



Next Generation
Equity and Excellence



Illinois Mathematics and Science Academy®
Spring 2018

IMSA is a leader in educating and developing a diverse STEM pipeline of creative, ethical, and scientific innovators for Illinois and the world. We aspire to become a recognized global leader and catalyst in equity and excellence in STEM teaching and learning, innovation and entrepreneurship.

Dr. Adrienne Coleman, Director of Equity and Inclusion, and Traci Ellis, J.D, Executive Director of Human Resources, are leading our institutional equity work which includes:

- A diversity plan
- Development of a board policy on equity and excellence
- Staff, including faculty training
- Diversity and inclusion assessments using global benchmarks that allow us to measure the progress of our work
- Annual Diversity in STEM Think Tank event bringing some of the nation's top minds in diversity and inclusion together to share best practices on how to build a sustainable and diverse education to career STEM pipeline

IMSA continues to actively recruit and support diverse faculty and staff as well as high ability, low-income students through our PROMISE Programs which address the challenges of underrepresented students through year-round academic enrichment programming at low or no cost. In 2017, 44% of ninth grade PROMISE participants were admitted to and enrolled in IMSA. Moreover, 20% of IMSA's Class of 2019 previously participated in a PROMISE program.

In addition to PROMISE, 75% of our award-winning Fusion outreach programs are taught in Illinois elementary and middle schools serving low-income students providing engaging, high quality STEM learning experiences. We are thrilled to partner with the Illinois Bicentennial Committee on the Fusion Legacy Project which will sponsor the Fusion program in 25 additional Illinois schools serving low-income students for the next three years.

As STEM education moves into an increasingly complex world, IMSA is providing the leadership necessary to train and guide future generations. I hope you will join us in helping to position IMSA as a recognized global leader and catalyst in equity and excellence. The potential is very exciting.



José M. Torres, PhD

Respectfully,
José M. Torres, PhD
 President

Congratulations to Traci D. Ellis, JD, executive director of human resources at IMSA, on receiving Elgin's 2018 Dr. King Humanitarian Award.



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Mission

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 of technology and pioneering outreach.

Diversifying the STEM Pipeline

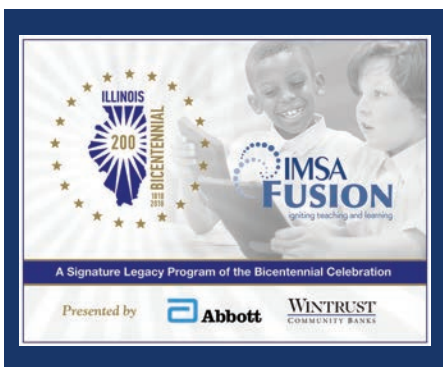
Coleman to Speak on Diversifying STEM at International Conference

Director of Equity and Inclusion, Dr. Adrienne Coleman, has been invited to speak at 2nd Annual International Symposium on the Future of STEAM (science, technology, engineering, arts and mathematics) Education July 23-26, 2018 in Athens, Greece on the topic of "Diversifying the STEM (Science, Technology, Engineering, Mathematics) Education to Career Pipeline."

Congratulations Dr. Coleman!



Illinois Bicentennial Committee Announces Fusion Legacy Project, Expands Access to STEM



Lieutenant Governor Evelyn Sanguinetti, Deputy Governor Leslie Munger announce the launch of the Illinois Bicentennial STEM Fusion campaign. The three year program will be awarded to 25 elementary and middle schools in underrepresented communities all across Illinois. "We are thrilled to partner with the Illinois Bicentennial Committee on the Fusion Legacy Project which will extend our ability to provide high ability, low income students with engaging, quality STEM learning experiences advancing our mission as a recognized leader and catalyst in equity and excellence in STEM teaching and learning," says Dr. Jose Torres, IMSA President. IMSA's award-winning Fusion program provides Illinois teachers with engaging STEM curriculum and teaching methods they can readily apply to motivate and encourage student interest in STEM. The committee includes: Emily Bastedo, Special Advisor to the Governor - Office of the Secretary of Education, Kevin Pitts, Vice President of Undergraduate Education-University of Illinois, Ross Hemphill, Board Member - IMSA Fund for Advancement of Education.

