Linwood Holton Governor's School

Spring 2016 Newsletter

www.hgs.k12.va.us
Virginia's First Virtual Governor's School

Contents

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Director's News

It seems impossible, but the calendar reminds us that another school year is rapidly coming to its close. It has been an eventful one for us here at HGS. Over the year it has been our honor to serve 242 outstanding students from the 17 school systems and 36 high schools with whom we partner. In addition to receiving high school credit for their classes with us they have also earned 1951 college credits that will give them an important head-start on their college education.

Our Teachers have worked hard to further enhance their curricular offerings, create exciting new projects, forge interesting partnerships, and provide unique field-trips that allow our students to extend their understanding of the subjects they are studying and learn what their real-world applications are like.

Once again Anatomy and Physiology is our most popular course, with 97 students. Following closely, as it usually does, Western Civilization had 91 students. Physics has enjoyed a good enrollment this year with 23 students. Environmental Science and Creative Writing, two of our newer courses, showed good enrollments this year with 16 and 13 students respectively. Appalachian History had 11 and Astronomy 10. The remainder of our courses were in the single digits. It is important for me to note that while some of these course titles are commonly known and may be available in students' home high schools, or perhaps on-line, our courses are significantly different than any other experience available and students report that they get more from them than any others they have ever taken.

On a personal note, this marks my eleventh and final year with the Governor's School. At the end of June, I will be retiring to spend more time with my family and to pursue many of the other passions I seem never to have time for. As I depart I want to take this last opportunity to again express my sincere thanks to the many people who have supported the school and me over the years, and also to remind everyone what a unique treasure the A. Linwood Holton Governor's School truly is.

And let me conclude with an admonishment that we all continue to diligently work to bring this opportunity to more and more of the young people of our region. It has made a big contribution to the educational preparation of over 4,000 students down through the years, as attested to by many of our former students. And its mission of providing unique learning opportunities to the best and brightest students of our region is no less critical today than it was when the school was begun in the fall of 1998.

Danny Dixon

Do well, enjoy your retirement, and by all means, keep in touch. It has been a pleasure to have had such an inspiring leader. You will be missed.

Thank you,
Your friends at the HGS

Getting To the Dirt of Things

The Environmental Science class had a wonderful Field Trip to Bays Mountain!

Following our unit on water use and pollution, students learned about the history of Bays Mountain reservoir as the original water supply for Kingsport, which is why the surrounding watershed was protected as a natural area. Students were able to apply their classroom knowledge as we discussed how watershed use affects water quality, and then they tested the water in the reservoir to see the difference in dissolved oxygen at several different locations. To further test their understanding of water quality parameters, we played a game called "Happy Fish, Dead Fish." Don't worry, no actual fish were harmed during this educational game! Students also analyzed soils in different locations. Soil science, which may sound boring, is quite fun once you get your hands dirty. The highlight of the trip was walking through the animal habitats with a park naturalist and learning about the different species that are housed at the park. Bays Mountain is a wonderful place to experience the interconnectedness of the wide variety of organisms in our world, which has been a theme throughout our Environmental Science course.






ENV 100 – Basic Environmental Science
Presents and discusses basic scientific, health-related, ethical, economic, social and political aspects of environmental activities, policies/decisions. Emphasizes the multidisciplinary nature of environmental problems and their potential solutions. (3 credits)

ENV 220 - Environmental Problems
Studies the relationship of man to his environment; ecological principles, population dynamics, topics of current importance including air, water, and noise pollution; poisoning and toxicity, radiation, conservation and management of natural resources. (3 credits)

Pre-requisite requirement of Biology

Create. Design. Animate. A. Linwood Holton Governor's School's **Engineering Methods & Computer Programming** (EM&CP) course is closing out the first year of using the *Processing 3* environment, with the use of *Processing 3* being a great success. Processing, a stand-out favorite of EM&CP students, is a programming environment and language that allows one to easily create *sketches*, which then animate on the desktop or, with just a simple code addition, in any internet web page.

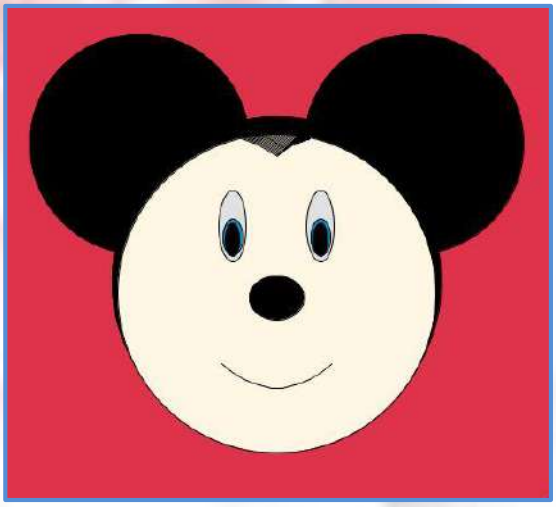


Figure 1 Mr. Elkin's Mouse

Just how easy is it to start programming with *Processing*? The graphic to the left, *Mr. Elkin's Mouse*, is the creation of a spring semester block student after only two class days. With the successful introduction and classroom testing this past academic year, the *Processing* environment will now be a major component in the course beginning with the Fall 2016 class. The environment will not only be used to introduce computational thinking, it will be used to model real world physics and then animate them. (The title graphic above is a single frame out of an animation of a model of particles with accurate physics created with *Processing*.)

Students in the fall will construct models that respond to stimuli within their environment, objects that evolve and learn, and much more. The *Processing* environment will also be used for the first time to visualize and animate classical engineering problems in computation, from "shooting problems" to more contemporary convergence problems.

