



***The Global Technology and Engineering
Consortium (GTEC***

Partnering with STEM Corporations

MassCUE/M.A.S.S. Conference

October 26, 2011



Topics for today

- ★ **GTEC – a brief overview**
- ★ **GTEC Global Virtual STEM Classroom concept & background**
- ★ **Pilot Program: Year One 2010-2011**
- ★ **Pilot Program: Year Two 2011-2012**
- ★ **Parametric Technology Corporation – GTEC partner**
- ★ **21st Century Skills & Building a partnership with STEM corporations**
- ★ **Next steps & how your school can participate**



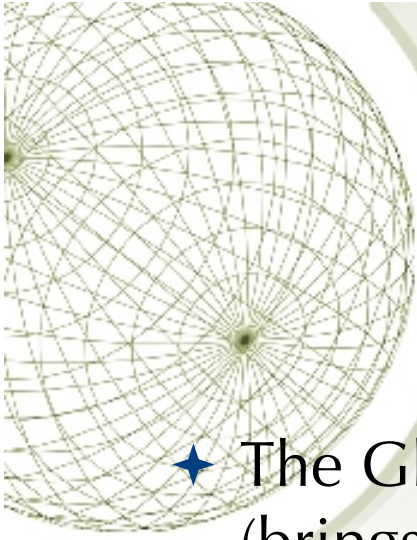
Introductions

GTEC Executive Board:

- ★ Isa Kaftal Zimmerman, Principal, IKZ Advisors, Former Superintendent of Schools
- ★ Annamaria Schrimpf, Director of Educational Technology, Winchester Public Schools
- ★ Larisa K. Schelkin, Executive Director, Founder and Concept Author

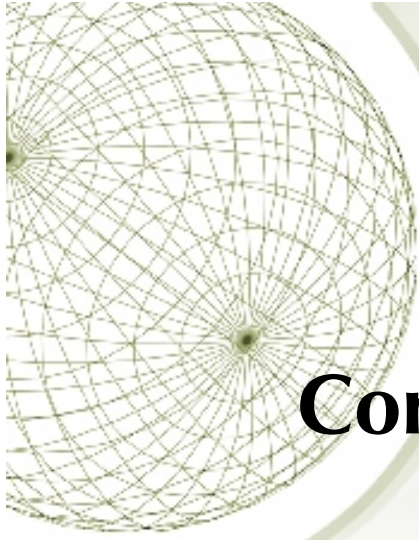
GTEC Partner: PTC

- ★ Myron Moss, Dima Orlov, Mark Fischer



GTEC – a brief overview

- ★ The Global Technology & Engineering Consortium (brings together K-12 & institutions of higher education, business & industry partners to contribute to developing the 21st century global workforce.
- ★ The Consortium will enable next generation workforce to be effective in & with other countries/cultures in solving the problems urgently confronting the world's populations & working successfully across global cultural differences.



*GTEC Global Virtual STEM Classroom
concept & components*

Concept developed 2007-2010:

K-12 (US and global)

Higher ed (US and global)

**Partnering with STEM industry/corps
(US and global)**

GTEC Global Virtual STEM Classroom

**Global team-work & intercultural
communication**

Project-based



Pilot First Year 2010-2011

- ★ **Presented at MassCUE/M.A.S.S. last year**

- ★ **First year pilot program participants:**

**Spirit of Knowledge Public Charter School
(Worcester, MA)**

PTC (in US and UK);

Haywood College of Engineering (HS in UK)

Keele University/Staffordshire University (UK)

Olin College of Engineering

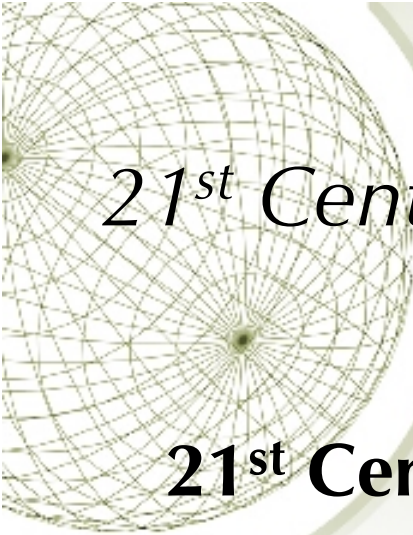
Worcester Polytechnic Institute

Newburyport High School



Pilot Year Two 2011-2012

- ★ **Dennis Yarmouth High School**
- ★ **Spirit of Knowledge Charter School**
- ★ **Worcester Technical School (tentatively – TBC)**
- ★ **Becker College/MA Digital Institute**
- ★ **WPI**
- ★ **CISCO Foundation**
- ★ **A Computer gaming design company (TBD – FYI: 75 companies in MA)**
- ★ **A wind-turbine manufacturing co & MA Clean Energy Center (tentatively - TBC)**
- ★ **PTC (tentatively - TBC)**



