



# RESEARCH

*i n n o v a t i v e*

# TEACHING

*a n d*

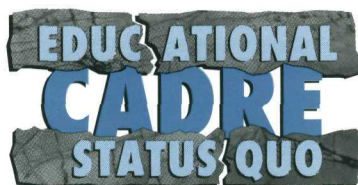
# SERVICE



# highlights and SPECIAL EVENTS

## FALL

The IMSA faculty began implementing CADRE (Career Development Reinforcing Excellence), a bold new system of professional accountability and development for teachers. Throughout the year, IMSA responded to numerous state and national inquiries about CADRE.



### School-based Partnerships

IMSA began working with 50 Illinois K-16 schools in focused partnerships to transform mathematics and science teaching and learning. Partnership themes included authentic assessment, problem-based learning, gender issues and other topics.

### Fourth Annual James R. Thompson Leadership Lecture

Dr. Sally Ride, the first American female astronaut to travel in space, presented *The U.S. Space Program: Pioneering the Future* to an audience of more than 2,000 including students and teachers from more than 60 Illinois schools. (see photo)

### National Merit Scholarship Corporation

101 IMSA seniors (58%) qualified as semifinalists or received letters of commendation in this annual competition.

### American College Test (ACT) Exam

*The Beacon-News*, Aurora, reported that IMSA's Class of 1994 led the nation with an average score of 31.0. This was the fifth consecutive year it was reported that IMSA led the nation on the ACT exam.

### Illinois Board of Higher Education Meeting

IMSA hosted the September meeting of the Illinois Board of Higher Education. Following the meeting, board members attended a luncheon and toured the Academy with students.

## WINTER

### Results of Calculus-based Physics Exploratory Study

IMSA released the much-anticipated findings of this study which explored strategies for enhancing the participation and success of female students. The study was cited by numerous organizations. IMSA staff also presented it at a luncheon for women legislators in Springfield.

### Alfred P. Sloan Foundation Grant

IMSA received a three-year \$240,000 grant to support expanded recruitment and retention programs at the Academy for underrepresented minority students.

### 1994 Knowledge Master Open

A team of 16 IMSA students finished first in Illinois and third in the nation in this competition which covered 15 curriculum areas.

## SPRING

### Record Number of Applicants

IMSA received a record 948 applicants from 420 schools for IMSA's tenth sophomore class, the Class of 1998. A total of 241 students were invited to enroll.

### Fourth Annual Richard L. Horwitz Lecture on Ethics

Former Chicago Bear Mike Singletary presented *Whatever Happened to Conviction?* to IMSA staff, seniors, alumni, friends and family of Richard Horwitz, and the public.

### **Ameritech Teleconference**

IMSA economics students participated in Ameritech's annual meeting in Chicago through interactive teleconferencing from IMSA's Toyota Video Production Laboratory. During the meeting, Ameritech Chairman and Chief Executive Officer Richard Notebaert answered questions from IMSA students.

### **International Bridge-Building Competition**

An IMSA student took first place in the Illinois Institute of Technology's International Bridge-Building Competition.

## **SUMMER**

### **The Wall Street Journal**

IMSA was featured on the June 8, 1995, cover of *The Wall Street Journal* in an article on math and science academies.

### **Alumni Open House**

IMSA hosted the first Alumni Open House for members of the Classes of 1989-1995. More than 200 graduates attended the event and participated in numerous activities including selection of officers for the IMSA Alumni Association.

### **Summer Service Initiatives**

IMSA hosted hundreds of Illinois students and teachers during numerous statewide service programs including Summer 'AD' Ventures in Mathematics, Science and Technology; Harris I and II Problem-Based Learning Institutes; and workshops on topics such as integrative mathematics. (*see page 11*)

### **IMSA Partners in Learning Conference**

Approximately 200 of IMSA's 1994-95 education partners presented the products of their partnerships with IMSA at this annual conference.

### **1995 Mathematical Olympiad**

#### **Summer Program**

IMSA hosted 24 of America's top mathematics students for the month-long program, which was directed by an IMSA mathematics teacher. The program featured lectures and tests in advanced mathematics, as well as training for the International Mathematical Olympiad.

### **Commencement of the Class of 1995**

Dr. Larry Smarr, director of the National Center for Supercomputing Applications, gave the commencement address on June 3 to IMSA's seventh senior class at Aurora's Paramount Arts Centre.





# *institutional and program-based* ACTION RESEARCH

**IMSA** conducts research on its students/ graduates, innovative teaching programs and work with other schools and teachers to assess the effectiveness of the IMSA experience. Results of institutional and program-based research provide a foundation for program evaluation and future planning, and inform and assist other educators in Illinois and beyond.

*Highlights in 1994-95 included:*

## INSTITUTIONAL RESEARCH

### Longitudinal Study of Graduates

*The Longitudinal Study of Graduates captures the effects of IMSA's academic and residential programs on its students.*

**The Class of 1990 Longitudinal Study** (conducted during students' senior year in college) indicates that IMSA's Class of 1990 graduated from college with an extensive record of academic achievement, community service, political involvement and scholarship awards, with 62% having engaged in independent research as part of their undergraduate experience.

Results also show 50% of IMSA's Class of 1990 earned degrees in science compared to the

national norm of 21% and 44% of the female graduates earned degrees in science compared to the national norm of 16%.

