

ASM Goes Viral at NABT!



AMERICAN
SOCIETY FOR
MICROBIOLOGY

Sponsored Plenary Speaker

Astrobiology and the Origin and Evolution of Life

Dr. Kenneth H. Nealson, J. Craig Venter Institute

October 13th, 8:15AM - 9:15AM

ASM Viral Sessions

Studying Viral Pathogenesis: From the Lab to the Web

Dave Wessner, Davidson College

October 13th, 12:30PM - 1:45PM

The Role of Viruses in the Origin and Evolution of Life

Luis P. Villarreal, University of California, Irvine

October 13th, 2:00PM - 3:15PM

Phage Discovery - A Platform for Integrating Research and Student Learning

Erin R. Sanders, University of California, Los Angeles

October 13th, 3:30PM - 4:45PM

Don't forget to stop by the ASM booth to learn more about our education programs and resources, fellowships, and our online publications!

You can visit us anytime online at: <http://www.asm.org/educators>

Also Available from ASM: K-12 Outreach Activities

The American Society for Microbiology provides over 20 tested classroom activities geared for grade K-4, 5-8, 9-12, or to be used in multiple settings. These peer-reviewed activities align with National Science Education Standards.

Bring microbiology into the classroom!

Download activities and learn more about submitting at:

<http://www.asm.org/asm/index.php/education/classroom-and-outreach-activities.html>

Sample Outreach Activities:

New! - What Microbe Are You?

A personality quiz that matches your student with a microbe.

The Role of Microorganisms in the Ecosystem

Man-made and natural materials undergo different rates of decomposition in a controlled experiment.

Extracting DNA from a Banana

Using purification steps, students can yield crudely prepared DNA.

Effect of Nitrate and Phosphate Levels on the Growth of Algae

A simple experiment demonstrates the levels of nitrate and phosphate necessary for both optimal algal growth and algal blooms.

All activities include:

- teacher and student handouts
- practical tips to complete the activity
- preparation and learning times
- materials needed and sources to obtain them
- safety requirements
- assessment

Join the community at:
[http://community.asm.org/
clubs/k12/](http://community.asm.org/clubs/k12/)

Questions? Contact us at:
education@asmusa.org

7:00 - 8:00 am

First Timers' Breakfast

Grand E

NABT Conference first timers are invited to learn more about the association and the Professional Development Conference over a complimentary breakfast. Each table will have an NABT mentor available to answer your questions and help you make the most of your time in Anaheim.

– *The NABT First Timers' Breakfast is made possible through the generous support of HHMI.*

7:00 am - 8:15 am

OCIE Poster Session

Registration Foyer • Poster Session

The NABT Outreach Coordinator & Informal Educator (OCIE) Section is proud to present a poster session highlighting resources, opportunities, and programs for teachers and students outside of the classroom. This year's posters will feature new marketing campaigns with advertising style posters designed like simple bus-stop or billboard ads. The OCIE members need YOUR help to determine what works and what flops. You be the judge to critique the posters and learn more about your local, state, regional, or national programs and resources for life science education.

9:30 am - 10:00 am

The Coal Cycle: Science and Sustainability

Grand K • Paper • General Biology • GA JH

The Coal Cycle offers an effective classroom portal for the carbon cycle, climate change, and concepts in botany, geology, ecology, and chemistry! Classroom materials provided.

– Renee Clary, Mississippi State University, Mississippi State, MS

Biology Gets Personal: Service Learning in the Bahamas

Grand J • Paper • Global Education Issues • 4C HS

Explore ways to include service learning into your courses. We focus on a curricu-

lum that incorporates personal accounts of diabetes and ethnobotany on Andros Island.

– Katey Hughes, Columbus State University, Columbus, GA

9:30 am - 10:30 am

Committee Meeting: Long Range Planning Committee

Gold Key 2

9:30 am - 10:45 am

Investigating Mitochondrial Genetics

Grand A • Exhibitor Demonstration • Biotechnology • HS 2C

Looking for an alternative to the restric-

ABBREVIATION KEY

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

tion digest of Lambda DNA? Take part in an inquiry-based investigation of mitochondrial genetics that fuses modern molecular biology with traditional pedigree analysis. Participants receive free curriculum materials and have a chance to win a Mitochondrial Genetics Kit from PASCO scientific and EdvotekTM.

– Ryan Reardon, PASCO

General Session
8:15 am - 9:15 am

Platinum 5&6

Ken Neilson, Ph.D.

Wrigley Chair in Environmental Studies and Professor of Earth Sciences and Biological Sciences, University of Southern California

Astrobiology and the Origin and Evolution of Life

At the University of Southern California (USC), Dr. Kenneth Neilson has been teaching an undergraduate course to a mixed group of students, all of whom are challenged to think about the nature of life, how one might search for it using available technology, and the implications of the discovery of life elsewhere than on our own planet. A wide variety of students work in groups to understand the approaches that can be used for life detection, and to discuss the social and political implications of finding extraterrestrial life. The course content, design, and successes will be discussed, with the goal of making this kind of approach accessible for teachers at all levels.

Dr. Neilson is a member of the International Advisory Board for the Japanese Marine Biotechnology Institutes, and a member of the scientific advisory board of the Craig Venter Institute. He is currently the co-chair of the Committee on the Origin and Evolution of Life for the NAS, and a member of the Space Studies Board of the NAS. His present work focuses on the study of biogeochemical processes in ultra-basic (i.e. pH 11.5) environments, and extracellular electron transport as it relates to the cycling of iron and manganese oxides, as well as other insoluble components in sediments and other anoxic environments, and to the use of such bacteria both for bioremediation of toxic wastes, and for energy production in biofuel cells.

Sponsored by The American Society for Microbiology



9:30 am - 10:45 am

continued

Genetic Testing for Huntington's Disease

Grand B • Exhibitor Demonstration • Genetics • JH HS 2C

Should a young woman with a family history of Huntington's disease have genetic testing? Use models, Punnett squares, pedigrees, genetic counseling, and simulated genetic testing. What are some benefits and risks of genetic testing? Information will be provided on lab kit assembly and related activities.

– Susan Holt and Dina Markowitz, Science Take-Out

Recent Advances in the Understanding of Evolution & Human Evolution

Elite 3 • Exhibitor Demonstration • Evolution • HS 2C

Encourage your students to see the relevance of evolution through current examples from the work of leading researchers, including Sean Carroll. Biozone's authors show you how to use these contextual examples to illustrate the startling power of selection and adaptation, and enhance your teaching of one of science's big ideas.

– Dr. Tracey Greenwood & Richard Allan, Biozone International

Disorder Detectives® from HudsonAlpha Institute for Biotechnology

Orange County 3 • Exhibitor Demonstration • General Biology • HS

Take your karyotyping lesson beyond counting to 23 and looking for pairs. Come see a no mess approach to karyotyping. This kit provides teachers with the tools necessary to engage students in a content-rich, person-first discussion of the implications of chromosomal disorders. Engaging, Active and Affordable!

