



Ohio's STEM Ability Alliance

STEM Degrees and Careers for Ohioans with Disabilities



OSAA E-NEWS

Issue 5: September 30, 2010



Ohio's STEM Ability Alliance (OSAA)

As of fall 2010, 73 students have participated as OSAA Scholars at Wright State University. Forty students are continuing in the OSAA program from previous years and we have acquired 22 new active members at the start of our fall quarter. The role OSAA plays in students' success is already becoming clear: three of our OSAA Scholars graduated last year, and one has enrolled in graduate school. This year we began fall quarter with 62 active members, and Sinclair Community College has seven students par-

ticipating. We also have 32 high school students who have signed up for OSAA and will have the opportunity to participate in our program. OSAA Columbus currently has 59 active members, including students from The Ohio State University, Columbus State Community College and high school students. A new cohort of ten CSCC students will join OSAA on October 13th when the fall Student Learning Community begins.

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OSAA Scholars receive Choose Ohio First Scholarships

OSAA was awarded a five-year Choose Ohio First grant from the Ohio Board of Regents to provide scholarships for OSAA Scholars. The availability of competitive COF Scholarships has become a key facet of our strategy to attract and motivate students to pursue STEM majors and participate in OSAA. Awards are made to individual students in amounts of \$1500 to \$4700 for an academic year.

uted at the beginning of fall quarter from Wright State University. This brings the total WSU awards to date to 48 scholarships shared by 31 different students.

The Ohio State University has provided scholarship money to 17 students as of spring quarter 2010. Applications are currently being accepted for the 2010-11 academic year with a deadline of November 1, 2010. For more information, visit our website at www.wright.edu/osaa/

August brought another wave of scholarship awards for OSAA scholars. Eighteen awards were distrib-

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The Ohio State University hosts Residential Summer Student Learning Community

OSAA Columbus hosted a residential learning community for 16 Beginner OSAA students and 10 Advanced OSAA students July 26-28. The students attended presentations given by Advanced OSAA students who are currently attending The Ohio State Emergent Materials Center (CEM) located in the Physics Research building on the OSU campus, as well as the Material Science and Engineering department also located on the OSU campus.

Students were able to witness first-hand some of the innovative research and theory being put into practice by OSU staff and graduate STEM students. The cohort was recruited from high schools across Ohio, including Metro High School, Ohio State School for the Blind, Reynoldsburg High School, Westerville, Grandview



OSAA students depicting the "O-H-I-O" cheer

Heights, Upper Arlington, Lynchburg-Clay, Bexley, Brookhaven, St. Edwards and Cleveland Heights High School. There was also a student who is currently attending Columbus State Community College.

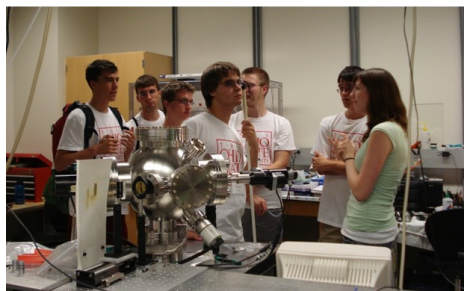
During the Beginner SLC, all of the OSAA students were introduced to the program through a modified probability

math course taught by a member of Columbus State Community College and an advanced OSAA student intern. The students were asked to predict the distribution of outcomes of the Monty Hall ("Let's Make a Deal") problem, a whimsical scenario involving guessing which door of three led to a car prize as opposed to a goat. This problem involved a twist that made the solution very counterintuitive.

Through a series of simple experiments and guided investigations, the students acquired sufficient knowledge of the basic notions and techniques of probability theory to find the correct solution to the problem posed at the beginning of the session.

After the cooperative learning experience wound down, the students were led in games of chance, where their newfound probability skills were applied. The session served as an introduction to the Math Explorers program, which will run concurrently with the SLC conducted on the campus of Columbus State Community College beginning on October 13th.