Python, a programming language that has formed the core of the EM&CP course in the past, will not be forgotten. It too will be used to allow students to expand beyond the visual. All in all, a challenge that is also a great deal of fun!

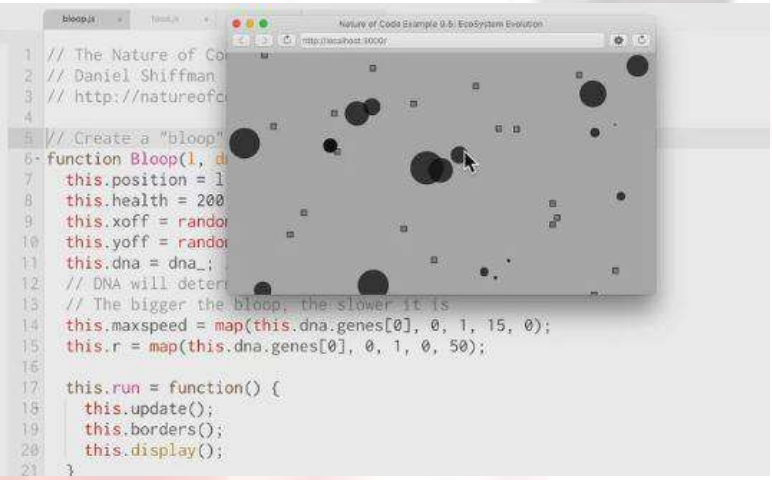


Figure 2 Particle creature model: particles eat, grow, and give birth to more of their kind. Window is a single frame from the real-time animation of the particle creature interaction process.

In EM&CP, no programming experience is assumed. Students start with a very basic development environment with simple instructions to master, progressing to a far more rich integrated development environment.

However, the end goal of the course is not to learn a particular programming language, but to learn to think "computationally." Thus, students develop strong problem solving skills even if they never take a similar course in their academic careers.

Sound like a fun way to start an adventure in Computer Science? It is!

Join us for the **2016-2017** sessions of **Engineering Methods and Computer Programming** with academic year classes starting August 2016. The Governor's School course, which is EGR 125 and EGR 127 in the VCCS Course Catalog, offers students six hours duel enrollment credit at the completion of the course. The class is offered in both the academic year format and the block schedule format. The block schedule format is offered only during the spring semester. For additional information about the course, please check the HGS web site or contact the course instructor, Dr. Bruce Norton, through email via bnorton@hgs.k12.va.us.

Figure 3 Modeling Physics in Processing: Single Frame from Animation

I Wanna Be Elected!

It's campaign season. You want to *take the country by storm*!

If you want to be elected to a public office, there is one thing you will be forced to confront over and over and over: the polls, lots and lots of polls. Even if you have no interest in ever running for anything, you must face seemingly endless political polling data: polls telling which candidates are leading in every region, county, state, and party; polls about what issues are most important to voters, and polls about the candidates "likeability" and trustworthiness. For almost any and every aspect of politics, there is a poll and published poll results, not only just snapshots in time as polls are, but time variation reports of polling data as well, as shown in the figure below.

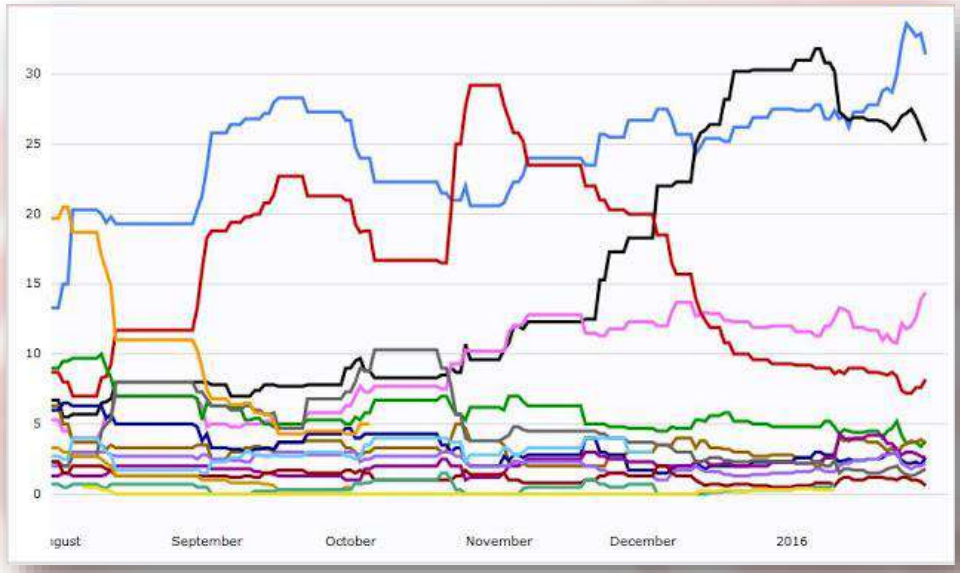


Figure 4 ***Real Clear Politics*** **Candidate Polling Performance of Republican Presidential Candidates from August 2015 through January 2016 for Iowa**

There are other politically induced polling data that one never sees. The candidates themselves have "internal polls" which we are told they use to determine everything from issues to address to words and phrases to use when speaking of topics of interest to voters. (So you will need to be your own statistical data analysis team to win.)

And it does not stop with political issue polls and the campaign season. Surf the internet for more than a few minutes and you will easily find a web site asking you to complete a poll and/or one displaying polling data. Keep browsing and you are sure to find a site that asks you to complete a poll then, once you submit your response, provides a visual display of the polling data to date. Listen to talk radio? If so, then you have heard numerous "call in" polls, where listeners call to express their opinion on the subject of the day, with the host sometimes keeping count of who is for/against, left/right, or even sideways.