– Madelene Loftin, HudsonAlpha Institute for Biotechnology

Genes in a Bottle—Kit

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

How do you fit a person in a bottle? Your DNA contains all of the information that makes you who you are. Isolate your own

DNA and capture your unique essence in a stylish glass necklace!

– Julie Mathern, Bio-Rad Laboratories

Human Physiology with Vernier

Platinum 3 • Exhibitor Demonstration • HS 2C 4C

In this hands-on workshop, you will learn how easy it is to integrate Vernier technology into your Human Anatomy and Physiology curriculum. Activities from our *Human Physiology 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.

– Angie Harr, Vernier Software & Technology

Free Classroom Resources from HHMI for Teaching Evolution

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

Discover classroom-ready lessons, hands-on activities, animations, and video clips to help you teach central and difficult biological concepts such as molecular genetics and the evolution topics of selection, phylogenetic trees, drug resistance, and biodiversity. These engaging multimedia resources include inquiry-based investigations, and data collection, analysis, and computation.

– Satoshi Amagai and Jennifer Bricken, Howard Hughes Medical Institute, Chevy Chase, MD

Using Concepts of Macroevolution and Phylogeny in High School Evolution

Elite 1 • Hands-on Workshop • Evolution • HS 2C

Participate in engaging activities from SEPUP's new biology course, Science and Global Issues, to investigate concepts of macroevolution and phylogeny in the context of issues of biodiversity conservation.

– Laura Lenz, SEPUP, Lawrence Hall of Science, UC Berkeley, Berkeley, CA

The Genetics of Gummy Bears And Dinosaurs: A Captive Breeding Experiment

Elite 2 • Hands-on Workshop • Genetics • HS 4C

A lab activity using gummy bears and the ancient 'eggs' of the gummy dino-

saur to teach simple Mendelian ratios, genotypes, phenotypes and inheritance patterns. Students are given the progeny of hypothetical matings and ask to evaluate them for clues to inheritance patterns and traits.

– Paul DeLange, Kettering College, Kettering, OH

Marine Science Mania IV

Platinum 7 • Hands-on Workshop • Oceanography/Marine Biology • HS JH

Marine Science Mania IV ~ using Marine Science Literacy, and the College Readiness standards as a common thread, this session will be focusing on Marine Science. Topics include: Biological, Chemical, Physical, and Geological oceanography. CD of labs, activities, powerpoint presentations, with terrific giveaways will provide you with ready to go activities.

– Tom Froats, N.B.C.T., Prospect High School, Mount Prospect, IL

Drop the Lecture and Let the Students Pick Up the Learning in Molecular Biology

Grand F • Hands-on Workshop • Molecular & Cell Biology • 2C

Using a fast-paced group game to compare and contrast the cellular organelle of prokaryotes and eukaryotes; a team race to exemplify the separation of DNA fragments by PCR and a bacterial social event to elucidate the critical points of conjugation and transformation, this session will add several new activities to your bag of tricks for teaching in-depth AP Biology topics in an engaging and memorable manner.

– Kristen Dotti, Christ School, Asheville, NC

Remodeling DNA: Bridging Form and Function in a Popular Teaching Exercise

Platinum 4 • Hands-on Workshop • General Biology • 4C HS

A review of the educational strengths and limitations of various physical models of DNA. An affordable and effective paper model will be built and discussed.

– Kirt Moody, Columbia College SC, Columbia, SC



Life Sciences for a Global Community

M.S. Biology for High School Teachers

- *Earn a Master of Science in Biology from Washington University in two years while continuing to work at your current job.*
- *Learn from top life science faculty at Washington University in St. Louis, one of the most prominent research universities in the country.*
- *Gain skills to build your department as a team and acquire nationwide contacts with colleagues who are working to strengthen biology education.*
- *Spend two three-week summer sessions on Washington University's main campus, participating in courses with renowned faculty.*
- *Participate in professional networks to keep in touch with colleagues and to provide support when writing papers and conference proposals.*
- *Develop leadership skills for curriculum innovation at the district, local and national levels.*

please stop by
**BOOTH
414**

(314)935-6700

ucollege.wustl.edu/MSBiology scienceoutreach@wustl.edu

 **Washington University in St. Louis**
UNIVERSITY COLLEGE IN ARTS & SCIENCES

9:30 am - 10:45 am

continued

Biology Best Bets 15

Platinum 8 • Demonstration • General Biology • HS GA

Explore our latest collection of biology learning experiences in context – logistics, cost, assessments, & extensions. Adapt them for your needs!

- Sue Black, Inglemoor High School, Kenmore, WA & Nancy Monson, West Linn High School, West Linn, OR

Science Choreography

Orange County 2 • Hands-on Workshop • Teacher Prep/Curriculum Development • JH HS

Explore the intersection of art, science, and kinesthetic learning using methods developed through a multi-year collaboration between Wesleyan University scientists and Liz Lerman Dance Exchange.

- Elizabeth Johnson, Liz Lerman Dance Exchange/Arizona State University, Tempe, AZ & Michael Weir, Laura Grabel & Laurel Appel, Wesleyan University, Middleton, CT

A Walk in the Park: Combining Service Learning and Field Research

Grand C • Paper • Environment/Ecology • 4C 2C

A model for creating partnerships with park advocacy groups and government agencies will be introduced for students to experience scientific research and public service.

- Robert Loeb, The Pennsylvania State University - DuBois, DuBois, PA

Dive in with Physical Models: Impact of Water on Protein Structure

Orange County 1 • Hands-on Workshop • General Biology • HS 2C

Discover the physical and chemical properties of water using magnetic water molecules. Explore how these chemical principles of water influence protein structure using physical models.

- Shannon Colton, Milwaukee School of Engineering, Milwaukee, WI

Improve Student Lab Reports by Taking a Long View of Lab Planning

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

Design a semester-length series of laboratories that teaches the scientific process,

leverages inquiry, develops critical thinking, and improves lab reports.

- Giese Alan, Lyndon State College, Lyndonville, VT

Turbo Strand

Preparing Your Students for the Quantum Leap into High School Sciences

Grand G • Hands-on Workshop • Instructional Strategies/Technologies • JH HS

Experience instructional strategies, based on current brain based learning research, that help students transition into high school science: graphic organizers, note-making, vocabulary skills, identifying similarities and differences, model-making and podcasting.

- Robby Cramer, Michigan Science Teachers Association, Grand Haven, MI

Integrating Bioinformatics into Introductory Biology Courses

Platinum 9 • Hands-on Workshop • Biotechnology • HS JH

Learn how to integrate basic bioinformatics concepts and tools into introductory biology classrooms using a case study about genetic testing for breast cancer.

- Jeanne Chowning, NW Assoc for Biomed Research, Seattle, WA

10:00 am - 10:30 am

Sex, Confidence, and the Role-Model Effect in Biology

Grand K • Paper • General Biology • 4C GA

We document how the presence of a woman in either a primary or secondary instructional role (or both) improves female students' levels of scientific confidence.

