

THE STARS OF TOMORROW

IMSA FUND FOR ADVANCEMENT OF EDUCATION



1990-91 ANNUAL REPORT

 **IMSA**

ILLINOIS MATHEMATICS AND SCIENCE ACADEMY

*IMSA Fund for Advancement of Education*

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1990-91

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MISSION

*The mission of the Illinois Mathematics and Science Academy, a community of scholars dedicated to intellectual exploration, is to develop leaders who know the joy of discovering and forging inter-connections among mathematics, science, the arts and the humanities, and who, by example and by instruction, inspire others to live in harmony with themselves, other human beings and the physical world.*

Dear Shareholders of the IMSA Fund for Advancement of Education,

It is a privilege for me, as president of the IMSA Fund board of directors, to share with you a copy of the first annual report of the IMSA Fund for Advancement of Education.

In previous years, as you may recall, the Illinois Mathematics and Science Academy's annual report included information about the IMSA Fund and its donors. With the significant growth in the number of donors and programs these external contributions support, the IMSA Fund will, from this point on, have its own annual report specifically designed to illustrate the critical role the private sector plays in ensuring the success of the Illinois Mathematics and Science Academy.

The IMSA Fund for Advancement of Education, a not-for-profit corporation, enlists investments of corporate, foundation and individual donors in the Illinois Mathematics and Science Academy. These investments support curriculum development projects, statewide outreach programs, minority recruitment programs, laboratory equipment purchases, facility enhancements, special student activities such as the US-USSR High School Academic Partnership Program, and a permanent endowment.

In 1990-91, the addition of nine new board members representing major corporate and community leaders from throughout Illinois enabled us to make significant progress in increasing awareness of IMSA and securing support for its programs. IMSA Fund board members hosted informational meetings for



*“Hitachi’s generous support of IMSA’s Science, Society and the Future curriculum project has enabled us to test the effectiveness of problem-based instruction with high school students. We are delighted that it is proving to be a very successful way of helping students develop their problem-solving skills.”*

William J. Stepien  
SSF Project Director  
Social Science Teacher

Dr. David Workman  
Science Team Leader  
Physics/SSF Teacher



business and corporate leaders in Chicago, Springfield and Bloomington; a reception for IMSA’s commencement speaker, Dr. Frank Press, president of the National Academy of Sciences; and an open house for the Aurora community. In addition, the IMSA Fund completed a comprehensive philanthropic market study which indicated the feasibility of raising a minimum of \$6.7 million by 1995.

At this time, I am delighted to report that 1990-91 was a record year for the IMSA Fund, thanks to the able leadership of its dedicated board of directors and to the outstanding commitment of you, the friends and supporters of the Illinois Mathematics and Science Academy. In this annual report, it is my privilege and pleasure to share with you some of the highlights.

Sincerely,

James R. Thompson  
President, Board of Directors  
IMSA Fund for Advancement of Education

## 1990-91 AT A GLANCE A SAMPLING OF HIGHLIGHTS

### ***Building a Strong Foundation***

- Expansion of the IMSA Fund board of directors (nine new members)
- Completion of a philanthropic market study
- Completion of a case statement for private sector support
- Addition of two staff positions, supported by the IMSA Fund, to strengthen the Academy’s institutional advancement program
- Establishment of a permanent endowment
- Implementation of friendraising events to increase awareness and understanding of IMSA in the business/corporate community

### ***Increasing Private Sector Support***

- \$779,500—a 42% increase in total monetary support
- 606 donors—an 18% increase in the number of donors
- \$357,000 in corporate giving—a 24% increase
- Two major national foundation grants: \$250,000 from the Alfred P. Sloan Foundation and \$150,000 from the Toyota USA Foundation
- A 50% increase in the number of IMSA faculty and staff donors
- Gifts of \$74,800 from 18 members of the IMSA Fund board of directors

*“Increasing the number and competitiveness of black and Hispanic students who apply and are accepted to IMSA continues to be a high priority for us. With the generous support of the Sloan Foundation, we now will be able to expand our minority recruitment efforts beyond Chicago to other parts of Illinois.”*

Dr. LuAnn Smith  
Director of Admissions

## 'MARGIN OF EXCELLENCE' CONTRIBUTIONS SUPPORT INNOVATIVE IMSA PROGRAMS



### **Curriculum Development**

- In 1990-91, IMSA released the results of its first research studies on problem-based instruction, a unique approach used in the Academy's Hitachi-funded Science, Society and the Future (SSF) course. In SSF, students use the facts and ideas of science and social science to confront ethical questions and implications inherent in making public policy decisions about controversial issues.

