INSA360

SUMMER2008

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

Technology Ignites and Nurtures Student Learning at IMSA



FROM THE PRESIDENT

Dr. Glenn W. "Max" McGee IMSA President

Often when I speak to parents, students and educators, I share one of my core beliefs: there is no ceiling on human potential. Though perhaps a bit overstated, as I fully realize my limited singing ability elicits monumental groans and sends animals scurrying for cover, it is true that often when we think an individual has reached his or her "potential," we are astounded by a new accomplishment. As I look back on my first year as IMSA's second president, I am humbled and amazed by IMSA's truly unlimited potential for advancing the human condition and living into our aspiration to be the world's leading teaching and learning laboratory for imagination and inquiry.

In this issue of *IMSA360*, there are many examples of IMSA's truly unlimited potential. For the third consecutive year, IMSA made *Newsweek* magazine's annual list of the top "Public Elites" in the country. Only 17 high schools in the nation were named to this list. Our cover story highlights IMSA's new One-to-One Tablet Program and shows how technology is expanding the already extraordinary learning opportunities for our students. A companion story highlights how IMSA is taking the "bold path again" as the first secondary institution in the world to form a chapter for the One Laptop Per Child initiative (OLPC). You will learn how OLPC and our students are bringing the gift of education to children in the developing world through emerging technologies.

In this issue, we also introduce the eight distinguished alumni named the 2008 recipients of the IMSA Board of Trustees Alumni Award. These alumni represent IMSA's unlimited potential to impact our state, nation and world in immeasurable ways.

Finally, IMSA's unlimited potential can be found in our statewide work with educators and children. This summer, we are hosting programs for educators and students on IMSA's campus and at Illinois locations such as Carbondale, Carterville, Chicago, Lake County and Springfield to name a few.

This recognition is testimony to the hard work and dedication of IMSA's world-class students, faculty, staff and community partners. IMSA continues to raise the bar on its truly unlimited potential. The IMSA community and the state of Illinois can be proud of IMSA's work to ignite and nurture tomorrow's leaders who will be well prepared to solve our global issues and advance the human condition.

of technology and pioneering outreach.

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The mission of IMSA, the world's leading teaching and learning laboratory for imagination and inquiry, is to ignite and nurture creative, ethical scientific minds that advance the human condition, through a system distinguished by profound questions, collaborative relationships, personalized experiential learning, global networking, generative use

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Send comments, questions or story ideas to: Brenda Buschbacher brenda@imsa.edu

CONTENTS

FEATURES

- 10 Technology Ignites and Nurtures Student Learning at IMSA
- 14 IMSA Leads Again With One Laptop Per Child
- 15 IMSA For All—Technology Extends IMSA's Work in Illinois and Beyond
- 16 Alumni Award Winners, Alumni Hall Naming and Homecoming





DEPARTMENTS

- 4 News Headlines
- 7 Alumni-in-Action
- 9 Alumni Corner
- 18 Community Notes
- **19** From the Vice President

VEWS**HEADLINES**

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

Partnerships Lead to Expansion of Summer Programs in Illinois

he IMSA Kids Institute[®] is expanding its Science Explorers summer program to fifth and sixth graders in southern Illinois and Lake County, Illinois this summer. IMSA is partnering with Southern Illinois University, Unity Point School, the Lake County Regional Office of Education and Rondout School District #72, with additional support from the IMSA Fund for Advancement of Education.

In addition, IMSA's Problem-Based Learning (PBL) initiative is expanding to central and southern Illinois thanks to a \$100,000 Innovation Generation Grant from the Motorola Foundation.

J.B. and M.K. Pritzker Family Foundation Offers Challenge Grant

The IMSA Fund for Advancement of Education is pleased to announce a challenge grant offered by The J.B. and M.K. Pritzker Family Foundation. The grant matches dollar for dollar all donations from IMSA Fund repeat donors for Fiscal Year 2008 (until June 30, 2008) and Fiscal Year 2009 (July 1, 2008 until June 30, 2009) up to \$50,000 per year. Donations support student participation in national and international academic forums and competitions; statewide programs that enable children to discover the wonders of mathematics and science; professional development programs for Illinois teachers; and innovative projects that advance teaching and learning. To donate or learn about programs supported by the IMSA Fund for Advancement of Education visit www.imsa.edu/giving.

Board of Trustees Adopts Alumni Staff and Emeriti Policy

The IMSA Board of Trustees adopted its Alumni Staff and Emeriti Policy. This establishes an honorary Emeritus/Emerita designation for eligible retirees who are nominated and selected. The policy and nomination process are available on IMSA's Web site at www.imsa.edu/about/board.

Seniors Honored with Award and Scholarships

Three seniors were recipients of award and scholarship programs administered through the IMSA Fund for Advancement of Education. Andrew Gentile was the first recipient of the Knight Family IMSA Scholarship, Sophia Pilipchuk received the Mary Van Verst Love of Science Scholarship and Sonny Song received the John H. McEachern, Jr. Exemplary Service Learning Award.

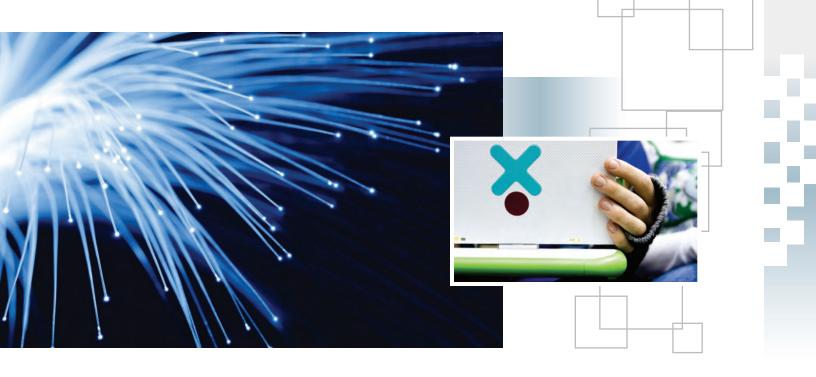
Student Achievements Recognized in National and Global Venues

Perry Bradford won a gold medal and a silver medal in Biology at the national competition, Academic, Cultural, Technological and Scientific Olympics (ACT-SO).