Center for Emergent Materials



OSU students experiments with liquid nitrogen



Advanced OSAA student leads a portion of the Math Explorer Program



OSU Math Faculty from CSCC cover probability through gambling scenarios

Wright State University's First Residential Campus Experience for High School Students

Diverse-Ability U. was the first residential campus STEM experience for Students with Disabilities (SwD) conducted by the OSAA Dayton QUAD at Wright State University. Nineteen students preparing to enter their junior or senior years of high school attended the event that began with check-in and introductory activities on July 25 and ended with final group project presentations and awards at a luncheon on July 29. Students were selected for attendance based on their demonstrated interests in pursuing higher education in STEM including two with severe visual impairments, two with hearing impairments, and six who have significant mobility limitations. Several students reported having ADHD or Asperger's Syndrome, and there were a number with multiple disabilities.

The camp began Sunday evening in the Honors Residence Hall with an introduction to the group project, team building exercises, and a panel presentation of current OSAA Scholars discussing their experiences as college students. The schedule included six STEM academic modules, two per day over the three full days.



Making statistics fun using candies



Geology Lab



A Residential Science & Engineering Campus Experience for College-Bound Students



Summer Residential Camp DIVERSEABILITY U.

Academic Modules DIVERSE-ABILITY U.

Lies, Damned Lies, and Statistics: Statistical Literacy and Collecting Data led by Beverly Grunden, Statistical Consultant from WSU's Statistical Consulting Center.

Neuroscience Exploration led by Patricia Schimi-Webb, WSU Department of Psychology.

So I might want to be an engineer... Am I really going to use all this MATH??? led by Nathan Klingbeil, WSU Professor in the Mechanical & Materials Engineering Department and Associate Dean for Academic Affairs.

Swallowed by a Sinkhole! Led by Chris Atchison, OSU.

No Lights, No Cameras, No Action? Led by John Gallagher, WSU Associate Professor, Computer Science and Engineering Department.

Laboratory Experiences in Biology led by Marcia Wendeln, WSU Biological Sciences Department.

Additional sessions were conducted by the Office of Disability Services and OSAA staff to discuss the challenges of college life, the support services available to students, and the personal skills that lead to success (e.g., self-advocacy). Social activities included swimming, movie night, and wheelchair football/rugby. The group projects were designed by a local STEM educator with extensive high school experience. Each group of four people had to present a different facet of either camp or STEM experiences for their parents.

Feedback from the students indicated that the chance to learn about college and the overall experience of living in the dorm and attending classes were among the most valued aspects of **Diverse-Ability U.** Attendees also noted the importance of sharing the experience with other students with disabilities preparing to transition to college.



Moving in day for OSAA DIVERSEABILITY U.



Swimming was a popular evening activity



Biology Lab

OSAA Columbus QUAD Student Highlights

Eric, an Advanced member of OSAA, is a senior in the Welding Engineering program at the Ohio State University. Eric was placed in a full-time research experience with the OSU Welding Engineering Joining and Metallurgy Lab. The research he was conducting is to evaluate the post-weld tempering response of the material and determine why one of the materials will not soften to its required hardness via the post-weld heat treatment mechanism. He has also gained valuable experience in various lab functions like metallographic preparation, building thermocouples, TIG welding with Jetline, furnace and Gleeble thermo-mechanical device operation. His performance in the lab has also secured him a part-time position during the 2010 Autumn quarter where he will continue his current research and begin to conduct the research necessary for his Masters research thesis.



Eric presenting his self-advocacy plan to a group of Beginner OSAA students



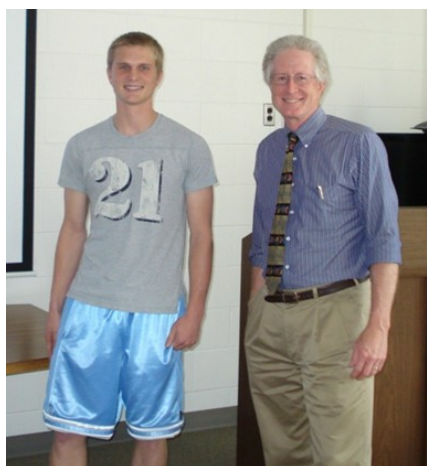
Rahul volunteering during the Ohio Special Olympics this summer

Rahul a senior in Biology at the Ohio State University was placed in an internship with a psychologist at the Nisonger Center working on multiple research projects. Projects he assisted with included the Curemark's Autism Genetics study, which examines genes which induce a hormone or neurotransmitter release thereby allowing brain and central nervous system functionality, a pilot project exploring neurofeedback issues in ADHD that is examining a possible treatment for ADHD which involves Electroencephalographic Biofeedback or Neurotherapy. Rahul was responsible for locating suitable candidates, administering treatments, gathering and collating data, and compiling results. He also assisted on the TOSCA study which examines the impact of atomoxetine on ADHD and aggression symptoms.

