Kids' Tech University

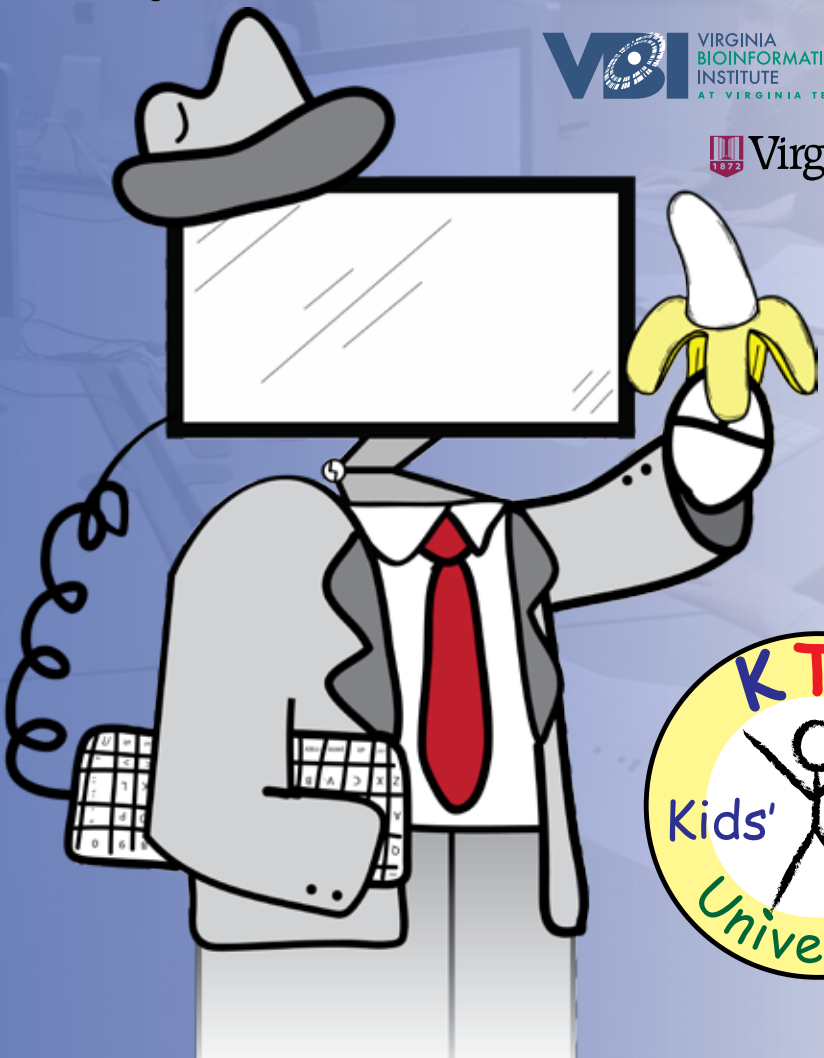
2012 Program at Virginia Tech

February 25, 2012 | Dr. Wu Feng

"Will Computers Replace Humans?"

VIRGINIA BIOINFORMATICS INSTITUTE AT VIRGINIA TECH

VirginiaTech
Invent the Future®



KTU Kids' Tech University

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Volunteers

Many members from the Virginia Tech and Blacksburg community

Additional Support is always welcomed. If you would like to help us provide this exciting opportunity for children, please contact:

Dr. Kristy Collins
540-231-1389
kdivitto@vbi.vt.edu

About the Program

The primary goal of Kids' Tech University (KTU) is to help grow the future workforce in **science, technology, engineering,** and **mathematics** (STEM) by sparking kids' interest in these disciplines.

KTU's curriculum features three parts:

Interactive Sessions
- where children meet scientists and learn about their research

Hands-On Activities
- that give children the opportunity to learn about research projects across the VT campus and beyond

Online Virtual Labs
- which allow continued exploration of science topics at home.
- http://ktu.vbi.vt.edu/

Feb 25th Agenda

9:45 AM

Parents drop off their children for the **interactive session** in McBryde Hall 100

10:30 - 11:45 AM

Kids enjoy an interactive session led by Dr. Wu Feng titled **"Will Computers Replace Humans?"** in McBryde Hall 100

Parents are invited to view the event in a satellite location, over a live video feed, in Torgersen Hall 2150

11:45 AM

Parents pickup their children and kids receive a Hokie Passport lunch card containing $6.00 for **lunch** at one of the specified dining halls on campus, along with 2 preprinted sticky labels. These labels will be used for the afternoon event and distribution of the KTU t-shirts.

1:15 - 4:00 PM

For the Feb 25th **hands-on activities,** we are splitting up the program participants into two groups decided by the first letter of each child's last name. Each "group" will report to an assigned venue and then (after a time limit) the two groups will switch locations.

