**AP Statistics Summer Institute**

**Paul Rodriguez**

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At this institute, participants will:

* Take a “deep dive” into the AP Statistics Course and Exam Description (CED) and learn how to plan effective instruction around the CED
* Perform at least two hands on AP grading trainings and develop lesson plans around these questions
* Learn how to modify AP free response questions to make your own and test items
* Use examples of online applets and activities suitable for all classrooms
* Develop lesson plans to help student master statistical inference (Question 4 on the AP exam!)
* Learn how the AP Statistics exam is scored and strategies to use to help *ALL* students do their best on the exam
* Examine additional resources, sample syllabi and textbooks
* Navigate the resources available on AP Classroom

**2021 AP Statistics**

**Course Description**

**Institute Overview**

Welcome to the wonderful world of AP Statistics! I am looking forward to working with all of you and hope that you will leave feeling prepared and excited about the opportunity to teach AP Statistics.

My goals are to review important topics from each of the four major content areas in AP Statistics (Exploring Data, Collecting Data, Probability, and Statistical Inference) and how the new Curriculum Framework will impact your current course. I will provide activities that help illustrate these topics and provide instruction and opportunities to use various types of technology, including graphing calculators and computer software. Also, we will review the history of the AP Statistics program, discuss the creation of the AP Statistics exam, and review the scoring of the 2021 AP Statistics exam in great detail. Participants are expected to come prepared to learn, involve themselves in activities, and more importantly, prepared to teach! We will utilize resources from all participants. Finally, we will discuss how to grow your AP Statistics program, how to select materials for use in class, how to recruit students, how to assess students, how to prepare students for the AP exam, and of course, anything else that participants want to know!

Questions? Email me at troyrodmath@gmail.com.

**Institute Preparation**

 You will be receiving electronic copies of all the lesson plans we cover, examples on how to make the perfect chapter tests, examples of projects, and many other resources. I strongly believe we learn most by doing, so you will be asked to participate in the activities, as well as present one of your own. It would be helpful to have a laptop computer, but it is not necessary. It will be necessary, however, to bring a graphing calculator. I will be modeling instruction using a TI-84, so bringing a TI-83 or TI-84 would be great. You will also be receiving copies of several textbooks, so you will not need to bring any of your own.

Institute Schedule (This will be adjusted to reflect the participants need, but will have an emphasis on the new Curriculum Framework released in May 2019, including the new College Board website and the questions from the 2022 AP exam and material for each day may be flip-flopped)

Monday:

Introduction:

* The History and Growth of AP Statistics, including Recent Developments
* Overview of Workshop Schedule and Materials
* Resources for Starting an AP Statistics Program
* Structure and Construction of AP Statistics Exam
* Grading of the AP Statistics Exam
* AP Audit
* Teaching and Assessment Strategies
* Preparing Students for the AP Exam

Collecting Data:

* Types of Sampling
* Bias in Sampling

**Tuesday**:

Collecting Data:

* Observational Studies
* Experimental Design
* Current and Previous AP Questions
* 1st Semester Project Ideas

Exploring Data:

* Univariate Data
* Bivariate Data
* Calculator and Computer Skills
* Current and Previous AP Questions

**Wednesday**:

Probability:

* Rules of Probability
* Simulations
* Random Variables
* Calculator and Computer skills
* Current and Previous AP Questions
* Sampling Distributions
* Calculator and Computer skills
* Current and Previous AP Questions

**Thursday**:

Inference:

* Confidence Intervals
* Hypothesis Tests
* Errors in Hypothesis Testing
* Using Simulation for Inference
* Calculator and Computer skills
* Current and Previous AP Questions
* 2nd Semester Project Ideas