



Preliminary Conference Program



February 15-16, 2019
Washington, DC

Welcome to LLI Atlantic!

LLI Atlantic is an annual gathering of educators from the DC area and across the country at National Cathedral School to teach, share, network, and learn together. LLI Atlantic is focused on practical tools and resources for educators, and on creating collaborative connections that last well beyond the conference.

Through active learning workshops - in which educators work together to learn new skills and gain new resources - LLI Atlantic is offering more than just another professional development for teachers. Teachers who learn and share at LLI Atlantic and other Lausanne Learning conferences are gaining experience, connections, practical tools and resources, and so much more.

This is a listing of the workshops at LLI Atlantic, with a short description and speak for each, as well as the intended audience. Stay tuned for the final schedule and exciting conference activities and opportunities!

With any questions, please always feel free to reach out to me, Lausanne Learning Coordinator, via my contact information below. I look forward to meeting you at LLI Atlantic in February, 2019!

Sincerely,

A handwritten signature in black ink that reads 'Amber Colvin'.

Amber Colvin

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Experiments, Explorations, and Entrepreneurship: Making in the Math Classroom

Math is more than just numbers on a worksheet. It can be beautiful, fun and inspirational! In this active learning session, teachers will explore project based learning, gameification, and building a student run business as a way to enhance the math curriculum in elementary, middle and high school math classes.

Amy Brownlee, Lausanne Collegiate School

Design Process Across Disciplines

The design process can be bent and molded to form lessons for numerous disciplines in the high school classroom. Teacher representatives from various disciplines at Holy Ghost Preparatory School will be demonstrating lessons they have developed which make use of the design process, and/or iterative design thinking. Lesson examples will be given for the following areas: Art, Foreign Languages, and English. Central to this discussion will be the premise that design thinking can, and should, permeate high school curriculum.

Rick Gabriel, John Scanlon, Patrick Hoezle, Holy Ghost Preparatory School

Create Your Own Robot with the New HummingbirdBit

Design, build, and program your own robot using the NEW Hummingbird Bit Robotics Kit and everyday art supplies. This 1-hour introductory workshop is designed for any teacher interested in bringing robotics, programming, and design into their classrooms.

Sarah Magner, Joey Starnes, Flint Hill School

Turning Up the STEAM: Activities Transcending the Disciplines for Enduring Learning!

This is not only a session full of “STEAMy” activities but offers a philosophical approach that actually works, developed in classrooms over the past five years. Many schools have makerspaces or innovation centers but do not make balanced studies on STEAM principles. This session will widen your horizons to see how to interweave science with the other disciplines. Our activities involve empirical science, meaningful art, and heated student-friendly competition. We have not seen most of our ideas presented at other conferences, so we hope this is new to you and helps refine your approach to physical science and STEAM.

Timothy Weymouth, Mary Taylor, Tower Hill School

Making Effective Arguments with the CER Framework

Teachers will learn to implement the Claim, Evidence, Reasoning (CER) Framework in their science classrooms. They will explore how this framework can be used to teach students to effectively structure arguments they make in response to an activity or assigned task.

Jim Barnaby, Heather Foucault-Camm, Beth Whipple, Sanford School

Girls and the Maker Movement

How is the maker movement and design thinking empowering girls to pursue STEM majors and careers? Is the maker movement important for girls' education? Can the maker movement be more inclusive of women, particularly women of color? If so, how can we make it more inclusive? Should girls be targeted for single-sex STEM and maker programs? Educators will discuss and debate the maker movement and its impact on girls' academic achievement, agency, and STEM.

Urvi Morrison, Allison Furton, Strategic Edtech

Fostering the next evolution of educators: Education Scientists

What is an education scientist? How is research in education inspiring innovation? Why should educators be conducting research every year in their classrooms? Our year-old program has produced eight pieces of unique research that is changing how educators teach. Learn how we are using the design cycle, the action research process, online/in-person professional learning networks, and pragmatism to help redesign education by turning educators into researchers. Educators will partake in writing their own research questions to help guide changes they want to make in their own practices.

Urvi Morrison, Allison Furton, Julia Ewart, Strategic Edtech

Promoting Student Leadership in Technology

In this session, participants will hear about several creative ways (e.g. badges, pop-ups, and ambassadors) to empower students to take on leadership roles with regards to technology at their school.