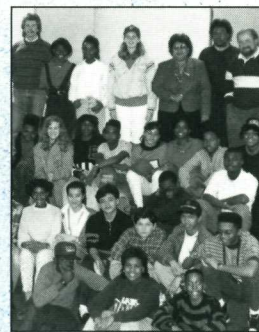
Studies showed that SSF students become better problem-solvers than their peers who do not take the course. Specifically, they were significantly more likely than other IMSA students to include careful problem definition as a part of their problem-solving and to expand the number of ethical appeals they consider when confronted with a moral dilemma.

Part of the Hitachi Foundation grant is being used to help other schools begin experiments with problem-based instruction. In 1990-91, IMSA sponsored a conference in problem-based learning for other Illinois teachers and students, and began helping teachers at John Hersey High School in Palatine develop instructional materials in problem-based learning for use in their school.

- As one of 20 U.S. high schools named a "Ford Model School," IMSA was selected to host two resource teachers/curriculum development consultants from the Soviet Union in 1990-91. The purpose of the program, sponsored by the American Council of Teachers of Russian/Ford Foundation Program for Russian in the Schools, is to help U.S. students increase their knowledge of the Russian language and culture, and to help U.S. teachers develop and improve teaching materials and techniques. Alexander Rafienko and Tatiana Vlasova each spent a semester at IMSA teaching classes and helping the faculty refine the Academy's immersion approach to foreign language instruction.

### **Minority Enrichment/Recruitment Programs**

- The Alfred P. Sloan Foundation awarded IMSA a grant of \$250,000 to help increase black and Hispanic representation in the Academy's student body by 1994. The IMSA-Sloan Challenge Program will involve black students from East St. Louis and Hispanic students from Aurora/Joliet. The students will participate in Saturday and summer programs for three years (grades 7-9) and will be eligible to apply for admission to IMSA in 1994.
- In addition, IMSA continued to expand minority recruitment programs under way in the city of Chicago, thanks to support from the Albert Pick Jr. Fund, Lloyd A. Fry Foundation, Ford Motor Company, Illinois Bell and Northern Illinois Gas.



### **Equipment**

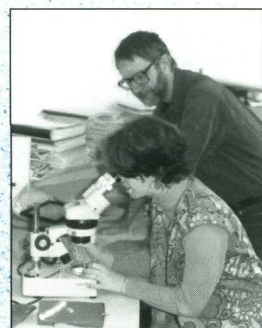
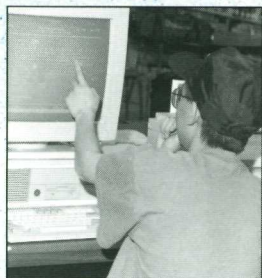
- The Toyota USA Foundation awarded IMSA a grant of \$150,000 to equip its video production laboratory over a three-year period. The lab will support video assessments of students' oral communications skills, clinics for teachers to assess their own performance, distribution to other schools of guest lectures and IMSA courses, tutorial videos for staff training, and a student-produced television show.
- University Microfilms, Inc., a division of Bell & Howell Company, donated the *ProQuest* system, giving students instantaneous access to up-to-date articles and illustrations from 150 magazines and journals. The equipment, valued at \$14,000, includes computer terminals and printers that can make high quality copies of articles, maps, graphs and other illustrations.
- A gift of \$5,000 from Rockwell International supported the purchase of equipment for IMSA's resident scientist program. The Academy's full-time resident scientist engages students in high-level research above and beyond opportunities provided by the curriculum.

### **Special Student Activities**

- For the second consecutive year, the Mayer and Morris Kaplan Foundation gave \$15,000 to support IMSA's mentorship program. In mentorship, students develop learning contracts for work on site with scientists and researchers at Argonne National Laboratory, Cargill Hybrid Seed, Federal Reserve Bank, Fermi National Accelerator Laboratory, Field Museum, Illinois Institute of Technology, IMSA, Loyola University, Loyola University Medical Center, Northern Illinois University and Willowbrook Wildlife Haven.
- Also for the second consecutive year, IMSA students and students from School 36 in Rostov-on-Don, USSR, participated in the US-USSR High School Academic Partnership Program. Private sector support enabled ten IMSA students to travel to Russia for two weeks; they attended classes at School 36, lived with Russian families and visited various historic sights.
- Once again, the IMSA Fund supported a very special, formal graduation ceremony for IMSA seniors. The event, held at Aurora's Paramount Arts Centre, featured commencement speaker Dr. Frank Press, president of the National Academy of Sciences in Washington, D.C. The IMSA Fund also hosted a business/corporate reception for Dr. Press in Chicago the evening before graduation.
- IMSA students enjoyed talks by area scientists as part of the "Speakers in Science" program supported by IMCERA.

