Spring Seminar 2019 at TCU

APS1918 AP Physics 1

Course Description:
AP Physics 1 cannot be compared to the pre-2015 AP Physics B course, and certainly not to most "honors" or "college prep" courses. The primary difference is the incessant demand for verbal explanations. A student who is skilled at "plugging and chugging" mathematics can easily pass any state standards exam, is likely getting an A or B in a typical introductory college or college- equivalent course, and could probably pass the old AP Physics B exam. Such a student cannot succeed in AP Physics 1.

Questions on the AP Physics 1 exam probe a student's understanding of the entire scientific process. In Physics 1 you don't just predict an answer, but you must explain the reasoning behind the prediction, and discuss how that prediction would change as the conditions of the problem change. And you don't stop there: you describe how you would set up an experiment to verify that prediction, how to analyze the data collected from such an experiment, how that experiment might turn out. In other words, our students are expected to acquire and demonstrate the same skills that professional physicists use in their work.

In this workshop, we will discuss in detail the content and structure of the AP Physics 1 exams. More importantly, we will talk about how to teach students the physics *skills* that will be tested on these exams, and which are useful at all levels of physics.

We'll be sharing teaching ideas within the group, especially including creative laboratory activities. I encourage attendance from those who have a year or two under their belts – their input will be especially useful to new AP Physics 1 teachers, and to other somewhat-veterans. We want to hear specifics about what has worked for you, and what has not.

The overarching goal of the day will be to communicate and share physics teaching ideas that, while focused on the AP Physics 1 exam, can be applied to any level of physics. In particular, we will discuss:

· *Quantitative* use of demonstrations… whenever students can be asked to predict the result of a demonstration, that demonstration has served a purpose beyond simply attention-grabbing.

· Laboratory activities in the style of AP lab questions… We will discuss how to create activities that are not only pedagogically valuable, but which also directly prepare the students for the types of exam questions they will face.

· Ways of structuring laboratory activities like a video game, in which students get quick (but not instant) feedback on their work, and in which students level up to progressively different activities. We will discuss activities that bring students beyond focusing on an abstract answer, but on to experimentally verifiable predictions. We'll talk about specific ideas that will help get students writing, communicating, and experimenting.

Agenda

8:00-8:30 Opening Session

8:30-10:00 **Teaching Ideas toward the AP Physics 1 exam: *Quantitative Demonstrations***
Teaching to the test = teaching good physics
Less is More
Starting the year
Integrating demonstrations and example problems

~10:00-10:30 break

10:30-11:30 **Laboratory in AP Physics**
Laboratory work and preparing students for AP lab questions
Equipment and resources: necessity, luxury, or useless?
Assessment suggestions
Research in high school physics – USAYPT and "physics fights"

~11:30-12:30 Lunch – *You're encouraged to eat together, with me and with each other, in order to continue our physics teaching discussions*

12:30-2:00 Teaching Ideas toward the AP Physics 1 exam: ***Teaching Like a Video Game***
In-class laboratory exercises
Leveling Up
Everything's a test
How do *you* teach ____?… a brief interactive content review

2:00-3:00 **The 2018 exam, selected questions**
How the AP exams are graded
Practice grading of student samples

Instructor Bio: Greg Jacobs teaches at Woodberry Forest School, a college preparatory boarding school for boys. He runs Woodberry Forest's award-winning Advanced Placement Physics program, as well as their 9th grade conceptual physics program.

Greg's academic history includes an undergraduate physics degree from Haverford College, and a masters degree in mechanical engineering from Northwestern University. He has worked for the College Board as an AP Physics Reader since 1999; he has been a Table Leader since 2008; he has run one-day teacher training workshops since 2002; and he has run week-long AP summer institutes all over the country since 2003.

Greg is the president of the USAYPT (www.usaypt.org), a non-profit organization promoting physics research at the high school level. He also served as the USAYPT tournament director, in charge of organizing and directing the annual US Invitational Young Physicist Tournament, for three years.

Major teaching awards Greg has earned include:

- Virginia AP Teacher of the Year from the Siemens Foundation
- George O'Connor Prize for outstanding teaching at Woodberry Forest
- Lipe Family Mastership at Woodberry Forest
- Physics RISE award from the Virginia Association of Science Teachers

Greg is the author of the McGraw-Hill 5 Steps to a 5: AP Physics 1 and AP Physics C exam prep books. Additionally, he writes the *Jacobs Physics* blog, providing ideas and advice about physics teaching. In his spare time, Greg is a debate coach. He also has broadcast soccer, baseball, basketball, and football over internet audio. He has written the football and baseball books in the Everything Kids series.

