**AP Biology Institute 2017**

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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**

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|  | **Morning** | **Afternoon** |
| **Day 1** | IntroductionsWhat do you have in front of you?Overview of the Curriculum FrameworkCollegeBoard Support Materials (Teacher Community)The ExamEquity and AccessLab: 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 InquiryOverview of the new labs and expectationsMy 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 LifeLab: Hardy-Weinberg (classic and new)Activity: Breeding BunniesOnline Resource: PopGenLab: 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 AuditMy course introduction and Registration/Life StoryOverview of my PBL courseUsing Case Studies in Class – NCCSTS, DNA to Darwin* Lactose Tolerance
* Case Study Assignment

Creating Peer Study GroupsLab: Photosynthesis and Respiration using Algae BallsLab: 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 LabsOther Respiration LabsOnline tutorial: Surface Area to VolumeLab: Diffusion and Osmosis – Agar, mix-up in the lab, root vegetablesDiscussion: Calculating Water PotentialMass plants for Transpiration labDiscussion: Urinalysis/Kidney labDay 1 of pGLO labActivities: Immune Players Interactive, Antibodies**Best Practices and share out for Big Idea 2** |

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| **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 SensingCell Communication resourcesCheck pGLO results – Day 2OperonsStain 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 SordariaActivity: Modeling Meiosis and FertilizationLab Intro: Mendelian GeneticsOnline Resource: Virtual Fly, GeniverseDemo: Blood TypeActivity: Chi-Square and M&Ms or SkittlesLesson: Embryo DevelopmentActivity: Case of the three-spined stickleback,Modeling the Regulatory Switches of the PITX1 Gene in Stickleback FishLab: TasteNervous 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 3Using the Instructional Planning ReportWriting exam questions2016 FRQs Where to find former FRQs and rubricsLab: Enzymes – floating disks and alternativesActivity: 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 BehaviorLab: Transpiration – collect final dataOnline Simulations – pHet, Concord Consortium, McGraw-Hill, etc.**Best Practices and share out for Big Idea 4**Wrap Up – Evaluations and Giveaways |