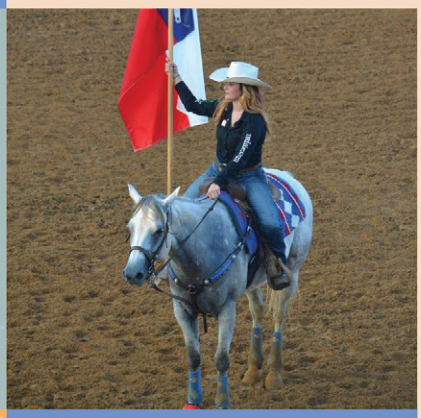






ES - Elementary
GA - General Audience
ML - Middle, Junior High
HS - High School
2Y - 2-year College
4Y - 4-year College & University

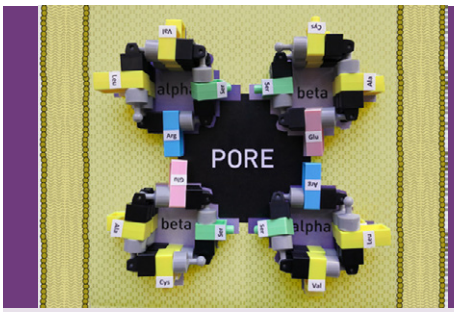
FUTURES

Superfund Research Program and the Edgerton Center

MIT Hands-on Biology Models

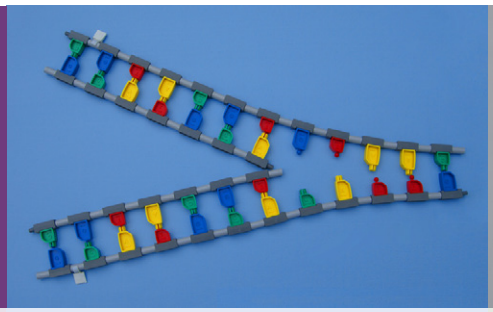
Middle School through University Levels

Visit Booths 215 and 217!



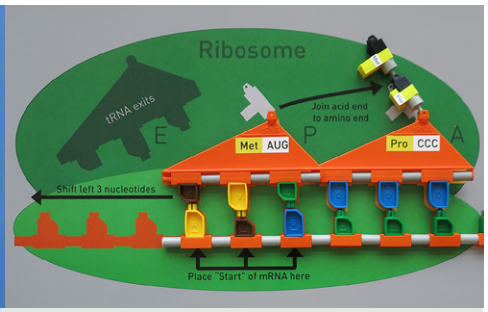
Protein Sets

Students can build and fold protein chains, learn about hydrophobic and hydrophilic interactions, demonstrate 4 levels of protein structure, create models of proteins they know like hemoglobin, antibodies, spike proteins, and more.



DNA/RNA Sets

Students can explore DNA and RNA structure, practice simple and advanced versions of replication, demonstrate DNA damage and repair, create different kinds of mutations, model lab techniques like gel electrophoresis, PCR, and more.



tRNA Sets

With all 3 kits (Protein, DNA/RNA, and tRNA), students can model protein synthesis: transcribing a gene into mRNA, translating the mRNA into a protein chain on a ribosome, and folding the protein chain into a functional shape.

All Workshops in Pegasus Ballroom B

Thursday, October 29

1:15 PM–2:30 PM	Introduction to DNA, Proteins, and Protein Synthesis

Friday, October 30

8:00 AM–9:00 AM	Lesson Sampler with MIT Biology Hands-on Models*
10:30 AM–11:45 AM	Introduction to DNA, Proteins, and Protein Synthesis
12:00 PM–12:30 PM	Cytochrome P450 Proteins, Vaping, and Cancer*
1:45 PM–2:15 PM	Hemoglobin and Sickle Cell Disease*
2:30 PM–3:45 PM	Biotechnology and Lab Techniques*
4:00 PM–4:30 PM	Cytochrome P450 Proteins, Vaping, and Cancer*

***Featuring NEW curriculum from our Health and Biotechnology Packs!**

9:30 AM – 11:30 AM

1922-132703 20 in 20 And Beyond

Pegasus B · General Biology · Special Workshop (2 hours) · ML, HS, 2Y

Come try numerous 20-minute inquiry-based activities that are sure to engage and excite your students. You and your students will be glad you did!

