

**BioMed Tech: Engineering for Your Health  
Great Lakes Science Center (Cleveland, OH)  
News Information to SEPA Website**

**BioMed Tech Distance Learning Program**

BioMed Tech: Engineering for Your Health, a SEPA-funded program at Great Lakes Science Center (Cleveland, OH) will premiere its BioMedTech Distance Learning Series on Wednesday, October 21, 2009 at 10 AM (EST). Presented in collaboration with WVIZ ideastream, it features presentations from leading local biomedical technology and engineering professionals.

Recommended for learners in Grades 7-12, the BioMed Tech Distance Learning Series is designed to stimulate interest in biomedical technology and engineering careers and to foster an appreciation and understanding of regionally developed medical advances. Aligned with the Ohio Department of Education Science, Mathematics, and Technology Content Standards and the National Science Education Standards, each program will emphasize biomedical technology and engineering careers, scientific processes, and science, technology, engineering, and mathematics (STEM) content.

Interested teachers, schools, districts, and science centers can register by contacting John Ramicone at [john.ramicone@ideastream.org](mailto:john.ramicone@ideastream.org) or 216-916-6360. Registration closes 3 days prior to the broadcast date. Participation is free to schools, SEPA programs, and science centers. Requires interactive video distance learning or web streaming capabilities. All programs are subject to change.

**2009-2010 BioMed Tech Distance Learning Program Series:**

**Wed, Oct 21, 2009, 10 AM (EST) broadcast**

**Presenter:** Dustin Tyler, PhD, Principal Investigator at the Louis Stokes Cleveland VA Medical Center and Cleveland FES Center, and Nord Distinguished Assistant Professor, Department of Biomedical Engineering, Case Western Reserve University

**Topic:** How to Make a Super Hero

**Description:** Movies make the super heroes of your imagination; science, engineering, and your imagination make the super heroes real.

**Wed, Nov 4, 2009, 10 AM (EST) broadcast**

**Presenter:** Kate Trueblood Doreian, PhD Candidate, Department of Physiology and Biophysics at Case School of Medicine, Case Western Reserve University

**Topic:** My Quest to Cure Diabetic Blindness

**Description:** In recognition of American Diabetes Month, an emerging diabetes researcher shares the story of her research and passion to cure diabetes and related illnesses.

**Wed, Jan 13, 2010, 1 PM (EST) broadcast**

**Presenter:** Cleveland Clinic Face Transplant Team Member

**Topic:** Medicine Makes the Impossible Possible

**Description:** Technology, expertise, teamwork, and creativity come together to develop groundbreaking medical procedures at the Cleveland Clinic.

**Wed, Feb 17, 2010, 10 AM (EST) broadcast**

**Presenter:** David Garcia, LP, Lped, Manuel Garcia Prosthetics and Orthotics

**Topic:** Artificial Limbs for Real People

**Description:** In recognition of National Engineers Week, discover how a local prosthetist improves quality of life of patients by integrating science, technology, and art. See the i-LIMB (a *Time* magazine Innovation of 2008) in action.

**Wed, Mar 17, 2010, 10 AM (EST) broadcast**

**Presenter:** TBD

**Topic:** Brain Power

**Description:** In recognition of Brain Awareness Week, explore the inner-workings of the human brain with local neuroscientists. Discover what researchers are learning about the brain, the technologies they use, and how their studies impact human health.

**Wed, Apr 21, 2010, 10 AM (EST) broadcast**

**Presenter:** Clinical Translational Science Collaborative (CTSC) Investigators

**Topic:** DNA and Your Health

**Description:** In recognition of National DNA Days, cutting-edge CTSC investigators will show how local DNA research will lead to medical treatments and cures.

**Wed, May 5, 2010, 10 AM (EST) broadcast**

**Presenter:** TBD

**Topic:** Minimally Invasive Surgery Maximizes Health

**Description:** See how advancements in surgical techniques lead to robots in the operating room, cutting-edge tools, smaller incisions, and shorter recovery times.

**BioMed Tech Speaker Series**

As a follow up or alternative to the BioMed Tech Distance Learning Programs, visit the Great Lakes Science Center to participate in live presentations and

activities with biomedical technology professionals. On Fridays, school groups (Grades 4-12) can take a field trip to Great Lakes Science Center to attend presentations for students. On Saturdays, visitors to Great Lakes Science Center can attend presentations in our BioMed Tech gallery.

### **2009-2010 BioMed Tech Speaker Series Program**

**Friday, October 23, 2009, 10AM-1PM (EST) and Saturday, October 24, 2009, noon-3 PM (EST) – Super Hero Science:** Movies make the super heroes of your imagination; see how science, engineering, and investigators from the Cleveland FES (Functional Electrical Stimulation) Center make the super heroes real!

**Friday, November 6, 2009 and Saturday, November 7, 2009 – Causes and Consequences of Diabetes:** In recognition of National Diabetes Month, emerging diabetes researchers from Case Western Reserve University School of Medicine share their research and passion to cure diabetes and related illnesses.

