BUILDING SUCCESSFUL BUSINESS PARTNERSHIPS:

- START THE CONVERSATION
- BUILD ADVOCACY
- SUSTAIN PARTNERSHIPS
- ACCELERATE RESULTS
EXPANDING STUDENT ACCESS TO STEM EDUCATION IS AN ISSUE OF NATIONAL PROSPERITY AND SECURITY

- The United States Department of Commerce reports that by 2018, STEM-related jobs in the United States will grow by 17 percent, nearly double the rate of jobs in non-STEM fields.
- There will be 1.2 million unfilled STEM jobs by 2018, due to a lack of qualified, trained workers.
- Expanding access to STEM education for underrepresented minority students is also of great interest, as graduates from these ethnicities make up only 10 percent of U.S. scientists and engineers.
- PLTW is taking action by giving over 750,000 students each year in more than 6,500 schools across the United States access to high-quality programs that promote problem solving, critical thinking, and real-world application of learning.
- STEM education has never been more important for our country, and no one can solve this problem alone.
PLTW Creating Shared Value

- Creating shared value is defined as *generating economic value in a way that simultaneously produces value for society by addressing its challenges.*

- PLTW Business Partnerships create and foster our sustainable, high-impact approach to help build an educated workforce and increase the pool of STEM workers, *thus enhancing the local, state, and national economies.*

BUILDING SUCCESSFUL BUSINESS PARTNERSHIPS:

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- SUSTAIN PARTNERSHIPS
- ACCELERATE RESULTS
Making the Case: Business/Industry Partnerships

STEP ONE: DETERMINE WHAT YOU OFFER AS SHARED VALUE

Do your research to discover their business goals. Analyze how STEM is integral to their business.

Shared Value Talking Points:
- Access to young talent and fresh perspectives
- Engagement in growing, influencing, and building loyalty in the local workforce
- Engagement in development of curriculum, projects and problems to reflect their industry sector
- Creating good will and strengthening community standing through support of STEM education

Making the Case: Raise Awareness & Open Doors

STEP TWO: ONCE YOU UNDERSTAND THE BUSINESS/INDUSTRY NEEDS, DEVELOP A PLAN TO ESTABLISH YOUR VALUE.

Hold a District STEM Open House or STEM Showcase to highlight the work of the PLTW students—all of them.

- Invite a panel of engineers, technicians or scientists for a preview student work to be featured.
- Ask the same panel of engineers to participate in the STEM Showcase to conduct student interviews throughout the event.
- Invite parents, businesses, school board, district administrators, neighboring districts, elected officials—local, state, and national.
- Invite the Media—and be sure that you have multiple activities underway with each student project or demonstration.
Making the Case: Invite Business/Industry In

**STEP THREE:**
**FIND MULTIPLE WAYS TO BRING BUSINESS PARTNERS TO YOUR PLTW ENVIRONMENT**

- Conduct VIP Tours led by students for business partners and elected officials as often as possible.
- Invite business partners to mentor your PLTW students on their projects, and be specific about what that includes.
- Request tours of local businesses—prep students with researching the company and preparing specific questions.
- Ask business/industry partners to submit problems or projects to challenge PLTW students.
- Participate in STEM Competitions to raise visibility in business community—engage business partners as consultants.

**GIVE BUSINESS/INDUSTRY A REASON TO ADVOCATE FOR AND SUPPORT YOUR SCHOOL.**

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**PLTW offers a K-12 solution through five programs of study.**

- Kindergarten through fifth grade
- Middle school
- High school
  - Launch
  - Gateway
  - Biomedical Science
  - Computer Science
  - Engineering
  - Post-secondary, career, and future success
What Makes a PLTW Classroom Different?

The Design Process

![Diagram of the Design Process]

PLTW Graduates Are College and Career Ready

- Dual Credit Opportunities
- PLTW college acceptance preferred preference
- Industry preferred preference
- STEM Pipeline
- Scholarships
- Peer advantage
Student Testimonials about Project Lead The Way:

“In terms of what Project Lead The Way courses have done for me personally is to realize my capacity as an engineer: designing, modifying, researching, marketing, and all the other facets that go into making an invention an innovation. Through the courses, I learned about the design techniques necessary to be able to properly communicate my ideas to my peers, supervisor, and even possible investors, as well as learn about the realistic aspects of materials, kinematics, etc.