Table of Contents

Dr. Wu Feng

Feb 25, 2012 | Interactive Session

"Will Computers Replace Humans?"

... As of June 2011, the fastest computer in the world performs approximately 10,000,000,000,000,000 mathematical calculations per second. How many such calculations can you perform per second?

... In February 2011 on the show Jeopardy!, IBM's Watson supercomputer trounced its human counterparts: Ken Jennings, the record holder for the longest championship streak on Jeopardy!, and Brad Rutter, the biggest all-time money winner on Jeopardy!

... At present, unofficial reports indicate that Google uses more than 1,000,000 computers to deliver search results for its Google search engine. That is, Google uses computers to perform search rather than humans.

... While K-Mart was the "king" of discount department stores back in the 1980s, Walmart has become the undisputed king of discount department stores, and K-Mart filed for bankruptcy in 2002. What happened? Walmart invested heavily in computer technology to manage its supply chain while K-Mart did not. In short, Walmart replaced humans with computers to manage its supply chain.

Does the above forecast a future where computers will replace humans? Why? Why not?

Please join me on a thought-provoking journey to answer the question: "Will computers replace humans?" Expect a wild ride where we will likely produce even more questions than answers :-).

Dr. Feng has been an Associate Professor in the Department of Computer Science and the Department of Electrical & Computer Engineering at Virginia Tech since 2006 as well as director of the Synergy Laboratory and site co-director of the NSF Center for High-Performance Reconfigurable Computing. He is also an Adjunct Professor in the Department of Cancer Biology and Translational Science Institute at Wake Forest University and at the Virginia Bioinformatics Institute at Virginia Tech. Previous professional stints include Los Alamos National Laboratory (1998-2006), The Ohio State University (2000-2003), Purdue University (1998-2000), University of Illinois (1990-1996), IBM T.J. Watson Research Center (1990), and several start-up companies, including Vosaic (1997), EnergyWare (2008-2010), and Abokia (2010-now).

Current research interests in Dr. Feng's Synergy Lab encompass large-scale and high-performance computing with applications to science, engineering, and health. Examples of such projects include "Computing the Cure for Cancer," video cards for supercomputing, mpiBLAST (http://www.mpiblast.org/), Supercomputing in Small Spaces (http://sss.cs.vt.edu/), and The Green500 (http://www.green500.org/).

Dr. Feng received a B.S. in Electrical & Computer Engineering and in Music (Honors) in 1988 and an M.S. in Computer Engineering from Penn State University in 1990. He earned a Ph.D. in Computer Science from the University of Illinois at Urbana-Champaign in 1996.

Hands-on Activities

Instructions

Please note that this date will be different than the other dates in the program to come. For this date we are splitting up the program into two groups by first letter of the child's last name **("A-L" and "M-Z" group)**. Each group will report to a different venue and then switch. ***You are responsible for bringing your children to the hands-on activities.***

IF YOUR CHILD'S LAST NAME STARTS WITH A-L:

1:15 PM Drop off child at the Math Emporium in the University Mall; Look for a sign corresponding to the child's last name and sign them in with a volunteer (i.e. give the volunteer one of your preprinted sticky labels).
1:30-2:30 PM Children will be in the Math Emporium taking part in an online activity.
2:30 PM Pick up child; go back to the sign where you dropped them off…you will pick them up here.
2:50-4:00 PM Go to the Lane Stadium Club boxes and on Stadium Drive located near the boxes. You are responsible for being with your child during the hands-on activities at Lane Stadium. Do not bring children who are not enrolled in KTU to this part of the event! The club boxes are located in Lane Stadium, you will enter through Gate 2 and take the elevator to the 3rd floor; you can only enter the area where the club boxes are through the elevator entrance.

> We are asking many departments/professors/student groups around the VT campus and the community showcase research, initiatives and content- it will be a great showcase of the technology activities and research that VT and the community is engaged in.

IF YOUR CHILD'S LAST NAME STARTS WITH M-Z:

1:15-2:30 PM Go to the Lane Stadium Club boxes and on Stadium Drive located near the boxes. You are responsible for being with your child during the hands-on activities at Lane Stadium. Do not bring children who are not enrolled in KTU to this part of the event! The club boxes are located in Lane Stadium, you will enter through Gate 2 and take the elevator to the 3rd floor; you can only enter the area where the club boxes are through the elevator entrance.

> We are asking many departments/professors/student groups around the VT campus and the community showcase research, initiatives and content- it will be a great showcase of the technology activities and research that VT and the community is engaged in.

2:45 PM Drop off child at the Math Emporium in the University Mall; Look for a sign corresponding to the child's last name and sign them in with a volunteer (i.e. give the volunteer one of your preprinted sticky labels).
3:00-4:00 PM Children will be in the Math Emporium taking part in an online activity.
4:00 PM Pick up child; go back to the sign where you dropped them off…you will pick them up here.

