A. Linwood Holton Governor's School

Spring 2010 Newsletter

www.hgs.k12.va.us

Virginia's First Virtual Governor's School

Danny Dixon
Director

Contents

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Director's News

I am pleased to report that the 2009-2010 School Year has been a very productive one here at the A. Linwood Holton Governor's School, in spite of a winter that we will all likely remember for some time. During the year, we have served almost 300 different students from the fifteen school systems with whom we partner. In addition to their high school credits these students will also earn almost 2,000 college credits when they complete this semester – all at no cost to them or their parents.

It is our mission here at HGS to provide our students courses that would not otherwise be available to them in their high schools. Presently our course catalogue includes eleven very innovative and challenging offerings. If a student was able to complete all of them, they would have earned over 60 college credits. Our most popular course this year has been *Anatomy & Physiology* with 102 students, followed by *Western Civilization* with 67 and World Civilizations with 28. *Appalachian History* occupies the fourth spot with 24 students.

Our new course for 2009-2010, *Advanced Multi-Media Applications*, is off to a great start with 16 students. This exciting new course provides students with the knowledge and skills to produce exciting multi-media presentations. Most students will see a need for this course before they graduate from college and certainly once they begin their careers.

As the spring weather returns, the administration and staff of HGS will often be on the road visiting the divisions and schools we serve. We look forward to and appreciate the opportunities we are provided to share information about our school with administrators, teachers, parents groups, students, etc..

Thank you for all you do to assist us in bringing this opportunity to the young people of our region.

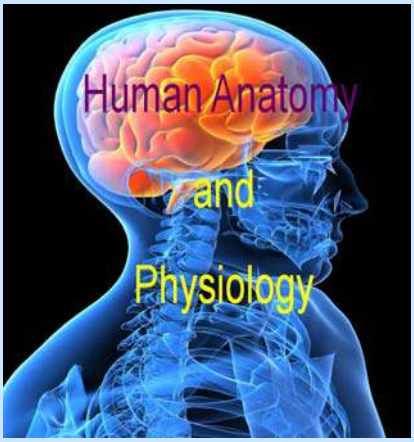

Photo Courtesy of Devan Trail
Rocky Gap High School

Expanding Knowledge... in Both Life and Death

By Autumn Sullivan, Marion Senior High School

Holding a human brain, seeing a spinal cord with nerves feeding into it, flexing the muscle of a cadaver: these are not experiences most people have, especially not at age 17. However, through the A. Linwood Holton Governor's School's anatomy and physiology class, I was given this opportunity. Near the end of the first semester of my senior year, my classmates from eleven local school districts and I traveled to the Eastern Virginia Medical School in Norfolk, Virginia for some very unique experiences that influenced both the way I think about life and the way I learn about the human body.

Going into the medical school, I was nervous. Would the smell in the gross anatomy lab be overwhelming? How would it feel to be in a room with fifteen to twenty dead bodies? Would everything really be like the diagrams in my textbook? Starting off with a patient to diagnose that was played by an actor from the medical school was not at all what I expected. This taught me that there are many approaches to learning about the human body as well as any subject in life. Reading and hands on labs are not the only way to gain knowledge. Following this introduction, a lecture with Dr. Paul Aravich, EVMS's professor of pathology and anatomy, really got me thinking. As he talked, we passed around human lungs, hearts, brains, and spinal cords. Not only did my understanding of these parts grow but also my thoughts about life. It is not one part that makes a body great, it is how it is able to function as a whole so complexly and incredibly that is worth studying. Dr. Aravich is a very passionate man; he made me realize that it does not matter what you do in life, whether you become a surgeon, teacher, carpenter, mother, or psychologist as long as you have the "fire in your belly" to make a difference and to do the job well. His is a passion that I hope to take with me from this trip into the rest of my life.

