the World - Adventures in Research Paper Writing: 6000+ miles from home

Orange County 1 • Undergraduate Faculty Professional Development Summit • 2C 4C

Assignment: Teach 50 students in two separate international classes to write a research paper in 8 weeks. Sound easy? Please join us to discover how.

- Beth Ann Krueger, Central Arizona College-Aravaipa Campus, Aravaipa, AZ

11:15 am - 11:45 am

Writing for *The American Biology Teacher*

Elite 1 • Demonstration • Teacher Prep/ Professional Development • GA

Learn techniques for writing a successful article for *The American Biology Teacher*. Included are author guidelines, sample articles and an opportunity to ask questions.

- Bill Leonard, NABT, Clemson, SC

Quick Tips for Running a Smooth Biology Class

Elite 2 • Demonstration • General Biology • HS 2C

Three biology teachers with over 65 collective years of experience will share tested techniques you'll be able to bring back to your classes.

- Jennifer Albanese, Jennifer Romano & David Szaroleta, Salesianum, Wilmington, DE

Time to Translate: Deciphering the Codon in the Classroom

Grand C • Paper • General Biology • 4C HS

A fun and simple role-playing exercise that allows the students to actively work through the process of translation is described and evaluated.

- Fardad Firooznia, City College of New York, New York, NY

The Domesticated Gene: How Human Morality Evolved

Grand K • Paper • General Biology • GA

E.O. Wilson now rejects kin selection and the 'selfish gene' has yielded to higher levels of organization – this updates you on the evolutionary origin of moral behavior; free CD.

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

STEMware: The Zombie Plague

Platinum 9 • Demonstration • Biotechnology • GA

Immerse yourself in a virtual world! Discover the microorganism causing a deadly zombie outbreak. Implement a cure, save the town, and learn important modern biology concepts.

- Barbara Soots, University of California Davis, Davis, CA

11:15 am - 12:30 pm

Exploring Gene Function in *C. elegans*: Mutations and RNA Interference

Grand A • Exhibitor Demonstration • Biotechnology • HS 4C

The roundworm *C. elegans* lets students explore gene function. Come to this hands-on workshop and discover the exciting things you can do in the classroom with this model organism. Learn how to grow the worms, explore mutant phenotypes, and easily turn off specific genes with RNA interference.

- DNA Learning Center

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

Grand B • Exhibitor Demonstration • General Biology • HS 2C 4C

Improve outcomes and increase student engagement with Aplia for Biology. See how our online learning solution fosters

Invited Speaker
11:15 am - 12:30 pm

Grand F

Patricia E. Molina, M.D., Ph.D.

Chair of NHSN, Chair Department of Physiology, Louisiana State University Health Sciences Center, New Orleans, LA



Alcohol, Drugs of Abuse and HIV/AIDS: More than just risk factors

This presentation will focus on the new understanding of how alcohol and drugs of abuse can impact the course of HIV disease progression. The presentation will discuss an overview of where alcohol and drugs of abuse interact with the host and the ability to control the infection. The biomedical consequences of infection in an alcohol or drug abusing population will also be highlighted. In addition, the presentation will discuss experimental approaches that have been used to inform researchers on mechanisms of altered disease progression.

Patricia Molina is currently the Richard Ashman PhD Professor and Head of the Department of Physiology at Louisiana State University. Dr. Molina is the chair of the National Hispanic Science Network. She has published over 90 journal articles and chapters in the areas of alcohol consumption, the role of the nervous system in response to stress, and the role of the neuroendocrine system in modulation of pro-inflammatory responses to traumatic injury.

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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

Inquiry-based Biology with Vernier

Platinum 3 • Exhibitor Demonstration • General Biology • HS

Do you need to add inquiry experiments to your biology curriculum? In this hands-on workshop, you will conduct an investigation in true inquiry style using our intuitive and innovative products, including Logger Pro software, LabQuest, or LabQuest Mini.

– Mike Collins & John Melville, Vernier Software & Technology

Turbo Strand

The Science of Climate Change and Your Biology Class

Platinum 4 • Hands-On Workshop • Environment/Ecology • HS GA

We have added a variety of components to our Field Biology courses that increase value and increase learning opportunities for students, including student-generated research projects.

– Paul Beardsley, BSCS, Colorado Springs, CO

Teaching Immunology, Viruses, and Disease with Free Resources from HHMI

Platinum 1&2 • Hands-On Workshop • HS 2C 4C

Participants will receive curriculum ideas utilizing Holiday Lectures on Science DVDs and BioInteractive website resources to enhance classroom instruction of Immunology, Viruses, HIV/AIDS, and other Infectious Diseases. Resources will be presented so a new teacher can implement a new unit or an experienced teacher can enhance existing lessons and classroom activities. In addition, correlations with the new AP Biology Curriculum will be provided. FREE DVDs, teacher-generated curriculum guides, and classroom-ready activities will be distributed.

