

# IMSA360

SPRING 2009

News for Alumni and Friends of the  
Illinois Mathematics and Science Academy®

## **Winds of Change:** Going Beyond 'Going Green'





## FROM THE PRESIDENT

Dr. Glenn W. "Max" McGee  
IMSA President

As a teaching and learning laboratory for imagination and inquiry, the Illinois Mathematics and Science Academy enables students to pursue their own compelling questions and identify and solve real-world problems. In these pursuits, they learn to collaborate with each other and the best minds around the globe. This process fosters integrative learning and enhances critical thinking, creativity, problem solving and teamwork.

Our feature stories in this issue of *IMSA360* take you on an amazing journey that demonstrates how IMSA students turn their passions, talents and knowledge into action. Under the guidance of inspiring faculty, staff and world experts, students have helped to establish the IMSA Energy Center which draws on students' natural concern for their environment and their desire to improve people's lives. As participants of the Energy Center, students join engineering and research teams to work on energy issues that address their particular interests. They learn and apply academic content as they encounter the need to solve problems for their respective teams.

With support from IMSA faculty, staff and experts from the University of Illinois at Urbana-Champaign, Fermilab and other institutions, students are working on a host of energy projects such as deriving alternative biofuels, adding solar panels on campus buildings and installing small wind energy devices. They are constructing the traveling "Energy House" and producing affiliated K-8 curriculum to educate Illinois children about alternative energy. IMSA students are also using their leadership skills to organize forums with Illinois legislators and government leaders to address policy issues and legislative bills that encourage energy exploration and environmental protection.

Like IMSA students in our residential program, Illinois children need opportunities to discover the joys and wonders of learning mathematics and science through imagination and inquiry. That's why IMSA is opening new Field Offices initially in Chicago and southern Illinois. IMSA Field Office staff will work with teachers who serve children from economically disadvantaged families. Field Office staff will also engage students in afterschool, weekend and summer enrichment programs in mathematics and science. On behalf of IMSA, I wish to thank all of IMSA's supporters for sharing the belief that children from all economic backgrounds deserve to become contributing members of our local and global economies that increasingly depend on high-tech skills and ethical leadership.

# IMSA360

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# CONTENTS

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## FEATURES

**10** Going Beyond Going Green: IMSA's Young Environmentalists Work to Make the Academy and World a Better Place for Future Generations

**16** IMSA Energy Center Fuels STEM Education

**17** IMSA Professional Field Services: Expanding Its Reach in Illinois



## DEPARTMENTS

**4** News Headlines

**7** Alumni-in-Action

**8** Community Notes

**9** Alumni Corner

**18** Financial Summary

**19** From the Vice President

## NEWSHEADLINES

News for alumni and friends of the  
Illinois Mathematics and Science Academy® (IMSA)

# IMSA Receives Grant From Tellabs Foundation to Advance Innovation in STEM Teaching and Learning

The IMSA Fund for Advancement of Education ([www.imsa.edu/giving](http://www.imsa.edu/giving)) has received a \$60,000 grant from the Tellabs Foundation to advance innovation in STEM (science, technology, engineering and mathematics) teaching and learning at IMSA and beyond.

The grant will enable IMSA to create [cool.hub.imsa](http://cool.hub.imsa), which includes an interactive Web platform that connects and supports collaborative innovation networks anytime and from any computer with access to the Internet. Using dynamic Web resources—such as video conferencing, forums, instant messaging, Second Life (an online virtual community), wikis and blogs—students, teachers, researchers, business leaders and inventors contribute their questions, ideas and expertise to solve problems of mutual interest. Three “innovation cool spots”—tech-enabled work zones conducive to face-to-face collaboration and rapid prototyping—will facilitate small group access to the virtual platform from IMSA and its new field office in Chicago.

“Thanks to the generous support of the Tellabs Foundation, IMSA will be better able to serve and support innovative educators and reach new populations of students with enormous potential,” said IMSA President Dr. Glenn W. “Max” McGee. “This model will have a powerful impact in creating partnerships that will truly transform teaching and learning and make Illinois an engine of innovation.”

### IMSA Summer Programs Include New Offerings

IMSA’s 2009 summer programs, which serve Illinois students in grades 3-10, include a number of first-time offerings. *Energy@IMSA* is a co-ed residential program for 10th grade students who will spend one week

exploring energy sources and potential alternatives through chemistry and physics. *Your Sense-Sational Senses: Pathways to Learning* engages 6th-8th graders in inquiry and problem solving to explore how the senses provide input into the human learning process. *Kidsplorations in Technology* places 5th and 6th graders in a week-long experience that features the basics of robotics, touch screen technology, and computer programming. IMSA 2009 summer programs for students will be held on IMSA’s campus in Aurora and at locations in Carbondale, Edwardsville, Lake County and Springfield. For more information, visit [www.imsa.edu/programs](http://www.imsa.edu/programs), contact [summerprograms@imsa.edu](mailto:summerprograms@imsa.edu) or call (630)907-5950.



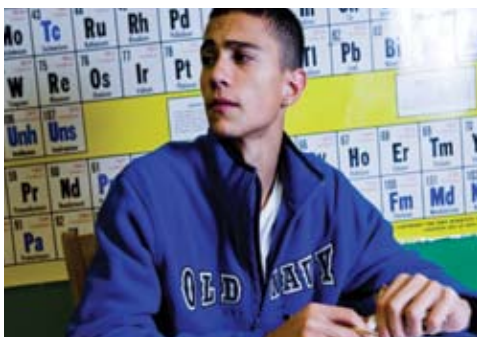


Photo by Craig Watson Photography

HiMCM team members Bohao Liu, Jessica Durden, Ilya Nepomnyashchiy and Justin Troyka take a moment to celebrate their achievements with IMSA President Dr. Glenn W. "Max" McGee.



