

Illinois Board of Higher Education Meeting: June 5, 2012

Proudly Hosted by:

Illinois Mathematics and Science Academy[®]

Dr. Glenn W. “Max” McGee, President

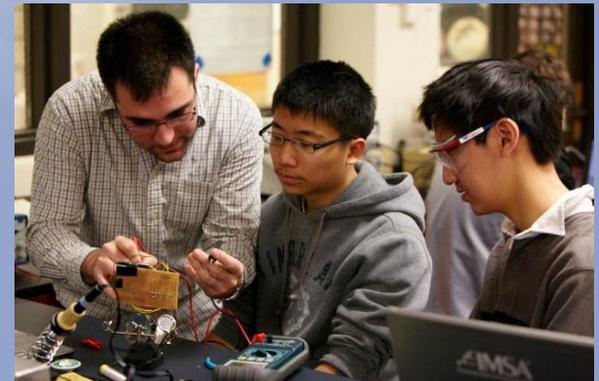
IMSA at a Glance

- State agency under budget authority of IBHE
- Legislative charges
 - Offer uniquely challenging education for students talented in math and science
 - Stimulate excellence for Illinois schools in math and science
- Mission
 - ignite and nurture creative, ethical, scientific minds that advance the human condition
- Strategies
 - personalized learning, expansion of products and services, innovation and entrepreneurship, scholarship and knowledge transfer, development of whole person, diversified funding
- IMSA at 25: “Beyond Knowledge”
- Partner in IBHE Public Agenda



A PUBLIC AGENDA FOR
COLLEGE AND CAREER SUCCESS

IBHE PUBLIC AGENDA AND IMSA





Background

- The General Assembly initiated development of the Public Agenda by adopting HJR 69 in Spring, 2007.
- The Public Agenda is the pathway to one Illinois, where all residents have affordable access to high-quality educational opportunities that prepare them for the jobs of the present and the future.
- After a year of collaboration with hundreds of stakeholders in higher education, the Public Agenda Task Force presented the **Illinois Public Agenda for College and Career Success** to the IBHE, which has statutory responsibility for master planning for higher education.
- In December, 2008, the Board unanimously endorsed the Public Agenda as the blueprint to guide education policy – from preschool to graduate school – in Illinois for the next decade.



A PUBLIC AGENDA FOR
COLLEGE AND CAREER SUCCESS

Goals

The Public Agenda encompasses four goals designed to eliminate barriers and foster opportunities for all of Illinois:



Goal 1: Increase educational attainment

Goal 2: Ensure college affordability

Goal 3: Address workforce needs

Goal 4: Enhance economic growth

We're named in one:

Goal 4, Strategy on cutting-edge P-20 educational programs:

“Expand IMSA’s reach throughout the state in both teacher professional development and STEM education programs for students.”



We contribute to all.

IMSA Contributions to Goal 1

IBHE Public Agenda GOAL 1:

Increase educational attainment to match best-performing states.

We develop diverse STEM talent, challenging our residential students to stretch and excel beyond grades and test scores.

Student Inquiry and Research

We work with teachers statewide to strengthen their skills, with special emphasis in Chicago, Metro East and Rock Island.

IMSA FUSION

Problem-Based Learning (PBL) Network



Student Inquiry and Research

IBHE Public Agenda GOAL 1:

Increase educational attainment to match best-performing states

Students do not attend classes on Wednesdays

Approximately 90% of junior and seniors choose to conduct an SIR project

Most students go off campus to work on authentic research projects with mentors on Illinois university campuses, medical and scientific laboratories or at the facilities of experts in a particular field

Students must prepare proposal, obtain IRB approval, keep logs and prepare a final paper, poster and presentation

IMSA and Chinese students collaborate on SIR projects



IMSA FUSION

IBHE Public Agenda GOAL 1:

Increase educational attainment to match best-performing states

- Award-winning professional development and student enrichment program
- This year, 102 programs in over 90 schools, serving 200 teachers and nearly 2,500 students
- Since 2000, FUSION has served more than 1,000 teachers and 12,000 students

Impact on Learners:

- 100% of IMSA FUSION graduates take advanced science courses, and 100% of FUSION teachers report an increase in open-ended, student-driven, high level questioning.



