

Illinois PLTW Conference Agenda - December 1, 2016

8:15 - 9:00 am Registration and Coffee (Lobby and Illinois Ballroom)

9:00 -10:00 am OPENING GENERAL SESSION (Illinois Ballroom)

Welcome and Introductions--*Steve Parrott, ISBE Consultant and PLTW/Engineering State Leader*

Speaker: David Dimmett, Senior Vice President and Chief Engagement Officer



As the chief academic officer of the Evansville Vanderburgh School Corporation in Southwest Indiana, David Dimmett was instrumental in leading innovation and unprecedented improvements in student achievement. With an eye always toward increasing opportunities for students, David facilitated the curriculum and instruction for the district, developed strategic partnerships, and implemented several innovative school models including Early College High School and New Tech Institute using the Project Lead The Way Engineering program. Today, David leads PLTW's network of regional vice presidents, directors of school engagement, and the PLTW Solution Center to provide exceptional support and service to PLTW schools and educators across the United States. He passionately supports program quality and growth, as well as coordinates key partnerships and education initiatives to meet the needs of students, educators, schools, and communities.

PLTW STEM Stories - Student/Alumni Reflections on the PLTW Experience

Vivek Nukala, *George L. Evans JHS/McLean Unit 5 Gateway (via PLTW DM video interview)*

"continuously improving"

Shubhika Jain, *Mt. Vernon Area Career Center Class of 2016, U of Missouri-Kansas City Medicine Class of 2022 (via video)*

"accelerated pre-med preparation"

Angela Wiscons, *St. Charles East HS PLTW Class of 2014; U of Illinois at Urbana-Champaign Mechanical Engineering Class of 2018; and*

Andrew Shone, *St. Charles East HS PLTW Class of 2014; U of Illinois at Urbana-Champaign Nuclear, Plasma, and Radiological Engineering Class of 2018*

"actively engaged, professionally prepared, taking the lead"

Illinois 10-Year PLTW School Recognition—*Brenda Pacey, U of Illinois PLTW Affiliate Director*

10:00 - 11:00 am Concurrent Sessions #1

11:05 - 12:05 pm Concurrent Sessions #2

12:00 - 1:00 pm LUNCHEON GENERAL SESSION and STUDENT EXHIBITS (Illinois Ballroom)

Speaker: Kevin Pitts, Associate Dean for Undergraduate Programs, College of Engineering, UIUC



Professor Kevin Pitts is the Associate Dean for Undergraduate Programs in the College of Engineering at the University of Illinois. Activities in the Engineering Undergraduate Programs Office include student recruiting, academic advising and support, outreach, study abroad, career services and instructional initiatives. Dean Pitts is involved in a number of initiatives to provide equity in access to science and engineering careers, including initiatives in K-12, community college and at the University of Illinois. As a professor of physics, he carries out research on sub-atomic particles. Dean Pitts works with undergraduate students in his research activities and has been recognized as an outstanding teacher.

1:00 - 2:00 pm Concurrent Sessions #3

2:05 - 3:05 pm Concurrent Sessions #4

3:05 pm Evaluations/Adjournment

Concurrent Session 1 - 10:00 - 11:00 AM

E = Elementary, MS = Middle School, HS = High School, A = Administrator, C = Counselor, P = Partnership

- Presentation Title: **High School Engineering Curriculum Foundation Courses (Intro to Engineering Design/IED and Principles of Engineering/POE)**
Description: See the Engineering Foundation courses in action.
Presenters: Illinois Master Teachers Don Whitman, Kyle Thomas, Paul Zurek; Michael DeWees
Room: Lincoln Target Audience:HS,A,C,P
- Presentation Title: **PLTW Computer Science Curriculum –Intro to Computer Science (ICS), Computer Science Engineering (CSE)**
Description: Introduction of the new PLTW Computer Science pathway, with special focus on demonstrations of ICS (for MS or HS), CSP, CSA, the first three courses available in the evolving program.
Presenters: Master Teacher Mike Crowhurst (Pulaski HS, KY); CSP/CSA teacher Christi McGee and Mt. Vernon Area Career Center students
Room: Alma Mater Target Audience:MS,HS,A,C,P
- Presentation Title: **Middle School Gateway Curriculum Foundation Units (Design and Modeling; Automation and Robotics)**
Description: See the DM and AR Gateway Foundation units in action
Presenters: Illinois Master Teachers Kathryn Rabolt, Sydney Schuler, Rob Harmon, Ed Coyle
Room: Chancellor Target Audience:MS,A,C,P
- Presentation Title: **Launch Elementary Curriculum**
Description: Overview of the PLTW K-5 Elementary STEM curriculum's 24 modules (4 per grade level) aligned to national standards.
Presenters: Kathy Feser and Nate Pratt, Master Teachers; Emily Schaefer, PLTW Regional Trainer.
Room: Quad Target Audience:E,A,C,P
- Presentation Title: **Mighty Messages for Student Success**
Description: Culture shapes our biases and beliefs about people based on their age, gender, race, language, (dis)ability, or income level, often without our realization. We communicate our biases in our world, often unknowingly, through micromessages. The accumulation of micromessages over time impacts a person's belief in his or her own ability to be successful in a course, class, college, and career. This session will equip educators with strategies to support students in STEM with positive micromessages.
Presenters: Meagan Pollock, Director of Professional Development, NAPE
Room: Humanities Target Audience:ALL
- Presentation Title: **PLTW Biomedical Science Program**
Description: Overview of the high school Biomedical Science program and how the program is different from traditional science courses.
Presenters: Tammy Martin, Master Teacher; Mt. Vernon Area Career Center Biomed students.
Room: Innovation Target Audience:HS,A,C,P