**The Class of 1993 Longitudinal Study** (conducted during students' freshman year in college) indicates that IMSA's Class of 1993 credited IMSA with fostering the development of their critical and creative thinking, ethical decision-making and ability to conduct research. IMSA's Class of 1993 specifically identified the inter-relationship of courses and the development of questioning skills as examples of how IMSA prepared them for college.

Results also show 87% of IMSA's Class of 1993 planned to pursue a graduate degree and 86% noted that IMSA's residential component was valuable to their academic growth. The major reasons cited were the total immersion, growth in responsibility, accessibility to teachers and friends, learning together and the free exchange of stimulating ideas.

### Impact Report and Study

*The counterpart to the Longitudinal Study of Graduates, the Impact Study captures the effects of IMSA's external work with Illinois educators toward achieving the Academy's mission and*

*objectives. The Impact Report, which informs the broader Impact Study, was conducted in 1994-95 to capture the effects of IMSA's K-16 school-based pilot partnership project with 150 Illinois educators representing 30 schools.*

During the year, these "Illinois Partners in Learning" addressed themes such as "Problem-Based Learning Applications in Mathematics and Science," "Integrated Science" and "Interdisciplinary Learning Experiences Involving Mathematics, Science and Technology."

The partnerships focused on the transformation of mathematics, science and technology teaching and learning in Illinois. All partnerships demonstrated impact in the areas of teacher, student or organizational growth.

**The Impact Report** indicates there was significant benefit to teachers in the areas of knowledge, skills and disposition. Evidence of this includes the development of more authentic assessment measures, interdisciplinary units of instructions, computerized instructional programs, integrated science courses and an improved understanding of and ability to apply a problem-based learning approach.



## PROGRAM-BASED ACTION RESEARCH

### Calculus-Based Physics Exploratory Study

*The Calculus-Based Physics Exploratory Study, conducted in 1993-94, explored how student-teacher, student-student, and student-content interactions influence learning. Findings were released in the fall of 1994.*

The study examined three coed and one all-girls section of the course for the first semester. All sections were coed for the second semester.

### The Calculus-Based Physics Exploratory

**Study** indicates that females in the single-gender section demonstrated significantly higher gains in self-confidence than did females in the coed sections; more females enrolled in and successfully completed the first and second semester courses than ever before; and the teacher of the all-female section increasingly reexamined and modified his behavior, enabling students to acquire experiences that are fundamental to a deeper understanding of advanced physics.

### Integrated Science Exploratory Study

*The Integrated Science Exploratory Study was designed to identify differences in performance between students who had completed two semesters of the Integrated Science course and students who had completed sophomore chemistry and sophomore physics.*

IMSA students have the opportunity to enroll in either separate courses in chemistry, physics and biology, or Integrated Science, a pilot interdisciplinary program that integrates content from chemistry, physics, biology, earth science and technology. Integrated Science is structured around a series of "problem platforms" which provide authentic scenarios.

### The Integrated Science Exploratory

**Study** indicates that Integrated Science students performed as well as students in the sophomore physics and chemistry courses, on a common, pencil and paper, free-response, problem-solving exam on a measure of their content area knowledge and critical thinking skills.

In addition, a review of the data suggests that placing students in their desired classes (either Integrated Science or sophomore physics and

## CLASS OF 1990 LONGITUDINAL STUDY RESULTS

- 50% of IMSA graduates earned degrees in science compared to the national norm of 21%.
- 44% of IMSA female graduates earned degrees in science compared to the national norm of 16%.
- A significantly higher percentage of IMSA graduates majored in mathematics and science than the national norm.
- IMSA graduates showed a strong inclination toward social service and philanthropic organizations, citing volunteer activities as a source of pride and growth in leadership qualities.
- 62% of graduates said IMSA improved their critical thinking ability "a lot" while only 15% of the comparison students said their high school improved their critical thinking to the same degree.
- IMSA graduates rated the quality of their IMSA instructors and instruction much higher than comparison students rated their instructors and instruction.
- A significant number of IMSA students graduated with degrees in multidisciplinary or cross-disciplinary fields such as psychobiology and biophysics.

chemistry courses) resulted in higher scores on this measure. However, when students desired to be placed in sophomore physics and chemistry courses and were instead placed in Integrated Science, their resulting scores were lower than those students placed in their desired classes.

**For more information about research initiatives, call (708) 907-5070.**



# T *integrative* TEACHING AND LEARNING

*IMSA offers advanced courses and other learning experiences in mathematics, science, the arts and humanities, with an emphasis on connections within and among the disciplines. Students learn how to integrate content and skills, demonstrating broad knowledge of important concepts. This teaching approach focuses on the quality of understanding rather than the quantity of information.*

*Like IMSA's academic program, the residential life program connects with the mission of the Academy and has specific student learning outcomes. The three-year residential life curriculum is organized around concepts such as community, communication, self awareness, personal accountability, wellness, relationships and diversity.*

*Highlights in 1994-95 included:*

## ACADEMIC PROGRAM

### Integrated Science

Students in this interdisciplinary program learn and integrate content from chemistry, physics, biology, earth science and technology instead of taking separate courses in chemistry, physics and biology. Integrated Science more closely mirrors the real scientific world and helps students learn how to "think scientifically" rather than just "learn science," unlike conventional science

instruction which is still largely textbook-based and textbook-dependent in many American schools. Integrated Science is structured around a series of "problem platforms" which provide authentic scenarios, not constrained by traditional discipline boundaries.