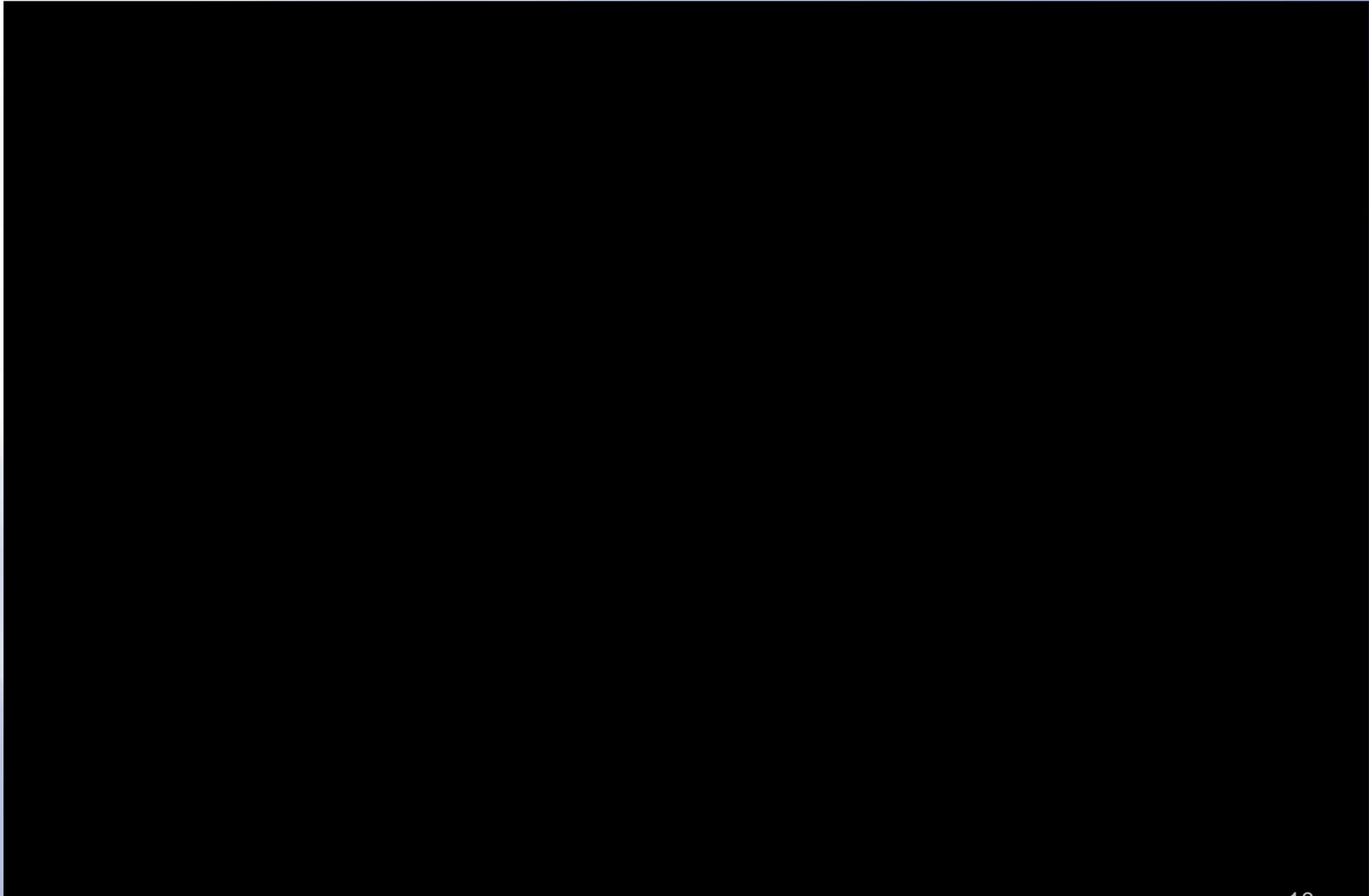
Photos by John Schultz/QUAD-CITY TIMES

Fourth-graders Victoria McLeod, left, and Taylor Sierens work on connecting a battery to construct a "jitter bug."



Students in the IMSA Fusion program gather supplies to construct their "jitter bugs."

NIU and IMSA Productions!



