

BOARD OF HIGHER EDUCATION MEETING
September 6, 1994

COMMENTS - STEPHANIE PACE MARSHALL

Thank you, Mr. Quern, and Good Morning.

On behalf of the Board of Trustees, its President, Mr. Jim Pearson, and the entire IMSA staff, I welcome you to our pioneering educational community.

We are delighted you are here and appreciate your interest in and commitment to the Academy, as a unique and critical component of education in Illinois.

I would also like to welcome Dr. Wagner and his staff, our colleagues from higher education, and other friends of Illinois education who are with us this morning.

Although you are present on our **campus**, we hope that by the end of the day you will come to recognize IMSA as more than a place; it is also an idea and a promise; and in the words of Carl Sagan—a gift from the people of Illinois to the human future.

We are very proud of the Academy—its role in Illinois education, and its impact nationally; and we are grateful for the support of the General Assembly, and this **Board** to sustain this institution, and in so doing, honor our commitment to the future.

This fall marks the beginning of our ninth year. Although I wish to focus my comments on our present and our future, I do believe an important part of IMSA's remarkable story has been the context of our history over the last eight years.

Although most of us who have been at the Academy since our beginning in 1986, are feeling the effects of time, IMSA is still a very young enterprise.

When the Academy was officially created in 1985, and opened in 1986, it was expected to serve two primary goals:

- to provide an educational, social, and emotional climate in which students with exceptional aptitudes in mathematics and science could develop their intellectual talents, and

- to serve as a laboratory for the development, testing, and dissemination of innovative techniques in mathematics, science, and the humanities which could become a resource for teachers and students in Illinois and the nation.

Under the context and structure of our Strategic Plan, which has guided our evolution since 1988, we have integrated these two goals into our commitment to build the capacity of our students and our external partners by creating knowledge, designing strategies, and developing products and services to transform teaching and learning in mathematics and science through the forging and discovering of connections within and among mathematics, science, the arts and the humanities.

In so doing, we have tried to develop a learning community that is as organic, dynamic, adaptive, fluid and flexible as the nature of learning itself.

Institutions are complex systems; but as I think about their fundamental structures, it is useful for me to understand and assess them within three interdependent contexts:

- Institution as **Symbol**
- as **Substance**, and
- as **Soul**.

In my view it is the integration of these three contexts that captures the essence of

- institutional identity,
- institutional purpose, and
- institutional commitment.

Because I do not have the time to share all of the information I'd like, I've tried to summarize the most critical dimensions of IMSA's work and achievements within these three contexts.

As symbol, IMSA has become a national leader, not only in mathematics and science, but as a model of an authentic innovative, risk-taking learning *community* designed to foster the creation of meaning by facilitating integrative ways of knowing.

Because of our achievements and the achievements of our partners, but more importantly, because of the way we think and interact, because of the nature of the questions we raise, and because of the understanding we bring to information relationships and non-linear change within systems characterized by dynamic complexity, we have been invited into dialogues that will impact the reshaping of national policy and practice in education.

[Most recently, under the sponsorship of the ASCD International, the Academy is piloting our Integrative Learning System—a curriculum decision-making framework designed to promote integrative ways of knowing with fifteen school districts across the nation.]

The Academy opened one year ahead of schedule on September 7, 1986, with 210 sophomores. At that time, we had

- 21 courses
- 12 faculty
- No Books
- No Computers
- No Outreach Program, and
- No Residence Halls

Eight years later, in September, 1994, we have:

- A diverse student body of over 600; 21 percent of whom are members of underrepresented groups, and 46 percent of whom are female.
- Highly sophisticated Science, Mathematics, and Technology Laboratories that can access information from around the world through Internet
- A microwave telecommunications network through Waubensee Community College to disseminate IMSA courses to other high schools in a local area network and plans for statewide technology access that will enable **all schools** in Illinois to interact with students and staff at the Academy, and
- And numerous partnership initiatives impacting hundreds of teachers and thousands of students across Illinois.

Some of these partnership initiatives include:

Summer 'AD' Ventures Program for students in grades 7, 8, 9, and 10; grades 9 and 10 on campus of Eastern Illinois University - to date over 1100 students have participated.

A Scientific Literacy grant program for teachers and teams to fund the development and implementation of innovative ideas in mathematics, science and technology.

An Annual Leadership and Training Program in problem-based learning (part of our National Center for PBL).

Minority recruitment and retention programs in Chicago, East St. Louis, Joliet, Rockford, Springfield, and Aurora - over 1500 students have participated.

Fifty (50) Long-term partnerships focused on seven specific initiatives in mathematics, science, and interdisciplinary studies - initiated Integrated Science.

University Affiliates - develop partnerships with universities in Illinois to both attract IMSA students and improve mathematics and science in Illinois.

(Illinois State University, Eastern, Loyola, Northwestern, University of Chicago, University of Illinois)

In eight short years, the Academy has

- Graduated over 1000 students in six graduating classes, over half of whom attended institutions of higher learning in the state of Illinois.

