





SATURDAY

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

POSTER SESSION

NABT Biology Education Poster Session

8:00 AM – 10:00 AM · Marsalis Hall · GA

GENERAL CATEGORY (NON-COMPETITIVE)

1. **Bringing HIPs to the Biology Classroom: Lessons from a Global Discovery Project**
   Christine Patrum, Georgia State University Perimeter College, McDonough, GA

2. **Learn with Worms: StressCURE's Modular Approach to Innovative Laboratory Design for Integrating Research into Undergraduate Courses**
   Joshua Gray, US Coast Guard Academy, New London, CT; Mindy Reynolds, Washington College, Chestertown, MD; Jennifer Newell-Caito & Sam Caito, University of Maine, Orono, ME; Jessica Hartman, Medical University of South Carolina, Charleston, SC; Julie Hall, Lincoln Memorial University, Harrogate, TN

3. **Designing a Diabetes-Focused Biology Curriculum for Peer Tutoring**
   Akash Sriram, Milpitas High School, Milpitas, CA

4. **Decoding the invasion: a biostatistics lesson for undergraduate courses**
   Shannon Walker, School of Biological, Environmental and Earth Sciences, The University of Southern Mississippi, Hattiesburg, MS; Natasha Woods, Department of Biological Sciences, Environmental Studies & Sciences Program, Moravian University, Bethlehem, PA; Alycia Lackey, Department of Biology, University of Louisville, Louisville, KY

5. **Exploring the impact of Virtual-Reality Enhanced Inquiry Focused Curriculum on Science Literacy and Science Identity in Non-Major's Biology.**
   Pamela Watson, Walter Dorfner & Lisa Abrams, Rowan University, Glassboro, NJ

6. **Accessibility in Biology Education: Instructional Strategies for a DeafBlind Student**
   Rebekah White, UA Little Rock, Little Rock, AR

7. **Biofilm inquiry laboratory activity for engaging students in scientific thinking**
   Danielle Schroeder, Mountain View High School, Marana Unified School District, Tucson, AZ; Caroline Krater, Canyon Del Oro High School, Amphitheater Unified School District, Tucson, AZ; Daryn Stover, Ethan Howley, Adriana Cimetta & Ingmar Riedel-Kruse, The University of Arizona, Tucson, AZ

8. **Advancing student-centered STEM teaching through graduate teaching assistants and the Student Experience Project**
   Brian Jusko, Emily Rauschert & Bill Kosteas, Cleveland State University, Cleveland, OH; Jasmine Vidrio & Samantha Levine, Coalition of Urban Serving Universities (USU), Washington, DC

9. **Comparative Analysis of Freshwater Quality Across Aquatic Systems in Omaha, NE.**
   Leticia Soh Tadjou Epse Tchato Nganko & Jeba Inbarasu, Metropolitan Community College, Omaha, NE

10. **Making a Case for Not-so-Identical, Identical Twins**
    Justin Pruneski, Heidelberg University, Tiffin, OH; Bethany Stone, University of Missouri, Columbia, MO

11. **Preparing Undergraduate Learning Assistants to Provide Support in Course-based Undergraduate Research Experience (CURE) Contexts: Development of a Training Module for Effective Peer Mentoring**
    Darla French, Oberlin College, Oberlin, OH

12. **Nature Journaling Fosters Creativity, Curiosity, Ecological Awareness, and Observational Skill Development Among College Ecology Students**
    Darla French, Oberlin College, Oberlin, OH

13. **Building a Source-Grounded AI Learning Assistant for Medical Microbiology: A Faculty-Curated Approach to Student Learning**
    Andrew Lee, Georgetown University, Washington, DC; Ghislaine Mayer, Texas Tech University Health Sciences Center, El Paso, TX

14. **Virtual Simulations Enhance Non-Traditional Student Learning and Attitudes in Microbiology Laboratory Courses**
    Ana Maria Barral, Veronica Ardi-Pastores, Rachel Simmons & Dawn Tamarkin, National University, San Diego, CA

15. **Research in a Week: An Immersive Approach to Teaching Biology Through Authentic Research**
    Daniel Moore, Southern Maine Community College, South Portland, ME

16. **Build quantitative skills and students' sense of belonging by featuring counter-stereotypical scientists in curricula with the Biologists and Graph Interpretation (BioGraphI) Project**
    Emily Rauschert, Cleveland State University, Cleveland, OH; Shannon Walker, USM, Hattiesburg, MS; Rachel Pigg, University of Kentucky Louisville, Louisville, KY; Suann Yang, SUNY-Geneseo, Geneseo, NY

17. **Visualizing Cell Signaling: Engineering Bioluminescent Bacteria for the Classroom**
    George Chenaux, Kelly Miller, Jeannie Spagnolo & Poornima Rao, Bio-Rad Laboratories Inc., Hercules, CA

18. **Teaching Field Biology Through International Service-Learning**
Jill Zipperer, Carrie J. Bucklin & Kristy L. Daniel, Texas State University, San Marcos, TX