Hands-on Activities

Learning to "Scratch"| at the Math Emporium

Scratch is a computing environment that makes it easy to create your own interactive stories, animations, games, music, and art, and then to share your creations on the web, if so desired. As you create and share **Scratch** projects, you learn important mathematical and computational ideas, while also learning to think creatively, reason systematically, and work collaboratively.

While at KTU, you will take part in hands-on sessions in order to understand and appreciate the power of **Scratch**. You will be engaged with the following hands-on lessons:

- **Lesson 1:** Introducing Scratch and Creating Sprite
- **Lesson 2:** Animating a Sprite
- **Lesson 3:** Playing with Scratch Projects

Hands-on Activities

Exhibitors' Showcase | at Lane Stadium

Computing and Gaming through the Ages

An exhibit of computing through the ages. Come see what gaming looked like in the 70's and 80's! Ever wonder what a "punch card" or a "slide rule" looked like? What did kids in the 70's use to listen to their favorite music? (Hint: There were no MP3 players!) Find out what year the Internet was born. Kids will have a chance to take a sneak peek into Computers Through the Ages: The Evolution of Computing. We will have several dinosaur computers and gaming units on display as well as a PowerPoint presentation highlighting their evolution.

Presented by the Techsupport Community at Virginia Tech, a collaborative discussion group, facilitated by a listserv, of Central and Departmental Information Technology faculty and staff.

Where in the world am I?

hosted by Virginia Cooperative Extension Agents, Emily Nester, Tazewell County 4-H; Daniel Collins, Smyth County 4-H and Sarah Jones, Carroll County 4-H.

We will be exploring the world of GIS and Google Earth; youth participants will be able to electronically pinpoint their 'world' address on a projectable map! We will provide information on Google Earth, GIS, and Geo-Caching!

CS^2 is a student organization at Virginia Tech dedicated to bridging the "digital divide" in the New River Valley. This is accomplished through volunteer sites at local elementary schools and community centers, where we teach basic computer skills and lessons meant to spark an interest in technology.

Our display demonstrates a number of activities we perform at our sites, including logical problem-solving using Lightbot, computer model design using Google Sketch-up, game/software design with Scratch, and data visualization with Google Earth.

Looking Down is Looking Up: Why do we work with aerial photography?

Geospatial tools, which include geographic information systems (GIS), global positioning systems (GPS), and remote sensing, provide us with a new understanding of the earth. In this activity, participants will use GIS to identify changes on the earth's surface. We will examine aerial photography from two different time periods, and students will explore, estimate, and measure general changes in land use during these two periods. Observing these kinds of changes helps us understand how landscape changes influence our local communities and environments.

This hands-on activity is being led by a professor, a Ph.D. student, and two undergraduate students from the Department of Geography. The Geography Department (founded in 1975), located in Major Williams Hall, is part of the College of Natural Resources and Environment. We offer both Bachelors and Masters Degrees and we participate in the College of Natural Resources doctoral program in Geospatial and Environmental Analysis. We have recently added a new degree program in Meteorology. The department's students are active in its Geographic Society's many outreach events and fellowship activities, such as exploring caves in southwest Virginia. More information about our program, our students, staff, and faculty can be found on our website at http://geography.vt.edu/

This activity is co-sponsored by VirginiaView, a state level organization within AmericaView—a national consortium that focuses upon research, outreach to K-12 and community college education, and distribution of imagery to a spectrum of users at state and local levels. VirginiaView's mission encompasses many dimensions of the acquisition, analysis, and application of geospatial data to practical problems in natural resources, geography, geosciences,

and agriculture. Additional information can be found at http://cnre.vt.edu/virginiaview/

Dr. John McGee, active within VirginiaView, prepared some of the activities presented this year at Kids' Tech University.

VIRGINIA TECH ASSISTIVE TECHNOLOGIES DEPARTMENT

The Virginia Tech Assistive Technologies (VT-AT) department is proud to be demonstrating the benefits of assistive technologies (AT) for enhancing, maintaining, or increasing a person's abilities by using computers for learning, teaching, working, recreation, and maintaining independence. With a focus on tools for people with disabilities, the participants will experience:

- Computers and special-purpose video magnifiers for visual magnification, color filtering, and contrast enhancements for people with visual difficulties,
- Assistive reading and literacy tools that use text-to-speech capabilities for people with learning, visual, or print disabilities,
- Voice recognition, touch screen, tablet pc, and/or adaptive input devices to assist people with difficulties in writing due to physical or learning disabilities, and
- Note taking aides and organizational tools for anyone in the classroom.

Besides looking at specialized AT applications, the AT department will be demonstrating existing accessibility options already built-in to computer operating systems and available to everyone.