With the numerous polls, political and non-political, and a lot of weight seemingly given to their findings, they must be accurate, right? Well, yes and no. It depends…it depends on how the question was asked and how the data were collected.

Web sites polls and radio talk show polls are biased, and rarely reflect the actual opinion of the population. Obviously web site polling has polls filled in only by people who visit the site and volunteer to do so. Thus, for starters, one must have an interest in the subject of the site to be there. Radio talk show callers call in because they are highly motivated to do so. Most radio program listeners will never call or attempt to reach the host in any way. Therefore, the data are only that of strongly opinioned people who, for the most part, agree with the host's point of view, otherwise they would not be listening. There are exceptions.

While you are almost never told (by your political advisor team), most "valid" polls you see are based on probability: there is a specified probability that the poll finding will be within the reported interval, the interval computed by taking the average value (i.e., what one typically sees as "the value") and adding and subtracting the margin of error. Typically the probability is 95%, or more correctly, 0.95. (Probability values range from 0 – meaning the event will never happen – to 1 – meaning the event will always happen.) Thus, when you see a reported result of

- Candidate A: 45% *+/- 3 % margin of error*
- Candidate B: 46% *+/- 3% margin of error*

there is a 95% chance that Candidate A's support is somewhere within the interval of 42% to 48% (45 +/-3 for the upper and lower interval bounds) , meaning there is also a 5% chance (0.05 probability) it is not, that it will be outside the reported interval. This assumes that the data collected represents the voters who will actually vote and is a truly simple random sample from this group, something that is very difficult to obtain in the real world. (The margin of error is generally controlled by the sample size: the number of people who were polled and responded. Smaller margins of error typically reflect the fact that a larger group of people were polled and responded. According to one Gallup report, only about half of the people contacted respond. It is unknown how many respond truthfully.)

It is common to see variation in different polls, as evident in the *Real Clear Politics* table below. In general, the polls published by CNN, for example, may differ from those published by NBC or Fox or CBS or Survey Monkey or whomever. More bias, right? No. There will always be variation due to chance: just because they all do not agree does not mean that someone is slating their results. If CNN conducted the same poll twice, they would most likely get somewhat different numbers both times due to variation in sampling that is due to chance. Furthermore, even with "textbook" data collection, sometimes chance variation yields bad data: data that is not representative of the population.

Polling Data

Poll	Date	Sample	Trump	Cruz	Rubio	Carson	Paul	Bush	Huckabee	Kasich	Fiorina	Christie	Santorum	Spread
Final Results	--	--	24.3	27.6	23.1	9.3	4.5	2.8	1.8	1.9	1.9	1.8	1.0	Cruz +3.3
RCP Average	1/24 - 1/31	--	28.6	23.9	16.9	7.7	4.1	4.1	3.1	2.9	2.6	2.4	1.1	Trump +4.7
Emerson	1/29 - 1/31	298 LV	27	26	22	3	3	4	5	4	2	3	1	Trump +1
Opinion Savvy	1/29 - 1/30	887 LV	20	19	19	9	9	5	4	4	4	3	2	Trump +1
Quinnipiac	1/25 - 1/31	890 LV	31	24	17	8	4	4	3	2	2	1	1	Trump +7
DM Register/Bloomberg	1/26 - 1/29	602 LV	28	23	15	10	5	2	2	2	2	3	2	Trump +5
PPP (D)	1/26 - 1/27	780 LV	31	23	14	9	4	4	4	2	3	2	1	Trump +8
Gravis	1/26 - 1/27	724 LV	31	27	13	7	2	6	2	4	3	3	1	Trump +4
NBC/WSJ/Marist	1/24 - 1/26	450 LV	32	25	18	8	2	4	2	2	2	2	0	Trump +7

All Iowa Republican Presidential Caucus Polling Data

Table 1 *Real Clear Politics* Iowa Polling Comparison

Polling, its execution and proper interpretation, is one of many topics covered in the Governor's School's ***Probability and Statistics***. Currently, spring semester HGS ***Probability and Statistics*** students are gathering their own polling data to make estimates of candidates' support as well as the opinion of voters on issues that the students think are important. They will be watching as the election season results come in to see how well their polling data matches.

Want to learn to be able to conduct your own poll, political or otherwise, or know of the many uses of statistics in medicine, computer science, marketing, engineering, environmental restoration, political science or just buying a car? If so, the ALHGS ***Probability and Statistics*** class is for you.

The class covers a wide range of applied statistics and probability, making use of both simple hand calculations as well as computer modeling with the R statistics analysis package. Students have an on-line place to meet - "The Stat Cave" - as well as a 24/7 help web site where they can go for answers to their questions , video tutorials, interactive instructional web sites, and recitation sessions to aid in success of problem solving.

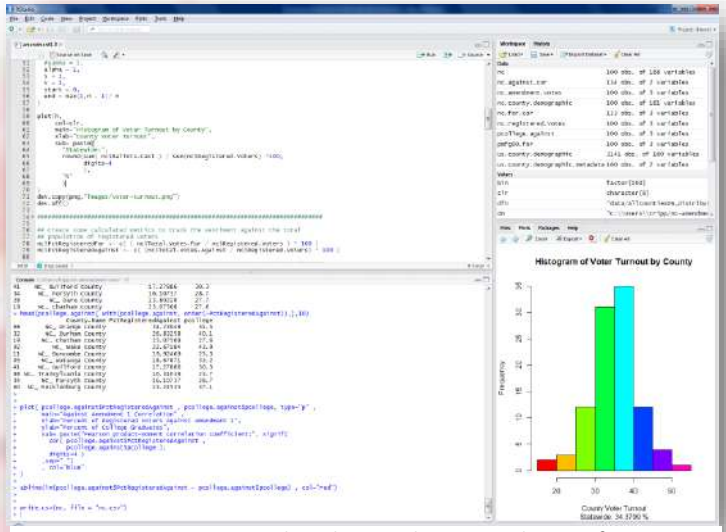


Figure 5 R Statistical Analysis Package R Studio Interface

Join the ALHGS ***Probability and Statistics*** Team. The Governor's School's ***Probability and Statistics***, which is MTH 241 and MTH 242 in the VCCS Course Catalog, offers students six hours of dual enrollment credit. The class is offered in both the academic year format and the block schedule format. (The block schedule format class is only offered in the fall semester.)