Lucia, 2012 Graduate of Gulliver Preparatory School, Miami, Florida

“I think PLTW is wonderful for high school students interested in engineering. It is a great stepping-stone that prepares you for college. It teaches you the fundamentals of engineering and I think it gives those students who take PLTW courses an advantage going into college.”

Justin Penix, Engineer with Sarah Fisher Hartman Racing; PLTW Greenfield Central H.S. graduate; IUPUI Purdue School of Engineering and Technology Graduate- Motorsports Engineering

BUILDING SUCCESSFUL BUSINESS PARTNERSHIPS:

- START THE CONVERSATION
- BUILD ADVOCACY
- SUSTAIN PARTNERSHIPS
- ACCELERATE RESULTS
An engaged network of partners

Why Our Corporate Partners Are Engaged: Return on Community Investment

- PLTW has proven success that provides results
- PLTW can develop a long term relationship
- Scalability proven adaptable to states or regions
- Organizational structure provides ongoing access to State Leaders and PLTW staff
- PLTW is a collaborative model that includes Community Based Organizations, Community Colleges, and State Universities
LEVERAGING SUCCESSFUL PARTNERSHIP STORIES

CHEVRON
TOYOTA
LOCKHEED MARTIN

PLTW and CHEVRON
2014 US News & World STEM Solutions Summit
Creating Shared Value

Chevron’s “We Agree” campaign recognizes that today’s students are tomorrow’s employees, and that an educated STEM workforce is crucial to our country’s economic future. The challenge is clear; we all have a role to play in securing the future with education.

Creating shared value is generating economic value in a way that also produces value for society by addressing its challenges.

The Chevron/PLTW Partnership has created and continues to foster our sustainable, high-impact approach to help build an educated workforce and increase the pool of STEM workers, thus enhancing the local, state, and national economies.

Chevron has committed more than $12.4 million to support Project Lead The Way

7 states

111 programs

9,200 students

- California: $4,885,048 since 2009 for 66 schools
- Louisiana: $1,476,686 since 2011 for 23 schools
- Mississippi: $282,800 since 2013 for 10 schools
- Pennsylvania: $168,430 since 2013 for 4 schools
- Texas: $315,000 since 2011 for 2 schools
- West Virginia: $95,430 since 2013 for 1 school

Funding provided PLTW programs to over...
TOYOTA ENDORSEMENT OF PLTW

Toyota’s Dennis Parker on PLTW’s World-Class Curriculum:

“PLTW has the best STEM curriculum for schools in The world. We have examined what other countries have to offer and there is none better within the scope of my experience. PLTW would not be a partner with Toyota if its curriculum was anything less.”

Dennis D. Parker, A.M.
North American Production Support Center
Multi-Skilled Maintenance / College Partner Program
Toyota, Inc.
Georgetown, KY

Toyota Tests Employee Candidates for Five Qualities

1. **Technical Skills**
   * Assessed by a 200+ question test plus a hands-on test.
   * Written areas coordinate with the hands-on areas.

2. **Ability to Multi-Skill**
   * Math is an indicator.
   * Reading is an indicator.
   * Relative class standing is an indicator.

3. **Desire to Multi-Skill**
   * Such desires as wanting to know electricity, oil sumps and fabrication are indicators.
   * The effect of a technician who can multi-skill but does not wish to do so will negatively impact the flexibility and productivity of the team long-term.

4. **Ability to Learn Quickly**
   * Relative class standing, math ability, and reading ability are all indicators.

5. **Interpersonal Capacity**
   * Do workers (students) get along with other people?
   * Toyota has interactive assessments for this skill
Toyota Believes PLTW Teaches
All Five of these Qualities

1. Technical Skills √
2. Ability to Multi-Skill √
3. Desire to Multi-Skill √
4. Ability to Learn Quickly √
5. Interpersonal Capacity √

“Toyota has learned that PLTW students naturally have more strengths and abilities in the five areas we most desire. It is because PLTW embeds these aspects into its curriculum and students have had experiences with each of the five areas.”