Whitney Hagins, Retired, Bolton, MA

1922-128765 The Society for College Science Teaching (SCST) Presents: Enhance Your College Science Instruction

Reunion A · Instructional Strategies · Special Workshop (2 hours) · 2Y, 4Y

Join SCST's interactive session as college science educators share their favorite techniques and explore strategies to enhance instructional efficacy, college student engagement, and course enjoyment.

Ian Moncrief, National Louis University, Chicago, IL; Heather Scherr, Lone Star College, Kingwood, TX

NCSE Presents:

1922-132075 CER re-examined: Constructing and Evaluating Evidence-based Claims

Reunion B · Science Practices · Special Workshop (2 hours) · HS, 2Y, GA

The Claim, Evidence, Reasoning (CER) framework integrates multiple scientific practices into a simple, yet deceptively complex structure. We will re-examine the CER framework and extend it with strategies for evaluating claims in the media.

Wendy Johnson & Britt Miller, National Center for Science Education, Oakland, CA

1922-132036 Teaching Evolution Via Scientific Practices and Open-source Software

Reunion C · Evolution · Special Workshop (2 hours) · GA

Explore how to bring authentic scientific practices into your evolution classroom using the evolved software (https://mjanuario.github.io/evolved). In this hands-on workshop, you'll learn how to integrate simulations and authentic evolutionary datasets into active-learning activities tailored to your own teaching goals. Alternatively, you can adopt our ready-to-use classroom modules, designed to foster scientific reasoning and computational skills. Join us for this 2-hour workshop to explore, discuss, and experiment with these open educational resources. This session is a special presentation by the 2026 Huxley Award winner.

Matheus Januario, University of Michigan, Ann Arbor, MI

HHMI BioInteractive Presents:

1922-131354 Nurturing the Science Practices by Engaging Students in Authentic Field Research With Caterpillar Decoys

Reunion E · Science Practices · Special Workshop (2 hours) · HS, 2Y, 4Y

Build the confidence to engage your students in impactful field research experiences using clay caterpillar decoys to measure local biodiversity. Participants will obtain tips and resources to implement their own experiments, including complying with applicable regulations.

Peter J. Park, Farmingdale State College, Farmingdale, NY; Mr. Jim Lane, Mahtomedi High School, Mahtomedi, MN

10:30 AM – 11:30 AM

NABT Open Forum

Pegasus A · Committee Meeting

The NABT Board of Directors will lead this interactive discussion to share updates on current and future initiatives. Everyone is invited to learn more about our operations, provide feedback on the programs we support, and get more involved with NABT.

12:30 PM – 1:00 PM

1922-129033 What a 30-Year Undergraduate Research Fellowship Program Reveals About Mentorship, Impact, and Sustainability

Cumberland I/J · Ecology/ Environmental Science / Sustainability · Paper (30 min) · 4Y

A qualitative case study of the CELS Summer Fellowship at URI, an undergraduate research program operating since 1996, examining features that have sustained it and its lasting impact on student and mentor participants.

Martina Muller, University of Rhode Island, Kingston, RI

1922-129073 The Moving Parts of AP Biology®: DIY Kinesthetic Models that Hit the Top of Bloom's Taxonomy

Cumberland K · AP Biology® · Hands-on Workshop (30 min) · HS

Hands-on modeling designed by teachers and students based on everyday materials pushes student boundaries in thinking beyond memorization and comprehension. Topics covered range from prokaryotic gene regulation to Hardy-Weinberg dynamics and beyond.

Deame Hua, Stuyvesant High School, New York, NY

12:30 PM – 1:00 PM CONT.

1922-129265 Visualizing Dihybrid Crosses: Helping Reduce Student Symbol Confusion

Pegasus A · Genetics · Hands-on Workshop (30 min) · ML, 2Y, 4Y

Setting up and performing dihybrid crosses is often difficult for students. In this lesson, we will use manipulatives to help students visualize the alleles and then transfer that information to the symbols traditionally used in Punnett squares.