For additional information about the course, please check the HGS web site or contact the course instructor, Dr. Bruce Norton, through email via bnorton@hgs.k12.va.us.

Taking ***Probability and Statistics*** will be a life changing experience: a great one that will allow you to understand and know the world around you, regardless of your future field ….

… and it might just help you Be Elected!

Bigfoot

One of the interesting aspects of teaching Appalachian history at the A. Linwood Holton Governor's School is the unpredictability of the topics that might present themselves in class. The Early Bird Appalachian History recently offered an excellent example that illustrates this point. Instructor Mark Hagy was wrapping up a point about Wise County when one of the students referenced an interesting activity: looking for Bigfoot. "For a second," recalls Hagy, "I thought I misunderstood. Then I assumed that the student was joking." After a question or two, Hagy soon learned it was no joke. "I found myself intrigued. And then I decided to question the students."

Two Eastside High School students, Matthew Sluss and Hunter Stanley, were more than eager to answer Hagy's questions. When asked why they started hunting Bigfoot, the two offered a similar answer: having heard stories of such creatures and seeing TV shows on the subject they decided to hunt in their local vicinity for the elusive creature. Stanley's optimism was evident in his response: "I believed that I could be the one that finally catches him." When asked to describe a hunt, Sluss explained the logistics: "When we go on a Bigfoot hunt it normally consists of us going on a Friday afternoon and coming back Sunday evening. We typically stay the night in the camp grounds in the area and follow paths made by deer or other such animals that might be prey [for the creature]." In response to the method used to hunt the creature, Stanley replied that "You start hunting him at dark. I wear complete camo and wear normal deer scent to smell like the woods. You sit over a bait pile of different foods."

The technique explained, Sluss and Stanley went on to discuss their most interesting experiences on such a hunt. Sluss recalled hearing strange noises at night around their camp. Stanley shared a more concrete, and

ominous, experience: "One time I heard a big scuffle right next to my bait pile but could never see what it was. So I shot and ran and when I got over there some of my bait was gone but I do not know exactly what it was." When asked why they pursue such an interesting past time, Sluss replied that he continues to do this because of his love of the outdoors. Stanley succinctly cited a determination to find the elusive creature: "It's that simple: I just don't want to quit until I do [find Bigfoot]."

Mr. Hagy then asked both students what he considered to be the two most pressing questions at this point. First, do the young men have a preferred hunting ground? Their answer, Hagy recalls, was a little disconcerting: High Knob. "That is a place my family has visited for sixty years. Who knew Bigfoot could be right behind a tree!" The second question was more pedagogical: how have these hunts helped you appreciate Appalachian history? Sluss' answer reflected the harsh beauty of the region: "These hunts have helped me understand the region of Appalachia by how it is hard to [live off] of the land, with how difficult the terrain can be and the unpredictable weather sometimes." Stanley said: "I love being outside and connecting with the natural beauty of this region even though Bigfoot is just a legend, for now. When you're out there you have to believe that you will find him."

After a couple of questions, Matthew and Hunter invited Mr. Hagy to go on a hunt with them. Regrettably, Mr. Hagy was unable to join them. **"As always, ALHGS Appalachian history students offer insight and perspective to the history of our region in fresh and novel ways. Matthew and Hunter have continued this tradition admirably. I must say that the idea of Bigfoot hunts never crossed my mind!"**

Appalachian History – HIS 205

This course addresses the history of the Appalachian region (from Pre-Columbian period through the early 21st century) with a focus on southern Appalachia. Emphasis will be placed on such skills as historical research, use of primary documents, oral history, archival work, and preservation. (3 credits)

Discovering Super Massive Black Holes

Dr. Steve Rapp

Astronomers needed the help of students at A. Linwood Holton Governor's School (ALHGS) and the students in Dr. Rapp's physics class have made some major discoveries. Black holes are found at the center of most galaxies. Generally, the bigger the galaxy, the bigger the black hole and the greater the effect it can have on the host galaxy. These supermassive black holes attract nearby material, and occasionally produce spectacular jets of material traveling nearly as fast as the speed of light. These jets usually can't be detected in visible light, but are seen using radio telescopes. Dr. Rapp's students were able to find these jets and match them to the galaxy that hosts them. In most images there are many infrared (IR) galaxies, but only some of these appear in the radio region. Students used images from the Very Large Array (a group of 27 telescopes that are electronically linked) located in Socorro, New Mexico and the Wide-Field Infrared Survey Explore spacecraft operated by NASA. About 350,000 images were available to students.

The first image below shows a galaxy that is emitting radio waves and the second image shows the galaxy in the infrared region of the electromagnetic spectrum. The contours in the first image indicate the radio brightness of the galaxy. The goal is to match up the radio contours to their galaxy images in the IR. In image 2, notice the dotted outline of the galaxy radiating radio waves superimposed over the galaxy we see in the infrared spectrum. The yellow circles indicate the location of supermassive black holes.

