IMSA: A Differentiator for Illinois

Illinois Mathematics and Science Academy
Who Are We?

Science is not about status quo. It’s about revolution.

- Dr. Leon Lederman, IMSA Founder
  Director emeritus Fermi National Lab
  Nobel Laureate in Physics (1988)
The Illinois Mathematics and Science Academy (IMSA) launched in 1986 through support by the Illinois Governor and State Legislature in collaboration with business, education, and science leaders.

To be a Recognized Global Leader and Catalyst for Equity and Excellence in STEM Teaching and Learning, innovation and entrepreneurship through:

- New STEM Teaching Models
- The Development of STEM thinking and Education of Future Solutionaries
- Broadening Statewide Student Participation in STEM
- Educator STEM Proficiency

• Consistently places top finishers in National and International student math and science competitions
• IMSA Alumni founders of Top American companies: YouTube, PayPal, and Yelp
• IMSA Alumni working at Illinois’ most innovative companies: Boeing, Abbvie, ComEd
• IMSA Alumni teaching at Top 20 American Universities
• The power to convene national and international groups for collaboration
• National and International recognition for recruitment of underserved populations to STEM

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## 2019 Accolades

### Residential Academy

<table>
<thead>
<tr>
<th>#1</th>
<th>170</th>
<th>57%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranked #1 Public High School in America by niche.com</td>
<td>Students conducting research alongside Faculty or at world-leading institutions and 52 social entrepreneurial projects</td>
<td>IMSA Faculty with doctoral degrees 100% with masters degree</td>
</tr>
</tbody>
</table>

### Global Teaching & Learning

<table>
<thead>
<tr>
<th>90,000</th>
<th>50,000</th>
<th>5,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM lesson plans accessed by teachers worldwide</td>
<td>Hours of STEM professional development delivered worldwide</td>
<td>Institutions from 188 countries utilizing IMSA’s teaching materials</td>
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What Do We Do?

Research & Venture collaboration

• $1.9 million for Steve and Jaime Chen Center for Innovation & Inquiry providing new venture programming for prototyping, design thinking and the launching of new ideas

• $20K in Prize Money for student and faculty pitches and startup ideas

• $2.2M for New Science Wing focused on forensic science

Global Experiences

• $200K to host the 2018 International Student Science Fair featuring 32 schools from 20 countries

• $30K in Scholarships supporting Educational Student Excursions to International Destinations and other Leadership Opportunities

• $50K faculty training and development of curricular to support UN 17 Sustainable Development Goals

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Leaders Start at IMSA

**IMSA graduates are leaders in the business, education, scientific, and technology sectors. Notable IMSA alumni include:**

**Community Leaders**
- Michael Brody
- Arati Shroff, U.S. Diplomat
- Lieutenant Commander Alex Dietrich

**Academic Innovators**
- Tim Meyer, CEO of FermiLab
- Rebecca Willett, University of Chicago professor and researcher of machine learning and data science.
- Sabrina Paterski, “Next Einstein”
- Dr. Princess Imoukhuede, University of Illinois researcher developing treatments for over 70 diseases including breast cancer.
- Dr. Aaron Parness, NASA Robotics

**Entrepreneurs**
- Steve Chen, YouTube Co-Founder
- Yu Pan, PayPal Co-Creator
- Russell Simmons, Yelp Co-Founder
- Sam Yagan, ShopRunner Founder
A Partnership-Driven IMSA Fund

The IMSA Fund for Advancement welcomes strategic alliances to advance the progress of math and science education through Illinois, our nation and the world.
How Can You Help?