*"We recognize that a healthy, well-educated community creates a healthy and competitive business environment. The Illinois Mathematics and Science Academy is a leader in providing progressive, innovative education. We are proud to support IMSA in its efforts to enrich the educational experiences not only of its own students, but of students and teachers throughout Illinois."*

**Yale Gieszl  
Senior Vice President  
Toyota USA Foundation**



*“Mentorship gives me time to get away from my regular school work and dig into the research. I enjoy discussing experiments with Dr. Mitchell and doing research in a college lab.”*

Waheeda Shaikh  
IMSA Student

Mentor: Dr. John Mitchell, professor of biological sciences and chemistry, Northern Illinois University

### **Statewide Programs/Outreach**

- A \$15,000 grant from the Amoco Foundation supported the development and implementation of IMSA's new systemic change initiative, District Learning Leadership Teams. This initiative involves a system-wide restructuring and change process. Participating school district leadership teams focus on changes in curriculum, instruction and assessment in mathematics and science education, and the integration of the two disciplines with other areas of study. The Amoco Foundation grant supported IMSA's work with elementary schools in Chicago.
- Continental Bank became the first corporate partner in the statewide IMPACT II program administered by IMSA. IMPACT II promotes excellence in elementary and secondary education by recognizing, rewarding and networking creative teachers. Disseminator grants enable teachers to share their successful programs with colleagues through annual catalogs, workshops, conferences and interschool visits. Adaptor grants are awarded to teachers who want to use the programs in their classrooms. Continental Bank underwrote five adaptor grants for Chicago mathematics and science teachers in the Orr School Network.
- The Aurora Foundation supported a collaborative program between mathematics teachers at IMSA and in the Aurora East and West School Districts. The program was designed to promote the use of technology in the classroom.

### **Faculty/Staff Development**

- With support from IMSA faculty and staff gifts, matched by the IMSA Fund, an Innovations and Initiatives Grants program was established to help staff members implement creative ideas that support IMSA's mission. This program is open to all IMSA employees.

### **Permanent Endowment**

- An individual donor, who wishes to remain anonymous, gave \$15,000 to establish the James R. Thompson Leadership Fund. This permanent endowment fund will support special programs on leadership and ethics for students, faculty and staff. The first Thompson Leadership Lecture, scheduled for October 2, 1991, will feature world-renowned astrophysicist Dr. Carl Sagan.
- Permanent endowment funds were established in memory of Richard Horwitz (1947-1990) and Chuck Aaron (1971-1989). The first supported the establishment of the Richard L. Horwitz Memorial Lecture that will focus on the implications of ethics in science, and the second supported inner-city students' participation in IMSA Summer 'AD' Ventures. Horwitz was legal counsel for the Academy from 1985-1990, and Aaron was a member of IMSA's Charter Class of 1989.

## **FROM THE EXECUTIVE DIRECTOR**

Dear Members of the Council for Educational Distinction in Illinois,

On behalf of the board of trustees, faculty, staff and students of the Illinois Mathematics and Science Academy, it is my privilege to express our gratitude to you, our donors, for your most generous support of the Academy in 1990-91. Your investments have enabled IMSA to pilot new programs, both internal and external, as well as expand existing ones. "Margin of excellence" resources from the private sector are helping to ensure IMSA's continuing development as one of the premier institutions of its kind in the nation.

As we look to the future, I am optimistic. The Academy's revolutionary strategic plan represents our commitment to fundamental changes in curriculum, assessment and instruction. We are restructuring curriculum so that students explore key concepts in-depth rather than just memorize facts from a textbook. Faculty are piloting the use of thinking logs, learning journals, portfolios, videotapes of student presentations and student self-assessments—authentic measures that de-emphasize reliance on grades and test scores. A teacher's role in the classroom is changing too—to that of coach and mentor, rather than lecturer. In other words, teachers are being asked to facilitate discovery, not impart facts.

At the same time, the strategic plans call for continued growth in external programs, statewide initiatives and partnerships with other educators, business and research leaders in Illinois—partnerships designed to enhance mathematics, science and technology education for all students.

All of these strategic initiatives are congruent with—and in many cases go even further than—the recommendations to improve American education provided by President Bush's America 2000, Arthur Andersen's 14 Points and the Business Roundtable Agenda.

For the IMSA community, the strategic plan has come to represent a journey of "re-creation toward extraordinary purpose." We look forward to our continuing journey and to forging even stronger partnerships with you, our donors. Thank you for sharing our vision and for believing in the promise of the Illinois Mathematics and Science Academy.

Sincerely,

Stephanie Pace Marshall, Ph.D.  
Executive Director







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