Concurrent Session 2 - 11:05 - 12:05 PM

- Presentation Title: **High School Engineering Curriculum Specialty Courses Overview**
Description: Digital Electronics (DE), Civil Engineering and Architecture (CEA), Computer Integrated Manufacturing (CIM), Aerospace Engineering (AE), and Environmental Sustainability (ES).
Presenters: Illinois Master Teachers Gary Cotie, Jason Huber, Michael Karasch, Michael DeWees
Room: Lincoln Target Audience:HS,A,C,P
- Presentation Title: **Engaging Economically Disadvantaged and Non-Traditional Students in the Technology and Engineering Education Classroom**
Description: Session focuses on resources and strategies developed by the Illinois State University's Special Populations and CTE project, introduces special populations groups, and shares data about special population students in Illinois
Presenters: Sally Arnett-Hartwick, Josh Brown, Michael Cermak, Illinois State University
Room: Alma Mater Target Audience:MS,HS,A,C,P
- Presentation Title: **Middle School Gateway Curriculum Specialty Units**
Description: Energy and the Environment (EE), Green Architecture (GA), Medical Detectives (MD), Science of Technology (ST), Magic of Electrons (ME), Flight and Space (FS)
Presenters: Illinois Master Teachers Sydney Schuler, Ed Coyle
Room: Chancellor Target Audience:MS,A,C,P
- Presentation Title: **Introduction to the APB Instructional Approach—Activity, Project, and Problem-Based Framework for K-12 PLTW Curriculum**
Description: Interactive session introduces conceptual understanding of the APB approach through reflective practice, video presentation and APB course content mapping activity.
Presenters: Emily Schaefer, PLTW Regional Trainer and Illinois Master Teachers Sydney Schuler, Paul Zurek
Room: Quad Target Audience:ALL
- Presentation Title: **STEM for Every Student: Messaging that Matters!**
Description: STEM careers are in demand, and opportunities are available for every student. This workshop will increase awareness of the breadth of opportunities and pathways in STEM Careers, and equip participants with powerful and meaningful messaging for sparking student interest in STEM. Join us for an interactive session to explore many exciting and in-demand careers in STEM, and learn the STEM messaging that will matter to your students!
Presenters: Meagan Pollock, Director of Professional Development, NAPE
Room: Humanities Target Audience:ALL
- Presentation Title: **ISBE College and Career Readiness Division STEM CTE Update**
Description: ISBE STEM CTE news, including Illinois State Course System and matrix updates, New Skills for Youth (NSYF) initiative
Presenters: Steve Parrott, ISBE Consultant and PLTW State Leader
Room: Innovation Target Audience:MS,HS,A,C

Concurrent Session 3 - 1:00 - 2:00 PM

Presentation Title: EDD Capstone - Bridge to the Professional World

Description: Rigorous EDD capstone course structure readies students for post-secondary college and professional career. Current in-progress teams share their work and seek audience feedback as part of the EDD protocol cycle - problem definition, research, design, prototype testing, defense, and documentation.

Presenters: Stephen Buchs, Michael DeWees, Cindy Bednara, Master Teachers; Collinsville HS EDD student teams

Room: Lincoln

Target Audience:HS,A,C,P

Presentation Title: AP + PLTW Partnership

Description: Project Lead The Way partners with the College Board to recognize students who participate in one of three pathways - Engineering, Biomedical Science, and Computer Science - involving PLTW foundation and specialization courses, along with one or more AP courses.