A quick scroll through some posts on the *Jacobs Physics* blog should give you a flavor for Greg's teaching.

APS1923 AP World History

Course Description: In this workshop, we will work together to accomplish the following goals:

- To better understand the mechanics of the AP World History Course and Exam

- To improve our dependence on the Curriculum Framework in lesson planning and assessment
- To develop instruction that emphasizes writing using the Historical Thinking Skills
- Using more primary and secondary sources in the classroom
- Guiding students through argument development (Thesis writing and development)

In order to help me better prepare for this workshop, please take just a moment to fill out a survey at https://goo.gl/forms/yuHl2t5QeC3xkaF13 so that I can better know who will be at the workshop.

Please make sure to bring an electronic device and be willing to share some of the wonderful activities happening in your classroom!

I know many of you are interested in the upcoming changes to the AP World History Curriculum and Exam, unfortunately, I have no special insight into these changes and will not be able to provide any information that is not already publicly available.

Instructor Bio: Chad Smith is the AP World History teacher at MacArthur High School in Irving, Texas. As a MacArthur teacher, he has taught on-level, honors, Pre-AP, and AP classes in both US and World History. He also coaches several academic teams, including Academic Decathlon and UIL Current Events. Chad is also an official reader, grader of the free response portion of the AP test, for the College Board and has presented at the AP National Conference.

APS1920 AP Spanish Language and Culture

Course Description: In this workshop, participants will review the AP Spanish Language and Culture exam materials and scoring guidelines that focus on specific pedagogical techniques. Teachers will also learn content-specific strategies that can use in the classroom. Participants will learn the skills, tasks, and materials for which students might need more preparation.

Instructor Bio: Dr. Marisa Pérez-Bernardo is an Associate Professor at the University of Dallas. Professor Pérez-Bernardo received her Ph.D. in Spanish from the Catholic University of America (Washington D.C.). She holds an A.B.D. in English Philology from Universidad de Valladolid (Spain), an M.A. in Specialized Translation from the Universidad de Córdoba (Spain), an M.A. in Spanish and TESOL from West Virginia University, a B.A. in English Philology from Universidad de Valladolid (Spain), and a Certificate in Translation from University of California San Diego.
Pérez-Bernardo has published four book editions, and articles on 19thand 20thcentury Spanish literature. She has also presented papers at different international conferences in Spain, France, Germany, Hungary, Poland, England, Mexico, and Guatemala.
Pérez-Bernardo is also a consultant for the College Board in Pre-AP World Languages and Cultures, AP Spanish Language, and AP Spanish Literature. She is also serving as a Spanish Language and Culture reviewer for the AP Course Audit. She provides AP Spanish teachers and administrators with the clear AP curricular and resource guideline, and determines if syllabi submitted by teachers meet all curricular requirements as established by the AP program.
Marisa also served as an expert advisor for the Texas State Board of Education in its development and reviewed the Languages Other Than English (LOTE) curriculum during the academic year 2013-2014.
Presently, Pérez-Bernardo serves in the Fulbright National Screening Committee for English Language Teaching Assistantships in Mexico.

APS1929 AP Human Geography

Course description: The AP Human Geography Review Workshop will focus on review and preparation for the AP Exam in May. This one-day workshop will have a strong focus on review activities and lessons to prepare students for the AP Exam. During the workshop, participants will actively participate in review lessons they can replicate with their students. There will also be a strong focus on preparing students to write FRQs as well as tips to help you score like an AP Exam Reader. Participants will be provided with ready to use, hands on review activities you can use in class immediately.

Instructor Bio: Jennifer Garner has been an AP Human Geography teacher since 2004. She has served 14 years as an AP Exam Reader, the past four as a Table Leader. She has also written exam items for the AP Exam and practice test questions for the iScore5 APHG Exam review app. She is currently a member of the GACE Geography Test Committee. Mrs. Garner's experience in leading professional development is extensive including leading Georgia DOE Workshops in AP Human Geography each year since 2008, running workshops in writing skills based assessments and instructional strategies. Mrs. Garner is also active with the National Council for Geographic Education, presenting multiple times at their national conference and hosting multiple geography themed webinars.

APS1922 AP U.S. History

Course Description: This course will cover major strategies for preparing your students for the AP U.S. History Exam. We will cover test taking strategies for multiple-choice questions and all the free-response questions. Other things we will cover: pacing of the content, introducing and implementing the historical thinking skills, and review activities. Teachers are encouraged to bring questions about the AP U.S. History course.