VIRGINIA ASSISTIVE TECHNOLOGIES SYSTEM, SOUTHWEST REGION (SWVATS) Southwest VATS is one of three regional sites of the Virginia Assistive Technology System, a statewide project committed to improving the quality of life for all Virginians by increasing awareness and accessibility of assistive technology (AT). Established in 1990, VATS is administered by the Virginia Department of Rehabilitative Services (DRS). Our Southwest Region encompasses 14,000 square miles in 29 counties and 13 independent cities.

We will help staff the Assistive Technologies display and showcase some of our devices and software with a similar focus as our campus AT partners. Aside from the explanation of what SWVATS is, Hal Brackett is going to demonstrate "serious note taking and fun diversions" available on the Livescribe Echo smartpen.

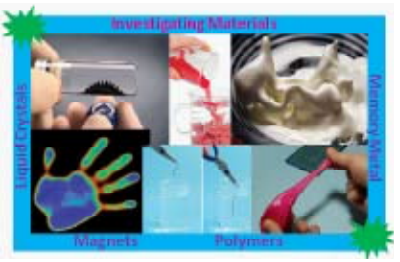
JUSTIN GRAVES, VIRGINIA TECH GRADUATE STUDENT

Justin Graves, recipient of the 2011 Undergraduate Diversity Research Grant, will also display information that he has gathered using Apple's iPad2, and how kids can use this device not only for fun & leisure, but for academics & productivity as well. About a dozen apps will be demonstrated to anyone interested, with a focus on assistive technologies offered similar to those of SWVATS.

EXPLORING OUR WORLD THROUGH THE INVESTIGATION OF MATERIALS | HOSTED BY PROFESSOR LOU MADSEN'S RESEARCH GROUP IN THE CHEMISTRY DEPARTMENT

We invite you to stop by our booth and become a materials scientist by investigating the properties of some materials! Through hands-on activities, you'll discover why oil and water don't mix, what magnetic fields look like, what causes silly putty to act the way it does, and more!!

We are also introducing a pilot program, "PlayCreateDiscover.vt.edu". Through this interactive website combined with hands on



activities, we hope to encourage young girls (ages 5 -10) to explore the world around them through creative play!

THE HUMAN POWERED SUBMARINE TEAM will be showcasing their submarine at Kid's Tech on February 25th. The team will have a booth at the event with interactive activities that emphasize the benefits of 3d printing and design. For more information on the Submarine team, please visit our website: http://www.hps.aoe.vt.edu/

EYEROBOT FOR SECURE FACE RECOGNITION

How do your friends get tagged in facebook photos automatically?

Have you ever tried to login twitter via your face only? It is face recognition that makes this all come true. However, have you ever found any flaws? Naughty kids may wear face photos to challenge the system. Can you secure the face recognition system? We are bringing an eyerobot to help make wise decisions on face recognition. Let it go and find the "real" person you want to talk to.

3D PRINTING AND ADDITIVE MANUFACTURING

Ever had a great idea for a new invention, but didn't know how to make it? Come by this booth to learn about 3D Printing and how it can be used to help you turn your dreams into reality! Participants will get to see a series of desktop-scale 3D Printers in action and get to see example parts created by the industrial-scale 3D Printers at Virginia Tech. Come learn about how 3D Printing works and what lies in its future!

HOSTED BY THE DEPARTMENT OF MECHANICAL ENGINEERING'S DREAMS LAB (http://www.dreams.me.vt.edu).

The DREAMS Lab conducts research centered in additive manufacturing technologies. In addition to researching design tools, materials, and process improvements for additive manufacturing, the DREAMS Lab also explores how additive manufacturing technologies can be integrated into curricula to enhance STEM education.

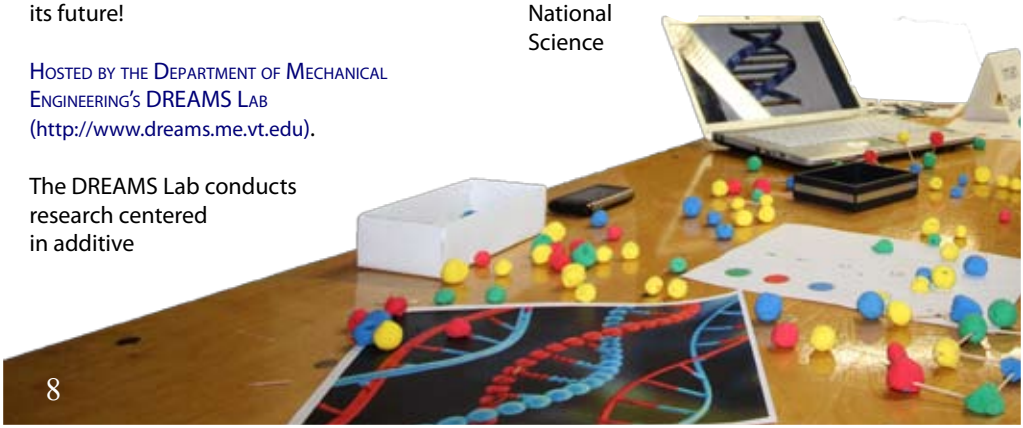
VIRGINIA CAREER VIEW

Really into computers? Love trying to figure out how things work? Learn about fun careers in technology at the Virginia Career VIEW exhibit. Through an interactive game, kids will learn more about technology careers and have some fun, too. Virginia Career VIEW is funded by Virginia's Department of Education Career & Technical Education department to research workforce needs and create resources for kids (and parents, teachers, and counselors) to use in grades K-8.