### STUDENT INVESTIGATION INCLUDED

- *a call for bids on the construction of a Mars base for human habitation* (supporting content includes mechanics, thermodynamics, chemical change and metabolism)
- *the design and assessment of a protection program for endangered animal species* (supporting content includes genetics, population dynamics, energy supplies and energy wastes, nuclear processes and geological structures)

### Collaborative Visualization (CoVis)

Students who use this learning tool create their own knowledge and display it visually to others and themselves. The CoVis project, piloted in Geophysics, Astrophysics and Observational Astronomy, is an example of how IMSA embeds technology into curriculum, instruction and assessment. CoVis provides students with a "collaboratory" workbench that includes desktop video conferencing, shared software environments for remote, real-time collaboration

with peers and scientists, access to Internet resources, a multimedia scientist's notebook, and scientific visualization software.

### STUDENT INVESTIGATION INCLUDED

- *the download of real-time weather data via the Internet* into visualization software to analyze weather data and explore the physics of weather phenomena such as hurricanes
- *the encounter of abstract situations such as wave theory*; and through visualization, generate, transpose, analyze and discover phenomena such as the greenhouse effect

### Mentorship

Students in this research program conduct on-site research throughout the year with scientists and scholars in corporations, educational institutions and laboratories in the Chicagoland area. Students engage in various research activities including proposal writing, observation and documentation, experimentation, theory generation, collaboration and presentation. Students are paired with mentors based on their research interest.



#### STUDENT INVESTIGATION INCLUDED

- *Epstein-Barr Virus: The Role of CD 45 in Lymphoma Development*
- *Blink Conditioning in Aging Mice: Modeling Alzheimer's Cognitive Deficits*
- *Classification of Galaxies by Computer Analysis of CCD Imaging Data*

#### Mathematical Investigations

Students in this interdisciplinary program learn and integrate content from all areas of pre-calculus including algebra, geometry, trigonometry and number theory. In addition, students apply knowledge from other fields including physics and chemistry while solving problems. The MI curriculum emphasizes reasoning, problem-solving, connections and communication. Students explain, justify, defend and write their arguments for mathematical assertions.

#### STUDENT INVESTIGATION INCLUDED

- *weekly problem sets that include a series of 30-40 problems focusing on multiple concepts which reinforce past and current material in addition to laying the foundation for future material. The concepts are introduced in slow stages and often are not a specific topic for classroom discussion.*

#### Wellness

Students in this interdisciplinary program learn and integrate content from health, physical education and life skills. Students learn how to take responsibility for their social, emotional, physical, mental and philosophical/spiritual well-being through the practice of wellness activities. Wellness, a positive approach to living which emphasizes the whole person, is consistent with many of IMSA's Belief Statements including "a good life is characterized by harmony among the emotions, the body, the intellect, and the spirit."

#### STUDENT INVESTIGATION INCLUDED

- *the development of an individualized exercise program or independent pursuit of a lifetime physical activity*
- *the regular implementation of time/ stress management and decision-making strategies*

#### Problem-Based Learning (PBL)

Students who use this interdisciplinary educational approach gather and apply knowledge from multiple disciplines in their quest for solutions to "messy" real-world problems. Guided by teachers who facilitate learning, students develop critical thinking, problem solving, and collaborative skills as they identify problems, formulate hypotheses, conduct

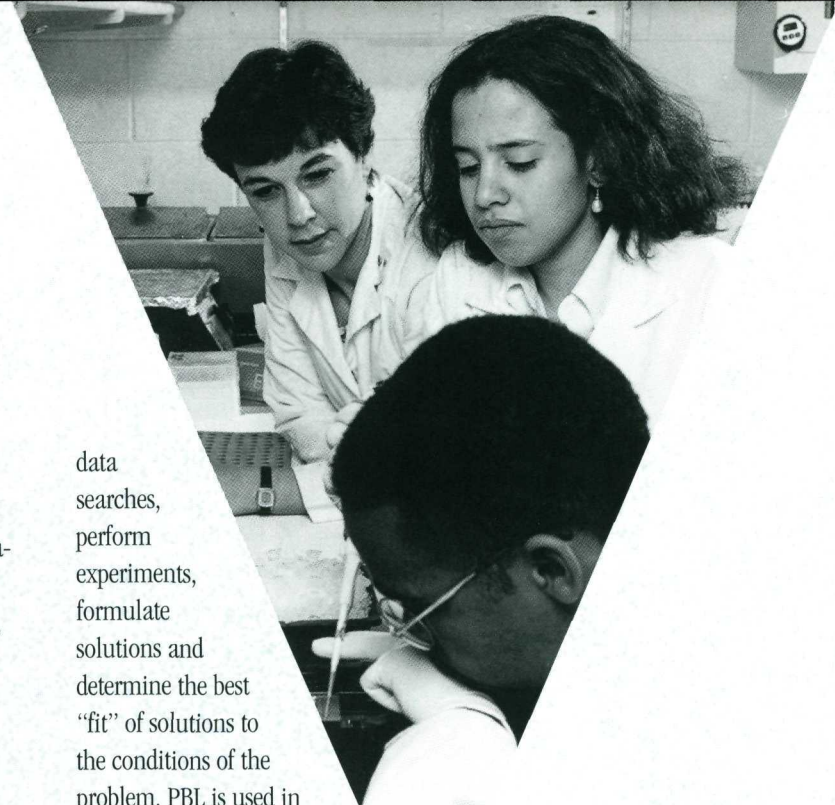
data searches, perform experiments, formulate solutions and determine the best "fit" of solutions to the conditions of the problem. PBL is used in various IMSA classes including *Science, Society and the Future, Biophysics, Ecology and Genetics*.