19. **The Study of Water Contamination in Papillion, NE.**
Emily Fredlund & Jeba Inbarasu, Metropolitan Community College, Omaha, NE

20. **Evolving the Culture of Biology: Developing New Strategies and Resources for Teaching Assistant - Teaching Professional Development (TA-TPD)**
Kaleb Heinrich, New Mexico State University, Las Cruces, NM; Stephanie Gutzler, Georgia State University, Atlanta, GA; Mitra Asgari, University of Missouri, Columbia, MO; Adam Chouinard, Oregon State University, Corvallis, OR; Erin Shortlidge, University of New Mexico, Albuquerque, NM; Star Lee, UC Irvine, Irvine, CA

21. **Combining science and art to educate students and the general public**
Jennifer Schieltz, Iowa State University, Ames, IA

22. **Evaluating the benefit of second-chance testing policies for at-risk students**
Rebecca Hunter & Jennifer Hennigan, Abilene Christian University, Abilene, TX

23. **Biofilm Photolithography: Demonstrating Gene Regulation with Blue Light Induced Bioart**
Tobias Kochenderfer, Tucson High Magnet School, Tucson, AZ; Ethan Howley, Daryn Stover, Adriana Cimetta & Ingmar Riedel-Kruse, The University of Arizona, Tucson, AZ

24. **When Cells Lose Their Way: Development, Mutation, and Cancer**
Amy McElhinney, University of Mount Union, Alliance, OH

25. **How Research Experiences for Teachers (RETs) Changes My Pedagogy**
Kirsten Salonga, Justice High School, Alexandria, VA

26. **Scaffolding Cancer Concepts in General and Advanced High School Biology: A Two-Level Instructional Model**
Natalia Coleman, Neril Sandeep & Rudy Baez, Jose Marti STEM Academy, Union City, NJ; Casandra Gabriele, New Jersey Cancer Institute, Rutgers, New Brunswick, NJ

27. **Precision Under Pressure: Teaching CRISPR Through Scientific Decision-Making**
Natalia Coleman, Jose Marti STEM Academy, Union City, NJ

28. **Can AI serve as a partner to deepen conceptual understanding, or to improve scientific literacy and research skills?**
Barbara Murdoch, Eastern Connecticut State University, Willimantic, CT

29. **Building an open education ecosystem to facilitate the adoption of open science resources in undergraduate biology education**
Sam Donovan, Deb Rook & Sarah Prescott, BioQUEST Curriculum Consortium, Raymond, NH; Drew LaMar, William and Mary University, Williamsburg, VA

30. **User-friendly genomic data science: Evidence-based integration at 2-year colleges**
Elizabeth Humphries & Ava Hoffman, Fred Hutchinson Cancer Center, Seattle, WA; Rosa Alcazar & Stephanie Coffman, Clovis Community College, Fresno, CA; Xiomara Chianelli, El Paso Community College, El Paso, TX; Karla Fuller, Guttman Community College, New York, NY

31. **Making Podcasts Matter: Student Perceptions of Educational Podcasts in Biology Courses**
Phil Gibson, University of Oklahoma, Norman, OK; Kristen Savage-Ashlock, University of Oklahoma, Norman, OK; Katriana Popichak, Colorado State University, Fort Collins, CO

32. **Introducing High School Students to Authentic Research through Community College and High School Collaborations**
Sharon Gusky, CT State CC : Northwestern, Winsted, CT; Angela Norige, Torrington High School, Torrington, CT

33. **The BioQUEST Curriculum Consortium: A Community of Educators Supporting Evolution and Revolution in STEM Education**
Sarah Prescott, BioQUEST/UNH, Raymond, NH; Deborah Rook & Sam Donovan, BioQUEST, Raymond, NH; Drew LaMar, William & Mary, Williamsburg, VA

34. **Finding Wonder in Nature: Preparing Preservice Teachers Through Journaling, Literature, and an Author Visit**
Ashley Campbell & Brigette Whaley, West Texas A&M University, Canyon, TX

35. **Parallel Implementation of CUREs in the Principles of Biology Laboratory Sequence**
Clint E. Edmunds & Vivian Padín-Irizarry, Clayton State University, Morrow, GA

36. Defying Gravity, Defining Genes: Space Biology for the Classroom
Jack Treml, University of Kansas, Edwards Campus, Prairie Village, KS; Jody Brison-Molina, Frontier Schools, Kansas City, MO; Kara Burke, Independence School District, Independence, MO; Nola Hoffmann, Shawnee Mission School District, Prairie Village, KS; Alex Luchen, Grandview School District, Grandview, MO; Megan Martin, Center School District, Kansas City, MO

37. From Cells to Society: Making Biology Matter Through Project-Based Learning
Tarannum Uddin, Wilbur Wright College, Chicago, IL

