SHARE FAIR DC 2015

A New Reality in the Classroom

Kay Cole and Kim Boyd, *Fort Bend (TX) Independent School District*

Tired of presenting topics in the same way? Student attention lost during class? Want to include the virtual world with the real world? Incorporate augmented reality into your classroom and keep students engaged and enthusiastic about the lesson. Presenters will share augmented reality apps, lesson ideas, and demonstrate how to create your own aura.

Anatomy in Clay!

Gregory Gonzales, *Anatomy in Clay*

Hands are one of the most versatile components of the human body, a critical interface for sensing and evaluating incoming data and constructing and forming objects. In this workshop, you will experience the world's first interactive tool, the hand, as your own personal anatomy laboratory. Our presenter will guide participants through the basic concepts of human musculoskeletal anatomy with the Anatomy in Clay® Learning System, a method that uses clay to build tendons and muscles – one at a time, from the inside out -- on a scale model of the human hand and forearm. This experiential approach engages the kinesthetic mind and enhances the educational experience across all learning styles.

Bringing the NGSS Scientific Practices Alive in Your Classroom

Amy D'Amico and Katherine Blanchard, *Smithsonian Science Education Center*

Are you interested in having a robust conversation about the Next Generation Science Standards? What to learn more about the scientific practices? Even if you aren't implementing the NGSS, employing the practices in your classroom can add to your repertoire of teaching techniques to engage students in their own learning. In this classroom intensive, we will delve into one practice and work through methods of implementing that practice into the science you already teach. Our goal is that everyone walks away with a new tool to put in their toolkit of teaching strategies!

Building Khan Artists: Developing Support Structures to Facilitate Differentiation of Instruction with Khan Academy

Wayne Thornes and Heather Crosser, *Khan Artists*

How can technology be used to help differentiate mathematics instruction for all levels of learners? How can teachers help fill gaps in previous learning for some students without impacting the learning of the class at large? Khan Academy is a free, easy to use online resource that can address many of these needs. Individual teachers can and do realize this vision using Khan Academy, but how can schools/districts work to systemically move teachers toward this goal? Join us to learn about the tools and features of Khan Academy as well as how one district worked with teachers to engage students using Khan Academy to support differentiated math instruction through targeted professional development. ***Please bring a laptop or computing device with you to this session to explore Khan Academy and access resources and tools that we will share to start your school or district on this journey. Please sign up for Khan Academy prior to this session. Visit bit.ly/khanartists to learn how to sign up for Khan Academy, add coaches, and access the class code to add us as your coach prior to this session.***

Cisco Networking Academy: Outside the Box Techniques to Maximize Student Results (2 Hour Session – must sign up for Hour One and Hour Two)

Jason Kahler and Marie Zwickert, *Cisco*

Educational institutions and nonprofit organizations around the world deliver Cisco Networking Academy courses to help improve local career opportunities. Cisco Networking Academy courses cover a range of topics from basic network design and theory to network security and advanced troubleshooting tools. 21st century skills such as problem solving, critical thinking, and collaboration are integrated into the curricula to help students succeed in their careers. Come and learn about Cisco's Corporate Philanthropic Public-Private partnership with schools, utilizing our innovative ICT curricula, while exploring Common Core curriculum implementation and creating dynamic student roles. You will invent ways to mobilize and communicate through collaborative 21st Century tools, while experimenting with performance driven classroom objectives, while you flip the paradigm and your classroom.

College Ready Math (2 Hour Session – must sign up for Hour One and Hour Two)

Kelly Gaier Evans, *Battelle*

In this 2 hour session, the teacher facilitator will model a Math Design Collaborative (MDC) lesson. Participants will take on the characteristics of their math students. As mathematics

teachers we can think very linear. We focus so much on getting the answer that we completely forget how we learn. This method takes our focus back to teaching and learning.

College Ready Math is designed for math teachers grades 6 through 12. Lessons embed formative assessment teaching practices while using rigorous and real world math problems. They are built to surface how students think about math concepts. By voicing their own thinking, including misconceptions, students can talk the problem out. That helps them figure out language and methods for math that work for them, not just their classmates.

