



Ohio's STEM Ability Alliance

STEM Degrees and Careers for Ohioans with Disabilities



OSAA E-NEWS

Issue 7, March 2011

Ohio's STEM Ability Alliance



Student success can be greatly influenced by the level and quality of personal interactions with faculty, staff and peers. Many studies have shown that it is the people who come face-to-face with individual students on a frequent basis that provide them with their most positive growth experiences. OSAA's interventions capitalize on the influence of such personal relationships to promote the advancement of our college and high school participants. Our Ability Advisors have been very successful in guiding and mentoring college level OSAA Scholars and in finding internship opportunities to enhance their experience and qualifications. The tangible result so far has been an excellent record of persistence in STEM majors. Using events such as

our summer residential learning experience and campus visit days to increase the motivation and academic preparedness of pre-college students, we are filling our pipeline with individuals that aim to succeed. OSAA is providing opportunities for our students at all levels to sharpen academic and personal skills and to interact with STEM professionals in learning communities. Rounding out this comprehensive approach to student support, OSAA offers financial assistance through various participation incentives and competitive state-funded scholarships.

We hope you will keep reading to learn more about OSAA. This issue of the OSAA E-News highlights our accomplishments, shares our student successes during winter quarter of 2011, and provides a preview of upcoming events.

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2010 Diverse-Ability U.



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OSAA Dayton QUAD News

Sinclair Community College – Campus Visit Day for Students with Disabilities

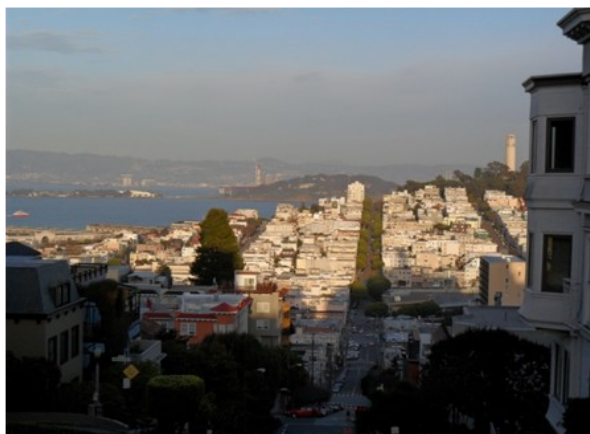
As part of the Dayton QUAD, Sinclair Community College is sponsoring another Campus Visit Day, April 2, 2011 for students in the 6th-12th grade with disabilities from local schools who have expressed interest in STEM fields. The students will tour Sinclair's campus and learn about Sinclair's office of Disability Services. They will also be able to see a demonstration in Mathematics Robotics, do activities in Astronomy and Chemistry and observe the Energy Laboratory. Please contact Holly Brown-Wright at 512-5113 or holly.brown-wright@sinclair.edu for further information.



Dr. Holly Brown-Wright and students in the SCC Energy Lab

OSAA Staff Attend National Conferences on Science Education

Dayton QUAD director Dr. Clark Shingledecker and project coordinator Brittany Boyne traveled to San Francisco on March 9-12 to attend two conferences sponsored by the National Science Teachers Association (NSTA). They made a joint presentation at the Science Education for Students with Disabilities (SESD) conference entitled *Preparing Students with Disabilities in Grades 7-12 for Postsecondary Education and Careers in STEM* which described OSAA's unique Diverse-Ability U. summer residential campus experience for 11th and 12th graders, and the Starting Wright program that offers webcasts and internet resources to students with disabilities beginning in middle school. The presentation also provided preliminary data on the effectiveness of these programs in promoting student transition to STEM majors in college.



San Francisco, CA March 2011



Brittany Boyne, OSAA Dayton Quad

Following the SESD conference, the OSAA staffers joined 10,000 science educators, scientists and administrators from across the country at the NSTA National Conference on Science Education. They attended several of the concurrent sessions to gather information on best practices to promote persistence in STEM education and teach students about science and engineering careers. During breaks in the programming, Brittany helped to staff a booth in the exhibit area sponsored by the NSF Research in Disabilities Education Alliances. Although Clark was complaining about contracting a "science headache" by the end of the week, both travelers agreed that the presentation by Bill Nye (the Science Guy) on the activities of the Planetary Society was a great capstone experience for a very productive trip.



