

CoE DRAGONotes

A Newsletter for Students, Parents and Friends of Drexel University's College of Engineering

Bernard Amadei Named 2008 Engineer of the Year

Dr. Bernard Amadei, distinguished founding president of Engineers Without Borders - USA (EWB-USA), cofounder of Engineers Without Borders - International (EWBI) and professor of Civil Engineering at the University of Colorado at Boulder, will be honored by Drexel and the College of Engineering as the 2008 Engineer of the Year.



Dr. Bernard Amadei, 2008 Engineer of the Year

Dr. Amadei founded EWB in 2000 and co-founded EWBI in 2002. The organizations train engineering professionals and students and partner with disadvantaged communities to improve the quality of life through sustainable engineering projects. Dr. Amadei was inspired to found EWB when visiting the village of San Pablo. He noticed that children were carrying water from the river to the village all day, and the task kept them from attending school. With the help of colleagues and students, Dr. Amadei designed a water pump that brought water directly to the village and freed the children to attend school. Amadei says "For me, it was an epiphany, a way for me to realize that engineering was not just technical solutions or providing technical solutions; it had very strong social components."

Dr. Amadei teaches sustainability and international development at the University of Colorado. He also directs the new Engineering for Developing Communities (EDC) program, which educates engineering students and professionals who can offer sustainable solutions to the endemic problems faced by developing communities. He received his M.S. in Civil Engineering in 1979 from the University of Toronto and his Ph.D. in Civil Engineering in 1982 from the University of California, Berkeley. He has co-authored two books and 150 technical papers.

Dr. Amadei will be honored at a Dinner that culminates CoE's Annual Engineers Week, held in conjunction with National Engineers Week. The week's events promote public awareness and celebrate the contributions of engineers. Please see below for a schedule of events, and check the website, www.drexel.edu/coe, for more information.



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2008 Engineers Week – February 18-22

Schedule of Events

Monday, February 18

Egg Drop, 12 p.m.
Bossone Research Enterprise Center Lobby

Tuesday, February 19

High School Day 9 a.m.
Bossone Research Enterprise Center

Wednesday, February 20

Honors Day Awards Ceremony and Reception 5 -7 p.m.
Main Auditorium and Great Court

Thursday, February 21

4th Annual Career Fair 10 a.m.-3 p.m. *Bossone Research Enterprise Center Lobby and Atrium*

Friday, February 22

Engineer of the Year Lecture 12 p.m.
William F Mitchell Auditorium

Engineer of the Year Dinner 5 p.m.
Rittenhouse Hotel

For a complete schedule of events, please visit www.drexel.edu/coe/eweek2008/.

From the Dean's Desk

Drexel's 6th Annual Engineers Week is a time to recognize engineers for their extraordinary contributions and reflect on the impact their thriving work has on society.

CoE is excited to welcome Dr. Bernard Amadei, this year's Engineer of the Year, to accept his award at the Engineer of the Year Dinner. With the practical insight of an engineer and the compassion of a global humanitarian, he is an inspirational

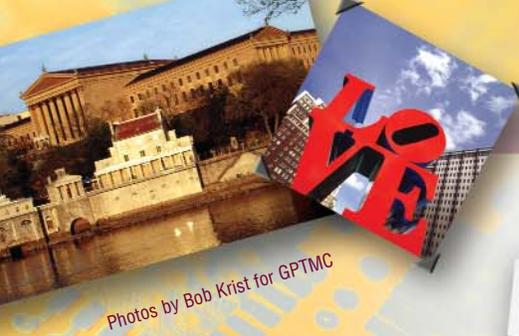
leader for engineers and society. He is dedicated to making changes, which profoundly improve the lives and fortunes of people globally.

With a commitment to excellence, our own engineers are demonstrating how they can change the world. This is reflected in the success of our own faculty and our MEM department placing 4th in the Academic Analytics rankings. New initiatives are also being carried out by CoE

with Drexel's EWB chapter improving the water system in Miramar, El Salvador and our new partnership with Air Products and Shanghai Jiao Tong University. Please join us as we pay tribute to our engineers!