#### STUDENT INVESTIGATION INCLUDED

- *cystic fibrosis and gene therapy*
- *the reintroduction of the wolf into Yellowstone National Park*
- *the social and ethical implications of genetic engineering and experimentation*

#### CADRE

IMSA teachers using this new system of professional accountability and development are responsible to each other and the institution for improving student learning and professional practice, and developing products and services





## TEACHING AND LEARNING (CONTINUED)

for external sharing. At the heart of CADRE are the teachers' "plans for authentic inquiry" which add to their classroom role the roles of learner, researcher, creator of new knowledge, and teacher of teachers. The primary components of CADRE include ongoing dialogue, action research and authentic assessment.

### TEACHER INVESTIGATION INCLUDED

- the creation of *American Studies multi-media units*
- research on the reliability and validity of *alternative assessments* and use of that knowledge to design and implement more effective assessments of student learning in core mathematics courses
- the creation of a *biochemistry course using problem-based learning*

## RESIDENTIAL AND SUPPORT PROGRAMS

### Educational Programming

Students participated in a number of on-campus educational programs during the year including: the first annual campus wide celebration of *Women's History Month*; activities to heighten awareness of the historical and international significance of genocide during *Holocaust Memorial Week*; and activities to heighten awareness and promote education about HIV/AIDS during *HIV/AIDS Awareness Week*.

### Campus/Community Service

Students fulfilled on-campus work service and off-campus community service requirements by serving in a number of volunteer roles including: tutoring students at four elementary schools in Aurora; working on the "Teen Talk Line" of the *Crisis Line of the Fox Valley*; and assisting in various program areas on-campus including the *Computer Resource Center* and *Office of Institutional Advancement*.

### Academic and Personal Support

Students participated in a number of academic and personal support services on-campus including: study groups organized by the *Strategies for Success Center* to help strengthen study skills; a *Mini-Snowball Retreat* to explore topics such as how to help others make healthy, informed decisions; a *Peer Mediation Program* to enable students to help resolve conflicts among fellow students; and *college/career counseling* which included a career exploration session with representatives from 15 professional organizations at College Information Day.

### Wellness and Recreation

Students enjoyed a number of wellness and recreational activities including: off-campus trips to movies and plays including "*Les Miserables*" in Chicago, and sporting events including a *Chicago Bulls basketball* game and *Chicago Wolves hockey* game; on-campus activities including an *International Celebration*, *Parent Potlucks* and *Sibling Weekend*; and participation in 18 interscholastic sports and 36 cocurricular groups. Students also enjoyed the use of the *Titan Fitness Center*, *gym* and *pool*.





## STATEWIDE RECRUITMENT

### On-Campus Recruitment

Admissions staff conducted numerous on-campus recruitment activities to educate prospective students and parents about IMSA's academic and residential programs including: two *Visitor Information Program Days* which were attended by more than 1500 people; a *Special Introduction to Academy Life* which was attended by 140 parents and 74 students who applied as eighth graders and were encouraged to re-apply as ninth graders; *Project School Visit* which was attended by 12 schools from Chicago, Joliet, Elgin and Aurora; and *Junior Scholars* which was attended by 70 Illinois seventh and eighth graders and 110 of their parents.

### Off-Campus Recruitment

Admissions staff conducted numerous off-campus recruitment activities to promote education about IMSA's academic and residential programs including: 50 *Statewide Informational Meetings* which were attended by prospective students, parents or interested community members from throughout Illinois; 10 *Chicago Elementary District Science Fairs* which were attended by admissions

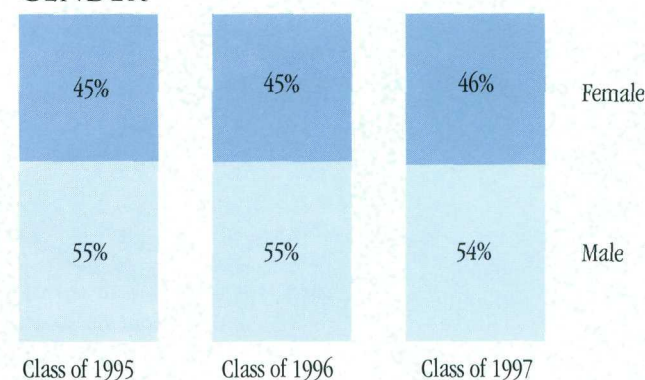
counselors who met with award-winning seventh and eighth grade science students and their families; and 39 *SAT testing sites* which were sponsored by IMSA and held at public facilities throughout Illinois to help make testing convenient for students and their families.