Lindsey Choi, Anita Mehta and Sonny Song participated in the Ritsumeikan (RITS) Super Science Fair in Japan.

Megan Abel, Karan Patel and Vineet Mohanty participated in the Third International Students' Science Fair, held in India. Mohanty received second honorary mention in Oral Presentation in Biology and Patel received second place Oral Presentation in Biology and third place (overall) in Poster Presentation.



Newsweek Names IMSA Among Best in Nation

Newsweek included IMSA among the "Public Elites" in its 2008 list of 17 secondary educational institutions with the highest ACT and SAT scores in the nation.

IMSA**360**

5

Sushma Kola was named a finalist in the 2008 Sanofiaventis International BioGENEius Challenge, an annual competition for high school students who demonstrate an exemplary understanding of biotechnology through science research projects.

Yangbo Du's paper, "Promoting Bio-Ethanol in the United States by Incorporating Lessons From Brazil's National Alcohol Program," was published in the fall 2007 issue of the National Consortium for Specialized Secondary Schools of Mathematics, Science and Technology Journal.

Elizabeth Ikejimba is a co-author of "Microsatellite loci for two East African tree species, Leptonychia usambarensis (Sterculiaceae) and Sorindeia madagascariensis (Anacardiaceae)" by Dr. N.J. Cordeiro, Dr. K.A. Feldheim, Ms. E. Ikejimba and Dr. H.J. Ndangalasi to be published in *Molecular Ecology Resources*.

Sushma Kola, Shailee Shah and the team of Kelsey Lawhorn and Anthony Yunker represented Illinois Junior Academy of Science Region 5 at the Intel International Science and Engineering Fair (Intel ISEF), the largest science competition of its kind with over 1,700 students from 49 countries and territories. In the special awards judging, Kola received third place from the National Anti-Vivisection Society. In regular competition judging, Kola received fourth place in the Cellular and Molecular Biology category.

Marilyn Blasingame, Eric Hultgren, Cody Morrow, Jeffrey Narkis, Bharat Vaitla, Emily Zhao were gold medal recipients and Mivil Abraham, Philip Kuo, Sabine Tegura were silver medal recipients for essays submitted to the 26th National Russian Essay Contest.

Robert Delaney, Alexander Drummond, Roy Fisher and Adam Leemans were accepted into the Summer Leaders Seminar at the United States Military Academy at West Point.

Jonathan Koch was selected as a delegate to the 46th Annual United States Senate Youth Program, held in Washington, D.C.

Jenny Shao, Sarah Shareef and Evelyn Wang were selected as delegates to the 46th National Junior Science and Humanities Symposium (JSHS) sponsored by the U.S. Army, Navy and Air Force. JSHS aims to widen the pool of scientific and engineering talent for our nation.

NEWS**HEADLINES**



IMSA Faculty and Staff Receive Recognition/Contribute to Their Fields

Mathematics Teachers Coach Students to First Place in State Contest

IMSA mathematics teachers Dr. Steve Condie, Dr. Micah Fogel, Mark Kammrath, Dr. Michael Keyton and Dr. Vince Matsko coached a team of 33 IMSA students, leading them to first place in the 28th Annual Illinois Council of Teachers of Mathematics (ICTM) State Math Contest (Div. 4 AA) held at the University of Illinois at Urbana-Champaign on April 26.

IMSA President Dr. Glenn "Max" McGee was joined by IMSA staff members to deliver presentations to participants attending Closing the Gap: Practical Strategies for All Educators Conference presented by the Southern Illinois P-20 Education Alliance, the Illinois Association of School Administrators Annual Conference and the Tutor/Mentor Leadership and Networking Conference. The forums generated dialogue about IMSA's work with communities to grow and strengthen partnerships that enhance mathematics and science education and make an enduring difference in Illinois schools and beyond.

Principal and Vice President for Academic Programs, Dr. Eric McLaren, was invited to serve on the Quality Assurance Review Team for the North Carolina School of Science and Mathematics. The review team provided analysis and feedback on the school's improvement planning process, system plan, goals, results and quality assurance. Biology teachers Sarah O'Leary and Dr. Susan Styer were selected as a participant team to attend the National Academies Summer Institutes on Undergraduate Education in Biology at the University Wisconsin-Madison. Of the 22 participant teams, the IMSA team represents the only college prep program. All other faculty teams represent colleges and universities throughout the country.

Mathematics teacher Dr. Vince Matsko delivered the talk, "Conis, Linear Algebra, and Mathematica" at the University of Illinois Urbana-Champaign's Geometric Potpourri Seminar and at the Illinois section of the Mathematical Association of America's regional conference at Eastern Illinois University.

Dr. Stephanie Pace Marshall, IMSA founding president and president emerita, was named a recipient of the 2008 Damen Award for Lifetime Achievement by Loyola University in Chicago. Named for Loyola University Chicago's primary founder, Arnold Damen, S.J., this award is granted to an alumnus(a) from each of Loyola's schools and colleges. It recognizes the qualities of leadership in industry, leadership in community and service to others.

Nobel Laureate and IMSA Resident Scholar Dr. Leon Lederman received the 2008 William Benton Medal for Distinguished Public Service in the field of education. Dr. Lederman, co-founder of IMSA, was presented the award at the June 14th Convocation at The University of Chicago.

ALUMNI-IN-ACTION

Flygirl Makes PBS Debut



Navy pilot, Lieutenant **Alex Dietrich '97**, is one of 18 crew members featured in the 10-part PBS series *CARRIER*.

According to the PBS Web site (http://www.pbs.org/ weta/carrier) CARRIER focused on the stories and lives of crew members of the USS Nimitz during a sixmonth deployment overseas. The Web site states, Their stories provide a personal look at the broader topics of family, faith, discipline, patriotism and the war on terror. Lt. Dietrich, originally from Chicago, is an F-18 pilot and member of the Black Aces squadron. She and her squadron were featured in episodes 1, 2, 5 and 7. Read more about Lt. Dietrich at http://www.imsa.edu/ news/releases/2007_2008/PBS.php. Lt. Dietrich, who earned her B.S. degree in civil engineering from George Washington University in Washington, D.C., said her IMSA experience prepared her well for her career. "The advanced curriculum at the Illinois Mathematics and Science Academy, with its emphasis on integration across disciplines, prepared me for all aspects of flying...from pre-mission planning, weaponeering and targeting to in-flight scenarios and combat situations," Dietrich said. "The problem-solving and technical skills I developed at IMSA continue to help me today."