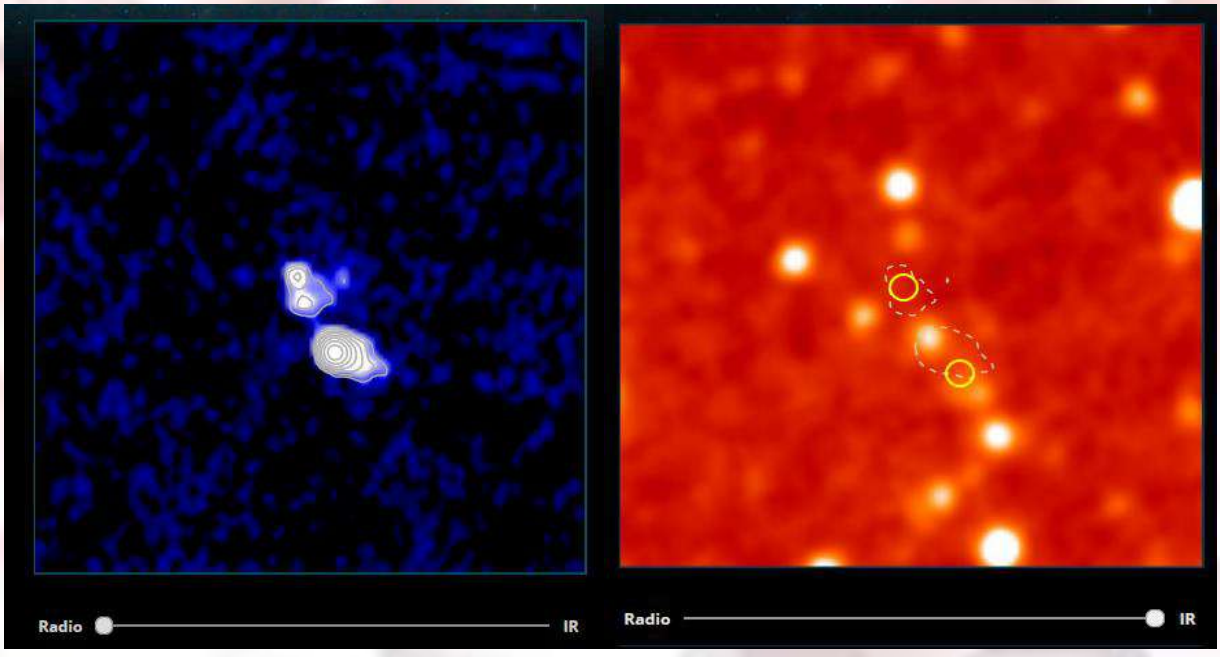
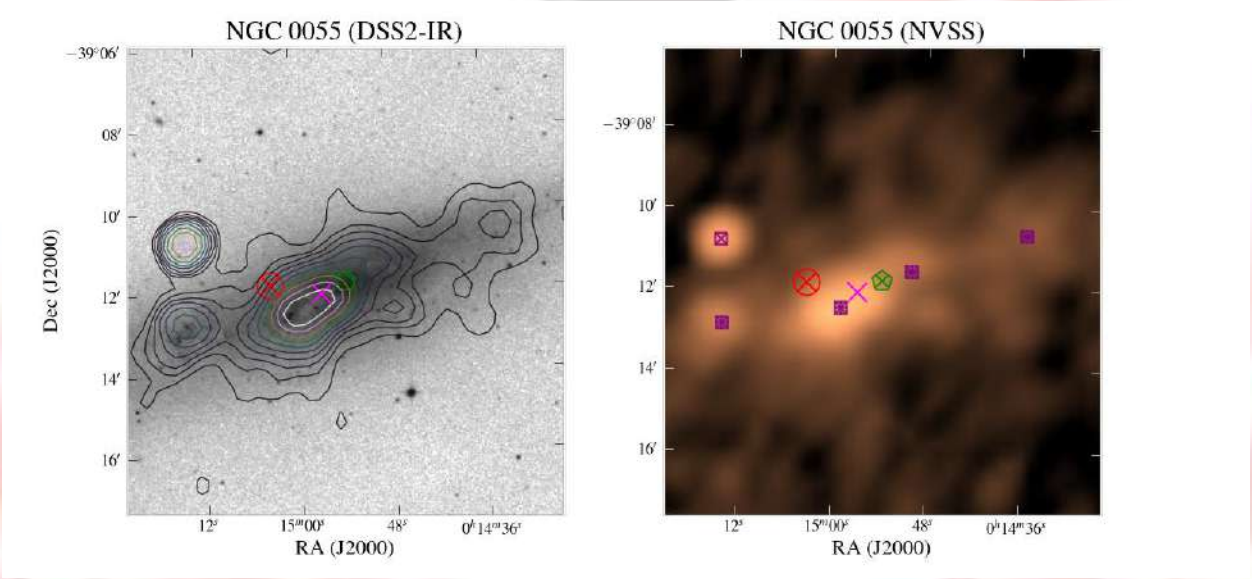


Image 1: Galaxy at radio wavelengths Image 2: Galaxy at infrared wavelengths

You may be wondering why computers can't do this task. The jets visible in the radio wavelengths and the host galaxy visible in the optical wavelengths sometimes overlap. In this case, computer programs can tell automatically that they are associated with each other. However, the matching becomes much more complex