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

Creating Classroom Research Opportunities Using Online Ecology Data

Grand J • Paper • Environment/Ecology • 2C 4C

Using citizen-science data or Cornell's web-based video and sound files, high school through undergraduate students can conduct authentic inquiries into eco-

logical relationships and animal behavior.

- Colleen McLinn, Cornell Lab of Ornithology, Ithaca, NY

11:00 am - 11:30 am

Involving Undergraduates in Instructing Introductory Biology: A Collaborative Effort to Enhance Pre-Service Teachers' Inquiry Teaching Skills

Platinum 8 • Paper • Teacher Prep/Professional Development • 4C 2C

Come learn how we use inquiry-based, college-level introductory biology laboratories as a low-threat training ground for pre-service teachers enrolled in their science methods course.

- Julie Angle & Donald French, Oklahoma State University, Stillwater, OK

11:00 am - 12:15 pm

Using Data Logging to Improve Student's Information and Communication Technology (ICT) Skills in IB Biology

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

In this session, you will learn how PASCO's data collection and visualization solutions will help your students better understand biology and fulfill aim #7 of the IB diploma program: to develop and apply the students' information and communication technology skills in the study of science. Learn how easy it is to incorporate these technologies into your student's "training" and internal assessment labs.

- Jason Lovell, PASCO

Enzymes and Lactose Intolerance

Grand B • Exhibitor Demonstration • General Biology • HS

How does the dietary supplement, LACTAID work to help people with lactose intolerance? Model the action of the enzyme lactase. Conduct tests to determine whether LACTAID digests lactose. Design and conduct an experiment to determine if acid interferes with the action of the enzymes in LACTAID.

- Susan Holt & Dina Markowitz, Science Take-Out

Using Concept Stories and Case Studies to Teach Core Content in Environmental Science

Elite 3 • Exhibitor Demonstration • Environment/Ecology • HS 2C

BIOZONE's new Environmental Science workbook provides a concept-based approach to a dynamic and challenging subject. Using the 2010 Gulf of Mexico oil spill as a case in point, BIOZONE's authors demonstrate how case studies can provide a real world framework for understanding core content and developing inquiry based skills.

– Dr. Tracey Greenwood & Richard Allan, Biozone

Enzymes and Biofuels -- Go From Grass to Gas! (AP Lab 2)

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

Reveal the power of enzyme kinetics by illustrating the theory through real world applications to biofuels. Your students will determine how temperature, pH, the concentration of substrate and of enzyme affects an enzymatic reaction by determining the rates of reaction for cellobiase – a key enzyme in the production of ethanol.

– Julie Mathern, Bio-Rad Laboratories

Biology and AP Biology with Vernier

Platinum 3 • Exhibitor Demonstration • Biotechnology • HS 4C

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

Survival of the Fittest: Variation and Selection

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

The focus of this session will be on natural selection, a central and difficult concept of evolution. Participants will work through classroom-ready, hands-on activities and lessons that complement the HHMI DVD Evolution: Constant Change

Invited Speaker 11:00 am - 12:15 pm

Grand F

Laurie Marker, Ph.D.

Executive Director, Cheetah Conservation Fund

Aspects of Biology, Ecology and Conservation of Cheetah in Namibia

Images of the cheetah racing across the African savannah in an awe inspiring display of speed and agility are so familiar to us from wildlife documentaries on television that it can be difficult to believe that this beautiful animal is literally running for its life. The world's fastest land animal is also Africa's most endangered big cat.

Today's cheetah populations are descendants of but a few animals, which remained after the Pleistocene era about 10,000 years ago. Although the cheetah's future might seem bleak, the history of the cheetah is that of a survivor; as it has recovered from several population bottlenecks and has increased in numbers each time. However, if the wild populations continue to plummet, and habitat conservation efforts fail in Africa for this species, the cheetah could face extinction within decades.

As Founder and Executive Director of the Cheetah Conservation Fund (CCF) since 1990, Dr. Laurie Marker has pioneered new ideas in cheetah conservation and has formed cooperative alliances on behalf of the cheetah that had never before been possible. She is recognized around the world as one of the leading experts on cheetahs, both in the wild and in captivity. CCF is an international organization with headquarters in north central Namibia, in the heart of cheetah country, and has worked actively with the farming community over the past 20 years to develop livestock and game management practices that are 'predator-friendly'. CCF has grown into a world-renowned research and education centre, where ongoing long-term scientific research programs run alongside the day-to-day work of a model farm and caring for orphan cheetahs.



and Common Threads. These resources are designed to engage students in inquiry by encouraging them to formulate questions that can be answered through scientific investigation, data collection, and pattern recognition. Attendees will receive the Evolution DVD.

– Mary Colvard, Howard Hughes Medical Institute, Chevy Chase, MD

Turbo Strand

Achieving High Biology Test Scores and Motivation in Urban Schools

Grand K • Hands-on Workshop • General Biology • HS GA

State test scores of 96% basic and higher in urban LA! We'll demonstrate/share brain research-based strategies to improve student motivation, retention, and success. Resources provided!

– Gerard Vargas & Mark Friedman, Animo Leadership Charter High School, Inglewood, CA

AP Bio Symposium: Making Inquiry Authentic, not Just a Buzz Word

Orange County 1 • Symposium • HS

During this portion of symposium we will dig into the nature of science ideas that are now explicit in the framework for AP Biology, including using inquiry to enhance student learning and to create experiences that help students truly experience biology as a scientific endeavor. To do this we'll look at the findings from science education research and consider and experience what it actually means to put those findings into practice, with a particular emphasis on the following:

- understanding what counts as evidence in science and how that relates to theory development
- exploring the nature of scientific explanations with specific attention to using the structure of claim-evidence-reasoning to articulate explanations.
- delving into the philosophical ideas that ground scientific practices and consider how to exemplify those practices in the

11:00 am - 12:15 pm

continued

biology classroom

All of these ideas will be explored from multiple perspectives so that classroom teachers can see and experience the connections between research and practice in ways that will enhance teaching and illustrate the exciting aspects of the new AP Biology curriculum.

- Janet Carlsson, BSCS, Colorado Springs, CO
- Sponsored by Pearson

“Not Just a Theory:” Research-Based Strategies for Teaching Evolution

Elite 1 • Paper • Evolution • HS 4C

Learn about successful ways to support evolution understanding and acceptance in the classroom based on recommendations in the science education research literature.

- Emily Walter, University of Missouri, Columbia, MO

Field Guide to Measuring Dissolved Oxygen and Stream Flow

Elite 2 • Hands-on Workshop • Environment/Ecology • HS JH

This hands-on workshop will provide participants the opportunity to perform measurements of dissolved oxygen in water samples using both traditional field/bench chemistry (i.e. Winkler method) as well as software driven probes (Vernier, PASCO, etc.). Factors influencing DO values (temperature, salinity, aeration, etc.) will be tested. Measurement of stream flow using changes in conductivity as measured by Vernier probes will be demonstrated.

