

STAT CAST Conference 2019

# Free Teacher Workshops

Presented by Bio-Rad Laboratories

Step-by-Step, Hands-on Experience

Dallas, Texas

Hilton Anatole

November 21–23

Thursday | November 21

De Soto A	Title	Description
9–10 AM	<b>Inquiry + Genetic Engineering = Engaged Students</b>	Learn how to transform tried and true “cookbook” labs into student-centered activities that get kids thinking. We’ll cover strategies that let students ask their own questions about glowing bacteria, collect information, and then support their claims with reasoning.
10:30–11:30 AM	<b>Algae Blooms: Agriculture, Ecology, and Economy (AP Biology, AP Environmental Sciences, Aquatic Sciences, and General Biology)</b>	Teach photosynthesis and cellular respiration together in the context of the dead zone in the Gulf of Mexico. Using algae beads together with an algae bloom case study, your students can engage in authentic inquiry investigations to learn about two connected processes and their ecological and economical implications.
12–1 PM	<b>The Opioid Epidemic: Exploring the Genetic Associations of Opioid Abuse (AP Biology)</b>	Opioid abuse is prevalent in the United States. Students take on the role of researchers as they utilize higher level skills to design an experiment utilizing a fast electrophoresis protocol of pre-amplified DNA samples that predicts addiction risks for opioid abuse, treatment, and implications to precision medicine based on a patient’s genotype.
1:30–2:30 PM	<b>It’s in Their DNA! Teach Personalized Medicine with Students’ Own DNA</b>	Experience a hands-on classroom activity where students work with their own genes and PCR in the context of personalized medicine, the wave of future disease treatment.
3–4 PM	<b>Contagion! Track the Progress of Dangerous Viruses that are Spreading Throughout the Country</b>	Disease can spread like wildfire through populations. In this hands-on workshop you will become an epidemiologist and track diseases like ebola, bird flu, SARS, and HIV to name a few. See if you can track down patient zero.

Continued on back...

Come visit us at **Booth #114**

Can’t make a session? Don’t miss out — download the FREE presentations from [bio-rad.com/explorerworkshops](http://bio-rad.com/explorerworkshops)

19-2179

**BIO-RAD**

Visit us on the Web at [explorer.bio-rad.com](http://explorer.bio-rad.com)  
or call us at 1-800-4BIORAD (1-800-424-6723)

**BIO-RAD**  
**Explorer**

**Friday** | November 22

De Soto A	Title	Description
8–9 AM	<b>Genes and Justice (Forensics, AP Big Ideas 3 and 4)</b>	Of the 365 people that have been exonerated using DNA evidence, 20 were on death row. Learn how the Innocence Project uses DNA evidence to free those who were wrongly convicted. You'll use restriction enzymes and electrophoresis to examine crime scene DNA in this hands-on lab.
9:30–10:30 AM	<b>Mushroom Ecology and Why it Matters for Biofuel Production</b>	With rising greenhouse gases, bioengineers apply observations in mushroom ecology toward finding a biofuel solution. In this hands-on workshop, use an inquiry-based approach as you extract enzymes from mushrooms and optimize reaction rates for biofuel production.
11 AM–12 PM	<b>Are Your Students Doing Protein Labs? Explore Molecular Evolution Using Fast Protein Electrophoresis</b>	In this hands-on workshop you will generate protein profiles from distant and closely related species of fish using protein gel electrophoresis. Test the hypothesis that protein profiles are indicators of evolutionary relatedness and construct cladograms from your own gel results. Learn about proteomics and explore the central dogma of biology: DNA>RNA>Protein>Trait. (TEKS 112.34.C.1-3, 5, 7-9)
2–3 PM	<b>Conserving the Panda Population Through Understanding their Reproductive Endocrinology (Grades 9–16; AP Biology)</b>	Save the Giant Pandas! Learn about the effect of reproductive hormones, cell-to-cell communication, immunological responses, and ecosystem balance by engineering a hormone detection system for Giant Panda population conservation efforts.
3:30–4:30 PM	<b>Think Like an Engineer in Your Biology Class</b>	Incorporate science and engineering practices into your biology class by engaging students to define the problem of world hunger. Considering constraints, students will design a treatment plan (solution), in the form of an evidence-based argument, for protein-energy malnutrition.

**Saturday** | November 23

De Soto A	Title	Description
8–9 AM	<b>Get That Grant Money!</b>	Successful grant writing isn't rocket science, but it can take your teaching to new heights. We'll show you how to get organized and find resources. Experienced grant writers will share their powerful tips to get you to the next level.
9:30–10:30 AM	<b>Textbook: Texas Biotech Pathway</b>	Modern biology is revolutionizing human lives! Are your students prepared? Glowing cats? Personalized medicine? Designer babies! Empower and prepare your students to think critically as modern biology revolutionizes medicine, industry, and human lives. Learn from a leader in biotechnology education how to build your bioscience lab program step-by-step with equipment, supplies, and student credentials.  Screen reader support enabled.

Come visit us at **Booth #114**Can't make a session? Don't miss out — download the FREE presentations from [bio-rad.com/explorerworkshops](http://bio-rad.com/explorerworkshops)

Visit us on the Web at [explorer.bio-rad.com](http://explorer.bio-rad.com)  
or call us at 1-800-4BIORAD (1-800-424-6723)