STUDENT COMPETITION: BIOLOGY EDUCATION RESEARCH

38. Investigating the impact of instructor messaging on student perceived utility value and external resource use during an out-of-class biology concept assessment
Tiffany Burgess & Brian Couch, University of Nebraska-Lincoln, Lincoln, NE

39. Teaching First-year Undergraduate Biology Students the Central Dogma of Molecular Biology with a PBL Activity on Huntington's Disease: A Pilot Study
Carly Carron, Katherine Sharp & Carson Dudley, Missouri University of Science and Technology, Rolla, MO

40. Historical perspectives on vaccine hesitancy: what variolation teaches biology education
Caroline Moon, Davidson Fine Arts, Augusta, GA; Hyunjin Shim, Texas Tech University, Lubbock, TX

41. Strengthening STEM Instruction Through Targeted Curriculum Development
Madison Calla & Jeanette Gore, University of Tampa, Tampa, FL

42. Strengthening STEM Instruction Through Hands-on Learning Experiences in a Final Teaching Practicum
Cassidy Pardini & Jeanette Gore, The University of Tampa, Tampa, FL

43. Student Impacts of a Power-of-Place Course-based Undergraduate Research Experience on Local Urban Soil Microbiomes
Emma Throneburg, Natalie Christian & Rachel Pigg, University of Louisville, Louisville, KY

44. Nature-Based Solutions and Community Engagement: A School-Based Approach in Texas
Alexis Denn & Davida Smyth, Texas A&M University- San Antonio, San Antonio, TX

45. From Misconceptions to Mechanisms: Understanding Ion Dynamics in an Introductory Biology Laboratory
Omisha Saraf & Tarren Shaw, University of Oklahoma, Norman, OK

46. A Case Study of Horizontal Gene Transfer via Rafflesia
Eleanor Hartle, University of Missouri - Columbia, Columbia, MO; Rebecca Seipelt-Thiemann, Middle Tennessee State University, Murfreesboro, TN

47. Science Literacy for All: An Equity-Focused Assessment Tool for Measuring Real-World Science Skills
Chelsea Miller & Desiree Pointer Mace, Alverno College, Milwaukee, WI

48. A Thematic Analysis of Lab Instructors Post-Pandemic: The Challenges and Changes Made in Instruction.
Jennifer Sollinger & Margaret Blanchard, North Carolina State University, Raleigh, NC

STUDENT COMPETITION: MENTORED STUDENT RESEARCH

49. The Efficacy of Bacillus Subtilis in Promoting Growth of ABA-Deficient(CS156) and Wild-Type Arabidopsis Thaliana in Zinc-Contaminated Soil
Anurith Kusunam & Linda Hand, Biotechnology High School, Freehold, NJ

50. Interactions of Emerin with Histone Modifying Enzymes in Nuclear Envelope-Mediated Repression
Aayush Gupta, Edison High School, Edison, NJ; Richard Condon & James Holaska, Rowan University, Camden, NJ

51. Same Receptor, Different Damage: What Two Fruit Fly Mutations Reveal About Neurodegenerative Vulnerability
Anusha Manda, Dripping Springs High School, Dripping Springs, TX; Thilini Wijesekera, University of Texas, Austin, Austin, TX

52. Application of CRISPR and Stem-Cell Therapy in a Potential Curative Approach to Familial Alzheimer's Disease
Parvathi Halliyur, Centennial High School, Frisco, TX; Jobin Varkey, University of Southern California, Los Angeles, CA

53. Transcriptomic Reanalysis of PMA-Induced THP-1 Monocyte-to-Macrophage Differentiation Reveals a Tissue-Resident Macrophage Signature
Hetvi Patel, Coppell High School, Coppell, TX; Dun Ning, University of Texas at Dallas, Richardson, TX

54. Ferroptosis and Venetoclax Sensitivity in Acute Myeloid Leukemia: Why Cell Differentiation Matters
Samika Agarwal, Woodbridge Academy Magnet School, Woodbridge, NJ; Katie Wilwohl, University of Mississippi, Lafayette County, MS

55. **An EpCAM-Targeted Mirror-Image DNA Nanostructure for Precise Drug Delivery in Triple-Negative Breast Cancer**
Sihan Wu, Carmel High School, Carmel, IN; Wen Zhang, Indiana University School of Medicine, Indianapolis, IN

56. **Computational Discovery of Potential IL-1R1 Inhibitors for Modulating IL-1-Mediated Neuroinflammation and Neurodegeneration**
Vihaan Mundra, Saint Joseph High School, Sayreville, NJ; Jobin Varkey, University of Southern California, Los Angeles, CA

57. **Wolfpack Move-out: Fostering Sustainable Lives**
Claire Dorsey & Aimée Thomas, Loyola University New Orleans, New Orleans, LA

58. **Evaluating the Antimicrobial Activity of Novel Ionic Liquids Against Oral Bacterial Pathogens: A Comparative Study on Minimum Inhibitory Concentrations**
KaLong Chan, Danieli Rodrigues, Anthony Reyes & Sumedha Guha, The University of Texas at Dallas, Richardson, TX