During the 2009-2010 academic year **Kashali**, who graduated in June of 2010 with a degree in Actuarial Science from Ohio State, was placed in a paid position with the Bursars Office upon graduation in June 2010 this internship transitioned into full-time paid employment with the Bursars office.



Kashali presenting her self-advocacy plan during an SLC



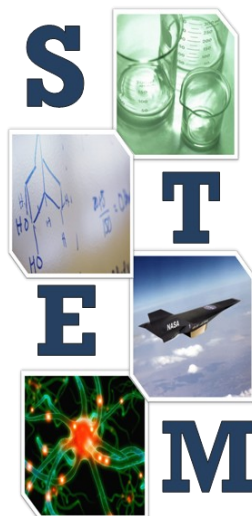
Kyle and his mentor Dr. Merrill (Director-First Year Engineering Programs) after Kyle presented his self-advocacy plan

Kyle, a sophomore in mechanical engineering, was placed an internship in TTI Floor Care's (Hoover) testing lab during the summer of 2010. During his time with Hoover he designed two filter test fixtures in Pro/Engineer and his research project has indicated that the current filter they are using could be replaced with a more cost effect filter in turn saving the company almost \$200,000.

Dayton QUAD Events

Asperger's Syndrome (AS) Support Group

OSAA Dayton Scholars diagnosed with Asperger's are invited to participate in a biweekly AS Support Group that meets at Wright State University, 023 Student Union, Office of Disability Services. This support group will give you the opportunity to meet new friends in a friendly and nonjudgmental setting and allow you to share your successes and struggles. This can be a valuable tool to increase your social skills. 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.



Workforce Recruitment Program for College Students with Disabilities (WRP) is a resource for federal agencies and private businesses nationwide to identify qualified temporary and permanent highly motivated postsecondary students from a variety of fields. WSU has been a participant since 1977. Annually, trained recruiters come to campus to conduct personal interviews and develop a database of each student listing their qualifications. Federal agencies use this database to help select students for internship/part-time/full-time employment. This summer, two of WSUs' OSAA Scholars were selected for internship programs: Nathan (Chaplain's Office) and Kyle (National Air Space Intelligence Center)

OSAA and the Technology-based Learning with Disability NSF IGERT program sponsored a colloquium on Aug 31, 2010. Cary Supalo from The Independent Laboratory Access for the Blind (ILAB) project based at Pennsylvania State was the featured presenter. Cary's NSF funded research focuses on the development of accessible tools and techniques to assist blind students in performing high school level chemistry laboratory experiments. After graduating with a BS in Chemistry from Purdue in the spring of 1999, he started graduate studies at Penn State that fall. Cary obtained his Masters of Science degree in Chemistry from Penn State in December 2004.



Cary Supalo

His topic, *Multi-Sensory Approaches to Teaching Chemistry to Students with Blindness or Low Vision*, provided the framework for a stimulating discussion attended by graduate students from the Learning with Disability Program and our OSAA Scholars. During his visit Cary Supalo recorded an interview describing his STEM career pursuits for the Starting Wright webcast series which is aimed at increasing interest in STEM careers for students with disabilities in grades 6-12.



STREAMS is a competitive research training program open to college students from across the United States. It is funded by the National Institutes of Health to encourage members of underrepresented minority groups and students with disabilities to pursue careers in science and biomedical research by providing a stimulating summer experience to enhance the students' academic and personal development. Last summer we had three Wright State University OSAA Scholars accepted and participated in the program. This summer we had four OSAA Scholars participate in internships with the STREAMS program. The OSAA Scholars took 1st and 3rd places in the poster symposium at the end of the summer. Way to go, Jacob, Mitch, Darius and Lisa!

