ENGINEERING OPEN HOUSE



BEYOND IMAGINATION WISTOR'S GUIDE HTTP://EDH.EC.UIUC.EDU

VISIT EOH HEADQUARTERS IN DCL PHONE: 217.244.3828

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HIGHLIGHTS

Grade School Competition

The Grade School EOH program offers many different types of challenging and fun activities for grade school students. This year's Grade School Design Contest, open to 6th, 7th and 8th graders, will be to design Ping-Pong Ball Launcher. The launcher that scores the most points and has the most creative design will be declared the winner. The Onsite Grade School Design Challenge will remain a secret until participants compete and will test the engineering mind of all grade levels. And finally, the Grade School Village will offer several hands-on exhibits used to demonstrate basic engineering and scientific principles. Come by and see what these young engineers have to show off! **Location: Crane Bay of Newmark Lab (K)**

High School Design Contest

Teams of high school students have put their heads together to design a contraption for this year's competition, a Rube Goldberg Machine Contest. The machines must shred 5 pieces of paper individually. Science and engineering principles are combined with creativity and ingenuity to create these awesome inventions. Stop by or ride the shuttle Armory on Friday between 9 am and 1 pm to see the machines in action, vote for your favorite one, and play the "I spy" game. **Location: Armory (J)**

Illini Engineering Challenge

The year will mark the 9th annual Illini Engineering Challenge. The event will take place between 9am and 3pm on Saturday, March 11th. This year, participants will be required to design a small boat out of materials provided. Everyone will get a chance to put their creations to the test as judges will determine how much weight the boat can hold. All students, parents and visitors to Engineering Open House are encouraged to participate! **Location: Crane Bay of Newmark Lab (K)**

AMD W. J. "Jerry" Sanders Creative Design Competition

AMD W. J. "Jerry" Sander Creative Design Competition is an annual robotic contest pitting some of the best engineering students in the Midwest in a test of engineering and ingenuity. Robots will be removing plastic balls from their bases and shooting them through basketball hoops. This one of the largest and most exciting events at Engineering Open House is sponsored by Advanced Micro Devices. Come to join us to encourage creativity and excellence in engineering! **Location: Kenney Gym Annex (I)**

Traffic and Safety

Engineering Open House works hard to ensure the safety of our visitors. We ask you not to enter those rooms and buildings not marked for EOH use as indicated in the Visitor's Guide. Additionally, please follow standard safety precautions with special consideration for campus constructions sites. For the safety of yourself and others, please cross at the designated crossing when walking on the campus. Thank you!

Shuttle and Parking

In order to make your visit to EOH more relaxing, parking at EOH is free. Please park your vehicles at E-14 parking lot along Kirby Ave. The EOH Shuttle – operated by Allerton Charter Coach – will be run every 15 minutes during EOH hours. There are six stops in every route: Armory (High School Contest), ARUPLA Open House, Kenney Gym, Roger Adams Lab, Bevier Hall (ACES Open House), and the Stock Pavilion (ACES, ISGS Open Houses). A tour guide will introduce the University campus to the visitors during rides, and EOH visitor's guides are provided in the EOH shuttle. Bus can drop off visitors at the south side of Gregory Drive, across from Armory (J) by entering from the west side of 4th and Gregory. All buses have to park in E-14 parking lot.

Food and Entertainment

EOH proudly presents Area 51 (V), the center stage for food and entertainment! Conveniently located in the big tent between Engineering Hall and Everitt Lab, across the street from the Illini Union, you will find singers, dancers, and other various entertainers during the afternoon hours. Area 51 is also the place where you can grab a bite to eat and relax for a couple of minutes as you tour the exhibits. So stop by, grab some lunch, and cheer on various U of I students as they take the stage!

Exhibitor Vote

Be sure to vote for your favorite EOH exhibit! Voting ballots and boxes are located in most EOH buildings. Help your favorite exhibit gain some well-deserved recognition!

EOH 2006

Friday, March 10: 9AM to 4PM

Saturday, March11: 9AM to 3PM

Engineering Open House Tours

Tours lead by volunteers are available on both days of the Engineering Open House from 10 am to 2 pm. Two types of tours will cover exhibits, either oriented toward children or oriented toward adults (middle school and up). Meet at the south entrance to Area 51, located between Everitt Lab (G) and Engineering Hall (F). No sign up is needed.

Tours will begin every half hour.

Tours for adults: start on the hour

Tours for children: start on the 30's

ENGINEERING OPEN HOUSE 2006



Dear Visitors:

Welcome to Engineering Open House. For 86 years, this showcase event has attracted thousands of visitors each March to experience a myriad of engineering marvels and mysteries in this ever-changing world. This is one of the nation's largest and most innovative science fairs, organized and managed entirely by science and engineering students in the College of Engineering. The exhibits and contests reflect their enthusiasm for science and engineering, and passion for creativity.

This year's theme, "Beyond Imagination," reflects the idea that the engineering students here today will use their knowledge and experience to build the tools and technology that will create a future that is beyond what we can currently imagine. Throughout the day, you will learn about the science and engineering behind everyday products, see how engineering is used to solve problems, and even catch a glimpse of coming innovations in technology. We invite you to open your mind to new and different ideas. Be sure to ask questions, get involved, and find out for yourselves how important engineering is to society.

Among the more than 200 colleges of engineering in the U.S., Engineering at Illinois is ranked No. 4 in the country in both undergraduate and graduate education. The University of Illinois is one of the world's gems of engineering research and education. Feel free to ask us about our programs or learn more at www.engr.uiuc.edu. We thank you for joining us at Engineering Open House.

Sincerely, Ilesanmi Adesida

Franni AL 22

Interim Dean, College of Engineering

Open House Central Committee

Engineering Open House Director Exhibits Director Facilities Co-Directors

Corporate Co-Directors

Awards Director Best of EOH Director College Design Contest Director High School Design Contest Director Grade School/Onsite Design Contest Director Visitor Information Publicity Director Safety Directors Social Director Secretary/Treasurer Webmaster Advisor Doug Johnson Jason Chang Zai Chang <u>Siddharth G</u>opalan Harry Thakkar Ravi Thakkar Ashwin Ramamurthy Kevin Zhou Jeff Keith Kurt Adair Meagan Simantz Lu Shi Sam Dacanay **Reid Parrish** Nasim Suterwala Bo Li David Stolarsky Dan Swiatek

Special Thanks

Jeff Beavers Katherine A. Darr Debra Ann Forgacs Kay Kappes Richard Kubetz Dan Mast Linda Oldham Tina Prow Deborah Su Bill Thomas & Insight Cable

18th Annual AMD "Jerry" Sanders Creative Design Competition

College students from across the Midwest come to participate in the 19th Annual AMD Jerry Sanders Creative Design Competition, a twoday contest of robotic design and engineering. This year, robots will battle against the clock and each other to keep their bases clear of small plastic balls while shooting them at basketball hoops around the 2000 square-foot, two-level course. Additional points can be earned by placing balls in special locations on the course if the robot can traverse the teeter-totters and rippled bridge. Four teams compete simultaneously in ten-minute rounds, and the highest scoring teams advance to the final rounds on Saturday, March 11th.

Scoring

- 1 point for each ball removed from the base
- 10 points at the end of the round for a base clear of balls
- 5, 10, or 15 points for balls placed on the rippled bridge
- Various points for each basket made, depending on the difficulty of the shot

"Jerry" Sanders III graduated from the University of IIlinois at Urbana-Champaign in 1958 with a Bachelors of Science in Electrical Engineering. Since then, he's gone on to start one of the most successful companies of our times.

W.J. "Jerry" Sanders III co-founded Advanced Micro Devices (AMD) in 1969. Under his leadership, AMD grew from being a "second-sourcer" of other companies' products to its current position as the fourth largest semiconductor manufacturer in the United States.

Sanders also co-founded several prominent industry groups including the Semiconductor Industry Association, the Santa Clara Manufacturing Group, the

Semiconductor Research Corporation and the Microelectronics and Computer Technology Corporation.

The Wall Street Transcript named Sanders the Best Chief Executive Officer in the semiconductor industry for the years 1983, 1984, and 1985, and runner-up in 1991. Mr. Sanders received the Robert N. Noyce Award from the Semi-conductor Industry Association (SIA) in 1998. In 2001 he received the Medal of Achievement from the AeA, the nation's largest high tech industry association.

Sanders' continued support for the University of Illinois and in particular this design contest is a testament to his support of education competition, both of which he thinks breeds success, creativity, and excellence.