Problem-Based Learning Network

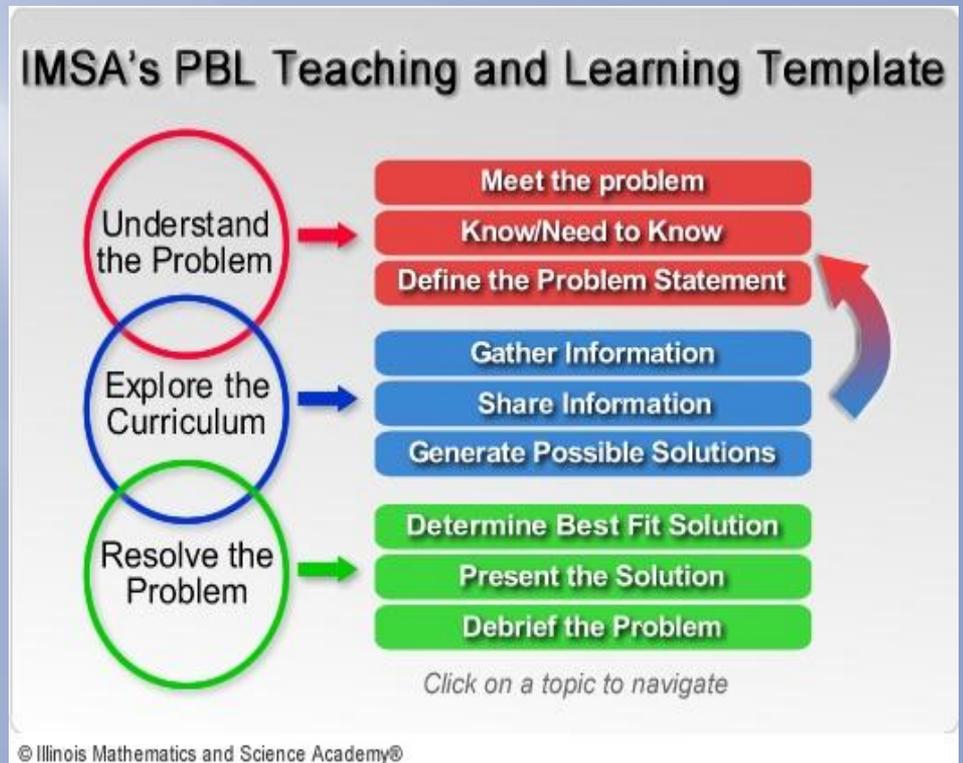
IBHE Public Agenda GOAL 1:

Increase educational attainment to match best-performing states

IMSA's PBL Network provides year-round professional development institutes, seminars, online support and consultations for educators and schools from introduction to advanced levels.

Impact on Learners:

- Increases Motivation
- Makes Learning Relevant to the Real World
- Promotes Higher Order Thinking
- Encourages Learning How to Learn
- Requires Authenticity



IMSA Contributions to Goal 2

IBHE Public Agenda GOAL 2:

Ensure college affordability for students, families, and taxpayers.

We purposefully and mindfully educate families in mandatory individual meetings on comprehensive college affordability and financial planning.

With support from ISAC, we conduct several evening seminars

Students receive regular communication on “merit money options,” e.g. paid research and leadership positions in colleges.



Many of our "neediest" students receive the full Pell Grant.

IMSA Contributions to Goal 3

IBHE Public Agenda GOAL 3:

Increase the number of high-quality postsecondary credentials to meet the demands of the economy and an increasingly global society.

We actively partner with universities and teacher preparation organizations throughout Illinois to prepare high quality STEM teachers for the future.

Teacher Candidate Institutes

Golden Apple Scholars Summer Institutes

Common Core/Math Learning Collaborative



Teacher Candidate Institutes

IBHE Public Agenda GOAL 3:

Increase the number of high-quality postsecondary credentials to meet the demands of the economy and an increasingly global society.

- TCIs are two-week programs offered to pre-service teachers and students in collaboration with a university partner.
- They provide preservice education candidates instructional activities in a mentored environment, from design to implementation and assessment of student learning.
- Focus on STEM content



Golden Apple Scholars Program

IBHE Public Agenda GOAL 3:

Increase the number of high-quality postsecondary credentials to meet the demands of the economy and an increasingly global society.

Launched with a \$341,000
U.S.D.E grant in 2008

IMSA and the Golden Apple Foundation prepare math and science teachers for Illinois schools, especially schools in need, through summer institutes at IMSA.

Golden Apple Scholars helps IMSA staff deliver math and science instruction to middle and high school students.



Math Learning Collaboration Network

IBHE Public Agenda GOAL 3:

Better integrate Illinois' educational, research, and innovation assets to meet economic needs of the state and its regions.