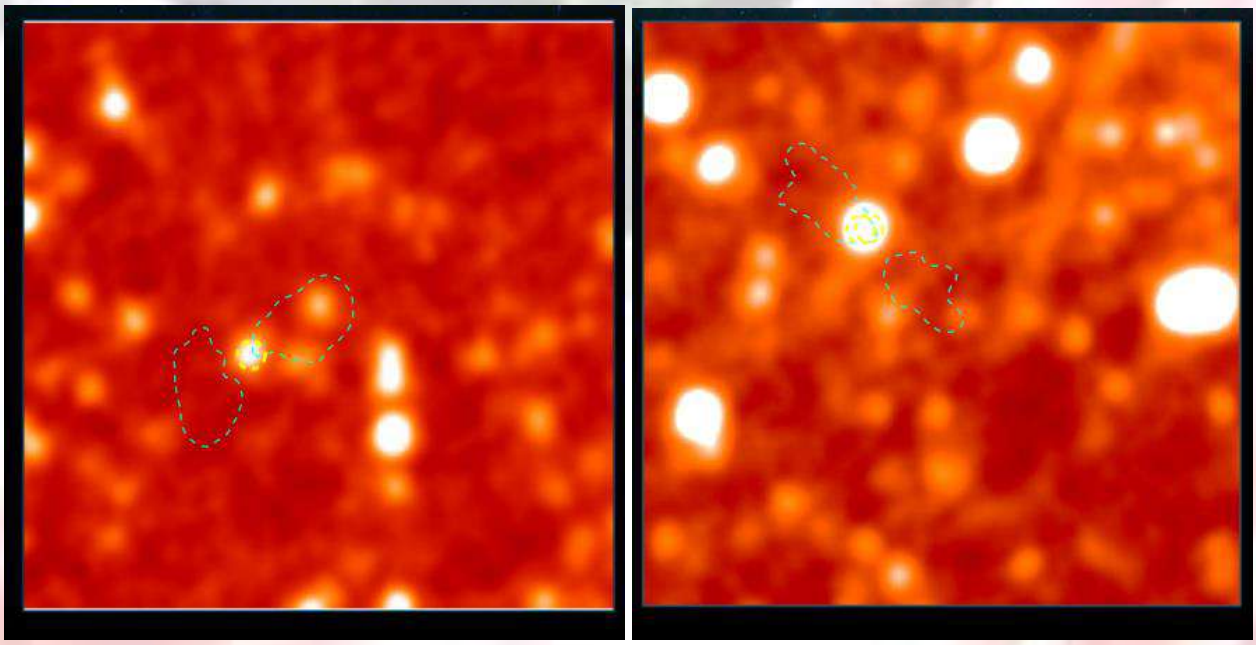
when we start to consider situations where there is a great deal of mixed up radio emission or very complex arrangements of multiple sources — as in the example below.



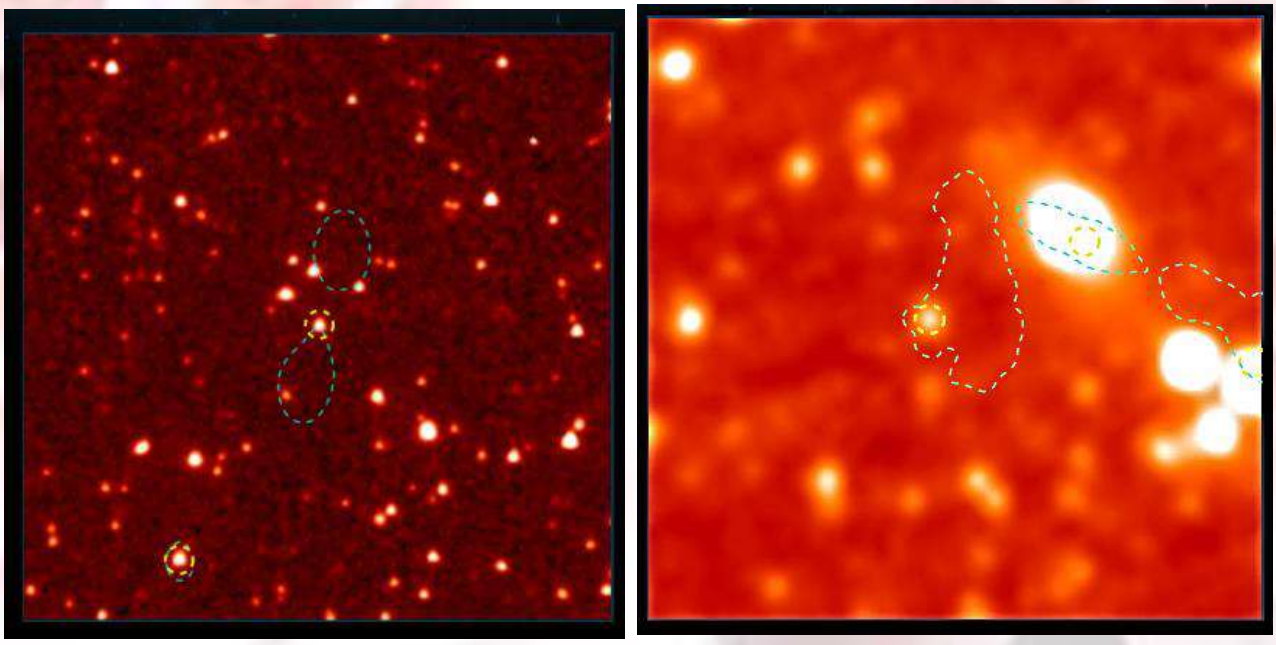
If we see three blobs of radio emission that could be either three separate galaxies or a black hole and its two jets. It's possible for a human to tell by comparing the radio and infrared images – if the infrared shows three galaxies in a row, lining up with the respective radio spots, then it's probably three separate galaxies. If the only infrared source is in the center, then it's probably a black hole and two jets. Computer programs cannot currently compete with the human brain for pattern recognition, especially if the radio emission is uneven or distorted. NASA has found that humans, especially high school students, are curious by nature and will question and explore unusual features that they see.