Instructor Bio: John Irish teaches AP U.S. History, American Studies AP, and Special Topics in Humanities classes called "People and Places in History" at Carroll Senior High School in Southlake, Texas. He is a nationally certified consultant in AP U.S. History for the Southwestern Region of the College Board and serves as a Question Leader for the AP U.S. History Exam. He is the co-Chair of the College Board AP U.S. History Test Development Committee (DC), which is the group responsible for creating the new exam, overseeing continuing changes to the curriculum, and developing / presenting trainings for teachers across the country at state and national venues. He was on the writing team that published a four volume updated edition of the AP U.S. History Workbooks by the Center for Learning, along with a curriculum unit on Edward Bellamy's novel "Looking Backward" also by the Center for Learning. He has published three books in the series on the Historical Thinking Skills for the redesigned AP History courses; these are published by Norton. He is the founder and chief editor for a small independent publishing company called A Bit O'Irish Press, which specializes in nineteenth-century American Gothic literature, Horror, Weird, and Science Fiction. The press has published a volume of Gothic Short Stories by Fitz-James O'Brien, three volumes of *The Collected Writings of O'Brien*, and anthologies on Mummy short stories. Mr. Irish holds a B.A. in Political Science and Philosophy, an M.A. in Philosophy (thesis topic: John Locke's Theory of Property), and a M.L.S. in Humanities (thesis topic: The Enlightened Puritan: the Intellectual Thought of John Adams) from Southern Methodist University. He is currently a Doctorate student in Humanities at SMU. The focus for his dissertation research is on early 19th century American thought, with special emphasis on Fitz-James O'Brien – the Irish Poe.

APS1926 AP Psychology

Course description: One-Day Teacher Review for 2019 AP Psychology Exam

This course is designed for AP Psychology educators who are just beginning the exciting adventure of teaching AP Psychology or have a level of experience. A special focus will be to present useful and fun review games and tools to cover content required for student success. Topics will be drawn from the College Board Acorn book with particular focus on content requirements, strategies for multiple-choice questions and for skills for successful writing of free-responses as required on the AP Psychology Exam. Specific time will be devoted to hints for helping students fine-tune study skills for cumulative exams.

Topics will include the following:

* Specific review tools for identified content areas from the College Board Acorn book

* Fun resources and teaching strategies focusing on review for AP Psychology Exam

* A review of tips for successful writing on the AP Exam

* Review of 2018 FRQ

Instructor Bio: Margaret Davidson taught Introductory Psychology and AP Psychology at Rockwall-Heath High School in Rockwall, Texas. She has participated in the National Science Foundation Summer Institute for the Teaching of Psychology at Texas A&M University, has served as lead teacher at the Arthur Vining Davis Foundations Psychology Teacher Institute at Nebraska Wesleyan University and has presented at numerous one-day and weeklong College Board AP Psychology institutes as well as College Board's National Conference. She has been an AP Psychology reader and table leader for the AP Psychology Exam for many years. In addition, she has served as chair of the Teachers of Psychology in Secondary Schools with an affiliation with the American Psychological Association. Ms. Davidson is a recipient of Richardson ISD's RISE award, the Moffet Memorial High School award from the American Psychological Association Society for the Teaching of Psychology and the College Board's Southwest Region AP Special Recognition award. Currently, Margaret is working with College Board's mentoring program as well as providing training for teachers in international schools. She has also been recognized by her students in "Who's Who Among American Teachers."

APS1910 AP Biology

Course Description: Participants in the seminar will be given an overview of the 2018 AP Biology Exam. Suggestions for improving writing skills and reading multiple choice questions will be shared and practiced. Test analysis of what students should expect, common misconceptions that appear often, and working with various types of models, including graphs, and other quantitative skills will be discussed for implementation in the classroom. Please bring a calculator, the AP Biology Curriculum Framework, and laptop/electronic tablet, if possible.

Instructor Bio: Nancy has taught AP Biology for 40 years. She currently mentors at Health Careers High School in San Antonio, Texas. As a College Board consultant for over 33 years, she has led many summer institutes in Texas, New Mexico, North Carolina, California, and Hawaii. She has had the honor of serving on the AP Biology Test Development Committee as well as being an AP Reader, Table Leader, and Question Leader at the AP Biology Readings. She has also served on numerous College Board Committees and Advisory Panels, the most recent being on the AP Biology Redesign Panel, The SAT Subject Area Test in Biology Test Development Committee, and AP Biology Innovations Professional Development Committee. Nancy has earned many awards and recognitions in teaching. Among these awards has been the Siemens Award Winner for Advanced Placement Teaching, Outstanding Biology Teacher from The National Biology Teachers Association, Northside Independent School District Teacher of the Year and Region XX Education Service Center of Texas Teacher of the Year, and Texas Exes Outstanding Teacher Award.