Urvi Morrison, Allison Furton, Julia Ewart, Strategic Edtech

Web Designers Belong in Every Classroom

In order for education to be successful, students need to see how their learning extends beyond the next project or test. While most teachers craft their courses in order to achieve lofty, globally-minded objectives, many students have difficulty seeing how their coursework advances them towards these goals unless they are provided with the opportunity to step back from the course material and reflect. Teachers of all subjects use website design in order to help their students see the big picture. In my classroom, students engage in a year-long project in which they document their learning in a personal website. This process facilitates the making of inter-unit and interdisciplinary connections that students might otherwise miss as they rush through curriculum. In addition, the necessary reviewing of their work encourages students to reflect on the development of subject-specific skills and work habits. Engaging in website design affords students the space to think “big picture” and to create an artifact of their learning that is beautiful and functional. Come see my students’ websites for inspiration on how to help your students make connections between information, ideas, skills, and their academic growth.

Heather Clagett, Lausanne Collegiate School

3D Printing in Clay

The convergence and overlaying of Art and Design, specifically, Ceramics with the fields of Science, Technology, Engineering and Math (STEM) is a powerful synthesis that can be leveraged to facilitate critical investigations in the areas of material science, engineering, architecture, earth science, chemistry, color theory, history, design, innovation, and digital fabrication.

Through Ceramics and 3D printing, this workshop will explore making, innovation, and the inherent connection to STEM fields. We will review contemporary tools for digital fabrication, utilize 3D modelling programs such as Tinkercad, and overlay this with the process of creating product designs and fine art.

The creative process applied in this workshop makes references to the processes of printing malleable materials such as clay, glaze, chocolate, cookie batter, concrete, and biomaterials. 3D printing in clay is an opportunity to further explore form finding and creation that expands upon two techniques already familiar in ceramics, extruding and coil building. Added to this is the element of form creation using 3D modeling software allowing for design of complex or precise geometries, data-driven designs, and options for incorporating custom text. All are welcome. No prior experience required in clay, digital fabrication, or software required.

Session participants will design and make objects using Tinkercad, generate a gcode file, and produce them with 3D clay printing. Printed work will be fired right after the session to take home the next day.

Amy Sinbondit, National Cathedral School

Boost Critical Thinking with R.A.W. Skills

This session is designed to help teachers boost their students' critical thinking with reading, annotating and writing (R.A.W.) skills.

Delmetria Millener, Shunta Spencer, Lancaster High School

Grades Ain't Nothing But a Number

This workshop is designed to help teachers, administrators and all stakeholders in a child's education to shift their focus from being driven by data to being motivated by growth.

Shunta Spencer, Delmetria Millener, Lancaster High School

Matlab and Multivariable Calculus

With coding fast becoming a “basic literacy,” it is important to create opportunities for students to gain exposure to computer programming and computational thinking. Matlab, a high-level language and environment for scientific and technical computing, enables the use of code for 3D graphing, visualization and modeling in Multivariable Calculus.

Lana Conte, National Cathedral School

Coding in Math Classes

Introducing basic computer programming concepts and literacy in math classes with emphasis on algorithmic thinking, artistic design, and relevance of math concepts in coding.

Morgan Eaker, National Cathedral School

Solving the *Good Will Hunting* Problem: An Introduction to Graph Theory

This fun lesson introduces basic components of Graph Theory that can be adapted to many academic levels and subjects. Using the vertex-edge graph creator tool from NCTM, homeomorphically irreducible trees can be created and explored. While the vocabulary sounds daunting, any student who can count to 10 will be able to make progress with this problem. Time permitting, Hamiltonian and Euler circuits will be introduced.

Susan Flagg, National Cathedral School

Uncovering the "Everyday"

Connecting~Living~Uncovering~"Everyday" Science & Engineering Through Observations What does it mean to make an observation? Students are asked daily to make observations in science and The ARTS. Observations that require them to think like an explorer as they work to make observations of the world around them that give them clues to the everyday. Clues that uncover how they are connected, clues to the story of who they are and evidence of change through the lens of science and engineering.

Frederick Hellbusch, St. Andrew's Episcopal School

Using Cospaces to Create a Virtual Reality Experience

In this workshop we will explore the Cospaces application and how it is used to create virtual reality experiences for the 21st century classroom. Attendees will have the opportunity to explore the basics of the program and discuss how virtual reality could be implemented to any classroom no matter what the subject matter is.