My students were able to match 124 galaxy images, 72 images of radio galaxies with 72 images in the infrared region. They basically superimposed the radio galaxy images over the infrared galaxy images during this investigation to help determine the location of supermassive black holes.

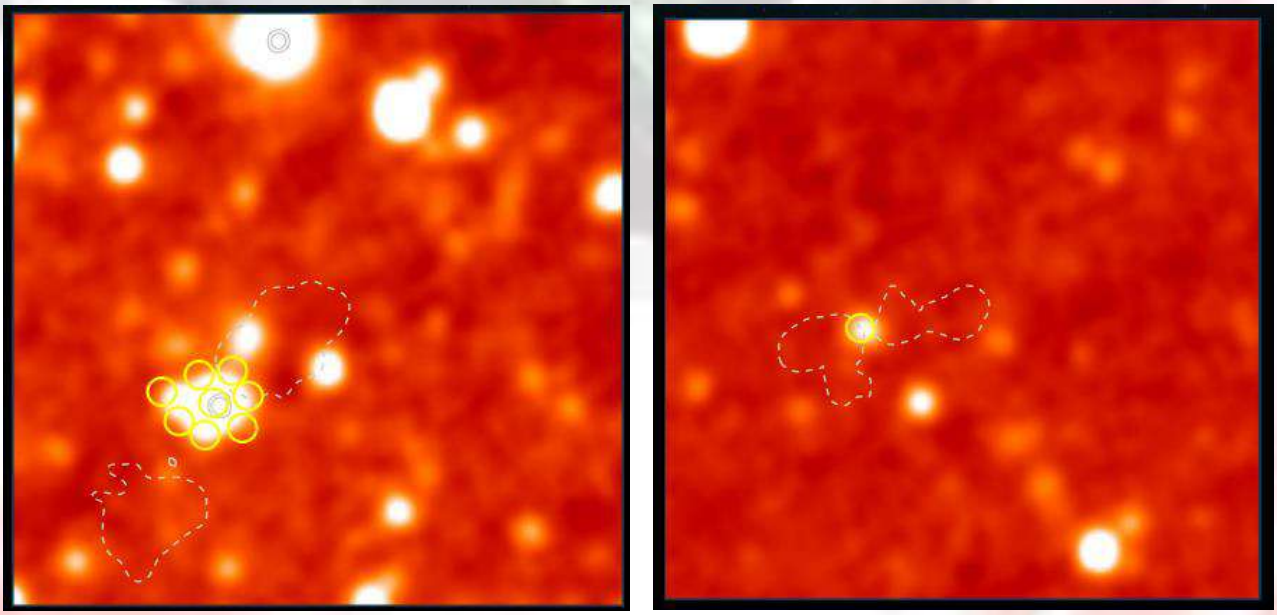
In order to better understand how these black holes form and evolve over time, astronomers need to observe many of them at different stages of their lifecycles. To do this, they need to find them first! So the ALHGS students involved in this project provided much needed help to the astronomers. Some of the superimposed images classified and analyzed by the students are found on the next two pages.



These two images were processed by Abigail. Notice the outline of the radio galaxies aligned with the galaxy in the infrared region. Each image shows a supermassive black hole between the lobes (dotted lines) of the radio galaxy.



Taylor discovered two supermassive black holes in each of images shown above.



Bradley discovered a very unusual characteristic in the first image shown above, a cluster of supermassive black holes. In his second image he found a black hole in a very irregularly shaped radio galaxy.

This project was a great success.

Students felt good about helping out global astronomers and they learned much about analyzing galaxies and supermassive black holes. The students embraced this investigation just as a research scientist would have done.

In fact, they became scientists!

In the World Of Anatomy & Physiology

Mrs. Karen Smith

It is Spring 2016 and soon most of my Anatomy & Physiology students will be leaving high school and going on to college where they will be preparing for future careers in the medical field. It amazes me to hear from former students and their successes in medicine or health related careers.

This semester has really flown by and I am thrilled that even with all the snow days my students have taken class seriously. They have been much disciplined in their studies so we can complete the course.

In March the other half of my Anatomy students went to Blacksburg to tour and visit the Veterinary School of Medicine on the Virginia Tech campus and the Virginia College of Osteopathic Medicine. Both tours were outstanding and students were able to apply what they have learned in class to human as well as animal cadavers. The gross anatomy laboratory is always the highlight of the fieldtrip.

It was great that two of my former students, Scottie Hurley and Seth Lowe, were able to meet with us and share with the students what it is really like to be in medical school. Some of the students know Scottie and Seth because they are from their same communities. This is so valuable for Anatomy students because they can relate easily to them and see that they can also go to medical school. Scottie and Seth shared that even though medical school is challenging they do still have time for extracurricular activities. They also emphasized that time management is very important.

While at both medical schools students were advised on what they needed to do to prepare for entrance while in college. It was also stressed that community service in a medical field is necessary and they should start participating in that now.

In addition, and new to this trip, we went to the College of Natural Resources and Environment Wildlife Facilities. Here we were introduced to the Wildlife Facilities including the Bear Center, Aquaculture Center, and the Aviary. The students were introduced to the complex natural resource issues facing our planet as well as sustainability, natural resources management, and the environment. There were also presentations on Wildlife Conservation. Another part of this day included a presentation and discussion of medical geography and the study of health and disease patterns across the world. Students found this very interesting and quite a forward thinking experience.