## IMSA Team Receives Highest Ranking in World Contest; Mathematical Models Address National Debt and Air Pollution

One team from IMSA received the highest ranking possible in the 11th Annual International High School Mathematical Contest in Modeling (HiMCM). The team's performance placed IMSA among the top four schools in the world in this year's competition.

The IMSA team—including Jessica Durden, Bohao Liu, Ilya Nepomnyashchiy and Justin Troyka—received the rank of "National Outstanding." Only four teams out of 270 competing worldwide received this ranking. A second IMSA team—including Cameron Breedlove, Alex Drummond, Adam Leemans and Mike Reeks—received the rank of "Regional Outstanding."

The High School Mathematical Contest in Modeling is a 36-hour contest where each team is expected to solve a mathematical modeling problem. Each team then prepares and submits a paper discussing the solution to the problem.

IMSA's "National Outstanding" team had to build a mathematical model that could be used to help understand the national debt and make forecasts based on different scenarios. IMSA's "Regional Outstanding" team had to create a mathematical model to show the feasibility, effectiveness and costs of increasing carbon dioxide consumption in the U.S. to try to achieve national carbon "neutrality" with minimal economic and cultural impact.

## Students Excel in National and Global Venues

Eric Shyu is one of only two students from Illinois and among 40 in the nation to be named an Intel Science Talent Search (Intel STS) Finalist. Often considered the "junior Nobel Prize," the Intel STS is America's oldest and most prestigious high school science competition. In addition, IMSA student Jenny Shao was named a semifinalist in the competition.

IMSA students Hannah Reiser, Rae Rokosh and Sarah Trevor, along with Loyola University Stritch School of Medicine staff members Jonathan Muraskas, M.D.; Adrian Jones, J.D.; and LaDonna Norstrom, M.ED. co-authored an investigation, *Predicting Medical School Success in 60 Minutes*, that was presented at the 2009 Innovations in Medical Education Conference at the University of Southern California.

IMSA student Jamie Ray is one of two students recognized for being major contributors to a Fermilab analysis on the Higgs boson. The publication *Fermilab Today* states, "Two young students ... completed most of the work for the analysis. Under the direction of more experienced researchers, these students developed new skills and made important contributions to the result." Ray, who was cited for "assisting with the calculation of efficiencies and helping to finalize the results," joins Fermilab's Ray Culbertson and Craig Group in presenting the analysis, *Search for a Fermiophobic Higgs Boson Decaying into Diphotons at CDF*, at the American Physical Society meeting in Denver, Colorado.

## IMSA Student Inquiry and Research Program Featured in National Science Teachers Association Book

*Inquiry: The Key to Exemplary Science*

Student Inquiry and Research at IMSA is one of only 18 science education models in the nation to be featured in the National Science Teachers Association (NSTA) book, *Inquiry: The Key to Exemplary Science*.

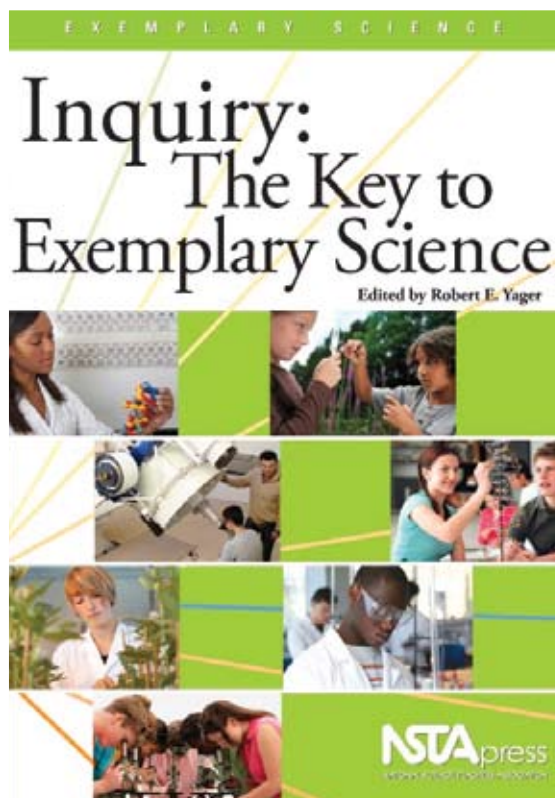
The book's fourth chapter, "Student Inquiry and Research: Developing Students' Authentic Inquiry Skills" is co-authored by Dr. Judith Scheppler, IMSA coordinator of Student Inquiry and Research; IMSA science faculty members Dr. Susan Styer, Dr. Donald Dosch and Joseph Traina; and Christopher Kolar, coordinator of IMSA Research and Evaluation. In addition, Dr. Scheppler was invited to serve as a speaker on two "Exemplary Science" panels at the NSTA national convention.

### IMSA Faculty and Staff Contribute to Their Fields

IMSA President Dr. Glenn W. "Max" McGee has a featured essay, *Reflections on Standards, Assessment, Accountability and NCLB*, in the recently published *2009 Illinois Kids Count* data book released by Voices for Illinois Children.

Clay Sewell, IMSA fine arts faculty member, received National Board Certification from the National Board for Professional Teaching Standards (NBPTS). The rigorous national certification process credentials successful candidates as Master Teachers.

IMSA Resident Scholar Dr. Leon Lederman is the recipient of the 2008 National Space Grant Distinguished Service Award. The award, presented by the National Space Grant Foundation, was established to "recognize individuals whose life and career have had a long lasting impact in a science, engineering or education field that is related to aeronautic, aviation, or space endeavors." The inaugural award was presented in 2003 to former Senator and Secretary of the Treasury Lloyd M.