59. **Towards Intoxication Detection via Non-invasive Natural Typing**
Caiden Bergeron, Louisiana School for Math, Science, and the Arts, Natchitoches, LA; Joonha Chang, LSUHSC, School of Public Health, Department of Biostatistics and Data Science, New Orleans, LA

60. **Isolation and Characterization of Novel Bacteriophages Raya and Skyerus in SEA-PHAGES Introductory Biology**
Selena Ritschel & Evdokia Kastanos, Montgomery College, Rockville, MD

61. **Predicting Isolation Origin and Characterizing Resistance Associated Accessory Genes in Vibrio parahaemolyticus Through Pangenome Analysis and Machine Learning**
Shravan Yoagentharan, Centennial High School, Ellicott City, MD; Padmini Ramachandran, Food and Drug Administration, Silver Spring, MD

62. **Beyond Apoptosis: Exploring Alternative Cell Death Pathways in Tumor Biology**
Samyuktha Musunuru, Imagine International Academy of North Texas, Allen, TX; Mayuri Bandekar, Pangea Society, Mumbai, Maharashtra

63. **How Social Isolation Affects Amygdala Activity and Brain Function**
Kavin Senthil Kumar, Upper St Clair High School, Pittsburgh, PA; Jobin Varkey, University of Southern California, Los Angeles, CA

64. **Protective Effects of Ascorbic Acid on Hydrogen Peroxide-Induced Oxidative Stress in Escherichia Coli**
Halima Abdul-Rauf, Bhooma Srinivasan, Paloma Rodriguez De Leon & Roger Kedley, UNT Dallas, Dallas, TX

65. **CLOCK Dysfunction Unveils Evidence for Tissue-Specific Regulation Beyond Pacemaker Neurons Following Traumatic Brain Injury**
Reya Satam, Phillips Exeter Academy, Exeter, NH; Olivia Heintz, UMass Chan Medical School, Worcester, MA

66. **Mitochondrial Function Across Developmental Stages of C. elegans**
Katherine Cui, Westlake High School, Austin, TX; Joseph Dubie, The University of Texas at Austin, Austin, TX; Haein Jung, Westwood High School, Austin, TX; Anthony Kim, Allen High School, Dallas, TX

67. **The Biochemical Profile of Rhizosphere Bacteria of Select Microgreen Plants**
Aseem Uddin, Khalid Uddin & Bara Sarraj, Harold Washington College, Chicago, IL

7:15 AM – 8:00 AM

NABT BioClub Breakfast

Cotton Bowl · Special Event (Tickets Required)

Every year, the NABT BioClub supports students at K-12 schools, community colleges, and informal learning organizations throughout North America. Join us to share what your club is doing or learn how to start a BioClub Chapter of your own!

Sponsored by Carolina

7:30 AM – 8:45 AM

Committee Meetings

Marsalis Hall · Committee Meeting (75 min) · GA

Learn more about the different volunteer opportunities available at NABT. Committee Chairs and Regional Coordinators will highlight ways to get involved that fit your interests and schedule. Help support the programs that support you as a leader in life-science education. See page 13 for details about different NABT committees.

8:00 AM – 8:30 AM CONT.

Appleseed Expeditions Presents:

1922-131887 Yellowstone Alive: Bringing the American Serengeti into the Science Classroom

Cumberland B/C · Ecology / Environmental Science / Sustainability · Demonstration (30 min) · ML, HS

Explore Yellowstone's ecosystems through wildlife, conservation research, and inquiry-based activities. Learn practical strategies for teaching food webs, biodiversity, population dynamics, and ecosystem change using engaging classroom investigations.

Joe Moore, Appleseed Expeditions, Freeport, FL

1922-129103 DNA Barcoding and DNA Subway 2.0

Cumberland E/F · Ecology / Environmental Science / Sustainability · Hands-on Workshop (30 min) · HS, 2Y, 4Y

Explore DNA barcoding using DNA Subway 2.0, a web-based platform that simplifies complex genomic workflows into intuitive bioinformatic "stops." Master species identification and phylogenetics in this hands-on workshop. Please bring a phone or laptop to participate.

Arie Kaz, Cold Spring Harbor Laboratory, Wayne, NJ

1922-128113 The Alignment Advantage: Collaborative Planning That Delivers

Cumberland G/H · Curriculum Development · Demonstration (30 min) · HS

A shared planning calendar and focused Professional Learning Community meetings can help your team stay aligned, manage pacing, and support student learning. Explore practical tools and examples that can be adapted to your own departments.

Kyla Hooker, Los Alamos Public Schools, Los Alamos High School, Los Alamos, NM

1922-129264 An Introduction to "Effective Teaching": An Online Course for Faculty Action

Cumberland I/J · JEDI / Inclusive Teaching Practices · Hands-on Workshop (30 min) · HS, 2Y, 4Y

A hands-on introduction to the free online course, "Effective Teaching." Designed for undergraduate biology faculty, this course is organized into five modules that help participants identify inclusive practices and enact strategies to create user-centered classrooms.

