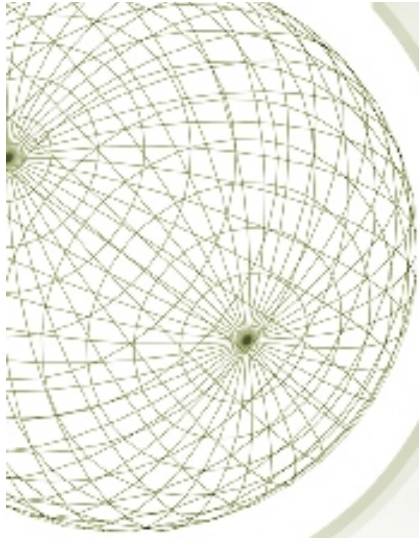


# *MassCUE/MASS Technology Conference 2010*

Today's Global Learners,  
Tomorrow's Global Leaders

***GTEC – Global Technology &  
Engineering Consortium***




# GTEC

**--Educating students who can succeed  
in a *flat* and *diverse globe*--**



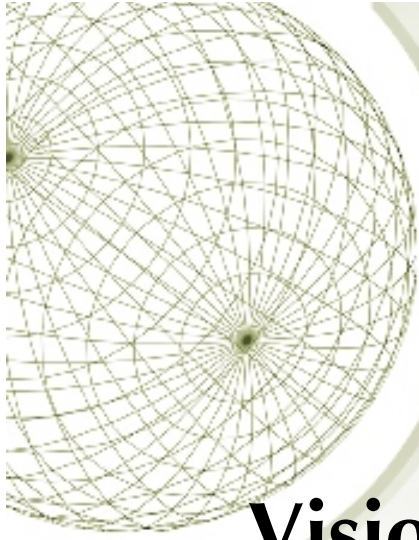
# *Who we are: Leadership Team*

- **Larisa K. Schelkin**, CEO & President
- ✦ **Annamaria Pisari Schrimpf** Director of Educational Technology, Winchester Public Schools
- ✦ **Julia Sigalovsky**, Executive Director/Lead Founder, Spirit of Knowledge Charter School
- ✦ **Yevgeniya V. Zastavker**, Associate Professor of Physics, Olin College of Engineering
- ✦ **Isa Kaftal Zimmerman**, Principal, IKZ Advisors

A decorative wireframe sphere is positioned in the upper left corner of the slide. The sphere is composed of a grid of thin, light-colored lines that form a globe-like structure. The background of the slide features a light green and white color scheme with abstract, curved lines and a semi-transparent white rectangular area containing the text.

# *What we see: The Challenge*

**In today's global engineering market, engineers work in international teams & some experience difficulties in communication, relationships & understanding across different cultures.**



## *What we see: GTEC Vision*

### **Vision:**

**Modeling international team relations for secondary and college student teams by developing, managing and implementing exciting global engineering/ technology/science projects**



## *What we promote: GTEC Principles*

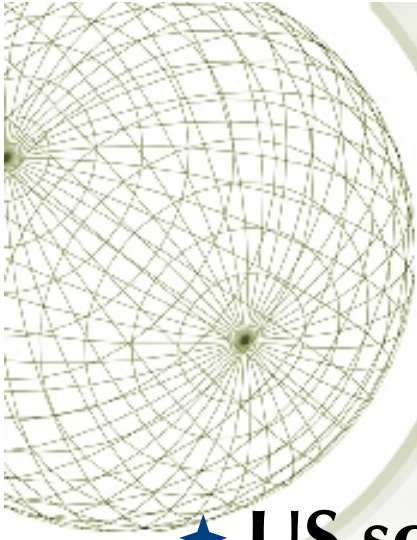
- ★ **Global diversity education**
  - ★ **working effectively /managing across cultures**
- ★ **Using advanced communication technology for global engineering/ technology/science projects**
- ★ **Developing a knowledge base for global engineering/ technology/science corporations**