A{S1913 AP English Language and Composition

Course description: This one-day AP Exam Prep Workshop is designed for teachers interested in acquiring strategies for preparing their students for the AP exam. (I'm not sure what else to call it.)

Instructor Bio: Lisa Wernli has taught for 26 years in the Pflugerville Independent School District. For the last 13 of those years, she has taught Advanced Placement Language and Composition, and 2 years ago added Advanced Placement Seminar to her resume. When not grading essays, she enjoys reading, playing games on the IPad, and spending time with her husband and children.

APS1915 AP Environmental Science

Course Description: Welcome to the TCU Spring Seminar! I am excited to lead the AP Environmental Science workshop and look forward to sharing strategies and activities that will help you prepare your for success on the national exam. My goal is for teachers to enhance the quality of their review time by providing engaging review strategies that include mini-labs, games, graph and switch and study cards. In addition, we will discuss timeline for review and techniques for improving multiple choice and FRQ writing skills. I will share a digital copy of all review materials and strategies.

Instructor Bio: I have been teaching AP Environmental Science in Marshfield, Wisconsin for 12 years, in addition to chemistry, biochemistry and science research. I have served as an AP Reader, Table Leader, Test Development Committee member and have worked for 6 years as a college board consultant. I am passionate about environmental science education and believe I have inspired many young people to pursue careers in the field or simply become more environmentally aware citizens. I teach students with vast differences in their science background and ability levels and have seen great success with all groups. Please contact me with any questions you may have prior to the seminar.

Amy Fassler fasslera@marshfieldschools.org

715-387-8464 (work)

715-581-0621 (cell)

APS1914 AP English Literature and Composition

Course description: Students can grasp and point to the important features of a poetic text, but the analysis is often lost in summary or superficiality. Come join a conversation and practice alongside other AP English Literature teachers as we address the coaching of full examination and a deepened analysis of complex texts, for both the multiple choice and essay exam questions.

Instructor Bio: Michelle Iskra has been an AP English Literature instructor for 14 years, an English professor for 16, an English Literature Exam Reader since 2010, and has presented at several College Board AP Annual Conferences and at TCU's Fall PD Day and AP Summer Institute.

APS19P30 Pre-AP® MS English

Course Description: Preparing students for academic success is a teacher's job, but teaching empathy and respect is a teacher's joy. Using both fiction and non-fiction units, from John Steinbeck to Dr. Marin Luther King, Jr., we will explore how a writer's words can mold and shape the human heart. In this middle school seminar, we will employ creative and scaffolded lessons to help build a strong foundation for grammar, close reading, and analysis/argument writing.

Instructor Bio: Jacqueline Ward Rains has taught 7th grade English at Fort Worth Country Day for 12 years and love establishing the foundation students will build upon in their future college experience. With my additional job as the K-12 English Department Chair, I get to work with fellow teachers in establishing a healthy and challenging vertical skills alignment. Also, as a Laying the Foundation presenter, I work with teachers from across the country and benefit immensely from a powerful exchange of ideas. In my previous 19 year position with the Abilene Independent School District, I served as an AP Lead English Teacher and worked as a liaison between AP Strategies and the school district while also teaching AP Language and Pre AP English 10.

APS19P32 Pre-AP® HS English

Course Description: Make It Simple! Despite our culture's fascination with bigger, faster, and fancier, the best teaching practices are often the simplest ones. This workshop will get back to basics with skills that can be used with a variety of texts for any ability level. We will explore how to improve reading comprehension, analyze elements specific to different genres, and write well about them. We will focus primarily on skills that are tested on the AP Language and AP Literature exams and look at ways to differentiate based on ability level. Sometimes when students go low (tech), they go high!

Instructor Bio: Suzanne Dilday has successfully taught advanced high school English students for 27 years and graded the AP English Language exam. This is my eighth opportunity to present AP workshops at TCU. Currently, I create practice multiple choice questions and study materials for the SAT, ACT, and AP English exams at UWorld.

APS19P34 Pre-AP® MS Math

Course description: Mathematical Modeling for students who go straight to the Algorithm
Many students enrolled in Pre-AP middle school math classes have developed a fantastic ability to follow the steps they are given and apply those steps to solving routine math problems. Often merely following steps gets in the way of students' deep understanding of mathematics.

In this course, we will examine strategies for helping students who thrive on following procedures learn to look more deeply at the underlying mathematics of those procedures. We will use the Concrete, Pictorial, Abstract theory to teach the understanding that is the foundation of mathematical reasoning so that your students will be better prepared to address the Mathematical Practices for AP Calculus. The concrete and pictorial phases are often foreign to us as secondary math teachers but are worth exploring so we can support our students' understanding of the procedures they use so well. We also look a free curriculum that uses the CPA model that you can take and use right away.