- William Anderson, Stroud Water Research Center, Avondale, PA & Sandra Litvin, Unionville High School, Kennett Square, PA

Bioethics 101

Platinum 7 • Hands-on Workshop • Bioethics • HS JH

Engage students in thinking about ethical dimensions of scientific research using engaging and practical lessons developed by experienced teachers. Receive extensive newly-developed bioethics resources.

- Jeanne Chowning, NW Assoc for

Biomed Research, Seattle, WA

Digital Resources from the HudsonAlpha Institute for Biotechnology

Orange County 3 • Hands-on Workshop • Instructional Strategies/Technologies • HS JH

Imagine students using their smart phone to study cells. Come see the FREE digital resources available from The HudsonAlpha Institute for Biotechnology. Receive a CD of digital content and classroom-tested activities ready to be dropped into lessons

- Madelene Loftin, HudsonAlpha Institute for Biotechnology, Huntsville, AL

Let’s Get Helical: Exploring DNA Structure/Function with Interactive Physical Models

Platinum 4 • Hands-on Workshop • General Biology • HS 2C

Explore DNA structure and information storage with an interactive, magnetic DNA model and a paper bioinformatics exercise focusing on the beta subunit of hemoglobin.

- Tim Herman, Shannon Colton & Margaret Franzen, Milwaukee School of Engineering, Milwaukee, WI

Integrating Inexpensive Digital Microscopy into Biology Inquiry Learning

Grand J • Demonstration • Instructional Strategies/Technologies • HS 2C

This presentation demonstrates how digital microscopes can be used to reinforce learning. It will show a variety of student inquiry projects that can be produced.

- Brian Shmaefsky, Lone Star College – Kingwood, Kingwood, TX, Cynthia Syverson-Mercer, Swift Optical Instruments, San Antonio, TX

Activities & Demonstrations to Stimulate Inquiry in Biology

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

Hands-on activities and demonstrations: Diffusion, Passive Transport, Simulated Cell Organelles, MRI, Hydrophilic and Hydrophobic Properties, Intimate Microbes, Energy Transfer, and Forensics.

- John Fedors, Science Activities, Lincoln, CA

Biology and the Arts: Sing, Dance, Cook and Create Your Way Through Biology

Grand G • Hands-on Workshop • General Biology • HS 4C

Learn engaging ways to teach complex concepts such as gene expression, photosynthesis, and heart rhythms. See and experience over 20 activities. Make Hawaiian “lei” chromosomes to take home with you!

- Diane Sweeney & Mike Judge, Punahou School, Honolulu, HI

Preparing for NABT’s 75th Anniversary

Gold Key 2 • Hands-on Workshop • Teacher Prep/Professional Development • GA

NABT’s 75th Anniversary celebration is fast approaching. Share your ideas for this epic event while viewing a slide show: NABT’s past, planning for the future.

- Pat Waller, Dee Millard, Leonard Blessing, Carrie Boyce, Betty Carvellas, Maura C. Flannery, Kathy Frame, Bunny Jaskot, Beth Ann Krueger, Ann Lumsden, Peter McClean, William F. McComas, Bob McGuire, Louise Pittack, Dorothy Reardon, Brenda Royal, Pam Tabery, NABT History Committee

Heads or Tails — Using Guided Inquiry and Planaria to Develop 21st Century Skills

Grand C • Paper • Instructional Strategies/Technologies • 4C GA

Join us as we share our investigative story and its interesting results. We weave together technology, both hardware and software, and a tried and true model system to encourage development of 21st Century skills for life and work: Communication, collaboration, critical thinking, creative problem solving.

- Sandra Latourelle & Nancy Elwess, SUNY Plattsburgh, Plattsburgh, NY

Biotechnology Made Easy

Platinum 9 • Hands-on Workshop • Biotechnology • HS 2C

Wish you had more hands-on activities to demonstrate hard biotechnology concepts? This workshop will allow participants to engage in some inexpensive activities designed to be used as inquiry, reinforcement, or

even transfer task assessments in the classroom.

- Kristina Nicosia, West Windsor-Plainsboro High School North, Plainsboro, NJ

11:30 am - 12:00 pm

Development of an Effective Tool to Identify Students At Risk For Failure in Introductory Biology Courses

Platinum 8 • Paper • Curriculum Development/Supervision • 2C GA

A survey tool was developed that could accurately predict students at risk for failure in introductory biology courses.

- Ann Witham, University of Cincinnati, Raymond Walters College, Cincinnati, OH

12:30 pm - 1:00 pm

Just Tell Me What I Need To Do To Teach This Lesson

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

“Tell me what I need to do to pass this test,” is a often heard phrase by students but nowadays, it’s slightly altered wording is heard from teachers and professors as well (note the session’s title)

- Tom Lord, Indiana University of PA, Indiana, PA

Climate, Environment and Global Literacies for the 21st Century

Platinum 8 • Paper • Teacher Prep/Professional Development • 4C GA

This interactive paper session will highlight our Climate Change Education White Paper arguing for pedagogies that make the global relevant in the local classroom.

- Teddie Phillipson-Mower, University of Louisville, Louisville, KY

12:30 pm - 1:30 pm

AP Bio Symposium: Conducting Inquiry Based Laboratory Investigations

Orange County 1 • Symposium • Instructional Strategies/Technologies • HS

Members of the AP Biology Development Committee will provide an overview of the: curriculum framework, science practices, new labs, and focus on inquiry-based instructional strategies.

- Spencer Benson, University of Maryland, College Park, MD; Julianne Zedalis, The Bishop’s School, La Jolla, CA

– Sponsored by Pearson

12:30 pm - 1:45 pm

Understanding the Practices of Science for Classroom Implementation

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

Inquire into the practices of science for integration in the classroom and improved student learning.

- Janet Carlson, BSCS, Colorado Springs, CO

ASM “Going Viral” Symposium: Studying Viral Pathogenesis: From the Lab to the Web

Grand C • Symposium • HS 2C 4C

This presentation will introduce current lab-based research on reovirus pathogenesis and also the use of Twitter in courses to interact with the broader research community.

- David Wessner, Davidson College, Davidson, NC

– Sponsored by the American Society for Microbiology

Enhancing Student Learning Using On-Line Media

Orange County 2 • Paper • Environment/Ecology • 2C 4C

Students retain more when personally involved with their learning. In response, publishing companies are providing on-line platforms that when used effectively, support a student-centered classroom.

- Erica Kipp, Pace University, New York, NY

Using Current Issues to Teach Ecosystem and Population Dynamics

Elite 1 • Hands-on Workshop • Environment/Ecology • HS 2C

Learn how to integrate sustainability issues such as fisheries management and

invasive species into ecology and population dynamics lessons using activities from Science and Global Issues: Biology.

- Maia Willcox & Laura Lenz, SEPUP - Lawrence Hall of Science - UC Berkeley, Berkeley, CA

Turbo Strand

Evolution Solutions

Grand K • Hands-on Workshop • Evolution • GA 4C

Do you wonder how to infuse evolution into your curriculum? Are you looking for diverse evolution applications with direct relevance to engage your students? Several educators will demonstrate hands-on applications from the newly revised Understanding Evolution website.

