



News and Notes

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Meet Dr. Bill Fraccaro: IMSA E2K+PoM Writer

The Problem of the Month (PoM) is written by Dr. Bill Fraccaro, a national and state award winning retired Illinois teacher and current consultant. The problems (*which are restricted to students participating in E2K+*) appear on the *E2K+ Webpage*. Dr. Fraccaro personally reviews each submitted PoM answer. Solutions are due by the date posted on the site. Fraccaro also prepares the International Riddle which is offered to E2K participants in Israel, Iowa, and New York as well as to Illinois students.

Fortunate is how Fraccaro describes his opportunity to continue to challenge students through E2K+. "I strive to provide [E2K+] students with reality-based opportunities to problem-solve. Problem-solving is a most useful skill necessary for success in life. The best problems have a twist to them where the answer is not obvious. These require students to look at them from different points of view – they need to think." Fraccaro most appreciates student responses that reflect, "Ah-Hah! I got it!"

Fraccaro also enjoys the Ah-Hah through the challenge and excitement of solving a problem before considering it for the E2K+ PoM or the International Riddle. Personally, he finds manipulative 3-D puzzles, Soduko, crossword puzzles, critical

thinking exercises, and quizzes fun problem solving opportunities.

PoM problem-solving strategies Fraccaro offers are, "Read the problem a few times before trying to solve it. Then ask, 'why is this information in here?' Look for tricks such as unnecessary information or try to find things that are missing but implied in the problem. If the problem appears too easy at first glance, then assume that the problem is harder than it looks. Most important, have fun and take pride in yourself for looking for the solution, even if you get an incorrect answer."



Dr. Bill Fraccaro, a national and state award winning retired Illinois teacher and current consultant.

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New Units Field Tested

Two new units written primarily by E2K+ site teachers underwent a first field test in Fall 2007.

Forensic Math and Science: Three Scenarios was developed and written by *Jill Borah* (Grant MS, Springfield), and *Scott Haenel* (Litchfield Forensic Fire Investigator) in collaboration with IMSA E2K+ staffers Mary Lou Lipscomb and Sharon Poynter. The schools involved in this field test are Emily G. Johns IS (6th grade), Plano MS and Prairie Hills JHS. This unit includes three mysteries designed to engage students in various forensic activities and to sharpen their observation skills.

From Basic Genes to Designer Genes: Biotechnology Basics was developed and written by *Colleen Gillespy* (Roselle Middle School), *Rachel Jachino* and *Christi Jones* (Franklin MS, Springfield) with IMSA E2K+ staffers Mary Lou Lipscomb and Ray Dagenais. This unit was field tested at Bloomington JHS, Franklin MS (Springfield), and Litchfield MS. Basic genetics background and lessons in probability are the core of this unit which culminates with a debate over the pros and cons of an aspect of biotechnology.

Based on field test feedback, units will be “tuned-up” and a second round of field testing will occur during the 2008-2009 school year. Schools that have participated in IMSA E2K+ for two or more years may opt to participate in the field tests for these two exciting new units.



E2K+ alum *Sophia Pilipchuk*, IMSA Class of 2008

E2K+ alum *Chris Stovall*, IMSA Class of 2010



Welcome E2K+ Alumni!

A record number of IMSA sophomores participated in Excellence 2000+ while they were in middle school. The class of 2010 boasts eighteen E2K+ Alumni! We are proud of the students who have chosen to pursue an education focused on science and mathematics, and believe that the E2K+ program gave an edge to their interest! Many of the students took time from their busy schedules to participate in a photo opportunity - their photos can be seen throughout this newsletter.

IMSA Excellence 2000+ alumni who are now at IMSA (and their E2K+ school) are: Seniors *Nichole Milleron* and *Alexis Sellars* (Yorkville MS), *Josue Pernillo* (Heritage MS - Lansing) and *Sophia Pilipchuk* (Pasteur ES - Chicago); Juniors *Hruday Malloubhola* (Bloomington JHS) and *Thomas Mathew* (Glenview MS - East Moline); and Sophomores *Mariam Alaka* (Ariel Academy - Chicago), *Stephanie Bernardo*, *Gabriela Cardoso*, *Salvador Esparza*, and *Karl Ochmanek* (Lincoln MS - Berwyn), *Michael Glavan* (Stephen Mack MS - Rockton), *Eghonghon Emarenezor* (Prairie Hills JHS - Markham), *Leslie Martin* and *Chris Stovall* (Forest Trail MS - Park Forest); *Shilpa Topudurti* (Franklin MS - Champaign); *Julia Tippey* (Tazewell Consortium - Pekin); *Cody Ward* (Tazewell Consortium - East Peoria); *Ikechi Nwosu* (Heritage MS - Lansing), and *Jake Ayala*, *Jackson Hallauer*, *Sara Johnson*, *Pruthvi Kothari* and *Peter Nebres* (E2K+ Summer Program at IMSA).