# *Pilot Program: Goal*

**Year One: To develop & pilot authentic international engineering/technology/science projects for teams of secondary school students.**

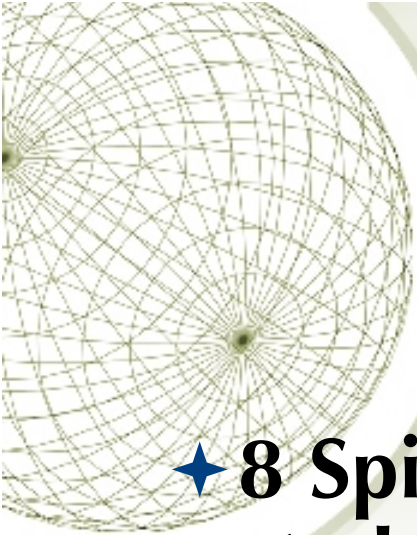
**To pilot diversity curriculum**



# *Pilot Program: Elements*

- ★ **US school & UK school teams**
- ★ **Mentoring by Olin College students & practicing engineers**
- ★ **Students receive training in global diversity, advanced communication technology, & specific engineering & science skills & content needed for the projects**

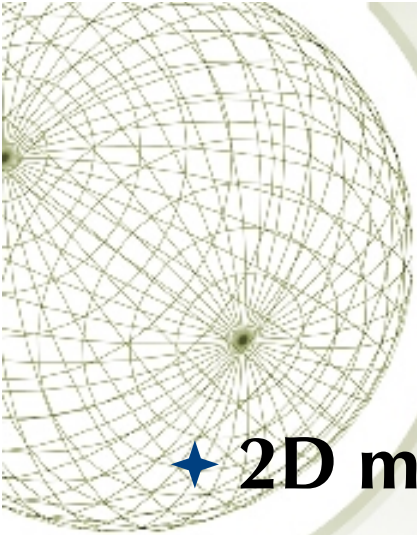




# *Pilot Program Status.1*

## *People*

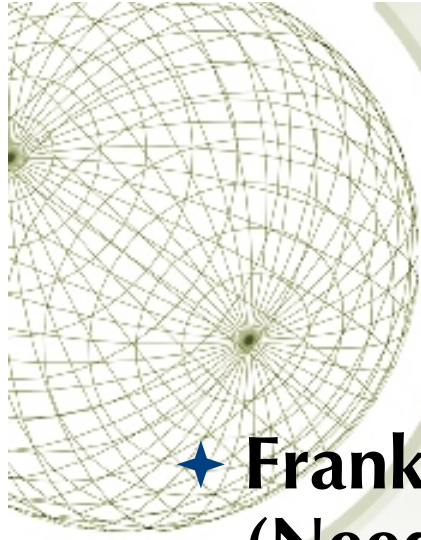
- ★ **8 Spirit of Knowledge Charter School students**
- ★ **8-10 Olin College mentors**
- ★ **1 Olin College faculty**
- ★ **8 Haywood College M/HS students**
- ★ **8 Keele University/Staffordshire University mentors**



# *Pilot Program Status.2*

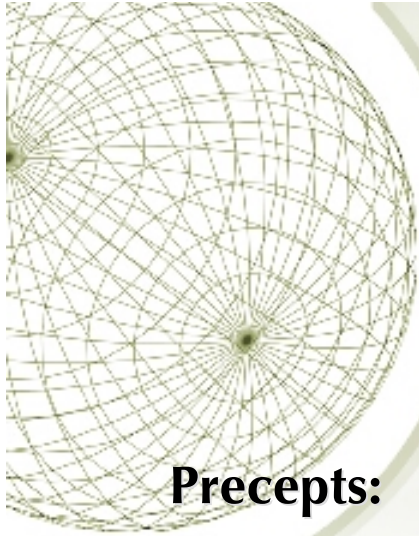
## *Status at SOKCS*

- ★ **2D modeling**
- ★ **PTC adapted curriculum**
- ★ **Diversity curriculum, cyber safety & 21 C skills**
- ★ **Collaboration (culminating in project)**
- ★ **30 weeks, 1 to 2 periods w. added individual student time**
- ★ **Skype for communication**