Robert J. Spanier





Photos by Bob Krist for GPTMC

The Brain behind Drexel's Redesigned Egg Drop Competition

As part of Engineers Week, students will be participating in a revamped version of Drexel's Egg Drop competition with guidelines created by ECE student, Daniel Lofaro '08.



Daniel Lofaro '08 (ECE) is hard at work measuring the target location for the egg drop competition.

Though usually held in Great Court, the Egg Drop competition will take place in the Bossone Research Enterprise Center this year. Previously, teams competed to design a carrier that would protect one Grade A raw egg from splattering, after it propelled down a 100-foot steel cable into a wooden barricade from the second floor of Drexel's Great Court. Students will no longer be attaching the egg to the steel cable. Instead, the Grade A egg will be dropped in a 28 foot free-fall. The device holding the egg not only has to protect the egg from breaking, but it must also steer the egg to land in a target below.

Lofaro added the slight twist to the competition with the idea of keeping the traditional egg drop concept. "We wanted to add an intellectual power to it," Lofaro says. Although Lofaro has kept busy with planning the guidelines for the egg drop competition, he also has been establishing guidelines for the Institute of Electronic and Electrical Engineers (IEEE) Robot competitions. Currently, Lofaro is completing research on a humanoid bi-ped robot in the Drexel Anonymous Systems Laboratory (DASL). He is finishing his BS/MS in Electrical Engineering in Control Systems and will be starting his Ph.D next year.

For more information on the egg drop competition and Engineers Week, please visit, www.drexel.edu/coe/eweek2008.

Engineering Management's Morton Rabinowitz Recognized as Outstanding Online Instructor



Dr. Morton Rabinowitz

Engineering Management Associate Director, Dr. Morton Rabinowitz, was acknowledged as an Outstanding Online Instructor during National Distance Learning Week (NDLW). Among one of nine recipients who received awards for Outstanding Online Instructor, Dr. Rabinowitz was honored for his work in aiding growth and accomplishments occurring in Engineering Management's distance learning programs.

Honorary Drexel University Online Student, Mayor-Elect, Michael Nutter, delivered the Keynote Address and emphasized the need to promote the growth and broader application of online education. Sponsored by the United States Distance Learning Association, the 2007 NDLW, seeks to promote and celebrate the development and success occurring today in distance learning programs offered by schools, businesses, and governmental departments.

Dr. Rabinowitz first joined Drexel's Engineering Management Masters program in 1995. Engineering Management integrates the study of major management disciplines within the context of engineering or technical operations. The program is designed to provide the background in management science necessary to advance from purely technical positions to those including supervisory responsibilities in areas such as research and development, production, engineering design, and technical marketing. During the following years, Dr. Rabinowitz worked to develop elective courses for Marketing for Engineers and R & D Management which he currently teaches.

Computer Science and Digital Media Establish Joint Gaming Curriculum

The Computer Science Department (CS) and Digital Media (DIGM) program in the Antoinette Westphal College of Media Arts and Design are pleased to announce a jointly offered computer gaming curriculum. CS students may now select Game Development and Design as one of their areas of concentration. DIGM students may add additional gaming courses to their existing required and elective courses.

The development of the gaming curriculum was spearheaded by Paul Diefenbach, Assistant Professor of DIGM and Frank Lee, Assistant Professor of CS. The curriculum provides conceptual

understanding of game design and practical experience in the design and the development of games. The intention of the curriculum is to bring CS and DIGM students together in a series of classes where they work as a team.

The creation of the gaming curriculum coincides with the foundation of a joint research lab, called Replay, headed by Drs. Lee and Diefenbach, that will explore various aspects of computer gaming. In addition to the RePlay, Tom Bennett, a Drexel CS major, has founded a student group, Drexel Game Developers, for students interested in the design and development of computer games.

Engineers Without Borders to Install Water System in El Salvador Village

Drexel University's student chapter, Engineers Without Borders (EWB), will journey to Miramar, El Salvador to provide a village of 160 residents with a clean, dependable water supply and distribution system.