Our Path to Collaboration: Strategic Partnerships

- Judge an IMSA Competition
- Create a Strategic Alignment Partnership
- Sponsor Internship or Student Research
- Design/Fund IMSA Programs in STEM, Global, or Entrepreneurship
- Join the IMSA Fund Board

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## Case Study: ComEd

### History & Purpose

Since 1995, ComEd has partnered with IMSA providing grants to support Academy and Outreach programs including:

- IMSA’s Energy 2000K program
- CyberQuiz 4 Kids program
- IMSA’s Energy Center
- Multicultural Student Recruitment
- Energy Innovation Programs

### Current Activities

Most recently, ComEd partnered with IMSA on a $25,000 grant used for energy innovation programs:

- Six mini grants to IMSA faculty and staff for energy projects. Awards ranged $250 - $2,500 and were used for energy curriculum, research, projects and resources including energy applications for Arduinos in Engineering, fluorescence spectroscopy for biodiesel and biofuel production and chemical kinetic techniques.

- Sponsorship of the Steve and Jamie Center for Innovation & Inquiry “Idea Bar”, a concierge station for supplies an volunteer start-up mentors.

- Power UP! energy scrimmage featuring students grades 6-12 who design solutions to situations presented related to communications and public works capabilities during a simulated cyber attack.

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The IMSA Fund Board is charged to find partners and donors to advance the mission of IMSA. 2019 is a growth year for the Board, and we encourage expressions of interest by members of the Illinois community who wish to strengthen the vision of the Illinois Mathematics and Science Academy.

Join Us at IMSA!

• Learn about IMSA scholarship online:  https://digitalcommons.imsa.edu/
• Browse IMSA Videos:  https://www.youtube.com/user/IMSAschool
• Join a virtual (or real) tour:
  •  https://www.imsa.edu/audience/video-tour/
  •  Sample a real tour with a 2-hour immersive experience with students and faculty at IMSA.  Contact Tami Armstrong @ tarmstrong@imsa.edu

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Source of Contributions

FY19 – July 1, 2018–June 30, 2019:

> Annual Goal: $1.1M
> YTD Actual: $1.37M
> Restricted Gifts: $950K
> Unrestricted Gifts: $360K
> Total Assets as of : $360K

Top Corporate Donors:
> ComEd
> BP
> Boeing
> Nicor
> Pentair
> VWR
> TE Connectivity
> Ecolab

Use of Contributions

PROMISE (Excellence & Equity)
Save a Seat (Auditorium Refresh)
Science Wing Equipment
Summer Outreach Program
IRC (Library)
Robotics
SIR (Inquiry & Research)
Athletics
Leon Lederman Founder’s Fund

Targeted use of Unrestricted:
Block Grants with Key Usage for:

> Faculty and Curriculum Development
> Summer Stem Camps
> International Student treks
> International Market Research supporting expansion of IMSA

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# Appendix A: Sample Coursework

<table>
<thead>
<tr>
<th>Science</th>
<th>Social Science</th>
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<tbody>
<tr>
<td>Cancer Biology</td>
<td>Science and Society</td>
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<tr>
<td>Molecular and Cellular Biology</td>
<td>Modern Genocide and Mass Violence</td>
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<tr>
<td>Organic Chemistry</td>
<td></td>
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<tr>
<td>Medicinal Chemistry</td>
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<tr>
<td>Physics – Calculus-based Mechanics</td>
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<tr>
<td>Computer Science</td>
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<tr>
<td>Advanced Programming</td>
<td>World Languages</td>
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<tr>
<td>App Programming</td>
<td>Mandarin Chinese</td>
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<tr>
<td>Object Oriented Programming</td>
<td>Russian</td>
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<tr>
<td>Mathematics</td>
<td>German</td>
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<tr>
<td>Multi-Variable Calculus</td>
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<tr>
<td>Statistical Experimentation &amp; Inference</td>
<td></td>
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<tr>
<td>Theory of Analysis</td>
<td>English</td>
</tr>
<tr>
<td>Game Theory and Rationality</td>
<td>Modern World Fiction</td>
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<tr>
<td></td>
<td>Graphic Novels – Image and Text</td>
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Fine Arts

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<tbody>
<tr>
<td>Music</td>
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<tr>
<td>Visual Arts</td>
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