Dennis D. Parker, A.M.
North American Production Support Center
Lockheed Martin Teams Up with Project Lead The Way in National Partnership

INDIANAPOLIS (Feb. 18, 2014) –

Project Lead The Way (PLTW) announced Tuesday a $6 million national partnership with Lockheed Martin to expand PLTW’s science, technology, engineering and math (STEM) programs in select U.S. urban school districts. The specific urban districts will be announced in the coming months.

“Success in building the next generation of STEM talent depends on collaboration among industry, educators, policy makers and families,” said Jeff Wilcox, Lockheed Martin vice president of Engineering. “Our partnership with Project Lead The Way is designed to educate and inspire tomorrow’s scientists, engineers and mathematicians.”

Since 2007, Lockheed Martin has provided over $1.34 million in grants and scholarships to 82 PLTW schools across 13 states. The company has also supported the development of PLTW’s middle school and high school courses focused on aerospace engineering and flight, and connected Lockheed Martin engineers with students through the company’s “Engineers in the Classroom initiative.”

LOCKHEED MARTIN DONATES $200K TO BRING SCIENCE AND TECHNOLOGY PROGRAM TO ALL HUNTSVILLE CITY ELEMENTARY SCHOOLS

District Ranks as Largest in Alabama with 100% Participation in Project Lead The Way

The grant was announced during the Space and Missile Defense Symposium with the 2014 theme of “Space and Missile Defense: Foundational to US Strategy Today and in the Future.” Project Lead The Way was featured during the SMD Symposium’s STEM Education Forum.
Building Successful Business Partnerships:

- Start the Conversation
- Build Advocacy
- Sustain Partnerships
- Accelerate Results

Lockheed Martin has committed over $7 million to support Project Lead The Way since 2011

13 states
82 programs
61,000 students

Alabama: $245,000 for 28 schools
California: $250,000 for 9 schools
Colorado: $10,000 for 1 school
Florida: $90,000 for 4 schools
Kentucky: $45,000 for 2 schools
Maryland: $60,000 for 4 schools

Minnesota: $20,000 for 1 school
New Jersey: $60,000 for 3 schools
New Mexico: $20,000 for 2 schools
New York: $315,000 for 14 schools
Pennsylvania: $30,000 for 2 schools
Texas: $20,000 for 1 school
Washington, DC: $175,000 for 10 schools
PLTW Students More Prepared for Higher Education
Dr. James Van Overschelde, Texas State University
Spring 2013 American Journal of Engineering Education

• Dr. Van Overschelde collected and analyzed six years of longitudinally-linked student data to compare thousands of PLTW students to their non-PLTW peers.
• PLTW enrollment in Texas has increased by over 400% over the last five years: Hispanic by over 500%; females nearly 600%; and low-income students by 650%.
• PLTW students are more prepared for and attended Texas higher education institutions at a higher rate.
• PLTW students scored higher on the state’s mathematics assessment
• For those students who did not enroll in college, the median wage for PLTW students was 13.6%.

Change the Equation Endorsement

Change the Equation (CTEq) Named PLTW to An Elite List of STEM Organizations: One of Four organizations nationally recognized for outstanding quality

Indianapolis (October 3, 2013) Project Lead The Way (PLTW) has been nationally recognized as one of just four high-quality STEM programs that are immediately scalable on a national level. Of the four programs selected, PLTW is the only in-school STEM curricular program for elementary, middle, and high school students and the only program offering a comprehensive professional development model for teachers.

Change the Equation (CTEq) is a nonprofit, nonpartisan, CEO-led initiative that is mobilizing the business community to improve K-12 STEM learning in the US.
Job growth, employment rates, new patents, wages, and exports are **ALL HIGHER** in more STEM-based metropolitan economies.

Almost all of the **30 FASTEST-GROWING** occupations in the next decade will require at least some background in STEM.
STEM SKILLS ARE IN DEMAND

In Colorado, STEM skills have stayed in demand even through the economic downturn.