Bentsen for his "visionary work in creating the National Space Grant College and Fellowship Act."

Dr. Stephanie Pace Marshall, IMSA founding president and president emerita, attended the meeting of the Clinton Global Initiative University at The University of Texas at Austin in March. This meeting convened students, university presidents, nongovernmental organizations, and national youth organizations to create and implement Commitments to Action that can impact global problems. Dr. Marshall became a newly appointed member of the board of advisors for Games for Change (G4C), a community of practice for those interested in making digital games about the most pressing issues of our day—from poverty to race to the environment.

### The Facebook Era



**Clara Shih '00** is author of the book *The Facebook Era: Tapping Online Social Networks to Build Better Products, Reach New Audiences, and Sell More Stuff* available on [www.amazon.com](http://www.amazon.com) and in book stores nationwide on March 26, 2009. Shih is the creator of Faceconnector (formerly Faceforce), the first business

application on Facebook, and is currently the product line director for AppExchange, described by *Forbes Magazine* as the “iTunes of business software” and one of the top innovations of 2007. To learn more, visit Clara’s blog at [www.thefacebookera.com](http://www.thefacebookera.com) or “fan” the book at [www.facebook.com/thefacebookera](http://www.facebook.com/thefacebookera).

### Greener Pastures for Cows

**Lacy Simons '02** was recently featured in the *Chicago Journal* newspaper for her research which was published on the cover of the December 2008 issue of the international *Journal of Chemical Ecology*. According to the feature, Simons’ research, *Effects of Methyl Jasmonate and an Endophytic Fungus on Plant Resistance to Insect Herbivores*, focused on pasture or prairie grass (commonly named tall fescue) and her introduction of “methyl jasmonate to the grass, a hormone that triggers a less-toxic natural defense in the tall fescue which makes it less toxic to cows.”

### Fresh Ideas in Education



**Branson S. Lawrence '02** published the article *Preparing for the Classroom: Pre-Service Professional Development* in the fall 2008 issue of the journal *Thresholds in Education*. The refereed journal is published by Northern Illinois University and is “dedicated to the exploration of new education

inquiries, theories, viewpoints, and program innovation.”

Lawrence’s article focused on his work with IMSA’s Excellence 2000+ program while an undergraduate student in education. More information on the Journal can be found at <http://www.cedu.niu.edu/lep/foundations/thresholds/jrnl.htm>.

### Alumni Career Paths Showcased



**Dr. Scott Gaudi '91, Capt. Kenyatta Ruffin '99 and Dr. Mia Markey '94** all had feature articles in the fall 2008 issue of the *NCSSMST Journal* (National Consortium for Specialized Secondary Schools of Mathematics, Science and

Technology), which focused on the paths taken by graduates of Consortium schools. The journal and the alumni articles are available online at [http://www.ncsssmst.org/userViewpublicationdetails.aspx?pub\\_id=100089](http://www.ncsssmst.org/userViewpublicationdetails.aspx?pub_id=100089).

### Meadows Scholar

**Joshua Cote '08** was one of only 10 students nationwide to be named a Meadows Scholar at Southern Methodist University (SMU) in University Park, Texas. Cote, who is majoring in Music Performance (French Horn) with an Economics minor, will study with Gregory Hustis, principal horn of the Dallas Symphony, professor at SMU and a recording artist. According to the SMU website, “the Meadows Scholars program is a new initiative at the Meadows School of the Arts to enable SMU and Dallas to compete for the most talented and highest academic achieving students in the arts and communications fields.”

### Thumbs Up for Repeat Alumni Author

**Jonathan Hayward '92** is the author of numerous books, most recently *The Sign of the Grail*. His book was described by *The Midwest Book Review* as “a unique, scholarly, and thorough examination of the Grail mythos, granting it a top recommendation for academia and the non-specialist general reader with an interest in these subjects.” In addition, the Review “highly recommended” several other books written by

## ALUMNI-IN-ACTION

Hayward, including *Yonder*, *Firestorm 2034*, *A Cord of Seven Strands*, *The Steel Orb*, *The Christmas Tales* and *Hayward's Unabridged Dictionary*. The books are available from <http://CJShayward.com/> for purchase or free online reading.

### Hall of Famer

**Natasha Rodgers '97** was one of 10 former student-athletes inducted into the Washington University Sports Hall of Fame, Class of 2008. According to the Washington University (St. Louis) website, Rodgers was a member of all four of WU's women's basketball national championship teams in 1998, 1999, 2000 and 2001. In addition, she holds numerous WU records including first in career steals and field goal percentage, second in scoring and sixth in rebounds. In 2001, Rodgers was named the UAA (University Athletic Association) Most Valuable Player and helped lead



WU to back-to-back undefeated national championship seasons. More information on Natasha is available at <http://bearsports.wustl.edu/releases/HOF.html>.

IMSA360

8

## COMMUNITYNOTES

**David Franklin '89** edited the Justin Timberlake profile for Katie Couric's pre-Grammy special on CBS. He regularly edits for *48 Hours – Mystery* and *CBS Sunday Morning*. His motion graphics can be seen at [www.artisanaltelevision.com](http://www.artisanaltelevision.com). He lives in Brooklyn, New York.

**Kathy Rink '89** was promoted to Associate Group Leader at MIT Lincoln Laboratory. In addition, she and her husband Mike Holm are proud parents of their first son, Joseph Rink, born on August 21, 2007.