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OSAA Dayton QUAD News

Wright State University's EmployAbility Expo, 2011

The annual EmployAbility Expo was held on Wright State University's campus, March 3, 2011. This career and internship expo for people with disabilities provided students and others seeking jobs a chance to demonstrate the ability to dress for success, an opportunity to perform mock interviews and to receive helpful feedback on their resumes. The expo was open to anyone with a disability, not just WSU students or those still in school. Approximately 20-30 students attended this event which was hosted by Wright State University and sponsored by WrightChoice, Dayton VA Medical Center, Goodwill Easter Seals Miami Valley, Montgomery County Job Center, Sinclair Community College, Social Security Administration, and Wright Patterson Air Force Base. The expo had great STEM employers such as Air Force Research Laboratories, Emerson Climate Technologies, Defense Logistics Agency, Aeronautical Systems Center and many more. Next year's event is planned for March 8, 2012.

EmployAbility Expo , March 2011



Tykia Wright, WrightChoice

Starting Wright's Spring series webcasts will begin April 19, 2011. The college preparation webcasts have been upgraded with new technology providing improved audio and ease of access. **Starting Wright** is currently using internet web broadcasting technology to produce live, interactive programs that aim to raise interest in STEM careers. The program's website is a valuable resource for high school students with disabilities, parents and educators providing information on disability friendly colleges, transition information, self advocacy and resources on STEM careers and opportunities. More information is available at the Starting Wright website; <http://www.startingwright.org>

During winter quarter OSAA Dayton staff and the Wright State Office of Disability Services (ODS) participated in a series of college/transition fairs for high school students with disabilities to discuss OSAA programming with prospective OSAA Scholars. Some of the event locations included: Greene County Educational Service Center, Mason City Schools, Wright State University Raider Open House, Dublin/Hilliard Schools, Wayne High School, Sycamore High School and the Clovernook Center for the Blind in Cincinnati.

Asperger's Syndrome (AS) Support Group – OSAA Dayton Scholars diagnosed with AS are invited to participate in a biweekly AS Support Group that meets at Wright State University, 023 Student Union in the Office of Disability Services. This support group will give you the opportunity to meet new friends in a friendly and nonjudgmental setting where you can share your successes and struggles. Come and meet with others who are there to support you. For more information and times please contact Dr. Lopez-Garcia at (937)775-5680.



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OSAA Columbus QUAD News

Mentor Mingle at the OSU Physics Labs and Foundry, February 2011

On February 22nd OSAA students and their mentors had the opportunity to visit the physics labs at Ohio State. Students and mentors visited the Pulse Laser Deposition Lab, and the Superconductivity Lab. Students and mentors were given a first-hand view of pulsed laser deposition of thin films and shared the potential applications of IRG-2's research into double perovskite interfaces and heterostructures. At the Metal Casting Laboratory, part of the Department of Materials Science and Engineering, students and mentors viewed a study of metallurgy, ceramics, and advanced composites. OSAA participants viewed how to process a material to get the atomic structure needed to bring about properties to meet desired performance requirements. Students and mentors were given Ohio Stadium castings made by students in the lab. It was a great afternoon for all!



OSU Students at the Mentor Mingle



OSU SLC Students



Student Learning Communities

Over the winter term the Columbus Quad conducted two Student Learning Communities (SLC). The first one took place at Columbus State Community College (CSCC), where 10 CSCC students participating in the Autism College Transitions (ACT) program met once a week. The other SLC took place at Ohio State. The seven students in this group worked over the quarter at preparing resumes, practicing interviewing skills, looking into internship opportunities, and designing their self-advocacy plans. At the end of the 10-week session, students presented their self-advocacy plans in a PowerPoint presentation.



OSU Students Enjoying Wheelchair Basketball

Looking Forward to Spring!

We are looking forward to warmer temperatures and more OSAA events this spring! The first Mentor Mingle will take place on Friday, April 8 from 4pm-7pm. Originally scheduled for January, this mingle had to be postponed due to inclement weather. We'll be playing goalball and wheelchair basketball at Ohio State's RPAC. No experience necessary! Someone from Adapted Rec Sports will be there to teach us. Contact osaa@osu.edu to RSVP!

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OSAA Columbus QUAD Highlights

OSAA Co-PI to Lead STEM Education Initiatives

The Ohio State University College of Arts and Sciences has appointed Christopher Andersen director of its Science, Technology, Engineering, and Mathematics (STEM) Education Initiatives. Andersen will be responsible for coordinating and promoting STEM-related education and outreach activities across Ohio State's College of Arts and Sciences and building collaborations with other colleges throughout the university community. He will also serve as liaison to external communities for STEM activities and promote recruitment and retention of students in STEM fields.