- Jean DeSaix, University of North Carolina at Chapel Hill, Chapel Hill, NC; Judy Scotchmoor & Anna Thanukos, University of California Museum of Paleontology, Berkeley, CA; Calvin Young, Fullerton College, Fullerton, CA

The Science of Making Wine

Elite 2 • Hands-on Workshop • Molecular & Cell Biology • HS JH

From the vineyard to the table, modern wine makers employ a multitude of scientific techniques to help them control every stage of the wine making process. Learn how contemporary wine makers use biology and chemistry to help them face the challenges of producing the highest quality wines while still maintaining the integrity of their art. Lesson plans and student worksheets will be included.

- Nancy Withers, Fisher Science Education, Huntington Beach, CA

Evolution Every Day

Platinum 7 • Paper • Evolution • HS 4C

We will present the argument that biology teachers can and should teach evolution every day and will provide examples from our classrooms.

- Paul Strode & Kristy Campbell, Fairview High School, Boulder, CO

12:30 pm - 1:45 pm

*continued***Grant Writing Success through Collaborative Projects**

Elite 3 • Paper • Teacher Prep/Professional Development • HS 2C

Participants examine competitive grant writing using collaborative research experiences for students. Resources include lists of grants, grant writing techniques, and ideas for research experiences.

- Jennifer Allsbrook & Kimberly Mirasola, Polk County High School, Columbus, NC

Assessment in Microscope-Based Labs using Digital Lab Notebooks

Grand F • Hands-on Workshop • General Biology • GA 4C

Laboratories utilizing microscopes often ask students to make drawings of what they see under the microscope to illustrate lab notebooks which constitute a portion of their grade. This workshop will provide examples of assessments that can be used in these laboratories to assess student mastery of a variety of concepts and skills.

- Connie Russell, Angelo State University, San Angelo, TX & Cynthia Syverson-Mercer, Swift Optical Instruments, San Antonio, TX

Using Socratic Seminars in Science

Grand J • Hands-on Workshop • Instructional Strategies/Technologies • HS JH

Socratic Seminars can be used in a science classroom to foster discussion of a challenging text. Participants will engage in an actual seminar.

- Jeanne Chowning, NW Assoc for Biomed Research, Seattle, WA

How Do You Know That? Building Knowledge from Studies

Grand G • Hands-on Workshop • Instructional Strategies/Technologies • JH HS

Students learn the processes of science and the function of organelles as they analyze simplified scientific studies to construct and defend models explaining what organelles do.

- Catherine Ambos, Somerville Middle School, Somerville, NJ

Bringing Systems Biology Research to your Classroom

Platinum 9 • Hands-on Workshop • Biotechnology • HS JH

Explore 3 modules that guide students through inquiry based, interdisciplinary lessons as they develop systems thinking skills and apply science content to real world investigations.

- Claudia Ludwig, Institute for Systems Biology, Seattle, WA & Mari Knutson Herbert, Lynden High School, Lynden, WA

1:00 pm - 1:30 pm

Rubrics, Artifacts & Tools: A Tale of Assessment

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

Feeling overwhelmed by assessment? Come hear about a project assessing scientific writing skills. Learn about the challenges and receive tips and resources for your own assessment project.

- Kathy Kresge, Northampton Community College, Bethlehem, PA

Authentic Environmental Data Can Enhance Science Understanding and Improve Math Skills

Platinum 8 • Paper • Environment/Ecology • 4C HS

This presentation provides details on how to access, download, and manipulate environmental data so students can graph, analyze, and interpret real data.

- William Kroen, Wesley College, Dover, DE

1:30 pm - 3:15 pm

AP Bio Symposium: Conducting Inquiry Based Laboratory Investigations

Orange County 1 • Symposium • Curriculum Development/Supervision/Teacher • HS

Participants will conduct one of the new AP Biology Labs and host a mini-poster session. They will be active participants in a student directed, inquiry based investigation.

- Brad Williamson, University of Kansas, Lawrence KS; Sharon Radford, The Paideia School, Atlanta, GA
- *Sponsored by Pearson*

1:45 pm - 2:45 pm

Committee Meeting: Personnel Committee

Gold Key 2

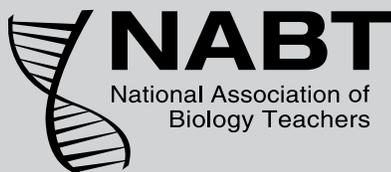
2:00 pm - 3:15 pm

Diagnosing Diabetes

Grand B • Exhibitor Demonstration • HS

Follow the case of a young woman with diabetes. Organize graphics to illustrate a patient brochure on diabetes. Conduct a simulated glucose tolerance test and graph glucose and insulin levels to determine if your patient has Type 1 or Type 2 diabetes. Information will be provided on lab kit assembly and related activities.

- Susan Holt & Dina Markowitz, Science Take-Out



thanks the many volunteers from the Greater Anaheim area who worked so hard to make the 2011 Conference a success.

From Petri to PCR: Incorporating the Versatile Model Microbe *Halobacterium sp.* NRC-s Into Your Classroom

Grand A • Exhibitor Demonstration • Molecular & Cell Biology • HS 2C

Come experience Haloarchaea - the perfect tool for engaging students in inquiry-based learning activities developed by an enthusiastic team of university researchers and classroom teachers.

- Priya DasSarma, Kelley Tuel & Brenda Bott, Carolina Biological Supply Company

Starting a Biotech Program with Biotechnology: A Laboratory Skills Course and author Kirk Brown

Orange County 4 • Exhibitor Demonstration • HS

Empower your students to become tomorrow's leaders by giving them the skills they need to become independent thinkers. Learn how to set the foundation of your program with equipment, supplies, Bio-Rad's new biotechnology lab textbook, and words of wisdom from model biotech programs to inspire students with real world lab experiences.

- Julie Mathern, Bio-Rad Laboratories

Inquiry-based Biology with Vernier

Platinum 3 • Exhibitor Demonstration • General Biology • HS GA

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

Videocase Lesson Analysis for Increased Teacher Content Understanding

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

Experience how video based lesson analysis has an impact on preservice teacher content understanding.

- Paul Numedahl, BSCS, Colorado Springs, CO

ASM "Going Viral" Symposium: The Role of Viruses in the Origin and Evolution of Life

Grand C • Symposium • Microbiology • HS 2C 4C

Introducing the big picture of viruses and life. This challenging perspective on life will incite curiosity, imagination and motivate new perspectives in students.

- Luis Villarreal, University of California-Irvine, Irvine, CA
- *Sponsored by the American Society for Microbiology*

Biology Concept Cartoons Can Engage ALL of Your Students

Grand K • Hands-on Workshop • General Biology • HS JH

Research-based biology concept cartoons have been developed to help your students learn a variety of biology topics including natural selection, cell division, and ecosystem ecology.