### The Early Involvement Program

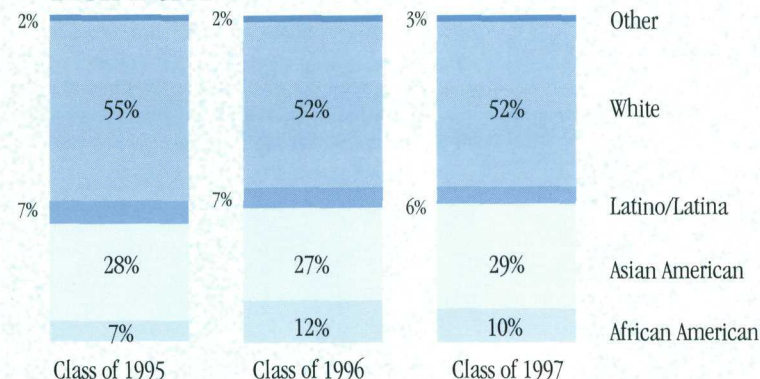
Admissions staff coordinated this program which was held at IMSA and Loyola University-Water Tower Campus for 53 ninth graders from under-represented groups from Chicago, Aurora, Elgin and Joliet. Saturday sessions included "hands-on" and group problem-solving activities as well as some preparation for the Scholastic Aptitude Test. Students learned how to design, build and maintain a city using a computer simulation software program. In addition, EIP students and their parents attended a retreat at IMSA.

## 1994-1995 STUDENT DEMOGRAPHICS

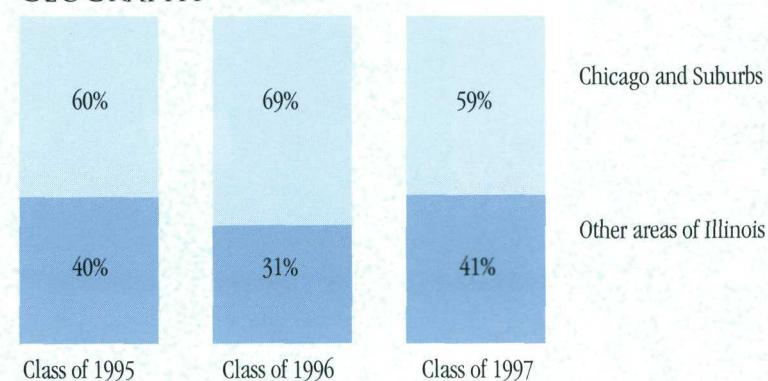
### GENDER



### ETHNICITY



### GEOGRAPHY





# Statewide SERVICE

*IMSA offers numerous statewide services for teachers throughout Illinois and the nation including school-based partnerships, professional development programs, electronic professional development and learning initiatives, professional development institutes/conferences and various hands-on materials. IMSA also provides innovative learning experiences for students throughout Illinois.*

*Highlights in 1994-95 included:*



## SCHOOL-BASED PARTNERSHIPS

### Illinois Partners in Learning

Fifty K-16 schools throughout Illinois participated in this pilot partnership project to focus on the transformation of mathematics, science and technology teaching and learning in Illinois. Partner schools met regularly with IMSA staff to collaborate and address themes such as "Integrated Science," "Problem-Based Learning Applications in Mathematics and Science," and "Interdisciplinary Learning Experiences Involving Mathematics, Science and Technology."

### TEACHER/STUDENT INVESTIGATION INCLUDED

- *a science/English wolf unit* about their habitats, predator-prey relationships, data collection and analysis, the scientific method, personification, characterization and skit-writing
- *the development of computer hypercard stacks* for use in introducing new students to school programs
- *the ecological implications of water pollution*

### ISBE Service Learning Project

Nine schools from Aurora, Batavia, Chicago, Chicago Heights, Freeport and Springfield received staff development in problem-based learning from IMSA as recipients of Illinois State Board of Education's service learning grants.

### TEACHER/STUDENT INVESTIGATION INCLUDED

- *the ecological and social implications of building a landfill* in their respective communities

## PROFESSIONAL DEVELOPMENT PROGRAMS

### IMPACT II

More than 1,000 Illinois mathematics and science teachers have received awards through the IMPACT II program since 1990 and more than 32,000 Illinois students have been served. IMPACT II, a national program, promotes excellence in elementary and secondary education by networking teachers and their innovative ideas. Illinois' program, administered by IMSA, is the only one in the U.S. to focus on improving mathematics and science teaching and learning.



#### TEACHER/STUDENT INVESTIGATION INCLUDED

- *the properties of motion* through 15 different hands-on classroom activities
- *the application of electronics* through the development of a sound-operated robot
- *the application of geometry* through the development of a landscape plan

#### Summer 'AD' Ventures

Illinois teachers learn how to design, develop and deliver discovery-based, integrative learning experiences involving mathematics, science and technology for students in grades 7-10.

#### TEACHER/STUDENT INVESTIGATION INCLUDED

- *the application of astronomy* through *sun dial experiments*
- *the application of chemistry and ecology* through *water quality experiments*

## PROFESSIONAL DEVELOPMENT INSTITUTES/ CONFERENCES

#### Neison and Bette Harris Institute on Problem-Based Learning

Teachers from Illinois and other states attended this summer workshop which provided them with instruction, guided practice, mentoring opportunities for dialogue in designing PBL curriculum and developing implementation strategies. In addition, Illinois teachers involved with IMSA's Center for Problem-based Learning attended another workshop for training in working as staff developers in PBL or becoming master PBL teachers in their own classrooms.

