2020 Advanced Placement® Statistics

About the AP® Statistics Summer Institute
This session is designed for both new and experienced teachers and will cover the material pertinent to the 2020-2021 AP® Statistics Course.

Day 1: Monday, July 6, 2020
Session 1
- Introductions
- AP Statistics Overview
- College Board Materials and Other Resources
- Use of Technology, Formulas and Tables
- AP Audit, Pacing/Syllabi
- Equity and Access as a Guiding Principle in Designing Instruction

Session 2
- Exploring Data (Univariate Data)
- Descriptive Statistics in Words, Numbers, and Charts/Graphs
- Normal Distributions
- Class Activities on Exploring Data

Session 3
- Exploring Relationships (Bivariate Data)
- Scatterplots and Association
- Correlation and Coefficient of Determination

Session 4
- Least-Squares Regression Lines
- Residual Plots
- Class Activities on Exploring Data and Relationships

Day 2: Tuesday, July 7, 2020
Session 1
- Homework Review
- Sampling
- Observational Studies
- Experiments

Session 2
- Designing Studies
- Scope of Inference
- Simulation and Simulation-Based Inference
- Class Activities on Data Production

Session 3
- Randomness and Probability Rules
- Conditional Probability
- Mutually Exclusive Events and Independent Events

Session 4
- Random Variables (Discrete and Continuous)
- Binomial and Geometric Distributions
- Combined Event Probabilities
- Class Activities on Probability and Random Variables

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Day 3: Wednesday, July 8, 2020

Session 1
- Homework Review
- Sample Proportion
- Sampling Distribution of a Sample Proportion

Session 2
- Sample Mean
- Sampling Distribution of a Sample Mean
- Class Activities on Sampling Distributions (Sample Proportion and Sample Mean)

Session 3
- Statistical Inference
- Confidence Interval for a Proportion
- Conditions for Inference
- Margin of Error and Standard Error

Session 4
- Confidence Interval for a Mean
- T-Distributions
- Class Activities on Confidence Intervals for Proportions and Means

Day 4: Thursday, July 9, 2020

Session 1
- Homework Review
- Significance Tests about a Mean or Proportion
- Test Statistics and P-Values

Session 2
- Power, Type I and Type II Errors
- 2-Sample Significance Tests and 2-Sample Confidence Intervals
- Class Activities on 1-Sample and 2-Sample Inference Procedures

Session 3
- Chi-Square Goodness of Fit Test
- Chi-Square Test for Association/Independence
- Chi-Square Test for Homogeneity
- Class Activities on Chi-Square Procedures

Session 4
- AP Reading
- Common Student Errors
- Assessment Strategies
- Review Tips
- Equity and Access (Revisited)
- Wrap-up

What to bring:
Items you should bring during the week include:
- a laptop computer & storage device
- a TI-84 Plus graphing calculator
- a current syllabus and pacing guide
- one classroom activity to share
- one best practice to share
- comfortable clothes and shoes for walking in the summer heat
- a light sweatshirt or sweater in case you get chilly in the AC
- note: a survey will be sent to you a few weeks before the course begins – please be sure to provide your own email address so that you can respond prior to the beginning of the workshop
Instructor:

David Wilcox is currently a member of the mathematics faculty at The Lawrenceville School in Lawrenceville, NJ. He has served as a rubric team member, table leader, and reader for the College Board at the AP Statistics Reading for the past 18 years. Additionally, he has developed and taught courses to help students prepare for the SAT and ACT. David also has experience as an AP workshop leader and APSI instructor. In addition to AP Statistics, David teaches Honors Calculus-Based Probability and Statistics at The Lawrenceville School. In 2006, he was a national nominee for the prestigious Siemens Award for Advanced Placement for his work in the AP Statistics classroom. David received a Bachelor of Science in Mathematics from Christian Brothers University in 1989, a Masters of International Business Studies (Spanish Track) from the University of South Carolina in 1994, and a Masters of Applied Statistics degree from the University of South Carolina in 2013.

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