Heather Green, Middle Tennessee State University, Murfreesboro, TN

1922-129272 Beyond the Textbook: Bringing Biology to Life with HIPs

Pegasus B · General Biology · Demonstration (30 min) · 2Y, 4Y, GA

Beyond the Textbook: Bringing Biology to Life with HIPs explores a course-embedded approach that uses active learning and real-world applications to boost engagement, deepen understanding, and build critical-thinking skills in introductory biology students.

Jewels Morgan, Georgia State University, Lilburn, GA

1922-128796 #Seeing Plants: Interdisciplinary Botanical Connections to Engage All Audiences

Reunion C · Instructional Strategies · Demonstration (30 min) · GA

We often overlook botanical contributions in our world, but plants offer portals for interdisciplinary connections and big-picture understanding. Learn how plants are relevant in YOUR classroom! Resources provided.

Renee M. Clary, Mississippi State University, Mississippi State, MS

1922-129168 Rolling the Dice… Sort Of: Conveying the "Chance" and "Non Chance" Elements of Evolution

Reunion E · General Biology · Hands-on Workshop (30 min) · HS, 4Y, GA

This session models evolution using dice. The simulation may be used as a conceptual introductory activity, an enhancing activity, or expanded upon as a lab activity, and is adaptable to varying topics and preparedness levels.

Heather Minges Wols, Columbia College Chicago, Chicago, IL

1:15 PM – 2:30 PM

1922-128763 Cell Respiration Lab Without Tears

Cumberland I/J · General Biology · Hands-on Workshop (75 min) · HS, 2Y

Fed up with peas and respirometers that leak? Engage in a simple, effective cellular respiration investigation using yeast and syringes! We'll also consider experimental design, cell respiration details, and what to do with the data.

Phyllis Robinson, St. Andrew's Episcopal School, Potomac, MD (retired), Silver Spring, MD; Kathy Van Hoeck, York High School, Elmhurst, IL (retired), Marion, IA

1922-129262 Breaking Introductory Biology Sequence Silos with the Studio Model

Cumberland K · General Biology · Hands-on Workshop (75 min) · 2Y, 4Y

Interested in transforming your Intro Bio course? Explore our studio model, replacing taxonomic silos with integrated content and student-readiness scaffolding. Test-drive activities as a student and leave with a blueprint for building inclusive, active-learning environments.

Maryann Herman, Kaitlin Bonner, Daryl Hurd, Noveera Ahmed, St. John Fisher University, Rochester, NY

1:15 PM – 2:30 PM CONT.

1922-129175 Cells in Action: Unraveling the Cell Cycle, Combating Cancer, and Exploring Clinical Trials

Cumberland L · Microbiology & Cell Biology · Hands-on Workshop (75 min) · HS, 2Y

Explore cancer biology through the nature of science, emphasizing how knowledge develops over time. Experience authentic activities inspired by the NIH Short Course in Genomics and leave with ready-to-use classroom materials.

Jennifer Sunderman Broo, Mariemont City Schools, Cincinnati, OH

1922-129222 Virtual AP Biology® Lab Investigations to Deepen Inquiry

Pegasus A · AP Biology® · Hands-on Workshop (75 min) · HS, 2Y, 4Y

Strengthen AP Biology investigations with free virtual laboratory simulations from Harvard University's LabXchange. Learn to use these teacher-approved resources as pre-lab preparation, post-lab synthesis, or alternatives for absent students, supporting diverse learners in person and online.

Paul Schwein, LabXchange, Cambridge, MA; Angela Campbell, Seminole County Public Schools, Oviedo, FL; Mary Liu, Weston Public Schools, Weston, MA

MIT Presents:

1922-131457 Introduction to DNA, Proteins, and Protein Synthesis with MIT Biology Hands-on Models

Pegasus B · Microbiology & Cell Biology · Hands-on Workshop (75 min) · ML, HS, 4Y

Introducing the MIT models, designed to teach molecular processes, not just structure. Experience cellular functions firsthand – just like your students will! Build all 4 levels of protein structure and explore transcription and translation.