E2K+ on the Move: Late Elementary

Starting off the 2007/08 school year, the E2K+ 4th – 5th grade teachers and students, field tested a new unit titled **Patterns Around Us**. A talented trio of teachers working with Jean Gotkowski developed lessons and activities based on the relationship of various patterns in the real world. These writers are **Dr. Fai Anderson** Math Specialist at Charles Carroll-Rosenwald Specialty School in Chicago, **Kery Obradovich**, Math Specialist with Northbrook-Glenview District 30, and **Sue Younker** from Spring Wood Middle School in Hanover Park.

Like all E2K+ units, **Patterns Around Us** has high interest activities and features E2K+'s signature hands-on, inquiry-based curriculum. The new unit explores data analysis, astronomy, number sense, geometry, algebra, geology and physical science. Students are challenged to generate and predict patterns of change found in our natural environment.



E2K+ alum Sara Malik and Eghonghon Emarranezor, IMSA class of 2010

Congratulations to E2K+ Participants

DeDiego Community Academy - Chicago

Last year, E2K+ began a partnership with HFS Chicago Scholars, and was able to invite participating students to apply to the HFS mentoring program. We are thrilled to announce that three students from DeDiego Community Academy successfully applied, and were paired with mentors for their high school careers. Those students are **Bianca Rodriguez**, attending Lane Tech, **Carlos Ortega**, attending Northside Prep, and **Giovanny Ospina**, attending Lane Tech.

Submitted by Brian R. Parker, Sr., Executive Director of HFS Chicago Scholars

Heritage Middle School - Lansing

Recognition was given to four current or former E2K+ participants by the School Board of Sunnybrook District 171 (Lansing) for scoring in the 90th percentile or above on last year's (2006-2007) ISAT tests. The students are **Ijeoma Nwosu**, **Amanda Koziarski**, **Clarreesa Hardin**, and **Ashley Moore**. In addition, Heritage faculty recognizes one student per grade each month with the National Attitude Award. Students must display a positive attitude regarding scholarship, behavior, attendance, and character. IMSA E2K+ students have a great showing! September winners were **Katie Oberman**, **Simeon Black**, and **Kristian Black**; in October, **Taylor Bailey** won the award; and for November, winners were **Morgan Eberhardt** and **Briana Lilly**. Congratulations to all of them!

Submitted by Rhea Lindeman, Coordinator for District 171

Lincoln Middle School - Berwyn

The IMSA Excellence 2000+ team from Lincoln, **Linda Pader**, **Jason Crowley**, and **Lindsay Mynagh**, along with Principal **Gail Quilty-Fejt**, made a presentation to the Berwyn City Council, telling about the work they do with students through E2K+. Council Members had many questions about the program, and expressed their gratitude to the team for their commitment to students and the community!

Submitted by Linda Pader, Coordinator at Lincoln Middle School

Dunne Elementary School - Chicago

Aurelia Turner, now in her third year of E2K+, will be one of the representatives of Dunne School at the Area 16 Science Fair, with her project, *What is the Effect of Earthworms on the Growth of a House Plant?* This continues a string of four years in which the Dunne Science Fair winner has been an E2K+ participant!

Submitted by Ed Caster, Coordinator at Dunne Elementary School

Franklin Middle School – Champaign

Adilah Terry, E2K+ teacher and 8th Grade Math faculty member received the Excellence in Education Award.

Submitted by Whitney Stewart, Coordinator at Franklin Middle School.

IMSA

Sophia Pilipchuk, IMSA Senior and E2K+ participant at Pasteur Elementary School in Chicago for three years, is a real achiever! Sophia attended the American Association for the Advancement of Science Conference in Boston, MA in February, the Chicago Junior Science and Humanities Symposium, and the Junior Science and Humanities Symposium at Loyola University, both in March, where she was selected to present her research to audiences of professional scientists.

Submitted by Eric McLaren, Principal of the Illinois Mathematics and Science Academy



E2K+ Alum Mariam Alaka, (IMSA Class of 2010) Leslie Martin (2010), and Ikechi Nwoso (2010) (L to R, standing), Alexis Sellars (2008) and Stephanie Bernardo (2010) (L to R, front)

Simmons Middle School – Aurora

Numerous IMSA E2K+ student participants achieved Honor Roll this year. On High Honor Roll were **Grace Crowcroft, Tanner Cassidy, Nayeli Partida, Joscelyn Garcia, Julie Martinez, Iris Cruz, Brian Nunez, Nicholas Kluber, Jenny Velasquez, Pemiri Merel, Stephanie Valencia, Samantha Zamora, Andres Mayo, Marquese Moore, Katerina Martin, Vincent Dhan**, and **Rafael Gonzalez**. Regular Honor Roll achievers included **Victor Amar, Joey Reyna**, and **Mauricio Palma**.

Submitted by Karen Morris, Coordinator at Simmons Middle School

Mathematical Inquiry at IMSA

Once again this year the IMSA Excellence 2000+ offered its middle school partners the opportunity to attend the popular Mathematical Inquiry at IMSA program.