W.J. Sanders III Founder and Chairman Emeritus of Advanced Micro Devices, Inc.



Founder and Chairman Emeritus of Advanced Micro Devices, Inc.

BEYOND IMAGINATION 5



Location and Time

March 10 and 11, 2006 Kenney Gym Annex University of Illinois at Urbana -Champaign

Schedule

Competition will be from around 8:00am to 4:00pm both days with final rounds being on Saturday, March 11th.

There will be rounds running during all the times with bonus rounds and even crowd participation events spaced throughout the day.

W.J. "Jerry" Sanders **Creative Design Competition Committee**

Director: Jeff Keith Field Chair: TBA Rules Chair: TBA Publicity Chair: Lawrence Han Volunteers Chair: Rachel Williams Webmaster: Stephen Kempf Student Advisor: Doug Johnson Faculty Advisor: Dan Mast

ACRONYMS

| Societie | 5 |
|------------|---|
| ABED | Agricultural and Biological |
| | Engineering Department |
| ACI | American Concrete Institute |
| ACM | Association for Computing |
| | Machinery |
| ADSL | Advanced Digital System |
| аенс | Laboratory Alpha Ensilon Honor Society |
| | Audio Engineering Society |
| | American Institute of Aeronautics |
| / \// \/ \ | & Astronautics |
| AIChE | American Institute of Chemical |
| , u ene | Engineers |
| ans | American Nuclear Society |
| ASABE | American Society of Agricultural & |
| , 10, 12 2 | Biological Engineers |
| ASCE | American Society of Civil |
| | Engineers |
| ASME | American Society of Mechanical |
| | Engineers |
| ATREL | Advanced Transportation |
| | Research & Engineering Lab |
| COE | College of Engineering |
| DHSPEC | Danville HS Principles of |
| | Engineering Class |
| EHHE | Environmental Hydrology & |
| | Hydraulic Engineering |
| EMBS | Engineering in Medicine & |
| | Biology Society |
| EOS | Engineering Outreach Society |
| EWB | Engineer's Without Borders |
| IAESTE | International Association for the |
| | Exchange of Students for |
| | Technical Experience |
| IAHR | International Association of |
| | Hydraulic Engineering & Research |
| IIE | Institute of Industrial Engineers |
| ISGE | Illinois Society of General |
| | Engineers |
| ISS | Illinois Space Society |
| IWRA | International Water Resources |
| | Association |
| NEES | Network for Earthquake |
| | Engineering Simulation |
| NOBCCH | E National Organization of |
| | Black Chemists and Chemica |
| | Engineers |
| SAE | Society of Automotive Engineers |
| SARC | Synton Amateur Radio Club |
| SBME | Society for Business & |
| | Management in Engineering |
| SEM | Society for Experimental |
| | Mechanics |
| SME | Society of Manufacturing Enginee |
| UMO | Undergraduate Materials |
| | Organization |
| WCE | Women in Computer Science |
| WEA | Water Environment Association |
| WECE | Women in Electrical & Computer |
| | Engineering |
| | |

| TITLE | SOCIETY | ROOM | AGE GROUP |
|--|------------------------------------|--|----------------------------|
| Agricultural Engineering Science Building | | | |
| How Does Popcorn Pop? | AEHS | Near Room 137 | gs,hs,adult |
| Digital Computer Lab | | | |
| Illini Pullers American Society for Agricultural & Biological Engineers | Illini Pullers ASABE | l st Floor Ground floor | gs,hs,adult hs |
| FIRST Lego League | COE | Atrium | gs,hs,adult |
| Temperature Combustion Modeling | Individual | Ist Floor | hs,adulf |
| Bioengineering In Action | EMBS | 3110-3111 1st Elear Hallway | hs, adult |
| Building Environmental Control Simulator | ABED | 1st Floor Hallway | gs,hs,adult |
| Biodiesel - a renewable fuel Career Opportunities in Agricultural & Biological | ABED | 1 st Floor Hallway 1 st Floor Hallway | gs,hs,adult as bs adult |
| Engineering | | | 93,113,00011 |
| Soil and Water Resources Engineering Illini Pullers ¼ Scale Tractor Design and Construction | ABED Illini Pullers | 1 st Floor Hallway 1 st Floor Hallway | hs,adult as hs adult |
| International association for the Exchange of | IAESTE | 110c | gs,hs |
| Students for Technical Experience Tank Wars | individual | NE Classroom | as,hs,adult |
| Build Me a Ship! | SBME | 106B3 | hs,adult |
| Bridge Busting Leal Elementary School Volcano Display | EOS | 106B6 106B8 | gs,hs,adult as,hs,adult |
| Environment (Providence Orand) | | | 0, , |
| Space Access | individual | Outside | gs,hs,adult |
| Paintbot | Illini Roboteers | Outside | hs,adult |
| Everitt Lab | | | |
| Autonomous Reconnaissance Aircraft | individual individual | ADSL Lab (260) ADSL Lab (260) | hs,adult as hs adult |
| Illiniac I and II | individual | 151 | hs,adult |
| Checkersbot Audio Projects & Technology | ADSL AFS | 261 245 | gs,hs,adult |
| Synton Near Space Demo | SARC | 165 | gs,hs,adult |
| Audio Direction Finding & Beamforming Tube Climber Robot | ECE 420 | 251 261 | gs,hs,adult |
| G9 Impulse | individual | 261 | gs,hs,adult |
| WECE Presents: Inventions in Electrical & Computer | WECE | 163 | gs,hs,adult |
| EWB Solar Ethanol Still | EWB | 151 | gs,hs,adult |
| African Americans in Chemistry & Chemical Engineering | NOBCChE | 151 | gs,hs,adult |
| Magnetic cannon | Power Lab | 50 | gs,hs,adult |
| Floating trying pan Tin can motor | Power Lab Power Lab | 50 50 | gs,hs,adult as hs adult |
| Computerized Etch and Sketch | Power Lab | 50 | gs,hs,adult |
| Linear Induction motor The Continuum Fingerboard | Power Lab individual | 251 251 | gs,hs,adult as hs adult |
| Wash Those Hands!!! | NOBCChE | 151 | gs,hs,adult |
| Hydrosystem Lab | | | |
| One of Nature's Magical Tricks Hydrosystem Lab | EHHE/IWRA/IAHR | 1st Floor Main Lab & 1518 | hs,gs,adult |
| | | | 93,113,00011 |
| Loomis Lab Bottle Rockets | Physics Society | Outside | as.hs.adult |
| X-Prize: One year later. | ISS | Hallway | gs,hs,adult |
| Bubble Room Cloud Chamber | Physics Society Physics Society | 132 South Lobby | gs,hs,adult hs.adult |
| E and M Demos | Physics Society | 144 | hs,adult |
| Laser Microphone Railaun | Physics society Physics Society | 136 | hs,adult hs.adult |
| Rube Goldberg Machine | Physics Society | 158 | gs,hs,adult |
| Vacuum Cannon Liauid Nitroaen table | Physics Society Physics Van | 158 South Lobby | gs,hs,adult as.hs.adult |
| Physics Van Lecture Demos | Physics Van | 141 | gs,hs,adult |
| Futures in Fusion! Nuclear Demonstrations | ans ans | 151 Hallway near 151 | gs,hs,adult as.hs.adult |
| Float'n Illini | Float'n Illini | Hallway near 151 | gs,hs,adult |
| Pop Rockets and Paper Airplanes ChemE Car | Float'n Illini AlChF | 151 143 | gs as hs adult |
| Kraft's World of Cheese | AIChE | 143 | gs,hs,adult |
| Pleasant Odors Renewable Energy? More Power to Youl | AlChE AlChE | 143 143 | gs,hs,adult as hs adult |
| Students for Space | ISS | Southwest Lobby | gs,hs,adul |
| SpaceVision2005 Future Technology: Todayl | ISS | Southwest Lobby | gs,hs adul as hs adult |
| The Fun of Flight | ISS | Southwest Lobby | gs,hs,adult |
| The Race for Space | ISS | Southwest Lobby | gs,hs,adult |
| Materials Science & Engineering Building | 1140 | | 1 1.1. |
| iviaterials Selection in Guitar Strings and Ional Applications Biomaterials: Artificial Blood Vessels | UMO | i st Floor Hallway 1 st Floor Hallwav | ns,adult gs |
| Conducting Polymers | UMO | 1 st Floor Hallway | hs,adult |
| Crystals and Synthetic Crystallization Electronic Paper | UMO | 1 st Floor Hallway 1 st Floor Hallway | gs,hs gs,hs |