Throughout the trip, my understanding of the human body was thoroughly enriched and expanded. In the gross anatomy lab, cadavers were used to demonstrate how many organs, tissues, and muscles in a body work together. Here I learned that there is so much that humans can do to expand knowledge both in life and death. The doctors and medical students had been consistently working with these bodies and others to gain further insight into certain conditions people have had and how organs interact. Some of these cadavers were once people that cared enough about science to become these objects for studying. I was surprised by how easy it was to consider them just another material in a lab while at the same time greatly appreciate what they have given to the world and the impact he or she will leave behind. As the day continued we once again looked at parts in isolation. Comparing healthy organs to damaged or cancerous ones has certainly changed the way I think about what I put into my body. Before going into the gross anatomy lab, I had never considered what cancer looked like. In the infected livers, lungs, and other tissues that I saw, cancer was surprisingly light-colored, hard, and almost circular. This put everything I had read about in textbooks and learned through the years into perspective. After seeing this, I have become more adamant to not smoke or drink and to have healthy eating habits. I have always felt strongly about these issues, but now I have the visuals in my head of black, tar stained lungs and cancerous livers that I can use to share my newly strengthened commitment to health with others. Each time I have a new assignment or see someone puffing on a cigarette, I remember the things I saw, did, and learned at the Eastern Virginia Medical School in Norfolk, and I am thankful for the experience that has increased my understanding, changed my life, and brightened my future.

The Galileoscope

Students in Dr. Steve Rapp's fall 2010 astronomy class and physics class will be using the new Galileoscope for observing celestial objects and for optics lessons. The Galileoscope is a high-quality, low-cost telescope kit developed for the International Year of Astronomy 2009 by a team of leading astronomers, optical engineers, and science educators. No matter where you live, with this easy-to-assemble, 50-mm (2-inch) diameter, 25- to 50-power achromatic refractor, you can see the celestial wonders that Galileo Galilei first glimpsed 400 years ago and that still delight stargazers today. These include lunar craters and mountains, four moons circling Jupiter, the phases of Venus, Saturn's rings, and countless stars invisible to the unaided eye.

Like Galileo, students will build their own telescope and gain an understanding of how the lenses are used to focus light and form an image. Using slots to hold each lens, the optical design, spacing, and alignment are preserved to create a high quality optical system while giving students the opportunity to see inside the telescope and form mental pictures of how the light moves through the telescope to form the image. The telescope tube even serves as an optical bench that can be placed on a table to become an optics experiment station. The students will build and use their telescopes as the culminating event after participating in a variety of optics experiments and projects illustrating how light behaves.

Advanced Multimedia Applications

classes have gotten off to a great start their first year at A. Linwood Holton. Students have developed many different skills and have come together to create videos depicting numerous incredible opportunities offered through our virtual school.

Technology students produced the videos to bring out the best in our school. With this driving spirit, students concentrated on individual classes, extraordinary opportunities, free books & tuition, lasting relationships, and not to mention endless academic benefits that students will take with them for a lifetime. Videos put faces on classes, students, and teachers. Marion High School's Autumn Sullivan interviewed Lucas Helton, who shared his positive experiences in Dr. Norton's *Probability and Statistics* class. AMA classes collected images from field trips, previous newsletters, and school archives. Video slides were created using PaintShop Pro and Microsoft Office PowerPoint. Music editing was completed in Audacity. All videos were created and uploaded in Windows Movie Maker. AMA software skills are individualized therefore some students chose other types of software to edit sound and video for these projects.

While creating this project, the class dispersed in different categories. Each class had project managers, research teams, layout designers, and videographers. Students, working together as a multimedia team, experienced the stages in a multimedia project with this assignment. Although the packaged projects took on several facets throughout their productions, students are proud of their work.

One class worked on interactive presentations. Devan Trail from Rocky Gap High School created an interactive presentation for her elementary Spanish class, which she tutors. The interactive presentation challenged students' vocabulary skills. AMA has truly experienced many things this first year!