Entrepreneurship, Competitiveness in Focus



Premier leaders from business, government and academia, including **Steve Chen '96**, gathered in Chicago on May 22 for the

2008 National Summit on American Competitiveness, convened by the U.S. Department of Commerce. Dr. Glenn "Max" McGee, Dr. Stephanie Pace Marshall, Catherine C. Veal and **Sachin Agarwal '98** attended the Summit which featured discussions on how to bolster the business climate, link entrepreneurship with economic prosperity, and utilize free trade agreements. Introduced as "the YouTube guy," Chen was an invited speaker on the Entrepreneurship panel (Steve is CTO and Co-Founder of YouTube). While in town, he also spoke at a Chicagoland Chamber of Commerce roundtable on the region's entrepreneurial, investment and innovation climate. Attendees included Chicago Mayor Richard M. Daley, Chamber President and CEO Jerry Roper, other prominent leaders, and more than a dozen entrepreneurs and members of the region's investment community. In addition, **Steve Chen '96**, **Jay Budzik '95** and **John Hoesley '89** met with a group of IMSA students for a lively conversation about YouTube, PayPal, IMSA and entrepreneurship.

Dual Fellowships



Amy Peterson '04 recently received a National Science Foundation Fellowship and also was offered a Department of Defense National Defense Science and Engineering Graduate Fellowship. Amy is a graduate student in chemical engineering

at Drexel University, where she received her B.S. degree in 2007. She currently holds an Integrated Graduate Education and Research Traineeship (IGERT) Fellow in Nanoscale Science and Engineering. Her research project is entitled "Remendable Polymer Networks with Reversible Chemistry."

Student Speak

Shareese Pryor '04 was featured on the Barnard



College Web site for its May 2008 "Student Speak" column. Shareese graduated from Barnard this spring and plans to head back to Illinois to attend The University of Chicago Law School. According to the Barnard

College Web site, Shareese will "work on issues of family law this summer, as a 2008 Arthur Liman Public Interest Law Undergraduate Summer Fellow. She attended the Liman program's annual spring

ALUMNI-IN-ACTION

colloquium at Yale Law School, and after Barnard graduation, funded by a Liman grant, she will intern at the Juvenile Protective Association in Chicago. There she will help provide intervention and treatment for families and children in abuse and neglect cases." You can read Shareese's column and learn more about her outstanding undergraduate experience at http://www .barnard.edu/newnews/student/0508pryor.html.

Shake, Rattle and Roll



Students at Cornell University have the chance to learn about earthquakes and other natural disasters from the "Master of Disaster," **Dr. Matt Pritchard '93.** Pritchard, assistant

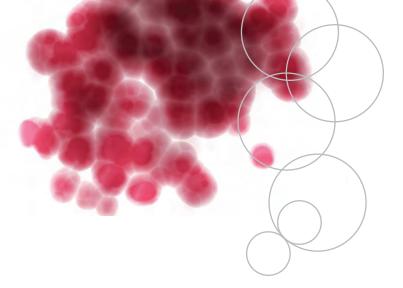
professor in the Department of Earth and Atmospheric Sciences at Cornell, is featured in the article "Master of Disaster: Earth Sciences Professor Matt Pritchard Helps Students Understand Nature's Fury" available online at http://www.engineering.cornell.edu/news/ engineering-magazine/archives/cem-summer-2007/master-of-disaster.cfm. Read about what else Matt has been up to, including undergraduate and graduate research assistant opportunities, at his Web site: http://www.geo.cornell.edu/eas/ PeoplePlaces/Faculty/matt/Pritchard.html.

Scholarly Achievements



Ying (Amy) Ye '05 was recognized as a 2007 Goldwater Scholar and also was named to USA TODAY's 19th annual All-USA College Academic Team (3rd team). The Goldwater Scholarship Program honoring Senator Barry M. Goldwater was

designed to foster and encourage outstanding students to pursue careers in the fields of mathematics, the natural sciences and engineering. Amy attends the University of Illinois at Chicago and is majoring in biological sciences.



Research Hits Home Run



A research project by **Scott Powers '07**, which he conducted in IMSA's Student Inquiry and Research (SIR) program as a student, tied for a first place award at the Society for American Baseball Research National Convention. Information about the award

can be found at http://www.sabr.org/sabr.cfm?a= cms,c,134,43,0. Scott said, "I would like to thank the SIR program for teaching me what it means to conduct a scientific inquiry." Read Scott's winning paper, "The St. Louis Cardinals of the Sixties and Their Effect on Black/ White Relations in St. Louis," at: http://www.sabr.org/ cmsFiles/Files/Scott%20Powers.PDF.

Real Role Model



Jessica (Fritzsche) Stephenson '97 gave the keynote address at the 2008 IMSA Award of Excellence ceremony held on March 14, 2008 at IMSA. Each year, IMSA sophomores are invited to nominate a former educator who most challenged, inspired

and supported their academic or personal growth prior to enrolling at IMSA. Educators represent both public and private schools throughout Illinois. Stephenson, an English teacher at Prosser Career Academy in Chicago, encouraged fellow teachers in the audience to help their students find their own voice. "I am indebted to IMSA because I really feel like this place gave me my voice-my wonderful teachers...administrators...coaches...my college counselors; my resident counselors; and my classmates. And I now work to pass on that gift to my own students."

ALUMNI**corner**



Strengthening the IMSA Alumni Network

When many older alumni attended IMSA, it was "hightech high"—many of us had email accounts and were doing research online before our friends back home had ever seen the Internet. And we have heard the stories about those alumni who helped to develop the Internet and the applications that many of us now take for granted.