| TITLE | SOCIETY | ROOM A | GE GROUP |
|--|--------------------------|----------------------|------------------|
| Fiber Optics | UMO | 1st Floor Hallway | hs,adult |
| Luminescence | UMO | 1st Floor Hallway | gs,hs,adult |
| Materials Show 2006 | UMO | 119 | gs,hs,adult |
| Nert-Ballistic Iransport (in Carbon Nanotubes) | UMO | 1 st Floor Hallway | hs,adult |
| Polymer Slime | UMO | 1 st Floor Hallway | gs,hs |
| Searce Momony Alleve | | 1st Floor Hallway | gs,ns,daun |
| Stick it to Me: The Materials | LIMO | 1st Floor Hallway | as hs adult |
| Science Behind Hockey | 01110 | rai noon nuiwuy | 93,113,00011 |
| Sub-par Putting | UMO | 1st Floor Hallway | as.hs.adult |
| Superconductors | UMO | 1st Floor Hallway | gs,hs,adult |
| The Electronic Materials Challenge | UMO | 1st Floor Hallway | gs,hs,adult |
| The Materials Challenge | UMO | 1st Floor Hallway | gs,hs,adult |
| Time Capsules | UMO | 1st Floor Hallway | gs,hs,adult |
| Uses of Nitinol (Nickel-Litanium Alloy) in Medical Instruments | UMO | 1 st Floor Hallway | hs,adult |
| Vanishing Light | UMO | 1 st Floor Hallway | hs,adult |
| Geopolymers WaterCAMPWS: Water Treatment Technology to the Rescue | | 1 st Floor Hallway | ns,aauit |
| waler CAMI w3. waler neumenn lechnology to the Rescue | | rsi i loor i luliway | 93,113,00011 |
| Mechanical Engineering Laboratory | | | |
| Ford Lab Showcase | ASME | Ford Lab | gs,hs,adult |
| Giant Simon Game | ASME | 2001 | gs |
| Hydel Power Plant | ASME | 2001 | adult |
| Injection Molding Demonstration | ASME | 1230 | gs,hs,adult |
| Sandcasting Demonstration | ASME | 1225 | gs,hs,adult |
| Institute of Industrial Engineers | IIE SAAE | 2009 1228 | ns,adult |
| Society of Automative Engineers | SAF | Main Floor Hallway | as hs adult |
| Newmark Lab | JAL | Main Hoor Hailway | 93,113,00011 |
| Concrete Canoe Team | ASCE | Crane Bav | as,hs,adult |
| Steel Bridge Team | ASCE | Crane Bay | gs,hs,adult |
| MidAmerica Earthquake Center | ASCE | Crane Bay | gs,hs,adult |
| Railroad Engineering | ASCE | Crane Bay & 1233 | gs,hs,adult |
| Transportation Today | ASCE | Crane Bay | gs,hs,adult |
| ACI Concrete Cylinder Competition | ASCE ACI | Crane Bay | gs,hs,adult |
| Water Environment Association | WEA | Crane Bay | gs,hs,adult |
| Pavement Designs | ASCE / AIREL | Crane Bay | gs,hs,adult |
| Earthquake Engineering ASCE Balsa Wood Bridge Compatiti on | ASCE / NEES | Crane Bay (East End) | gs,hs,adult |
| Noce baisa wood bhage competiti on | / JOCL | Ciune buy (Easi Ena) | 93,113,00011 |
| Siebel Center | | | |
| Ring Cycle Kernel | individual | Atrium | adult |
| Quaejin | ACM | Atrium | hs,adult |
| Winter of Liberty: FSS Code Rescue | ACM:FSS | Atrium | hs,adult |
| Phantom Breach | ACM: Game Builders | Atrium | gs,hs,adult |
| Shadow | ACM:Game Builders | Amum | gs,ns,adult |
| WebTunes | ACM:MacWarriors | Atrium | as hs adult |
| From Complexity to | ACM:SIGAct | Atrium | hs.adult |
| EOH Tracker | ACM:SIGArch | Atrium | , gs,hs,adult |
| Garuda Traffic Simulator | ACM:SIGArt | Atrium | hs,adult |
| Evolving Digital Filters | ACM:SIGBio | Atrium | hs,adult |
| Platform Vehicle Project | ACM:SIGBot | Atrium | gs,hs,adult |
| SA-1110 Wireless Networking | ACM:SIGEmbedded | Atrium | gs,hs,adult |
| Dinosaur World | ACM:SIGGraph | Atrium | gs,hs,adult |
| Footsteps | ACM:SIGMII | Atrium | gs,hs,adult |
| | ACMISIGNUSIC | Amum | gs,ns,adult |
| CTE (Collaborative Text Editor) | ACM:SIGSoft | Atrium | as hs adult |
| Scheedule | ACM:SIGSoft | Atrium | as.hs.adult |
| UIUC Pathways | ACM:SIGSoft | Atrium | hs.adult |
| Wipt, the Windows Installer Package Tool | ACM:SIGWin | Atrium | gs,hs,adult |
| ChimpOS | ACM:Web Monkeys | Atrium | gs,hs,adult |
| RPG Developers | individual | 1st Floor Hallway | gs,hs,adult |
| Live to Eat | WCS | Atrium | gs,hs,adult |
| seekBot | individual | Ist Floor Hallway | gs,hs,adult |
| BattleZONE Lyision | BattleZONE individual | Atrium | gs,hs,adult |
| | Individual | Allolli | ys,ns,uuun |
| Talbot Lab | | | |
| ION CubeSat | CubeSat | 206M | gs,hs,adult |
| Design Build Fly | Design Build Fly | 104 | hs |
| AIAA Space Shuttle Heat Tile | AIAA | 103 | gs,hs,adult |
| Century of Flight | AIAA | 1 st Floor Hallway | gs,hs,adult |
| Space Access | SEM | 103 | gs,ns,adult |
| Dynamics Dynamics II | SEM | Fast Entranco | ys,ris,aault |
| Fluids Fun | SEM | 126 | hs adult |
| TAM Toys | SEM | 220 | as hs adult |
| Concrete Crushing | SEM | Crane Bav | gs,hs,adult |
| Windtunnel Demonstration | AIAA | 18A | gs,hs,adult |
| | | | |
| Transportation Building | ISGE | 103 | ac |
| Sticky Skyscrapers | ISGE | 103 | ys as |
| Refreshments | ISGE & Gamma Ensilor | 202 (Student Lounge) | as hs adult |
| Gamma Epsilon's Ega Drop at | Gamma Epsilon | 206 | gs,hs,adult |
| Transportation Building | | | 5., |

BEYOND IMAGINATION

7



Illini Union

1401 W. Green, Urbana

Anchoring the north end of the quad, the Illini Union is the heart of campus. It is a place where students meet and relax, and it is remembered fondly by alumni.



Agricultural Engineering Sciences Building

1304 W. Pennsylcania, Urbana

Map Code: A

The Agricultural Engineering Sciences Building is home to the Agricultural Engineering Department and the Department od Food Sciences.



Digital Computing Lab

1304 W. Springfield, Urbana

Map Code: E

The Digital Computing Lab is the former home to the Department of Computing and Communica-

PROJECT DESCRIPTIONS

Agricultural Engineering Science Building

How Does Popcorn Pop?

Alpha Epsilon Honor Society Popcorn has been around for over 4,000 years, but how much do YOU know about it? This display will explain what popcorn is and what makes it pop. It will also feature several varieties of homegrown popcorn available for sampling. Location: Near Room 137

This exhibit is suitable for: All

Digital Computer Lab

Illini Pullers

Illini Pullers

Illini Pullers Quarter-Scale Tractor Design Team is displaying this year's pulling tractor. Three 16 horsepower Briggs and Stratton engines and a continuously variable transmission power the tractor. Illinois students design and manufacture the tractor as an extracurricular activity. The team competes annually against 30 other universities. They are judged in several categories including maneuverability, static design, and pulling ability as well as written and oral reports.

http://www.age.uiuc.edu/illinipullers/ Location: 1st Floor

This exhibit is suitable for: All

American Society for Agricultural and Biological Engineers ASABE

We are student members of the American Society for Agricultural and Biological Engineers. Come and see what Agricultural and Biological Engineering has to offer you!! Location: Ground floor This exhibit is suitable for: hs

FIRST Lego League

COE Office of Special Programs Mock competitions from the FIRST Lego League. COE hosts the East Central Illinois Regional Tournament annually.

http://www.engr.uiuc.edu/outreach/ index.php?id=FIRST05

Location: Atrium

This exhibit is suitable for: All

Physical Property Measurement of Bio-diesel Fuels for Low Temperature Combustion Modeling

individual

Many of the physical properties of diesel fuel are well known, but with so many different feed stocks for biodiesel, the physical properties are extremely hard to standardize. The purpose of this project is to properly estimate the properties of biodiesel for low temperature combustion modeling.