Standards: *Dual Enrollment (6 credit hours)*
Pre-requisites: *Keyboarding*

This course is designed to introduce students to the exciting world of multimedia. Students will learn to select and manage software and hardware resources required for multimedia production including: digital media, video clips, still images, audio clips, etc.

The focus will be on using multimedia to develop and present projects that simulate those required of professionals in a variety of fields.

History in the Mountains!

The A. Linwood Holton Governor's School Spring 2010 Appalachian History class promises a rich yield of student research projects on the local history of far southwest Virginia. Students from Twin Springs High School in Scott County, Virginia are attempting an ALHGS first: a group project on the history of a specific county. The students have divided the chronological history of their county into equal periods, with each student having a chronological period as his/her focus of research. Working in conjunction with their teacher, Mr. Hagy, the students will address the political, social and cultural history of the county. The ultimate goal is a series of student presentations, posted on-line at the ALHGS Appalachian archive. These presentations will offer to all internet users a history of Scott County, Virginia created by local students.

"One of our goals with the ALHGS Appalachian History class is to get students out of the class and into the field doing research," notes Mr. Hagy, "and this Twin Springs effort meets that goal beautifully. I am most excited by the fact that this group project was the students' idea; normally, each student completes an individual course project. But these Twin Springs students approached me with this great idea. Our goal is to have all the projects in the Archive by the late summer 2010."

In addition to the Twins Springs Scott County Project, Spring 2010 Appalachian History students are researching various aspects of local history, including the musical heritage of the Carter Family and the Civil War Battle of Saltville.

Calling all Historians: Let's Travel

The A. Linwood Holton Governor's School Time Travel Machine is about to launch! The mode of transport will be a charter bus and the itinerary will include the history of pre-Columbian cultures, the cultural exchange between Old and New Worlds in Virginia, and the transplantation of late medieval European culture to the colonial Carolinas. Students will visit the Wolf Creek Indian Village site in Bastian, Virginia, the Frontier Culture Museum in Stanton, Virginia and the Bethabara and Old Salem sites in Winston-Salem, North Carolina.

"Over the years, ALHGS students have visited all of this year's sites, with the exception of the Wolf Creek site which is a new addition to the itinerary. The 2010 trip is designed to include all of these sites as appropriate for all the ALHGS History courses," remarked Mr. Hagy, "so we will have a consolidated field trip that is topically well-suited for Appalachian History, World History and Western Civilization. I am very pleased with this approach as the trip highlights the interconnections between our region and global history. This is something that will really hit home with students from far southwest Virginia."

The ALHGS History Field Trip is scheduled for April 8-10, 2010.

PROBABILITY & STATISTICS

Was it the worst winter on record… or a return to a "normal" winter?

Will it now be warmer in the summer than "normal"?

Was this winter evidence for global cooling?

Was it evidence for global warming?

Was it climate change?

Our *Probability and Statistics* class is doing more than just talking about the weather. As part of the first major project of the Governor's School soon to be formed Center for Mathematics, *Probability and Statistics* students are currently working on a major analysis of weather patterns for Southwest Virginia. They are gathering historical temperature data, reviewing temperature recording methodologies used, and analyzing the data for long-term trends: whether it is cooling, warming, or statically insignificant temperature change. Their work will be part of a long-term Governor's School project, which will consist of the warehousing of climate data for Southwest Virginia as well as the publication of exceptional student analysis of the data, all for the general public. It's a project where students have the opportunity to work with government, higher education institutions across the country, industry, and local media. According to Dr. Norton, the instructor for the class, "Students are very excited about the project. It gives them the opportunity to be involved in addressing one of the major political and scientific questions of the day using mathematical analysis."

Ask the class instructor or a student if the class is only about analysis of temperature data and they will be quick to say "no." Setting criteria for and understanding bone disease, knowing how the unemployment rate is really obtained, extraterrestrial intelligence, the Census, space station construction, economic impact of major sporting events, casino gaming, predicting flooding and establishing flood planes, and risk analysis are just a few of the other subjects *Probability and Statistics* students are investigating this semester alone.