- Dianne Anderson, Point Loma Nazarene University, San Diego, CA

Bad Acid: Engaging Students in an Inquiry-Based Online Ocean Acidification Study

Elite 1 • Paper • Oceanography/Marine Biology • HS E

Acid Ocean is an inquiry-based virtual lab designed to investigate the problem of ocean acidification. Students use a vir-

tual lab bench to set up an experiment, use authentic research data, measure changes in larva to see possible effects of climate change. Students measure their own specimen and then evaluate the significance individual and class data

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

Inquiry Lessons: Life on Earth and Elsewhere?

Elite 2 • Hands-on Workshop • Evolution • JH HS

Astrobiology and Evolution? What's the connection? Join the SETI Institute for activities and resources connecting the latest in interdisciplinary science to the classroom. Inquiry-based activities.

- Pamela Harman, SETI Institute, Mountain View, CA & Nikki Chambers, West High School, Torrance, CA

Infuse Your Biology Curriculum With Current Research Developments

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

Learn about hands-on lessons developed by scientists and teachers that engage students and bring real-life relevance to the biology curriculum

- Ben Koo & Sabine Jeske, UCSF - Science & Health Education Partnership, San Francisco, CA

Journal of Emerging Investigators

*A Harvard GSAS Organization



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*** ENGAGE** 6th-12th grade students in scientific writing.

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2:00 pm - 3:15 pm

continued

Integrating Issues of World Health into a Life Science Classroom

Grand F • Hands-on Workshop • Molecular & Cell Biology • HS 2C

Participate in engaging activities from SEPUP's new biology course, Science and Global Issues to investigate stem cell differentiation, and explore issues around stem cells and disease.

- Maia Willcox & Laura Lenz, SEPUP, Lawrence Hall of Science, UC Berkeley, Berkeley, CA

An Innovative Way to Create Efficient Student Groups for Labs or Projects

Grand J • Hands-on Workshop • Instructional Strategies/Technologies • 2C HS

Participate in an innovative, interactive method of forming student groups. Learn how to help students appreciate other students' behavioral styles and foster collaborative learning.

- Jean Anastasia, Suffolk County Community College, Selden, NY

Immunity, It's Child's Play

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

This inquiry-based workshop demonstrates fun, inexpensive activities and games that explain the difficult concepts of the Immune System. Handouts will be provided.

- Peggy Deichstetter, St. Edward High School, Elgin, IL

Developing a Science Research Program for High School Students

Grand G • Paper • Instructional Strategies/Technologies • HS JH

We have 25 years experience of student independent research. Join us in a discussion of the details, benefits, drawbacks, and implementation of this program.

- Peter Langley, Robert Orr & William Lamb, Oregon Episcopal School, Portland, OR

Turbo Strand

Using Mathematical Models for Teaching Population Ecology and Conservation Issues

Platinum 8 • Hands-on Workshop • Environment/Ecology • HS 2C

Looking for ways to make population ecology more authentic? This research-based project teaches students to use bio-math to identify species conservation strategies.

- Peter Pintz & James Paige, Hinsdale Central High School, Hinsdale, IL

Genes Gone Wild!

Platinum 9 • Hands-on Workshop • Biotechnology • HS JH

Want a biotech activity that really engages students, but you don't have a lot of fancy equipment? These paper activities teach bioengineering, culminating in a "product" for sale!

- Dana de Farcy, Casa Roble High School, Orangevale, CA

Lost in Translation: Exploring Protein Synthesis with Interactive Physical Models

Platinum 1&2 • Hands-on Workshop • General Biology • HS 2C

Discover the translation process from mRNA to protein, using hands-on innovative physical models of the insulin gene and protein.

- Margaret Franzen, Shannon Colton & Tim Herman, Milwaukee School of Engineering, Milwaukee, WI

- Jacqueline B. Rojas, California State University Fullerton, Fullerton, CA; Denise D. Boyd, Santa Ana College, Santa Ana, CA.

3. Cogenerative Dialoguing as a Tool to Increase Full Student Participation in the Urban Biology Classroom

- George Sirrakos, Curtin University of Technology, Perth, AUS and Christopher Emdin, Teachers College, Columbia University, New York, NY

4. Developing the Visuo-Spatial Aptitude of Biology Students

- Thomas Lord, Department of Biology, Indiana University Pennsylvania, Indiana, PA

5. Special guest: Recipient of the 2011 Four-Year College & University Biology Research Award

- Erin Baumgartner, Western Oregon University, Monmouth, OR

3:30 pm - 4:45 pm

Homeostasis and Negative Feedback

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

How are negative feedback mechanisms used to maintain homeostasis? Do a hands-on simulation to show how "Cupples" maintain homeostasis. Use a graphic organizer to illustrate feedback control mechanisms for regulating body temperature.

- Susan Holt & Dina Markowitz, Science Take-Out

Carolina™ Investigations for AP Biology

Grand A • Exhibitor Demonstration • General Biology • HS

Enhance your students' experience in AP Biology with new investigations from Carolina. Based on the revised AP Biology curriculum, Carolina's new guided inquiry-based labs help students develop essential knowledge of each Big Idea. This hands-on workshop provides you the opportunity to experience these new resources and share feedback with us.

- Carolina Teaching Partner, Carolina Biological Supply Company

2:00 pm - 4:45 pm

NABT Research Symposium

Grand D • Symposium • 4C

Join us for the 3rd Annual NABT Research Symposium. Selected peer reviewed biology education research papers will be presented.

1. Factors Potentially Influencing Student Acceptance of Biological Evolution
 - Jason Wiles, Syracuse University, Syracuse, NY
2. Revealing Generation 1.5 Student Awareness of Academic Self-Efficacy to Learn Biology through Inquiry

Cloning and Sequencing Explorer Series: Get your Students Published in GenBank!

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

This unique lab series guides students through an innovative workflow identical to those performed in research labs worldwide. In this multiple-week course, students combine traditional and cutting edge molecular biology techniques and bioinformatics to clone, sequence, and analyze a housekeeping gene from a plant of your choice to produce unique and novel data.

- Julie Mathern, Bio-Rad Laboratories

Biotechnology and Spectroscopy with Vernier

Platinum 3 • Exhibitor Demonstration • Biotechnology • HS 4C

In this demonstration, you will learn how easy it is to integrate Vernier technology 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.

- John Melville & Mike Collins, Vernier Software & Technology

Pedagogical Content Knowledge (PCK) - Jargon or a Path to Improved Student Understanding?

Platinum 4 • Hands-On Workshop • Bioethics • GA 4C

Explore the concept of Pedagogical Content Knowledge (PCK) with us—it is more than jargon. Consider how curriculum materials and professional development work together to strengthen the PCK of biology teachers.

- Janet Carlson, BSCS; April Gardner, BSCS, Colorado Springs, CO

ASM “Going Viral” Symposium: - Phage Discovery - A Platform for Integrating Research and Student Learning

Grand C • Symposium • Microbiology • HS 2C 4C

This talk will describe student research in phage biology and how it ties into student learning.

