Spring 2009

OSGC Observations

A publication of the Ohio Space Grant Consortium

Paul C. K. Lam, Ohio Space Grant Consortium

Paul Chi-King Lam, Ph.D., 62, passed away May 24, 2009 after fighting a courageous battle with kidney disease. Dr. Lam was born in Nanking, China, and had resided in Cuyahoga Falls the past 34 years, moving here from West Lafayette, Indiana. Dr. Lam was a true scholar and valued all aspects of the educational enterprise including research, teaching and service.

His academic journey began at Purdue University, where he received a B.S. in Engineering Science in 1969. His graduate education next took him to the University of Illinois where he obtained an M.S. in Theoretical and Applied Mechanics in 1970. After Illinois, he attended The University of Akron, where he received a Ph.D. in Mechanical Engineering in 1978.

After brief sojourns into the corporate world at Pratt Whitney, Babcock & Wilcox, and General Motors, Dr. Lam began his academic career as an Assistant Professor at The University of Akron in 1980. He was to serve Akron with all his amazing devotion to students and research for 29 years. Most recently, he served with distinction as Associate Dean, Undergraduate Studies and Diversity Programs, and as a Full Professor of Mechanical Engineering. As a faculty member and Dean, Dr. Lam worked with many students and he truly loved watching students grow into active professionals. He had planned to retire from The University of Akron this summer.

There are far too many students whose lives he influenced to ever list them all. This included students at every level, from Ph.D. to grade school children in the workshops he delivered at local schools. Dr. Lam was an advisor for ASME and participated in over 57 Ph.D. or Master's level committees. A phrase that could be used repeatedly to describe Dr. Lam "is too numerous to mention." This expression certainly describes his professional service and activities.

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OHIO SPACE GRANT CONSORTIUM

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Affiliate Members

Air Force Institute of Technology
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Cleveland State University
Ohio Northern University
The Ohio State University
Ohio University
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OAI Ohio Aerospace Institute

NASA

Featured Students

Junior Scholar

Bethany Harpole — Cedarville University

A current student at Cedarville University, Bethany Harpole began taking college courses when she was thirteen years old. A long lasting interest in medical science encouraged her to pursue a Biology major, and minor in Chemistry, Music, and Bible studies.

Bethany's research at Cedarville has concentrated on the use of caffeine and aspirin to decrease the motor deficits suffered by Parkinson's patients. Fruit flies were used for the testing, due to their accessible nervous system and tractable genome.

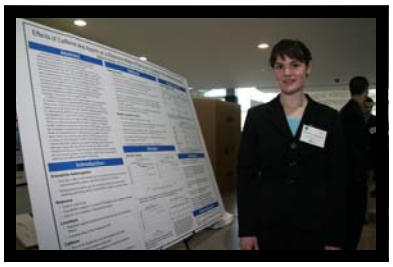
Rotenone was used to induce Parkinson's symptoms in one group of flies, while others were treated with caffeine, aspirin, and Levodopa, a commonly prescribed medication for Parkinson's.

The flies were placed in a freezer to sedate, and than transferred to a vial. After five minutes of recovery they were tapped to the bottom, and given 10 seconds to travel 5 cm horizontally.

Fruit flies used in the experiment.

After fourteen days of testing the flies treated with both caffeine and aspirin showed movement capabilities similar to those treated with Levodopa.

Bethany will finish her Junior year at Cedarville in May and plans to spend a few weeks applying to medical school and job shadowing.



Bethany Harpole presents her research at the OSGC symposium in April.

This summer she will be participating in a cellular and molecular biology undergraduate research program at Princeton.

Bethany will be returning to Cedarville in the fall to continue her research on Parkinson's.

Senior Scholar

Makeba Anderson — Central State University

Makeba Andreson will graduate as a Manufacturing Engineering Senior from Central State University this ___. While attending Central State, Makeba's research focused comparing on the design, fabrication and test results of material composites to ensure the use of the highest quality and cost efficient materials.

Growing up in Dayton, Ohio Makeba's knowledge of higher education opportunities was limited. After attending a engineering summer enrichment program she discovered her passion for engineering and began to pursue a degree in Manufacturing Engineering.

Makeba's time at Central State University has offered her individualized attention and research opportunities critical to her success.

After graduation, Makeba has the opportunity to attend graduate school at the University of Dayton, as well as a full time position at Boeing Company in Seattle, Washington. .