**Elizabeth (Bielenberg) Hage '92** states, *The Vicious Kind*, an independent film produced by **Tim Harms '92** was recently selected for inclusion at the Sundance Film Festival. This is Tim's second film to be honored at Sundance. Joining him for the Festival this year were fellow alumni **Jenn (Peek) Wylie '92** and **Joe Wylie '92**, **Beth Bielenberg '92** and **Chris Hage '90**, **Teresa Lehnhardt '92**, **Cynthia Morales '92** and **Nate Fogg '92**.

**Anna (Para) Hubbard '97** states, "We are proud to announce the birth of our fourth child – Lauren Grace Hubbard, born 12/9/08 at home at 8 lb. 8 oz. Her big brother and two sisters are loving their new little sister."



Alumni attend the Sundance Film Festival.

**Jonathan Helm '99** was recently selected as a three-year National Science Foundation Fellow (one of three in the country in his field) for mathematical modeling research in Hospital Systems Engineering as part of his Ph.D. in Operations Research at the University of Michigan.

### Contribute to Community Notes Online!

#### What's New in Your Life?

Let us and your fellow IMSA classmates/colleagues know about what you've been doing! Have you recently started a new job or been promoted? Are you involved in new and exciting community service projects or other activities? Have you recently been published, honored or elected? If so, please tell us about it at:

[www3.imsa.edu/news/community-notes](http://www3.imsa.edu/news/community-notes)



# ALUMNICORNER

## Alumni Weekend 2009

Mark your calendars! Alumni Weekend is July 17-19, 2009. The weekend will host reunions for the classes of 2004, 1999, 1994 and the very first 20-year reunion for IMSA's Charter Class of 1989.

In addition to the reunions, the IAA will hold its annual meeting and the much anticipated luncheon with faculty and staff in the IRC. You don't want to miss this opportunity to reconnect with fellow alumni! If you are a member of one of the classes celebrating a reunion this summer, you should receive information from your reunion coordinators shortly: Chris Dargis '89, Osman Ahmed '99, Ani Vallabhaneni '99, Uchenna Egwu '04, John Jaeger '04, Monica Khan '04, Alicia Passfield '04, Monica Radosevich '04 and Nisha Wadhvani '04. In addition, the IAA still is seeking coordinators for the Class of 1994 15-year reunion. If you are interested in assisting, please contact IAA president Ande Croll at [president@imsaalumni.org](mailto:president@imsaalumni.org).

Elections will be held at the annual IAA meeting on July 18 for all IAA Cabinet positions, including four officers and eight at-large members. More information about these roles and elections is available at: <http://www.imsaalumni.org/iaa/elections/roles-and-responsibilities>.

## IAA Launches New Programs to Connect With IMSA Students

The work of the IAA goes far beyond planning the annual Alumni Weekend. This year, the IAA launched two new programs to better connect with students at IMSA. The CCC Forum—College, Career and Choices—is a series of discussions featuring alumni who share their experiences with IMSA students about college, careers and the choices that got them to where they are today. The first CCC Forum on Technology was held in October at IMSA, and two more are planned for the school year. The next event focuses on alumni in medical professions. Interested in participating in a future CCC Forum? Contact Amy Kinney '95 at [amy.kinney@imsaalumni.org](mailto:amy.kinney@imsaalumni.org).

The pilot Alumni Sibling Program paired a selected number of current students with alumni to serve as mentors and friends. The program was initially proposed by Lauraleigh Heffner '10 and has already been successful. Based on feedback from alumni and students, the IAA hopes to expand the program to enable more students to have an alumni sibling in the 2009-2010 school year.



Dr. Tamara McArdle '98 teaches *Vets, Pets and Modern Medicine-An Introduction to Veterinary Medicine* to IMSA students during Intersession.

## Reunion Years

1989 | 1994 | 1999 | 2004

Returning again this year is the University Host program which helps students to connect with an IMSA alumnus during a college visit. You can sign up to host a student on [myIMSA](http://myIMSA) ([www.imsa.edu/alumni/myimsa](http://www.imsa.edu/alumni/myimsa)). After you log in, click on "IMSA and You," and select "Host a visiting IMSA student" as a volunteer interest. Need more information? Contact Jonathan Koch '08 at [jonathan.koch@imsaalumni.org](mailto:jonathan.koch@imsaalumni.org) or Sam Berger '07 at [samuel.berger@imsaalumni.org](mailto:samuel.berger@imsaalumni.org).

## Record Number of Alumni Return for Intersession

This year, alumni turned up in record numbers to teach IMSA students during Intersession 2009. Forty-nine alumni volunteers shared their week with IMSA and taught more than one-third of all sessions offered. The week's offerings included *Vets, Pets and Modern Medicine*; *Data Informed Techniques and Decision Making in Baseball*; and *Classical Painting Method*, just to name a few. Off-campus sessions run by alumni included *Introduction to Clinical Medicine* (held at Northwestern University Feinberg School of Medicine) and the *ILXO Deployment*, in which students were part of the deployment team for a One Laptop Per Child pilot school in Cambridge, Massachusetts.

Need to update your email, address or other information with IMSA? Create (or update) your profile on myIMSA, the online alumni directory at [www.imsa.edu/alumni/myimsa](http://www.imsa.edu/alumni/myimsa).

– Ande Croll '97



IMSA360

10

# Winds of Change:

## Going Beyond 'Going Green'

Powered by their imaginations...

Fueled by their desire to make the world a better place...

Energized by their collective talent...

**T**he winds of change are blowing through IMSA as community members do their part to make IMSA and the world a greener place for generations to come.