Instructor Bio:
Kathy began earning her degree in education in Denton, Texas, attending Texas Woman's University. Her first teaching position was in White Settlement teaching 7th-grade math. During her 9 years there, she taught all grade levels including Algebra 1. Kathy then moved to Burleson to teach at Hughes Middle School. She was the math department head and an instructional coach for the school district. She is currently the Elementary Math Curriculum Coordinator for Burleson and teaches a section of 6th Grade Math in Burleson's Math Demonstration Classroom.

APS19P31 Pre-AP® HS Math

Course Description: In this session, teachers will engage in several interactive activities and discussions that can be used and implemented immediately into their classrooms. We will explore several rigorous and engaging activities that help students understand and incorporate multiple representations. Teachers will also have the opportunity to work in groups, arranged by course, to create additional activities for their classes.

Additionally, we will dedicate time to discuss the discussing the importance of conceptual understanding in the pre-AP classroom and how to implement these strategies. These discussions and activities will be hands-on and interactive. In the session, teachers can expect to be engaged and leave with multiple classroom ready resources, ideas and activities to help them immediately and long term in their classrooms.

Instructor Bio: Bryan Passwater taught AP Calculus AB and BC at Lebanon High School, in Lebanon, IN for 7 years before joining the AP-TIP IN program at the University of Notre Dame in 2012. Acting as the Director of Mathematics and CS for the AP-TIP IN program, Bryan trained, mentored and supported over 1000 AP and pre-AP math teachers around the country. Bryan has led dozens of 1-day, 2-day and weeklong AP and pre-AP workshops from San Francisco to New York City. He is passionate about teaching and is highly motivated to provide great trainings, support, resources and encouragement to math teachers everywhere. In 2017, Bryan decided to go back to the classroom full time and currently teaches AP Calculus AB, AP Calculus BC, Multi-variable Calculus, Differential Equations, Honors Algebra II and Geometry at a low-income rural school in Indiana. Bryan lives in Carmel, IN with his wife Mary, an elementary school teacher, and their two kids, Adeline (16) and Aydin (14).

APS19EE02 Elementary Education ELA (K– 2)

Course description: Come join us for a day in the life of the Kindergarten-Second grade Reading/Language Arts teacher! Our session will focus on all aspects of early literacy while building fluent readers and writers. We will dive in depth into the world of phonemic awareness, vocabulary, comprehension, writing and how to build our young minds into beautifully prepared readers. The foundational years focus on “learning to read” and we will make sure our students are also prepared to make the transition to “reading to learn”. This course will provide strategies that challenge our students as thinkers, readers, and writers as well as enriching their learning. Teachers will have the opportunity to plan engaging lessons and discuss how to apply these concepts in their classroom.

Instructor Bio: Shaula Shaffer currently serves as Dyslexia Specialist in Burleson ISD. Throughout her teaching career at the elementary level, she has presented at numerous school and district professional development seminars. Mrs. Shaffer’s experiences have proved valuable in being selected as a Lead Teacher, Mentor Teacher, and Cooperating Teacher throughout campus and other select opportunities. She was instrumental in the redesign of district math scope and sequence and most notably in being hand selected for the District Committee to develop resources and tools for teachers. Her expertise is Guided Reading/Early Literacy/Phonemic Awareness and Guided Math/Numeracy.

Mrs. Shaffer is often recognized for her many accomplishments and contributions, with the most recent accolade as a 2018 Fort Worth Top Teacher Recipient and the 2017 Teacher of the Year for her campus. She holds a Bachelors Degree in Social Sciences and a Masters Degree in Education with an emphasis on Curriculum and Instruction. She is incredibly passionate about her work and is always excited to share her experience and expertise to help peers grow in their career.

APS19EE01 Elementary Education Math (K-2)

Course Description: In this session we will be focusing on identify student gaps in math and how to close them. We will look at and discuss ways to close those gaps by using -

- Formative assessments
- A guided math model
- Games and stations
- Effectively scaffolding skills and concepts to be taught

Participants will leave with ideas and a plan for small groups and hands on activities that can used for immediate implementation in your classroom. If available, bring the pacing of your math block, systems you currently use in your class, and a fully charged laptop or mode for note taking/planning.

Instructor Bio: Kerry Woods has been teaching for 22 years and is currently teaching Multiage K/1 in Lewisville ISD. During her career, Ms. Woods has been awarded Elementary Teacher of the Year for her district in Longview ISD and for her campus in Lewisville ISD. She is an educator who fervently believes that little learners can do big things. Her classroom reflects that philosophy with daily engaging and innovative lessons that reflect the rigor of the standards across subject areas. This allows little learners to be out of the box thinkers and innovators in their own rite. Ms. Woods loves presenting to educators in the hopes of inspiring them to try innovative ideas, approaches, and strategies in their classrooms.