For more information about the Illinois Bicentennial, visit illinois200.com

Top Minds in Diversity Come Together to Discuss Increasing the STEM Pipeline

Some of the nation's top minds in diversity and inclusion are coming together to share best practices on building a sustainable and strong education-to-career pipeline for underrepresented groups in science, technology, math and science (STEM) fields at a Think Tank event on Tuesday, March 13, 2018 from 5:00 p.m. - 8:00 p.m.

With a growing demand for STEM educated professionals in a variety of industries and stagnant numbers of underrepresented students in the education pipeline, the "Diversifying STEM Think Tank" dinner, panel and round table discussions aim to develop strategies for shifting the demographics of these fields to match the racial and ethnic composition of the US population.

Panelists for the event include Major Kenyatta Ruffin '98, a senior member in Civil Air Patrol's Texas Wing and former CAP cadet; Dr. Kelly Page, a communications and learning consultant who works at the intersection of social learning and digital participation; Brian Nord, an Associate Scientist in Fermilab's new Machine Intelligence Group; Dr. Anita White, IMSA chemistry faculty and science educator to underrepresented eighth and ninth grade students through IMSA's Promise program; and Dr. Don Dosch, IMSA Biology faculty and Curriculum and Assessment Leader for the Science Team.

To RSVP please visit <https://www.surveymonkey.com/r/DSTT2018>

Registration opens in two phases this year for Summer@IMSA!

- Registration for IMSA's residential programs (students entering grades 8-10) is now open
- Registration for IMSA's day programs (students entering grades 3-9) opens February 20th, 2018 at 8:00 a.m.



Information on program offerings can be found at:

https://www.imsa.edu/extensionprograms/summer_at_imsa

For a glimpse of what last summer was like last year, visit OutreachatIMSA.wordpress.com

● It IS Rocket Science!

Saturday, April 7, 2018

9:30 AM - 12:00 PM

IMSA Campus, 1500 Sullivan Rd, Aurora, IL, 60506

Grades: 3-4 & 5-6

Registration Fee: \$45

Student Engineers will investigate the four forces of flight (thrust, drag, lift, and gravity) and Newton's 2nd Law of Motion, through hands on explorations.

Register at: <http://www.imsa.edu/extensionprograms/funshops-0>

● Build-a-Pokemon Challenge FUNshop

Saturday April 21, 2018

10am to Noon

Grades: 6th, 7th and 8th

Registration Fee: \$45

Design and build a knock-off Pokemon character with time and budget limitations. This takes teamwork, reverse engineering, careful planning of steps in production, time management and smart use of funds.

Register at <https://www.imsa.edu/extensionprograms/in2-2018-spring-funshops>

● Makerspace FUNshop: Make your Own Video Game and Controller

Saturday May 12, 2018

10am to Noon

Grades: 6th, 7th, and 8th

Registration Fee: \$45

Use the Scratch programming language to make simple games and the MakeyMakey circuit board to create your own controller interface from things like cardboard or even bananas.

Register at <https://www.imsa.edu/extensionprograms/in2-2018-spring-funshops>

IMSA holds the National Oceanic Atmospheric Administration Regional Conference and IMSA's Educator Institute Day March 1-3!

The regional conference titled "Educating the Earth," kicks off with an evening reception at Sci-Tech Hands-On Museum and features jam-packed, action-filled days of sessions including a keynote address, break out groups, panel discussions and a climate impact design study.

Big Payoff for IMSA TALENT Alumni with Sale of Startup

IMSA Alumni Brendan Batliner '15 and Vinesh Kannan '15 sold their startup company Omnipointment, hatched at IMSA during their high school years involved with the IMSA TALENT (Total Applied Learning for Entrepreneurs) program to Mimir, a cloud-based software company that scales and automates the evaluation of computer science students and professionals.

Kannan now joins Mimir as its Lead Computer Science Curriculum Engineer. Batliner, who transferred to Illinois Tech this year from the University of Nebraska-Lincoln, works for Ocident, CleverSafe founder Chris Gladwin's new startup.

"I'm really grateful for all the support we have received from IMSA and Illinois Tech in this journey," Kannan said.

Kannan helps to design enrichment programs and has taught over 450 students about collaboration, computing, and entrepreneurship. He worked with Chicago Public Schools' CS4ALL Initiative to help prepare more than 170 high schools to meet a citywide computer science graduation requirement mandate by August 2016.