STEM: 1.5 jobs for every 1 unemployed person

Non-STEM: 3.0 unemployed people for every 1 job

COLORADO MUST PLUG GAPS IN THE STEM PIPELINE

<table>
<thead>
<tr>
<th>What percentage of high school students graduate? (2010-2011)</th>
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<tbody>
<tr>
<td>Colorado</td>
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<tr>
<td>79.8%</td>
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<tr>
<th>Of students who enter a two-year degree program, what percentage graduate? (2009)</th>
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<tr>
<td>39.3%</td>
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<th>Of students who enter a four-year degree program, what percentage graduate? (2009)</th>
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<tr>
<td>53.3%</td>
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<tr>
<th>What percentage of college degrees and certificates are in STEM fields? (2011-12)</th>
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<tr>
<td>14.9%</td>
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</table>
2014-15 Colorado PLTW Programs

Be a part of the solution

- Bring PLTW to your school or community.
- Mentor PLTW students.
- Join a school partnership team.
- Financially support PLTW program implementation.
- Voice your endorsement of PLTW.
PLTW and the Innovation Portal: Invitation to Engage

Build - use the resources and rubric to create an online protected portfolio
Connect - share and collaborate with anyone anywhere
Iterate - save versions of your portfolio as you build over time
Listen - receive feedback and suggestions form teachers and mentors
Submit - enter the portfolio for any number of recognition opportunities
SEPTEMBER 25, 2014: PLTW Conference

The Innovation Portal is Growing:

As of September, 2014

21,674 users have created

10,460 portfolios

Gwen Shuster-Haynes
Director of School Engagement—Colorado
gshuster-haynes@pltw.org
Keith Nosbusch on PLTW Addressing Our National Crisis:

How we create a STEM contemporary workforce is one of the most pressing questions this country faces. If we don’t improve our K-12 education curriculum and teacher readiness with STEM competencies, America will lose its pre-eminence in the global economy. The data we have collected over the last seven years reinforces that PLTW addresses this national crisis. PLTW’s continued success and growth is critical to ensure that our students have the knowledge and skills necessary to compete in the global economy.

Keith Nosbusch
Chairman of the Board & CEO
Rockwell Automation
SUNPOWER ENDORSEMENT OF PLTW

William Kelly on PLTW’s Impressive Results:

PLTW’s Pathway to Engineering program engages and inspires teachers and students. PLTW's rigorous curriculum, project-based approach and partnership with employers in industry are yielding impressive results.

William Kelly
Managing Director, Public & Education
SunPower Corporation

CUMMINS ENDORSEMENT OF PLTW

Dr. John Wall of Cummins, Inc. on PLTW’s Creating the Next Generation of Employees and Leaders:

PLTW’s curriculum teaches students to create, design, build, discover, and collaborate while applying what they learn in math and science to solve engineering problems. The use of those skills will create the next generation of employees and leaders required at all levels in a high-tech, high-skill global economy. We look forward to continuing to partner with PLTW, its teachers and its students to further promote and improve STEM education, and we encourage other companies to do the same. Our future depends on it.

Dr. John Wall, VP/Chief Technical Officer
Cummins, Inc.
FEDEX EXPRESS ENDORSEMENT OF PLTW

From Sean Healy of FedEx Express on PLTW as a solution they support:

“The statistics are alarming regarding the number of engineers, advanced manufacturing technicians, and other skilled professionals that are needed now and into the future for jobs in our country... We need to find solutions for properly educating the next generation of Americans who possess STEM skills. PLTW is a solution that we support.”

Sean L. Healy
Vice President, Global Planning & Engineering
FedEx Express

JOHN DEERE & COMPANY ENDORSEMENT OF PLTW

From Klaus G. Hoehn of Deere & Company on PLTW’s World Class Curriculum:

“We recognize PLTW as the nation’s leading science, technology, engineering, and math (STEM) curriculum provider, reaching over 500K students. With approximately 40% of John Deere’s global salaried workforce employed in STEM-related jobs supporting innovation, this effort is vital to us. PLTW’s world-class curriculum engages students of all levels, including those underrepresented, exposes them to areas of study that many typically would not pursue otherwise, and provides them with a proven path to college and career success.”

Klaus G. Hoehn,
Vice President, Advanced Technology & Engineering
John Deere & Company