VISIT CAREER VIEW AT www.vacareerview.org

WIRED FOR WIND: AN OVERVIEW OF THE 2011 NATIONAL 4-H SCIENCE EXPERIMENT

Wind power is a clean, widely available, low cost, and renewable energy source. As the search for alternative energy sources continues to gain momentum, the development of wind power technologies is advancing. In this interactive demonstration, we will explore the world of wind power using a model windmill to generate electricity to power small models like sail cars and tricycles. Then we will learn how to build and design your own wind turbine prototype using the "Wired for Wind" 2011 4-H National Science



Experiment curriculum materials.

HYBRID ELECTRIC VEHICLE TEAM (HEVT)

HEVT is a nationally recognized student design team in Virginia Tech's Department of Mechanical Engineering. Virginia Tech is one of 15 North American engineering schools participating in *EcoCAR 2: Plugging In to the Future*. Sponsored by the U.S. Department of Energy (DOE) and General Motors (GM), the three-year competition offers students hands-on experience in an effort to educate the next generation of automotive engineers. *EcoCAR 2* challenges university students to reduce the environmental impact of a 2013 Chevrolet Malibu, while still maintaining performance, safety and consumer acceptability. GM will donate the 2013 Malibu at the end of the first year of competition. In June 2011, HEVT placed first in another U.S. DOE and GM sponsored competition, *EcoCAR: The NeXt Challenge*. Under the supervision of Virginia Tech mechanical engineering professor Doug Nelson, HEVT produced an extended-range electric vehicle with an 82 miles-per-gallon rating.

VT ROCKETRY AND SPACE (STUDENT PARTICIPATING IN ADVANCING SPACE EDUCATION)

Come build a paper rocket with VT Rocketry! Using a sheet of paper, an index card, a pencil and an air launcher, build a pencil sized paper rocket and see how far you can fly! Learn about how VT Rocketry is participating in the annual NASA USLI competition and come take a look at our prototype rocket! It's four feet tall and flies to over 1000 feet!

You will also learn about buoyancy and the ideal gas law using Cartesian Divers! Using a straw, some paper clips, a rubber band and a 2-Liter bottle, watch as the "diver" that you make "magically" sinks as you squeeze the bottle filled with water but then rises when you release it! It's not actually magic but it sure does look like it!

INDUSTRIAL ENGINEERING deals with four main areas: Ergonomics, Operations Research, Management Systems, and Manufacturing. For our activity, we will focus on the optimization of building a tower that will focus on three performance measures: budget, height, and holding a weight. During the activity the kids, will learn the tradeoffs for purchasing items, which combinations of supplies work the best together (design of experiments), and more importantly be learning about process improvement, which is the focus of many Industrial Engineering jobs.

PRESENTED BY ALPHA PI MU AT VIRGINIA TECH, AN INDUSTRIAL ENGINEERING HONORS SOCIETY.

CATAPULTS AND NEWTON'S THREE LAWS OF MOTION

EXHIBIT BY SALLY FARRELL; CRAIG COUNTY 4-H

We will exhibit three different kinds of catapults (wooden, Lego NXT, and home-made) and see how these catapults demonstrate Newton's three Laws of Motion:

1. Every object in a state of uniform motion tends to remain in that state of motion unless an external force is applied to it:

- The projectile rests in the catapult until launched and then travels until it is acted on by gravity and lands on the ground.

2. The acceleration of an object depends directly upon the force acting upon the object, and inversely upon the mass of the object. As the force acting upon an object is increased, the acceleration of the object is increased. As the mass of an object is increased, the acceleration of the object is decreased.

- The catapult exerts a given amount of force depending on how far the bucket is cranked back. The mass depends on the payload.

3. For every action there is an equal and opposite reaction.

- The catapult will experience exactly the same force as the thrown object but in the opposite direction. It will begin to

move backwards.

WHY PHYSICS IS FUN

Electricity, Magnetism, Mechanics, Optics and Pressure Demos

ABOUT THE PHYSICS OUTREACH PROGRAM

Our program consists of undergraduate students in physics who have a passion for teaching physics to kids of all ages. They present hands on experiments in mechanics, electricity and magnetism, optics, and pressure.