Presenters: William White, PLTW Midwest Regional Vice President

Room: Alma Mater

Target Audience:HS,A,C

Presentation Title: Sustaining the Illinois PLTW STEM Effort - Reflections on Challenges Faced, Opportunities Leveraged, Lessons Learned

Presenters: Jim Vreeland, Schaumburg CSD 54; Michael Karasch, Palatine D211; Chris Powell, Niles D219; Rob Knutson, Mt. Vernon Area Career Center provide insights

Room: Chancellor

Target Audience:ALL

Presentation Title: Building K-12 STEM Connections - MS/HS Robotics Mentoring

Description: This session highlights how one Chicago elementary and one HS collaborated to create a Robotics Day for MS and HS students. Participants can expect to walk away with knowledge about how to adapt high school curriculum and recruit MS students for a large scale STEM project, how to coach HS students in hosting and mentoring younger students, and selecting groups of MS students for mentoring and special projects.

Presenters: Kathleen Hurley, Peterson Elementary/CPS; and Jennifer Roden, Von Steuben HS/CPS

Room: Quad

Target Audience:E, MS,HS,A,C,P

Presentation Title: STEM Project Based Learning for Equity

Description: Project Based Learning (PBL) is a learner-centered pedagogy, where the learners are given a realistic problem and solve it by researching and applying knowledge and skills. To address the disparity of women and students of color in engineering, and as PBL gains popularity in STEM classrooms, there are specific strategies that can be applied to PBL pedagogy to improve equity and access for all students. This session is designed to assist educators in creating, evaluating, and administering equitable and effective STEM project/problem based learning (PBL) lessons by utilizing the STEM PBL for Equity Rubric. With more equitable PBL, we can increase the diversity of students interested in and pursuing STEM careers.

Presenters: Meagan Pollock, Director of Professional Development, NAPE

Room: Humanities

Target Audience:ALL

Presentation Title: Math in the Middle School PLTW Gateway Classroom: An Overview for Teachers, Counselors, and Administrators

Description: Examples of math in action in the Gateway curriculum.

Presenters: Bob Becker, U of Illinois Chicago PLTW Affiliate Professor, and Gateway Master Teachers

Room: Innovation

Target Audience:E,MS,A,C

Presentation Title: Roundtable Talk Topics

Description: K-12 PLTW collaboration; first/second year PLTW school networking; community partnership support; or open table space for small group planning.

Room: Loyalty

Target Audience:ALL

Presentation Title: Getting Started with PLTW--or Adding New Pathways to Existing PLTW Programs

Description: Administrators of districts/schools interested in implementing new PLTW programs (as well as those from schools/districts intending to add to their current PLTW STEM pathways) will learn more about next steps.

Presenters: Greg Quam and Amy Rauch, PLTW Directors of School Engagement/Midwest

Room: Technology

Target Audience:E,MS,HS, A,P

Concurrent Session 4 - 2:05 - 3:05 PM

Presentation Title: PLTW Support Resources for District Administrators and Teachers

Description: Introduction of myPLTW, Learning Management System, Student Rostering, End-of-Course Assessment, Purchase Manual/technology support, standards alignment tools, and more.

Presenters: Illinois Master Teachers Jason Huber and Paul Zurek

Room: Lincoln

Target Audience:E,MS,HS,A

Presentation Title: PLTW Grant Opportunities

Description: Learn about PLTW's School Grant Program, current grant opportunities for Illinois schools, and how to prepare a competitive application.

Presenters: Calli Duggins, PLTW Director of Grant Management

Room: Alma Mater

Target Audience:ALL

Presentation Title: Successful Community Collaboration Snapshots

Description: HS students recognized by Max's Miles Foundation for designing power wheel vehicles for disabled children; community makerspace trends; corporate/school partnership activities; and regional CTE/community college professional development and student job internship efforts are presented.

Presenters: Normal Community HS PLTW students; Suzanne Linder, Education Research Specialist, CU Community FabLab;

Pat Barnes, Program Director, John Deere Inspire; Martha Eldridge-Stark, Executive Director, NSERVE