- Erin Sanders-Loren, University of California Los Angeles, Los Angeles, CA
- *Sponsored by the American Society for Microbiology*

AP Bio Symposium — Designing Instructional Activities and Laboratory Investigations in Support of the Revised AP Biology Course

Orange County 1 • Symposium • Instructional Strategies/Technologies • HS

Participants will learn how to design instruction and develop student directed, inquiry based activities that support the curriculum framework and focus on the science practices

- Spencer Benson, University of Maryland, College Park, MD; Julianne Zedalis, The Bishop’s School, La Jolla, CA; Brad Williamson, University of Kansas, Lawrence KS; Sharon Radford, The Paideia School, Atlanta, GA
- *Sponsored by Pearson*

Turbo Strand

WOW XIII

Platinum 9 • Hands-on Workshop • General Biology • HS JH

On a budget? Join the Mississippi Association of Biology Educators as we share some of favorite cheap and hands-on activities. Handouts Galore! Door Prizes!

- Mary Branson, Callaway High School, Jackson, MS; Tammy Cox, Provine High School, Jackson, MS ; Jammy Davis, Forest Hill High School, Jackson, MS & Sheila Smith, Science Consultant, Ridgeland, MS

The Role of Natural History Museums in Evolution Education

Elite 1 • Paper • Evolution • JH GA

This paper discusses the critical role natural history museums play in addressing biological evolution content via three principles: variation, natural selection, and change over time.

- Paul Narguizian, California State University, Los Angeles, Los Angeles, CA

From Gene to Protein: How to Use this Resource in Your Classroom

Grand J • Hands-on Workshop • Instructional Strategies/Technologies • HS 2C

This session is for AP Biology teachers who want to use the special focus supplement, From Gene to Protein, effectively in their classroom. Taught by current AP Biology teachers, this session will provide additional print and on-line resources to enhance student learning of molecular biology concepts.

- Allison Kittay, Redwood High School, Larkspur, CA & Cherylann Holliger, Central York High School, York, PA

Visualizing Five Billion Years

Elite 2 • Hands-on Workshop • Evolution • HS JH

Conduct a hands-on inquiry activity addressing two evolutionary misconceptions: Humans and dinosaurs have coexisted and the earth is just a few thousand years old.

- Bill Leonard, Clemson University, Clemson, SC & John Penick, Sangari Global Education

How to Start a Biotech Program - A Toolkit Approach to Grant Writing and Program Design

Platinum 7 • Hands-on Workshop • Biotechnology • HS JH

Want to start a Biotech Program? Whether you want to start with just a few labs or with an entire course, join us for a “tool kit” approach to writing grants and designing your program.

- Stan Hitomi, San Ramon Valley Unified School District, Walnut Creek, CA

Stem Cells: Science and Ethics

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

Explore the science behind stem cells as well as ethical implications of embryonic stem cell research using hands-on engaging activities. Receive the 5-lesson unit on CD.

- Jeanne Chowning, NW Association for Biomedical Research, Seattle, WA

You-tubes and Demos in Bio, Oh My!

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

A compilation of classroom strategies, demos, and you-tubes (media) used to enhance student performance of at-risk students in the introductory-level biology classroom.

- Marianne Gudmundsson & Mary Ann Ericksen, Glenbrook South High School, Glenview, IL

3:30 pm - 4:45 pm

continued

Extreme Animals in Your Classroom - Tardigrades

Platinum 1&2 • Hands-on Workshop • General Biology • GA JH

We will isolate tardigrades (water bears) from moss, discuss their ability to survive extreme conditions, how to isolate, maintain, and integrate them into your curriculum.

- Karen Kalumuck, Exploratorium, San Francisco, CA

Process Oriented Guided Inquiry Learning (POGIL) for High School Biology and Chemistry Classrooms

Grand G • 1 Hands-on Workshop • Instructional Strategies/Technologies • HS GA

Participants will be introduced to POGIL pedagogy. Sample biology and chemistry activities from the newly developed HSPI collection will be examined and provided for attendees.

- Elizabeth Mancini, Cherry Hill High School East, West Berlin, NJ;
- Joanne Long, Franklin Township

Exhibit Hall Grand Opening • 4:45 pm - 7:30 pm

Marquis Ballroom

You are the guest of honor at this special event showcasing the different offerings from NABT Exhibitors. With over 60 booths to visit, the NABT exhibit hall is the place to learn more about the latest and greatest in teaching technologies and resources. Visit your favorite vendors and meet new ones that will help you become a better teacher. Make sure you get those free samples for your classroom and your colleagues back home, and visit the exhibit hall!

School District, Somerset, NJ & Cindy Wingenroth, The POGIL Project, Franklin & Marshall College, Lancaster, PA

Pipetting by Design

Platinum 8 • Hands-on Workshop • Biotechnology • HS GA

After years of pipetting practice, we have developed a fun method to engage students of all ages (even teachers) in using a micropipette.

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

Multi-disciplinary Student Research: Assessing Attitudes, Knowledge, and Behaviors related to Water Quality

Grand K • Demonstration • Environment/Ecology • JH HS

The presentation will describe and share results of an authentic research experience for students in the content areas of Ecology and Psychology.

- Peter Mecca, George Mason High School, Falls Church, VA

6:00 pm - 7:30 pm

Two-Year College Section Special Presentation by Jay Phelan

Newport Beach/Rancho Las Palmas

The Two-Year College Section invites you to grab some hors d'oeuvres and attend a special presentation from Dr. Jay Phelan. Jay is a biology professor at UCLA whose main area of research is evolutionary genetics and aging. He received a Ph. D. in Biology from Harvard in 1995, and



master's and bachelor's degrees from Yale and UCLA. He is co-author of the international bestseller, *Mean Genes: From Sex to Money to Food — Taming Our Primal Instincts* (Penguin, 2001; translated into nine languages). Written for the general reader, *Mean Genes* explains in simple terms how knowledge of the genetic basis of human nature can empower individuals to lead more satisfying lives. Jay has also authored the textbooks for non-science students "What is Life? A Guide to Biology" and "What is Life? A Guide to Biology, with Physiology" (W. H. Freeman and Co.) and more than twenty technical publications. He also created the online adaptive testing website www.Prep-U.com (Macmillan Publishing Group). Jay serves as an instructor at the FBI's Behavioral Analysis Program, his research has been funded by the National Science Foundation, and he has appeared on ABC's Nightline, CNN with Paula Zahn, the BBC, and National Public Radio's Talk of the Nation. His work has been featured in USA Today, The Los Angeles Times, MSNBC, and Elle magazine, as well as in more than a hundred newspapers. He is the recipient of more than a dozen teaching awards, including UCLA's Distinguished Teaching Award in 2011.

7:30 pm - 9:30 pm

Two-Year College Section Reception

Los Angeles

All teachers at two-year and community colleges are invited to share stories, learn what's happening in undergraduate education, and just have fun with the fastest growing section at NABT. Everyone is welcome to attend.

AP Section Reception

Gold Key 1&2

We're ready for the changes in Advanced Placement Biology. Are you? Discussions about implementing the new curriculum framework are always easier with drinks and appetizers, so come network with other members of the A.P. Biology community at this social reception.