On any given day at IMSA, there is much evidence to prove that the community has moved from a state of green awareness to one of green activism. And while many could point to recycling as the genesis of green activism at IMSA, it has since grown into an organic, environmentally-conscious campus with numerous, ongoing opportunities for staff and students to learn about global energy conservation and sustainability.



(photo l-to-r) IMSA President Dr. Glenn W. "Max" McGee, State Senator Linda Holmes (Plainfield) and State Representative Linda Chapa LaVia (Aurora)



## 'Going Green' at IMSA: It's Not Just Recycling

IMSA's young environmentalists received such recognition when, in 2008, the IMSA Lorax Environmental Club's "IMSA Go Green" project was named one of only eight recipients of the Governor's 2008 Green Youth Award for outstanding and innovative environmental activities. The student members were honored for their green contributions at the Abraham Lincoln Presidential Library and Museum in Springfield.

"These projects demonstrate the innovative ways young people throughout the state are working to protect Illinois' environment," said Illinois Environmental Protection Agency (EPA) Director Doug Scott in a news release.

The award, established by the Illinois EPA in 2002, honors youth environmental projects that will make a difference in their communities and our future. IMSA's award-winning projects involved implementing sustainable living in the residence halls and Academy buildings, promoting environmental awareness and increasing contributions to the community.

In addition to these award-winning projects, IMSA's Lorax Club members also conducted an energy audit of IMSA and researched solar thermal energy as a way to heat water for the Academy.

IMSA English teacher and Lorax Club sponsor Audrey Wells said she is extremely proud of the students' continued enthusiasm and outstanding contributions to making the Academy a model for other schools to follow.

"I love that these students take charge of their own community," Wells said. "They teach each other and build upon past efforts," she added. "The next step for Lorax?"



"I love that these students take charge of their own community. They teach each other and build upon past efforts."

— Audrey Wells, IMSA English teacher and Lorax Club sponsor

Examples of this included reforming and reorganizing the recycling program to better educate the IMSA community and increase recycling efficiencies, and hosting a "Junkyard Wars" competition which challenged students to create a useful object or a work of art from recyclables. Also, a "Clash of the Halls" competition showcased which residential halls at IMSA could save the most energy.

They are reaching out to environmental clubs at other high schools and forming an alliance," she said. "Lorax definitely puts the 'go' in 'IMSA Go Green.'"

In the 2008-09 year, IMSA students were recognized nationally and internationally for their innovative solutions to real-world conservation and energy problems.



IMSA Student  
Jennifer Roderick

## Big Dreams Take Off With IMSA Energy Center

A team of IMSA students guided by IMSA faculty member Dr. Mark Carlson was one of only 16 teams nationwide (and the only one from Illinois) to receive a 2008-09 Lemelson-MIT InvenTeam grant for a low-cost, durable water filtration system. The project was recognized for its solution to the real-world problem of water sanitation in emerging countries. For more information on the project and student team members, visit <https://www3.imsa.edu/news/features/InvenTeam>.

In addition, several IMSA students received the ranking of "Regional Outstanding" in the 11th annual international High School Mathematical Contest in Modeling (HiMCM). Their mathematical model showed the feasibility, effectiveness and costs of increasing carbon dioxide consumption in the U.S. to try to achieve national carbon "neutrality" with minimal economic and cultural impact. For more information, visit <https://www3.imsa.edu/news/releases/2009/01/21/imsa-receives-highest-ranking-world-contest-mathematical-models-address-nat>.

## Energy Experts Inspire Students to Be Green

At IMSA, students have endless once-in-a-lifetime opportunities to discuss green issues with scientists, legislators, business leaders and others who have a stake in energy conservation and sustainability statewide and nationwide.

In February, five energy-conscious Illinois legislators discussed "going green" at the first-ever IMSA Green Panel, sponsored by the Student Committee for IMSA Advancement (SCIA).

During the event—which was featured in several Chicagoland newspapers—students had the chance to learn firsthand from Illinois legislators who discussed their energy and environmental concerns for the state and the energy legislation they have sponsored.

Illinois legislators who served as members of IMSA's first Green Panel included:

- State Senator Linda Holmes (Plainfield), State Representative Naomi Jakobsson (Champaign), State Representative Linda Chapa LaVia (Aurora), State

Jennifer Roderick '09 says she wants to "aim high" and become an astronaut someday. The IMSA Energy Center, she says, is giving her the boost she needs early in her career.

"Of course the most exciting project I'm currently working on in the Energy Center is solar panels," she said. "I want to be an aerospace engineer and since many spacecrafts have panels, I figured getting a head start wouldn't hurt."

Jenny says that through her research and collaboration with fellow students, she learned how important communication was to their job.

"We had to write weekly reports so our teachers knew exactly what we were doing," she said. "Collaboration also played a large role in our project and there was a large amount of collaboration within our solar panel group," she added.

"What we lacked though at first, was communication with the entire class, particularly the building group," she said. "We realized partway through the second quarter that there might not be enough room for our [solar] panels on the IMSA Energy House," she said. "After some quick measurements and a moment of panic, it turned out to be okay. However, we learned to communicate more often with the larger group after that."

Jenny is continuing to champion her energy conservation efforts, even at home.

"I've been trying to convince my parents to get me a hybrid car, but my efforts have been fruitless. Whether it's the car part or the hybrid part, I'm not really sure!"



IMSA Board of Trustees  
Member Luis Núñez

## Championing IMSA Students to Learn and Lead for a Sustainable Future

IMSA Board of Trustees member Dr. Luis Núñez, a consultant for BioTarget, believes that IMSA students can be “responsible ambassadors and leaders” in current and future efforts for global energy conservation and sustainability.