Kathleen M. Vandiver, Massachusetts Institute of Technology, Lexington, MA; Amanda Gruhl Mayer, Massachusetts Institute of Technology, Dedham, MA

1:15 PM – 2:30 PM CONT.

1922-129210 Pablo Escobar's Hippos as an Anchoring Phenomenon for Teaching Ecology and Systems Modeling

Reunion A · Ecology / Environmental Science / Sustainability · Hands-on Workshop (75 min) · HS, 2Y, 4Y

Learn how to use Pablo Escobar's hippos as a phenomenon to teach ecology and systems modeling! We will model how hippos affect their native environment and predict their impacts on their introduced range in Colombia.

Emily Schmidt, The Bronx High School of Science, Bronx, NY

1922-129251 Evolving the Nubbler: A Hands-on Simulation of Divergence, Adaptation, and Speciation

Reunion E · Evolution · Hands-on Workshop (75 min) · HS, 2Y, 4Y

Participants engage in a hands-on activity where a shared starting organism evolves over multiple generations under changing environmental pressures, allowing students to visualize divergence, adaptation, and speciation through iterative design and comparison.

Reid Armstrong, Western Oklahoma State College, Lawton, OK

Science Communication Lab Presents:

1922-130937 From Story to Science: Using Indigenous Knowledge and Modeling to Teach Nitrogen Cycling

Reunion B · Ecology / Environmental Science / Sustainability · Hands-on Workshop (75 min) · ML, HS, 4Y

How can traditional storytelling help students understand the nitrogen cycle? Experience a classroom-tested lesson sequence that combines film, modeling, and collaborative sensemaking to connect Indigenous knowledge, ecosystem science, and student-centered learning.

Shannon Behrman & Rosa Veguilla, Science Communication Lab, San Diego, CA

HHMI BioInteractive Presents:

1922-131355 From Nutrients to ATP With BioInteractive's Cellular Respiration Hub

Reunion G · General Biology · Hands-on Workshop (75 min) · HS, 2Y, 4Y

Participants will explore cellular respiration and mitochondrial function by tracing matter and energy, examining ATP production, and engaging with models and free classroom-ready resources for teaching these complex biological processes.

Diana Siliezar-Shields, Barrington High School, Barrington, RI; Chris Monsour, Tiffin Columbian High School, Tiffin, OH

1922-127723 Genomics in Action: An Interactive, Online Curriculum Resource to Explore Human Genomics

Reunion C · Genetics · Demonstration (75 min) · HS, 2Y, 4Y

In this hands-on workshop, participants will engage with a digital curriculum focused on modern genetics and genomics concepts presented in a modular and interactive format, contextualized in real-world scenarios.

Sarah Wojiski, The Jackson Laboratory, Farmington, CT; Sharon Gusky, CT State-Northwestern, Torrington, CT; Cleo E. Rolle, CT State-Capital, Hartford, CT; Megan deLivron, CT State-Gateway, New Haven, CT

2:45 PM – 3:15 PM

1922-129257 The Science & Engineering of Food: Why Do Babies Need Milk But Some Adults Do Not?

Cumberland I/J · General Biology · Hands-on Workshop (30 min) · HS, GA

Unpack a 3-dimensional biology storyline on how milk provides all the essential nutrients infants need for survival. Students explain why dairy is an important agricultural product and source of food energy for mammals.

Shane Cullian, Agricultural Biology Storyline Team, Lake Geneva, WI; Kathy Van Hoeck, Agricultural Biology Storyline Team, Cedar Rapids, IA; Kristin Rademaker, NSTA, Freeport, IL

2:45 PM – 3:15 PM CONT.

1922-131894 How to Make Students in Large Courses Feel Like They Matter

Cumberland K · Instructional Strategies · Demonstration (30 min) · HS, 2Y, 4Y

This talk will introduce the concept of student mattering and highlight how instructors can help students feel like they matter, and how mattering affects students.