She plans to enter the workforce to gain industry experience while obtaining her MBA from the University of Dayton. Makeba also intends to increase the exposure of inner– city students to STEM careers.

A mother of three, Makeba's dedication to pursuit of education is highly respectable. OSGC wishes Makeba the best of luck in undertaking future educational and employment options, as well as health and happiness to her family!

Makeba Anderson presents her research at this years' Symposium.

After Graduation

Through an Ohio Space Grant Consortium fellowship, Jennifer Fries (formerly Lukens) graduated from the University of Dayton with a Master's of Science in Aerospace Engineering in 2008. She is currently working at Cornerstone Research Group in Dayton, Ohio as a research team member and project leader. Her focus at Cornerstone is advanced materials and morphing aircraft development.

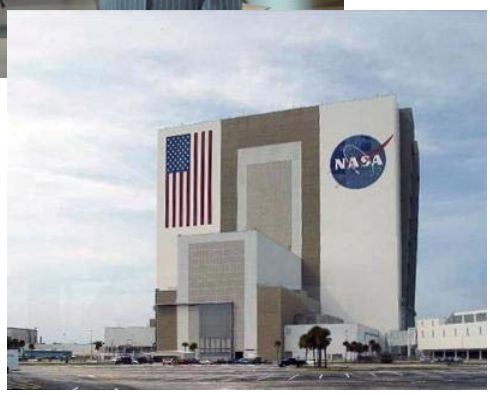
Jennifer first realized her passion for aerospace engineering in high school, and began at the University of Dayton in August, 2003. As a graduate student she served as the Secretary of the Society of Women Engineers and volunteered much of her time to charitable organizations. She believes that graduate school improved her ability to solve complex problems and think critically.

As an OSGC fellowship recipient, Jennifer's research concentrated on wing mechanization design that would allow give an air vehicle the capability to simulate the rotational motion of a perching bird.

Jennifer met her match in her freshman Chemistry class. He is also an engineering graduate of the University of Dayton, and they married last July.

Jennifer hopes to one day become a professor and inspire students to pursue their passion. She advises today's engineering students to look for a job that they will be excited to get up and go to in the morning.

NASA Exploration System Mission Directorate (ESMD) Intern: Eileen Boyd



Top: Eileen presents her research on A-123 Lithium Iron Phosphate Cells at the Student Research Symposium held on April 17, at the Ohio Aerospace Institute.

Bottom: The NASA Kennedy Space Center in Orlando, Florida.

Eileen Boyd, a junior in Chemical Engineering at The University of Akron, will be interning at the NASA Kennedy Space Center in Orlando, Florida, this summer through support from the OSGC. As an intern at NASA Glenn Research Center in 2007, Eileen was signed up to the ESMD community, and was able to find applications for different positions at NASA Glenn Research Center and NASA Kennedy Space Center.

Eileen will be working with her mentor, Philip Metzger, and roommate, Whitney Hauslein, to research how rocket exhaust from lunar and Martian landers will blow soil, create craters, and damage hardware when landing on the moon or mars. She will be rooming with Whitney in Cape Canaveral.

In 2007, Eileen also received OSGC support to intern through the ESMD program at NASA Glenn Research Center in Cleveland, Ohio. She was involved in testing A-123 Lithium Iron Phosphate cells in attempt to build a single battery that could power all functions of a spacesuit.

In her spare time, Eileen enjoys watching television, playing video games and listening to music. She loves dealing with space, and hopes to pursue a career involving chemical engineering and aerospace.

While in Florida, Eileen hopes to see a shuttle launch. She will return to Ohio after the summer to continue at The University of Akron. OSGC hopes Eileen has a great time in Florida, and encourages her to make the most of this great opportunity!

OSGC Director Passes at 62

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Some of the technical societies in which he held membership include American Society of Mechanical Engineers (ASME), American Society of Engineering Education (ASEE), American Society of Automotive Engineers (SAE), National Association of Minority Engineering Program Administrators (NAMEPA), and National Advancement Council of Minorities in Engineering (NACME). Honor society memberships included Omicron Delta Kappa, Phi Eta Sigma, Sigma Gamma Tau, Tau Beta Pi, and Sigma Pi Sigma. He served on committees for many of these organizations, including the Ohio Space Grant Consortium K-12 Education and Pipeline Committee, and also reviewed for journals and federal agencies.