#### TEACHER/STUDENT INVESTIGATION INCLUDED

- *overcrowding and fiscal constraints in a school district*
- *medical waste incineration*
- *substance testing policies in schools*



#### 1995 Illinois Partners in Learning Conference

Educators from throughout Illinois who were involved in school-based partnerships with IMSA in 1994-95 presented the initial results of their action research and products of these collaborations at this annual conference. All of the partnerships were designed to transform teaching and learning in mathematics and science.

#### TEACHER/STUDENT INVESTIGATION INCLUDED

- *physical science/algebra integration*
- *problem-based learning applied to an ecosystem study*
- *the exploration of gender equity issues in a K-8 district*



## ELECTRONIC PROFESSIONAL DEVELOPMENT AND LEARNING INITIATIVES

### Mathematics Workshop for Teachers

Mathematics teachers from five school districts participated in this weekly two-hour workshop through IMSA's distance learning classroom from October-November. Teachers received credit for the class through Aurora University.

#### TEACHER/STUDENT INVESTIGATION INCLUDED

- *alternative assessment in high school mathematics*

### Walter Dyett Middle School Video

#### Teleconferencing Project

Through video teleconferencing, students and teachers at Walter H. Dyett Middle School in Chicago participated with IMSA in this year-long project.

#### TEACHER/STUDENT INVESTIGATION INCLUDED

- *the creation and delivery of discovery-based and problem-based learning experiences*

### Electronic Lists

Various electronic lists allowed IMSA partners to communicate with IMSA staff through the use of computers and electronic mail between sessions. The lists join interested members in an ongoing dialogue centered around their specific area of interest.

#### TEACHER/STUDENT INVESTIGATION INCLUDED

- *problem-based learning*
- *the use of technology in interdisciplinary curriculum development*

## PRODUCT DEVELOPMENT INITIATIVES

### IMSA Math Journal

The IMSA Math Journal is an annual publication which is distributed to all Illinois high school mathematics departments and mathematics teachers with whom IMSA has individual and/or organizational contacts. Contributions to the journal come from IMSA faculty and students, and other Illinois mathematics teachers and students.

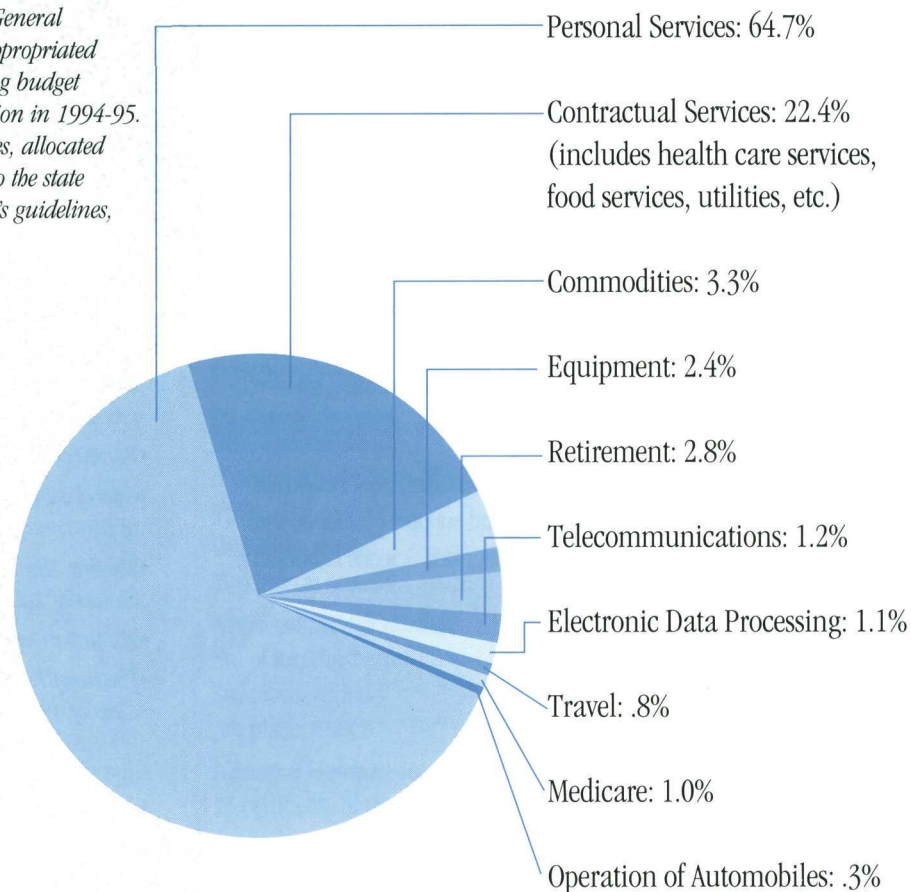
### IMPACT II Catalog

The IMPACT II Catalog of Teaching Ideas is an annual publication which is distributed to all K-12 schools in Illinois and individual teachers upon request. The catalog includes award-winning innovative lessons in mathematics and/or science which were submitted by Illinois teachers.



# Illinois' INVESTMENT

*To support and expand the Academy's research, innovative teaching and service programs/initiatives, the Illinois General Assembly appropriated an operating budget of \$12 million in 1994-95. Expenditures, allocated according to the state comptroller's guidelines, included:*



In addition, the Academy was awarded a contract from the Illinois State Board of Education to support a statewide service program, the Illinois Scientific Literacy Grant Program, to transform teaching and learning in mathematics, science and technology.