Núñez, a former chemist at Argonne National Laboratory, recently presented *Balancing Energy Demands and Environmental Concerns: Fine Tuning Energy Diversity for an Industrialized Society* to IMSA students. At Argonne, Dr. Núñez led research and development efforts there and also assisted the U.S. Department of Energy with the development of a new nuclear reactor research and development program while on assignment as a staff scientist.

During his discussion with students, Núñez said it was valuable for IMSA students to learn about these issues from both technological and socio-economical points of view.

“IMSA students can be responsible ambassadors and leaders in selection of the most energy efficient sources and practices,” Núñez said. “Furthermore, IMSA students can be the educators of local and global communities on energy and environmental issues,” he added.

“IMSA students play a key role for the state’s and the nation’s wishes for a higher quality of life for its citizens,” Núñez said. “I guarantee that many of the key issues in the future will be based on the understanding of complex technology combined with serious global and social problems and IMSA students are ready to lead.”



Representative Elaine Nekritz (Des Plaines) and State Representative Dave Winters (Rockford).

IMSA President Dr. Glenn W. “Max” McGee said this first-ever event was particularly special because it provided a unique learning opportunity for students.

“IMSA’s young environmentalists are passionate about the issues of energy conservation and sustainability, but more important, they are testing solutions to these local and global issues through IMSA’s Energy Center and other initiatives on campus,” McGee said. “By learning about the state’s environmental concerns firsthand from our legislators, they will be better able to focus on relevant issues and solutions.”

Also in February, IMSA students participated in the 9th Annual IMSA Hollister Lecture and Leadership Symposium, *Ethics of Energy and the Environment*, with keynote speaker Illinois EPA Director Doug Scott. On that same day, students led numerous breakout sessions on a number of energy-related topics including *The Future of Cars*, *Engineering and Energy for the Future* and *Socioeconomic Status and Its Impact on the Environment*.

In November 2008, IMSA Board of Trustees member Dr. Luis Núñez, a consultant for BioTarget, presented *Balancing Energy Demands and Environmental Concerns: Fine Tuning Energy Diversity for an Industrialized Society*.

During his discussion with IMSA students, Dr. Núñez spoke about the development and current status of energy sources, technologies, consumption patterns, conservation and energy policies. An emphasis of his discussion included the environmental effects of various choices made at each step of the energy cycle.



## IMSA Community Embraces Green Initiatives

Whether it's planting a rain garden, carpooling to work, or integrating energy issues in curriculum, IMSA community members serve as role models for students.

IMSA fine arts faculty member Clay Sewell received a \$10,000 grant from BP's A+ for Energy Program for his project, *Firing Ceramic Kiln With Alternative Fuels*. His proposal was one of more than 1,400 applications submitted nationwide. Evaluators said Clay's project "represents an interesting integration of art, engineering and energy and provides a hands-on experience in research and development."

This past summer, IMSA science faculty member Josie



Wallmuth and counselor Deb McGrath planted approximately 300 native plants for IMSA's new rain garden, located in a wet, marshy area between the IMSA baseball field and the pond. The plants were generously donated by Midwest Groundcovers in St. Charles.

IMSA staff members also participated in the IMSA Go Green Logo Contest and designed IMSA's first official Go Green Logo (see graphic). In addition to being used in numerous IMSA publications, the logo is also provided as a desktop image and screensaver.

The passions, talents and inventiveness of students and staff will provide fertile ground to plant the seeds of a sustainable future for all for years to come.



Fermilab Physicist and  
IMSA Partner Dr. G. P. Yeh

## Global Energy Expert Sparks IMSA Energy Center Development

It is easy to see the enthusiasm and confidence Fermilab Physicist Dr. G. P. Yeh has for IMSA's programs and its students.

"I have been familiar with IMSA's excellence since the 1980s," Dr. Yeh said. "Several IMSA students worked with me through IMSA's mentorship program," he added. "Many IMSA students will become world leaders – IMSA should lead the world."

Yeh, a supporter of IMSA since its beginning and one of the Energy Center's earliest champions, says that the "21st Century is the Century of Energy" and he is excited to know that IMSA students and staff have created a place on campus dedicated to this endeavor.

"Thanks to Dr. McGee and the IMSA team's great dedication and hard work, Dr. McGee and the IMSA team have been making tremendous progress and successes with the IMSA Energy Center," Dr. Yeh said.

"Renewable and sustainable energy will be the greatest human responsibility, challenge, opportunity and endeavor," Dr. Yeh said. "Clean energy is the key to solving many challenges worldwide, including health, environment, economy and security," he added.

"Wind power, solar energy, biofuels, geothermal, wave and other clean energies have been making great progress in recent years, with vital prospects for the future."

Yeh said he is excited about the IMSA Energy Center and its promises for humankind.

"IMSA has the best and the brightest students with wonderful imagination, dedication and successes," Yeh said. "The IMSA Energy Center will not only help contribute to IMSA students' knowledge of their own energy consumption and others but also help lead the world in the global energy transformation and help save the world."

Students prepare an ethanol sample to be distilled (above) and test electric motors to use for generators in the IMSA Energy Center.



# IMSA Energy Center Fuels STEM Education

After a “visioning” meeting in the spring of 2008 that included IMSA staff, students, Fermilab Physicist Dr. G. P. Yeh, and IMSA parent Lane Allen, the idea for the IMSA Energy Center was born.

Since then, the IMSA Energy Center—under the leadership of IMSA science faculty member Branson Lawrence—has become a place where imaginations soar, ideas are sparked and put into action, and dreams come true.

“The Energy Center is a place where students meet to create tangible products for a more sustainable future for all,” Lawrence said. “Equally important, the IMSA Energy Center is sparking the imaginations of future engineers and scientists,” he added.

