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 2017.

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 2017 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 2017 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 2017 – IT IS ALL ABOUT THAT SKILL
Consultant: Pat Mote, Georgia State University, Atlanta, GA
Lab Coordinator: Richard Patterson, Athens Academy, 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

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Why are the LO’s and SP’s important?

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

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workshops and summer institutes at various schools and universities all over the country.

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 16 years at the Georgia Institute of Technology in Atlanta.

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

Richard Patterson is currently in his 43rd year of teaching high school biology, the last 40 years at Athens Academy in Athens, GA. He has taught AP Biology for 37 of those years. He holds a BS in Botany and a MEd in Science Education, both from the University of Georgia. He has served as a consultant for the College Board conducting over 60 one-day up to two-week AP Biology Teacher Workshops and Institutes throughout the nation. He has served as a question item writer for the Educational Testing Service for both the AP Biology and NEAP exams, and has served as a Reader, Table Leader and Question Leader for the College Board at the AP Biology Essay Readings since 1986. At Athens Academy he serves as the Science Department Head in the Upper School, teaches several sections of Biology Honors for 9th graders, and usually two sections of AP Biology for seniors. He serves on several standing committees, is a Faculty Advisor to the Honor Council, and over the years has been a Head Coach in Boys Varsity Soccer and Girls Volleyball. He was named Region Coach of the Year twice in volleyball. Now in the spring, he is an assistant Head Coach of the Track & Field team with specialization in the shot put and discus. In that role he has had the honor of coaching 38 Region/Area Champions, 14 State Champions, and one girl who placed 6th in the World Junior Olympics in the shot in France, 2013. Richard was named Outstanding Biology Teacher of the Year for the State of Georgia in 1988 and again in 2008, and won the 2006-7 Siemens Award for Advanced Placement for Georgia. He has been chosen by Athens Academy STAR students to be their STAR Teacher eleven times. He authored an article in American Biology Teacher magazine in March 1998, wrote a major revision of the Dissolved Oxygen lab in the “classic” curriculum lab manual, and an article on preparing students for the AP Biology Exam free response questions about labs in the College Board’s 2004-05 Professional Development for Biology Workshop Materials book. Richard recently celebrated his 40th anniversary with his wife, Georgia, by taking a cruise to Alaska, and he will be retiring from the classroom at the end of the 2016-17 school year.