Tom Brezina, Lausanne Collegiate School

Teaching problem solving through inquiry-based learning problem sets

The equations and formulas students learn in high school math are not always relevant to their future goals, but logical reasoning and problem solving are universally valuable skills. However, these skills are difficult to teach and are often overshadowed by the need to memorize formulas and algorithms. Having students work through an inquiry-based learning problem set can help them develop problem solving skills by giving them a chance to reason through new ideas on their own. In this workshop we will work through an example problem set from the summer day camp "Girls Talk Math." The problems are designed for rising high schoolers, and are appropriate for students nearing the end of middle school. The material will cover mathematics beyond the standard high school curriculum but will require students only being comfortable with basic algebra. An advantage of using material not covered in the basic curriculum is that students can focus more on trying to reason through a logical argument rather than on getting the "right" answer for a good grade. During the workshop we will also model the role of the teacher in helping students work through this inquiry-based learning problem set.

Katrina Morgan, Girls Talk Math

There is no "S" in "TEAM": Teaching Skills for Success Through Project-Based Learning

STEAM education is often synonymous with project-based learning (PBL). We know that students can go deeper, in terms of taking on complex concepts and content, by participating in open-ended, hands-on, team-centered learning experiences. One potential roadblock to successful PBL is that students often do not bring the skills that they need to be successful collaborators and problem-solvers to the kinds of group learning experiences promoted in STEAM education. This session will explore specific skills and techniques that students can be taught as part of the PBL experience, along with the level and kind of structure that open-ended, project-based learning requires to be successful.

Marc Carraway, Sallie Outten, Stacy Carr, Blue Ridge Governor's School

Can We Benefit from Progress Born Free of Conscience?

The general perception of science is that it is limitless. The question is, should it be? One of the greatest challenges for impactful 21st century education in the sciences should be how to empower young people to realize that limitations on human autonomy are necessary. Sometimes, the ability to choose pales in comparison to the virtue of choosing well. The primary focus of this workshop will be an examination of how the application of scientific ethics, in a student-centered environment, can ensure that the next generation of young scientists are equipped to handle the diverse area of possible scenarios that could very well re-define many aspects of the human experience in the very near future.

Heather Foucault-Camm, Sanford School

Using Neurorobots to Teach High School Neuroscience

Neuroscience is a new high school course at Georgetown Day School, which links the neurobiology of the brain with various behaviors, including learning, memory, and decision-making. An important concept taught throughout the course is the role of specific neural networks in regulating these behaviors. In order to investigate this role more actively, we have adapted neurorobots whose neural networks are designed by the students to model the brain. The neurorobots are mobile robots that use camera, microphone, speaker, and distance sensor to navigate and interact with their environments. Students use a laptop with WiFi access to the robot to build its neural networks neuron-by-neuron and synapse-by-synapse. The neurorobots are developed by Backyard Brains and funded by the National Institutes of Health with the aim of making brain function and psychological capabilities accessible to students.

Bill Wallace, Bobby Asher, Christopher Harris, Greg Gage, Georgetown Day School and Backyard Brains

Protein Engineering case studies to integrate engineering concepts into a survey biology course

While engineering concepts and practices are frequently addressed in high school elective courses and maker-type opportunities, we see that high school engineering curricula are more often aligned with concepts of mechanical and electrical engineering. We believe that engineering concepts and principles can be integrated into survey biology and chemistry courses through case studies related to chemical engineering. The session will share case students and examples of engineered proteins including insulin, proteases, and other enzymes with industrial applications to integrate engineering concepts into units in a survey biology curriculum. Literature, web resources, and manipulatives for activities will be shared.

Tommie Hata, National Cathedral School

Making Complicated Subject Matter Applicable (and Enjoyable) for Middle School Curriculums

Have you ever had a really cool topic that you wanted to cover in your class, but you felt that the students may not have the background understanding to cover the material? This roundtable discussion will allow educators the opportunity to discuss strategies for implementing advanced materials to middle school students.

Tom Brezina, Lausanne Collegiate School

Makerspaces go mobile! Robotics and coding in a middle school science classroom.

In order to make projects incorporating designing, iterating, and coding accessible to all our students, we are making “maker” resources mobile. Even a laser cutter is on wheels to make accessible in a classroom! We will share details of a project in a middle school science classroom incorporating use of a laser cutter and robotics kits to design a robotic arm. We will facilitate a discussion on how institutions often fund and support shared resources such as laser cutters and 3D printers. We welcome teachers, technologists, makerspace managers, administrators, and anyone else wishing to engage in a conversation of how maker resources and experiences fit into an institution’s curriculum and goals and how these experiences can be made accessible to all students.