Kaitlin Bonner, St. John Fisher University, Rochester, NY; Sam Donovan, BioQUEST, Pittsburgh, PA; Bryan Dewsbury, Florida International University, Miami, FL

1922-129120 Teaching Cell-Cell Adhesion Using Synthetic Biology: A Cell Aggregation Laboratory Activity

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

Cell-cell adhesion is essential to numerous biological processes (e.g., immune function, sexual reproduction, tissue development, biofilm formation) and may be observed by students in real-time using our guided-inquiry, customizable, cell aggregation laboratory activity.

Daryn Stover, University of Arizona, Tucson, AZ

1922-129275 Putting Students in the Expert Seat: Mastering Leukocyte Identification via AR-Enhanced Jigsaws

Cumberland L · Instructional Strategies · Hands-on Workshop (30 min) · HS, 2Y, GA

Master the morphology of white blood cells using Augmented Reality and jigsaw pedagogy. This evidence-based activity transforms students into "experts," leveraging mobile devices to overcome visualization hurdles and significantly improve leukocyte-identification accuracy.

Ranya S. Taqieddin, Saint Charles Community College, Cottleville, MO

8:00 AM – 8:30 AM CONT.

1922-128677 Supporting Student Success, Access and Outcomes

Pegasus A · Instructional Strategies · Hands-on Workshop (30 min) · 2Y

Early support and meaningful access can shape a student's entire academic journey. Students' success means more than offering resources; it's about understanding their unique needs, and proactively removing the barriers that hinder their progress.

Shanthi Murali, Dallas College, Farmers Branch, TX

1922-129117 RNA-seq Before R: Teaching Gene Expression Through Research in Introductory Undergraduate Biology Classes

Pegasus B · Genetics · Demonstration (30 min) · 2Y, 4Y

C-MOOR miniCURES are modular curricula focused on teaching genomic data science through student research in undergraduate biology classes. Participants will explore modules investigating gene expression in the Drosophila midgut on the cloud platform AnVIL.

Sayumi York, Notre Dame of Maryland University, Baltimore, MD; Rosa Alcazar, Clovis Community College, Fresno, CA

Flinn Scientific Presents:

1922-131713 Exploring Biology: A Flinn Bundle

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

Discover Flinn's Exploring Biology bundle through a hands-on highlight: Students create algae balls, place them into a bromothymol blue indicator, and visualize photosynthesis! A simple, engaging way to make plant metabolism visible and measurable.

Jodi Knabe, Flinn Scientific, Inc., Batavia, IL

3D Molecular Presents:

1922-133332 From Water to Wonder: Hands-On Models for Biological Understanding

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

In this hands-on session, participants explore models that reveal water's remarkable chemical properties and deepen understanding of how life maintains and regulates homeostasis through the movement of water and ions in biological systems.

Keri E Shingleton, 3D Molecular Designs, Tulsa, OK

1922-129234 Acting Up in Biology

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

Come act out in biology! Each participant becomes a component of 4 physiological processes using kinesthetic learning. Fun, fast paced and engaging – teachers will leave with protocols and card sets for teaching these processes.

Brenda Royal, Middle Tennessee State University, Murfreesboro, TN; Elesha Winebrenner, Central Magnet School, Murfreesboro, TN

8:00 AM – 10:00 AM

1922-131883 AP Symposium: Results from the 2026 AP® Environmental Science and AP® Biology Exams

Reunion A · AP Biology®, AP Environmental Science® · Symposium (2 hours) · GA

Join us for a discussion of the results of the 2026 AP Environmental Science and AP Biology exams, overall student performance, and experiences from the Reading. We will review the different components of each exam, with a focus on particular questions, content areas, and skills that were a challenge for students. Participants will obtain valuable insight into common misconceptions and errors that students demonstrated on the exams. Educators will be able to use the results to identify strategies that help them prepare their students, and to build their own understanding of the exams and the Reading. New and experienced science educators, as well as teachers and administrators interested in introducing AP Environmental Science or AP Biology, are encouraged to attend and ask any questions they have about the exams.

Scott Sowell, Atlantic Coast High School, Jacksonville, FL; Aaron L. Mathieu, Acton-Boxborough Regional High School, Acton, MA

1922-132728 NABT Biology Education Poster Session & Coffee Break

Marsalis Hall · Instructional Strategies · Special Symposium (2 hours) · GA

The NABT Poster Session highlights best practices, programs, and scholarship in three distinct categories: general strategies for teaching biology, the scholarship of teaching, and mentored student research. Student presenters are eligible for two competitions, and winners will be announced after the closing general session.

8:45 AM – 9:45 AM

1922-129204 Community Science in the Classroom: Digital Tools for Nature Exploration and Undergraduate Research

Cotton Bowl · Technology in the Classroom · Hands-on Workshop (60 min) · HS, 2Y, 4Y

This session will demonstrate how to use nature-based apps and community science initiatives to bridge the gap between course content and real-world application. After the demonstration, attendees will go outside to participate in a mini-BioBlitz!