Aspiring aerospace engineer and IMSA senior Jennifer Roderick of Taylor Ridge agreed. “My involvement in the Energy Center has sparked a new interest in energy conservation,” said Roderick. “Green technology will vastly improve in the next 10 years, and it will become more affordable and efficient,” she added. “Luckily for the environment, it’s become a cool new trend. Hopefully, this is a long-term trend.”

Roderick, who is working on a solar panel energy project through the center, is just one of many IMSA students who gained new knowledge and got a “head start” on realizing their future dreams in STEM and other fields.

Jenny’s “head start” and those of other IMSA students were made possible by the leadership of IMSA staff and community partners such as Yeh, who was instrumental in the Energy Center’s development.

Yeh, who has been a strong supporter of IMSA since its beginning and also served as a mentor to students involved in research projects, says “We must, as soon as possible, transform from fossil fuels to clean energy and achieve the goal of reducing global greenhouse gas emissions by 50% by 2050.”

The Energy Center embodies IMSA’s mission to “ignite and nurture creative ethical minds that advance the human condition.” It also reflects IMSA’s goals to: develop innovation prototypes that transform teaching and learning in science, technology, engineering and mathematics (STEM); forge partnerships with public and private organizations; and serve as an educational resource to school systems throughout Illinois and beyond.

Numerous Energy Center projects are underway, including working with IMSA’s Becky Arundale ’03 and University of Illinois at Urbana-Champaign (UIUC) Professor Dr. Stephen Long on research using Miscanthus and switchgrass as alternate fuel. In this research project, IMSA students will use plants from the UIUC site in various experiments to try and produce ethanol. In addition, several other student teams are deriving biofuels from algae, cooking oil, corn, soybeans, sugar cane and yams.

Funding through the IMSA Fund for Advancement of Education has provided a solar-powered laptop charging station, another lesson in energy savings for students. The Energy Center is also working on a number of other initiatives such as the installation of alternative energy sources on campus (multiple wind generators, bike generator and biodiesel lawn mower), hosting energy seminars, conducting energy improvements of the IMSA campus, constructing the traveling IMSA Energy House and producing affiliated K-8 curriculum to educate Illinois students about alternative energy. In addition, students are also designing an inquiry-based residential summer camp on alternative energy for 10th graders.

More information is available at the new IMSA Energy Center website, located at <http://staff.imsa.edu/science/energycenter/index.html>.

Supporters of the IMSA Energy Center include:

BP A+ for Energy, Briggs & Stratton, ComEd, an Exelon Company, Illinois Clean Energy Community Foundation, Illinois Department of Commerce and Economic Opportunity, James Hardie Inc., Lemelson-MIT InventTeam Grant, Solar Power Foundation and the University of Illinois at Urbana-Champaign





Lori Lennix, principal of James R. Doolittle East School, and Susan Bisinger, Ed. D., director of IMSA Statewide Educator Initiatives

## IMSA Professional Field Services: Expanding Its Reach in Illinois

The Illinois Mathematics and Science Academy is launching Field Offices to expand science, technology and mathematics programs and services for Illinois schools, teachers and students, with an initial focus in Chicago, southern Illinois and the Quad Cities area. Beginning with the 2009 opening of the Chicago location at James R. Doolittle East School, the Field Offices will deliver IMSA's professional development programs for educators and enrichment programs for students.

IMSA President Dr. Glenn W. "Max" McGee appealed that all children should have opportunities to prepare for highly skilled careers in the fields of mathematics, science and technology.

"The long and rigorous academic road to high-tech occupations begins at an early age," McGee said. "Now more than ever, all students, particularly those in economically disadvantaged communities, need encouraging and inspiring teachers who can help them discover the joys of learning math and science and get them on the path to satisfying careers that benefit society and the economy."

Field Office staff will deliver professional development and follow-up support to educators

in under-resourced schools that serve students from economically disadvantaged families. Instructional methods will focus on inquiry and discovery to involve students in asking compelling questions and to challenge them to probe, take risks, test, support and communicate findings. IMSA also will deliver afterschool, weekend and summer programs for children.

Field Office staff will become active members of the communities. "Community relations will be an important part of our work," said Michelle Kolar, executive director for IMSA Professional Field Services. "By building relationships with representatives of local youth organizations, universities and museums, we are better positioned to share resources and address the unique educational needs of local residents."

Private support for the opening of the Chicago Field Office includes the Polk Bros. Foundation and an anonymous foundation.

In addition to opening Field Offices, IMSA has expanded its student summer program offerings at its Aurora campus and in Carbondale, Edwardsville, Lake County and Springfield.

# FINANCIAL SUMMARY

## FISCAL YEAR 2008

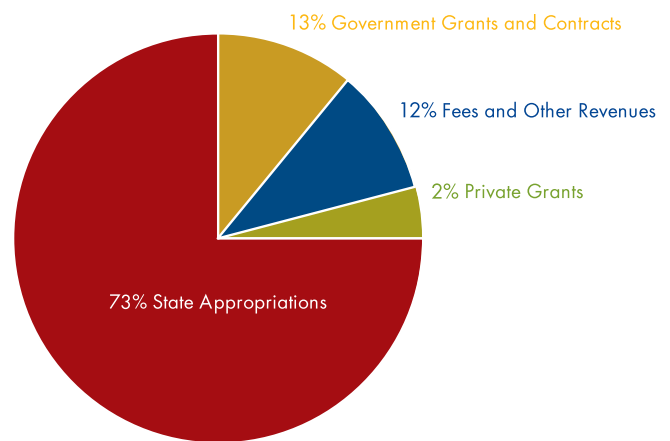
To support and expand the Academy's innovative teaching, research and external service programs/initiatives, the Illinois General Assembly appropriated an operating budget of \$17.7 million in 2007-08. IMSA and the IMSA Fund for Advancement of Education work to secure the support and participation of various constituencies including individuals, corporations, foundations, educational institutions and governmental agencies to advance the Academy's mission. In 2007-08, \$3.5 million in supplemental funding (gifts and grants) was provided.