Tommie Hata, National Cathedral School

Not Just For Scouts: Badging and Credentialing in the K-12 Makerspace and Classroom

Maker Education and Project-Based Learning have been gaining steam as educators and students see the value these methods have to growth mindset, social/emotional learning, and student engagement initiatives in schools. Teachers who facilitate these activities are often dissatisfied with traditional grading systems to assess student skill development and habits of mind. Additionally, they are tasked with responding to new safety challenges and policies. One answer that many programs are turning to is using badging or credentialing. Badges and

credentials create structured goals and clear teacher expectations. They communicate skills and knowledge to peers and teachers without bias. They create confidence and allow students to see themselves as experts. Teachers can confidently take on the role of learning guide and coach as student responsibility and ownership rise. In this session, you will learn about badging and credentialing programs at St. Patrick's Episcopal Day School in Washington, DC and Bullis School in Potomac, MD. You will have an opportunity to experience hands-on how teachers in Lower, Middle, and High School are implementing badging in subject-specific classrooms and in Makerspaces and take part in a conversation about what lessons have been learned and further possibilities to explore.

Elizabeth Markowitz, Stephanie Sack, Jonathan Fichter, Beth Cole, Matt Zigler, St. Patrick's Episcopal Day School and Bullis School

What the Heck is it? Engaging Students in Historical Technology

Engaging with the past can't happen unless students understand how people in the past lived - empathy is a foundational skill, to be sure. But they can't understand how they lived - and fought, celebrated, died, worshipped, created, and loved - without understanding the history of technology. Rather than teaching semesters of the history of tech, integrate historical technology into your classrooms (history or otherwise!) with "What the Heck is It?", a game that Lausanne Learning Coordinator Amber Colvin uses in her history classes! Using objects and images, this workshop will share an easy, fast way to get the conversation around historical technology started - and get your students learning while playing!

Amber Colvin, Lausanne Learning

No More Textbooks! Engaging Students through Primary Sources

Letting students take the reins of a history class and getting rid of boring textbooks sounds great...until you realize how scary it also sounds! Will they read? Will it be chaos? Will it be amazing? Yes. Yes. Yes. This session will share how engaging students and letting them be the historians allows them to take ownership over their learning in history classes, and teachers will leave with practical ideas for how to start implementing this change, including worksheets that help with documents analysis, sample lesson plans, and primary source resources!

Amber Colvin, Lausanne Learning

How to Give Quality, Narrative Feedback in Less Time

If you could cut the time spent writing narrative feedback in half and not compromise the quality of your feedback, would you do it? How would you use that time? Come to this session to learn how to use Google add-ons to create and distribute narrative feedback in ways that maximize

efficiency - even if your school does not use Google Classroom! All that's needed is a Google account, a laptop, and a (future) assignment for which you plan to give narrative feedback.

Heather Clagett, Lausanne Collegiate School

Mastery and Motivation using Gamification

The concept of gamification in education goes beyond actual video games and board games and explores the structural concepts behind why games are challenging, motivating, and fun. This workshop will discuss positive point scoring, mastery, leveling up, inclusion of learning styles and hierarchies, micro projects, and collaborative tools. Learn how a few little changes in your classroom can make a remarkable difference in how your students approach learning with joy and excitement.

Seth Burgess, Lausanne Learning

Tearing Down the Tree of Knowledge with Rhizomatic Theory

Our concept of authority and connection is based on a factory model of "circles of power" that only allows rigid, linear connections (think of your school's organizational chart). However, innovative schools and classrooms do not work in this model anymore with development of social media models that allow for multiple connections via multiple channels. Truly innovative educators should understand how the rhizomatic theory of connection works in order to better grasp the seeming "chaos" of collaborative, independent learning that requires more than just a textbook.

Seth Burgess, Lausanne Learning

Project Lead The Way: Empowering Students to Thrive in an Evolving World

Your PreK-12 students already have the qualities of great designers and innovators. In this session you will experience PLTW as a student, tapping into your natural exploratory nature, engaging in learning that feels like play as you participate in a sample hands-on activity. Then we will demonstrate how the pathways for our programs in Engineering, Computer Science, and Biomedical careers are built with hands on learning opportunities from the first day of preschool through senior year. PLTW utilizes an activity, project, and problem based instructional design that empowers students to discover and explore interests, imagine and design solutions to real-world challenges, and become independent, confident problem solvers. We invite you to come play, learn more, and take away some ideas for further exploration.

Carol Medawar, Project Lead the Way

National Cathedral Tour

Join Cathedral and Cathedral School staff for a tour of one of DC's most impressive (and interesting!) landmarks, the National Cathedral. See what part the Cathedral plays in the Cathedral schools and learn more about its history, all during a free tour on day two of the conference!

National Cathedral School Hackathon

This year, National Cathedral School's annual Hackathon will be taking place during LLI Atlantic! We'll have guided tours, the opportunity to talk and interact with students and their projects, and a chance to discuss how to start a Hackathon at your school!