The Miramar project is the first mission for Drexel's year-old chapter of EWB, a nonprofit organization that aids developing communities worldwide to improve their quality of life. Thirty students have been planning the project with the assistance of Dr. Richard Cairncross, Associate Professor of CBE and Joe Mastronardo of Pennoni Associates, an engineering firm with offices in Pennsylvania and seven other states.

"Miramar, located in western El Salvador near the border of Guatemala, endures six months of rain followed by six months of drought, resulting in a severe water shortage for its residents, refugees of a 1980s civil war," said Kim DiGiovanni, '08 (CAEE) manager of the student project. DiGiovanni continued by saying, "Residents take several hour-long trips each day to get drinking water from a small, polluted stream. Those trips prevent children from attending school and limit women's ability to work to support their families." In addition to the water shortage, the water supply in wells and streams contains high levels of E. coli and other coliforms, causing illness.

Five students flew to Miramar in September to assess the village's needs for the first of the three-trip project that includes support from Peace Corps volunteers. With the assistance of Dr. Cairncross and Mastronardo, eight more students will travel to Miramar in March to oversee the drilling of the village's well so that it extends deep enough to penetrate the aquifer. Students will also dig a foundation for a storage tank that will funnel water to four distribution points, located strategically throughout the village. The gravity-driven storage tank will provide residents up to 22,500 liters of water a day. The students also plan to install an electric pump in the well. They will install the storage tank and all the pipes for the distribution system.

The project is being funded by corporate sponsors and rotary clubs. Students estimate they will need \$25,000 to complete the project. Donations are accepted at www.firstgiving.com/miramarproject.

Drexel team members, John McCormack, Mike Sexton, and Dr. Cairncross (Back row) teach a group of boys in Miramar, El Salvador how to play Ultimate Frisbee.



(Below) Drexel students, John McCormack and Lindsey Falkner meeting with the Miramar, El Salvador Community President, Rodrigo.

(Below) Children are drawing buckets of water from the main public well by hand while Drexel students perform testing of water quality in Miramar, El Salvador.



CoE Welcomes Shanghai Jiao Tong University Students from Joint Cooperation Agreement

We are proud to welcome our first students Qinling Shen '09 (MEM), and Dawei Ren '09 (CBE) as part of the Air Products, Shanghai Jiao Tong University (SJTU) and Drexel University Joint Cooperation Agreement.

Air Products, SJTU and Drexel University signed a landmark Joint Cooperation Agreement and launched an integrated "3-2 Program" in September that offers outstanding Chinese students the opportunity to earn undergraduate and graduate degrees and a corporate work assignment. The partnership is the first among a Chinese university, an American university and an international corporation.

The students will complete three years of education at SJTU followed by two years at Drexel, including a six-month internship assignment with Air Products. Upon completion of the program, the students will receive a bachelor's degree in their engineering major from SJTU and a master's degree in global engineering from Drexel.



Qinling Shen '09 (MEM), and Dawei Ren '09 (CBE) are the first students to take part in the Air Products, Shanghai Jiao Tong University (SJTU) and Drexel University Joint Cooperation Agreement.



Dean Güçeri, standing with partners from Shanghai Jiao Tong University Quyan Ye, Deputy President Professor and Dr. Hu Wei Professor and Dean.

MEM Ranks Fourth in Nation

The *Chronicle of Higher Education* has announced that Drexel University's Mechanical Engineering and Mechanics Department was ranked #4 out of 375 Ph.D. granting institutions in the nation in the 2007 Academic Analytics rankings.

This is one of the most comprehensive ranking systems, as it considers critical metrics that constitute the strength of a program based on data obtained on scholarly accomplishments from many different sources. Faculty members can be judged on as many as five factors, depending on the most important variables in the given discipline: books published; journal publications; citations of journal articles; federal-grant dollars awarded; and honors and awards. The index examines faculty members who are listed on a Ph.D. program's Web sites, and includes a total of 217,254 names. Our ranking was based on the evaluation of the work of our 39 faculty who are active in this important interdisciplinary area.