## *Pilot Program: Participants*

- ★ **Franklin Olin College of Engineering  
(Needham, MA)**
- ★ **Spirit of Knowledge Public Charter School  
(Worcester, MA)**
- ★ **Haywood College of Engineering (Stoke-on-  
Trent, UK)**
- ★ **Keele University (UK)**



# *F.W. Olin College of Engineering*

**Precepts:**

No academic departments; no tenure;  
full tuition scholarship;

**Program:**

Selective, undergraduate engineering;  
B.S. in electrical and computer,  
mechanical and engineering;

**Faculty:**

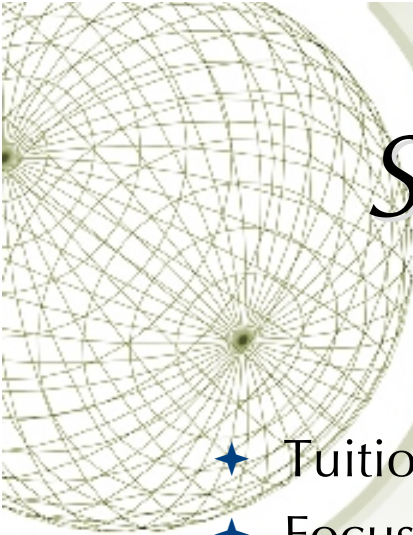
34 full-time: 35% women, 12% minority;

**Students:**

n = 304: 42% women, 15% minority;  
Student/Faculty: Currently 9 to 1;

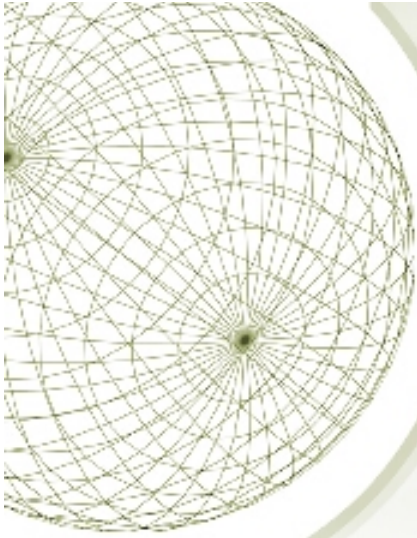
**Curriculum:**

*"Bold Goals"*



# *Spirit of Knowledge Charter School*

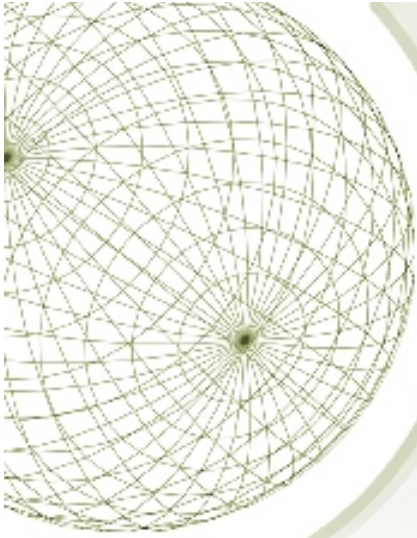
- ★ Tuition-free public school in Worcester, MA
- ★ Focused on achieving proficiency in **math, sciences & technology** & how it is applied to renewable energy & biotechnology
- ★ Academic success achieved through high-standard, innovative curriculum
- ★ Extensive academic supports
- ★ Extensive use of technology
- ★ A unique school culture, strong discipline, uniforms
- ★ Opened last month with 156 students in grades 7, 8 & 9. At full capacity, will serve 275 students in grades 7 - 12.