IMSA parents paid a \$795 fee in 1994-95 to offset some of the costs of cocurricular programs and residential services.

The most significant capital projects included the expansion of the Information Resource Center and the greenhouse and science laboratory renovations.



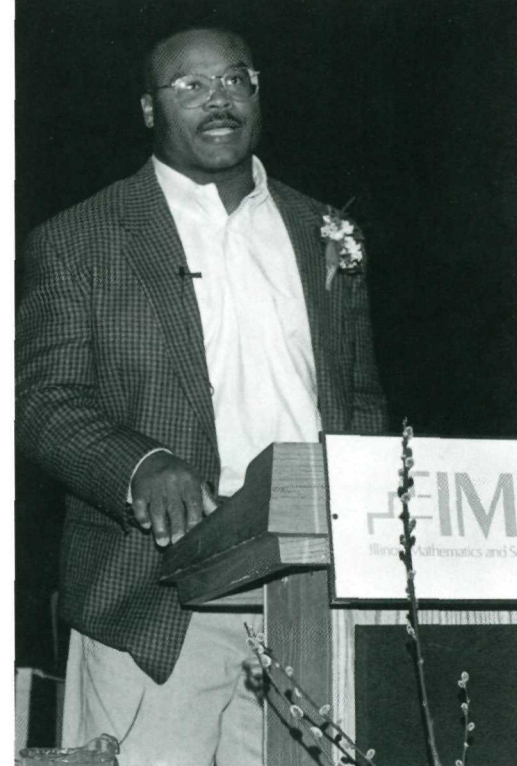
# private sector INVESTMENT

*The* **IMSA Fund for Advancement of Education** works to secure the support and participation of various constituencies including individuals, corporations, foundations, educational institutions and governmental agencies to advance the Academy's mission. Private sector support highlights in 1994-95 included:

## PROGRAM PARTNERSHIPS...

- with the **Albert Pick, Jr. Fund, Alfred P. Sloan Foundation, Ameritech, Amoco Foundation, Arie and Ida Crown Memorial, FMC Corporation, Illinois Power, Lloyd A. Fry Foundation, Polk Bros. Foundation, Quaker Oats, ScottForesman, State Farm Insurance and UOP** to support recruitment and retention programs at the Academy for underrepresented students.
- with **Abbott Laboratories, Central Illinois Public Service Company** and the **Toyota USA Foundation** to support the IMPACT II award program for Illinois mathematics and science teachers. The program, administered by IMSA, promotes excellence in elementary and secondary education by networking creative teachers and their innovative ideas.

- with **Bell and Howell Company** and **University Microfilms International** for in-kind support of the ProQuest system which allows students immediate full image access to up-to-date articles and illustrations from 225 magazines and journals.
- with the **Bernice Lavin Jumpstart Fund** for the development of Women in Science and Mathematics Initiatives for IMSA female students and schools throughout Illinois.
- with the **Smithsonian Institution** to support the development of curriculum models that integrate instruction in mathematics, science, the arts and humanities.
- with **Varlen Corporation** and **Precision Scientific** for in-kind support of science equipment in the new Integrated Science Laboratory.



## SPECIAL EVENTS/FUNDRAISING RESULTS

- Fourth annual **James R. Thompson Leadership Lecture**: Dr. Sally Ride, former NASA astronaut.
- Fourth annual **Richard L. Horwitz Lecture on Ethics**: Former Chicago Bear Mike Singletary. (see photo)
- Parent contributions of \$45,824
- Gifts of \$245,370 from **IMSA Fund Board of Directors**.
- The first **Alumni Open House** for the **IMSA Classes of 1989-1995**.
- The first meeting of the **IMSA Alumni Association**.
- The second alumni reunion for the **IMSA Class of 1990**.

A list of 1994-95 donors to the IMSA Fund for Advancement of Education is published in the IMSA Fund's annual report. To receive a copy, contact the Office of Institutional Advancement at (708) 907-5040.



# Examples of student ACHIEVEMENTS

## Mathematics and Science

### *Mandelbrot Competition*

1st place in nation, intermediate team

### *United States Mathematical Olympiad*

Five students qualified to take the exam

### *Illinois Institute of Technology's International Bridge-Building Competition*

1st place, individual

### *Illinois Institute of Technology's 21st Annual Bridge-Building Competition*

1st and 2nd place, individual

### *American Computer Science League*

1st place in state, intermediate and senior teams

### *ICTM State Math Contest*

2nd place, team

### *North Suburban Math League*

2nd place, team

### *Museum of Science and Industry's*

*1994 Outstanding Young*

*Scientist Award*

### *Illinois Science Olympiad*

2nd place, team

### *1995 U.S. Physics Team*

One student qualified to take the semifinal exam

## Humanities

### *Telluride National English Competition*

1st place

### *Illinois Future Problem Solving Bowl*

1st place, team (written)

### *United Nations International School/*

*United Nations Student Conference*

One of 50 schools worldwide invited to participate;