Congratulations to the MEM department for its tremendous efforts!

CoE Students Launch Drexel Energy Club

Looking to foster understanding of the technological, economic, environmental and sociopolitical issues surrounding energy generation and use, CoE students formed the new Drexel Energy Club (DEC). DEC began in November and was established by President, Lisa Leone '10 (CBE) with the assistance of Advisor and Associate Professor, Richard Cairncross (CBE).

Leone began DEC to educate members of the Drexel community on the methods and consequences of energy generation and usage. Leone says, "I decided to form DEC because of my realization that my knowledge about energy, and I think many other people's general knowledge about energy, is extremely fragmented and not very useful."

DEC's projects include acting as advocates for sound energy policy at Drexel University and within the Philadelphia area, affecting Philadelphia and regional energy policy, involving students professionally in the energy industry by way of co-op and working with the Steinbright Career Development Center (SCDC) to make more energy jobs an option for students.



Members of DEC are working to become further educated on the consequences and methods of energy generation and usage to affect change on the regional and global levels.

Upcoming Events

FIRST Robotics

March 27-29

For the 9th consecutive year, Drexel University and CoE will host FIRST (For Inspiration and Recognition of Science and Technology) Robotics. The goal of FIRST is to inspire high school students to achieve and aspire to careers in science and technology. For more information about FIRST, please visit www.usfirst.org.



Sea Perch Challenge

May 10

The Sea Perch Challenge is part of the Office of Naval Research's initiative, "Recruiting the Next Generation of Naval Architects." This competition teaches students how to build an underwater robot and works to increase student interest in engineering and technology. For more information, please visit coe.drexel.edu/seaperch.

Open Houses

April 13, Accepted Students Weekend; DAC

May 18, Discover Drexel; DAC

For more information, about the Open Houses, please visit www.drexel.edu/em/undergrad/visit/undergrad-events/.

The National Society of Black Engineers Celebrates Black History Month

Drexel University's chapter of the National Society of Black Engineers (NSBE) will recognize engineers as well as learn about future technologies at the Black History Month Awards Banquet celebration to be held February 15, in the Grand Hall.

The Black History Month Awards Banquet will benefit Collegiate and Alumni NSBE members who will have the opportunity to network with district NSBE chapters and corporate and political leaders from the region. Philadelphia Mayor-Elect, Michael Nutter will be speaking at the event. The theme for NSBE's 5th Annual Black History Month Awards Banquet is "Geared toward the Future." Teryn Phillips, Chapter President '10 (Commerce and Engineering) says, "It is our hope that this banquet will provide unity throughout the student and community population as well as create awareness of technology and growth while highlighting engineering and the sciences."



Pictured from left to right at last year's NSBE banquet: Herbert A. Green, Ed.D., Shari Emelle and Lloyd Emelle '07 (ECE).

Alumnus Donates \$2 Million for Scholarship Program

William Schleyer '73 (MEM) and wife Mary Zygala committed \$2 million to establish the Schleyer Scholars Program. The program will provide scholarships for academically talented Philadelphians from disadvantaged backgrounds to pursue a degree in engineering. In addition, the program will support selected students during their entire five-year course of study at Drexel. One male and one female Schleyer Scholar will be chosen each year.



William Schleyer '73 (MEM)

As a way to express the Schleyer's gratitude for the education Mr. Schleyer received while studying mechanical engineering at Drexel, priority will be given to awarding one scholarship to a student pursuing a degree in engineering. Mr. Schleyer's distinguished careers in the communications industry include leadership roles as president of Continental

Cablevision, CEO of AT&T Broadband and chairman and CEO of Adelphia Communications.

The new program is consistent with the aims of the current William Schleyer Endowed Scholarship Fund which assists engineering students with financial need who have a strong work ethic and high scholastic achievement.