Location: 1st Floor

This exhibit is suitable for: hs,adult

Bioengineering In Action

EMBS, Bioengineering Department Ever wonder what it means to be a bioengineer? Interested in becoming involved in a rapidly growing new field? Come see what bioengineer really do. There will be hands-on project demonstrations in the new cell and tissue engineering lab and bioinstrumentation lab.

Room Number: 3110-3111 This exhibit is suitable for: hs, adult Show Times: Friday 11-2 Saturday 11-NOON.

Biorefinery Concepts

ABE

Learn how bioprocess engineers are helping to develop a biobased economy. This display shows new bioprocesses are possible and feasible when engineers think outside the box. www.age.uiuc.edu

Location: 1st Floor Hallway

This exhibit is suitable for: All

Environmental Control Simulator

ABE

Heating, Ventilating, and Air Conditioning (HVAC) systems are required for all buildings to maintain the desired thermal comfort and healthy environment. The simulator is used to demonstrate the heating, ventilation and air conditioning process and the operations of environmental sensors and controller. It is also a unique hand-on facility to enhance the teaching and learning on HVAC system and control.

www.age.uiuc.edu

Location: 1st Floor Hallway

This exhibit is suitable for: All

Biodiesel - a renewable fuel ABE

Find out about biodiesel, which reduces our dependence on foreign oil.

Location: 1st Floor Hallway

This exhibit is suitable for: All

Career Opportunities in Agricultural and Biological Engineering

ABE

Agricultural and Biological Engineers solve engineering problems related to living organisms and systems. Career opportunities are available in areas related to bioprocessing, renewable energy, water and air quality, natural resources, food production systems, biological systems and other areas that utilize biology as part of the engineering solution. Employment is available in industry, government, and academics.

www.age.uiuc.edu Location: 1st Floor Hallway

This exhibit is suitable for: All

Soil and Water Resources Engineering

ABE Department

This display will depict techniques for construction of earthen berms in military training lands. Land degradation from various earthen structures is often a problem in military training lands. The importance of soil and water resources management issues will be addressed in this display.

Location: 1st Floor Hallway

This exhibit is suitable for: hs,adult

Illini Pullers ¼ Scale Tractor Design and Construction Illini Pullers

Each year a group of students design and build a quarter scale tractor that is entered in national competition. The project provides hands-on experience on all phases of engineering design. The national competition is held in early June. Last year's entry placed fifth in the pulling competition.

www.age.uiuc.edu/illinipullers/index. html

Location: 1st Floor Hallway This exhibit is suitable for: All

Engineering Hall

International association for the Exchange of Students for Technical Experience IAESTE

Would you like to be paid to explore!? Or travel the world? Then you just might be interested in interning abroad. Come to participate in a Jeopardy style game focused on broadening your cultural horizons!

Room Number: 110c

This exhibit is suitable for: gs,hs

Tank Wars

individual Remember those old tank war games

BEYOND IMAGINATION 9



Engineering Hall

1308 W. Green, Urbana

Map Code: F

Engineering Hall, an example of Renaissance Revival architecture, was built in 1894. It is the administrative hub of the College of Engineering and home to a number of Engineering



Everitt Lab

1406 W. Green, Urbana

Map Code: G

Everitt Lab is home to the Department of Electrical and Computer Engineering and is named after the late William L. Everitt, former derpartment head on the internet? Enter version 2006. A couple of robots controlled by human players moving around shooting each other. See how we implemented it and try it out yourself!

Location: Northeastern Classroom

This exhibit is suitable for: All

Build Me a Ship! SBME

Tired of just LOOKING at stuff? Then come to the SBME exhibit, Build Me a Ship! Here we'll put all of your business and technical skills to the test... Can you survive?!? In teams of 3-5 students, you can design, build, and race your very own cargo ship! And, of course, the winners will be deliciously rewarded. www.sbme.ora.

Room Number: 106B3

This exhibit is suitable for: hs,adult

Bridge Busting Danville HS Principles of Engineering Class

inividual

The Danville High School students are back, and having completed a unit on bridges, invite you to see them test their bridges to failure! A bridge will be tested every few minutes through the day on Friday, so come on by!

Room Number: 106B6

This exhibit is suitable for: All

Leal Elementary School Volcano Display

Engineering Outreach Society Two classes from Leal Elementary school have been working on "engineering" a way to keep houses sheltered from an explosion from a Volcano. If you want a break from the typical engineering display come watch these students explain their designs and ideas, maybe even a demonstration or two if you come at the right time!! Who knows, maybe you'll meet tomorrow future engineer

who changes our world. **Room Number: 106B8**

This exhibit is suitable for: All Show times: Friday 9:30 AM-2PM Saturday:10AM-noon.

Engineering Quad (Bardeen Quad)

Space Access

AIAA

Demonstration of a model second stage launch vehicle. The model is built by a research group under the leadership of Professor Burton. During the demonstration, we will fire the turbine jet engine.

Location: Outside

This exhibit is suitable for: All

Paintbot

Illini Roboteers

Paintbot is a paintball playing robot that searches for and shoots players wearing a certain color.

Location: Outside

This exhibit is suitable for: hs,adult

Everitt Lab

Autonomous Reconnaissance Aircraft

individual

Small autonomous aircraft using various sensors such as GPS, digital compass, accelerometers, gyros, etc... flies to location and takes reconnaissance photos.

Room Number: ADSL Lab (260)

This exhibit is suitable for: hs,adult

Environmental Sensors and Power Solutions for Bat Monitoring

individual

Specialized infrared sensors for tracking endangered Indiana bats as to migrate from roost to roost. Use of passive integrated transponder (PIT) tags to track individual bats.

Room Number: ADSL Lab (260)

This exhibit is suitable for: All

Illiniac I and II

Illiniac I: is a simple processor used to demonstrate the inter-workings of a microprocessor and its basic data flow. It accomplishes this by the use of a electronic display board that shows all several key data buses on the processor and how this in turn allows the processor to function. Illiniac II: A 4-bit processor that is being designed and fabricated completely by our group.

Room Number: 151

This exhibit is suitable for: hs.adult

Checkersbot

ADSL

Robot that plays checkers against the visitor.

Room Number: 261

This exhibit is suitable for: All

Audio Projects & Technology

Audio Engineering Society A showcase of the audio equipment and setups that AES and its members have worked on in the past year. Exhibits showcased will be the Speaker Workshop speaker kits, Amp Workshop digital amplifier kit, Jeff Zahos' recording setup, homemade guitar pedals, and other instruments.

Room Number: 245

This exhibit is suitable for: All

Audio Direction Finding and Beamforming

ECE 420

This project finds the direction of the loudest sound in a room and then focuses the microphone on that sound. Have fun while shouting at two microphones.

Room Number: 251

This exhibit is suitable for: All

Tube Climber Robot ADSL

A pneumatic robot that can autonomously navigate the insides of pipes. Created as a innovative method of locating and clearing drainage

problems in industrial applications. Room Number: 261

This exhibit is suitable for: All

G9 Impulse

individual

Custom built and designed video game system. Also includes hardware interface C routines and code for StarCell XF-1 (the 'release' game). All designs are open source and specification are free to be modified by the community.

http://www.opencores.org/projects. cgi/web/395 vgs/overview

Room Number: 261 This exhibit is suitable for: All

WECE Presents: Inventions in Electrical & Computer Engineering WEĆE

An exhibit on significant inventions in EE and CompE, with information about the inventions' histories and with hands-on demonstrations illustrating their uses in everyday life. Room Number: 163

This exhibit is suitable for: All

EWB Solar Ethanol Still

Engineer's Without Borders A student-built still which uses sunlight energy to make fuel ethanol for use as a gasoline substitute or cooking fuel. Exhibit includes demonstration of still, explanation of the process of making ethanol from scratch, and discussion on difficulties in adopting ethanol as a primary fuel.

http://www.ewb-uiuc.org/committees/eoh

Room Number: 151 This exhibit is suitable for: All

African Americans in Chemistry and Chemical Engineering Quiz Bowl NOBCChF

Come learn about black chemists and chemical engineers and their contributions to chemistry and chemical engineering, and also

BEYOND IMAGINATION



Bardeen Quad

North of Green Street, Urbana

Map Code: W

Bardeen Quad is home to the UI's renowned engineering program. Buildings on the quad include Grainger Engineering Library, Mechanical Engineering Laboratory, **Materials Science Engineering** (MSEB), Engineering Hall, Everitt Lab, and Talbot Lab.

find out about our organization, NOBCChE! Free prizes!!! Room Number: 151 This exhibit is suitable for: All

Magnetic Cannon

Power Lab Shoots aluminum rings using magnetic fields.