Danielle Gay, Jill Zipperer & Mallika Saha, Texas State University, San Marcos, TX

1922-129200 Industry Insights - Bridging Science Curricula to Careers in the Bioscience Industries

Cumberland A · Biotechnology · Hands-on Workshop (60 min) · HS, 2Y, 4Y

Join us for an engaging presentation and hands-on activity for introducing students to valued workplace skills while building awareness of bioscience industry careers.

Tamara Mandell, University of Florida, Biotility, Gainesville, FL

1922-128964 Beyond the Classroom: Using Films, Hands-On Learning, and Community Engagement to Foster Student Belonging and Agency

Cumberland B/C · Curriculum Development · Hands-on Workshop (60 min) · ES, ML, HS

This workshop showcases how film-based, community-connected science lessons can foster student belonging and agency, using real-world case studies and hands-on integration strategies to help educators design meaningful learning experiences that extend beyond the classroom.

Shannon Behrman, Science Communication Lab, Berkeley, CA; Yajaira Torres De Jesus, Colegio Rosa-Bell, Guaynabo, PR; Susan Bartol, Hillside Elementary, Montclair, NJ

1922-129107 Mitochondrial DNA Analysis: Exploring Human Diversity and Evolution

Cumberland E/F · Evolution · Hands-on Workshop (60 min) · HS, 2Y, 4Y

Dive into hands-on genetics by extracting your own mitochondrial DNA! Learn how to analyze your DNA sequencing data to investigate human diversity and evolution, and compare your mtDNA with people from around the world.

Arie Kaz, Cold Spring Harbor Laboratory, Wayne, NJ

1922-128526 Smarter Feedback, Less Grading: Using AI to Transform Science Classrooms

Cumberland G/H · Instructional Strategies · Hands-on Workshop (60 min) · GA

From overwhelmed to optimized: Discover how AI can streamline grading, strengthen feedback, and improve scientific writing in biology courses while preserving academic integrity and instructor expertise.

Tanya Quiroz, Galen College of Nursing, Alcolu, SC; Jacqueline McCray, Galen College of Nursing, Houston, TX

1922-129221 Science For All: Engineering Structural Equity in the Biology Lab

Cumberland I/J · JEDI / Inclusive Teaching Practices · Hands-on Workshop (60 min) · ES, ML, HS, GA

Move beyond surface-level representation! Learn how to use a structured equity rubric to audit experiments and curricula for linguistic and cultural barriers, integrating WIDA standards and scaffolded inquiry to increase agency for ALL biology students!

Kirsten Salonga, Virginia Association of Science Teachers, Alexandria, VA

1922-129216 Implementing Actionable Norms to Promote Effective and Meaningful Student Collaboration

Cumberland K · Instructional Strategies · Hands-on Workshop (60 min) · ML, HS

In this session, participants will engage in a blood-type task to explore strategies for establishing clear and intentional actionable norms that promote a classroom culture of effective and meaningful student collaboration.

Selendra Mullen, Duncanville High School, Red Oak, TX

1922-129058 NeuroCase Chronicles: A Case-based Curriculum to Teaching Emerging Topics in Neuroscience

Cumberland L · Neuroscience · Demonstration (60 min) · ML, HS

Explore NeuroCase Chronicles, a hands-on, case-based neuroscience curriculum. Experience activities on emerging topics in neuroscience including brain-computer interfaces, AI, therapeutic interventions, and ethics, and leave with ready-to-use lessons and strategies for engaging high-school students.

Matthew Blank, Baylor College of Medicine, Houston, TX

1922-128688 Connecting Teachers to Tools: The HudsonAlpha Educator Resource Hub

Pegasus A · General Biology · Demonstration (60 min) · ML, HS, GA

Join HA educators as they share free resources on the Educator Resource Hub. Explore content including: classroom supports, cells, heredity, energy, molecules of life & unity and diversity resources. This session promises something for everyone!

Jennifer Hutchison, Madelene Loftin, Malcolm Parker & Aubri Simpkins, HudsonAlpha Institute for Biotechnology, Huntsville, AL

8:45 AM – 9:45 AM CONT.

1922-128671 Shape Shifters: Spike Proteins, ACE2 Receptors and Viral Spread... Oh, My!

Pegasus B · Genetics · Hands-on Workshop (60 min) · ML, HS, 2Y

Come participate in an inquiry-based 5E lesson that addresses the scientific concepts behind the spread of COVID-19, its subsequent variants, and the role that vaccines play in slowing or stopping the spread of viral infections.

Julie Angle, Professor Emeritus - Science Education; Oklahoma State University, Dallas, TX; James Mantooth, Meridian Technology Center, Stillwater, OK

Flinn Scientific Presents:

1922-132000 Active Learning in the Biology Classroom

Reunion B · General Biology · Hands-on Workshop (60 min) · ML, HS

A hands-on session for Biology teachers that will explore mitosis via microscopes and pop beads, inheritance via Sno-Ball Sillies, natural selection via a STEM challenge, and membrane transport via hands-on activities.