Two students were two of six to address the conference

### *National History Day*

3rd place, computer project

### *Illinois History Expo*

Three projects advanced to national competition

### *Johns Hopkins University's 1995 Center for Talented Youth Summer Experience*

*Program Award*

## Foreign Language

### *Nationwide Russian Written Contest*

Three gold medals

One silver medal

Two bronze medals

### *National French Contest*

3rd place, Northern Illinois Chicago Chapter

3rd place, region

5th place, nation

### *National German Exam*

15 certificate of merit awards

### *National German Honor Society*

21 students

## Fine Arts

### *Illinois Music Educators Association*

Seven All-State Awards

### *Illinois High School Association State Solo and Ensemble Contest*

97 superior ratings

57 excellent ratings

Three perfect scores

### *Illinois High School Association*

*State Music Contest*

1st place, chamber choir

## Other

### *Knowledge Master Open*

3rd place in nation

1st place in state

### *U.S. Chess Federation National High*

*School Chess Championships*

1st place, "under 1600" division

### *IHSA Competition*

3rd place in Class AA State

Final Chess Tournament

Qualified for state final tournament

(boys swimming)





# H I G H L I G H T S

## Scholastic Assessment Test (SAT I) Scores

Class of 1995-Middle 50% Range and Mean

Class of 1994	Female (N=79)		Male (N=92)		Total (N=171)	
	Verbal	Math	Verbal	Math	Verbal	Math
IMSA Mid 50% Range	560-670	660-750	550-660	710-770	550-660	690-770
IMSA Mean	608	700	607	731	608	717

IL Col. Bound Sr. Mean	486	539	491	581	488	560
All Col. Bound Sr. Mean	426	463	429	503	428	482

## Percentages of IMSA Students in Test Score Intervals

Score Intervals	English		Mathematics		Reading		Science Reasoning		Composite	
	M	F	M	F	M	F	M	F	M	F
27-36	80	82	93	89	85	86	81	77	90	88
22-26	17	14	7	11	13	11	18	22	9	11
19-21	1	4	0	0	2	1	1	1	1	1
1-18	2	0	0	0	0	1	0	0	0	0

## Advanced Placement (AP) Examination Scores for IMSA Students: 1995

AP Grade	United States History	Biology	Chemistry	Computer Science A	Computer Science AB	Economics: Micro	Economics: Macro	English Lang. & Composition	English Lit. & Composition	European History	French Language	German Language	Latin: Vergil	Mathematics Calculus AB	Mathematics Calculus BC	Physics B	Physics C: Mechanics	Physics C: Elec. & Mag.	Psychology	Spanish Language	Total Grades Reported	Percentage of Total
5		4	7		11	1		14	2	1				3	44	1	25	25	2	2	142	34
4	2	20	11		7		1	9	5	1	2			1	25		19	11			114	27
3	3	15	10	2	4	6	2	4	6		2	2		4	28	3	8	5		4	108	26
2		1	5		3	4	6	2	2		1	1		2	2	1	2	4		1	37	9
1		1			3	1	2						1	1	3	1	1	1			15	4
TOTAL	5	41	33	2	28	12	11	29	15	2	5	3	1	11	102	6	55	46	2	7	416	100

IMSA Mean	3.40	3.60	3.60	3.00	3.71	2.66	2.18	4.20	3.46	4.50	3.20	2.66		3.27	4.02	2.83	4.18	4.19	5.00	3.42		
Nat'l Mean	2.82	3.14	2.91	2.53	3.24	3.10	3.10	2.99	3.11	3.13	2.85	3.28		3.03	3.71	2.76	3.34	3.24	3.24	3.64		

## SAT II Scores for the Class of 1995

Middle 50% Range and Mean

Test	Total IMSA Scores Reported	Middle 50% Range	IMSA Mean	Illinois Mean	National Mean
English Writing Literature	137 11	549-661 NA	605 629	566 572	508 514
Mathematics Level I Level II	3 136	NA 707-790	NA 749	584 698	548 652
Sciences Biology Chemistry Physics	29 37 61	550-664 626-726 633-726	607 676 680	595 622 637	560 577 603
History American European	4 2	NA NA	NA NA	581 560	536 528
Languages Chinese L/R French German L/R Spanish Spanish L/R	3 2 1 2 1	NA NA NA NA NA	NA NA NA NA NA	757 544 550 581 539	718 551 535 565 533

## American College Testing (ACT) Scores for the Class of 1995 — Middle 50%

Score Intervals and Mean

Subscore	Female N=73	Male N=88	IMSA Mean	MID 50% Range	Illinois Mean	National Mean
English (1-36) Mean	29.1	28.5	28.8	27.2-31.0	20.5	20.2
Mathematics (1-36) Mean	30.7	31.7	31.2	29.5-33.4	20.7	20.2
Reading (1-36) Mean	31.5	31.4	31.4	29.4-34.9	21.4	21.3
Science Reasoning (1-36) Mean	29.1	30.4	29.8	27.1-33.4	21.2	21.0
Composite Mean	30.2	30.7	30.5	29.0-32.6	21.1	20.8

## Preliminary Scholastic Assessment Test (PSAT) Scores

Class of 1995-Middle 50% Range and Mean

	Verbal		Math	
	Mid 50% Range	Mean	Mid 50% Range	Mean
Female (N=79)	62-72	67.2	62-72	66.9
Male (N=103)	60-71	65.5	67-77	71.8
IMSA (N=182)	61-71	66.2	64-75	69.7
Illinois Mean		48.9		48.5
National Mean		48.8		47.9





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