"I'm so excited to see the results of our hard work," said Batliner.

IMSA TALENT is an enrichment inquiry learning program helping Illinois middle school and high school students build and launch STEM business ventures. Interested teens may take advantage of TALENT workshops, mentors, internships, summer camps, pitch competitions and IMSA's membership in 1871, Chicagoland's acclaimed incubator for digital startups.



*IN2, Steve and Jamie Chen
Center for Innovation and Inquiry*

For more information about IMSA TALENT, contact Carl Heine at heine@imsa.edu

Save the Date! Alumni Reunion

July 20 - 21, 2018

Class of 1993, 1998, 2003, 2008, 2013
Registration and details coming soon!

Please update contact information with
Cathe Stieg at cstieg@imsa.edu.

Alumni Corner

**A message from the IAA President
Brian Cudiamat '96**



While recently exploring my mother's basement utility closet, I stumbled upon a VHS tape dated February 1996. I had unearthed over two hours of footage of the high school version of me experiencing an ordinary day. Armed with a video camera for 24 hours, I had recorded "my boring life" – a stroll across Yare Yard, dinner conversation with friends, part of a Drama Club meeting, seven o'clock curfew check, doing homework by the mailroom, and parts of a few classes.

22 years later, it was interesting to see what's changed; most notably the switch from orange to blue carpet... and my voice getting a bit deeper. What hasn't changed were the many people that were and are still a part of my life.

We were once kids from throughout Illinois, and now we're everywhere! The community that formed because of our presence at IMSA remains today. We might not always see each other, save for an occasional reunion, but that bond is there. As IMSA Alumni Association (IAA) President and with the IAA Cabinet, I look forward to serving the IMSA community.

Ranked No. 1 in STEM Hiring and Diversity, BP is a natural partner with IMSA

For the third consecutive year, BP ranked first on the list of STEM Jobs Approved Employers which rates companies on their responsiveness to creating and filling high-demand, high-growth STEM occupations.

“BP’s commitment to STEM is about inspiring and supporting the next generation of innovators,” said Andrew Simpson, head of Global Business Services at BP America’s offices in Naperville, Illinois. “That’s what makes our years-long partnership with IMSA such a good fit, because that’s what IMSA does every day with its students.”

Dr. Cynthia Manfredi, BP’s Medical Director of Occupational Health for the Chicagoland region, has been one of BP’s active volunteers with IMSA. “I’ve served on the IMSA Fund Board, IN2 Advisory Committee, faculty review committee and have participated in the IMSAloquium,” said Manfredi.

“I enjoy being involved with IN2 activities and look forward to BP’s involvement in IN2 components such as the IDEA Bar and Teen Stem Café.”

Most recently, BP has partnered with IMSA to sponsor the 2018 International Students Science Fair June 27-July 1, 2018. “As a global company with business activities in more than 70 countries, the ISSF is a great opportunity to support IMSA as they welcome the world to Aurora,” said Simpson. With more than 3,500 employees in Chicagoland/Northwest Indiana, the area is home to BP’s third-largest employee footprint in the world.

For more information about BP, visit www.bp.com



**International Student
Science Fair 2018**

June 27-July 1, 2018

IMSA is proud to host the

International Student Science Fair (ISSF)



Learn more at issf2018.com

**#IMSAleading
#ISSF2018**

Student Inquiry and Research

Young IMSA Students Impress Audience at Prestigious MILCOM Conference

Seven IMSA students impressed audience members at the prestigious MILCOM Conference with their research and design of a mobile tracking system for satellite communication so much that they were offered internships at the Naval Research Laboratory in Washington, DC as a result of their work.

Students Harrison Carcione '18, Charles Kuch '18, Advai Poddaturi '18, Peijing (Mike) Xu '18, Joseph Hutter '17, Gina Jiang '17 and Soomin (Shannon) Park '17, under the guidance of IMSA faculty advisor Dr. Peter Dong, partnered with David Beering of Intelligent Designs, LLC, on a Student Inquiry and Research (SIR) project that aimed to expand on the company's efforts to develop communication systems that enable on-demand communication via satellite in a highly inclined orbit. In naval communications, continual communication above 60 degrees latitude (north of the equator) is not possible because geosynchronous satellites (a satellite in sync with the rotation of the earth) are not in sight.