NABT BioClub Reception

Elite 3

The NABT BioClub continues to grow and now boasts over 60 chapters in high schools and community colleges. Learn what the buzz is about at this informational meeting and reception. Come join the club (BioClub that is!).

Four-Year College & University Section Reception & Poster Session

Grand E

The Four-Year College & University Section will once again be hosting an informal reception and poster session for educators at the undergraduate level. Don't miss this popular event highlighting education research by NABT scholars and graduate students.

POSTER TITLES AND AUTHORS

The Relationship Between Undergraduate Biology Students' Intellectual and Ethical Development and the Nature of Science

– Teddie Phillipson-Mower, University of Louisville, Louisville, KY

Smooth Hand-off: Guiding the Biology Transfer Experience in Iowa

– Jeffrey Weld, University of Northern Iowa, Cedar Falls, IA

Extending Classroom Inquiry with Social Media

– James Howell, Penn State University, University Park, PA

"Do People Really Get Paid For Doing This?"

– Antonios Pappantoniou, Housatonic Community College, Bridgeport, CT

We are! why NABT?

Biology & life science education are changing.

We know what you need when you need it, so you can focus on what matters most- your students.

With your NABT Membership, you have access to:

- 9 issues of the award winning journal, *The American Biology Teacher*.
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Why now?

Since 1938, NABT has empowered thousands of teachers to provide the best biology and life science education for all students. Imagine what we can do for you!

Learn more at www.NABT.org.

7:30 pm - 9:30 pm

continued

Adventures in Toading: Hopping Across the Gap Between Research and Education Using a Multimedia, Web-based Approach

- Amanda Arner, Texas Tech University, Lubbock, TX

Modeling a Bacterial Cell: An Introduction to A Modeling-Based Curriculum for Biology

- Seth Manthey and Eric Brewe, Florida International University, Miami, FL

The Effects of an Interactive Module with a Bioethics Component Verses a Non-Interactive Worksheet on Comprehension of the T Test in a College-Level Biostatistics Course

- Joanna Hoegerman and Ashley Carter, CSU-Long Beach, Long Beach, CA

Human Impact on Beaver Foraging in an Urban Forest

- Samuel King, James Helton, and Robert Loeb, Penn State-Dubois, Dubois, PA

Context-based Learning of Genetics by Means of Authentic Practice

- Ronald Michelotti, San Diego, CA and April Cordero Maskiewicz, Point Loma Nazarene University, San Diego, CA

The Effect of Easy to Read and Disfluent Fonts on College-Level learning Assessments

- Victoria Gray and Ashley Carter, CSU-Long Beach, Long Beach, CA

It's Been 15 Years Since The NSES: What Are the Viewpoints About Inquiry?

- Anna Hiatt, Oklahoma State University, Stillwater, OK

Student-Centered Versus Lecture-Based Teaching in a General Studies Biology Course

- Wendy Jamison, Chadron State University, Chadron, NE

Establishing a Dna Database for the Genus *Rana* in and Around the New York and Vermont Lake Champlain Basin

- Justin Andrews, Sandra Latourelle, and Nancy Elwess, SUNY Plattsburgh, Plattsburgh, NY

Genetic Analysis of the Brown, Brook, and Tiger Trout Populations in the Lake Champlain Basin

- Markie Palermo, Nancy Elwess, and Sandra Latourelle, SUNY Plattsburgh, Plattsburgh, NY

Evaluating the Efficacy of Screencasting as a Preparation Activity for Introductory Biology

- Abigail Blades, Steven D. Christenson, and Greg McDavitt, Brigham Young University - Idaho, Rexburg, ID

Assessment of the Two-Lab Learning Cycle Approach in Non-majors General Biology

- John Rushin, and Cary Chevalier, Missouri Western University, St. Joseph, MO

"All About Me"

- James Wiley, SUNY Plattsburgh, Plattsburgh, NY

Using an Online Activity to Teach Regulation of the Lactose Operon in a General Genetics Undergraduate Classroom

- Kallie Johnson, and Tess Rasmussen, Brigham Young University - Idaho, Rexburg, ID

Estimating Sugars: A Practical Classroom Activity to Promote Quantitative and Nutritional Awareness

- Jonathan Fowler, St. John's University, Queens, NY

Are Different Course Delivery Methods Achieving the Same Learning Outcomes?

- Leanne Bakke and Shellie Kieke, Concordia University-St. Paul, St. Paul, MN

Research Potential of Planaria

- Trevor Junquera, Nancy Elwess, and Sandra Latourelle, SUNY Plattsburgh, Plattsburgh, NY

Investigation of the Presence of the ACE and ACTN3 Genes in Winter Athletes Competing in Lake Placid, New York

- Kindsley Dodson, Nancy Elwess, and Sandra Latourelle, SUNY Plattsburgh, Plattsburgh, NY

Creating a Learning Community with First Year Biology Majors

- Margaret Carroll, Framingham State University, Framingham, MA

Analysis of Culverts and Bridges for Fish Passage on the Ausable River and Surrounding Streams

- Siobahn Levere, Sandra Latourelle, and Nancy Elwess, SUNY Plattsburgh, Plattsburgh, NY

Technology to Teach: Supporting and Assessing Secondary Biology Teachers in their Use of DNA Gel Electrophoretic Analysis in High-Stake Testing Instructional Settings

- Regina Wragg, Christine Lotter, and Bert Ely, University of South Carolina, Columbia, SC

Development of a Diagnostic Test Assessing Student Conceptions of Evolutionary Trees

- Luke Blacquiere and William J. Hoese, CSU-Fullerton, Fullerton, CA

An Inquiry-Based Undergraduate Biology Laboratory Course Positively Impacts Student Attitudes Towards Research: Results of a Two-year Evaluation

- Sara Brownwell, Matthew Kloser, and Rich Shavelson, Stanford University, Stanford, CA

Peer-Led Team Learning in Introductory Biology: Effects on Critical Thinking Skills

- Julia Snyder and Jason Wiles, Syracuse University, Syracuse, NY

"What's Life?": A Scaffolded Inquiry Exercise

- Cindy Seiwart, Goodwin College, East Hartford, CT

Online Discussion: An Effective Tool for the Big Questions

- Carol Wake, SD State University, Brookings, SD

Recognizing and Addressing Student Misconceptions Towards Fruit Classification

- Kristen Goossens, Katella High School, Fullerton, CA; William J. Hoese, CSU-Fullerton, Fullerton, CA

NEC Belize: Leading an International Student Trip for the First Time

- Eric J. Simon, New England College, Henniker, NH

Stimulation of Murine Erythroid Leukemia Cell Differentiation by DMSO In Vitro: Replication of a Classic Experiment to Enhance Inquiry in the Undergraduate Laboratory

- Logan Bonner and Jacqueline McLaughlin, Penn State-Lehigh Valley, Center Valley, PA

Out of School Life Science with Middle School Students: Favorite Activities and Attitudes about Science

- Kim Cleary Sadler, Leigh Gostowski, Linda Gilbert, Emily Newton, and David Green, Middle Tennessee State University, Murfreesboro, TN