Room Number: 50 This exhibit is suitable for: All

Floating Frying Pan

Power Lab Levitates an aluminum cake pan using magnetic fields - cooks eggs from the heat created by the induced currents in the pan.

Room Number: 50

This exhibit is suitable for: All



Hydrosystems Lab

301 N. Mathews, Urbana

Map Code: H The Hydrosystems Lab is a research facility in the Department of Civil and Environmental Engineering.

Tin Can Motor

Power Lab

Demonstrates the concept of a revolving magnetic field by using a coffee can as the rotor.

Room Number: 50

This exhibit is suitable for: All

Computerized Etch and Sketch

Power Lab Uses servo motors and a computer to drive the two knobs on an Etch and Sketch toy. **Room Number: 50**

This exhibit is suitable for: All

Linear Induction Motor

Power Lab Demonstrates translational motion by induction rather than rotation. **Room Number: 251** This exhibit is suitable for: All

The Continuum Fingerboard individual

The Continuum Fingerboard is a "fretless piano keyboard" that continuously tracks the position and pressure of each finger. It allows the performer to play in any tuning with expressive vibrato, glissandi, and crescendo. It was invented by Prof. Lippold Haken and played by Jordan Ruess (Dream Theatre), Terry Lawless (U2), John Paul Jones (Led Zeppelin), and Hamilton Sterling (sound designer for War of the Worlds, Master and Commander). Listen to virtuoso Mark Smart and try it out yourself.

Room Number: 251 This exhibit is suitable for: All

Wash Those Hands!!!

NOBCChE Testing the effectiveness of antibacterial hand soaps and explaining the chemistry behind how they work. **Room Number: 151** This exhibit is suitable for: All

Hydrosystem Lab

One of Nature's Magical Tricks

EHHE/IWRA/IAHR

Ever wonder how sand bars form? This experiment will showcase sediment sorting/bar formation of sand particles which occurs naturally in coastal environments.

Location: 1st Floor

This exhibit is suitable for: All

Hydrosystem Lab

IAHR

This project will let users explore the Ven Te Chow Hydrosystems Laboratory and see many large and impressive facilities used in ongoing research. All working facilities will be on display and the audience will be informed of the research currently being conducted in each facility. Past work will be displayed on an array of posters showing the full capability of the largest hydraulics lab at the University of Illinois. The sheer size and capacity of many of these facilities will fascinate the audience and since most are custom built, creation and innovation are certainly included in the tour. Facilities: giant wave tanks, 50 and 20 meter tilting flumes, physical models, meandering river models, and more, this 11,000 sq. ft. hydraulics laboratory houses numerous state of the art facilities used in cutting edge research. Let us give you a tour.

http://vtchl.uiuc.edu/

Location: Main Lab & 1518 This exhibit is suitable for: All

Loomis Lab

Bottle Rockets

Physics Society

A demonstration of Newton's 3rd Law utilizing soda bottles launched with water and pressurized air. Lobby and Outside

Location: Outside This exhibit is suitable for: All

X-Prize: One Year Later

Illinois Space Society On October 4, 2004, the world watched in awe as a small Mojave aerospace company sent the first private spaceship to space in an effort to start an industry of space tourism. Learn about the progress that has been made in commercial space flight such as the X-Prize cup and the Spaceship Company and see a mockup of the first vehicles that will care you to space.

Location: Hallway

This exhibit is suitable for: All

Bubble Room

Physics Society Here children of all ages can play with explore bubbles. This includes trying make one large enough to be inside of one.

Room Number: 132

This exhibit is suitable for: All

Cloud Chamber

Physics Society

A Chamber where one can view cosmic rays. These rays are always in the atmosphere, but this chamber reveals them.

Location: South Lobby

This exhibit is suitable for: hs,adult

E and M Demos

Physics Society

Come explore what electricity and magnetism can do for you, including a railgun!

Room Number: 144 This exhibit is suitable for: hs,adul

Laser Microphone

Physics Society We will show how to eavesdrop on remote conversations using a laser.

Room Number: 136

This exhibit is suitable for: hs,adult

Railgun

Physics Society Magnetic forces at work! By using the properties of magnetism, a small conductor can be pushed along a rail.

Room Number: 144 This exhibit is suitable for: hs,adult

Rube Goldberg Machine

Physics Society A series of reactions that result in hit ting a golf ball for a hole in one.

Room Number: 158 This exhibit is suitable for: All

Vacuum Cannon

Physics Society

How heavy is air? This is answered by using the pressure difference between the atmosphere and vacuum to accelerate the ping pong ball. Will be demonstrated during the Physics Van Lecture Demos Show.

Room Number: 158

This exhibit is suitable for: All Show times: Friday at 10:30, 12, 1:30, and 3 and Saturday at 10, 11:30, and 2.

Liquid Nitrogen Table

Physics Van

Stop by the Liquid Nitrogen table to see what happens when things get really cold. Liquid Nitrogen is -320 degrees F, and you can watch things like balloons and flowers get placed into the nitrogen. We can also use it to make a banana into a hammer or to propel a cork out of a cannon!

Location: South Lobby

This exhibit is suitable for: All

Physics Van Lecture Demos

Physics Van

Come sit and relax while enjoying demonstrations by the Physics Van Outreach Program. Demos will include laws of motion, states of matter, and a few explosions along the way!

Room Number: 141

This exhibit is suitable for: All Show times: Friday at 10:30, 12, 1:30, and 3 and Saturday at 10, 11:30, and 2.

BEYOND IMAGINATION 13



Loomis Laboratory

104 S. Goodwin, Urbana

Map Code: L

The Loomis Laboratory of Physics is home to the

Do You Know?

• The purpose of the first Electrical Engineering Show in 1907, a precursor to EOH, was to raise funds in order to contribute to a memorial in honor of steamboat inventor Robert Fulton.

 The first Engineering Open House was held in 1920 to commemorate the centennial of the birth of James Watt.

Futures in Fusion!

ANS

See the tremendous power behind a magnetic can crusher and ring launcher. Although for the time being commercially available fusion is not achievable we hope to one day make that a reality. Hear about the fantastic developments in fusion and witness the future!

Room Number: 151

This exhibit is suitable for: All

Nuclear Demonstrations

ANS

Check out nuclear technology in the everyday world. See a plasma in a microwave, use a Geiger counter to take radiation readings of radioactive dinner plates, smoke detectors and other items. See next generation nuclear power plants as well as a

model of a modern nuclear power plant complete with working cooling towers.

Location: Hallway near 151

This exhibit is suitable for: All

Float'n Illini

Float'n Illini

The Float'n Illini is a student run research group that conducts experiments in a simulated weightless environment as part of the NASA Reduced Gravity Research Program. Learn about the experiments we have be working on this year and see a demonstration on how we achieve weightlessness.

Location: Hallway near 151

This exhibit is suitable for: All

Pop Rockets and Paper Airplanes

Float'n Illini

Have you ever wanted to build a rocket? The Float'n Illini will be teaching participants how to build little pop rockets from every day items and give them a chance to use the same principals that we use on our experiments.

Room Number: 151

This exhibit is suitable for: gs

ChemE Car AIChE

Come explore the exciting field of alternate fuel sources and see how an electrochemical reaction can be used to power a small car.

Room Number: 143 This exhibit is suitable for: All

Kraft's World of Cheese AIChE

Cultures throughout the world have altered cheese's flavor, taste, texture, and production to fit their personal needs, but how? Through a series of complex procedures, cheese has evolved from homemade churned cheese to large mass productions. Come uncover these mysteries and

sample some cheese along the way! **Room Number: 143**

This exhibit is suitable for: All

Pleasant Odors AIChF

Come discover what makes you smell good. Find out how some of your favorite scents are created using esters. Choose from pineapple, banana, rum, apricot, orange, or wintergreen and we will make you a sample while you learn how these compounds are produced on an industrial scale.