What do we see happen in the classroom? Engaged students who are discussing and debating math and re-energized teachers who are inspired by the changes they see in students. Walk away from the College Ready Math session with lessons you can use tomorrow and an understanding of the theory behind the lessons.

Crazy for Education: Flip Teaching - Jump the First Hurdle with Blazing Speed

Renato Cataldo, *Crazy for Education*

Note:** ***To participate in some of the exercises, please bring your laptop (PC or Mac), fully charged, and your eager sense of curiosity. A webcam (internal or external) is recommended to create high-quality video lessons.
According to the hours of interviews of Flip Teachers that we've conducted, Flip Teaching is achieving dramatic results throughout the U.S. for increased comprehension and test scores while simultaneously getting through material faster. This allows time for higher level, critical thinking; problem based learning including accounting for differentiation and learning styles. Teachers often struggle with the first hurdle of transitioning to Flip Teaching: recording their video lessons. In this session you will: • Discover how to record an average 8 minute video lesson (middle and high school average) in 10 to 12 minutes. • See how easy and quick it is with simple software on the PC and Mac. • Remove all anxiety and concern, even for the most non-technical teachers. • Understand, and learn how to incorporate, key elements that make the difference between average video lessons and great ones. • Be excited to start "Just-In-Time Flipping" so you can start recording next week's video lessons, tonight. No kidding. Many teachers do this after our session.

Creativity with Chromebooks

Brandon Peterson, *Douglas County (CO) Schools*

Learn more about how to unlock the full potential of the world of Chrome Apps (found using the Chrome Browser) and how they unlock student potential leveraging devices such as

Chromebooks! Chrome has hundreds of built-in (mostly free) apps that allow students to create a wide variety of projects that help them to not only produce amazing results but enhance their 21st century skills. All you and your students need is a Google login to instantly gain access to an abundant offering of apps ranging from diagramming apps like LucidChart, to unique visual creation apps like Piktochart, to drawing apps like SketchPad and beyond. This session will leave you invigorated to go back to the classroom and try out tons of new student-driven activities. ***Note: Participants should bring a Chromebook, MacBook or Windows Laptop that has the Chrome Browser installed. Mobile devices (such as iPads) will NOT work for this session.***

Front Row: Explore Adaptive Math Lessons from the Teacher and Student Perspectives

Corey Still, *Front Row*

Front Row is a free adaptive math program for K-8 classrooms that is common core aligned. It allows students to practice at their own level and move up and down at their own pace so they are never bored, and so they never have material that is just too challenging for them. This ensures students are engaged, and are owning their learning path. In addition, students can draw upon short videos for help, and can collaborate to learn together using the suggestions from the program. At the same time, Front Row allows teachers to view exactly where each student is, and how to tailor instruction for them. The program has features like adaptive printables for off-line practice, auto-generated small groups for instruction, and auto-generated standards based report cards - all to make sure teachers can effectively reach each student.

In this session, you will learn more about how Front Row works, and for which uses it is best. In addition, you will learn more about how you can get started with Front Row for the first time and have the opportunity to explore the program as both a teacher and a student. Teachers across the country in thousands of schools have found ways to dramatically improve results for their students using Front Row, and you will learn some of the ways they used the program to make sure all their students grew in math. The goal of this session is to make sure you can go back into your classrooms completely ready to use Front Row, and to give you all the know-how to get the most out of this innovative program.

Honeybee Communication and Learning Behavior and the Effects of Insecticides

Hartmut Doebel and Ricky Zhu, *GWBuzz.com*

Learn about how foraging honeybees communicate food sources to their hive mates and how very low, sub lethal dosages of modern insecticides alter the cognitive behavior of honeybees.

