



FALL  
CONFERENCE

# Project Lead the Way Ohio 2009 Fall Conference

**November 5 and 6**

**November 5** *General Session for all PLTW Administrators,  
Teachers, and Business Partners*

**November 6** *Teachers Only Professional Development Day*

The audience for this conference is current PLTW program school administrators, PLTW teachers, business and industry representatives, advisory council members and those either considering implementing PLTW or those who will implement the program in 2010.

The conference features topics in Project Lead the Way courses, Biomedical Science and Engineering, Gateway Summer Academies, Gateway to Technology (for middle schools), Elementary Modules, articulation and help with implementation of PLTW.

This program fulfills the PLTW teacher requirement for annual professional development. This conference is eligible for contact hours for continuing education by the Ohio Department of Education.

Administrators 8.5 hours

Teachers 16 hours

*Conference Location:*

## **Sinclair Conference Center**

Sinclair Community College

444 W. Third Street

Building 12 (*Perry & Fourth Street*)

Dayton, Ohio 45402

# Thursday, November 5, 2009

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**8:00 am – 8:30 am**  
Great Hall

## **Breakfast and Registration**

**8:30 am – 9:30 am**  
Great Hall

## **General Session**

### Welcome

Dr. George Sehi, Dean of Science, Mathematics & Engineering Division, Sinclair Community College

### Opening Remarks

Michael Triplett, PhD  
Director of Commercialization  
Battelle Life Sciences

### Recognition of New Nationally Certified Schools and Recognized Middle Schools

David Powell, American Electric Power, Ohio PLTW Executive Council  
Michael Triplett, Battelle Life Sciences, Ohio PLTW Executive Council  
Kathy Sommers, Ohio Department of Education, PLTW Ohio  
Deb Lukjanovs, Sinclair Community College, PLTW Ohio

### Conference Overview

Steven Wendel, Affiliate Director, PLTW Ohio, Sinclair Community College

**9:45 am – 10:30 am**

## **Breakout Session I**

Session A: Perkins Funding and Reporting  
Session B: NEW PLTW Elementary Modules  
Session C: Articulation and Credit (2 and 4 year college credit)  
Session D: Biomedical Program Costs and Equipment  
Session E: Student Summer Experiences (Gateway Academies and Institutes)  
Session F: Aerospace Engineering Information Session (High School Elective)

**10:30 am – 10:45 am**

## **Break – Please Visit Student Displays**

Great Hall & 1<sup>st</sup> Floor, South Atrium

**10:45 am - 11:30 am**

## **Breakout Session II**

Session G: Programs of Study and Ohio's Tech Prep Vision  
Session H: 2008-09 Ohio Data Report and What's New  
Session I: Development of Biomedical Articulations  
Session J: Articulation and Credit (2 year and 4 year college credit)  
Session K: PLTW Foundation Courses Costs and Equipment Overview  
Session L: Preparing for National Certification

**11:30 am – 11:45 am**

## **Break – Please Visit Student Displays**

Great Hall & 1<sup>st</sup> Floor, South Atrium

**11:45 am -12:30 pm**

## **Breakout Session III**

Session M: 2008-09 Ohio Data Report and What's New  
Session N: NEW PLTW Elementary Modules  
Session O: Education and America's Economic Recovery: PLTW's Critical Role  
Session P: Biomedical Industry Connections and Advisory Councils  
Session Q: PLTW Non-Traditional Day (Recruiting the Underrepresented)

## Thursday, November 5, 2009

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**12:30 pm – 2:00 pm**  
Great Hall

**Luncheon and Student Presentations**  
Keynote Speaker: Tim Lawrence, Executive Director, National SkillsUSA

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**2:00 pm – 2:15 pm**  
Great Hall & 1<sup>st</sup> Floor, South Atrium

**Break – Please Visit Student Displays**

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**2:15 pm – 2:45 pm**  
Charity E. Earley  
Auditorium

**General Session – Environmental Engineering**

Dave Powell, Director, Plant Engineering and Environmental Performance, American Electric Power

**2:15 pm – 2:45 pm**  
Smith Auditorium

**General Session – Community Blood Center/Community Tissue Services**

Shawn Hunter, Director of Research, Community Tissue Services

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**2:45 pm – 3:00 pm**  
Great Hall

**Break and Afternoon Snacks**

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**3:00 pm - 5:00 pm**  
Charity E. Earley Auditorium

**Breakout Session IV** –*All participants are encouraged to visit all areas*

**Energy Lab Tour, Bldg. 11, Sinclair Community College**  
(tours begin in Charity E. Earley Auditorium)

Experience a wide range of projects, displays and information modules ranging from energy efficiency, solar thermal, solar PV, biodiesel, ethanol, wind and hydrogen, and even a solar racetrack.