– Ann Brokaw, Howard Hughes Medical Institute, Chevy Chase, MD

A 3-week unit of Biotech for Any Biology Class

Platinum 7 • Hands-on Workshop • General Biology • HS 2C

It's the age of biotechnology! Here's a manageable unit of lab and computer activities that bring the science and business of biotech into biology.

– Ellyn Daugherty, San Mateo High School, Redwood City, CA

NASA Fit Explorer: Train Like An Astronaut

Platinum 8 • Hands-on Workshop • Physiology • E JH

Join NASA in a variety of fitness activities and hands-on science explorations. Fit Explorer is a scientific and physical approach to human health and fitness on Earth and Space. Learn how astronauts train- and together we can inspire future explorers to train like an astronaut.

– Lisa Brown, NASA - Aerospace Education Services Project, College Station, TX

Top Seven for 2011

Grand J • Paper • Genetics • HS JH

Want to include cutting edge genetic research in your class? See some of the top discoveries of 2011 presented in student friendly language and correlated to national standards.

– Dr. Neil Lamb & Madelene Loftin, HudsonAlpha Institute for Biotechnology, Huntsville, AL

20 in 20

Orange County 2 • Hands-on Workshop • General Biology • HS 2C

Hoping to lecture less and engage students more? Come learn about twenty 20-minute activities for all levels of biology. Handouts provided.

– Whitney Hagins, Lexington High School, Lexington, MA

The Global Epidemic of Confusing Hypotheses with Predictions

Elite 3 • Paper • Teacher Prep/Professional Development • HS GA

Hypothesis testing is fundamental to the process of science, yet teachers, textbooks, and even trained scientists are failing our students. So let's teach it right.

– Paul Strode, Fairview High School, Boulder, CO

Self-Service Learning: Helping Students Take Ownership of Their Learning

Grand D • Symposium • Instructional Strategies/Technologies • HS GA

Tools, tips, and strategies for involving students in clarifying learning goals, mastering new material, identifying gaps in understanding, and formulating plans to close learning gaps.

– Steve Wood & Brett Erdmann, Adlai E. Stevenson High School, Lincolnshire, IL

Get Your Anatomy Students Out of their Seats!

Orange County 3 • Hands-on Workshop • Physiology • HS 2C

“Simon Says” you should be ready to get up and participate in this hands-on session!(Be prepared to use your feet and head too!)

– Holly Crochetiere, West Windsor-Plainsboro HS North, Robbinsville, NJ

11:30 am - 1:30 pm

Cash & Carry Lunch available for purchase in Exhibit Hall (Marquis Ballroom)

11:45 am - 12:15 pm

Biology Students Love Creationism: Predicting Students' Attitudes About, and Knowledge of, Evolution

Grand K • Paper • Evolution • GA HS

We will present the results of a multi-year study of the differing attitudes about, and knowledge of, evolution among different subsets of college students.

– Randy Moore & Sehoya Cotner, University of Minnesota, Minneapolis, MN

Reviewing for *The American Biology Teacher*

Elite 1 • Demonstration • Teacher Prep/Professional Development • HS 4C

The ABT is looking for a few good reviewers. Your Editor will share reviewing techniques for new and potential

11:45 am - 12:15 pm*continued*

reviewers show you how you can contribute to biology education.

– Bill Leonard, NABT, Clemson, SC

Dissecting Primary Literature to Test Darwin's Tenets

Elite 2 • Paper • Evolution • HS 4C

Have Darwin's tenets on natural selection actually been tested? Ideas on how to use readable papers to examine the basics of natural selection will be presented.

– Mark Bland, University of Central Arkansas, Conway, AR

Use Two New Biology Study Tools to Improve Your Teaching Success!

Grand C • Paper • General Biology • HS GA

Teach your students how to use the two new science study tools that our research group has tested—to manage study time and focus attention!

– James Wandersee, Louisiana State University, ETPP Dept., Baton Rouge, LA & Renee Clary, Mississippi State University, Mississippi State, MS

Low-tech Biotech

Platinum 9 • Demonstration • Biotechnology • HS JH

This presentation will provide educators with resources for teaching biotechnology concepts on a limited budget to students who may not have an extensive biology background.

– Jocelyn Koller & Corrin McBride, Johns Hopkins University Center for Talented Youth, Baltimore, MD

12:15 pm - 1:30 pm**Regional, State, & Province Leadership Luncheon**

Gold Key 1 & 2

Calling all regional coordinators, state reps, OBTA directors, affiliate chairs and anyone else who wants to serve as "local leadership" for NABT! Who better knows your challenges and concerns than other association volunteers? Buy your lunch in the exhibit hall and meet us to share ideas and brainstorm for programs starting in 2012.

1:00 pm - 1:30 pm**International Programs: Biology Around the World - Developing an International Experience for a Field Biology Course**

Orange County 1 • Undergraduate Faculty Professional Development Summit • 2C 4C

St. Louis Community College at Meramec offers an international field course in Marine Biology. Procedures for developing an international field course will be outlined.