21st Century Skills: Building partnerships with STEM corporations

21st Century Skills:

- ★ **Creativity, Learning & Innovation Skills;**
- ★ **Critical thinking & Problem Solving;
Communication & Collaboration;**
- ★ **Life & Career Skills;**
- ★ **Information Literacy; Media Literacy; ICT
Literacy;**
- ★ **Ethics & Empathy**



Next steps

- ★ **Successfully implementing the second pilot**
- ★ **Results presented via Global Virtual STEM Conference in late June 2012**
- ★ **Professional development workshops will be held at Olin College**



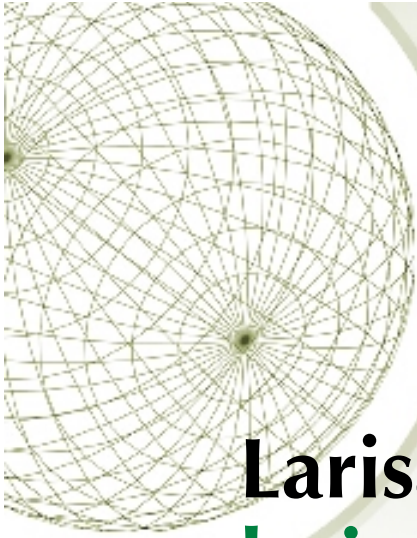
How your school can participate

RFP for next year's participation will be published at www.olin.edu/GTEC

Competitive review process

If chosen, your school will be connected with –

- a global school partner in Europe/Asia/South America or Australia**
- a global STEM company**
- higher education institution**
- training will be provided to faculty & students**
- STEM projects provided**



Our contact information:

Larisa Schelkin:

larisa.schelkin@gmail.com

Annamaria Schrimpf:

aschrimpf@fc.masscue.org

Isa Zimmerman: ikz1@verizon.net



Who is PTC: The Product Development Company

PTC:

Boston-area, USA based Technology Leader in Product Development Software and Services

Our Customers:

World Leading Product Development Companies and Retail Establishments

\$1.02B

Revenue in fiscal year 2010

5000+

employees in 18 countries worldwide

Outgrew Industry

2004-2009 PTC PLM*

27,000+

customers utilizing 600,000 active seats

Winning

22 strategic displacements in FY10- FY11

4,000+

new customers per year across 7 key industry verticals

*Source: AMR Research, CIMdata, IDC and company estimates

Unmatched Expertise in

Multiple Vertical Markets

AEROSPACE &
DEFENSE

Raytheon

EADS

THALES

 National Aeronautics
and Space Administration


BOEING


LOCKHEED MARTIN

BAE SYSTEMS



 **TOYOTA**



  **FAG**



Audi

 **HYUNDAI**

TRW

 **FAW**



 **PIAGGIO**

HARMAN

 **POLARIS**

ELECTRONICS
AUTOMOTIVE HIGH TECH

HITACHI

intel.