Sara Brownell, Arizona State University, Tempe, AZ

1922-127969 Guess Who? An Animal Classification In-class Activity

Pegasus A · General Biology · Hands-on Workshop (30 min) · GA

Is it an amphibian or reptile, an annelid or arthropod? Learn to play a game designed to reinforce animal classification learning and how to cheaply create your own version (adaptable for all grade levels).

Allison England, Pellissippi State Community College, Knoxville, TN

1922-128732 Long Story Short: Teaching Concepts in a Context, Building Scenario-based Assessments from Primary Literature

Pegasus B · General Biology · Demonstration (30 min) · HS, 2Y, 4Y

This workshop introduces scenario-based exam questions grounded in current primary literature as an authentic assessment strategy. Participants will learn to identify suitable research articles, develop exam-ready scenarios, and write aligned assessment questions for biology courses.

Manjushri Kishore, Heartland Community College, Normal, IL; Suann Yang, SUNY Geneseo, Geneseo, NY; Rachel Pigg, University of Louisville, Louisville, KY; Emily Rauschert, Cleveland State University, Cleveland, OH

2:45 PM – 3:15 PM CONT.

1922-129269 Mini-posters for Review and Presentations

Reunion A · Instructional Strategies · Hands-on Workshop (30 min) · ML, HS, 2Y, 4Y

Transform normal one pagers into interactive reviews! Learn to create portable mini-posters using file folders and sticky notes. Presenter will share implementation strategies and student examples, plus provide participants a hands-on template to keep.

Brittany Moss, Harris County High School, Pine Mountain, GA

1922-128268 Science, Society and Story: Using Popular Literature to Engage High School Science Students in Research

Reunion B · Instructional Strategies · Hands-on Workshop (30 min) · ES, ML, HS

Students choose and read popular literature and use it as a springboard to explore topics from both scientific and societal perspectives. Through discussions, research-skills development, and interdisciplinary exploration, students formulate research questions and investigate.

Lori Hilliard, Camelot Academy, Durham, NC

1922-129233 Supporting Inquiry-based Biology Learning for Middle & High School with LabXchange

Reunion C · General Biology · Hands-on Workshop (30 min) · ML, HS

Enhance biology classrooms with free virtual labs and interactive resources from Harvard University's LabXchange. Discover how to support diverse learners and bring inquiry-based learning to life for middle- and high-school students.

Paul Schwein, LabXchange, Cambridge, MA; Angela Campbell, Seminole County Public Schools, Oviedo, FL

1922-129252 Pedagogically Disrupting the High School/ University Curriculum Divide

Reunion E · Curriculum Development · Paper (30 min) · HS, 2Y, 4Y

This session reports on an in-progress teaching inquiry exploring a curricular collaboration between science educators at high school and higher ed levels to support students' scientific process skills and student readiness for higher ed.

Marina Tourlakis, University of the Fraser Valley, Abbotsford, BC; Jas Uppal Hersheron, University of the Fraser Valley, Mission, BC

HHMI BioInteractive Presents:

1922-131356 What Can a Deer Mouse Teach Us About Survival in Extreme Environments?

Reunion G · General Biology · Hands-on Workshop (30 min) · ML, HS, 2Y

Investigate high-altitude adaptation using BioInteractive's "The Science of an Extreme Animal Athlete." Participants will use deer mice living at different altitudes as a phenomenon to support student explanations of cellular respiration and natural selection.

Kate Fisher, Oregon City High School, Oregon City, OR

3:15 PM - 4:15 PM

GENERAL SESSION SPEAKER

Amoeba Sisters

See page 18 for biographies

Six Themes of Biology Misconceptions (and What to Do About Them)

Reunion FH · General Biology · Special Speaker (60 min) · GA

Biology misconceptions can be surprisingly persistent, even when students have access to effective explanations. Drawing from over 370 million cumulative views and years of audience feedback from their YouTube channel, creators of the Amoeba Sisters will highlight six themes of biology misconceptions they have identified. This session will explore how and why these misconceptions develop and persist, share examples within each theme, and offer ideas to address them.