However, despite the technological prowess of our alumni, there seems to have been a delay in efforts between alumni and the Academy to develop an online forum in which to share contact information and other important milestones. The myIMSA alumni directory (www.imsa.edu/alumni/myimsa) was developed to address that concern by allowing alumni to share and update information about themselves that is available to both the Academy and other alumni hoping to reconnect.

Still, the IMSA Alumni Association (IAA) recognizes that the myIMSA directory cannot meet all alumni communication needs. Therefore, the IAA is working with IMSA to determine how to handle other online services and who should provide those services. Currently, the IAA primarily works through the IAA Web site (www.imsaalumni.org), but for anyone who has visited the site lately, you can see that for a bunch of techno-geek alumni, we have a pretty lame online presence. Looking forward, the IAA plans to change that.

There have been proposals to create a blog to allow the IAA to share updates and events with the rest of the alumni community, listservs for alumni who live in a specific region and even the possibility that the IAA would take over the alumni email server so that alumni would not be subject to the state-mandated password change requirements. All of these proposals are put forward with the intent of developing a stronger, more responsive, online alumni community.

The IAA also recognizes that the alumni community is not just a virtual community and that social events can be an effective way to exchange information and news. This year's regional events held in Urbana-Champaign, Chicago, New York City, San Francisco, Seattle and Washington, D.C., were a great way for alumni to reconnect and welcome Dr. Glenn "Max" McGee to IMSA "live and in-person". In total, approximately 210 alumni attended. In addition, a special thank you should be extended to IMSA staff and friends including Dr. Glenn "Max" McGee, Dr. Stephanie Pace Marshall, Suzyn Price, Dr. Eric and Kim McLaren, Carolyn Johnson, Jennifer Spuehler, Cathy Veal and Jim Gerry for attending these events to strengthen communication between alumni and the Academy.

As successful as these events were, the IAA would like to find ways to expand beyond annual gatherings in order to help the regional clubs grow into organizations that enhance existing alumni networks as they change over time. Given that groups of alumni already spend time together in locations other than major cities and college towns, the IAA is considering a proposal to make funding for alumni events more flexible. If a group of alumni has an idea for an activity, the IAA has monthly public meetings where these ideas can be submitted to request funding from the IAA. There would be a couple of caveats. First, the IAA works on a limited budget so not all funding requests could be met. Second, the event must be open to other alumni in the area to potentially grow your existing alumni community.

There would still be a role for regional club chairs to plan area-wide events and maintain distribution lists, but this role will evolve as we learn more about what changing security requirements mean for data collection and sharing between IMSA and the IAA. The IAA also recognizes that some chairs need support during event planning and it is expected that this will improve with Carolyn Johnson's new role as the Coordinator of Alumni Engagement.

Success for any alumni event obviously depends upon having valid contact information. A major focus in coming months will be to work with IMSA to determine an effective way to build the alumni database and confirm details currently in myIMSA. In this way, the online and in-person communities, no matter how far-flung, must interface to further develop our alumni community. The IAA is still considering possibilities for these new developments, so please feel free to contact Ande Croll with tech-related issues (president@imsaalumni.org) and Matthew Knisley (vice-president@imsaalumni .org) with comments concerning the regional Clubs. Also, be sure to keep your profile updated in myIMSA (www.imsa.edu/alumni/myimsa)!

- Ande Croll '97 and Matthew Knisley '01



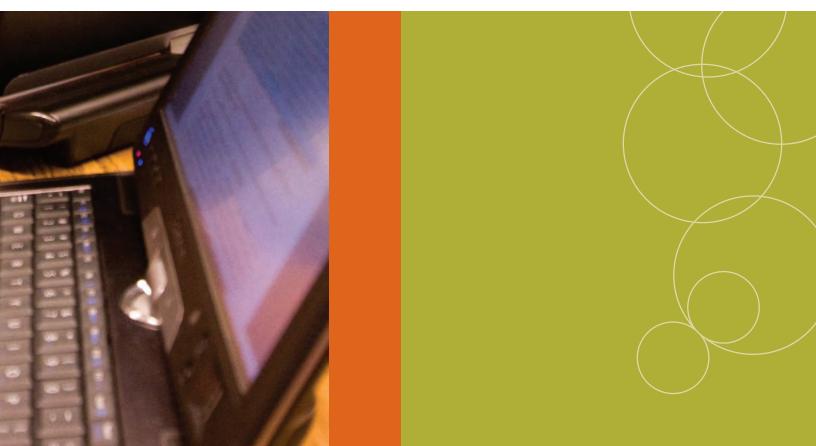


Technology Ignites and Nurtures Student Learning at IMSA

IMSA360

11

We learn how technology is enhancing student teaching and learning every day at IMSA in this interview with Chief Information Officer Jim Gerry, Instructional Technology Designer Christopher Glenn and Strategy Technology Coordinator Scott Swanson '90.



IMSA360: Can you describe IMSA's new One-to-One Tablet program that we initiated in the fall of 2007 with all incoming sophomores and why we decided to begin this?

J.G., C.G. and S.S.: IMSA's program is called the One-to-One Tablet program. Although begun this year, it has been several years in the making. It was conceived as one of the outcomes of the Technology Visioncasting event held at IMSA on May 7, 2005. After the Visioncasting event, the Technology for Learning Committee developed a three-year plan that created the One-to-One program. Committee members visited other schools involved in One-to-One programs. National and global experts including Milton Chen, David Thornburg and Bruce Dixon were consulted in this process. Based on the synthesis of all the research and assessment data collected, the most appropriate technology-rich learning environment for students of the state's leading mathematics, science and technology academy involved creating a one-to-one saturation of tablet computing devices. This would involve the entire student body in all formal and informal 24/7 learning opportunities.

IMSA is using convertible tablet computers which work like standard laptop computers in one mode and with a swivel of the screen can be used as a tablet in their other mode. Essentially these are laptop computers that include a touch sensitive screen and a pen-like stylus. Tablet computers were piloted in the 2006-07 school year by IMSA students and several IMSA faculty with their classes. IMSA also recommended, but did not require, that incoming sophomores that year purchase a tablet computer. Based on



student and faculty pilot work, a One-to-One Tablet program was recommended and began in the 2007-08 school year.