Andersen currently serves as director of Ohio State's Project to Support Grants for Research Outreach (Project GRO), an initiative within the university's Offices of Research and Outreach and Engage-



OSAA Co-PI, Chris Andersen

ment to create a resource for faculty who include an outreach/engagement component in their grant proposals for research funding. In addition, he is working with two NSF-funded projects at Ohio State: the Center for Emergent Materials, an NSF Materials Science Research and Engineering Center (MRSEC); and It's About Discovery, a STEM curriculum project in Ohio and North Carolina. "Chris Andersen is extraordinarily effective at facilitating partnerships between researchers and those who provide outreach to the communities we serve," said Joseph Steinmetz, executive dean and vice provost, College of Arts and Sciences. "His demonstrated leadership in fostering interdisciplinary collaborations makes him exactly the right person to strengthen and broaden the impact of the STEM efforts in the Arts and Sciences."

Student Spotlight

Ayden is an OSAA student who will be graduating in the summer of 2011 with a degree in biology. He spent his last summer in an internship with the Ohio State associate dean of human nutrition, researching what compounds inhibit the proliferation of cancer cells in the colon. In addition, he also spent two years studying salmonella in swine with the Ohio State veterinary school as a veterinary technician. His volunteer experiences have included work with animals and teaching physics over the summer for a summer camp. Ayden keeps very busy and is looking forward to graduating this year!



LeDerick Horne

LeDerick Horne, March 2011

LeDerick Horne, a poet, entrepreneur, and disability rights advocate, came to visit Ohio State and spoke to a large audience about the importance of mentoring in the transition to college and a career. LeDerick overcame many obstacles in his education to become a successful professional. He spoke about his experiences growing up and gave insightful advice to students transitioning to life after high school.



Ayden an OSAA student at OSU



Ohio's STEM Ability Alliance

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OSAA Dayton QUAD Highlights

OSAA Scholars Meetings – Wright State University

January 15, 2011. Approximately 50 OSAA Scholars participated in our January 13, 2011 OSAA Scholars meeting. WSU's Integrated Graduate Education Research Training (IGERT) Ph.D. fellows were on hand to provide demonstrations of their research. This event afforded our students a chance to interact with graduate students allowing them the opportunity to informally chat and ask questions about graduate school in STEM fields. Alyssa George Whitney provided some insights in her research of testing and modeling of orthopedic devices. Julio Mateo described his research on the mobility skills of blind pedestrians and Jenny Border demonstrated *Brainfingers*, a hands-free system using brain waves and other electrophysiological signals as a means to interact with computers. Stephanie Auld outlined her research aimed at using the iPhone as a platform for developing a multifunctional assistive device for students with cognitive disabilities. One of the unexpected outcomes of the meeting is that several of the OSAA Scholars were offered the opportunity to participate in these research projects.



Stephanie Auld demonstrating her iPhone application to WSU Students



Jennifer Border's *Brainfingers* demo to WSU Student

OSAA Students from the Columbus Quad Visit Wright State University. February 15, 2011 Columbus Quad students from Ohio State and Columbus State piled into a mini-van and took a road trip to visit Wright State University. Current WSU OSAA graduate students led the tour around campus, which ended with a presentation of their research. Visiting students learned about biomedical engineering technology and Brain Computer Interface software that uses eye tracking and muscle use to control a computer. One of the visiting students tried his skill at playing pong using the software! After the tour, the four OSU scholars from the OSAA Columbus Quad and two OSU OSAA staff members joined the Dayton Quad students and staff for a presentation from NASA representatives. Lynda Glover, Eric Clark, Mary Roberts, Lauren Jackson, and Eddie Santos from the NASA Glenn Research Center. The NASA team provided the OSAA Scholars with a 1 ½ hour presentation about NASA's internship, Cooperative Education Program and other employment opportunities. The visit was a great opportunity for the OSAA quads to get together and share what's happening at Wright State!



Internships, Scholarships and Research Opportunities Still Available!