Jodi Knabe, Flinn Scientific, Inc., Batavia, IL

3D Molecular Presents:

1922-133329 The Shape of Life: Modeling Cell Structure and Function with the Cell Modeling Kit

Reunion C · General Biology · Hands-on Workshop (60 min) · ML, HS, 2Y

This hands-on session will challenge participants to create and interpret models to illustrate the diversity of structures and functions of life at the cellular level.

Jim Lane, Mahtomedi High School, Mahtomedi, MN

1922-128720 Bacterial Emergency Mode: How Cells Decide Between Survival and Mutation

Reunion E · AP Biology® · Hands-on Workshop (60 min) · HS, 2Y, 4Y

Engage students in AP Biology using AI as a tool for inquiry, critique, and communication. Explore the SOS response to model gene regulation while guiding students to generate, evaluate, and refine scientific explanations.

Sarmistha Ghosh, Hawthorne Academy of Health Sciences, Charlotte, NC

10:00 AM – 11:00 AM

1922-128252 Rethinking Teaching and Learning in the Age of AI

Cotton Bowl · AP Biology® · Hands-on Workshop (60 min) · HS, 2Y, 4Y

Artificial intelligence is changing how we teach and how students learn. In this interactive workshop, learn practical strategies that minimize the pitfalls and leverage the possibilities of AI for teaching and learning.

James Morris, Brandeis University, Waltham, MA

1922-129273 Simplify Grading and Support Students: A Design Sprint for Competency-based Classrooms

Cumberland A · General Biology · Hands-on Workshop (60 min) · HS, 2Y, 4Y

Competency-based Grading benefits student learning and growth, and reduces teacher workload… but how to get started? This design workshop will help you develop a concrete plan to simplify grading in your courses and improve student outcomes.

Stephen Traphagen, Oak Park and River Forest High School, Oak Park, IL

10:00 AM – 11:00 AM CONT.

1922-127943 Using "Darwin Cards" to Demonstrate the Incredible Power of Natural Selection

Cumberland E/F · Evolution · Hands-on Workshop (60 min) · HS, 2Y, 4Y

Students challenge evolutionary change as being statistically impossible. This easy, hands-on lab demonstrates the amazing power of natural selection and makes them revisit their skepticism using probability and statistics! Simple, low cost, and very effective.

Dave Sheldon, St. Clair County Community College, Ft. Gratiot, MI

1922-127855 Designing High-impact Group Work for Asynchronous and Face-to-face Biology Courses

Cumberland G/H · Instructional Strategies · Hands-on Workshop (60 min) · HS, 2Y, 4Y, GA

Build high-impact group work that strengthens biology learning across modalities. Analyze scalable models—from genetics jigsaws to climate campaigns—and design your own structured, accountability-driven assignment during this interactive workshop.

Anica Lee, Texas State University-Department of Biology, San Marcos, TX

10:00 AM – 11:00 AM CONT.

1922-129267 Beyond Memorizing Pathways: Teaching Cellular Energetics with the ATP Currency Game

Cumberland I/J · Microbiology & Cell Biology · Hands-on Workshop (60 min) · HS, 2Y, 4Y

Participants will experience the ATP Currency Game, a hands-on activity where students earn and spend ATP while responding to environmental changes. Attendees play the game, explore learning outcomes, and receive sample materials for classroom implementation.

Gabriel E. Guzman, Triton College, River Grove, IL

1922-129268 Before the Taps Run Dry: Developing Group-worthy Tasks to Explore the Water Cycle and Human Impacts

Cumberland K · Instructional Strategies · Hands-on Workshop (60 min) · ML, HS, GA

Participants will experience a group-worthy task on the water cycle and human impact. Participants will then use a rubric based on 5 Elements of Group-worthy Tasks to evaluate and modify their own tasks.

Takumi Sato, Knowles Teacher Initiative, Moorestown, NJ

1922-129172 Preparing Undergraduate Biology Students to Bridge Ideological Divides with Science Communication

Cumberland L · Science Practices · Symposium (60 min) · HS, 2Y, 4Y

Learn strategies for preparing students to be effective communicators about topics like vaccines and climate change from researchers in the growing field of science-communication education research!

Erin Rowland-Schaefer, University of Nebraska-Omaha, Omaha, NE; Liz Barnes, Middle Tennessee State University, Murfreesboro, TN; Jamie Jensen & Isaiah Aduse-Poku, Brigham Young University, Provo, UT

1922-129060 Bioscience Career Cards

Pegasus A · Biotechnology · Hands-on Workshop (60 min) · ML, HS, GA

The growing bioscience sector faces talent shortages due to limited awareness. Do your students know about these jobs? Free Bioscience Career Cards and ready-to-use, teacher-developed activities can quickly integrate career exploration into your classroom.