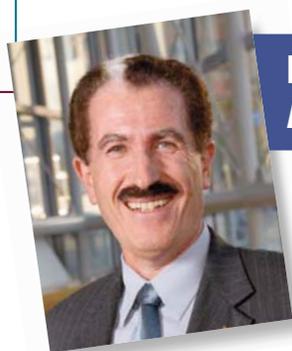
Dr. Jonathan Spanier

Jonathan Spanier Receives PECASE Award for Scientists and Engineers

Dr. Jonathan E. Spanier, assistant professor of MSE, was one of only 58 researchers across the nation to receive a Presidential Early Career Award for

Scientists and Engineers (PECASE). The PECASE is the nation's highest honor for professionals at the outset of their independent research careers. Dr. Spanier is the first assistant professor at Drexel to be selected for this recognition since the inception of the program in 1996 under President Clinton.

Nine federal departments and agencies annually nominate scientists and engineers whose work shows exceptional promise for leadership at the frontiers of scientific knowledge. Nominated by the Department of Defense, Dr. Spanier is cited for "innovative research in materials science and engineering to improve synthesis strategies to produce novel and advanced hybrid nanostructures with specific properties and multifunctional capabilities." Dr. Spanier is also cited "for his exceptional teaching of graduate and undergraduate students from diverse backgrounds." As part of his PECASE, Dr. Spanier will receive \$1 million over five years for his research.



Faculty Profile: Alex Fridman

As a world leader of plasma engineering and medicine, MEM professor Dr. Fridman is discovering innovative methods in energy and environmental systems, fuel conversion, material treatment, diagnostics and treatments

of diseases. Dr. Fridman is the Nyheim Chair Professor and Director of the Drexel Plasma Institute.

Plasma Medicine, a branch of engineering medicine lead by Dr. Fridman and his colleagues, was developed at Drexel when 40-kV discharge plasma was first directly and safely applied to living tissue. Initial experiments demonstrate how new plasma technology can provide therapeutic effects that will result in the development of effective medical tools. Plasma technology has the potential of deactivating pathogens, treating multiple diseases and it has the ability to stop bleeding without damaging healthy tissue. Plasma Medicine devices may look like plasma guns and shields as seen on Star Trek but in reality they are based on authentic engineering devices that are being developed at Drexel.

Recently, plasma medicine has been selected as the major research initiative at Drexel's Plasma Institute, which is rated the nation's greatest plasma research center. The Plasma Medicine initiative has students from Drexel's colleges working together on research to solve challenging medical issues that have been considered unsolvable until a couple of years ago.

For the last 35 years, Dr. Fridman has been researching plasma and with each breakthrough, he has become inspired to advance with his research. He received his Ph.D. from the Moscow Institute of Physics and Technology, and worked in National Laboratories and Universities of Russia, France and the United States. Dr. Fridman and his group are very active in fundamental and applied research in new and non-traditional areas of plasma engineering. Currently his research works are based on federal grants from NASA, DOE, DOD, DARPA, Air Force and NSF, as well as on support of such industrial partners as Chevron, Eastman Kodak, Ceramtec, Applied Material and Air Products.

