**AP Biology Institute 2017**

**Kristi Sutton (suttonkristi@gmail.com)**

Course Description

* Participants in the AP Biology Summer Institute will increase their knowledge of, and comfort level with, the AP Biology Curriculum Framework.
* We will perform most of the labs in the new lab manual and discuss how to tweak labs you currently use to make them student driven and inquiry based.
* We will share best practices and hints on what works in the AP Biology classroom to improve student achievement.
* During the week we will also look at sample syllabi, textbooks, and additional resources.
* In addition we will spend time familiarizing ourselves with the format, sample questions and grading of the new exam.
* If there is interest, time will also be provided to work on your course syllabus.

**Agenda**

|  |  |  |
| --- | --- | --- |
|  | **Morning** | **Afternoon** |
| **Day 1** | Introductions  What do you have in front of you?  Overview of the Curriculum Framework  CollegeBoard Support Materials (Teacher Community)  The Exam  Equity and Access  Lab: Natural Selection Day 1   * Discussion: What do you need to remember when you set this up yourself? What are some alternatives? More inquiry-based?   Introduction to Inquiry  Overview of the new labs and expectations  My pre-lab form | Overview of Big Idea 1   * In margins, write down what you already do * Highlight, or put a circle around things that you need to work on adding   Lab: Origins of Life  Lab: Hardy-Weinberg (classic and new)  Activity: Breeding Bunnies  Online Resource: PopGen Lab: BLAST (alternatives on Google Drive)  Other activities:   * POGIL Phylogenetic Trees * Evolution in Action: Statistical Analysis * Other HHMI activities – rock pocket mouse   **Best Practices and share out for Big Idea 1** |
| **Day 2** | Course Syllabus and AP Audit  My course introduction and Registration/Life Story  Overview of my PBL course  Using Case Studies in Class – NCCSTS, DNA to Darwin   * Lactose Tolerance * Case Study Assignment   Creating Peer Study Groups  Lab: Photosynthesis and Respiration using Algae Balls  Lab: Enzymes | Overview of Big Idea 2   * In margins, write down what you already do * Highlight, or put a circle around things that you need to work on adding   Other Photosynthesis Labs  Other Respiration Labs  Online tutorial: Surface Area to Volume  Lab: Diffusion and Osmosis – Agar, mix-up in the lab, root vegetables  Discussion: Calculating Water Potential  Mass plants for Transpiration lab  Discussion: Urinalysis/Kidney lab  Day 1 of pGLO lab  Activities: Immune Players Interactive, Antibodies  **Best Practices and share out for Big Idea 2** |

|  |  |  |
| --- | --- | --- |
| **Day 3** | Let’s talk about the details: grading, test corrections, using the textbook, lab books/reports, summer assignments, etc.  Lab: Vampire Murder (Restriction Enzymes)  Activity: Quorum Sensing  Cell Communication resources  Check pGLO results – Day 2  Operons  Stain Vampire Murder | Overview of Big Idea 3   * In margins, write down what you already do * Highlight, or put a circle around things that you need to work on adding   Overview of Mitosis/Meiosis Lab and Sordaria  Activity: Modeling Meiosis and Fertilization  Lab Intro: Mendelian Genetics  Online Resource: Virtual Fly, Geniverse  Demo: Blood Type  Activity: Chi-Square and M&Ms or Skittles  Lesson: Embryo Development  Activity: Case of the three-spined stickleback,  Modeling the Regulatory Switches of the PITX1 Gene in Stickleback Fish  Lab: Taste  Nervous System Resources – GSLC (demos, Mouse Party)  Analyze Vampire Murder Results  **Best Practices and share out for Big Idea 3** |
| **Day 4** | More pGLO results – Day 3  Using the Instructional Planning Report  Writing exam questions  2016 FRQs  Where to find former FRQs and rubrics  Lab: Enzymes – floating disks and alternatives  Activity: Toothpickase | Overview of Big Idea 4   * In margins, write down what you already do * Highlight, or put a circle around things that you need to work on adding   Discussion: How do you teach Ecology?  Protein folding activities (Foglia and wire)  Lab: Animal Behavior  Lab: Transpiration – collect final data  Online Simulations – pHet, Concord Consortium, McGraw-Hill, etc.  **Best Practices and share out for Big Idea 4**  Wrap Up – Evaluations and Giveaways |