Room: Chancellor

Target Audience:E,MS,HS,A,C,P

- Presentation Title: PLTW Students after High School - Alumni College and Career Reflections**
Description: University students share their college and career experiences - and the impact that PLTW participation has had on their career paths and self-confidence.
Presenters: Matt Hayes, Angela Wiscons, Andrew Shone, UIUC College of Engineering; Patrick Slade (via video), Stanford University (UIUC 2016 graduate and Forbes 30 under 30 awardee); Collinsville HS and Mt. Vernon Area Career Center alumni (via video)
Room: Quad Target Audience:ALL
- Presentation Title: Inspire the Courage to Excel: Self-Efficacy for Student Outcomes**
Description: Self-efficacy is defined as “the belief or perception that one is capable of organizing and executing the actions necessary to succeed at a given task.” Students with a high self-efficacy tend to be more resilient and persistent in the face of adversity. This workshop will prepare educators to build student self-efficacy through intentional microaffirmations, provide actionable strategies for implementation in the classroom, and offer a turn-key coachable model for helping students build their own self-efficacy. Ultimately, this course empowers and enables educators to inspire courage in their students to persist through difficulty and to excel.
Presenters: Meagan Pollock, Director of Professional Development, NAPE
Room: Humanities Target Audience:ALL
- Presentation Title: Math in Action in the High School PLTW Classroom - An Overview for Counselors and Administrators**
Description: Examples from several HS PLTW courses are shared
Presenters: Bob Becker, U of Illinois Chicago PLTW Affiliate Professor
Room: Innovation Target Audience:HS,A,C
- Presentation Title: University Architecture, Engineering and Engineering Technology Program Updates**
Description: Representatives of U of Illinois Chicago, U of Illinois Urbana-Champaign and others will share news about current and emerging undergraduate higher education opportunities.
Room: Loyalty Target Audience:HS,A,C,P
- Presentation Title: Q and A Consulting Assistance for New Schools**
Description: Ask Greg and Amy for advice in an informal setting
Presenters: Greg Quam and Amy Rauch, PLTW Midwest Directors of School Engagement
Room: Technology Target Audience:E,MS,HS,A



Dr. Meagan Pollock is the Director of Professional Development for the National Alliance for Partnerships in Equity. In this role, Meagan leads a national team of equity professionals that build educators' capacity to implement effective solutions for increasing student access, educational equity and workforce diversity.

Before turning her focus on the intersection of education and equity, Meagan worked as an engineer for Texas Instruments. Meagan was a National Science Foundation Graduate Research Fellow, and she holds a PhD in engineering education from Purdue University, a MS in electrical engineering from Texas Tech University, and a BS in computer science from Texas Woman's University. As an engineer turned educator, Meagan is focused on engineering equity into education.

Striving Towards Equity in STEM - National Alliance for Partnerships in Equity (NAPE) Interactive Workshops:

10:00-11:00 am Session 1 - Mighty Messages for Student Success

11:05-12:05 pm Session 2 - STEM for Every Student: Messaging that Matters!

1:00-2:00 pm Session 3 - STEM Project Based Learning for Equity

2:05-3:05 pm Session 4 - Inspire the Courage to Excel: Self-Efficacy for Student Outcomes

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8:15 - 9:00 - Registration and Coffee, Lobby and Illinois Ballroom

	9:00 - 10:00	10:00-11:00 Session 1	11:05-12:05 Session 2	12:10-1:00	1:00-2:00 Session 3	2:05-3:05 Session 4
Illinois Ballroom	Opening Session			Luncheon Session; Student Exhibits		
Lincoln		HS Engineering Curriculum Foundation Courses IED/POE	HS Engineering Curriculum Specialty Courses Overview		EDD Capstone - Bridge to the Professional World	PLTW Support Resources for Administrators and Teachers
Alma Mater		PLTW Computer Science Curriculum - ICS, CSP, CSA	Engaging Economically Disadvantaged & Non-Traditional Students		AP + PLTW Partnerships	PLTW Grant Opportunities
Chancellor Ballroom		MS Gateway Curriculum Foundation Units - DM/AR	MS Gateway Specialty Units		Sustaining the PLTW STEM Efforts	Successful Community Collaboration Snapshots
Quad		Launch Elementary Curriculum Overview	Intro to APB Instructional Approach - Activity, Project, and Problem-Based Framework for K-12 PLTW Curriculum		Building K-12 STEM Connections - Robotics Day HS/MS Mentorship	PLTW Students After High School
Humanities	Striving Towards Equity in STEM - National Alliance for Partnerships in Equity (NAPE) Interactive Workshops					
		Mighty Messages for Student Success	STEM for Every Student: Messaging that Matters		Inspire the Courage to Excel: Self-Efficacy for Student Outcomes	STEM Project-Based Learning for Equity
Knowledge	Illinois PLTW Conference Headquarters					
Innovation		PLTW Biomedical Science Program Overview	ISBE College and Career Readiness Division STEM CTE Pathways		Math in Action in the MS Gateway Classroom	Math in Action in the HS Engineering Classroom
Loyalty					Roundtable Talk Topics	University Program Updates
Technology					Getting Started with PLTW or Adding New Pathways to Existing Programs	Q & A Assistance from PLTW Directors of School Engagement

Boardroom - Midwest Region PLTW Staff Room

Excellence - Student Exhibitors' Homeroom