IMSA parents paid a fee between \$280 and \$2,490 in 2007-08 to offset some of the costs of cocurricular programs and residential services.

To receive a copy of the 2007-08 IMSA Fund for Advancement of Education Annual Report, contact the Office of Advancement at (630) 907-5040.

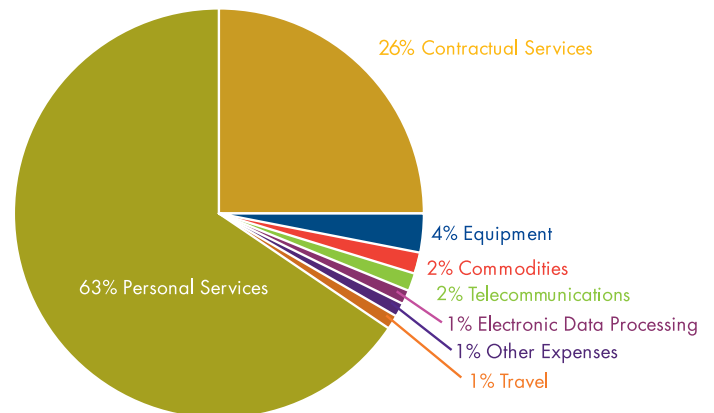
IMSA is audited by the Illinois Auditor General.

### Sources of Operating Resources



Total Operating Resources \$23,935,000

### Expenditures



## FROM THE VICE PRESIDENT

Catherine C. Veal  
IMSA Vice President for Strategy and Innovation

*Significantly improving life on the planet...stimulating further excellence for all Illinois schools...advancing the human condition...*

**F**rom the IMSA Board of Trustees original philosophy statement to the IMSA Law to the IMSA Strategic Plan, we and our supporters have always seen big possibilities for IMSA, and, through the years, we have realized many. It's in our DNA to wonder, imagine, question, strive, create, innovate, lead and serve. It's also in our DNA to challenge the status quo and keep going forward, with at least one eye always on the long view so that we "skate to where the puck is going to be" and help others do the same.

IMSA has put a stake in the ground that teaching and learning should be grounded in imagination and inquiry. Through our Field Offices and Energy Center, which are supported by both public and private funding, we will engage more students, educators and others in compelling questions and messy problems that make teaching and learning, especially in science, technology, engineering and mathematics (STEM), relevant, significant and "cool."

Speaking of cool, this spring IMSA is launching [cool.hub.imsa](#). Now in start-up, and with seed funding from the Tellabs Foundation, [cool.hub.imsa](#) will connect learners of all ages and give them tools to explore their big "What if" questions, develop their ideas and innovate together, without needing traditional organizational structures. Traditional roles of teacher, parent, student, expert, business person, researcher and inventor will blur as networks form around questions and problems of mutual interest.

**CoolSpots**, tech-enabled zones conducive for small group work, will serve as pathways to a robust virtual network that



supports innovation and learning through video conferencing, online forums, wikis, blogs, immersive online worlds and a searchable database of session recordings and published innovation projects. Initially, **CoolSpots** will be located on our campus and in our Field Offices.

The launching of [cool.hub.imsa](#) will support our Field Offices, our Energy Center and many other IMSA programs and services. It will also enable us to fast forward innovation in STEM teaching and learning, and enable us to scale selected programs and services in ways heretofore not possible, thereby increasing our capacity to significantly influence life on the planet, stimulate further excellence for all Illinois schools and advance the human condition. How cool is that? We're grateful to our early thinking partners in this endeavor: IMSA alumni, students, faculty and staff, IMSA Trustees and IMSA Fund Directors, and leaders at the Thornburg Center, Chicagoland Entrepreneurial Center, Chicagoland Chamber of Commerce and its related foundation, and Tellabs.

*Ever onward!*

*Catherine C. Veal  
Vice President for Strategy and Innovation*

The internationally recognized Illinois Mathematics and Science Academy® (IMSA) develops creative, ethical leaders in science, technology, engineering and mathematics. As a teaching and learning laboratory created by the State of Illinois, IMSA enrolls academically talented Illinois students (grades 10-12) in its advanced, residential college preparatory program, and it serves thousands of educators and students in Illinois and beyond through innovative instructional programs that foster imagination and inquiry. IMSA also advances education through research, groundbreaking ventures and strategic partnerships. ([www.imsa.edu](http://www.imsa.edu))





Photo by Craig Watson Photography

## IMSA Offers **RSS Feeds**



The IMSA Web site offers an RSS Feed of our top news stories. For more information on how to subscribe visit [www.imsa.edu](http://www.imsa.edu).

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## SAVE THE DATE for the **Following IMSA Events!**



IMSAloquium	<b>April 29, 2009</b>
Illinois Innovation Talent Program Sharing and Celebration Event	<b>May 1, 2009</b>
Chicago Field Office Ribbon Cutting	<b>May 4, 2009</b>
TALENT Competition	<b>May 20, 2009</b>
IMSA Class of 2009 Commencement	<b>May 30, 2009</b>
Alumni Weekend (includes reunions for the Classes of 1989, 1994, 1999 and 2004)	<b>July 17-19, 2009</b>



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