Now is the time to start planning for summer internships and research experiences. Check out the Columbus QUAD events on Twitter for additional updates: <http://twitter.com/OSAAOSU>

- Registered with Wright State University's Office of Disability Services? Check out the current list of scholarships available. Applications are due **BEFORE FRI, APRIL 29, 2011**. [ODS Scholarships 2011-2012](#); Online scholarship application: <http://www.surveymonkey.com/s/BDQRKHH>
- National Science Foundation [Research Experiences for Undergraduates](#) (REU), List of all Research Experiences available for undergraduates.
- [REU grant in Perceptual Science, Summer 2011 Program Announcement](#), Matthew Stone Principal Investigator; undergraduates with a major in Computer Science, Cognitive Science, Psychology, Information Science or a closely related field. Current juniors (graduating in 2012), although sophomores with exceptionally strong backgrounds will be considered; Review of applications began February 23 and will continue until all places are filled.
- [Summer Undergraduate Research/Scholarship/Creative Activities Program 2011](#); WSU Undergraduates in all disciplines, no GPA requirement, research experience is not needed, June 13 - August 19, 2011; Application deadline: Friday, **April 15, 2011**. Eligibility: Students with a GPA of 2.5-3.4 (preferred); Currently enrolled undergraduates who will graduate no sooner than Fall 2011; Students majoring in any discipline; Please include faculty recommendation and transcript. Organizational meeting - June 13, 2011. Please check out the [word document](#) for more information and the application.
- [AAAS ENTRY POINT!](#) - is a program of the [American Association for the Advancement of Science \(AAAS\)](#) offering outstanding internship opportunities for students with apparent and non-apparent disabilities in science, engineering, mathematics, computer science, and some fields of business.
- [EasyColumbus.com](#), a website dedicated to retaining central Ohio college students after graduation, has been expanded to include internship information.
- [ColumbusInternships.com in Science, Engineering, or IT](#) - Internship possibilities for both the student and employers.
- [WrightChoice](#) - serves educational institutions, business and non-profit communities by sourcing and developing under-represented talent focusing on career and professional development, job readiness, internship placement, disability inclusion and diversity training.
- [The Student Educational Employment Program](#) including Student Career Experience Program provides Federal employment opportunities to students who are enrolled or accepted for enrollment as degree seeking students taking at least a half-time academic, technical, or vocational course load in an accredited high school, technical, vocational, 2 or 4 year college or university, graduate or professional school.
- [NASA Education](#), Lists all student educational programs for NASA.



More Opportunities!

- Consortium Research Fellows Program - The current goals of the CRFP are to provide educationally-relevant, well-paid, professional experiences for undergraduate and graduate students.
- Oak Ridge Institute for Science and Education Oak Ridge Institute for Science and Education (ORISE) is a national leader in science education and research. ORISE administers a broad range of internships, scholarships, fellowships and research experiences.
- Science, Mathematics and Research for Transformation (SMART); Scholarship for Service Program has been established by the Department of Defense (DoD) to support undergraduate and graduate students pursuing degrees in Science, Technology, Engineering and Mathematics disciplines. Applications will be open August 1, 2011.
- American Association of People with Disabilities (AAPD) – Advocacy Internship. For the student who wants to get involved. The fall application period will open in May 2011. This unpaid internship is ideal for students who have an interest in communications, public policy, project management, community organizing, and/or disability advocacy.
- 2011 CareSource Summer Intern Program for Wright State University students – on campus interviews May 5th and 6th in Career Services. Review position details, requirements and submit résumé for consideration via The Wright Search.
- Caterpillar is currently recruiting for Career and Internships - Apply ASAP! - Accounting, Marketing, Human Resources, Logistics/Supply Chain Management majors. Please visit their website; <http://www.caterpillar.com/careers>.
- Teradata will be posting 3 intern opportunities for the IT business applications organization. Looking for students completing their junior year in either an MIS or Computer Science/CE major. Position descriptions on line in the Students and Graduates section at: <http://www.teradata.com/careers>.

The School of Professional Psychology Diversity Inclusion Committee Presents

Reflections of a Black Deaf Woman

By

Michelle Banks

When: Tuesday April, 26 2011 @ 6:00 PM

Where: 120 Med Science Auditorium Wright State University Main campus

FREE EVENT AND OPEN TO PUBLIC

The play is about a special bonding relationship between a Deaf mother and her Deaf daughter and how hardships have prevailed throughout their lives with a combination of drama and humor. This is the first play of its kind that speaks to and about the relationships between a Black Deaf mother and her daughter, that was inspired by the life experiences of African-American Deaf women. Her play is performed in American Sign Language (ASL) and Spoken English. An interpreter will be present.