DISCOVERING HOW BUILDINGS RESPOND TO EARTHQUAKES

Students will discover concepts related to how buildings respond during earthquakes in this hands on activity. Students are encouraged to build a multistory scale building using K'nex 'The world's most creative construction and building toys'. The structures will then be placed on a shake table that will reproduce the ground motion that occurred during the magnitude 6.7 earthquake at Northridge California in 1994. Through this hands-on demonstration students will discover how the stiffness and mass of a structure affect its earthquake response, investigate natural frequency of a structure, and learn concepts related to designing structures to survive earthquakes.

THE CANSAT AT VT ORGANIZATION AND THE RASC-AL SENIOR DESIGN TEAM are hosting a joint exhibit for KTU on February 25th. CanSat is a competition for students to build a miniature satellite roughly the size of two soda cans that gets launched into the lower atmosphere and collects and transmits atmospheric and telemetry data on its way down to the ground. The RASC-AL group works on a paper study for NASA for a potential manned mission to Mars.

We will be hosting 3 distinct activities at our booth. For the first activity kids will build paper rockets using paper, a straw and a index card. They'll learn very basic things about control and fins. For the second activity the kids will design a duck call straw. And lastly, the kids will see some "cool" electronics gadgets.

THE EDUCATION OF ENGINEERING STUDENTS AT VIRGINIA TECH is a dynamic process adapting to meet the demands of the industry. Engineering students participate in basic problem solving and hands-on experiences representing the essence of the engineering profession. New engineering tools, a deeper understanding of the responsibilities of engineers to society and the environment, and an appreciation for the diverse and global nature of the workplace are continually incorporated into the engineering curriculum (Gilbert, 2003).

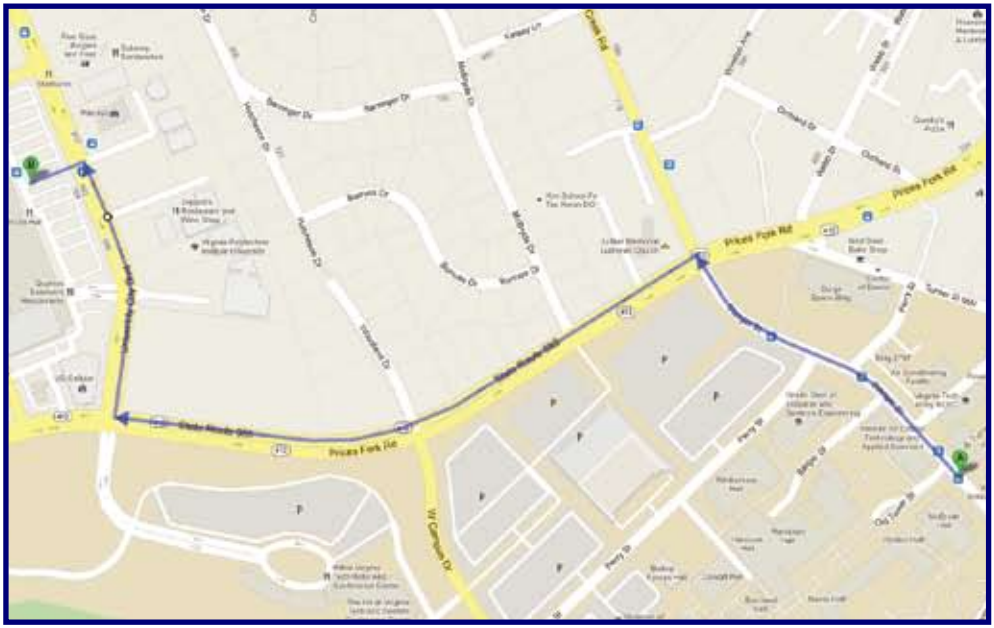
For incoming freshman in 2006, a Tablet PC computing initiative mandated the purchase of a Tablet rather than the previously required laptop. The initiative is supported by an alliance between Virginia Tech's College of Engineering, Fujitsu Computer Systems Corporation, and Microsoft Corporation offering students higher levels of hardware and software purchasing power and support. A current technology, the Tablet PC incorporates the portability of the laptop with the flexibility of writing. In conventional notebook mode, the Tablet PC offers a keyboard for typing. When the screen is rotated it transforms into a tablet, and using a stylus students can make handwritten notes and drawings.

"VIRAL OUTBREAKS! AND PIECING TOGETHER DNA" BY VIRGINIA BIOINFORMATICS INSTITUTE AT VIRGINIA TECH

Ever wonder how scientists and officials predict the spread of a virus (like H1N1), information on a social network, traffic flow or assess a natural disaster? At our booth you will be virtually spreading a virus around KTU and piecing together DNA fragments to find hidden clues and unlock genomic secrets!