Join the Amoeba Sisters in the Exhibit Hall for a meet & greet immediately following General Session.

4:15 PM – 6:15 PM

Exhibit Hall Grand Opening

Marsalis Hall · Special Event

Get ready for an unforgettable start to the NABT Conference! Join us for the grand opening of the 2026 NABT Exhibit Hall, where our amazing sponsors and partners will showcase the latest innovations in life-science education. From beloved classics to new favorites, you are sure to find something to elevate your teaching and engage your students!

6:00 PM – 8:00 PM

HHMI Night at the Movies

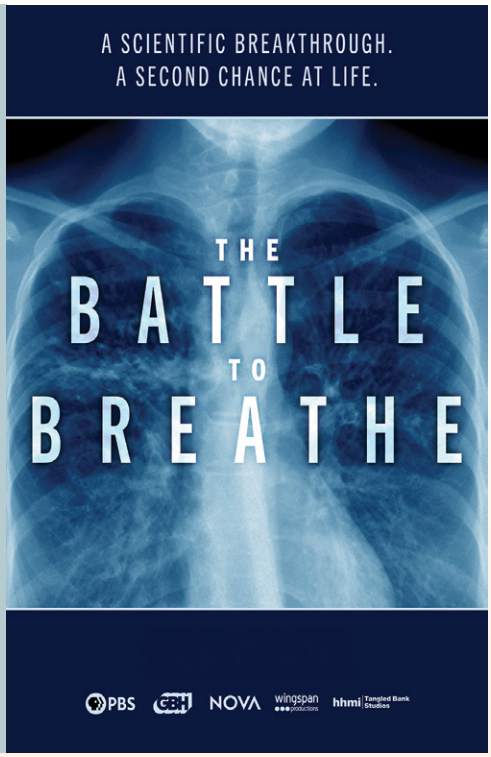
Reunion FH · Special Event · GA

Once a death sentence that kept life expectancies from reaching much past childhood, cystic fibrosis now has a revolutionary and life-saving treatment. In 2019, Trikafta, a potent combination of three drugs, changed the course of the disease almost overnight. Now, over 90% of people diagnosed with CF in the USA could have the opportunity for their lives to be transformed, and some who had once been gasping for breath have begun running marathons. THE BATTLE TO BREATHE follows how decades of scientific research, driven forward by desperate parents fighting for their children, led to this extraordinary breakthrough. Viewers will experience stories of joy, struggle, and unwavering hope.

Heavy appetizers, drinks, and candy will be available for your movie experience!

Hosted by:

hhmi | Tangled Bank Studios

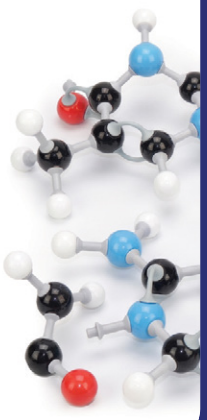


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2026 EVOLUTION SYMPOSIUM

Friday, October 30, 2026
10:30 am – 12:30 pm



Conservation in the Anthropocene: The Intersection of Evolution, Ecology, and Society

Céline Carneiro, *University of Texas at Austin*

An early-career scientist will share her journey integrating evolution, ecology, and genomics to understand how global change is affecting biodiversity. Her story highlights connections between science and society as well as conservation issues.

NCSE Teacher Workshop

Wendy Johnson and Britt Miller, *NCSE*

A common misconception is that evolution only explains the past, but it is also a powerful lens for understanding current populations and predicting future changes. NCSE will share free resources for teaching applications of evolution and strategies for addressing common misconceptions.



Join us for these additional sessions at NABT:

Thursday, October 29:

- *CER re-examined: Constructing and evaluating science-based claims (9:30-11:30)*

Friday, October 30:

- *Using the CER framework to support and assess learning (1:45-2:15)*
- *Beyond just facts: Overcoming climate change misconceptions, misinformation, and apathy (2:30-3:45)*
- *Learn about NCSE's Sound Science Teacher Community (4:00-4:30)*