APS19EE03 Elementary Education Math (3-5)

Course Description: This session will explore elementary math 3rd-5th grade concepts. How to get students to understand the essential questions, learn problem solving skills, use your old manipulatives in a new way. Use effective strategies for teaching math to our new age kiddies. Help students to make sense of word problems and create engaging lessons using technology in the classroom.

Instructor Bio: Roslyn Kelly

M.Ed. 20 years teaching Elementary/Middle School

TCEA (Texas Computer Education Association) presenter

TAABSE, Tot and Technology presenter/ District Professional Development Presenter/Curriculum Writer/ EdCamp Dallas presenter/EdCamp Global organizer and teacher-presenter Ambassador for Flipgrid.com, Buncee.com, Quizlet.com and EdPuzzle.com.

MIE Certified

APS19EE04 Elementary Education ELA (3-5)

Course Description: This full day ELAR will focus on teaching the most essential skills in reading and metacognitive thinking strategies. Time will be devoted to how to use guided reading and literature circles to engage, motivate, and grow all readers in your classroom.

Instructor Bio: Joanne Campbell is an elementary teacher who has worked in a variety of roles in K – 5. She currently works as an RTI Coordinator and Intervention Specialist in grades K -5 at the Academy at Nola Dunn, a brain based choice school in Burleson, Texas. Her passion is literacy with emphasizing creating lifelong readers who become lifelong learners. She has three children, who all attend(ed) Fort Worth ISD public schools and lives in Fort Worth with her youngest, her husband, and their dog, Baxter.

APS1912 AP Chemistry

Course Description:
Session 1: 8:30 am – 9:45 am Particulate Nature of Matter across the curriculum: Review the range of topics impacted by the particulate nature of matter and how to move your students earning a 2 to a 3, from a 3 to 4 and 4 to 5. The particulate nature of matter is important in such topics as gas laws, stoichiometry, gas phase equilibrium, acid-base equilibrium, ionic solids, solution process, IMAF, heat transfer and entropy.

Break: 9:45 am to 10:00 am

Session 2: 10:00 am 11:30 am Stoichiometry across the curriculum: Review the variety of stoichiometry problems and how ICE tables can simplify answering simple to complex stoichiometry questions. Stoichiometry appears in gas laws, limiting reagents, gas phase and aqueous equilibrium, moles of reaction in thermodynamics, neutralization reactions and equivalence points and redox reactions and equivalence points.

Lunch 11:30 am – 12:15 pm

Session 3: 12:15 pm – 1:45 pm Using data in problem solving: Review a range of problem solving where data is provided in a variety of different forms, including: data tables, chart recordings, and a wide range of graphs in problems covering topics such as stoichiometry, thermochemistry, gas phase and aqueous equilibrium, electrochemistry and kinetics.

Break 1:45 pm – 2:00 pm

Session 4: 2:00 pm – 3:30 pm A closer look at acid-base titrations, buffers and titration curves: Understanding equilibrium constants for strong acids, weak acids, strong bases, weak bases, salts, buffers and for any type of neutralization reactions. A qualitative understanding and a quantitative determination of relative concentrations of all species during a titration.

Instructor Bio: John has been teaching in the introductory chemistry program at Oklahoma State University for over 40 years. He has been involved with the AP Chemistry program and the College Board since 1988. From 1989 to 1992 he developed and taught AP Chemistry By Satellite to rural and urban high schools around the United States. John was an AP Reader from 1990 to 2005 and then from 2009 - 2018. From 2002 – 2005 he served as Chief Faculty Consultant for AP Chemistry. John returned to the Reading in 2009 as an Exam Leader. In 2016 he attended the Reading as a Table leader. In 2006 and 2007 John served on the College Board AP Chemistry Curriculum Alignment Commission. This group was responsible for developing the content outline for the redesigned AP Chemistry course. John was appointed to AP Chemistry Test Development Committee from 2010 to 2013. In 2012 and in 2019 John attended AP Chemistry Professional Development Workshops that provided training and materials focusing on the new AP Chemistry framework and curriculum and the use of inquiry in the classroom. Throughout his teaching career John has integrated computers into his teaching. In 2002 he and Dr. Michael Abraham from the University of Oklahoma received an NSF grant to develop a series of particulate level animations and the corresponding guided and open-inquiry activities. The MoLE project web site (http://genchem1.chem.okstate.edu/CCLI/Startup.html) provides teacher access to all the animations and activities. Along with Mike Abraham at the University of Oklahoma and Tom Greenbowe at Iowa State University (now at the University of Oregon), John is working on a new technology project (http://genchem1.chem.okstate.edu/BDA/Topics.php) that provides activities before class, during class and after class using a learning cycle design to help student better understand introductory chemistry content. Participants will have access to an APSI web site that includes homework assignments (with answers), sample examinations (with answers) and additional resources that can be incorporated into the classroom.