Room Number: 143

This exhibit is suitable for: All

Renewable Energy? More Power to You! AIChE

Ever wonder what the world after fossil fuel will be like? Or how much longer fossil fuel will last? Come see our solar car harnessing the energy of the sun. Discover the ways renewable energy can impact our world.

Room Number: 143

This exhibit is suitable for: All

Students for Space

Illinois Space Society Illinois Space Society is the University of Illinois' chapter of Students for the Exploration and Development of Space. SEDS is a group of students from all over the world working together to create a space-faring society.

http://illinois.seds.org/ **Location: Southwest Lobby**

This exhibit is suitable for: All

SpaceVision2005

Illinois Space Society What does it take to completely change the world's views about space exploration? This past year, some of the field's top achievers gathered in Champaign for SpaceVision2005, an international conference of space enthusiasts and creative minds. http://www.seds.org

Location: Southwest Lobby

This exhibit is suitable for: All

Future Technology: Today!

Illinois Space Society

For those of you who wonder what NASA has brought us besides a few hundred pounds of moon rocks and pictures of stars, wonder no more! Come see what new technologies and products have evolved from the space program.

Location: Southwest Lobby

This exhibit is suitable for: All

The Fun of Flight

Illinois Space Society Ever wonder what it might be like to fly in outer space? Come find out. Location: Southwest Lobby

This exhibit is suitable for: All

The Race for Space

Illinois Space Society Think you know all there is about space exploration? Test your knowledge in our trivia game and see if your answers can send the shuttle into orbit.

Location: Southwest Lobby This exhibit is suitable for: All

Materials Science & Engineering Building

Materials Selection in Guitar Strings and Tonal Applications

UMO

This project seeks to examine the effects of material selection on guitar string performance. The project will explore the variability of tonal quality as a function of string composition, as well as investigating the tonal "lifespan" of guitar strings in order to optimize string performance.

Location: 1st Floor Hallway

This exhibit is suitable for: hs,adult

Biomaterials: Artificial Blood Vessels

UMO

This project will be displaying the current state of artificial blood vessels, as well as future goals and research. In addition, we will be demonstrating the effects of bioactive and nonbioactive surfaces in contact with blood.

Location: 1st Floor Hallway

This exhibit is suitable for: gs

Conducting Polymers

This project investigates the property of conductance in polymers. Polypyrrole, polyaniline, or Polyethylenedioxythiophene will be investigated in order to conduct electricity and complete a circuit. This project will expose the solubility and ease at which polymer circuits can be manipulated as well as the flexible properties of these circuits.

Location: 1st Floor Hallway This exhibit is suitable for: hs,adult

Crystals and Synthetic Crystallization

UMO

In this project, we will explain the process of crystallization, show examples of the nucleation of polymer crystals, and also give a demonstration of the growth of sugar crystals. **Location: 1st Floor Hallway**

This exhibit is suitable for: gs,hs

Electronic Paper

UMO

This project explains the basic designs of electronic paper. An upscale demonstration of the concepts behind electronic paper will be presented through a fun game of tick-tack-toe.

Location: 1st Floor Hallway

This exhibit is suitable for: gs,hs

Fiber Optics

UMO

Using the basic principles of refraction and total internal reflection, this exhibit will show how light waves are

BEYOND IMAGINATION 15



Materials Science and Engineering Building

1304 W. Green, Urbana

Map Code: M

The Material Science and Engineering Building holds labs and offices for the Department of Material Science and Engineering.



Roger Adams Lab

600 S. Mathews, Urbana

Map Code: R

Roger Adams laboratories is home to the Department of Chemical Engineering. carried through fiber optic cables. To demonstrate the concepts of fiber optics, a fiber optic "cable" made using a long glass plate with two prisms mounted on top will be displayed.

Location: 1st Floor Hallway

This exhibit is suitable for: hs,adult

Luminescence

UMO

This project will demonstrate the phenomenon of luminescence showing what it is and how it works. There will be several interactive demonstrations for everyone to see.

Location: 1st Floor Hallway This exhibit is suitable for: All

Materials Show 2006

A fun, informative video presentation of Materials Science and Engineering and its application into our everyday world. Although the video topic changes each year, the results don't. It is still the reigning #1 public favorite project as voted by EOH visitors last few years.

Room Number: 119 This exhibit is suitable for: All

Nerf-Ball...istic Transport (in Carbon Nanotubes) UMO

This exhibit explains how carbon nanotubes might be used to make faster and smaller electronic devices in the future. It also includes a basic overview of the material properties for single walled carbon nanotubes and how they are made. Nerf-balls are used to compare the way electrons move through a crystal lattice versus a nanotube to illustrate "ballistic" transport.

Location: 1st Floor Hallway This exhibit is suitable for: hs,adult

Polymer Slime

UMO After a basic presentation about polymers (structure and properties) students will be able to participate in creating their own polymer slime out of Elmer's glue and Borax solution.

Location: 1st Floor Hallway

This exhibit is suitable for: gs,hs

Self Healing Polymers

This project will give a physical example of self-healing materials showing how they are made and how they work. The healing process will be demonstrated with caramel or taffy. This project will also explain the potential uses for self-healing materials in industry and everyday life.

Location: 1st Floor Hallway

This exhibit is suitable for: All

Shape Memory Alloys

After a brief overview of what a shape memory alloy is and the phases of it that allow for shape memory, there will be numerous demos showing a few applications and examples of shape memory alloys.

Location: 1st Floor Hallway

This exhibit is suitable for: gs,hs

Stick it to Me: The Materials Science Behind Hockey

Our project explores the composite materials which make up the many aspects of hockey. These aspects include the pads, stick, helmet, puck, and artificial ice. Come see how to create composite hockey pucks and test their strengths.

Location: 1st Floor Hallway

This exhibit is suitable for: All

Sub-par Putting

UMO

Sub-par Putting? Don't be "puttoff" by the sub-par performance of your current golf putter! Explore the potential of using other engineering materials like ceramics in the sports, specifically golf, industry. Challenge your friend to a putting competition and try out our all ceramic putter, will

you be able to tell the difference? Location: 1st Floor Hallway

This exhibit is suitable for: All **Superconductors** UMO

This exhibit will provide information on superconductors and using liquid nitrogen, will demonstrate the ability of a superconductor to levitate a piece of metal.

Location: 1st Floor Hallway

This exhibit is suitable for: All

The Electronic Materials Challenge

UMO

Do you think you can make electricity out of raspberries, TiO2 (the white stuff in toothpaste and sunscreen), a pencil, and glass? Come take the electronic materials challenge and learn how to combine these everyday materials to make a dye-sensitized solar cell! You will learn the basic concepts behind how solar cells work, while making your own solar cell to test. *For those of you who are simply interested in observing, various types of photovoltaic cells will be on display and we will be happy to discuss solar applications with you!

Location: 1st Floor Hallway

This exhibit is suitable for: All

The Materials Challenge

Come compete with other EOH attendees and make the strongest ceramic composite! Participants will be given the opportunity to create a plaster rod with different types of matrix materials, such as paper clips, rubber bands, spaghetti, etc., then have their rod tested to see how much weight it can hold before breaking. Learn about the properties of ceramic materials focusing on their strength and fracture properties.

Location: 1st Floor Hallway

This exhibit is suitable for: All

Time Capsules

UMO

Learn the concepts and difficulties behind the design of medical drug delivery systems by building and testing your own time release system.

Location: 1st Floor Hallway

This exhibit is suitable for: All

Uses of Nitinol (Nickel-Titanium Alloy) in Medical Instruments

UMO

Medical instruments are designed using particular materials for a reason. Come see how and why special nickel-titanium alloy, Nitinol, is used in medical instrument applications.

Location: 1st Floor Hallway

This exhibit is suitable for: hs,adult

Vanishing Light

UMO

Vanishing Light introduces the audience to polarizer's and the concept of polarization using various polarized materials.

Location: 1st Floor Hallway

This exhibit is suitable for: hs,adult

Geopolymers

Keramos

What are geopolymers? Come learn about advanced ceramics and their applications in the engineering field. Cutting edge technology is displayed in this low temperature ceramic material. Demos and give-aways! **Location: 1st Floor Hallway**

This exhibit is suitable for: hs,adult

WaterCAMPWS: Water Treatment Technology to the Rescue

WaterCAMPWS

WaterCAMPWS will demonstrate water treatment engineering concepts and present a design for a water treatment device that can be used after major flood events like Hurricane Katrina.

Location: 1st Floor Hallway

This exhibit is suitable for: All

BEYOND IMAGINATION 17

Do You Know?

Engineering Open
House is an event run
entirely by students of the
University of Illinois.