**Friday, January 8, 2010 and Saturday, January 9, 2010 – Medicine Makes the Impossible Possible:** Technology, expertise, teamwork, and creativity come together to develop ground breaking medical procedures. Join a member of the world-renowned Cleveland Clinic Face Transplant team to learn more about this incredible achievement.

**Friday, February 19, 2010 and Saturday, February 20, 2010 – Artificial Limbs for Real People:** Celebrate National Engineers Week with a local prosthetist and explore how science, technology, and art integrate to improve people's quality of life. See Touch Bionics' i-LIMB Hand (a *Time* magazine Innovation of 2008) in action.

**Friday, March 19, 2010 and Saturday, March 20, 2010 – Brain Power:** Explore the inner-workings of the human brain with local neuroscientists. In recognition of Brain Awareness Week, discover what researchers are learning about the brain, and how their studies impact human health.

**Friday, April 23, 2010 and Saturday, April 24, 2010 – DNA Days Celebration:** National DNA Day commemorates the discovery of the double helix and the completion of the Human Genome Project. Join our celebration with speakers, games, workshops, and interactives to learn more about genetics and genomics.

**Friday, May 7, 2010 and Saturday, May 8, 2010 – Minimally Invasive Surgery Maximizes Health:** Discover how advancements in

surgical techniques lead to robots on the operating room, cutting edge tools, smaller incisions, and shorter recovery times.

Book these dates! Call 216-621-2400 ask your reservationist for times and details. All speakers are free with Science Center admission. Aligned with the Ohio Department of Education Science, Mathematics, and Technology Content Standards and the National Science Education Standards. Due to the nature of the health care industry, dates and speakers are subject to change. See the BioMed Tech Website ([www.greatscience.com/biomed\\_tech](http://www.greatscience.com/biomed_tech)) for more details.

### **BioMed Tech: Engineering for Your Health Website**

BioMed Tech: Engineering for Your Health, a SEPA-funded program at Great Lakes Science Center (Cleveland, OH) launched its website, accessible from the GLSC home page ([www.greatscience.com](http://www.greatscience.com)), or [http://www.greatscience.com/biomed\\_tech/](http://www.greatscience.com/biomed_tech/). Web visitors can explore the biomedical technology gallery, hands-on exhibits, as well as upcoming programming and events.

### **Health Careers Exploration Day**

BioMed Tech: Engineering for Your Health, a SEPA-funded program at Great Lakes Science Center (Cleveland, OH), will host local students at the 2<sup>nd</sup> Annual Health Careers Exploration Day on February 23, 2010. The purpose of this program is to stimulate student interest in biomedical technology and engineering careers. Cleveland school students will explore the SEPA-funded BioMed Tech: Engineering for Your Health exhibit, attend career presentations by local biomedical and engineering professionals, and interact with representatives from local colleges, universities, and employers. Local collaborators include the Cleveland Clinical Translational Science Collaborative (CTSC), Cleveland Clinic, University Hospitals at Case Medical Center, MetroHealth Medical Center, Cleveland FES Center, Case Western Reserve University, John Carroll University, Notre Dame College, Ursuline College, and Cuyahoga Community College.

### **Evening with Educators**

Regional educators (grades K-12) attended an Evening for Educators on Tuesday, October 6, 2009. Great Lakes Science Center visitor experience staff shared how GLSC can supplement classroom experiences via field trips,

programming, and distance learning. An expert from the Clinical Translational Science Collaborative (CTSC) shared practical information about asthma, respiratory illness, and sleep disorders. Teachers learned how to help students in their classrooms with these medical conditions.

## **New BioMed Tech Exhibits and Exploration Carts**

Bio Med Tech: Engineering for Your Health, a SEPA-funded program at Great Lakes Science Center (Cleveland, OH), launched three new exploration carts this year. Exploration carts, facilitated by trained GLSC staff, engage visitors in a hands-on, interactive experience. Tiny Tools allows visitors to simulate minimally invasive surgery by using real surgical instruments to perform fine motor tasks inside a box projected on a video monitor. Puzzle of Life encourages visitors to explore the genetic code of life by deciphering a genetic mutation in a strand of RNA, and repairing it via gene therapy. Clone a Microbe illustrates the flexibility of the microbial genome, shows the transference of antibiotic resistant genes, and describes how microbes are utilized in the production of human insulin. Visitors can view microbes under a microscope and capture images.

The newest exhibit and cart will open to the public on October 23-24, 2009. The FES Investigation, designed and developed in collaboration with the Cleveland FES Center and Case Western Reserve University, explains functional electrical stimulation (FES) and challenges visitors to control a simulated paralyzed arm. Text and videos describing the design process will accompany the exhibit. The FES cart, Muscle Cars, models FES technology as visitors move remote-controlled cars with their muscles via specialized sensors.

## **BioMed Tech Resources for Teachers**

State standard-aligned lesson plans for teachers (Grades 7-12) inspired by BioMed Tech Exploration Carts are accessible from the Great Lakes Science Center Biomed Tech web page ([www.greatscience.com/biomed\\_tech/](http://www.greatscience.com/biomed_tech/)). Titles include Puzzle of Life, Microbial Most Wanted, and Medical Imaging. Lesson activities require no or low cost materials, making them accessible to all teachers and students.