– George Karleskint, Jr., St. Louis Community College at Meramec, St. Louis, MO; Jody Martin de Camilo, St. Louis Community College at Meramec, St. Louis, MO

1:30 pm - 1:45 pm**AIBS/NESCent Evolution Symposium: Changing Humans in a Changing Environment**

Platinum 1&2 • Evolution • HS 2C 4C

Hear directly from the researchers who are adding to our growing understanding of human origins and learn how the dynamic interplay between the environment and our evolving species drives change. The symposium will take place from 1:30 -5:30 pm Friday and the corresponding workshop will take place on Saturday morning 9:30 -11:30 am.

– James Collins, AIBS President/ Arizona State University, Tempe, AZ

**Invited Speaker
1:30 pm - 2:45 pm**

Grand F

Mary Lee Ledbetter, Ph.D.

Program Officer, National Science Foundation, Arlington, VA

Vision and Change in Undergraduate Biology Education—A Call to Action

Triggered by the radical changes in the discipline and advances in knowledge about effective approaches to undergraduate education, AAAS, with the support of NSF and the participation of NIH and HHMI, sponsored a series of events to engage a wide spectrum of biologists in consideration of the state of undergraduate education in biology and the most effective ways to exploit these advances. Over 600 biologists participated in these events including faculty, administrators, students and the leaders of key professional biology societies. This session will explore the results of those efforts, the programs and resources available to faculty to carry out the recommendations of those events and will include an opportunity for questions and discussion.

Mary Lee S. Ledbetter is a rotating Program Director in the Division of Undergraduate Education (DUE) of the Education and Human Resources (EHR) Directorate at the National Science Foundation (NSF). In 30 years as a faculty member at College of the Holy Cross (Worcester, MA), she taught courses ranging from undergraduate research (over 80 students altogether), cell biology, immunology, and biochemistry for biology majors through general biology for premedical students of all majors, to several courses of her own design for first-year students, non-biology majors, and secondary school teachers. She implemented project-oriented laboratories in her courses and worked hands-on activities into courses that were otherwise limited to classroom instruction. Her research, involving the function of communication through gap junctions among cultured animal cells, was supported by grants from NSF, NIH, Muscular Dystrophy Association, and Research Corporation. In 2003 she was one of six recipients of the NSF Director's Award for Distinguished Teaching Scholars. She attended the conference on *Vision and Change in Undergraduate Biology Education* in 2009 and assisted in the final preparations of the published report, which appeared in March 2011.



1:30 pm - 2:00 pm

International Programs: Biology Around the World - Organizing your "Embedded" International Field Course On-line

Orange County 1 • Undergraduate Faculty Professional Development Summit • 2C 4C

Two field courses and the tested "field-course experiential learning model" that frames them will be showcased with emphasis on using course/program websites, social media, and video.

- Jacqueline McLaughlin, Pennsylvania State University - Lehigh Valley, Center Valley, PA

Sexually Transmitted Diseases: Cases for Teaching the Facts and Real-life Decision Making

Grand K • Paper • Human Health & Public Issues • HS 4C

These five mini-cases engage students in active discussion about a private topic. Students research, teach one another, make recommendations and discuss ethical issues about STDs.

- Stephanie Zojonc & Bethann Lavoie, Minnesota State University, Mankato, Mankato, MN

Student Centered Methods for Learning Body Systems

Platinum 7 • Demonstration • Physiology • HS JH

This presentation will demonstrate student centered methods of facilitating the learning of the basic anatomy and physiology of the reproductive, circulatory and digestive systems.

- Christina Palffy & Abbie Lueken, Adlai E. Stevenson High School, Lincolnshire, IL

What is "Nature of Science" and How Do You Teach It?

Grand G • Paper • Instructional Strategies/Technologies • GA

Douglas Allchin (Editor of *ABT's Sacred Bovines*) gives an overview on this elusive concept, with an update on new national standards, clues for teaching (grand and small), and time to answer your questions.

- Douglas Allchin, Univ. of Minnesota, Saint Paul, MN

SMaRT Scholars for Success: Strategies to Retain Talented Youth in STEM Majors

Grand C • Paper • General Biology • 2C GA

Learn how Northampton Community College is retaining students in science, technology, engineering and mathematics (STEM) career pathways. Discuss strategies to increase the STEM talent pipeline.

- Sharon Lee-Bond, Northampton Community College, Bethlehem, PA

1:30 pm - 2:45 pm

Introduction to *Drosophila* with Easy Fly

Grand A • Exhibitor Demonstration • Genetics • HS 4C

This session covers the basics of working with *Drosophila* through hands-on activities. Participants will gain experience in anesthetizing fruit flies, identifying male and female flies, recognizing commonly used mutants and comparing them to wild type flies, setting up new cultures of flies, and making crosses using Carolina's Easy Fly® *Drosophila*.