 The inspiration for EOH first came in 1906 when the physics department hosted its first open house.

• In the early years of EOH, exhibits put on by companies were one of the highlights of the open house. Since then, the focus has shifted to studentrun exhibits.

 This year, over 10,000 people are expected come and experience Engineering Open House.



Mechanical Engineering Laboratory

105 S. Mathews Avenue, Urbana

Map Code: O

The Mechanical Engineering Laboratory is home of the Department of Mechanical and Industrial Engineering.

Mechanical Engineering Lab

Ford Lab Showcase

This lab will be holding demonstrations on rapid prototyping. It will feature stereolithography and fused deposition machines which will produce three-dimensional parts throughout the day.

Location: Ford Lab This exhibit is suitable for: All

Hydel Power Plant

ASME

The Hydel Power Plant is an environmentally friendly and economic source of energy.

Room Number: 2001 This exhibit is suitable for: adult

Injection Molding Demonstration

ASME Learn about the process of Injection Molding through interactive demonstration.

Room Number: 1230 This exhibit is suitable for: All

Sandcasting Demonstration ASME

Learn about the process of sandcasting through interactive demonstrations.

Room Number: 1225 This exhibit is suitable for: All

Institute of Industrial Engineers

Institute of Industrial Engineers We will be displaying laboratory stuff from one of our classes. These are called signal detection labs. Also, we will be having different types of simulations that we perform in our classes. There will also be an information video on Industrial Engineering at our exhibit.

Room Number: 2009

This exhibit is suitable for: hs,adult

Society of Manufacturing Engineers

Society of Manufacturing Engineers We will be showing various Pro/Engineer drawings and parts. Pro/Engineer is something that students in Mechanical & Industrial Engineering learn in their freshman year. Its a computer aided design program and you can do a lot of cool stuff with it. We will also be showing various machine process videos which talk about manufacturing stuff. And one of our graduate members will show you various machining techniques in one of our high tech laboratories.

Room Number: 2009, 1228

This exhibit is suitable for: hs,adult

Society of Automotive Engineers

Society of Automotive Engineers SAE has student groups that design, fabricate, and race vehicles against students from other Universities worldwide. Come check out the student built formula and mini-baja racecars.

http://www.mie.uiuc.edu/clubs/sae/ General/index.html

Location: Main Floor Hallway

This exhibit is suitable for: All

Newmark Lab

Concrete Canoe Team

Did you know that concrete can float? Come see how UIUC students design, build, and race canoes made of light weight concrete. http://sftp.cee.uiuc.edu/groups/

asce/canoe/default.asp

Location: Crane Bay

This exhibit is suitable for: All

Steel Bridge Team

The Steel Bridge Competition is an annual inter-collegiate event in which civil engineering students are challenged to design, fabricate, and construct a bridge. The students are simply given a twenty-page packet describing the rules for the competition, and the rest is for the students to figure out for themselves. The rules give information on span length, dimension requirements on members, loading amounts, construction rules, and judging criteria.

https://netfiles.uiuc.edu/danaher2/ **Location: Crane Bay**

This exhibit is suitable for: All

MidAmerica Earthquake Center

ASCE

Build your own model with K'Nex and see how your design would react in an earthquake on our mini shake table. Also, learn more about how real buildings react and what modern techniques engineers are using to help keep structures safe when earthquakes occur.

Location: Crane Bay

This exhibit is suitable for: All

Railroad Engineering

ASCE

All Aboard!!! Take the fast-track to our booth! Talk to industry representatives, grab some free stuff, and take the locomotive simulator for a spin. We hope to demonstrate the inner workings of the railroad industry along with teaching important safety guidelines. This will surely bring out the railroader in everyone!!!

Location: Crane Bay and 1233

This exhibit is suitable for: All

Transportation Today

ASCE

Come see real size traffic lights, and explore the new Light Emitting Diode (LED) signals. Also, stop by the display to measure your perception reaction time. In the area of pavement research, new asphalt and concrete mixes have been proposed to allow for longer pavement life.

Location: Crane Bay

This exhibit is suitable for: All

ACI Concrete Cylinder Competition

ASCE ACI

Students mix their own batches of concrete, and then load them in compression. The contestant with the cylinder that withstands the greatest load is awarded prizes.

Location: Crane Bay This exhibit is suitable for: All

Water Environment Association

WEA

Students interested in water and environmental issues are invited to join this interdisciplinary professional organization on campus. This organization gives students opportunities to attend the Water Environment Federation State, Regional, and National Conferences; tour industry sites; gain professional contacts; and participate in social activities and community service

Location: Crane Bay This exhibit is suitable for: All

Pavement Designs

ASCE / ATREL

Learn the different types of pavement structures exist for highways, roads, and airport runways with a 3-D cross-section of a pavement. Also learn about new technological advances in improving the performance (less cracking and less noise) and extending the service life of existing pavements.

Location: Crane Bay This exhibit is suitable for: All

Earthquake Engineering

ASCE / NEES

Come and see the 50 foot long and 5 foot thick strong wall used to test structures for earthquake loads. Learn about earthquake engineering and see actual tests in the new Network for Earthquake Engineering Simulation (NEES) lab.

Location: Crane Bay

This exhibit is suitable for: All

BEYOND IMAGINATION 19



Newmark Laboratories

205 N. Mathews Avenue, Urbana

Map Code: K

Newmark Laboratories is home to the Department of Civil Engineering.



Siebel Center

201 N. Goodwin, Urbana

Map Code: Q The Thomas M. Siebel Center is the new home to the Department of Computer Science.

ASCE Balsa Wood Bridge Competition

ASCE

Design and Build competition to make the strongest, lightest balsa wood bridge possible. Both high school and college students are welcomed to join, with cash prizes offered and testing done in the Newmark crane bay.

Location: Crane Bay (East End)

This exhibit is suitable for: All

Siebel Center

Ring Cycle Kernel

individual

The Ring Cycle kernel is a major step forward in operating system stability and reliability by running device drivers in lower privilege rings on x86. Device drivers cause most system crashes and by isolating them from the rest of the kernel, full system crashes are less likely. http://www.acm.uiuc.edu/trac/Ring-Cycle

Location: Atrium

This exhibit is suitable for: adult

Quaejin

ACM A startling new programming language. Location: Atrium

This exhibit is suitable for: hs,adult

Winter of Liberty: FSS Code Rescue

ACM: Free Software Society Free Software Society members rescue formally abandoned apps and bring them into Free Software.

Location: Atrium This exhibit is suitable for: hs,adult

Phantom Breach

ACM: Game Builders A multiplayer top-down shooter video game in which players explore levels while fighting against the forces of an evil army. Players work together to solve puzzles, fight enemies, and complete their objectives.

Location: Atrium This exhibit is suitable for: All Red Girder

ACM:Game Builders Top-Down 2d Space Arena Shooter with dynamic physics.

Location: Atrium This exhibit is suitable for: All

Shadow

ACM: Game Builders A 3D multiplayer adventure / shoot'em-up game. This game is networked across several computers and uses OpenGL for its 3D graphical effects. This game will also be using the Novodex physics engine to handle all of the in game physics. **Location: Atrium**

This exhibit is suitable for: All

WebTunes

ACM:MacWarriors

WebTunes allows you to listen to your music via any computer connected to the internet. WebTunes has a simple and easy-to-use interface that makes streaming music across the internet a snap. You install WebTunes on your home computer and then connect to it from wherever you feel like some tunes.

Location: Atrium

This exhibit is suitable for: All

From Complexity to

ACM:SIGAct

A high-level approach to automatic algorithm optimization given space/ time complexity constraints.

Location: Atrium

This exhibit is suitable for: hs,adult

EOH Tracker

ACM:SIGArch

A tracking system for objects and people at EOH. Using cameras and fiducial tags, which are essentially fancy barcodes, EOH Tracker is able to construct graphs of peoples' paths through exhibits in the Siebel center. Statistics like booth with most tag-hours and tag hits are also possible.

Location: Atrium

This exhibit is suitable for: All

Garuda Traffic Simulator

ACM:SIGArt

A traffic simulator designed to compare the relative effectiveness of greedy and global algorithms for automated road traffic control.

Location: Atrium

This exhibit is suitable for: hs,adult

Evolving Digital Filters

ACM:SIGBio

A population of digital signal filters compete for best the best frequency response.

Location: Atrium

This exhibit is suitable for: hs,adult

Platform Vehicle Project

ACM:SIGBot An autonomous robot on wheels with a modular architecture.