Hands-on Activities - Locations

Driving directions from McBryde Hall to the Math Emporium



from Google Maps

Start from

McBryde Hall
Blacksburg, VA 24060

1 - Head northwest on Stanger St toward Prices Fork Rd (about 0.3 miles)

2 - Turn left at Prices Fork Rd/ State Route 685 (about 0.5 miles)

3 - Turn right at University City Blvd (about 400 feet)
The Math Emporium is on the left, in the shopping area/mall.
Parking can be found in the parking garage.

End at

Virginia Tech Math Emporium
University Mall
801 University City Blvd
Blacksburg, VA 24060
latitude & longitude: 37.2337,-80.4342

Hands-on Activities - Locations

Driving directions from McBryde Hall to Lane Stadium

from Google Maps

Start from

McBryde Hall
Blacksburg, VA 24060

1 - Head southeast on Stanger St toward Drillfield Dr (about 0.1 miles)

2 - Slight right at Drillfield Dr (about 0.2 miles)

3 - Slight right toward W Campus Dr (about 381 feet)

4 - Turn left at W Campus Dr (about 0.4 miles)

5 - At the traffic circle, take the 2nd exit onto Washington St SW (about 0.2 miles)

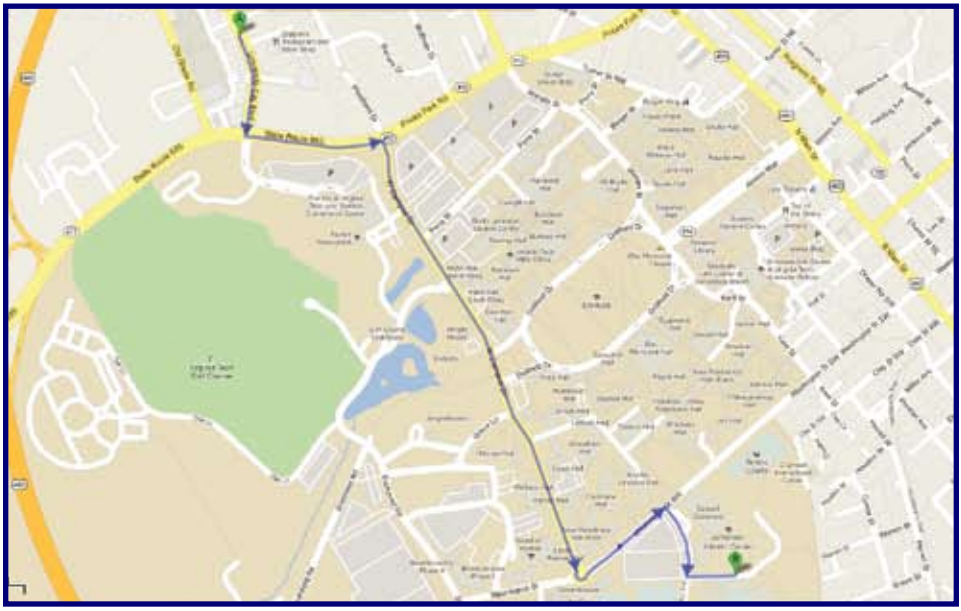
6 - Turn right onto Spring Rd (about 0.1 miles)
Lane Stadium is on the left.
Parking can be found in the Stadium Lot, the Southgate Center Lot and the Chicken Hill Lot.

End at

Lane Stadium
Blacksburg, VA 24060
latitude & longitude: 37.22003,-80.418055

Hands-on Activities - Locations

Driving directions from the Math Emporium to Lane Stadium



from Google Maps

Start from
Virginia Tech Math Emporium
University Mall
801 University City Blvd
Blacksburg, VA 24060
latitude & longitude: 37.2337,-80.4342

1 - Head south on University City Blvd toward Prices Fork Rd/State Route 685 (about 400 feet)

2 - Take left onto Prices Fork Rd/State Route 685 (about 0.2 miles)

3 - Take the 1st right onto W Campus Dr (about 0.8 miles)

4 - At the traffic circle, take the 2nd exit onto Washington St SW (about 0.2 miles)