**Robotics Lab Tour, Bldg. 11, Sinclair Community College**  
(tours begin in Charity E. Earley Auditorium)

See the latest in work cells and robotic programming technology

Smith Auditorium

**Health Sciences Lab Tour, Sinclair Community College**  
(tours begin in Smith Auditorium)

Get a taste of the many and varied career fields in the health sector, and gain a sense of context to pass along to help students understand their options.

Great Hall

**Networking Round Tables**

Spend time with industry representatives and your peers from other Ohio schools sharing successes, discussing ideas and asking questions

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**4:00 pm - 5:00 pm**  
Great Hall

Evaluations / CEUs Awarded  
(One CEU sheet per participant, no CEUs handed out in advance)

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**5:30 pm – 7:00 pm**  
Crowne Plaza Hotel

**Teacher Networking Event** (*Recommended for All Teachers*)

# Breakout Session Program Descriptions – November 5, 2009

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## Breakout Session I

### Perkins Funding and Reporting

*This session is designed to assist schools in meeting the requirements of Ohio's Perkins plan.*

**Presenter:** *Rick Mangini, Associate Director, CTAE, Ohio Department of Education*

### NEW PLTW Elementary Modules

*Introduces and explains the newest addition to the PLTW offerings: Elementary modules, utilized in grades 3-5*

**Presenter:** *Pam Newberry, PLTW National, Director of Curriculum*

### Articulation and Credit (2 and 4 year college credit)

*Clarifies the process for obtaining college credit for PLTW courses taken in high school, both from a 2 year and a 4 year institution.*

**Presenters:** *Vicky Korosei, Admissions Office, Sinclair Community College, and Scott Segalewitz, Engineering Technology Division, University of Dayton.*

### Biomedical Program Costs and Equipment

*Receive valuable information on the cost to set up, fully implement, and maintain a PLTW biomedical program.*

**Presenter:** *William Kreinbrink, Superintendent, Miller City/New Cleveland Schools, Steve Peck, Counselor, & Matt Kinkley, Vice President for Student Affairs, Rhodes State College.*

### Student Summer Experiences (Gateway Academies and Institutes)

*Learn more about the Gateway Academies and High School Summer Institutes held in conjunction with the Society for Manufacturing Engineers Education Foundation.*

**Presenter:** *Judy Steritz, Avetec, Inc. and Deb Voisin, Gateway Academy GTT teacher, Worthingway Middle School*

### Aerospace Engineering Information Session (High School Elective)

*Receive information about PLTW's Aerospace Engineering program; how to implement, what to expect, what expenses will be involved, how to involve local industry*

**Presenter:** *Theodore Kleiser, Wayne High School PLTW teacher and licensed pilot, and Kathy Schweinfurth, WPAFB*

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## Breakout Session II

### Programs of Study and Ohio's Tech Prep Vision

*Assists schools in completing the required CTE-26 application and the new requirement for Programs of Study.*

**Presenters:** *Nenna Davis, Tech Prep consultant, Ohio Department of Education, and Rick Mangini, Ohio Department of Education*

### 2008-09 Ohio Data Report and What's New

*Covers all the latest information about Ohio's data collection process, revision of the WebXam middle school screens, and the results of the 2008-09 school year data.*

**Presenter:** *Bob Mahlman, Director, CETE, The Ohio State University*

### Development of Biomedical Articulations

*Provides insight into the development of tech prep articulations for the new Biomedical Sciences career pathway.*

**Presenter:** *Tom Kluding, North Central Tech Prep Consortium*

### Articulation and Credit (2 and 4 year college credit)

*Clarifies the process for obtaining college credit for PLTW courses taken in high school, both from a 2 year and a 4 year institution.*

**Presenters:** *Vicky Korosei, Admissions Office, Sinclair Community College, and Scott Segalewitz, Engineering Technology Division, University of Dayton.*

### PLTW Foundation Courses Costs and Equipment

*Find out the actual costs of implementing PLTW from school administrators who have had experience with starting the basic PLTW courses, Introduction to Engineering Design, Principles of Engineering, and Digital Electronics.*

**Panel:** *Jeffrey Layton, Northwestern Local Schools, Karen Johnson, Trumbull Co. Career Center, Betsy Bhasker, Columbus City Schools.*

### Preparing for National Certification

*Covers what to expect when you apply to be a nationally certified PLTW school, along with tips on who to have at the table and what to expect once your site visit is over.*

**Panel:** *Linda Thayer, West Shore Career and Technical District, and Deb Lukjanovs, Program Coordinator, PLTW Ohio State Affiliate.*

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## Breakout Session III, Thursday, November 5

### 2008-09 Ohio Data Report and What's New

All the latest information about how Ohio's data collection process, revision of the WebXam middle school screens, and the results of the 2008-09 school year data.