IMSA360: Have teachers and students embraced this new initiative?

J.G., C.G. and S.S.: Many IMSA classes are a mixture of grade levels, and an initiative like this requires one-to-one densities which, by design, will not be reached until the 2009-10 school year. We expect faculty involvement to evolve as this plan progresses. Students often follow faculty members' lead on use of the computer for formal learning opportunities. As faculty involvement evolves, this aspect of student uptake of the One-to-One program is expected to rise as well. Students have a wide range of informal learning uses of the tablets. Increased support of peer-to-peer engagement opportunities will continue to augment these techniques and methods, both in breadth and depth.

IMSA360: Can you give an example of how IMSA teachers have used this technology with sophomores to enhance learning in the classroom?

J.G., C.G. and S.S.: Faculty members use the technology in a number of ways. Many of the humanities teachers assess student learning by using video assessment. In these situations, students use video editing software to capture and edit video. Video has also been used in wellness programs for formative assessment. Mathematics and science teachers incorporate technology into instructional activities, using the tablets for collecting data and producing representations of theories and concepts.

IMSA360: What has IMSA learned along the way during the 2007-08 year that we might do differently next year?

J.G., C.G. and S.S.: We learned that more machines need repair than we anticipated. We have seen about a 10% rate, a common figure that is starting to emerge across a wider cross section of One-to-One implementers. We are making adjustments to accommodate this. We also see how critical curriculum change is to faculty adoption. Finally, we learned that this is the first machine that many students have administered. They have to learn how to keep their machines running well and backed up.

Teachers not only need training on how to use hardware and software but also need support in the development of instructional activities when implementing a One-to-One computing initiative. Supporting teachers in the development of instructional activities sets the foundation for incorporating technology into instruction.

IMSA360: Were there concerns about the cost of the tablets and what do we do for students who can't afford them?

J.G., C.G. and S.S.: While some concerns were raised about the cost, most parents realize that this is important for student learning. IMSA specifications are established so that the



computer will be viable over the student's three-year stay. This means that highly-advertised low-cost computers with low-end features that don't include tablet capabilities are not feasible for our program. We accommodate students who cannot afford them by providing an IMSA loaner machine.

IMSA360: What staffing changes needed to be implemented for the new One-to-One program to be successful? What type of training needed to be implemented with faculty and staff?

J.G., C.G. and S.S.: We added a new instructional technology designer position to support the program. Chris Glenn is in this position. In 2006-07, we focused staff development days on technology in the classroom activities. Training for faculty along with curriculum development work will continue this summer.

IMSA360: How does IMSA keep its learning materials current with technology or vice versa?

J.G., C.G. and S.S.: Through our work at conferences and other external professional networking and development opportunities, we stay abreast of the current trends in educational technology. In addition, we forecast what we see as the intersection of emerging technologies and our mission and vision, and keep ourselves constantly refining and moving toward those goals.

IMSA360: Is the IMSA campus entirely wireless now for all students and staff, allowing for email access, file sharing and file retrieval from anywhere on campus?

J.G., C.G. and S.S.: Yes, wireless access is available inside any building on campus. This was completed in the main building in summer 2006. Upgrades were done later that year (main building expansion) and again in summer 2007 with the addition of residence hall coverage and new security architecture. Further upgrades were done in October of 2007 with the addition of wireless LAN (local area network) controllers creating a managed wireless network.

IMSA360: How well equipped are the classrooms with other "smart" technology, besides the tablets?

J.G., C.G. and S.S.: Our classrooms are equipped with digital projectors and speakers. Some classrooms have white boards. All faculty members have portable computing equipment which can be brought into the classroom. Over the next three years, all classroom projectors will be connected as network devices. As such, they can be used via any computer's wireless connection. Since all portable computers also have DVD players, these are available to students and faculty wherever they are, which obviously includes the classroom. With wireless access in all classrooms, the learning environment is rich with digital technologies.

IMSA360: What type of changes do you see on the horizon as far as technology enhancements, etc. to the current learning process in the classroom?

J.G., C.G. and S.S.: Our short-range plans include: constructive platforms, social networking (i.e. Web 2.0 technologies like wikis, blogs and podcasts), and wireless projectors in classrooms permitting tablet screen projection without tethered wired connections. Our long-range plans include: multi-user virtual environments (e.g. Second Life), and using the Internet to provide meaningful real-time learning experiences with experts and students throughout the world.



IMSA Leads Again With One Laptop Per Child

IMSA takes the bold path again—this time to be the first secondary institution in the world to form a chapter for the One Laptop Per Child initiative, widely known as OLPC. OLPC forms partnerships with countries in the developing world to bring learning to children through the XO, the trademarked laptop uniquely built for children of emerging countries. OLPC describes the XO design as a "very distinctive machine; rugged, durable and child friendly, inside and out." The XO's software applications are where IMSA begins to come in!

Creative Software Applications for Children Around the World

XO is built from free and open-source software, enabling learning advocates from around the world to share their knowledge and expertise to build learning activities for children. Who better than IMSA students and alumni to embrace these innovative activities for learning?

The IMSA/OLPC Story Unfolds

Scott Swanson '90, Strategy Technology Coordinator at IMSA, and Mel Chua '03, University Affiliate Liaison for OLPC, knew that IMSA students could dazzle OLPC's university partners with their creative learning applications for children. During IMSA's January 2008 Intersession, Swanson and Chua co-led an intensive five-day workshop where 15 students learned the concepts, goals and technologies of OLPC. Students then quickly applied their enthusiasm, knowledge and skills to build innovative educational solutions.