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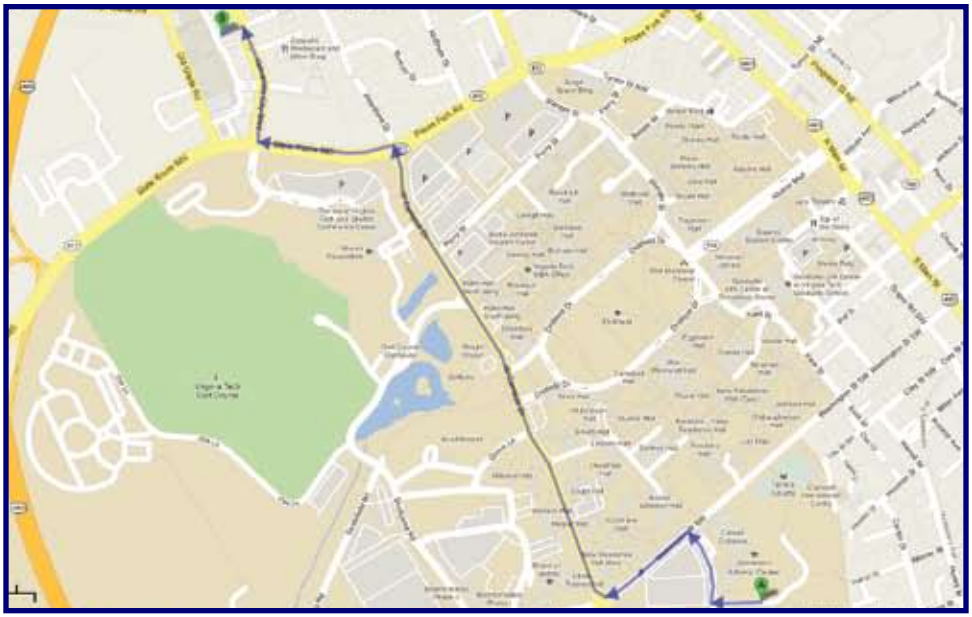

from Google Maps

Start from

Lane Stadium
Blacksburg, VA 24060
latitude & longitude: 37.22003,-80.418055

1 - Take the 1st right onto Spring Rd (about 0.1 miles)

2 - Turn left onto Washington St SW (about 0.2 miles)

3 - At the traffic circle, take the 1st exit onto W Campus Dr (about 0.8 miles)

4 - Turn left onto Prices Fork Rd/State Route 685 (about 0.2 miles)

5 - Take 1st right onto University City Blvd
(about 400 feet)
The Math Emporium is on the left, in the shopping area/mall.
Parking can be found in the parking garage.

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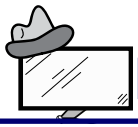

Educator Workshops

We are excited to offer CEU (Continuing Education Unit) credits for educators in conjunction with the KTU program.
Educators will learn it, teach it, and take it back to the classroom.

Interact with:
- **S**cientists
- **T**echnology Experts
- **E**ngineers
- **M**athematicians

You will engage in an exciting, hands-on teaching experience, and then apply what you learned in a unique, first-hand teaching environment with 3rd-6th graders. You will also be able to participate in ongoing community blogs and network with other teachers and education specialists.

This program is ideal for elementary and middle school teachers, out of school time educators, or others interested in STEM teaching.

Educator Workshop

- interact with Scientists, Technology Experts, Engineers, and Mathematicians
- participate in a four (4) hour interactive hands-on training
- interact with KTU students at learning stations to deploy what you learned
- be an audience member in a topic session with kids, led by a world renowned research scientist
- learn how to incorporate fundamentals and concepts from the interactive session and training into your classrooms

Any educator who has a child enrolled in Kids' Tech University and who is attending the teacher workshop will need to arrange for a chaperone to accompany their child during the program. Children are not permitted to attend the educator workshop (regardless of age).

Cost

Virginia 4-H is paying the registration fee for the first 10 participants for each workshop. Register early to hold your spot for March, and April! The cost per workshop is $30. However, if there is a hardship please let us know by emailing, Dr. Kristy Collins at kdivitto@vbi.vt.edu.

February KTU Educator Workshop

The workshops will be held on the Virginia Tech campus in Blacksburg, Virginia.

"Interactive Session: Will Computers Replace Humans?"

Workshop instructor: Dr. Kathleen Jamison, Virginia 4-H;
Guest Researcher: Dr. Wu Feng

Feb. 25, 2012, 8 am-5 pm
CEU credits offered

Have you ever heard that someday computers will replace humans? We will explore this topic during this educator workshop. During this workshop, educators will learn about this history of computers, current uses of supercomputers, biological computer applications. Educators will also work with various computer programs that give insight into computer programming for kids.

Registration

The registration deadline is one (1) week before the scheduled educator workshop. The class/workshops can be taken as a series or individually.

Please visit
http://kidstechuniversity.vbi.vt.edu/ for further information, and to register for the next KTU Educator Workshop.

KTU is a program at Virginia Tech with one primary goal: creating the future workforce in

Science,

Technology,

Engineering,

and **Mathematics**

by sparking kids' interest in these fields.

KTU 2012 Program Dates

Jan 28 | Math Day
Feb 25 | Technology Day
Mar 24 | Engineering & Health Centric Day
Apr 07 | Science Day

Contact

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KTU Kids' Tech University

We look forward to seeing you in March!

THE FUTURE OF SCIENCE

VIRGINIA TECH VIRGINIA BIOINFORMATICS INSTITUTE VBI

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