**Presenter:** *Dr. Bob Mahlman, Director, CETE, The Ohio State University*

### NEW PLTW Elementary Modules

Ms. Newberry will give explanations and examples of the newest addition to the PLTW model: Elementary modules, utilized in grades 3-5

**Presenter:** *Pam Newberry, PLTW National, Director of Curriculum*

### Education and America's Economic Recovery: PLTW's Critical Role

The American Recovery and Reinvestment Act (ARRA) signed into law by President Obama earlier this year is designed to stimulate the economy. Learn more about "Race to the Top", "Invest in What Works", and "Innovation Funds."

**Presenter:** *Terri Schultz, regional consultant, PLTW National*

### Biomedical Industry Connections and Advisory Councils

Learn how committed educational leaders can leverage their relationships within the community to bring PLTW students into win/win relationships with local biomedical industry representatives.

**Presenters:** *Dave Baldwin, Aquarian Technology Systems, and Joyce Boudreau, Education Consultant, Ohio Department of Education Department of Education*

### PLTW Non-Traditional Day (Recruiting the Underrepresented)

In an effort to help other schools achieve bigger percentages of underrepresented students in their PLTW courses, two of our PLTW Ohio Master Teachers will give an overview of one of their most successful recruiting tools.

**Presenters:** *Chad Weaver and William Small, PLTW Master Teachers, Timken Regional Campus*

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## Student Luncheon Presentations

Sincere thanks to teachers, parents, and especially to the **students** for sharing their real world classroom experiences with us.  
**Schools and students represented at our luncheon today include:**

**North Union Middle School** (Robotic roto-tiller project) **Riley Hall** and **Cody Howell**

**Northwestern High School** ( biomed youth program, orthopedic surgery product design) **Mekka Clark** and **Billy Hostetler**

**Lorain County JVS** (Student internship at NASA) **Katherine Fallon**

**Midview HS** (Innovative Inventor Designs) **Mitch Eppich** and **Paige Gusky**

**Polaris Career Center** (SkillsUSA National Robotics winners) **Patrick Ziska** and **Clinton Causey**

**University of Dayton** (yo- yo design) **Charlie Weikert**, alumnus of **Columbus East HS**

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## Afternoon Breakout Sessions, Thursday, November 5

### Environmental Engineering

Learn about the energy jobs of the 21<sup>st</sup> century and how environmental factors impact the way industry operates now and in the future.

**Presenter:** *David Powell, American Electric Power, Inc.*

**NOTE:** *Energy Lab Tours will begin after this session.*

### Biomedical Sciences—Tissue Banking: Current Impacts and Future Directions

How does the gift of donated human tissue save lives and impact the healthcare community? Hear about the future of jobs and skills desired as traditional tissue banking evolves into the growing field of regenerative medicine.

**Presenter:** *Shawn Hunter, Community Blood Center/Community Tissue Center*

**NOTE:** *Biomedical Lab Tours will begin after this session.*

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## Tours

**Energy Lab and Robotics Lab:** Begin in Charity E. Earley Auditorium following the Environmental Engineering presentation.

**Biomedical Labs:** Begin in Frederick C. Smith Auditorium following the Community Tissue Center presentation.

## Friday, November 6, 2009 *(Teachers Only)*

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**8:00 am – 9:00 am**     **Networking Breakfast**  
Sinclair Conference Center

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**9:00 am – 9:45 am**     **Breakout Session I**  
Session A: Science of Technology (GTT)  
Session B: New Curriculum Overview for DE, Part 1  
Session C: CTSO/Skills USA  
Session D: Preview of Medical Interventions Course  
Session E: Truss Calculations (POE)  
Session F: Flight and Space Module Info Session (GTT)

**10:00 am – 10:45 am**     **Breakout Session II**  
Session G: What is coming in GTT?  
Session H: IED Updates and What's New  
Session I: New Curriculum Overview for DE, Part 2  
Session J: Computer Integrated Manufacturing: Tricks and Tips for CIM  
Session K: Creating a Vision for Research and Design (EDD)  
Session L: Human Body Systems (Biomedical)