An example of the projects that students are developing includes a dynamic time activity to help educate younger children about the relationship between a digital clock, a wall clock and the position

of the sun in the sky. Another is an extremely low-cost electrocardiogram (EKG) sensor to assist with early diagnosis of heart problems in rural communities. Their work was quickly noticed by another teen with similar interests from Cleveland. Together they formed a global collaboration to help provide low-cost (no more than \$10) "telehealth" hardware and software for the XO that would enable children to learn about medical and wellness concepts, as well as provide actual early diagnostic possibilities for family and community members in rural and distant areas. April-Hope Wareham '08, who was a co-founder of the IMSA OLPC chapter, said the experience broadened student awareness of global issues. "Getting the chapter started, not only allowed us to work on various projects for OPLC, it opened new doors for a lot of students here," Wareham said. "It raised awareness about many international problems. It also got us thinking about solutions." Wareham's impact will continue when she becomes a college student. "I'm going to the University of Tulsa next year to major in Computer Science and Linguistics," she said. "My XO is coming with me, and I will definitely be starting a chapter there soon!"

Promoting Learning Without Boundaries

Swanson talks about students' efforts to create awareness about OLPC. "The response that our students get from Illinois educators at technology conferences is nothing short of fantastic. April-Hope [Wareham '08] and Kevin [Crews '09], our chapter founders, had a poster session at the Illinois Technology Conference for Educators (IL-TCE 2008), the biggest educational technology conference in Illinois. They and the little green machines seemed to pull everybody in like magnets," Swanson said. "With the XOs, they were engaging everybody from school board officials to kindergarten teachers to primary students in hands-on experiences, both individually and networked together," Swanson said. "At the same time, they educated conference participants on the ethos of the One Laptop Per Child project and showed the potentials of the units both in direct education of K-6 students as well as a service learning platform for grades 4 and up."

IMSA OLPC chapter co-founder Crews said OLPC advocacy is important. "We do a lot of advocacy work for the organization here in Illinois through presentations and seminars," he said. "I really wish that more people would take the time to understand the mission of the organization and to think about the situation in a long-term mindset," he added. "Children need water and food and electricity, but without an education, they will always need and never be able to provide. This is why OLPC is such an important project moving into the second decade of the 21st century."

Find Out More

The IMSA OLPC chapter's information hub, maintained by the chapter members, is at http://wiki.laptop.org/ go/IMSA. Here, you can find out about the chapter, member projects, and more about IMSA's involvement with XOs and OLPC.

IMSA For All

Technology Extends IMSA's Work in Illinois and Beyond

On the IMSA campus and in communities throughout the state, the Illinois Mathematics and Science Academy is using technology to ignite and nurture teaching and learning. These programs are just a few examples of how technology is extending IMSA's work for educators and children throughout Illinois and beyond.

• The IMSA-ComEd CyberQuiz 4Kids Challenge located at www.imsa.edu features stimulating mathematics and science brainteasers and word problems for Illinois students in grades six through nine. Students who submit correct answers to one of the monthly CyberQuiz challenges are entered into a monthly random prize drawing for an iPod and also an annual random grand prize drawing for a portable computer or four tickets to Six Flags Great America in Gurnee, Illinois. The IMSA-ComEd CyberQuiz 4Kids, made possible because of the support of ComEd, a unit of Chicago-based Exelon Corporation, supports classroom learning by enhancing student interest and motivation in mathematics and science.

• The IMSA Kids Institute[®] IMSA on Wheels (IOW) Web site offers online science demonstrations and experiments to a worldwide audience and is the Web streaming repository to four volumes of the IMSA on Wheels DVD series http://www.imsa.edu/programs/kidsinstitute/ wheels/.

• Webinars featuring a Vitreous Retinal surgeon and the Kane County veterinarian are broadcast to IMSA Excellence 2000+ (E2K+) participating schools. These experts described and discussed their careers in STEM (Science, Technology, Engineering and Mathematics) and answered questions from E2K+ students.

• IMSA Excellence 2000+ students solve complex problems by participating in the online/virtual Illinois Problem of the Month and the International Riddle, open to students from Illinois, Iowa, Israel and New York. More than 830 E2K+ students participated in the Problem of the Month in 2007-08. • IMSA Excellence 2000+ classes from schools in Aurora, Bloomington, North Aurora and Springfield, along with schools in Israel, New York and Iowa participate in the annual International Virtual Competition hosted by the Mitchell Excellence 2000 group in Israel.

• 21st Century Information Fluency provides online training and resources for educators in Digital Information Fluency: the ability to find, evaluate and use digital information effectively, efficiently and ethically. All services, including courses, workshops, interactive tutorials and Internet search challenges, are provided over the project's Web site, http://21cif.imsa.edu which receives more than one million page views annually.

• The Illinois Virtual High School (IVHS) provides "anytime, anyplace" offerings to thousands of students in high school and some middle school classrooms throughout Illinois. Today, one out of every three high schools in Illinois uses IVHS services. It also provides online professional development courses for Illinois educators. IMSA was a founding partner of the IVHS and today fully manages and administers the program on behalf of the Illinois State Board of Education (ISBE).

IMSA PBL Network (Problem-based Learning)

technology applications include an emerging online environment that features professional development followup, discussion, a wiki, a PBL unit/tutorial, research and resources. In addition, educational and program DVDs are available as well as video and teleconferencing with Illinois or out-of-state partners such as NASA. Also, computer conferencing tools are used to share work between sites. IMSA's Problem-based Learning Web site (http://www .imsa.edu/programs/pbln/) received more than 320,000 hits during the 2007-08 year, many from undergraduate education students from throughout the country and abroad who want to learn about problem-based learning. 15

IMSA Homecoming Special Events to Honor Alumni Award Winners and Celebrate Alumni Hall Naming

Homecoming weekend at IMSA will be like none other this fall, so be sure to mark your calendars to attend several celebrations in honor of IMSA alumni! Below is a brief overview of the day—for details, visit our Web site www.imsa.edu/news/events/homecoming:

Saturday, September 27, 2008

12:00 pm Alumni Hall Naming Ceremony

Presented by the IMSA Fund for Advancement of Education (www.imsa.edu/giving) in recognition of total alumni contributions meeting—and exceeding—the \$1,000,000 mark, residence hall 1503 will be renamed "Alumni Hall." Lunch and Alumni/Student/Faculty/Parent engagement activities throughout campus will follow.

5:30 pm – 8:00 pm Alumni Awards Ceremony and Dinner

Presented by the IMSA Board of Trustees, the second annual Alumni Awards Ceremony and Dinner event will be open for students, parents, alumni and other guests (see below for additional details).