IMSA CoolHub and Professional Development support for ACIT Mathematics Learning Collaborative Network

With funding from ISBE six universities are collaborating on a summer workshop to prepare 50 teachers in high needs schools for teaching and assessing the Common Core Mathematics practices and standards. Dr.

McGee and IMSA staff will be teaching for the MLC.



IMSA Contributions to Goal 4

IBHE Public Agenda GOAL 4:

Better integrate Illinois' educational, research, and innovation assets to meet economic needs of the state and its regions.

We are expanding our reach in teacher professional development and STEM education programs.

- **Summer at IMSA**
- **Common Core Assessments**
- **Math Collaborative Network**
- **Statewide Student Initiatives**

We are developing innovation and entrepreneurial talent and capacity.

- **Illinois Innovation Talent Program**
- **Total Applied Learning for Entrepreneurs**
- **CoolHub**



Summer @ IMSA

IBHE Public Agenda GOAL 4:

Better integrate Illinois' educational, research, and innovation assets to meet economic needs of the state and its regions.

To “expand IMSA’s reach throughout the state in both teacher professional development and STEM education programs for students,” this summer we offer:

25 student programs for 1,450 students and 32 educator programs for 719 teachers in 13 different locations.

We are also piloting e-learning modules for high school biology students and middle school mathematics students and developing a student researcher class for teachers



Common Core Math Assessment

IBHE Public Agenda GOAL 4:

Better integrate Illinois' educational, research, and innovation assets to meet economic needs of the state and its regions.

In collaboration with the P-20 Council, ISBE, ICTM and IBHE (Director Reid pictured), IMSA convened 100 teachers from across the state to write high quality, 21st century sample assessment items for the Mathematics Common Core Practices.



Statewide Student Initiatives

IBHE Public Agenda GOAL 4:

Better integrate Illinois' educational, research, and innovation assets to meet economic needs of the state and its regions.

Hands-on STEM enrichment for 3rd through 9th graders

Summer camps around the state and weekend workshops at IMSA

Scholarships and web-based resources enable these programs to serve a diverse and eager community of learners.



Illinois Innovation Talent Program (ILIT)

IBHE Public Agenda GOAL 4:

Better integrate Illinois' educational, research, and innovation assets to meet economic needs of the state and its regions.

Real-world problem solving experiences for high school students through a partnership between schools, IMSA and business, government and communities.

This year, 1500 students and 51 industry partners across the state.

Funded by Illinois Department of Commerce and Economic Opportunity, Illinois State Board of Education and Illinois Biotechnology Industry Organization.

Total Applied Learning for ENTrepreneurs (TALENT)

Public Agenda GOAL 4:

Better integrate Illinois' educational, research, and innovation assets to meet economic needs of the state and its regions.

- Student entrepreneurship in a STEM context: idea → start-up
- On-campus, off-campus and virtual learning experiences to stimulate and encourage entrepreneurial projects by IMSA students and other teens.
- IMSA and 1871 have joined forces to develop digital entrepreneurial talent and start-ups.



CoolHub.IMSA

Public Agenda GOAL 4:

Better integrate Illinois' educational, research, and innovation assets to meet economic needs of the state and its regions.

Robust online platform for collaborative STEM projects innovation (now in Beta release)

Platform for ACI Mathematics Learning Collaborative for statewide teachers

International projects include the United Nations of Youth connecting seven of the top schools in the world and the SIR sustainable energy and water purification projects with IMSA, RDFZ, Beijing Normal University and Beijing University of Aeronautics and Astronautics.





Finland

Senator Durbin

Korea

Singapore

China

In 2012 we added Israel and Texas

Higher Education Partners (examples)

- Illinois universities providing SIR mentoring to develop research talent include UIC, NIU, Northwestern, the University of Chicago and North Central College
- National Louis University, Blackhawk Community College/SIU-E and IMSA collaborate to design and deliver Teacher Candidate Institutes
- Northwestern and IMSA partner in a national study on outcomes of STEM specialty schools for talented leaders and will be delivering a blended class for teachers desiring to develop SIR type opportunities in their schools and districts.
- University of Illinois at Urbana-Champaign, NIU and IMSA have developed and marketed Cool Hub

With strong support from IBHE and our Higher Education partners, IMSA advances our legislative charges and the Public Agenda. Let us find ways to do much more for Illinois' students so we can meet the 2025 goal and assure a bright future for our great state.

Thank you!

Visit us at www.imsa.edu