DELL

 **Lam**
RESEARCH
Changing the Value Equation™

TOSHIBA

 **ITT Industries**
Engineered for life

 **JOHN DEERE**

ABB

 **YORK**
Leading the World in Heating.

Rexroth
Bosch Group

TurboCare

 **MITSUBISHI**
HEAVY INDUSTRIES, LTD.
BABCOCK BORSIG POWER

 **Otis**
A United Technologies Company

CATERPILLAR

 **HELLER**
Machines


 **FRAMO**
ENGINEERING

RETAIL &
CONSUMER

COACH

 **XYRON**

Newell Rubbermaid
Brands That Matter

 **Herman Miller**

LIZ CLAIBORNE

 **adidas**



 **MOEN**
Buy it for looks. Buy it for life.®

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LANDS' END
DIRECT MERCHANTS



Limitedbrands

 **BLACK & DECKER**

MEDICAL
EQUIPMENT

stryker

GE Healthcare

Boston Scientific

 **SYNTHES**

 **Medtronic**
When Life Depends on Medical Technology

COVIDIEN

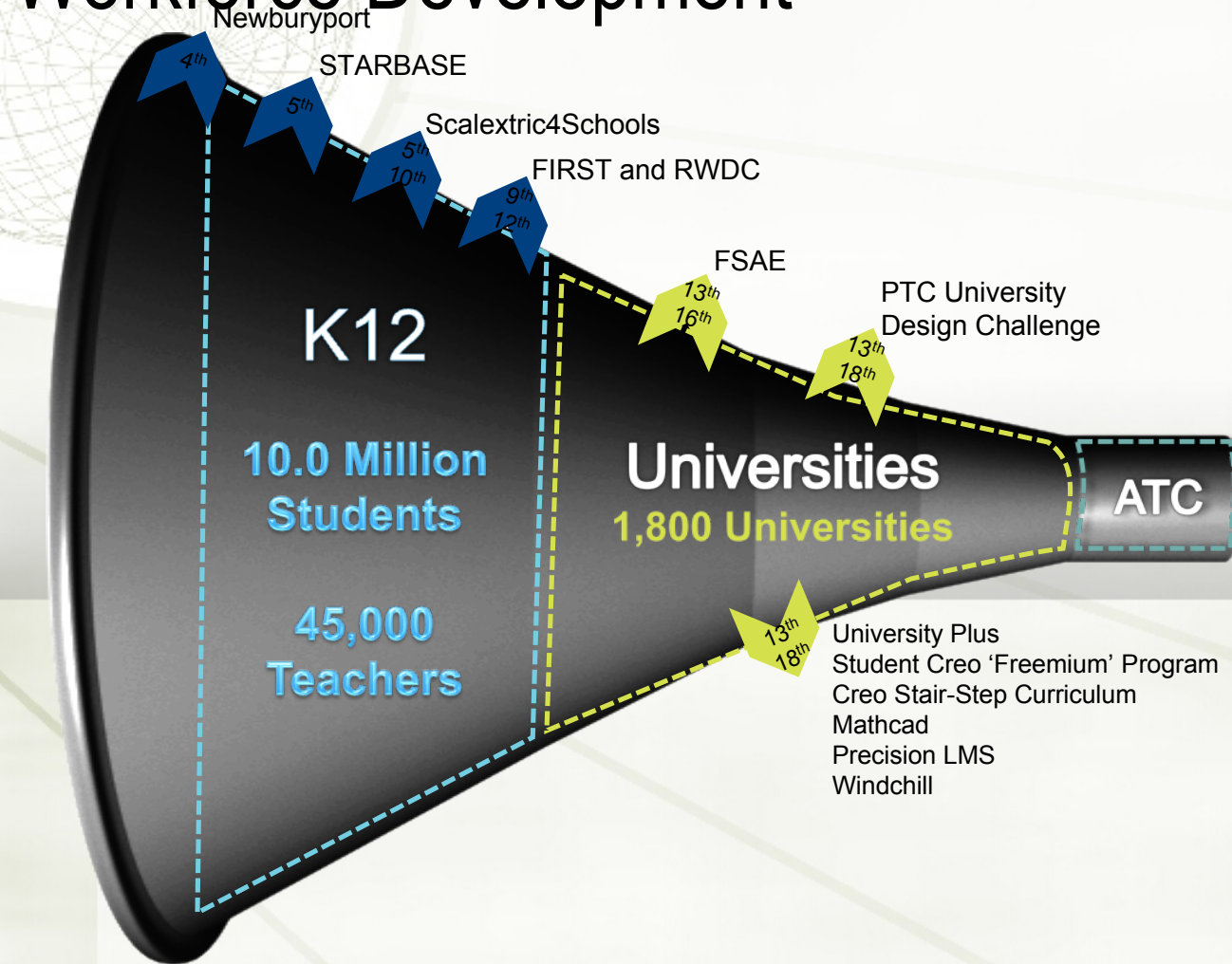
 **ABBOTT**
LABORATORIES

Alcon

ST. JUDE MEDICAL

Engineer of the Future Program

Workforce Development



Over 27,000 Customers

WORKFORCE DEVELOPMENT →

- Need for Engineers:**
- China= 5M by 2020
 - India= 3M by 2020
 - US= 3M by 2020
 - Germany= .5M by 2018
 - Russia= 2M by 2020



PTC Global Academic Program – *Engineer of the Future*

Philanthropy

30
countries

45,000
teachers

25,000
secondary schools

1,800
universities

10 million
students



COMMUNITY AWARDS & RECOGNITION

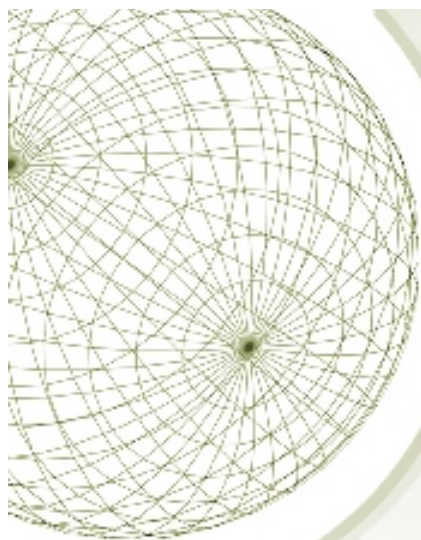
**Mass High Tech
Citizenship
Award**
2003-2009