How to Conduct a "Blended" Forensic Science Lab Activity with *Murder at Old Fields*

John Stevens, *Bullfrog Communications*

Murder at Old Fields is an exciting new Forensic Science Lab Activity for middle school and high school classrooms. Based on the 1842 double-murder of Alexander and Rebecca Smith at their farmhouse in Old Fields, Long Island, students examine evidence and conduct labs based on the historical facts of this case**.** The innovation in ***Murder at Old Fields*** is that it is a "blended" learning experience - a combination of both the real-world and the virtual world. ***Murder at Old Fields*** includes both a real-world kit in which labs can be conducted in the classroom or lab, and a virtual on-line activity which can be conducted on tablets, in the computer lab or on a student's computer at home.

John Stevens, the chief developer of **Murder at Old Fields,** will help conduct a hands-on seminar on how to integrate this blended learning activity into your classroom.
Students love learning through discovery with ***Murder at Old Fields*** as they learn science on their way to solving the crime!

How To Teach Engineering Design Through Service Learning - An Introduction to Purdue University's Award Winning "EPICS" Curriculum

Tom Hecks and Dr. Bill Oakes, *EPICS Purdue University*

EPICS is a unique program in which teams of students are designing, building, and deploying real systems to solve engineering-based problems for local community service and education organizations. EPICS = Engineering Projects In Community Service EPICS was created to meet a critical educational need of introducing middle and high school students, especially females and underrepresented minorities, to engineering and technical design opportunities through hands-on service-learning projects. The EPICS approach meets vital needs by providing non-profit organizations--such as community service agencies, schools, museums, and local government offices--access to resources for technology and engineering products to improve services. The EPICS model brings partnerships together to improve education and meet community needs. EPICS ties STEM careers to helping others. Through EPICS, students become engaged in STEM studies, motivating them to pursue careers in engineering and computing fields that require college degrees. The EPICS program offers schools the opportunity to: attract a diverse student population to STEM areas of study; reignite an interest in school for students who may be struggling in the traditional classroom; give students career skills to help them succeed as they graduate; and participate in a program to help students meet service requirements. EPICS was founded at Purdue University in Fall 1995 and has received major awards from the Carnegie Foundation, the National Science Foundation, the American Society for Engineering Education, the IEEE Education Society, Campus Compact, the

Corporate and Foundation Alliance, Purdue University, and the Governor and Legislature of Indiana. It was featured in the PBS series Communities Building Community.

Igniting STEAM Engagement Through Game Making (2 Hour Session)
Elise Lemle, *Two Bit Circus*

The design process is an integral part of effective STEAM teaching and learning. Drawing upon the success of the Los Angeles STEAM Carnival and STEAM Carnival Student Preview Day, Two Bit Circus will present an integrated approach to project-based learning through a unique fusion of technology, hands-on learning, and the design process. With an emphasis on purposeful play and innovative approaches to student engagement, participants will participate in a game-making STEAM activity to take back to their classroom and communities.

Jane Goodall's Roots & Shoots: Using Google Maps in the Classroom to Plan and Implement Service Campaigns
Shawn Sweeney, *Jane Goodall's Roots & Shoots*

"What does Google Maps have to do with Dr. Jane Goodall?" We're glad you asked! "Every individual makes a difference each and everyday," says Dr. Goodall, "It's up to us what kind of difference we're going to make." Jane Goodall's Roots & Shoots, the global, youth-led community action and learning program of the Jane Goodall Institute, builds on the legacy and vision of Dr. Goodall to place the power and responsibility for creating community-based solutions to big challenges in the hands of young people. Today, let us show you how to use Google Maps to create a digital map with your students to identify specific challenges in your neighborhood. Take this technique back to your classroom and use it to prioritize community problems, develop a plan for a solution, and take action.

All Share Fair Nation educators are eligible for Roots & Shoots mini-grants and all workshop participants will receive a very special set of Google virtual reality goggles for classroom use.

KEVA Planks: Stealth STEM - Sneak Engineering Into Any Subject
Ken Scheel, *KEVA Planks*

A hands-on workshop teaching simple, fun, engaging hands-on activities that stimulate the imagination, inspire problem solving, start conversations, teach history, art and STEM – all at the same time. This session will cover the highlights of top rated workshops conducted for Science Museum Educators, Art teachers, STEM Educators, Gifted teachers and Art Therapists.