APS1925 AP Calculus AB

Course Description: Teachers will learn how to inject their AP Calculus AB class with cutting edge approaches to prepare for the exam in May. They will focus on key review topics pertaining to semesters 1 and 2, review strategies that can be implemented during the final weeks before the exam, technological aids, and important findings from current AP Calculus Readings.

PLAN FOR THE DAY

Developing an Exam Review Plan

Topic Review: First Semester Perspectives with AP Flair (Quick ID of Limit Definition of Derivatives, Tangent Line Approximations, The Chain Rule, Graphs of f,f', etc.)

Topic Review: L'Hospital's Rule

Topic Review: Integral Representations

Topic Review: Functions Defined by Integrals

Topic Review: Integration Focus

Topic Review: Area/Volume

The Big Picture Through the Lens of Free Response Question

Instructor Bio:
Instructor bio: Melissa Burkhead teaches Pre-AP Geometry, Pre-AP Pre-Calculus and BC Calculus at Trinity Valley School in Fort Worth, Texas. She has been teaching secondary students for 25 years, including in Mexico City, the El Paso public schools, Austin's magnet school program and the Episcopal school system. Ms. Burkhead has presented at numerous AP conferences and most recently represented The College Board with a special AP Calculus focus in both Abu Dhabi, U.A.E. and Bogotá, Colombia. She is also a reader for the AP Calculus exam. She holds a BA in mathematics and political science from Georgetown College and an MA in education (mathematics specialty) from The University of Texas at El Paso.

APS1921 AP Statistics

Course description: AP Statistics Checklist for the AP Exam

Are you on schedule for preparing students for success on the May AP Statistics exam? Are your students on schedule? In this workshop, we will highlight the skills and activities/lessons that are essential for teachers' preparation and students' success on the AP Statistics exam. In addition, we will begin creating a database of resources that can be shared and utilized by all of the participants. After this workshop, you should have teacher-ready/student-ready resources to implement in your classrooms.

Instructor bio: Reva Soyemi is a mathematics teacher who has 17 years of classroom experience in various educational settings- secondary, post-secondary, urban, rural, suburban, and international. She currently teaches various math classes as a Google Educator- Levels 1 and 2- at Prosper High School in Prosper, Texas. Throughout her career, she has taught every math level (remedial, on-level, pre-AP, AP) for most math subjects (math lab, college prep math, pre-algebra, algebra, geometry, algebra 2, pre-calculus, statistics, and AP Statistics). She also had the opportunity to teach courses and lead workshops at Yonok University in Lampang, THAILAND, UMass Medical School in Worcester, MA, and the University of Colorado at Boulder.

In addition to her course load as a full-time Prosper High School teacher, she is an appointed-member of PHS's AP Guiding Council and an advisor to PHS's Mu Alpha Theta (national math honor society) chapter.

Her education background is diverse with a Bachelor of Arts degree in Sociology (Baylor University), Master of Arts degree in Sociology- quantitative analysis (Baylor University), and Master of Arts degree in Mathematics Education (Clark University- Worcester, MA). Her education background and teaching experience has prepared her for voluntary appointments on the Texas Education Agency's various short-term committees (2014-2016)- a) TExES Mathematics 7-12 (235) Examination Question Writer, 2014-2015 (ETS),b) TEA review panel of Mathematics, Algebra 2 for Proclamation 2015, c) Texas Examination of Educator Standards (TExES) Physics/Mathematics Test Review Committee, 2014, d) TExES Educator Certification Virtual Item Review Committee for Math (iPT) 7th through 12th grade, 2014, e) TEA review panel of Mathematics/Subchapter F. Finance for Proclamation 2017, and f) STAAR- Algebra 2 Item Review Committee September 2016.

Reva Soyemi started Prosper ISD's first AP Statistics (2012-present) and Statistics (2014-present) courses. Both programs have grown in student numbers and the district now has two high school instructors teaching multiple sections of AP Statistics as well as Statistics. She was the team lead for AP Statistics from 2017-2018 and the current team lead for Statistics (2018-present). She is also a co-owner of a test prep company, 1st Choice Test Prep and a member of the following professional organizations- National Council of Teachers of Mathematics (NCTM), Association for Supervision and Curriculum Development (ASCD), and the American Statistical Association (ASA). She has participated in workshops where she shares how she incorporates her diverse experience into her math classrooms. She looks forward to leading her first Education First (EF) London STEM tour the summer of 2019.