Dr. Lam became the Director of the OSGC in 2007 after serving as The University of Akron's campus representative for many years. As the OSGC Director, Dr. Lam made numerous contributions to aerospace education in the State of Ohio and has also helped countless individuals through student scholarship and fellowship awards and internship opportunities at NASA Centers and with industry. He was also instrumental in assisting teachers and faculty members to become better educators and researchers through sponsorships of education workshops and grants for research and innovative teaching. He also had a special passion for working with K-12 students and teachers to promote STEM education and started the Summer Bridge Internship Program for high students at the university and with local industry. His contributions as Director impacted the lives of many students and teachers, helping them achieve success in their education and careers.

He was a role model for all whom he came in contact with, and everyone responded to his soft-spoken manner. He was so proud of his students' accomplishments and never once took any credit for that success. Dr. Lam was an educator for the people –- beginning with elementary education to higher education –- his contributions resulted in a better planet for us all.

Dr. Lam set high standards for his students and for himself. He was a tireless worker, who also found time to pursue his passion for knowledge. His accomplishments included a patent and over 120 journal, conference, and book publications. .As further recognition of the high quality of Dr. Lam's work, he received over 50 grants or donations of funds as a source of support for his research and his minority programs. His areas of research interest and publication included structural dynamics, rehabilitation and adaptive devices for cerebral palsy patients, finite element analysis of structures, fatigue and fracture evaluation of material behavior, minority engineering education, pre-college math-science-technology programs, and retention models of engineering education.

A memorial service was held on May 27 at The University of Akron. Family, friends, colleagues, and students gathered to share their memories and honor the legacy of a man who touched the lives of so many.

On behalf of the entire Space Grant community, Dr. Lam will be sorely missed – he truly personifies the phrase, "one in a million!" We became better individuals for knowing you. Godspeed, our friend and colleague!

SATELLITES

An Ohio Space Grant Consortium Seed-grant Award awarded to Kevin P. Czajkowski

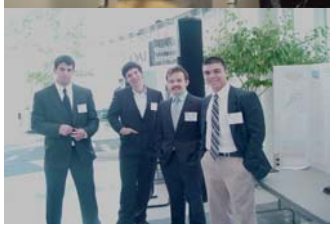
Students and Teachers Exploring Local Landscapes to Interpret the Earth from Space (SATELLITES) is a program based on the premise that students need real –life experience with science to understand it. Through the SATELLITIES program, Dr. Czajkowski works with instructors who teach in low-income level areas of Ohio in a summer workshop where they are introduced to geospatial technologies and the use of GLOBE observations in analyzing data to develop a successful implantation of the program in their classrooms. Classroom programs focused specifically on GPS, satellite observations, and the Earth's energy budget. Students collected data from observation of surface temperatures, clouds, and snow to link environmental changes to issues such as Global Warming.

On April 23, students presented their research findings at the SATELLITES conference held at the Penta Career Center located in Perrysburg, Ohio. Scientists reviewed the student presentations and the most outstanding participants were awarded. Students were also able to compare their environment observations with those of other students from around the world.

Students participating in the SATELLITES Conference held at Penta Career Center in Perrysburg, Ohio.

XVII Annual Student Research Symposium

April 17, 2009

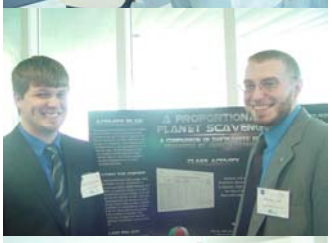


On April 17, 2009 the Ohio Aerospace Institute (OAI) hosted the Ohio Space Grant Consortium's Seventeenth Annual Student Research Symposium. The day began with breakfast while junior, education, bridge, and community college scholars set up their poster presentations. The group was welcomed by Gerry Noel from Central State University followed by Mike Heil, president and CEO of OAI, who spoke to the students about leadership and the future of aerospace.

After being welcomed, the group broke off into four groups for individual oral presentations by senior scholars. After presentations were completed, the group took a break for lunch.

Following lunch, Antoine Moss, Transportation Management Specialist from NASA Glenn spoke with the students about obtaining strong leadership skills, and gave tips on applying for NASA internships. The students and advisors than assembled for a group photo. The day ended with the junior, education and community college student presentation of posters.

OSGC would like to send a special thank you out to all evaluators and campus representatives for helping to make the symposium a great event and we hope to see you all again next year!



In Memoriam

Dr. Paul C. K. Lam

(1947-2009)

The University of Akron

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