**11:00 am – 11:45 am**     **Breakout Session III**  
Session M: Automation and Robotics (GTT)  
Session N: CTSO-TSA, National Robotics Challenge  
Session O: Student Presented Construction Challenge (EDD)  
Session P: Engineering Notebooks and Portfolios  
Session Q: New Curriculum Overview for DE, Part 3  
Session R: Principles of Biomedical Sciences Overview

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**12:00 pm – 1:30 pm**     **Networking Luncheon**  
Sinclair Conference Center

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**Luncheon Panel: Redstone Arsenal & Natick Labs 2009 Summer Teacher Tours**

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**1:45 pm – 2:30 pm**     **Breakout Session IV**  
Session S: Design and Modeling (GTT)  
Session T: Using the CareerMe website (CIM, POE, EDD)  
Session U: Inventor Update and Review (ImaginIt, Part 1)  
Session V: Detecting Respiratory Diseases (Biomedical)  
Session W: Principles of Engineering Update  
Session X: Civil Engineering and Architecture Update

**2:45 pm – 3:30 pm**     **Breakout Session V**  
Session Y: Zip, Zap, Zing, Zoom (GTT)  
Session Z: Inventor Update and Review (ImaginIt, Part 2)  
Session AA: Using Moodle for Curriculum Enhancement  
Session BB: The Keys to Capstones: Projects in Biomedical Research and Development

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**3:45 pm – 4:00 pm**     **Evaluations & Adjournment/CEUs Awarded**

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# Breakout Session Program Descriptions – Friday, November 6, 2009

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## Breakout Session I

### Science of Technology

*Recommended for GTT teachers and will cover creative approaches to the Science of Technology module*

**Presenter:** *Kristi Matlack, North Union Middle School GTT teacher*

### New Curriculum Overview for Digital Electronics, Part 1

*Covers some of the enhancements and projects in the newly revamped DE curriculum. Three part session.*

**Presenters:** *Chad Weaver, DE Master Teacher, Patrick Farley, DE Master Teacher*

### Skills USA

*Learn more about how you can bring the opportunities of the career technical student organization **SkillsUSA** to your high school, and learn more about the organization that thousands of Ohio students participate in each year.*

**Presenter:** *Mike Cowles, State Director, SkillsUSA, Ohio Department of Education*

### Medical Interventions (Biomedical)

*Take a look at what to expect in the Medical Interventions module*

**Presenter:** *Amy Elderbrock, Ashland West Holmes Biomedical Sciences teacher*

### Truss Calculations (POE)

*You asked for it, you got it -- this session is recommended for POE instructors who would like some help with teaching about truss calculations.*

**Presenter:** *Ryan Benroth, Miller City High School POE Master Teacher*

### Flight and Space Information Session (GTT)

*Take a closer look at the training requirements and curriculum for the Flight and Space module.*

**Presenter:** *Pam Newberry, PLTW National Director of Curriculum*

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## Breakout Session II

### New GTT Modules

*Take a look at the new GTT module, Energy and the Environment; includes new training requirements.*

**Presenter:** *Pam Newberry, PLTW National Director of Curriculum*

### IED Updates and What's New (IED)

*What's new in IED and the latest in IED updates.*

**Presenter:** *Bill Small, Timken HS, IED Master Teacher*

### New Curriculum Overview for Digital Electronics, Part 2 (see above)

### Computer Integrated Manufacturing: Tricks and Tips for CIM

*Learn tricks and tips and get software info and classroom tips; you will be working in Sinclair's robotics lab where CIM classes are held.*

**Presenters:** *David Lord, PLTW Master Teacher; Tobin Huebner, CIM teacher, US Grant Joint Vocational School*

### Creating a Vision for Research and Design (EDD)

*Learn some unique ideas for engaging students in real world work with industry during the capstone course.*

**Presenter:** *Bob Sintobin, Toledo Technology Academy, EDD teacher*

### Human Body Systems (Biomedical)

*Updates on the Human Body Systems module for Biomedical teachers.*

**Presenter:** *Darla Warnecke, Miller City HBS teacher*

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## Breakout Session III

### Automation and Robotics (GTT)

Find new ways to challenge the middle school student in the Automation and Robotics module

**Presenter:** *Marilyn Kramer*, Indian Valley Middle School GTT teacher

### CTSO/TSA, National Robotics Challenge

This session explores construction and programming of MathBots, a way to challenge **all grade levels** of students on math skills.