Aubri Simpkins, HudsonAlpha Institute for Biotechnology, Dothan, AL; Madelene Loftin, Jennifer Hutchison & Malcolm Parker, HudsonAlpha Institute for Biotechnology, Huntsville, AL

1922-129055 From Passive to Participatory: Transforming Online Biology Engagement with Miro Boards & Other Online Whiteboards

Pegasus B · Instructional Strategies · Demonstration (60 min) · HS, 2Y, 4Y

Online biology courses often struggle with student disengagement, passive learning, and limited collaboration. This interactive workshop introduces educators to practical, evidence-based strategies for increasing engagement using Miro boards as a dynamic, visual teaching and collaboration tool.

Jacqueline McCray, Galen College of Nursing, Houston, TX; Tanya Quiroz, Galen College of Nursing, Alcolu, SC

1922-133320 3D Molecular Presents: Protein Pep Talk: Folding Big Ideas into Every Biology Class

Reunion C · Instructional Strategies · Hands-on Workshop (60 min) · ML, HS, 2Y

Proteins power life. In this hands-on session, participants build amino acids, form protein chains, and explore folding through modeling. Leave with classroom-ready modeling investigations that help students explain how molecular structure drives function across diverse biological systems.

Keri E Shingleton, 3D Molecular Designs, Tulsa, OK

1922-129028 Think Global, Act Local: Vaccine Advocacy Using a Cholera Storyline

Reunion E · AP Biology® · Hands-on Workshop (60 min) · HS

Combat vaccine misinformation by integrating global health reporting into your biology lessons using a hands-on cholera storyline featuring Pulitzer Center journalism. Free interactive lessons provided to cultivate empathy, increase scientific literacy, and inspire vaccine advocacy.

Rebecca Brewer, Troy High School, Troy, MI

11:00 AM – 12:15 PM

GENERAL SESSION & PRESENTATION OF THE 2026 NABT DISTINGUISHED SERVICE AWARD

Phillip A. Sharp, PhD

See page 20 for biography

A Conversation with Phillip A. Sharp, PhD, Nobel Laureate

Reunion FH · Special Speaker (60 min) · GA

Dr. Phillip A. Sharp is an Institute Professor and Professor of Biology Emeritus at the Massachusetts Institute of Technology and an intramural faculty member at MIT's Koch Institute for Integrative Cancer Research. In 1993, he was a recipient of the Nobel Prize in Physiology or Medicine for the discovery of split genes, a breakthrough that transformed scientists' understanding of gene expression and RNA splicing.

Dr. Sharp's extraordinary life and career are the focus of the documentary Cracking the Code: Phil Sharp and the Biotech Revolution, narrated by Mark Ruffalo. The film traces his path from rural Kentucky to Nobel Prize–winning scientist, and explores how his discoveries helped launch the biotechnology revolution and advance modern medicine.

Join us for this fireside-chat conversation with Dr. Sharp as he reflects on the story behind the film, a lifetime of discovery, the importance of curiosity and scientific education, and the opportunities ahead for the next generation of biologists.

NABT is proud to name Dr. Phillip A. Sharp the recipient of the 2026 Distinguished Service Award for Enhancing Biology Education.

12:15 PM - 12:30 PM

Announcement of the 2026 Poster Winners

Reunion FH · Special Event · GA

NABT is pleased to announce the student winners of the Biology Education Research and Mentored Student Research competitions.

12:30 PM – 2:30 PM

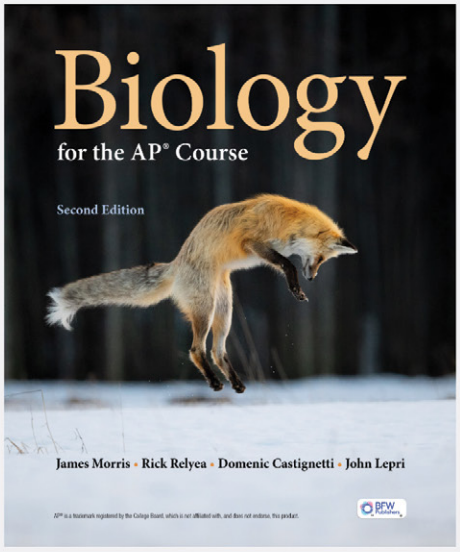
Honors Luncheon

Reunion A/B · General Biology · Special Event (Tickets Required)

NABT is proud to recognize the 2026 NABT Award recipients during this celebratory event. We will honor exceptional biology teachers from all levels, and everyone is welcome to join us to congratulate these remarkable professionals.



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CONGRATULATIONS

to Dr. Phillip Sharp on Receiving 2026 Distinguished Service Award from NABT!

Visit the Uncommon Productions booth to get a free copy of the new documentary *Cracking the Code: Phil Sharp and the Biotech Revolution,* companion book, and accompanying Educator Toolkit.

BOOTH #304