## *Other GTEC participants*

- **KMA Diversity/Cultural Detectives/  
[www.KMAdiversity.com](http://www.KMAdiversity.com)**

***Diversity Curriculum & Training***

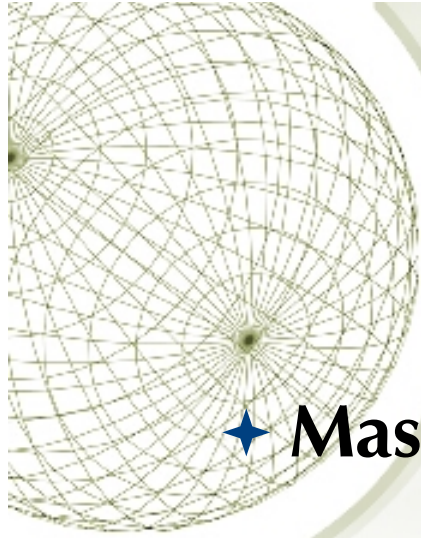


## *Other GTEC participants*

◆ **Davis Square Research Associates**

<http://www.davissquare.net/>

***Assessment/Evaluation***



## *GTEC Partners*

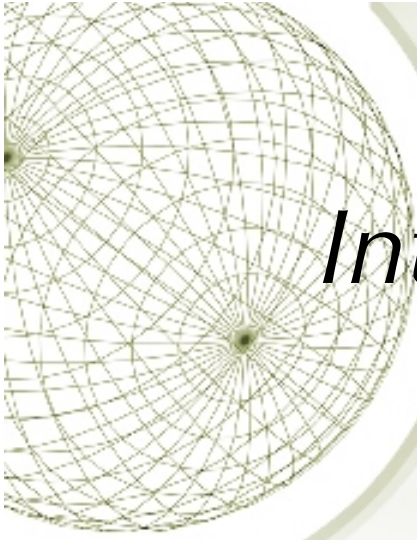
- ★ **MassCUE** <http://www.masscue.org/>
- ★ **November Learning**  
<http://novemberlearning.com/>
- ★ **Nesson Media Boston**  
(<http://www.nessonmedia.com/>) (a documentary)
- ★ **Parametric Technology Corporation**  
<http://www.ptc.com>





## *Inter-culturally competent person*

- ★ **Has a solid sense of own culture (cultural self-awareness);**
- ★ **Demonstrates cultural literacy (knowledge of or curiosity about others' cultures);**
- ★ **Has skills to engage with others across cultural differences to find effective solutions & resolve conflicts.**



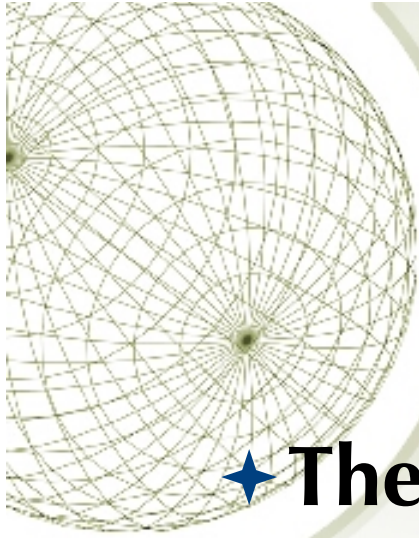
## *Inter-culturally competent team*

- ★ **Consists of culturally competent individuals**
- ★ **Consciously engages in creating team culture that provides the whole team & all team members the best & best-fitting opportunities to succeed**



## *Pilot Program Intercultural Component*

- ★ **Incorporates array of tools to facilitate students' Cultural Self-Discovery;**
- ★ **Increases their Cultural Literacy**
- ★ **Increase their understanding of Global Team Dynamics;**
- ★ **Assist them in developing Intercultural Communication & Conflict Resolution Skills;**
- ★ **Support students' learning through Training & Coaching**




## *Pilot Program STEM Projects Component*

- ★ **The project: 3D design**
- ★ **Software & AutoCAD curriculum provided PTC**
- ★ **Curriculum adapted by the SOKCS teachers for 7-9 grade students**



