



LIFE SCIENCE ACADEMY

February 2019 student produced Newsletter

Edited by: Leigha Mattingly
Cassidy Poynter, Olivia Taylor,
Emmylou Tidwell

Welcome to LSA - A Four Year Program

Highlights this year

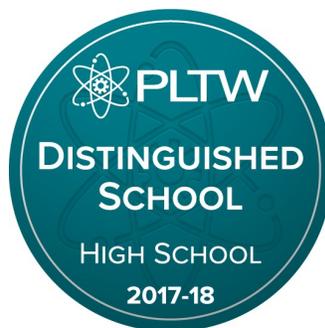
- Generosity through Community Benefit projects
- College Tours
- Favorite Labs
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Have you ever wanted to dissect an animal? Ever wondered how your body functions? Are you wanting to get involved in the science/medical field? If so, then LSA is for you! Taught by Chad Wilkerson, Jeanie Burden, Martha Sims, and Steve Hahus, LSA is a four year, dual-credit program open to all qualified high school students. Through project based coursework and partnerships with Owensboro Health, Owensboro Community and Technical College, and Project Lead The Way, LSA is an amazing program with extraordinary benefits to all those that participate. In the Life Science Academy, students explore the fields of biomedical science, human body systems, medical

interventions, and biomedical innovations. During their freshman year, students take the course Principles of Biomedical Science where they



study various medical conditions such as diabetes, sickle cell anemia, and heart disease. Students use what they learn to investigate the mysterious death of the fictitious Anna Garcia. In their second year of LSA students take Human

Body Systems. Students learn about the structure and makeup of the human body and how the systems of the body interact with each other. Students Third year LSA students take Medical Interventions where learn about certain medical devices and diagnostics, surgery, pharmacology, and immunology. There is a large focus on understanding cancer. As senior LSA students in Biomedical Innovations, students choose independent projects that address topics such as clinical medicine, physiology, biomedical engineering, and public health. This capstone course allows students to highlight the skills they have learned over the course of LSA.



Community Outreach

Every year just before the holidays, everyone at LSA gets together to give those who are less fortunate a joyful Christmas. We get into groups and work together to get the children at the Daniel Pitino shelter (ranging from ages 1-16), what they want for Christmas. The shelter provides the childrens' wish lists, as well as clothing sizes to give them everything they might want and need to

make their holiday season a great one. This all happens within a span of 2 weeks in which we bring in the presents, and during our Christmas party on the last day before Christmas break, we wrap the presents together. Overall it is an amazing time and fills everyone with so much joy to give the kids a Merry Christmas!



College Tours

LSA likes to take part in many forms of interaction with the community, including college visits and tours of the CDC in Atlanta (as Seniors). The college tours allow students to look ahead to their future and better prepare themselves for their career paths as adults. They give insight into colleges such as the University of Kentucky, University of Southern Indiana, Murray State University, Transylvania University (and others), that many students would not have access to otherwise. These tours are offered in group form, meaning

every grade present at the LSA has the opportunity to go on these day long tours. Many of our Juniors have participated in these tours and it has helped them to decide their college of choice! Along with these college visits are visits to the Owensboro hospital within student's respective grade levels.

"As a student, you gain immense knowledge about the inner-workings of a college environment, not to mention the use of important biological equipment that is necessary for pursuing a medical career. Not to mention student's take this class while on a college campus in a campus classroom."



Tim Minchin-

"Science is simply the word we use to describe a method of organizing our curiosity"

Two Favorite Labs



Deoxyribonucleic acid (DNA), is a molecule composed of two chains that coil around each other to form a double helix carrying the genetic information of an organism. It contains base pairs such as thymine and adenine that are joined by two hydrogen bonds, and guanine and cytosine that are joined by three hydrogen bonds. Nucleotides are the building blocks of DNA and are formed with a deoxyribose sugar molecule, a phosphate molecule, and base pairs (adenine, thymine, cytosine, or guanine). In the DNA extraction experiment, students extracted DNA samples from strawberries as well as their own DNA from saliva.