The student team and Dr. Dong quickly got up to speed on satellite communication and began to research and design a small, boat-mounted tracking system for medium earth orbit satellite communication. Beering arranged for the students to test the device at the US Electroynamics, Inc.'s Teleport in Brewster, WA. They had only four two-hour windows to test the device and gain valuable data on the precision needed for successful satellite connection. Though there are devices on the market that can accomplish this; the students' system did the same work for less than a tenth of the cost.

In 18 short months, Dr. Dong and the student team completed their work and submitted a paper to MILCOM under the Intelligent Design, LLC industry sponsorship, "Designing a Low-Cost Mobile Tracking System for Communication with a Medium Earth Orbit Satellite," which was selected to be presented at the October conference. The students are believed to be one of the youngest to present at MILCOM.

MILCOM, a military communications conference hosted by the Armed Forces Communications and Electronics Association (AFCEA) and the Institute for Electrical and Electronics Engineers (IEEE), is the premier international conference on military communications. Attendees include representatives from academia, the armed forces, and military contractors.

The SIR program is the embodiment of IMSA's inquiry-based education and provides a framework that allows students to learn how scientific knowledge is constructed through a 1-2 year engagement in concentrated research in a specialized field under the leadership and direction of world-class university and scientific researchers. It also exposes students to a systematic and comprehensive research process that includes a literature review, knowledge map, research proposal, research, public presentation and submission of findings for publication.

For more information about IMSA's Student Inquiry and Research program, contact SIR Director, Dr. Sanza Kazadi at skazadi@imsa.edu.



SIR is the hallmark of an IMSA education, students gain the ability to fully grasp scientific explanations of the natural world and further develop their problem solving skills.

IMSA Noteables

Students

Neil Wary '19 received a \$25,000 scholarship placing as a top finalist in the Siemens Math, Science and Technology competition in Washington D.C. on December 5, 2017.

Tyrone Whitmore-Wilson '19 helped create a virtual memorial to accompany the Kane County Veterans Memorial, chronicling local men and women who died serving our country.

Rebecca Ellington '19 was named a 2017 National Russian Scholar Laureate by the American Council of teachers of Russian. Rebecca is one of 31 students nationally who received this award this year.

The **IMSA Chess Team** won the IHSA State Championship for the second year in a row.

Staff/Faculty

English faculty, **Michael Dean**, taught students at Michelle Obama School of Technology and Arts all about graphic novels, IMSA style.

History faculty, **Dr. Lee Eysturid** authored feature articles on two ABC-CLIO sites in December. His commentary "Xi Jinping and the Chinese Communist Party Congress" is featured on World History: The Modern Era (worldhistory.abc-clio.com). He authored a second commentary "The Specter of the Russian Revolution" which is featured on World at War: Understanding Conflict and Society (worldatwar.abc-clio.com).

History faculty, **Dr. Rob Kiely** was a featured author on ABC-CLIO's site World History: The Modern Era (worldhistory.abc-clio.com) for his commentary "Martin Luther and the Modern World."

Alumni

Dayo Adesokan '07 was the big \$100,000 winner on Ellen DeGeneres' new prime time game show, "Ellen's Game of Games."

Congratulations to Keen IO co-founders and '02 alums **Dan Kador, Kyle Wild** and **Ryan Spratz** on the acquisition of Keen IO by Scaleworks.

Dr. Scott Sundheim '93 received a special shout out from the Loveland, CO community for starting the St. Matthews free medical clinic.

Sherrick, Pereira Appointed to IMSA Board of Trustees

The Board of Trustees of the Illinois Mathematics and Science Academy (IMSA) announces the appointment of Dr. Rebecca L. Sherrick and Mr. Sergio Pereira to its 17 member governing body.

"Both Dr. Sherrick and Mr. Pereira are innovative leaders and collaborators with demonstrated success in turning new insights into ideas and solutions that positively impact the growth of an organization," said IMSA President Dr. José M. Torres. "As IMSA endeavors toward its next 30 years, the guidance and contributions of Dr. Sherrick and Mr. Pereira will be instrumental to the strengthening of our institution."

Sherrick serves as President of Aurora University. Pereira is President of Quill.com.