- Carolina Teaching Partner, Carolina Biological Supply Company

Playing Biology: Engaging Students with Dynamic Games, Animations and Simulations

Grand B • Exhibitor Demonstration • General Biology • HS 2C

Find out what makes educational gaming effective as a learning tool by integrating games, animations and simulations into your lessons. Challenges, barriers and key strategies for success will be modeled, with hands-on opportunities. Using innovative real-time assessment tools as a basis for assessment will also be covered.

- Jeremy Friedberg, Spongelab Interactive

Biology and AP Biology with Vernier

Platinum 3 • Exhibitor Demonstration • General Biology • GA HS

In this hands-on workshop, you will learn how easy it is to integrate Vernier technology into your biology or AP Biology curriculum. Activities from

Biology with Vernier and Advanced Biology with Vernier lab book will be performed using a variety of easy-to-use sensors. Come try our intuitive and innovative products, including Logger Pro software, LabQuest, and LabQuest Mini.

- Mike Collins & John Melville, Vernier Software & Technology

Virtual-Lab Gaming for Student Understanding of Genetics

Platinum 4 • Hands-On Workshop • Genetics • HS GA

Explore and contribute to a project developing a game environment that will introduce and develop student understanding of the rapidly changing science of genetics.

- Chris Wilson, April Gardner & Dayna Garland, BSCS, Colorado Springs, CO

A Kidney Under Pressure

Platinum 8 • Hands-On Workshop • Physiology • JH HS

Explore kidney physiology by using free lessons and resources developed by teachers and scientists, as well as fellowship opportunities for a professional development program.

- Mel Limson, American Physiological Society, Bethesda, MD

Community College Biology Faculty Enhancement Through Scientific Teaching (CCB FEST)

Elite 1 • Hands-on Workshop • Teacher Prep/Professional Development • 2C 4C

Participants will experience a faculty enhancement activity from a professional development project (CCB FEST) targeting community college biology faculty to build community and pedagogical expertise.

- Jeff Schinske, De Anza College, Cupertino, CA; Allison Busch & Kimberly Tanner, San Francisco State University, San Francisco, CA

DNA Subway in the Classroom

Elite 2 • Hands-on Workshop • Molecular & Cell Biology • 2C 4C

Engage your students in discovering the principles of molecular biology while using the bioinformatics tools in DNA Subway (dnasubway.org) to find genes and compare genomes.

- Uwe Hilgert, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

1:30 pm - 2:45 pm

*continued***Systems Biology and Genetics Explained**

Grand J • Hands-on Workshop • Molecular & Cell Biology • HS JH

Explore cutting-edge scientific research and how a systems biology perspective can provide meaningful connections between the teaching of science and students' lives.

- Jessica Hankey & Erica Zahnie, The Field Museum of Natural History, Chicago, IL; Barry Aprison, University of Chicago – Chicago Center for Systems Biology, Chicago, IL

Plants, Carbon and the Big Picture

Orange County 2 • Hands-on Workshop • General Biology • JH HS

This workshop presents a series of activities designed to help students be more careful about their accounting for forms of matter (carbon) and energy in biological processes, especially plant growth and functioning.

- Jonathon Schramm, Michigan State University, East Lansing, MI & Cheryl Hatch, Kalamazoo Area Math & Science Center, Kalamazoo, MI

Undergraduate Research Experience For Every Student

Grand D • Paper • Instructional Strategies/Technologies • 2C 4C

First year students can get an authentic science experience. Discuss how integrating scientific experiments into the curriculum works at a school with minimal research support.

- Gail Baker, Lane Community College, Eugene, OR

Turbo Strand**Cracking the Code of Learning Styles: Tools for Students and Instructors**

Platinum 9 • Hands-on Workshop • Instructional Strategies/Technologies • GA 4C

Engage in an interactive learning styles activity designed to help students optimize learning and instructors design curriculum for a diverse population of learners.

- Kelly McDonald & Jennifer Lundmark, California State University, Sacramento, Sacramento, CA

1:30 pm - 4:00 pm

GMO Investigator Kit

Orange County 4 • Exhibitor Demonstration • Bioethics • HS 2C

Have your favorite foods been genetically modified (GM)? This hands-on workshop teaches the basics of DNA extraction, PCR, and gel electrophoresis and how these techniques are used to test common grocery store food products for the presence of GM foods. Are GM crops a good thing? Regardless of where you stand in the GM debate, wouldn't it be interesting to know which foods you eat are GM foods?

- Julie Mathern, Bio-Rad Laboratories

Workshop 4: Do Vampires Walk Among Us?

Orange County 3 • Special Workshops • Biotechnology • Cost: \$30 • HS 4C

The porphyrias are rare genetic diseases that may have inspired some vampire legends. In this workshop, we will discuss the real causes of porphyria and explore laboratory techniques used to detect genetic diseases.