Using high precision identical KEVA planks, learn how to slyly slip in some engineering into almost any topic you are teaching. Learn easy two-minute games, instant challenges and activities you can implement tomorrow. Channel ADHD energy for good. Come play with a purpose.

Ken Scheel is the Director of KEVA Education and an internationally sought after speaker and trainer for educators, Science Centers and Children's museums. He specializes in developing learning experiences that are tactile and so much fun, kids forget they are learning. Ken was **ranked the #2 presenter at the Young Child Conference & Expo in New York City**. Ken is the founder of the KEVA Planks Company and a professional toy inventor. His educational toys have earned some of the most prestigious awards in the industry including the Disney Family Fun Toy of the Year. Ken lives in Virginia where he plays with his wife because his three daughters are grown and usually playing with someone else.

Lead Yourself, Lead the World

Steven Edwards, *Edwards Educational Services*

In a technology rich globalized world the skill set for success had changed. Our children and grandchildren are faced with a new paradigm that requires new and different skills, currently these skills are not reinforced in most of our schools. This highly interactive session will share the iLead 21 experience with participants and demonstrate how classrooms, schools and districts can be transformed to create a new and relevant learning dynamic for students.

iLead 21 is a three-tier leadership experience that can transform how we think about teaching and learning. The core elements of iLead 21 are servant leadership, social entrepreneurship and 21st Century Skills. This is an adult facilitated and student lead experience that begins with an investigation of self, then moves into working with others and ultimately developing and implementing a project that beneifits the school, neighborhood, community or beyond. All iLead 21 participants become member of a closed international virtual network where they have the opportunity to design and implement project not only locally but with virtual partners from around the world. Throughout the iLead experience students are honing their skills by applying the iLead 21 process and the iLead 21 core principles.

Participants will leave the session with an understanding of the iLead 21 program and how the concepts and tools can be woven into their setting regarding of the students' academic background or prior experiences.

Lemonade Day DC: Experiential learning, entrepreneurship, financial literacy, mentoring, elementary/middle school

Alexandra Bossetta, *City Director Lemonade Day DC*

Lemonade Day DC (LDDC) is the service-learning initiative for the George Washington University School of business. LDDC is a student-run social entrepreneurial venture that seeks to inspire the next generation of entrepreneurs through teaching them how to own and operate their own business, a lemonade stand. GW business students serve as mentors to DC's 4-7th graders, as they walk them through the 14 lesson Lemonade Day curriculum. College students spend one month mentoring participants as they prepare for Lemonade Day, which is the implementation of their actual business. Students have permission to open shop and set up their stands all over the city. Our commitment to community drives us to make this curriculum accessible and free to all participants, provide trained college student mentors to teach the curriculum and maintain a presence in all 8 wards of DC. Last year we partnered with 50 schools and recreation centers and mentored over 1,000 youth participants. Our primary focus is middle school students in DC's public and charter schools. This presentation will give an overview of Lemonade Day DC and show how the unique program is beneficial for educators and youth in DC.

Micro-credentials: An emerging professional development strategy

Robert Bajor, *Digital Promise*

Participants will receive an introduction to micro-credentials, a professional development strategy that provides educators with recognition for the skills they acquire throughout their careers. Specifically, several micro-credentials are available for topics covered by Share Fair Classroom Intensives. Participants will discuss incorporating key methods associated with micro-credentials into their practice and have the opportunity to begin the micro-credential submission process.

Nature Works Everywhere: Behind How Nature Works to Produce Clean Air, Water, Energy and Food

Angela Brisson, *The Nature Conservancy*

The world's leading environmental organization, The Nature Conservancy, brings conservation science to life with the Nature Works Everywhere education program. Nature Works Everywhere is a digital education platform that helps students learn the science behind how nature works and how we can keep nature running strong. In this hands-on session, you will create a garden that supports habitat for pollinators, filters water, and improves soil. Then we

will work together to collect data on the conservation impact of the garden and share your results with a national community also working to help nature stay healthy and productive. This session builds on best-practices in project-based and service learning and will help you not only teach the natural sciences, but also model them in a fun and interactive way for your students.