OSAA Upcoming Events

Residential Campus Experience for High School Students

Diverse-Ability U. Ohio's STEM Ability Alliance is beginning preparations for Diverse-Ability U. to be held July 17-21. This year, the Dayton Quad will continue to host the event on the Wright State University Campus and the Columbus Quad staff at the Ohio State University will join them to produce a single OSAA free pre-college residential experience. The event will be open to students with a documented disability entering 11th or 12th grade with plans to attend college, and an interest in STEM majors. Diverse-Ability U. students will prepare for the challenges of living independently and succeeding academically on a college campus while learning about opportunities for studies and careers in STEM fields. Students accepted for



2011

DIVERSE-ABILITY U.

Diverse-Ability U. will live for 5 days and 4 nights in the fully accessible Honors Residence Hall and attend workshops and other events in campus classroom and research facilities. Students will be supervised by trained residential staff, on-duty 24 hours a day. As required, individual accommodations identical to those available to current Wright State Students with disabilities (e.g. personal assistants, special diets, note takers, etc.), will be arranged in cooperation with the Wright State Office of Disability Services. Only a limited number of spaces will be available. Applications can be downloaded on the OSAA website and are due by May 25, 2011.

Move in Day



STEM Focus



Personal Skills

College Experience





OSAA Upcoming Events

- Top scoring teams from regional Science Olympiad competitions are invited to compete at the Ohio Science Olympiad on April 30, 2011 at OSU's main campus. Top ranked teams from state competitions will compete in the National Science Olympiad Tournament, May 18-21, 2011. The University of Wisconsin-Madison will proudly host the 27th annual National Science Olympiad Tournament. This same National Science Olympiad Tournament will be held at Wright State University in 2013. Science Olympiad features competitions in biology, chemistry, earth science, astronomy, physics and technology science-related competitions for our sharpest middle and high school students.
- OSAA has decided to hold a collaborative Choose Ohio First Scholarship Recognition Ceremony for scholarship recipients for all four alliance institutions in late spring 2011. Details will be announced to all awardees as plans develop.
- NSF's Joint Annual Meeting (JAM 2011) – Washington D.C. June 6-8, 2011.
- Residential Campus Experience for High School Students will be held July 17-21, 2011. Check out the OSAA website for additional information or an application. Contact Brittany Boyne, (Brittany.boyne@wright.edu) at Wright State University or Bianca McArrell, (Bianca.McArrell@osumc.edu) at Ohio State University.
- The Dayton QUAD first spring quarter OSAA Scholar's Meeting will be held April 13, 2011, 6:00 P.M., 157 Student Union, Wright State University. We will be viewing an episode of the Discovery Channel's *Mythbusters*, "Driving Blind."
- The first OSU Mentor Mingle will take place on Friday, April 8 from 4pm-7pm, at Ohio State's RPAC.

Multiple Perspectives Conference

Get ready for the Multiple Perspectives Conference at Ohio State University May 4 and 5! It is hoped that the annual conference will serve as a catalyst for positive change and a springboard for collaborations with partners in education, business, public and social service. Each year a series of workshops provide a forum for individuals and organizations to expand their knowledge and perspectives, and an opportunity to increase community resources through the synergy of collaboration.

The workshops are designed to bring a diverse audience together to discuss the full spectrum of disability issues and experiences. To ensure broad participation from the university community, business, state and local government, educators, advocacy organizations, social service agencies, and individuals with disabilities sponsors are sought each year to subsidize conference participants.

This year, two OSAA students will be presenting on their college experiences. One will be discussing his research in the welding engineering department at Ohio State and the projects he has been working on while pursuing his degree. Another student will be presenting his Photovoice project, which is a unique combination of photography and storytelling and has been successfully used for social, community, and individual change in multiple populations (e.g. spinal cord injury, youth, and breast cancer survivors). Use of "subject-generated" products (i.e. pictures, videos) allows others to gain "the possibility of perceiving the world from the viewpoint of the people who lead lives that are different from those traditionally in control of the means for imagining the world" (Ruby, 1991, p 50).

The Ohio State University is implementing Photovoice on campus with students with disabilities, particularly around positive and/or negative impacts on academic success. Higher stress levels are known to be one of the main indicators of lower academic success (e.g. lower grade on an exam, paper, and project). There is limited information on stress among students with disabilities and academic success; therefore, through the implementation of Photovoice, there is hope to provide a glimpse into the lives of students with disabilities to policy makers and community members.