And those students have been recognized for their accomplishments.

- One of our female students won the prestigious Westinghouse Science competition.
- Several members of our Charter Class won Rhodes, Marshall, and Luce scholarships.
- We've had the highest ACT score in the nation for the last four years
- Over 65 percent of our students are consistently National Merit Finalists or Semifinalists

- We are the only high school ever invited to participate in the national collegiate undergraduate research conference.
- One of our students was a member of the six-person International Mathematical Olympiad Team that won first place this summer, and
- One of our math faculty was a coach, as a result,
- We have been invited to host all future training summer programs of the U.S. Math Olympiad Team. (Now done at military academies.)

And in addition,

- Students annually contribute over 15,000 hours of community service to the citizens of Illinois, as a graduation requirement.

Despite what some would view as impressive achievements, the essence of IMSA, or our soul, really resides in our mission and beliefs—those statements of value and purpose that have explicitly guided our work since the approval of our Strategic Plan in 1988, by our Board of Trustees.

Although you have likely seen our mission statement in print, because of its power in driving our work, I would like to state it.

The mission of the Illinois Mathematics and Science Academy, a pioneering educational community, is to transform teaching and learning in mathematics and science by developing ethical leaders who understand the joy of forging and discovering connections within and among mathematics, science, the arts, and the humanities within an exemplary laboratory environment characterized by research, innovative teaching and service.

Because of our commitment to service, this statement is meant to describe not only the work of **IMSA the school**, but also the work of **IMSA the partner**, **IMSA the collaborator**, **IMSA the enterprise**, **IMSA the idea**, and **IMSA the promise**.

Despite its complexity, the work of the Academy is very focused. We are simply trying to create cognitive dissonance in the educational community by challenging the currently held assumptions about learning and teaching that have served as the foundation for the students of our present system.

By our own design, our Strategic Plan is holding us accountable not only to act in accordance with our beliefs and to realize our mission, but also to achieve three specific objectives that could lead to the improvement of mathematics and science in our state. They are:

- to create a generally accepted paradigm for teaching and learning mathematics and science that embodies interconnections as the basis for understanding.
- To impact in the creation of a new system of indicators to define and assess student achievement in mathematics, and science in Illinois..
- To develop, either on our own, or with our partners, innovative materials and methods that will become the choice of Illinois educators as the foundation of their mathematics and science programs.

Because of the context in which the Academy was created, we have been able to serve as an educational laboratory for Illinois, and to engage in serious inquiry about the issues of educational transformation in our state and our nation.

I want to thank you, as members of this Board, and as colleagues in higher education, for your support. We recognize your stewardship of the state's resources, and we share that commitment.

Since 1988, our strategic planning process has focused on the leveraging and reallocation of financial and human resources to the priorities of our mission and objectives, and we will continue in this process.

I would like to conclude by reading three comments; each of which underscores the need for and promise of IMSA. . .

The first comment is by a Summer 'AD'Ventures faculty member:

“The two weeks of the Summer 'AD'Ventures. . . program are my most rewarding (and learning!) experiences of the entire year! I only wish I had the degree of freedom, flexibility. . . and enthusiastic partners during the “regular” school year. For two weeks, I become completely immersed in being an integrative teacher, thinker and learner! This experience has reaffirmed in my mind that teaching is indeed the most noble of professions.”

The second is by a Superintendent:

"You have taken a dream for education in Illinois and made it reality. The East Dubuque School District, as you know, is located 20 minutes from the "Field of Dreams" and I do feel that the statement, "build it and they will come" applies to IMSA. Build programs and the students will come. Provide the mindware for the growth of a state, and business will come.

The Illinois Mathematics and Science Academy should be recognized as the research base for education in Illinois and the Academy's lead for quality should be mandated. A vision whose time has come!"

And the last comment comes from an IMSA Sophomore student's thinking log.

"I wish I could still draw. When I was in grammar school I used to draw pretty decently. I love to draw in pencil and chalk; art of all kinds intrigues me, but I also love music and painting, and carpentry and metalworking, and dancing, and sewing and embroidery and cooking.

I want to dance in my old ballet class, play my clarinet, draw thousands of pictures, (really good ones), create beautiful poems and pieces of woodwork, cook and sew for my children, decorate my home, have a good marriage, be an active volunteer, go to church, be an astrophysicist, go to Mars, and understand all my questions about life.

Now that's not too much to ask, is it?"

Much is being asked of this institution, not only to serve the unique needs of an extraordinary group of young people, but also to serve as a catalyst, a resource and an authentic model for the improvement of mathematics, science, and technology education across our state.

The idea of IMSA is to demonstrate that there is a way to create a learning community that fosters intellectual rigor, risk, inquiry, and creativity for students and adult learners, and in so doing liberates the human spirit.

These expectations and the highly visible and public arena in which they are addressed cause us to live with paradox, uncertainty and change. But, we take these expectations most seriously, and we do not think it is too much for you or the shareholders of Illinois to ask.

Thank you and welcome.