APS19P35 Pre-AP® Chemistry

Course description: Bringing Critical Thinking into the Pre-AP Chemistry Classroom

Pre-AP Chemistry is a difficult course for both students and instructors alike. For students, it is likely one most difficult courses they elect to take as part of their preparation for college-level work as the combination of abstract concepts coupled with the application of mathematics to chemical problems is daunting. Consequently, many students try to memorize their way through the course, never learning “how to learn” so that courses such as AP Chemistry become manageable. From the instructor’s perspective, should Pre-AP Chemistry be “mini” AP Chemistry? How can novel topics be chosen to hit that “just right” level of breadth and depth needed to prepare students for the long-term while hitting curricular goals? Join us as we look at specific spots in the Pre-AP curriculum where one can build strong critical thinking skills. Participants will walk away with new approaches to classic material, as well as activities and labs that can be used for the remainder of this year in addition to adding new wrinkles for subsequent planning and vertical alignment.

Instructor Bio:
Paul D. Price is the Science Department Chair at Trinity Valley School in Fort Worth, Texas, where he has taught chemistry, AP Chemistry, physics, and AP Physics since 1998. He earned a B.S. in Chemistry and Mathematics from Southwestern University in Georgetown, Texas and an M.S. in Chemistry from the University of Wisconsin-Madison. Rumor has it that Paul’s courses are difficult because he is a stickler for understanding “the why” in chemistry. Fortunately, students say his classes are always entertaining. In 2004 the Dallas-Fort Worth Section of the American Chemical Society honored Paul with the Werner Schulz Award for Outstanding High School Chemistry Teaching. He has also been awarded the ACS Southwest Region Teacher of the Year in 2005 and was named one of the top teachers in Fort Worth by *Fort Worth, Texas Magazine* in 2014. Paul is a co-author of two chemistry laboratory manuals, an author and reviewer for the *Journal of Chemical Education,* and a frequent presenter at regional and national conferences, often discussing techniques to improve molecular-level problem solving skills. Paul is also a question leader at the annual AP Chemistry reading, an endorsed College Board consultant, and he served as a member of the AP Chemistry Test Development Committee for 10 years. Away from school, Paul enjoys spending time with his wife, Lenore, and seeing the world through the eyes of his two children, Micah and Kiersten. He can be reached anytime at pricep@trinityvalleyschool.org.

APS19P33 Pre-AP® MS Science

Course description: Pre-AP Middle School Science: Preparing for the New Pre-AP High School Courses

As high school Pre-Advanced Placement Courses frameworks include shared principles and areas of focus. Reflect on current practices, share ideas, and learn new strategies around the shared principles, areas of focus and AP Science Practices. Shared principles include close observation and analysis, evidence-based writing, higher order questions, and academic conversations. Areas of focus include analytical reading and writing, applying mathematics, and attention to modeling. Join us to learn, share, collaborate and reflect on the next steps to prepare our students for future success.

Instructor Bio: Tony has been in public education for 25 years. He currently serves as the Director of Science and Instructional Technology in Grapevine-Colleyville Independent School District, a suburban district in the Dallas-Fort Worth area. In this position his focus has been on providing professional growth opportunities to help educators lead students to a deep conceptual understanding of science as well as instructional technology. Tony has taught middle school students in grades 6-8 in several suburban Dallas-Fort Worth school districts. As a teacher leader, Tony has participated in action research, developed multiple curriculum models, and provided numerous professional development sessions. Tony is a leader in science at the state level. He served as Vice President for the Science Teachers Association of Texas (STAT) in 2010-2011. He is also a member of the Metroplex Area Science Supervisors, National Science Teachers Association, Texas Computer Educators Association, the International Society for Technology in Education and the Texas Science Education Leadership Association. Previously, Tony has served as an Advanced Academics Coordinator at the district level. In this capacity he focused on meeting the needs of gifted, pre-AP and AP students. He has influenced the creation of gifted science programs in several districts. At the university level, Tony has served as a graduate teaching assistant in the area of literacy studies as well as an adjunct professor teaching a science methods course for pre-service teachers. Tony holds a Bachelor of Science degree in Biology and Master's degree in Curriculum and Instruction. He has served as a College Board consultant since 2005. He has presented week-long summer pre-AP institutes, Topics in Vertical Teams and several conference-style sessions. He has served on vertical teams as a teacher, department chair, and administrator. He has been a member of both well-established and burgeoning teams. Tony and his wife of 29 years live in Hurst, Texas.