**Presenter:** *Tad Douce*, River Valley Middle School GTT teacher

### Student Presented Construction Challenge (EDD)

This student-run session looks at an EDD project completed and presented at a national Construction Challenge in Knoxville.

**Presenter:** *Jamie Squibb*, Whitmer High School EDD teacher

### Student Journals and Portfolios

From both an instructional and an industry perspective, take a look at the all-important engineering notebook, along with the student portfolio, a crucial piece of any PLTW class.

**Presenters:** *Jack Hunt*, Bellbrook High School, and *Steve Foutty*, Marietta High School PLTW teachers

### New Curriculum Overview for Digital Electronics, Part 3 (see above)

### Biomedical Sciences Overview

Recommended for new biomedical instructors. This is your chance to learn from the pros and ask your questions.

**Presenters:** *Autum Barry*, Logan HS Biomedical Master Teacher, and *Dave Gordon*, Kalida HS Biomedical teacher

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## Breakout Session IV

### Design and Modeling (GTT)

Ways to challenge middle school students using the Design and Modeling module.

**Presenter:** *Tad Douce*, River Valley Middle School GTT teacher

### Using the CareerMe Website

Bringing new resources to the classroom for PLTW teachers.

**Presenter:** *Sandy Feola*, National Center for Manufacturing Education

### Inventor Update and Review, Part 1

Recommended for instructors who are in their first or second year of using Inventor software, or those who still feel unfamiliar with Inventor. Basic modeling will be demonstrated, both part and assembly.

**Presenters:** *Caleb Funk* and *Cindi Meier*, IMAGINIT Technologies

### Detecting Respiratory Diseases (Biomedical)

A timely look at cellular and molecular diagnostic kits for detecting respiratory diseases, such as H1N1.

**Presenters:** *Terry Marovich*, Diagnostic Hybrids, Inc.

### Principles of Engineering Update (POE)

Recommended for all POE teachers or potential POE teachers; covers the new RoboTX interface, Fischertechnics pneumatics, and new curriculum purchase suggestions.

**Presenter:** *Peter Leeper*, POE Master Teacher

### Civil Engineering and Architecture Overview

Updates and new ideas for the CEA teacher.

**Presenters:** *Steve Carter*, CEA Master Teacher, and *Eric Dunn*, CEA Affiliate Professor

## Breakout Session V

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### **Zip, Zap, Zing, Zoom (GTT)**

*Interactively looks at ways to take your GTT curriculum delivery to the next level.*

**Presenter:** *Steve Wendel, Affiliate Director, PLTW Ohio, and GTT Affiliate Professor*

### **Inventor Update and Review (Part 2) (See Part 1 above)**

### **Using Moodle for Curriculum Enhancement**

*Recommended for all PLTW high school pre-engineering teachers not taking the Inventor Update above.*

**Presenters:** *Tad Douce, River Valley Middle School PLTW teacher, and Ritch Ramey, Tri-Rivers Career Center PLTW teacher*

### **The Keys to Capstones: Projects in Biomedical Research and Development**

*One teacher shares a strategy that enables 12th grade students to create graduate level (and higher) capstone research projects.*

**Presenter:** *Jamie Allison, Biomedical Teacher, Loveland High School*



*Notes:*



## 2009 Nationally Certified PLTW High School Programs

Amelia High School	River Valley High School
Bellbrook High School	Rock Hill High School
Columbus Downtown High School	Shelby High School
Dawson Bryant High School	Southeastern High School
Fort Recovery High School	Springfield High School
Georgetown High School	St. Henry High School
Girard High School	Thomas Worthington High School
Harding High School	Toledo Technology Academy
James F. Rhodes High School	Tri Rivers Career Center
Lakewood High School	US Grant Joint Vocational School
Logan High School	Van Wert High School
Marietta High School	Whitmer High School
Midview High School	Worthington Kilbourne High School
North Union High School	Xenia High School
Ridgedale High School	

## 2009 Nationally Recognized PLTW Middle School Programs

Dawson Bryant Middle School  
Rock Hill Middle School  
Ironton Middle School  
Chesapeake Middle School  
Grant Middle School  
North Union Middle School  
Van Wert Middle School

*On behalf of the Ohio Department of Education, Sinclair Community College, and the PLTW Ohio Executive Council, we would like to express our sincere appreciation to the numerous individuals, organizations and agencies whose support and commitment made this conference possible.*