DNA extraction was performed using a buffer prepared from water, dishwashing detergent, and salt. Strawberries were mashed in a Ziploc bag containing buffer, sifted through a cheesecloth square, then poured into a conical tube. Afterwards, 95% alcohol was poured into the strawberry solution and allowed to set. After a while, the DNA precipitated and rose to the top of the alcohol layer where a glass stirring rod was used to pick up some of the DNA which looked stringy and clumpy. We used this experiment to help us analyze the DNA found at the mock crime scene of Anna Garcia and determine

One of our favorite experiments this year was performing an EKG that compares one's reflexes to their responses. By using a computer program, an EKG kit, and a digital reflex hammer we were able to see how fast our reflexes react to the stimulant of the hammer. We also recorded how fast we could respond to the sound of the hammer hitting a table. By comparing their speeds, we were able to see how important reflexes are. The speed of your reflexes is significantly faster than the time it takes for our brains to respond. This new knowledge provided us with a better understanding of our reflexes and their importance in our body.

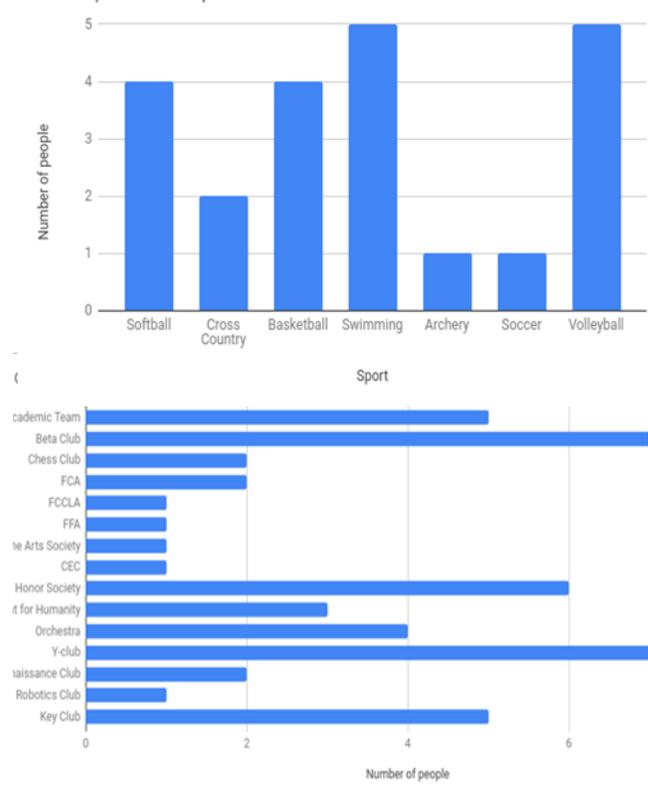


Extracurricular Activities

While the Life Science Academy is intended to be a challenge for students, it is not an all-time consuming class. Many students participate in school sports, including softball, cross country, basketball, swimming, archery, soccer, and volleyball. In addition, many of our students participate in various different extracurricular activities at school, including Academic Team, Beta club, CEC, Chess club, FCA, FCCLA, FFA, Fine Arts Society, Habitat for Humanity, Key Club, National Honor Society, Renaissance Club, Robotics Club, school orchestra, Y-club. Finally, many of our students do volunteer work and participate in various different organizations outside of school, including various different church youth groups, Wendell H. Ford Statesmanship Academy, Mayor's Youth Council, Impact 100 Next Generation, Kentucky Youth Chorale, and Owensboro Youth Symphony Orchestra. LSA has a very diverse group of students with many different interests outside of school, but they are all very well-rounded.



LSA Sport Participation



Alumni Feedback

The Life Science Academy has proven very helpful in post-graduate students. Emily Lynn, part of the first class to graduate in 2016 stated, "It helped me to come into college with confidence because I was more prepared for the curriculum. Even today, three years later, I still come across things I learned at LSA." Another graduate from the class of 2017, Ibraheem Murtaza said, "Aside from that, I am planning on graduating a year early and the 16 science elective credits I earned from LSA has also helped me towards this." Nate Martin, class of 2016, also added this, "LSA prepared me for the structure and expectations of a college level class."

Both students provide exemplary examples of the success' helped to be brought about by the Life Science Academy, this incredibly unique program not only helps students to pass their current high school classes, but in their life's paths as well. As stated by one of the teacher's here at the Life Science Academy "This program is truly amazing, I truly believe that students who partake in this course do better than those who are otherwise at the high school. I have seen students fail because of a lack of experience but this great, free program truly gives people a leg-up not only in their college credit hours, but in their experience of being in the college environment."- Steve Hahus.

"To catch the reader's attention, place an interesting sentence or quote from the story here."