# *GTEC Educational Outcomes*

- ✦ **Outcomes for students (increasing engineering/technology/science pipeline):**
  - ✦ Global diversity knowledge & skills
  - ✦ Engineering knowledge & skills
  - ✦ 21st century knowledge & skills
- ✦ **Creation of new Global Diversity curriculum for K-12 schools & higher education**
- ✦ **Knowledge base for global engineering/technology/science corporations**



# *National Standards and MA STEM Framework*

- ★ **National**

- ★ **ISTE**

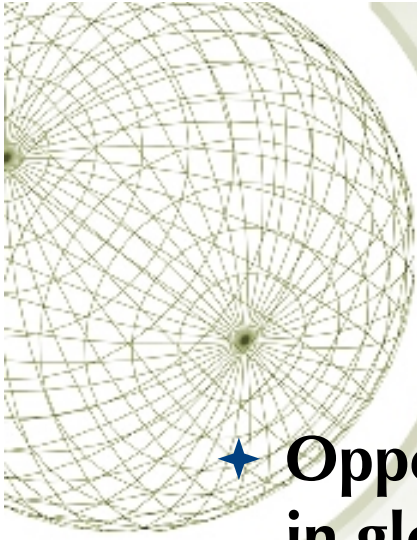
- ★ **National Academy of Engineering**

- ★ **The NAEP Technology and Engineering Framework**

- ★ **MA DESE**

- ★ **Technology Literacy & Expectations for students**

- ★ **Science, & Tech/Engineering**



## *Benefits for K-12 schools*

- ★ **Opportunities for student & faculty participation in global engineering/ technology/science including long-term projects, internships & others**
- ★ **Opportunity to learn 21st skills & to practice with global partners**
- ★ **Possibilities of higher education connections & jobs for students in the future**



# *Benefits for Higher Education*

- ★ **Opportunity to participate in development & ownership of a new curriculum & co-curricular activities**
- ★ **Partnerships with K-12 schools, other higher education institutions, companies & agencies in other countries for recruitment, fellowships & job placement opportunities**





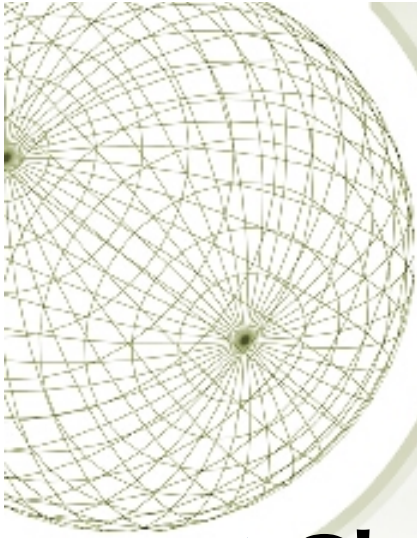
## *Benefits Higher Ed.2*

- ★ **Assistance in expanding current programs &/or developing new ones**
- ★ **Enhanced visibility on the national & international stage through leadership in this project**
- ★ **Opportunities for more external funding & resources as other innovation & entrepreneurship initiatives emerge**



## *Benefits for Business*

- ★ **Access to workers trained in global diversity**
- ★ **Access to a proven diversity curriculum for their own workforce**
- ★ **Partnerships with other companies, K-12 schools, higher education institutions & agencies in other countries for recruitment & job placement opportunities**



## *Benefits for Business.2*

- ★ **Global corporate partnerships**
- ★ **Enhanced visibility on the national & international stage through leadership in this project**



# *GTEC Next Steps*

- ★ **Adapting, developing diversity curriculum**
- ★ **Conducting & evaluating the pilot program the Pilot Program in 2010-2011 academic year**
- ★ **Procuring funding**
- ★ **Planning for dissemination & scaling**
  - ★ (Exemplary program--see MA STEM plan [www.mass.gov/governor/stem](http://www.mass.gov/governor/stem))



# *Our Contact Information*

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