- Didi Heisler, FOTODYNE Incorporated, Hartland, WI

1:45 pm - 2:30 pm

AIBS/NESCent Evolution Symposium: The Challenges of Becoming Human: Evolution in an Era of Dramatic Climate Change

Platinum 1&2 • Evolution • HS 2C 4C

How have humans today become one of the most adaptable species on Earth? In this talk, Dr. Potts will illustrate the evidence of extinctions and the emergence of adaptations over the past 6 million years of human evolution, one of the most dramatic eras of environmental change in Earth's history.

- Rick Potts, Human Origins Program, Smithsonian Institution, Washington DC

2:00 pm - 2:30 pm

International Programs: Biology Around the World - Establishing Academic Partnerships for Semester Abroad Programs

Orange County 1 • Undergraduate Faculty Professional Development Summit • 2C 4C

Partnerships with international institutions provide opportunities for enrollment in a semester abroad with classes counting toward the major. The Universidad del Azuay in Ecuador will be highlighted.

- John Moore, Taylor University, Upland, IN; Gustavo Chacón, Universidad del Azuay, Cuenca Ecuador

Animal Research: Using a Discussion-based Classroom Activity to Educate Students on Views Regarding the use of Animals in Research

Grand K • Paper • Bioethics • HS 2C

Learn how to effectively address concerns about animal research in high school or early undergraduate classes of any size using only a single class period.

- Elizabeth Burnett & Scott Dobrin, Wake Forest University Health Sciences, Winston-Salem, NC

Biotechnology from Bench to Bedside

Platinum 7 • Paper • Biotechnology • HS 2C

Students perform a differential diagnosis and then launch into clinical and research tracks in a quest to treat our young patient with Pompe disease.

- Julie Bokor & Houda Darwiche, University of Florida, Gainesville, FL

Twitter for the Biology Teacher

Grand G • Demonstration • Teacher Prep/Professional Development • GA

Are you a twitter skeptic? Learn how twitter can revolutionize your biology classes and professional development in 140 characters or less.

- Stacy Baker, Staten Island Academy, Staten Island, NY

Using Everyday Examples to Learn About Water Transport in Plants

Grand C • Paper • General Biology • 2C HS

This presentation focuses on the transport of water in the plants using practical examples related to the concepts adhesion-cohesion theory, capillary action and tension-transpiration theory.

- Mohamed Lakrim, Kingsborough Community College, Brooklyn, NY

2:30 pm - 3:00 pm

Undergraduate Faculty Professional Development Summit Meet and Mingle —Sponsored by Holbrook Travel

Orange County 1

Enjoy afternoon refreshments with colleagues to discuss collaborations and plans for courses, fieldwork, and other student experiences abroad!

2:30 pm - 3:15 pm

AIBS/NESCent Evolution Symposium: What can Chimpanzees Tell us About Human Evolution?

Platinum 1&2 • Evolution • HS 2C 4C

Studying chimpanzees living in a savanna environment in Senegal is a way of using living primates to model early human behavior. Specifically, Dr. Pruettz's research allows her to assess what is most limiting to apes in this harsh environment, a habitat that is similar to the one the earliest bipedal apes are thought to have inhabited. Comparing the behavior of savanna chimpanzees to those that live in forests allows Dr. Pruettz to pose hypotheses regarding what may have influenced the behavior and ecology of our earliest relatives. The second of four presentations in the 8th annual AIBS/NESCent Evolution Symposium: *Changing Humans in a Changing Environment*, from 1:30 - 5:30 pm.

- Jill Pruettz, Iowa State University, Ames, IA

2:45 pm - 3:15 pm

Please join us in the Exhibit Hall (Marquis Ballroom) for a coffee break.

3:00 pm - 3:30 pm

International Programs: Biology Around the World - Scientific Method, Evolution, and the Ivory-billed Woodpecker

Orange County 1 • Undergraduate Faculty Professional Development Summit • 2C 4C

Hear how the ivory-billed woodpecker can be used to show how the scientific approach works and that Darwinian theories of evolution are the foundation of biology (Four-Year Section Biology Teaching Award Winner).

- James J. Krupa, University of Kentucky, Lexington, KY

GRADUATE CREDITS

The Colorado School of Mines

The Colorado School of Mines is offering one hour of graduate level re-certification credit for attendees of the NABT Conference. Participants must submit a summary that describes 15 contact hours spent in sessions and workshops before Friday, November 4, 2011.

Registration details and instructions are available at <http://www.nabt.org/websites/institution/index.php?p=677>. Please send questions to Mike Sipes at mpsipes@earthlink.net.

Northland College

Northland College has both single and two credit options available for NABT Conference attendees. Summaries, including NSES focus for seven or ten hours of sessions and workshops are required by Friday, December 2, 2011. Details and online registration are available at <https://www.northland.edu/register/index.php?id=44>.