Students and their teachers are treated to an array of math puzzles, problems, and conundrums posed by members of the highly respected IMSA mathematics faculty. Following the session, students are led on a tour of classrooms and laboratories guided and narrated by IMSA students. Before leaving for home, students enjoy lunch in IMSA's cafeteria provided by the E2K+ program.

Schools taking advantage of this program during 2007-2008 were:

Bloomington JHS (Bloomington)	Jerling JHS (Orland Park)
Century JHS (Orland Park)	Jewell MS (Aurora)
Coretta Scott King Magnet (University Park)	Limestone Consortium (Bartonville)
Dunne ES (Chicago)	Lincoln MS (Berwyn)
Emily G. Johns	Plano MS (Plano)
Intermediate School (Plano)	Pontiac MS (Pontiac)
Forest Trail MS (Park Forest)	Prairie Hills JHS (Markham)
Franklin MS (Springfield)	Roosevelt MS (Bellwood)
Herget MS (Aurora)	Spring Wood MS (Hanover Park)
Heritage MS (Lansing)	Stevenson ES (Melrose Park)
Jefferson MS (Aurora)	Washington MS (Aurora)

E2K+ Students Take a “First” in Roller Coaster Competition!

Many Excellence 2000+ program teachers accompany their students to the famous Engineering Open House (EOH) at the University of Illinois in Champaign/Urbana each year. The event offers E2K+ middle school students an opportunity to visit a college campus, to see the kind of exciting work and projects that engineering students engage in, and sometimes to enter contests that stretch their imaginations and skills.

This year, students from Grant Middle School in Fairview Heights and from Plano Middle School and Emily G. Johns Intermediate School in Plano participated in a Roller Coaster Design contest sponsored by the EOH. The purpose of the contest was to design a creative track that would enable a marble to continue to roll for the longest time. The University of Illinois EOH group established the required dimensions of the roller coaster and gave participating students a list of the features that would be judged.

Student teams began working on their projects after school in January. They planned and tested designs to come up with the best-working roller coaster possible.

The theme selected by the first place team of Grant Middle School 7th and 8th graders (*see photo above*) was “Wonders of the World.” Their roller coaster featured the Great Wall of China, the Hanging Gardens of Babylon, the Pyramids, and other sights of the ancient world!

A second team from Grant Middle School took fifth place in the contest. Their roller coaster theme was “Space,” inspired by a field trip the E2K+ class took to Space Camp. Their coaster included rockets and a model galaxy.

According to E2K+ Coordinator Cathy Barnes, participating in the competition was a great activity for E2K+ students. It built collaboration and communication skills among the student teams as well as content area knowledge. Participants not only had fun, they learned a lot about physics, engineering and design along the way! Coordinator Pat Forrer with teachers Dan Herkes, Faith Melville, Anne Sears, and Amy Winter from Plano agreed, and added, “Next year, we’ll give Grant a run for their money!”



Lisa Tong, Danny Huges, Haley Koch, and Nicholas Lohmann of Grant Middle School in Fairview Heights show off their roller coaster at the University of Illinois Engineering Open House.

E2K International Riddle

A cooperative process among Excellence 2000 organizers from Israel, New York, Illinois, and Iowa, the **E2K International Riddle** celebrates the collaborative, international attribute of the E2K program. The Riddle fosters a motivating and exciting problem-solving environment for our International E2K Network four times each year. Solutions are submitted to the local organizer. For Illinois, the International Riddle appears on the E2K+ Webpage www.imsa.edu/programs/e2k/MonthRiddle.php. Only E2K+ student participants may respond. Dr. Bill Fraccaro writes the Illinois Riddle. Answers are due by the date posted. Students can try their skill at answering past riddles by checking the archives.



Illinois Mathematics and Science Academy®
1500 West Sullivan Road
Aurora, IL 60506-1000

IMSA Excellence 2000+
Phone: 630-907-5892
Fax: 630-907-5893
www.imsa.edu/programs/e2k

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IMSA/Aurora University Partnership

During the summer of 2007 IMSA established a partnership with Aurora University for the purpose of designing several master's degree programs. These programs are focused on developing teacher leaders in the areas of mathematics and science. Dr. Susan Bisinger, E2K+ Project Director, is a member of the Elementary Teacher Leadership team. Dr. Raymond Dagenais, E2K+ Professional Development Specialist, is a member of the Middle School/High School Mathematics Leadership team. Kristin Ciesemier, IMSA's Vice President for External Educational Programs, is an Administrator for all projects and a member of the Life Science team. Master's degree candidates in the programs will have the opportunity to experience E2K+ curriculum design and teaching approaches as a part of the Internship component of the programs. The project is funded by the Illinois State Board of Education as a part of the Illinois Mathematics and Science Partnership grant received from the federal government.



AURORA UNIVERSITY