Another new experience on this trip was given at Virginia Tech's Biocomplexity Institute. Here challenges to human health, habitat, and well-being are researched using a biological approach so that the behavior of many interacting systems can be predicted, explained, and visualized. While there we observed the CINET, pictured next, which is one of many tools designed by the Institute's researchers to help users analyze the behavior of very large interactive systems. While there the students were involved in hands-on DNA analysis.

In the few remaining days of class I hope to further instill the passion I have for the study of Human Anatomy & Physiology in my students. They need to find what really excites them and get priorities and goals organized in their minds. They have had opportunities in Holton Governor's School that no other students in our state have. Since they are members of our state's "First Virtual School" they can take this experience and use it in their futures.

I feel very blessed to have been a part of my students' lives and I also feel very secure about the future of the medical field. They have a better understanding of their bodies, they have a good idea of what careers they might go into, and they have matured. I feel quite confident they know what it will take to be successful in a college class now. It has been my pleasure to have this school year's students in my Virtual Classroom.

This spring in Advanced Multimedia Applications (AMA)

AMA students move ever closer to the end of the semester with many new skills. Before completing their final project, students are asked to analyze a multimedia presentation and then reflect on the skills they have acquired compared to what they have seen in the video.

Jazlyn Adams from J.I. Burton High School goes into her final assignment feeling confident:

How many of the multimedia tools that you saw in the video do YOU know how to use yourself now (even if just a wee bit)?

"I have learned a lot in this class, so I definitely feel more prepared than I was previously to use some of these tools. I feel comfortable using video, still shots, and audio. I think I should be pretty good using some different appeals and sticking to my audience, especially if I target my age (which I plan to do)."

Telena Turner from Ridgeview goes into her final project with confidence.

How many of the multimedia tools that you saw in the video do YOU know how to use yourself now (even if just a wee bit)?

"In class, we learned how to use camera angles, story, contrast, infographics, audio, background music, thematic appeals, and time lapses. I am extremely comfortable with using all these different multimedia tools, and seeing how he incorporated all of them into his own video to create one powerful and coherent message inspired me for our own final PSA assignment."

Alex Adkins from Central goes into his final assignment feeling confident as well.

How many of the multimedia tools that you saw in the video do YOU know how to use yourself now (even if just a wee bit)?

"I know how to use take video using different angles and shots to enhance the video, I know how to use appropriate audio to enhance the video, I know how to create info graphics that can relay information, and I know how to utilize still shots for enhancement."

All students will be moving into their final assignment for the semester which can be completed collaboratively or individually. Students will be creating a Public Service Announcement (PSA) that informs a target audience about a problem that their want to raise awareness about. They will plan brainstorm ideas, map out the way their will communication their message using storyboarding and then they will use their newly developed media creation and editing skills to create a multimedia presentation with a call to action. I look forward to the creations of this talented group of students!!

Wishing you all a safe and memorable summer :o)

CREATIVE WRITING

BARTER THEATRE'S YOUNG PLAYWRIGHT FESTIVAL!

WINNERS

A total of 286 students from nine area high schools participated in this year's Young Playwrights festival submitting 181 plays. This year's first place play, "Look Up," was written by Jacob Baker and Savannah Roberson of Castlewood High School in Castlewood, Virginia submitted through A. Linwood Holton Governor's School in Abingdon, Virginia.
-TimesNews

Three other HGS Creative Writing students received recognition as well. Kendra Woods and Emmily Woods of Castlewood High School were finalists, and Caramae Totten of Tazewell High School was a semi-finalist in the competition.

Kendra Woods won the 29th Annual Lonesome Pine Short Story Contest [High School Division] with her story, "How Much a Box Can Hold."

Student Reflections

I took World History online with Mark Hagy through the A. Linwood Holton Governor's School in 2007. I still remember the 7:20 AM course time with a mixture of fondness and dread. I am now in my third year as a PhD student in Russian History at UNC-Chapel Hill, with a BA in History from UVA. After a few years working as a teaching assistant of undergraduate history courses, I am increasingly aware of the quality of ALHGS's courses.

Mr. Hagy's World History course prepared me for the rigors of undergraduate history classes through his emphasis on essay writing and engagement with sources. I took a number of online courses, both through ALHGS and other programs, and they played a central role in my preparation for college. Interactions with students at both UVA and UNC have highlighted the uniqueness of my experience, as those from more economically dominant areas were less likely to have taken any online courses. ALHGS allows students in Southwest Virginia to be more competitive on both a state-wide and national level, by offering courses that are unavailable in local high schools.

Virginia Olmsted, Class of 2007
PhD Student of Russian and East European History
University of North Carolina, Chapel Hill

World Civilization

Standards: Dual Enrollment (6 credit hours)
Pre-requisites: U.S. & World History

The World Civilization course offers students an introduction to the history of humankind from prehistory to the twenty-first century. While the approach is similar to the Western Civilization course, this course has a global perspective. This course is designed to survey the Asian, African, Latin American, and European civilizations from the ancient period to the present. Students will find that World Civilization supplements rather than replaces the Western Civilization course.

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Bland County High
Carroll County High
Castlewood High
Central High
Chilhowie High
Council High
Eastside High
Fort Chiswell High
Galax City High
Gate City High

George Wythe High
Graham High
Grayson County High
Grundy High
Highland High
Holston High
Honaker High
Hurley High
J.I. Burton High
John Battle High
Lebanon High
Lee High
Marion Senior High

Northwood High
Patrick Henry High
Richlands High
Ridgeview High
Rural Retreat High
Rye Cove High
Tazewell High
Thomas Walker High
Twin Springs High
Twin Valley High
Union High
Virginia High

Participating Colleges

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

Our Mission

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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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Find us on to discover more about upcoming events!
Or, simply use it as another avenue to just "keep in touch."
We're there and waiting…and remember…
we are already one of *your* biggest fans!