Please contact Annette Nelson at anelson@northland.edu or visit the Northland College booth in the Exhibit Hall for more information.

3:15 pm - 3:45 pm

Hybrids, It's Not Just for Cars

Elite 1 • Paper • Environment/Ecology • 2C 4C

Engage in a discussion on how converting a traditional, on-campus course to a hybrid can enhance learning, offer greater flexibility and improve student engagement.

- Jennifer O'Malley & Alane Breitmeyer, Saint Charles Community College, Cottleville, MO

Hands-on Labs (HOL): Using Technology and Web-Based Resources to Transform a Traditional Lab-Based Biology Course into a Distance Learning (DL) Hybrid Course

Grand D • Paper • General Biology • 2C 4C

Distance Learning is becoming a mainstream instructional delivery system as more courses and degrees are becoming available through distance-education programs. Bio 123, a non-major biology course, is now a hybrid course with traditional lecture and at-home labs using the Labpaq system.

- Erica Kipp & Kabba Colley, Pace University, New York, NY

Podcasting - Practical and Creative Techniques

Grand G • Demonstration • Instructional Strategies/Technologies • 4C GA

Geared toward educators who have little to no experience with creating podcasts, we will focus on learning how to record and use brief, original podcasts.

- Janet Hart, MCPHS, Boston, MA

Three innovations for General Biology Students: Podcasts, Spots and Tests

Grand C • Paper • General Biology • HS 2C

Introducing NPR podcasts, field observations over the seasons of a school year and new test approaches to energize a general biology curriculum.

- Robert Orr, Oregon Episcopal School, Portland, OR

Designing Multiple Choice Exams to Test More than Memorization and Help Identify Student Misconceptions

Platinum 9 • Demonstration • General Biology • HS JH

Tired of wondering why your students miss seemingly easy concepts? In this session, we will show how to write better multiple choice exams that diagnose misconceptions that often inhibit students, especially struggling students from doing well. This information will help counter the "I am a bad test taker" mantra common to unsuccessful students.

- Jim Clark, Arroyo High School, San Lorenzo, CA

3:15 pm - 4:30 pm

AP Open Form

Platinum 8 • Symposium • HS

Have your questions answered! This session will focus on the recent changes to the AP Biology Curriculum. An overview of the exam, course audit and labs will be presented. College Board resources such as instructional materials and online/in-person professional development opportunities will be highlighted as well.

- La Tanya Sharpe, College Board, Atlanta, GA

Invited Speaker
3:15 pm - 4:30 pm

Grand F

Louisa A. Stark, Ph.D.

Director, Genetic Science Learning Center; Clinical Professor, Urban Institute for Teacher Education, College of Education; Research Associate Professor, Department of Human Genetics; Associate Director, Center for Science and Mathematics Education; Associate Director, Community Engagement Core, Center for Clinical and Translational Science; The University of Utah, Salt Lake City, UT

*NABT is pleased to announce that Louisa Stark has been selected as the **Ninth Annual Christine Chantry Memorial Speaker**. Chris, NABT's Director of Publications and Marketing for many years, died of cancer in February 2003. A Memorial Fund was established to honor this remarkable woman who touched so many lives.*

Lamarck Wasn't All Wrong: The New Science of Epigenetics

Recent research is revealing that the genome dynamically responds to the environment. Stress, diet, behavior, toxins and other factors activate chemical tags that regulate gene expression. Some of these tags remain in place as genetic information passes between generations. Epigenetic inheritance thus adds another dimension to the modern picture of evolution. This presentation will provide an introduction to epigenetics, updates on the latest research and an overview of free multimedia and hands-on materials for engaging secondary and college students in learning about this exciting new field.

Dr. Louisa A. Stark is a leader in genetics and genomics education, having made notable contributions to the field of science education that are of national and international significance. She is director of the University of Utah's Genetic Science Learning Center. She also serves the University of Utah as clinical professor of Science Education and associate director of the School of Medicine's Community Engagement Core Center for Clinical and Translational Sciences. Dr. Stark has received numerous recognitions from prestigious groups, including the American Society of Human Genetics' Award for Excellence in Human Genetics Education, the Utah Science Teachers Association's lifetime achievement award, the AAAS/Science Magazine Science Prize for Online Resources in Education. Dr. Stark is also the recipient of the 2011 NABT Honorary Membership.



BIOZONE Showcase their Biology Workbooks & Presentation Media (Grades 9-12)

Platinum 7 • Exhibitor Demonstration • General Biology • HS 2C

Biozones critically acclaimed student workbooks with their cutting edge content, will assist your students to achieve success. Clear learning objectives, concept based design and engaging graphics encourage critical thinking and active interaction between the student and the information. FREE workbooks to each workshop attendee. Visit us at booth 202.

