2018 Advanced Placement® Biology

About the AP® Biology Summer Institute
Whether a teacher is just beginning to teach an AP Biology course or has taught the course for years, there will be something for everyone at this Advanced Placement Summer Institute in 2018.

This comprehensive institute will provide information and experiences on how to teach both the classroom and laboratory components of an AP Biology course. Activities to support an understanding of the structure and design of the AP Biology Curriculum Framework will be a major part of this summer institute. There will be instruction on how to prepare or modify an Audit based on the curriculum framework. Teachers will be introduced to the laboratory investigations that are in the AP Biology Student Laboratory Investigations Manual. In addition, activities and strategies to support inquiry-based instruction will be presented along with how to incorporate these inquiry activities into the coursework. Participants will learn how to organize the course in order to have time to present the material to the students as well as to conduct the laboratory investigations.

Also the specifics of the AP Biology Exam and the importance of the Exam grading process will be presented. A review and discussion of the standards for the Free-Response Questions from the 2018 Exam will also be included. Teachers will learn methods to better prepare their students when they write answers to the Free Response Questions of the AP Exam.

- Included:
  - College Board Workshop Handbook
  - Notebook full of consultant-generated handouts and activities
  - Sample Textbooks
  - Student Laboratory Investigation Manual
  - Teacher Laboratory Investigation CD
  - Biology Lab Materials
  - Technology Assignment Options
  - USB Drive
  - Breakfast and Lunch

- Emphasis:
  - The AP Curriculum Framework
  - The AP Biology Investigations (Inquiry-based)
  - The AP Biology Exam
  - Free-Response Question Grading and Analysis of the 2018 Exam
  - Incentive-based Learning Strategies
  - Sharing of Strategies to Help Students Grow Academically
  - Sharing of AP Biology Teaching Strategies and Activities
  - How to Review for the AP Biology Exam
  - Tips on Transitioning to the Curriculum Framework with its inquiry-based, critical-thinking, problem-solving emphasis

AP BIOLOGY SUMMER INSTITUTE 2018 – IT IS ALL ABOUT THAT SKILL
Consultant: Pat Mote, Georgia State University, Atlanta GA
Lab Coordinator: Kimi Takagi, Cedar Shoals High School, Athens GA
** Investigative Labs to be conducted during this APSI
Sharing of Best Practices will occur throughout the week

Monday: THE CURRICULUM FRAMEWORK
Introductions, Consultant’s Notebook, College Board Handbook, Textbooks
Equity/Access and Diversity of Learners
The Curriculum Framework: BI’s, EU’s, and EK’s
Why are the LO’s and SP’s important?

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Lunch
Planning an AP Biology Course for the Year (Syllabus and AP Audit)
How much Anatomy & Physiology needs to be covered?
Lab Manual: *AP Biology Investigative Labs: An Inquiry-Based Approach*
Investigation 4: Diffusion and Osmosis ** BI 2
Investigation 11: Transpiration ** BI 4

**Tuesday: WHAT’S THE BIG IDEA About the Investigative Labs?**
Lab Notebooks, Lab Reports, Laboratory Equipment and Materials
Water Potential Calculations for **Investigation 4** BI 2
**Investigation 8: Bacterial Transformation** ** BI 3**
The AP Biology Exam and the 2017 FRQ’s

**Lunch**
The AP Biology Exam and the 2017 FRQ’s (continued)
Investigation 5: Photosynthesis ** BI 2** and Other Activities Using Plants
Investigation 6: Cellular Respiration ** BI 2**
Investigations 1: Artificial Selection BI 1 and 10: Energy Dynamics BI 4

**Wednesday: LET’S WORK ON THOSE SKILLS**
Investigation 9: Restriction Enzyme Analysis of DNA ** BI 3**
Investigation 3: BLAST BI 1 (Are there alternatives?)
How to Write AP-Level Multiple -Choice Questions

**Lunch**
Investigation 13: Enzyme Activity** BI 4**
Investigation 7: Cell Division: Mitosis and Meiosis BI 3
Investigation 12: Fruit Fly Behavior ** BI 4**

**Thursday: MATHEMATICS and STATISTICS: Biology’s Next Microscope**
Content Update Presentation - Guest Speaker
Calculating Transformation Efficiencies from **Investigation 8 BI 3**

**Lunch**
Calculating Restriction Fragment Lengths for **Investigation 9 BI**
Investigation 2: Mathematical Modeling: Hardy-Weinberg ** BI 1**
College Board Evaluations and APSI Certificates

**What to bring:**
Items you should bring during the week include:

- a laptop computer or tablet (recommended – not required)
- a copy of your school’s academic calendar
- a current AP Biology syllabus
- closed-toe shoes for laboratory work
- goggles for laboratory work
- highlighter(s)
- An investigation you used (or would like to use) with your students beyond what is found in the AP Biology College Board Lab Manual or an assessment that allowed you the opportunity to measure the learning objectives from the biology curriculum.
- comfortable clothes and shoes for walking in the summer heat
- a light sweatshirt or sweater in case you get chilly in the AC

**Instructors:**

*Pat Mote* taught biology at the high school level for over thirty years serving as department chair for many of these years. She has been an instructor and lecturer at the college level for 26 years. She holds degrees in Microbiology, Genetics, and Science Education from the University of Georgia. While serving as a consultant for the College Board since 1989, she has conducted one-day workshops and summer institutes at various schools and universities all over the country.

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She has been involved with the AP Reading to score the free response questions from the AP Biology Exam since 1992, serving as reader, table leader, question leader, and exam leader. She writes multiple-choice, grid-in, and free-response questions based on the curriculum framework for the AP Exams.

During her career as a high school teacher she was named high school Teacher of the Year several times and Teacher of the Year for her school district. She was also named the Georgia Biology Teacher of the Year and a Tandy Technology Scholar. In 2003, she received the Siemens Award in Biology for her work with minority students in the AP program at her school. Her students have also selected her as their STAR Teacher numerous times.

She has written and edited various teacher guides for anatomy and physiology textbooks and for several AP Biology textbooks. She has recently had items published in The College Board’s Materials for Professional Workshops. She serves as an editor for articles for The American Biology Teacher. She has edited numerous editions of Human Anatomy and Physiology textbooks. Other publications include articles for several microbiology journals from research conducted at the Centers for Disease Control in Atlanta and two instructors’ guides for AP Biology. She has also helped develop test banks for textbooks used in the AP Biology courses. And she has been teaching a summer molecular biology program for the past 17 years at the Georgia Institute of Technology in Atlanta.

Pat resides in Atlanta and is currently a lecturer for the Human Anatomy and Physiology, Majors Biology, and Non-majors Biology lecture and lab courses at Georgia State University’s Dunwoody Campus.

Dr. Kimi Takagi has a Ph.D in Marine and Environmental Science from the University of the Ryukyus in Okinawa, Japan. Kimi has conducted research in the watersheds and coastal ecosystems of Okinawa (Japan), Phuket (Thailand), Southern California, and Georgia. She was a Woodrow Wilson Fellow who recently completed a Master’s of Arts in Teaching Degree at Piedmont College. She is an AP Biology teacher at Cedar Shoals High School in Athens GA.

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