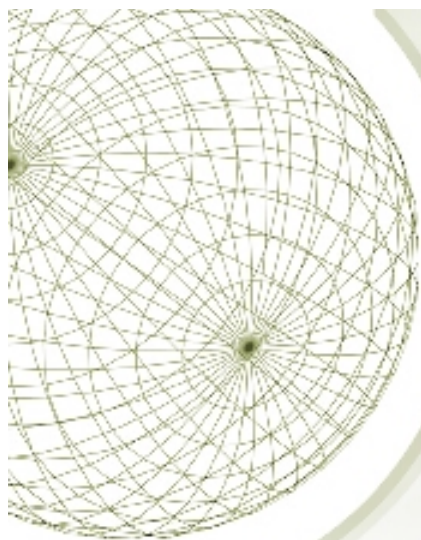
**BusinessWeek:
Highest In-kind Giver for
Software Companies**
2006

**International Technology
Educators Association
Award**
2007

**Congressional
Medal of Honor
Society Award**
2008

**Junior Achievement
Boston Business
Hall of Fame**
2010



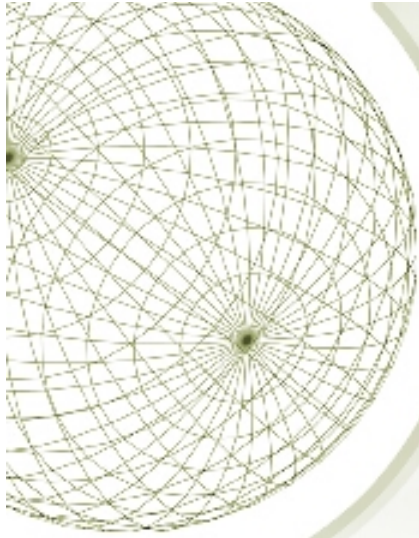




GTEC STEM Corporation partner:

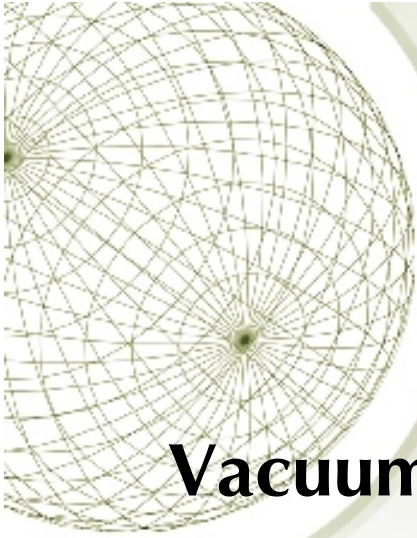
PTC– Parametric Technology
Corporation

(www.ptc.com)



An overview of PTC

Billion \$ worldwide publicly traded company producing software that designs everything from NASA rockets to Audi automobiles to John Deere tractors

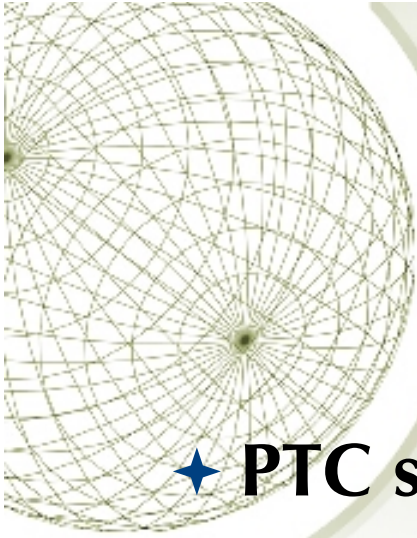


Educational component of PTC & need for engineers

Vacuum of engineers:

- **an aging workforce**
- **most engineering jobs with US government, particularly those focusing on national defense, require U.S.citizenship**

U.S. not producing enough new engineers for positions available



Educational component of PTC & need for engineers.2

★ **PTC sells its software to:**

- **colleges & universities**
- **high & middle schools**
- **design software is free to those schools**
- **all licensing is free in perpetuity**
- **students encouraged to place software on their home computers**
- **free online training for teachers**



What PTC software offers students

***Based on classroom observations & in pilot,
working with PTC's software in schools:***

- **Students, male & female, as early as 4th grade, easy to learn software**
- **The software challenges the gifted student, unlocks potential**



Upcoming Conference @ PTC

- ★ **Partnerships for Advancing Global Education(PAGE) on April 4, 2012 at PTC world headquarters in Needham.**
- ★ **The topic of the conference:
Preparing Our Students for 21st Century
Competition in the Global Market.**