– Richard Allan, Biozone

Amplify your Genetics Teaching Skills with Carolina's New Inquiries in Science® Biology Units

Grand A • Exhibitor Demonstration • General Biology • HS

Want to crack the mystery of genetics for your students? Increase student achievement on difficult concepts such as nucleic acids, genetic inheritance, and biotechnology by using a guided-inquiry approach. Carolinas Inquiries in Science® Biology units provide hands-on activities to make teaching challenging topics effortless. Free teacher materials and door prizes!

– Brian Kloepfer, Carolina Biological Supply Company

Turbo Charge Your Anatomy Curriculum With This Engaging Hands-On Teaching Method

Grand B • Exhibitor Demonstration • Instructional Strategies/Technologies • HS 2C

Explore anatomy from the inside out! Acquire the knowledge to engage students with immediate, hands-on learning using a proven method that is nationally recognized to increase student retention and test scores. This workshop will emphasize the skeletal system, directional terms, muscle and bone morphology, leading into other body systems.

– Kelly Canino, Anatomy in Clay® Learning Systems

Understanding the Science of Type 2 Diabetes

Platinum 4 • Hands-On Workshop • Human Health & Public Health • HS

Explore and contribute to a project developing a game environment that will




Learn More about the National Science Digital Library (NSDL) Science Literacy Maps at NABT

Join Project 2061 of the American Association for the Advancement of Science (AAAS) at the following sessions:

Understanding K–12 Science Learning Progressions and Accessing Online Resources: The NSDL Science Literacy Maps
Wed., October 12, 2011 • 12:00–5:00 p.m. • Anaheim Marriott, Orange County 3

An Overview of the NSDL Science Literacy Maps
Sat., October 15, 2011 • 9:30–10:45 a.m. • Anaheim Marriott, Grand B

Access the maps at <http://strandmaps.nsdll.org>

Don't forget to visit AAAS Project 2061 at **booth #314!**

introduce and develop student understanding of the rapidly changing science of genetics.

– Anne Westbrook, BSCS, Colorado Springs, CO

Teaching Epigenetics to Advanced High School Biology Students

Grand K • Demonstration • Genetics • HS 2C

In this session participants will receive materials and techniques for teaching genomic imprinting to high school students in Genetics, Biology II, or AP Biology courses.

– Joe Ruhl, Lafayette Jefferson High School, Lafayette, IN

B(io)logs! How to Use Blogs in Biology Education

Elite 2 • Demonstration • Instructional Strategies/Technologies • HS GA

Use students' love of social networking to help them learn science. Lead by the 2008 Edublog Best Class Blog Award Winner.

– Stacy Baker, Staten Island Academy, Staten Island, NY

Speciation via Sexual Selection: A Discovery Based Activity

Grand J • Hands-on Workshop • Evolution • HS 4C

Role-play speciation! Students explore how sexual selection can split one species into two or more new species using

dice and dress-up. Lesson plans provided.

– Sarah Eddy & Kaitlin Bonner, Oregon State University, Corvallis, OR

Turbo Strand

Help Your Students Succeed in AP Biology

Orange County 2 • Hands-on Workshop • General Biology • HS GA

Two experienced AP teachers will share strategies to help students learn more biology and improve AP scores. There will be hints on how to help students focus their study time, write better essays, and get more from labs using reading guides and test prep materials.

– Theresa Holtzclaw & Fred Holtzclaw, Webb School of Knoxville, Knoxville, TN

3:30 pm - 4:15 pm

AIBS/NESCent Evolution Symposium: Becoming Human in a Changing World: the Early Evolution of Homo

Platinum 1&2 • Evolution • HS 2C 4C

Between 2.5 and 1.5 million years ago our genus evolved and diversified in Africa in the context of an increasingly variable climate. The fossil discoveries of the last decade have radically altered our view of the early evolution of our genus making clear that the human package

3:30 pm - 4:15 pm*continued*

of anatomical features did not evolve in unison at the origin of the genus or even with the evolution of *H. erectus*. Instead, the first subtle steps were related to changes in dietary resources and involved small changes in teeth and jaws that increased survival rate. In this talk, Dr. Antón will review the newest fossil discoveries and what we know about how the changing world of the Pleistocene shaped the origin and early evolution of our genus. The third of four presentations in the 8th annual AIBS/NESCent Evolution Symposium: "Changing Humans in a Changing Environment" from 1:30 -5:30 pm.

- Susan Antón, New York University, New York, NY

3:45 pm - 4:15 pm**Understanding How Virtual Evolutionary and Ecology Simulations are Perceived by Community College Learners**

Elite 1 • Paper • Instructional Strategies/Technologies • E

Understanding how students perceive virtual biological simulations promotes sound pedagogy and learning. Student perceptions of virtual simulations in online introductory biology course are discussed.

- Beverly Ranney, Western Oklahoma State College, Altus, OK

Using Case Studies and Interactive Laboratory Activities as a Novel Classroom Approach to Pathophysiology

Grand G • Paper • Instructional Strategies/Technologies • 4C 2C

The goal of this course was to deepen students' understanding of pathophysiology through actively seeking answers to questions (via case study diagnosis and development) rather than a passive lecture-based format.