Interested or know someone who may be interested? The Governor's School will offer *Probability and Statistics* in both a block and academic year schedule during the 2010-2011 academic year. Please visit the Governor's School web site for additional information.

- ♦♦♦ *Standards:* Dual Enrollment (6 credit hours)
- ♦♦♦ *Pre-requisites:* Algebra II

Did you know that it is now possible to earn a Bachelor of Science degree in engineering from the University of Virginia (UVA) without leaving Southwest Virginia? It is! In 2007, in partnership with the Virginia Community College System, the University of Virginia engineering school initiated a program to allow Virginia residents to earn a Bachelor of Science degree in Engineering Science without relocating to Charlottesville – the *Engineers PRODUCED in Virginia* program. The *PRODUCED* program allows students to start their undergraduate studies at any one of the community colleges in Southwest Virginia, in the small, supportive classroom environment traditionally offered by those schools. While taking the early program courses at the community college, students complete the English composition, humanities and social sciences, math, science, and initial engineering courses typical of any undergraduate engineering degree.

Once students have completed the first half of the undergraduate engineering degree with their local instructors and fellow students at the community college, students who have done well in the program have the opportunity to move on to the second half of the degree program, taking classes delivered live, on-line by UVA faculty members located in Charlottesville. During the second half of the degree program, students will pursue an interdisciplinary program of study that teaches them how to weave together knowledge from two engineering subdisciplines. The subdisciplines of study available in southwest Virginia are mechanical engineering, electrical engineering, and materials science and engineering. Students pick two of those three areas of study and, with a faculty advisor, put the courses together into a concentrated plan of study leading to the Bachelor of Science degree in Engineering Science.

Read further for important advantages:

The *PRODUCED* program has a set of important advantages that students and parents should consider as they look towards college education.

First, the Virginia community college system is an open admission institution. If students want to study engineering at their local community college, they do not have to apply for admission. Rather, they can sign up for the degree program, and immediately begin classes. Then, highly successful engineering students at the community college can earn automatic admission to UVA's engineering school if they earn a 3.4 GPA (or higher) while studying engineering at their community college.

Second, students graduating from the overall program will hold a Bachelor of Science degree in engineering, and engineering is the best paying undergraduate discipline in the United States today. Graduates in engineering typically earn $45,000 - $65,000 per year immediately upon graduation.

Third, during the time that students are in the *PRODUCED* program, they will be connected with companies in the southwest part of Virginia that employ engineers. Indeed companies in Virginia were the spark for the program, asking for access to local talent to fill open positions in engineering. Companies in the area are stepping up to provide paid internships for students while they are still in school. Companies typically like to use such paid experiences as an early evaluation process for future employees. So, as part of this program, students can gain early engineering work experience and connect with potential future employers in the region.

Fourth, the *PRODUCED* program offers perhaps the most economical way to earn an undergraduate degree in engineering in Virginia today. For the first two years of the program, students pay Virginia community college tuition rates, which average about $300 per course at present. Then, during the second half of the program, Virginia residents will pay standard in-state tuition rates at the University of Virginia, about $750 per course at present. Additionally, the program has several need and merit-based scholarship opportunities available to students in the program. So, not only can students put themselves in a position for a good paying job upon graduation, but also they can potentially live at home, save money, and build paid work experience while studying towards their engineering degree.

Fifth, the courses offered in the second half of the program are delivered in a live on-line format that allows students with high speed internet access and a modern computer to take classes from anywhere that is convenient. While many people are unfamiliar with the state-of-the-art in on-line instruction, students studying in this UVA learning environment will build valuable professional work skills that give them an advantage later in the work place. Today's engineering professional environment is a global one in which many companies have employees spread across the country and around the world. Being able to work and solve problems with colleagues who work elsewhere is a critical skill in the years ahead. Students will become fully comfortable with on-line team work and leadership through participation in the *PRODUCED* program.