Problem Based Learning (4 hour Session – must take all 4 Sessions)

Kellie Lauth, *Principal, STEM Launch K-8 School (CO)*

Problem Based Learning (PBL) experiences engage students with an authentic problem rooted in content (science, social science, engineering) and have them analyze, research, study the problem with a cultural, social, political, economic, historical, scientific lens. The PBL can come from media sources, your own thinking, your students thinking, and business and industry partnerships. The PBLs are directly aligned and correlated to state standards across the content areas. One well-developed PBL will cover multiple disciplines and standards and develop conceptual understanding. Students, through authentic experiences (video conferencing with specialists, researching, interviewing, surveying, etc.) and collaboration propose solutions to the problem(s) presented. Through a digital lens, they present their findings and solutions to an authentic panel of experts and receive critical feedback to be able to rethink and redesign their solutions, findings. Some PBL units of study take a few weeks while others may last several. The goal of each is to immerse students in real world, contextual problems and employ strategies and knowledge to seek solutions, find evidence to support their thinking, and collaborate and share and engage with experts in the field. This session is intended for: Any educator interested in building a PBL unit from scratch to implement in the classroom.

PSI-PMI Demystifying Math and Science Education - New Jersey Center for Teaching and Learning

Rosanna Satterfield, *NJCTL*

Come learn about the Progressive Science and Math Initiatives (PSI-PMI) stress-free way to teach K-12 Next Generation Science and Common Core Math. PSI-PMI digital course materials are free, open source, and aligned to national standards. PSI-PMI pedagogy is technology-enabled and student-centered. Join us to learn about the free resources you can bring back to your school.

RAFT: Design and Build Moving Art
Chris DeKay, *Resource Area for Teaching*

Developed by the Exploratorium's PIE Institute, Cardboard Automata are a playful way to learn about simple machine elements such as cranks, cams, levers and linkages while creating art that actually spins and moves through the magic of science. Cardboard Automata is a great example of integrating art, science and engineering. In this workshop you will learn about the mechanics of simple machines by building moving art that tells a story. This is an activity that can be translated to the classroom at many levels as well as being a fun opportunity to unleash your own creativity.

REAL School Gardens
Alison Risso, *REAL School Gardens*

Meet your goals, get your students more engaged in learning and double the size of your classroom...take your class outside! All subjects, especially Science, Math, and Language Arts can be taught in a more engaging and hands-on way outdoors. NO GARDENING EXPERIENCE REQUIRED. In this session, you'll learn key outdoor class management techniques, and will practice a range of garden-based activities and lessons . See how rewarding and productive it is to bring students outside for their lessons. Our expert educators have all been elementary school teachers for years, and know how to help you meet your teaching goals.

STEM through Fairy Tales for Early Learners
Julia Patterson, *Imagine Tomorrow*

This dynamic, hands-on workshop brings the fairytale, The Three Little Pigs, to the 21st century to teach STEM skills in a fun and creative way. Participants will be engineers designing and building their houses to withstand the big bad wolf's attempt to blow them down. Lesson Plans, including the script to role play the story, The Three Little Pigs @ Webwood Forest, will be available online.

TeachLivE: A Virtual Sandbox for Teacher Preparation and Student Learning
Mike Hynes and Lisa Dieker, *TeachLivE*

In this session participants will have the opportunity to interact "live" with the University of Central Florida's virtual students and adults, TLE TeachLivE^{TM}, in what is called a "virtual sandbox". This teacher and leader professional development tool allows professionals to work

on pedagogical and content skills with middle school students, high school students, parents and teachers. The session will include emerging work with students with autism, intellectual disabilities and vision impairments along with the future of these environments in education. Participants will learn about the outcome of a two-year large national research study of this work on teacher practice and how data is coded, gathered and feedback is given will be shared. Come learn and play with instructors, along with our new adult avatars for an experience that is hands on and will catapult you into the future of the next generation of learning.