8:00 pm

IMSA Homecoming Dance for all students, alumni, faculty and staff

Eight IMSA Alumni to be Honored at Awards Ceremony

Eight distinguished alumni will be honored at the IMSA Board of Trustees Alumni Awards Ceremony the evening of September 27, 2008 at Pipers Banquets in Aurora, Illinois.

These awards are the highest honors bestowed to alumni in recognition of their accomplishments and contributions to their field of endeavor, to IMSA, and to the citizens of Illinois, our nation and the world. Alumni are defined as all former IMSA students who attended the residential program for at least one semester.

IMSA Board of Trustees Chairman Steven Isoye said the Board was extremely impressed by the quality of all the 2008 recipients.

"IMSA and the state of Illinois can be proud of each and every one of this year's Alumni Award winners, who are helping to advance the human condition through their gifts of knowledge and ethical and passionate leadership."

IMSA President Dr. Glenn "Max" McGee said the Alumni Awards program demonstrates how IMSA alumni attain extraordinary levels of success.

"Their collective contributions are astounding, even though as individuals, our oldest alumni have not yet reached the age of 40," Dr. McGee said. "The Alumni Award winners represent IMSA's truly unlimited potential to impact our state, nation and world in immeasurable ways."

Three categories of awards were given: the Alumni Trailblazer Award, the Alumni Distinguished Leadership Award and the Alumni Titan Award.

The Alumni Award Categories

The **Alumni Trailblazer Award** is bestowed when merited and honors alumni who personify IMSA's vision to prepare alumni who "create new intellectual worlds, cure a dreaded human ailment or in some other way significantly influence life on our planet." The outstanding achievements of hese honorees will have earned national or international prominence for a groundbreaking or sweeping initiative that has redefined and improved the way significant numbers of citizens live, learn or work.

The Alumni Distinguished Leadership Award, an annual award, goes to alumni who have made distinguished achievements or leadership contributions in their professional fields of endeavor consistent with IMSA's mission. The awardees also may be recognized for significant civic or community contributions or for extraordinary courage and selflessness under challenging circumstances.

The Alumni Titan Award, an annual award, honors alumni, who through outstanding service to IMSA, advance the institution's mission and work. The honorees are enthusiastic and energetic IMSA champions who dedicate significant time, talent and/or treasure to endeavors that help the Academy fulfill its role in developing talent and leadership in mathematics, science and technology for our state, nation and world.

The Alumni Award Recipients

For complete profiles of the following eight Alumni Award recipients, visit www.imsa.edu/alumni/awards/recipients08. php. To nominate outstanding alumni for next year's awards, please visit www.imsa.edu/alumni/awards.

The Alumni Trailblazer Award Recipients:



Steven Chen is co-founder and chief technology officer of YouTube.com, the online video sharing Web site which has revolutionized the creation and sharing of videos across the globe. Founded in February of 2005, YouTube instantly

became a viral video phenomenon with 100 million hits per day. In 2006, YouTube was purchased by Google for \$1.65 billion, less than one year after its launch. ABC-TV's *Good Morning America* dubbed the service the "YouTube

Revolution." As chief technology officer, Chen directs all areas of engineering and product development. Prior to YouTube, Chen was one of the first engineers at PayPal. Chen attended the University of Illinois at Urbana-Champaign.



Russel Simmons '95

Russ Simmons is co-founder and chief technology officer of Yelp Inc. (www.yelp.com), the growing online community enabling people to write and share reviews of local businesses with others. Yelp has

gained national attention and has been featured in national media outlets including *The New York Times, The Washington Post, The Wall Street Journal, TIME, Entrepreneur* magazine and National Public Radio's *Morning Edition.* Prior to Yelp, Simmons was one of the six founding members of PayPal, an eBay company. Simmons is a graduate of the University of Illinois at Urbana-Champaign.

The Alumni Distinguished Leadership Award Recipients:



Dr. Sanza Kazadi '90

Dr. Sanza Kazadi is founder and president of the Jisan Research Institute (JRI) in California, a pioneering research environment for high school and prehigh school students. JRI specializes in teaching young people how to conduct

scientific research. Under Kazadi's leadership, JRI students have thrived. Ranging in ages from 13-22 years, they have published numerous scientific papers and contributed to new technologies, several of which are patented. Dr. Kazadi is a graduate of the California Institute of Technology.



Dr. Mia K. Markey '94

Dr. Mia K. Markey is already recognized as one of the world's leaders of the young generation of biomedical computing. Markey is an assistant professor in the Department of Biomedical Engineering at the University of Texas at Austin. Her

research contributions focus on computer-based clinical decision making and support. She established a leading biomedical informatics lab with a team of 12 students. Her mission of designing cost-effective, computational medical decision aids will help physicians better diagnose, treat and manage cancer. Dr. Markey is a graduate of Carnegie Mellon University and Duke University.



Captain Kenyatta Ruffin '99

Captain Kenyatta Ruffin is an F-16 fighter pilot assigned to the 13th Fighter Squadron at Misawa AB, Japan. During his deployment to Balad AB, Iraq in support of Operation Iraqi Freedom, he flew 49 missions, logged

nearly 200 combat hours and volunteered in the chapel and hospital during his down time. Captain Ruffin graduated from the U.S. Air Force Academy in 2003, where he earned a B.S. degree in aeronautical engineering with a minor in military doctrine, operations and strategy. Captain Ruffin was the U.S. Air Force 2003 Class Vice President and the recipient of numerous awards, including the National Defense Service Medal and the Global War on Terrorism Service Medal.

Scott Swanson '90

Scott Swanson is on the leading edge of strategic and emerging technologies for education in local, national and international arenas. Swanson is a docent (lead mentor) for the International Society for Technology in Education

(ISTE) in Second Life[®], a 3-D virtual world entirely created by its residents (www.secondlife.com). He served on several panels for national and statewide education and technology conferences, and has become a strategic thinking partner for leaders with the Chicagoland Chamber of Commerce/Innovate Now!, the Illinois Department of Commerce and Economic Opportunity, and Cisco. Swanson attended Brown University.