Location: Atrium

This exhibit is suitable for: All

SA-1110 Wireless Networking

ACM:SIGEmbedded Demonstration of Intel's StrongARM SA-1110 microprocessor development board's wireless networking capabilities and other features.

Location: Atrium

This exhibit is suitable for: All

Dinosaur World

ACM:SIGGraph A 3D environment you can explore, inhabited by Dinosaurs. Location: Atrium

This exhibit is suitable for: All

Footsteps

ACM:SIGMil

We live in a world without walls, and without walls to protect us, we have no privacy. The ever growing popularity RFID (Radio Frequency Identification) technology comes with many risks. SIGMil's 'Footsteps' accomplishes three goals: explaining how RFID technology works, exploring the limits of RFID tracking capabilities, and demonstrating the real-life risks this technology exposes.

Location: Atrium

This exhibit is suitable for: All

Turing and the Wolf

ACM:SIGMusic

Different sections of music relate to ideas or characters in a storyline. This program will generate transitions between musical ideas in order to fit the music to the storyline in a narrative fashion.

Location: Atrium This exhibit is suitable for: All

SharedFS

ACM:SIGOps SharedFS is a pure peer-to-peer filesystem. It eliminates the need for central file servers in computer networks by using the resources that the individual workstations in the network already have. It also provides performance scalability and redundancy in ways that a traditional file server cannot.

Location: Atrium

This exhibit is suitable for: All

CTE (Collaborative Text Editor)

ACM:SIGSoft A program that allows multiple people to edit the same document in real-time over a network.

Location: Atrium This exhibit is suitable for: All

Scheedule

ACM:SIGSoft A class registration tool that generates and refines your weekly schedule automatically.

Location: Atrium

This exhibit is suitable for: All

UIUC Pathways

ACM:SIGSoft

A web-based mapping system that allows a user the ability to find the shortest route from one location to another on campus by using multiple forms of transportation (walking, buses, biking, etc)

Location: Atrium

This exhibit is suitable for: hs.adult

Wipt, the Windows Installer Package Tool

ACM:SIGWin

This is an implementation of a package management system similar to Debian APT on Windows. It allows the automatic installation and upgrading of software.

Location: Atrium

This exhibit is suitable for: All

ChimpOS

ACM: Web Monkeys ChimpOS is basically an online operating system complete with applications, a file system, and a usable

BEYOND IMAGINATION 21

Do You Know?

• The first EOH time capsule was buried at EOH 1975, "2001: An Engineering Odyssey". It was opened at EOH 2001, "The Odyssey Is Now".

• The EOH 2001 Central Committee buried the second EOH time capsule after opening the first one that same year. It will be opened at EOH 2051.

GUI interface. This project utilizes a mix of web technologies including JavaScript, XML, CSS, PHP, and MySQL databases and is an excellent example of what can be done with web based applications.

Location: Atrium

This exhibit is suitable for: All

RPG Developers

individual

A fantabulous 2 player helicopter shooter game containing big outdoor areas rendered using DirectX 9.0c, special effects like water, fire, and particles, and a GUI that is innovative and unique.

http://www.uiuc.edu/ro/rpgdev Location: 1st Floor Hallway

This exhibit is suitable for: All



Talbot Laboratory

104 S. Wright, Urbana

Map Code; T

Talbot Laboratory houses the Department of Aeronautical and Astronautical Engineering and the Department of Theoretical and Applied Mechanics.

Live to Eat

Women in Computer Science Your ultimate source to find some food in the Champaign-Urbana area.

Location: Atrium

This exhibit is suitable for: All

seekBot

individual

Created to demonstrate computer, electrical, and software engineering principles, seekBot is a 4-wheel drive rover with onboard computer and sensor arrays to allow for remote data collection and exploration. If you are into robotics and computers, check out this impressive machine.

Location: 1st Floor Hallway (near stairs)

This exhibit is suitable for: All

BattleZONE

BattleZONE

Come out and command a real model tank using out adapted computer gaming scenario. An interactive event with tanks fighting through the fog in our arena – controlled by audience participants!

http://groups.yahoo.com/group/UI-UCbattlezone

Location: 1st Floor Hallway (directly across from café) This exhibit is suitable for: All

Talbot Lab

ION CubeSat

CubeSat

The University of Illinois' first student developed satellite was delivered in April 2005 and currently awaits launch. Kids can assemble their own paper CubeSat and attach it to a balloon launcher.

Room Number: 206M This exhibit is suitable for: All

Design Build Fly Design Build Fly Design Build Fly brings to life the exciting world of RC aircraft. Each year, the DBF team constructs a RC airplane from scratch to compete in a contest sponsored by the Office of Naval Research and Cessna. Also come and try our simulator and see how good of a pilot you really are.

Room Number: 104

This exhibit is suitable for: hs

AIAA Space Shuttle Heat Tile

This exhibit will demonstrate how the Space Shuttle operates under extreme conditions. A Heat Tile will be subjected to very high and very low temperatures during this demonstration.

Room Number: 103

This exhibit is suitable for: All

Century of Flight

AIAA

AIAA will present a movie showing 100 years of flight. The movie will last 3 minutes.

Location: 1st Floor Hallway

This exhibit is suitable for: All

Space Access

Demonstration of a model second stage launch vehicle. The model is built by a research group under the leadership of Professor Burton. During the demonstration, we will fire the turbine jet engine.

Room Number: 105

This exhibit is suitable for: All

Dynamics

SEM

Ever seen chaos at work? Come watch our very own double pendulum swing into action. It will leave you mystified! Also, stick around for a presentation on the dynamics of a Wankel rotary engine.

https://netfiles.uiuc.edu/ro/www/SocietyforExperimentalMechanics/

Room Number: 103

This exhibit is suitable for: All

Dynamics II

SEM

Come watch as we revv up our own scale model of a Wankel rotary engine. See how different geometries effect the efficiency. Presentation in 103 Talbot, display outside on the quad.

https://netfiles.uiuc.edu/ro/www/SocietyforExperimentalMechanics/

Location: East Entrance

This exhibit is suitable for: hs,adult

Fluids Fun

SEM

Try your hand at fluid mechanics. Build a tin foil boat or watch a hydraulic jump. We have it all!

Room Number: 126

This exhibit is suitable for: hs,adult

TAM Toys

SEM

That's right, mechanics is fun. Have fun learning about the mechanics of some simple toys. Everything here is hands on! Also, participate in an ongoing knot tying contest. Winners receive a prize.

Room Number: 220

This exhibit is suitable for: All

Concrete Crushing

SEM

Watch as we crush huge concrete cylinders in our 3 million pound crushing machine. It will be a smash! Crushing occurs at 10:00 11:30 1:00 2:30 on both days.

Location: Crane Bay

This exhibit is suitable for: All

Windtunnel Demonstration

Conduct aerodynamics demonstration in an experimental wind tunnel from the Department of Aerospace Engineering.

Room Number: 18A

This exhibit is suitable for: All

Transportation Building

Castaway

ISGE

Each participant will be given aluminum foil, drinking straws, and scotch tape. The goal is to build the raft that will support the most weight in pennies.

Room Number: 103

This exhibit is suitable for: gs

Sticky Skyscrapers

Each participant is given toothpicks and marshmallows and instructed to build the tallest tower (truss) that they can. The tower must be able to stand without assistance.

Room Number: 101

This exhibit is suitable for: gs

Refreshments

ISGE and Gamma Epsilon Refreshments and snacks in the GE Student Lounge.

Room Number: 202 (Student Lounge)

This exhibit is suitable for: All

Gamma Epsilon's Egg Drop at Transportation Building Gamma Epsilon

The mission of Splatfest is to give young children, parents, and high school students the opportunity to build a device that prevents a raw egg from breaking (or cracking) when it is dropped out of a two-story window. The design should cost as little as possible (The builders will use fun-dollars to purchase supplies such as cotton balls, duct tape, napkins, rubber bands etc.). All designs that successfully prevent the egg from cracking will receive a prize. https://netfiles.uiuc.edu/ro/www/ GammaEpsilon/main.htm

Room Number: 206

This exhibit is suitable for: All

BEYOND IMAGINATION



Transportation Building

104 S. Mathews, Urbana

Map Code: U The Transportation Building houses the General Engineering Department.



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Beckman Institute Open House 2007

After taking 2006 off, the Beckman Institute will hold its biennial Open House in the Spring of 2007. The Beckman Institute Open House, which is held every other year, will coincide with the annual Engineering Open House.

www.beckman.uiuc.edu



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