For more information on the conference, go to <http://ada.osu.edu/conferences.htm>.



STEM in the News Excerpts from The Ohio STEM Learning Network

STEM students shine at inaugural G-Force Challenge

The nylon ball wouldn't stay on track. Repeatedly, the team made adjustments to the intricate series of rails, clips and the PVC pipe holding it all up. The third time the ball popped off its initial turn the judge simply smiled and said "we'll catch you on our next time around."

Such were the trials and tribulations of some entries in this year's inaugural G-Force Challenge, a statewide roller coaster competition that brought students from three STEM schools to the Center of Science and Industry (COSI) in Columbus on Jan. 28.

While snags are bound to occur when transporting sensitive, four-by-five-foot contraptions over distance, most of the teams successfully tweaked their coasters, completed their runs and eagerly waited for the results.

In all, 125 students and 23 teams packed two large rooms with roller coasters and displays. STEM permeated the event, from the schools represented to the interdisciplinary nature of the challenge, as students drew on math, engineering and language arts skills as well as an understanding of the human elements of roller coasters and theme parks.

The competition showcased the skills of some of Ohio's most creative STEM students. Kids from Metro Early College High School (Metro) in Columbus, Reynoldsburg eSTEM Academy in Reynoldsburg and the National Inventors Hall of Fame School . . . Center for STEM Learning in Akron, were all on hand to demonstrate their technical expertise in building roller coasters to spec and predicting velocity and g-force.

If they weren't showing off their loops, turns and bunny hills, most students were using marketing or theme park design presentations to impress judges with their understanding of the people factor.

The event was based on an event held each year by first-year students in the Ohio State University College of Engineering, and Program Director John Merrill was on hand to see how things turned out.

"When you think of the challenges of engineering and what that's going to mean for the 21st century, from infrastructure to healthcare, to medicine, we need (capable) students," says Merrill. He says getting students involved in projects like G-Force is crucial to whetting their engineering appetites.

Another roller coaster celebrity of sorts was also on hand: Jeffrey W. Gramke, manager of facilities, engineering and construction at Cincinnati's Kings Island.

Gramke's claim to fame is as a designer of The Beast, which Ultimate Rollercoaster calls "arguably the greatest roller coaster ever built." One of the fastest coasters in the world and the world's longest wooden roller coaster at



STEM in the News

Excerpts from The Ohio STEM Learning Network (cont'd)

more than 7,000 feet, The Beast has been scaring the stuffing out of Kings Island riders since 1979.

Gramke, who judges the OSU competition each year and served as emcee for the G-Force Challenge, says Kings Island's interest is science.

"While there's some benefit to Kings Island in getting our name out there, mainly it's important to keep kids interested in science. Our nation has fallen further behind."

While they were too young to participate in the competition, one group of Linden-area elementary pupils got a first-hand look at what they can aspire to when they someday enter Linden-McKinley STEM Academy.

These fifth- and sixth-graders from Linden Elementary School participated as junior judges and on-site team helpers. While this younger set handed out schedules with gusto, they seemed most enthralled by the roller coasters themselves.

"Can I try?" one boy asked Erin Lauer, a 9th grader at Metro who helped him stand on a chair and drop the ball onto the spiraling "Fall to Earth." Eyes widened and several other boys took their turns, no doubt wishing they, too, were in the competition.

The event was sponsored by the Central Ohio Hub of the Ohio STEM Learning Network in partnership with COSI, the Theme Park Engineering Group, Coaster Dynamix, Kings Island, the Ohio Business Development Coalition, the Educational Council, the OSU College of Engineering Education Innovation Center, the Ohio Department of Education, the Ohio Board of Regents and the Metro Early College High School. The PAST Foundation planned and organized the event.

All have an interest in promoting the critical thinking skills and cross-curricular approach that competing in something like the G-Force Challenge requires.

The obvious question is this: Will competitions like the one on Jan. 28 propel young, bright Ohioans into careers designing roller coasters? Gramke says no.

"Only a handful of people are designing roller coasters in this country," he says. "More people have walked on the moon."

But no worries. Gramke says there will be plenty of other opportunities for students to use STEM skills associated with the G-Force Challenge in real world applications.

Gene Monteith Monday, February 21, 2011