The Alumni Titan Award Recipients:



Neal Groothuis '97

Neal Groothuis has been an extraordinary volunteer on behalf of IMSA and the IMSA Alumni Association. As one of the longest serving IAA cabinet members, he served as the IAA Vice President

in 2003-2005, as Secretary from 2005-2007, and currently is an at-large cabinet member. Groothuis was the key individual responsible for updating and maintaining the IAA Web site. He also planned and implemented the acquisition of and transition to a new server for the IAA Web site, ensuring reliability and increased functionality. Groothuis has also participated as an Intersession facilitator for five consecutive years and was sponsor of the student Swing Club. He is also a loyal donor to the IMSA Fund for Advancement of Education (www.imsa .edu/giving) and has served as an annual giving class agent. As a graduate of the University of Illinois at Urbana-Champaign, he is currently pursuing a graduate degree at The University of Chicago.



Paul Strasma '94

Paul Strasma has been an engaged IMSA alumnus for the last decade. Starting out as a team member of the Class of 1994's 5-year reunion, Paul went on to support the 10-year reunion and then co-author a guidebook for future reunion planners.

From 2004 through 2007, he served on the IAA Cabinet first as an at-large member and then as vice president. In these roles, he championed broader alumni involvement, surveying alumni to understand their interests, guiding improvements to the myIMSA online directory (www.imsa.edu/alumni/ myimsa) and facilitating regional events celebrating IMSA's 20th anniversary. Paul also served as a member of the 2006-2007 Strategic Planning Committee. In addition to his volunteer activities, Paul has been a generous annual donor to the IMSA Fund for Advancement of Education. A graduate of Northwestern University and the Massachusetts Institute of Technology, Paul currently works as a Global Strategic Marketing Manager for Abbott Diabetes Care.



COMMUNITYNOTES

Eric Frost '90 states, "My wife Kristine and I have two daughters: Elizabeth and Lydia, aged 15 months and three years. I've been working for the McDonald's Corp. worldwide real estate department as a consultant or supplier for almost 15 years doing geographic information systems and database work (demographics, sales pattern analysis, etc). I also do web publishing—www.mapforums .com, www.windychat.com and many more."



Rachel Benoit '92 married James Brucker on February 1, 2008 at Kona Village Resort on the Big Island of Hawaii. Best Man was Web Behrens

and Best Woman was Amy Minster '93. Rachel is a graphic designer in the travel industry and webmaster of **ReelChicago.com**; Jim is an instructional design librarian at Northwestern University.

Joanna (Jenne) Gunderson '97 recently accepted a position as an assistant attorney general for the State of Illinois.

Michelle Fitzpatrick '01 states, "I am currently enrolled as an evening student at John Marshall Law School. I work full time during the day at a law firm located in downtown Chicago, which is pretty exciting."

Mallory Morris '02 was featured in the April 14, 2008 edition of the Urbana-Champaign *The News-Gazette* for winning the 2008 Beginning Educator Award from the University of Illinois College of Education. Morris, a teacher at Jefferson Middle School in Champaign, was recognized because of her excellent teaching and service to the schools or the community. Lori Slimp '05 states, "I'm an international studies major at the American University in Washington, D.C., with concentrations in the Middle East and Islamic studies. I am also pursuing an Arabic minor. I am here at the American University in Cairo for the semester (I've been here since February and will be returning to D.C. in early June) studying Arab and Islamic civilizations, with a focus in modern Arab history and religion, as well as the Arabic language. I'm currently on my spring break and just had the chance to travel to Luxor to see some of the amazing tombs and temples there."



Scott Zager 1989-2008

This issue of *IMSA360* honors the memory of Scott Zager, a 2006 graduate of the Illinois Mathematics and Science Academy. As an IMSA student, Scott was a three-year Varsity member of the IMSA Boys' Swimming and Diving program,

serving as co-captain his junior year. Scott also served as a manager for the Girls' Swimming and Diving program during his senior year. In addition, he served as a work service student and summer employee in the IMSA Information and Technology Services department.

Photos courtesy of Rachel Benoit '92 and IMSA



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

18



FROM THE VICE PRESIDENT

Dr. Eric McLaren IMSA Principal and Vice President for Academic Programs

s another academic year comes to a close, I am proud to be a member of the IMSA community. Each year offers opportunities for exploration and growth.

Academic year 2008 included many examples of IMSA's accomplishments. These can be found in its students, who throughout the year have collected student research achievements in competitions including the Intel Science Talent Search, Siemens Westinghouse competition, the International BioGENEius Challenge competition and the American Junior Academy of Science. These students, before they ever enter college, are already advancing the human condition with attempts to find solutions to global issues and cures for countless diseases.

IMSA students also made a difference in the lives of children, men and women in our local communities. Members of our 2008 graduating class contributed more than 35,000 hours to Illinois citizens through tutoring, mentoring and volunteering in medical centers, senior citizen and youth centers, police and fire departments, schools, libraries, and museums.

Our talented faculty and staff members shared their knowledge and enthusiasm with students on campus and with thousands of students in schools throughout Illinois. Their guidance helped Illinois youth to engage in exploration, think creatively and critically, and address real-world problems in their communities.



This year, we began teaching *Chinese I* and next year will expand to *Level II*. The English team has re-written the curriculum for the *Literary Explorations* courses to include three semesters which expands the elective offerings. In Mathematics, new elective offerings include *Polyhedra and Geodesics, Statistical Exploration and Description, Statistical Experimentation and Inference*, and *Web Technologies*. We also have begun to offer elective credit for Student Inquiry and Research projects.

May 31, 2008 marked the graduation of IMSA's twentieth class. As members of the Class of 2008 join our alumni in becoming IMSA ambassadors to the world, they are ready to ask hard questions, take risks and grow into leaders the world needs.

19

Photo courtesy of Jack Feltes Photography

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. It also serves thousands of educators and students in Illinois and beyond through innovative instructional programs that foster imagination and inquiry. (www.imsa.edu)



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SAVE THE DATE for the Following IMSA Events!

Homecoming Alumni Hall Naming Board of Trustees Alumni Awards Ceremony September 27, 2008 September 27, 2008

September 27, 2008



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