WSU OSAA Scholars Fall Quarter Meeting

The first OSAA Scholars Level 2 Student Learning Community meeting for the new school year was held on Tuesday, September 21. Thirty students took time from their hectic schedules to attend. The meeting began with introductions by new and returning Scholars. It is always interesting to hear where the students call home. The students had some time to socialize and were encouraged to meet with other students new to them. Our returning students made an extra effort to include the new students and build connections based on the previous introductions.



WSU OSAA Scholars

During the business part of the meeting, Clark Shingledecker and Brittany Boyne welcomed the new students to OSAA and the returning students back to campus. Dr. Shingledecker gave a brief overview of the OSAA program and its objectives, as well as the benefits available to participants. Our returning students then shared some highlights of their personal experiences in the OSAA program with the group. Students candidly discussed their experiences using the Ability Advisor for guidance, support, and problem solving; their professional development opportunities funded by Scholar's Dollars; their new perspectives on field experience gained by the caving trip last spring and the connections they have made with other students with disabilities in STEM fields.



Sinclair Community College – Campus Visit Day for Students with Disabilities set for Saturday October 16, 2010– **POSTPONED**

This visit will allow high school students with all types of disabilities and their parents to learn more about education after high school and opportunities for community college studies and careers in Science, Technology, Engineering, and Math (STEM). Students must attend with a parent or a guardian and provide their own transportation to campus. Please contact Holly Brown-Wright, OSAA Coordinator at Sinclair Community College by Friday, October 8 to reserve your space. Email: holly.brown-wright@sinclair.edu or phone at (937) 512-5113.

Participants will have the opportunity to:

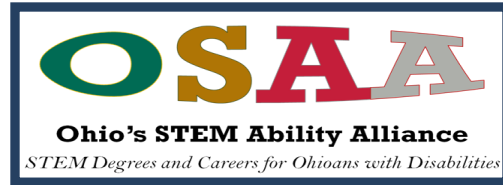
- Learn about getting ready for college
- Visit science and engineering labs
- Tour the Sinclair Community College campus
- Learn about accommodations available to students with disabilities



Lisa, a biomedical engineer student at WSU

NPR Report on Autism

A Wright State OSAA Scholar majoring in biomedical engineering was featured in a national public radio story report about autism that aired on National Public Radio's (NPR) "All Things Considered" show Monday, Aug. 23, 2010. Lisa's story outlines the social challenges of attending college in a world of "neurotypicals".



STEM In the News

Excerpts from: STEMscape Newsletter from the Ohio STEM Learning Network

UC awarded \$400,000 federal grant to enhance math and science learning for all children

Monday, September 20, 2010

A \$400,000 grant from the U.S. Department of Education will support a two-year University of Cincinnati research project to build and enhance student learning in science, particularly elementary and middle-school aged children with learning disabilities and behavioral disorders, reports the university. Researchers in UC's College of Education, Criminal Justice, and Human Services (CECH) are developing an interactive software suite that would be shared by teachers around the nation via cloud computing – a network that shares resources and services.

Metro School makes the grade: celebrating its first graduating class

Monday, August 16, 2010

Metro Early College High School just passed a big important test. The first students who took the plunge of leaving the halls of their own high schools to become live guinea pigs in Ohio's first STEM (science, technology, engineering, math) school have graduated.

Dayton STEM Hub spreads the cheer by awarding 10 sub-grants in five counties

Monday, July 19, 2010

In an example of how existing STEM programs can be leveraged to reach new students over a large region, the [Ohio STEM Learning Network](#)'s Dayton Hub has funded the first-ever regional grants to develop, expand and strengthen preK-12 STEM initiatives in a four-county area.

In May, the hub received nearly \$980,000 from the state of Ohio. While much of that money will be used to strengthen STEM learning within existing Dayton STEM initiatives, \$250,000 of the grant -- along with an additional \$38,000 from the hub -- will fund 10 STEM-related projects proposed by schools and other organizations in Montgomery, Darke, Miami and Greene County.