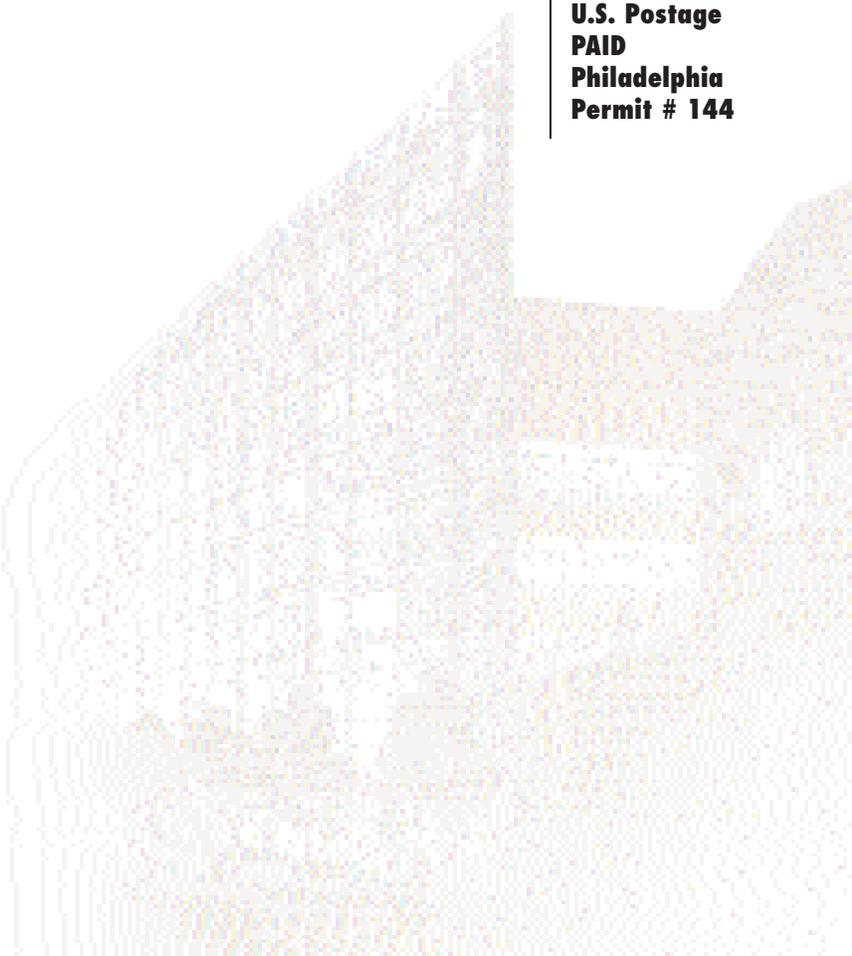


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CoE DRAGONotes

Meet Student **Cosmin Nicolaescu**



Cosmin Nicolaescu '08 (CS)

Why did you choose Drexel University?

MC: I chose Drexel for its high ranking College of Engineering, as well as the fact it is a mid-size university. Since I've always lived in a major metropolitan area, I was looking for a university that was located in the city, preferably on the East Coast. Drexel was a great match from that perspective.

Why did you choose your current major?

CN: I've always had a passion for technology and computers, so Computer Science was a pretty obvious path for my future. Through this program I hope to be able to innovate the way people interact and perform daily tasks.

Where did you complete your Co-ops?

CN: My first Co-op was with Drexel University as a Systems Administrator for the Computer Science Department. It was a phenomenal experience which allowed me to build a great resume and gain more experience than most of the other students in their first Co-op. Furthermore, it was great from a networking perspective, as I got to interact with all the faculty and staff in the department. My second Co-op was with Microsoft Corp. as an Applications Developer in Microsoft's IT Department. My last Co-op experience was with Microsoft again, this time as a Software Development Engineer for the Business Online Services group. It was the most challenging

out of all my Co-ops and also the one I enjoyed the most.

What extracurricular activities are you involved in?

CN: I always enjoyed playing different sports, so I've participated in intramural flag football and soccer. I've also been involved with several student organizations, including the Math & Computer Science Society (MCS Society) and have been Vice-President of Upsilon Pi Epsilon (UPE) Honors Society.

What have you enjoyed most about your experience at Drexel?

CN: Through its Co-op program, Drexel offered me a unique experience which no other university could. The size of the school and the Computer Science Department allowed me to get deeply involved in any work that I had an interest for and allowed me to build a strong network.

Is there any other information you would like to include about yourself or your experience?

CN: I would like to thank the Computer Science Department for all the opportunities they offered me. They allowed me to assist in several research projects, attend conferences, obtain several scholarships and awards as well as take graduate courses as an undergraduate student. I was able to get involved in any type of work that I found attractive.

Study Abroad Programs

Drexel's Study Abroad Office launched a new and improved website allowing engineering students to apply for study abroad opportunities online. Check out the new Study Abroad website for a completely paperless process at: <http://drexel.studioabroad.com/>.

For more information about CoE Study Abroad programs, please email studyabroad@drexel.edu.

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Please note, last issue we had an error and we stated that Lloyd Emelle was an CBE student. Lloyd Emelle is a ECE student.

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