

Governor's STEM Academy Brief



Office of Career and Technical Education

VOLUME 50—HEALTH SCIENCE

FEBRUARY 17, 2016

The purpose of the monthly brief is to provide information, resources, and a networking vehicle to support the STEM (science, technology, engineering, and mathematics) Academies in Virginia.

GOVERNOR'S STEM ACADEMIES SPOTLIGHTS

It seems like something out of science fiction – a heart just floating in the classroom. At the Falls Church Governor's Health Sciences Academy in Fairfax County Public Schools, students in the medical assistant program are working with a 3-dimensional virtual heart; manipulating it, looking inside, and even feeling it beat. Students press a button on a pen to move the heart around to see all angles. One student said that with this technology, learning about the body is like a game. Other parts of the body can also be explored virtually, providing a study of anatomy that is truly futuristic.

The technology is called Z space. Before, students would learn about heart valves using physical models that might not move. The virtual 3- dimensional heart beats and the valves move. The instructor said that this is technology you would usually see in hospitals or in medical schools. Through this technology, students experience something that better prepares them for future education in the medical fields. The class will also visit a Fairfax hospital to observe a live heart surgery.

CAREER LINKS—HEALTH SCIENCE

Find Health Science career information at the following Web sites:

- HealthCareers.org
- [American Dental Education Association: GoDental](http://AmericanDentalEducationAssociation.org/GoDental)
- [Radiology Careers](http://RadiologyCareers.org)
- [Nursing World: Career Center](http://NursingWorld.org/CareerCenter)
- [ExploreHealthCareers](http://ExploreHealthCareers.org)
- [American Health Information Management Association: Health Information 101](http://AmericanHealthInformationManagementAssociation.org/HealthInformation101)
- [Aspiring Docs](http://AspiringDocs.org)

INSTRUCTIONAL STRATEGIES—HEALTH SCIENCE

Lessons and classroom resources related to Health Science include the following:

- [Pinterest](https://www.pinterest.com/)
- [UT Health Science Center Curriculum](http://UTHealthScienceCenter.org/Curriculum)
- [hhmiBioInteractive](http://hhmiBioInteractive.org)
- [Nursing Assistant Resources on the Web](http://NursingAssistantResources.org)
- [Lifecycle Nutrition](http://LifecycleNutrition.org)
- [MedlinePlus: Videos & Tools](http://MedlinePlus.gov/VideosTools)
- [National Institute of Mental Health: Health & Education](http://NationalInstituteofMentalHealth.org/HealthEducation)
- [Mental Health America: Mental Health Information](http://MentalHealthAmerica.org/MentalHealthInformation)
- [CTE Online: Health Science and Medical Technology Lesson Plans](http://CTEOnline.org/HealthScienceandMedicalTechnologyLessonPlans) (requires free sign-up)

Math Central offers articles on the application of mathematics to health and medicine: [Math Central: Medicine and Math](#), [CAT Scans](#), [Lithotripsy - A Medical Application of the Ellipse](#), [Chemotherapy Drug Combinations](#), [Ratios and Proportions Used in Medicine](#), [Understanding Prescriptions and Medicine](#), and [Using Math to Find Your Body Mass Index \(BMI\)](#).

[Health Science: Back to Basics](#) emphasizes metric conversions.

For learning sites related to biotechnology, explore [BioInteractive](#), [DNA Interactive](#), [Genetic Science Learning Center](#).

Resources on medical coding and related areas of medical informatics are available from the [American Academy of Professional Coders: Medical Coding Links](#) and [NIH U.S. National Library of Medicine](#).

[Health Information Exchange](#) introduces the types, benefits, and infrastructure of electronic medical record sharing in the United States, including a guide to [Understanding and Preventing Medical Identity Theft](#).

NEW TECHNOLOGIES IN THE HEALTH AND MEDICAL SCIENCE FIELD

Explore the following resources on new technologies in the health and medical science field:

- [How the Internet of Things Will Affect Health Care](#) (an article on wearable medical devices)
- [Engineering By Design](#) (a sample lesson on the topic of telemedicine)
- [The Promise of Telehealth For Hospitals, Health Systems, and Their Communities](#) (a comprehensive report from the American Hospital Association)
- [3D Printing for Your Health](#) (technology solutions to age-old health care challenges)
- [Wearable Technology for Nurses](#)
- [DA: Digital Health](#) (a site containing information on mobile and wireless medical devices, as well as cybersecurity and other issues)

Visit [Science Friday: Body & Brain](#) from PBS for audio and video resources related to health and medical science.

GENERAL INFORMATION ON HEALTH SCIENCE

For basic Web resources on Health Science, see the following:

- [Medical Library Association Top Health Websites](#)
- [MedlinePlus](#)
- [Mayo Clinic](#)
- [healthfinder.gov](#)
- [U.S. Food and Drug Administration](#)
- [Cleveland Clinic: Disease Management](#)
- [Centers for Disease Control and Prevention](#)
- [University of Virginia Health System: Conditions & Treatments](#)

The following resources are related to medical care for diverse cultures:

- [Culture Clues](#) (from the University of Washington Medical Center)
- [Health Information in Multiple Languages](#) (from the U.S. National Library of Medicine)
- [Cultural Sensitivity and Awareness in the Delivery of Health Care](#) (includes scenarios of culturally sensitive and insensitive health care approaches from the American Congress of Obstetricians and Gynecologists)

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