Submitted by James F. Groves, Ph.D.

Students interested in learning more about the *PRODUCED* program opportunity should contact James Groves at the University of Virginia (e-mail: jgroves@virginia.edu, phone: 434-924-6261) or visit the program web site at www.seas.virginia.edu/producedinva. Students in the program who are currently in their third year with the program have established a Facebook site: *Engineers PRODUCED in Virginia*. They are interested in sharing their experiences in the exciting *PRODUCED* program of study. Finally, courses in the program are available as early as summer and fall this year at all of the local Virginia community colleges.

Student Reflections

Hey! I am Trista Wilson, a rising senior at Old Dominion University. Currently majoring in Human Services excites me as I plan to work toward a Master's Degree at Lindsey Wilson College. Looking back through my academic career, I cannot help but be thankful for the many opportunities that have come my way.

My first college class was with Southwest Virginia Community College when I was fifteen, but little did I know how challenging college could be until I took my first class with governor's school. Yea, you are right. I waded through Mrs. Smith's Anatomy & Physiology. Time has taught me that getting up that early to take a class is just a part of life we all get used to one way or the other. The governor's school proved to be challenging, but I like a good challenge, so I then took both of Mr. Hagy's history courses.

The governor's school taught me college is no piece of cake. I learned how to be an ambitious college student as I worked through the strenuous coursework, studied for tests that were much more difficult than high school tests, and scheduled and portioned my time appropriately to complete my assignments.

My most memorable events were the field trips. They truly gave me a hands-on experience to what I was learning. Seeing everything that I had read in the textbooks come to life before my eyes was incredible. They also gave me an opportunity to put faces and personalities to my classmates and a chance to get to know Mrs. Smith and Mr. Hagy better. I still talk to some of my HGS friends today!

In my college career, I've volunteered at a day care center and two nursing homes. The kids at day care taught me it was okay to play in the floor and enjoy life no matter where I stand with the world, and the nursing homes taught me to appreciate what I have in life while I am able to enjoy it because I may someday not be able to. I really enjoyed both experiences, and I learned that I can be a voice for those who cannot speak for themselves; therefore, I want be an advocate for people who need it most.

With the governor's school credits and other college credits offered through my school, I was able to graduate with my Associate's Degree *two months* after graduating high school. That is something that I was blessed to do. My college life started well before I was considered a "college student," and I don't regret it. I learned so much by taking classes when I had the chance, and it is something that I feel has molded me into the person that I am today.

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Thank You for your nurturing hand!

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Participating Schools

Abingdon High
Appalachia High
Bland High
Carroll County High
Castlewood High
Chilhowie High
Clintwood High
Coeburn High
Council High
Ervinton High
Galax City High
Gate City High
Graham High

Grayson County High
Grundy High
Haysi High
Holston High
Honaker High
Hurley High
J.I. Burton High
J.J. Kelly High
John Battle High
Lebanon High
Lee High
Marion Senior
Mt. Rogers Combined

Northwood High
Patrick Henry High
Pound High
Powell Valley High
Richlands High
Rocky Gap High
Rye Cove High
St. Paul High
Tazewell High
Thomas Walker High
Twin Springs High
Twin Valley High
Virginia High

Participating Colleges

MOUNTAIN EMPIRE COMMUNITY COLLEGE
SOUTHWEST VIRGINIA COMMUNITY COLLEGE
VIRGINIA HIGHLANDS COMMUNITY COLLEGE
WYTHEVILLE COMMUNITY COLLEGE

Our Mission:

Is to provide **challenging learning opportunities** for the gifted & talented students of far Southwest Virginia that are not available to them in their regular school program.

We will accomplish this by **strengthening their abilities** and **nurturing their social and emotional well being** - through **mentoring, rigorous academic courses, service to the community, and leadership training** within an *entrepreneurial culture that encourages* ***creativity, initiative, and problem solving.***

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