- Cynthia van Golen & Sabrina McGary, Delaware State University, Dover, DE

Project-based Applied Learning (PAL): Integrating Science Literacy Skills in General Education Undergraduate Courses

Grand C • Paper • General Biology • 4C 2C

Project-based Applied Learning (PAL) pedagogy focuses on increasing science literacy skills by allowing students to tackle a series of projects rooted in real-world problems.

- Peggy Brickman, University of Georgia, Athens, GA; Cara Gormally, Georgia Tech, Atlanta, GA; Virginia Schutte, Odum School/University of Georgia, Athens, GA; Greg Francom, College of Education/University of Georgia, Athens, GA; Sarah Jardeleza, Michigan State University, East Lansing, MI

Biology by Numbers From Biology in a Box

Platinum 9 • Demonstration • General Biology • HS JH

Stretch both your math and your biology muscles! We will present activities for incorporating math into biology lessons from Tennessee's popular Biology in a Box program.

- Kelly Sturner, National Institute Mathematical & Biological Synthesis, Knoxville, TN & Nita Ganguly, VolsTeach, University of Tennessee-Knoxville, Knoxville, TN

Self-Regulation of Conceptual Understanding of Seed Growth and Development Through Illustrative Diagrams

Grand D • Paper • Teacher Prep/Professional Development • 2C 4C

This session demonstrates a new protocol embedded with a self-regulatory technique for assessing and changing science misconceptions through student-designed inquiry-based instruction.

- Kimberly Staples, Kansas State University, Manhattan, KS

4:00 pm - 5:30 pm**NABT Student Group: CV Review & Networking Workshop**

Orange County 1 • Hands-On Workshop • Teacher Prep/Professional Development • GA HS 4C

Will your CV get in the "keep" pile or the recycle bin? Sit one on one with an NABT faculty member to review your CV or resume! Faculty from various institutional types and sizes will be on hand. This workshop is appropriate for students who are just starting to build their CV, as well as individuals preparing to go on the job market. Forgot to bring your CV with you? Electronic copies of your CV can also be reviewed.

4:15 pm - 5:00 pm**AIBS/NESCent Evolution Symposium: New Discoveries From Ancient Genomes**

Platinum 1&2 • Evolution • HS 2C 4C

The DNA from Neandertals and other ancient people is yielding a new understanding of their biology and relationship to living humans. Many of us carry genes from these people, and Dr. Hawks and other scientists are beginning to find out which ones, and what they may do. The final presentation in the 8th annual AIBS/NESCent Evolution Symposium: "Changing Humans in a Changing Environment" from 1:30 - 5:30 pm.

- John Hawks, University of Wisconsin-Madison, Madison, WI

5:00 pm - 5:30 pm**AIBS/NESCent Evolution Symposium: Concluding Remarks "Changing Humans in a Changing Environment"**

Platinum 1&2 • Evolution • HS 2C 4C

Concluding remarks, by the Director of the National Evolutionary Synthesis Center, about the symposium which features four researchers who are adding to our growing understanding of human origins and learn how the dynamic interplay between the environment and our evolving species drives change. The symposium will take place from 1:30 -5:30 pm Friday and the corresponding workshop will take place on Saturday morning 9:30 am - 11:30 am.

- Brian Wiegmann, Associate Director of Education & Outreach, NESCent, Durham, NC

**BELS Benefit Dinner
featuring Dr. Neil Shubin
7:00 pm - 10:00 pm**



Grand E • Cost: \$95.00

NABT is proud to feature Dr. Neil Shubin as the special presenter for the 2011 BELS Benefit Dinner. Shubin is Associate Dean and Robert R. Bensley Professor of Organismal Biology and Anatomy at The University of Chicago. A John Simon Guggenheim Memorial Foundation fellow, Shubin earned a Ph.D. in organismic and evolutionary biology from Harvard University in 1987 and joined the University faculty

as Chairman of Organismal Biology & Anatomy in 2001. Neil Shubin researches the evolutionary origin of anatomical features of animals. He has conducted field work in Greenland, China, Canada, much of North America and Africa, and he has published multiple articles in the Journal of Vertebrate Paleontology and Paleobiology, as well as more than 18 articles in Science and Nature. He is a Fellow of the American Association for the Advancement of Science, The American Academy of Arts and Sciences and a Member of the National Academy of Sciences. Dr. Shubin is also the recipient of the 2011 NABT Distinguished Service Award.

Join us as we explore the evolutionary transitions that made the human body. For form to function, learn about the traits we share with other organisms while celebrating what makes us unique. The dinner presentation will be followed by a private book signing, all to benefit the NABT Biology Educator Leadership Scholarship (BELS).

The BELS Benefit Dinner is sponsored by BSCS and PASCO scientific



NOTES