



# Life Science Academy

JAN 2015 STUDENT PRODUCED NEWSLETTER



## LSA 4 Year Program

The Life Science Academy (LSA) is a multi-district biomedical science program serving high school students in the greater Owensboro Region. The Life Science Academy was founded to improve deficiencies in the numbers of health care

professionals in our area. Current LSA students can all confess that they have been educated through more hands on activities rather than your typical high school course that involves sitting in a boring classroom taking redundant notes throughout the day. Our main objective is to give our students four courses that allow them to get an early start on the health profession and bet-

ter insight on what they might want to be when they grow up. The LSA is made up of four



separate courses that cover different subjects and fields in biomedicine.

Freshmen make up the Principles of Biomedical Science (PBS) class (pictured at left) where stu-

dents are introduced to biomedical science with hands-on projects and problems. The class is based on the mysterious death of Anna Garcia in which students investigate a variety of health conditions that may have led to her early demise.

The sophomore class is called Human Body Systems (HBS). Students focus on the structures of human systems and

investigate identity, communication, power, movement, protection, and homeostasis.

Juniors enrolled in the Medical Intervention (MI) class follow the lives of a fictitious family to discover how certain medical interventions are used to help prevent, diagnose, and treat diseases and disorders. MI broadens the knowledge of certain health fields learned in the previous years and covers new ones.

Seniors will have a Biomedical Innovation class, starting in the Fall of 2015. Over the course of the year, students will create their own independent study in the design of innovative solutions to topics such as clinical medicine, physiology, biomedical engineering and public health. This class will help the students apply their knowledge from the classroom to the outside world.

By: Autumn Coomes & Shelby Wathen

## MI & Dr. Wilkerson

Dr. Chad Wilkerson is the newest addition to our great faculty (pictured below). He, like



Cancer Research Program where

our great HBS professors, comes to us from Owensboro Health. Dr. Wilkerson is a re-search scientist at the Owensboro

he is re-searching new technologies for cancer treatment and prevention.

He went to college at Brescia University and LSU where he earned his Master's and Ph.D. in Molecular and Cellular Biochemistry. He glad-



ly took the Medical Intervention (MI) Facilitator position (students at left) because he

enjoys classes that are project-based, which is what the LSA is all about!

By: Makailah Cecil & Wade Hall

# Favorite Labs

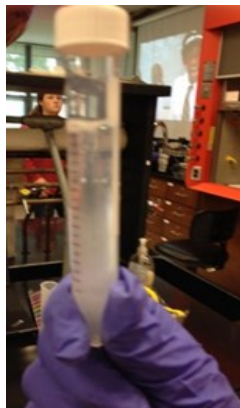
By: Savana Canary, Naomi Belcher  
& Miranda McCormick

*"I was always intrigued with science and anatomy, so it was natural for me to join."* - Kristina Canary (MI)



*"I joined the LSA because I love the opportunity to have hands-on experience in the medical field."* -Derek Osborne (PBS)

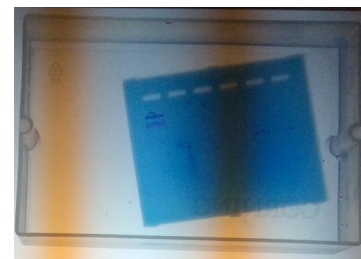
Our favorite lab in PBS was when we extracted DNA from our saliva! This was done by sterile salt solution being swished around in the mouth then spit back into the tube. Then we put alcohol in the tube with our sali-



va in it. After a while the DNA became visible, looking like white strings! Cow eye dissection was the best in HBS! First we made an incision in the cornea, then we removed all of the pieces of the eye from the iris to the retina. It was incredibly detailed and surprisingly beautiful. In MI, we tested our ability to sense a bitter taste, which was



voted a class favorite! We assayed our DNA for the genotype that allows bitter tastes and checked our results with a test strip for the genotype for bitter tastes. Results indicated the majority of the MI class tested positive; more than half of our class was able to taste bitterness!



*"I have learned about many topics. It has empowered me in many different ways. I have learned about sickle cell disease*

*and diabetes. I have also enjoyed dissecting a cow eye and visiting the hospital."* —Neil Madadi (HBS)

*"This class has definitely been my favorite experience in my high school career.*

*The class is not only a great learning opportunity but a place where you will*

*form strong ties not only with your fellow students, but with your teachers."* —Chelsea Sams (HBS)



@ UK



@ The Crime



@ Heart & Vascular



@ OCTC

## Student Life

By: Cameron Buckman, Will Boultinghouse, Kaleb Decker, Braden Johnson, Neil Madadi, Chance Meeks, Ibraheem Murtaza & Aman Singh

Students in the Life Science Academy are engaged in many different extra-curricular activities, summer camps, sports teams and other acclaimed groups and clubs. Two juniors in LSA have already scored a 35 on the ACT. Two of our other students have been to Washington D.C. for leadership camps dedicated to the medical field. Several are enrolled in other college level classes such as AP Physics, and AP Biology. Some of our students are also top-notch athletes, including 2 who were on the state runner-up team in girls' soccer this year. Neil Madadi, Ibraheem Murtaza, Mason Clark, Autumn Coomes, Jasmyne Post, Akeel

Kalik, Sonal Muthalali and Leslie Probus serve as volunteers at Owensboro Health. Eli Cooper, Aman Singh, Ibraheem Murtaza, Neil Madadi, Allison Wright, Will Boultinghouse, Chelsea Sams, Annie Miller, Elaine Leslie, Trey Kinison, Akeel Kalik, Max Smith, Jasmyne Post, Sonal Muthalali and Mason Clark are on the academic team.

Sports teams include: swimming- Eli Cooper, Franky Onley, Emily Clark, Ben Duncan and Annie Miller; cheer- Emily Clark, Savana Canary and Candace Young; track- Emily Clark, Kristina Canary, Rebekah O'Bryan and Boppa Godfrey; basketball-Rebekah O'Bryan, Naomi Belcher and

Miranda McCormick; volleyball-Tara Knott, Emily Haimes and Ally Mattingly, Autumn Coomes, Kristina Canary and Cassandra Blandford, football-Nate Martin; tennis- Neil Madadi, Ben Duncan, Maddy Van Hulse, Piper Cannon and Christiane Canant; soccer- Cameron Buckman and Trey Kinison; softball- Rebekah O'Bryan; and baseball- Blakely McCalister.

Our students are also in many leadership positions at their home high schools, such as Student Council, National Honor Society, Beta Club, and other organizations. Just ask any of them, and you will see how successful they are!



# Our Role in the Community

Community service is a big deal at the LSA. This year we participated in an Alternative Spring Break, a Community Project and a Christmas Campaign with the Pitino Shelter!

This past spring break, some of the LSA students traveled to Appalachia to help Eula Hall (pictured below with students). She has shown how one woman can make a difference through understanding the nexus between politics, wealth, labor and disease. Eula built her own health care clinic in the heart of Appalachia to provide people with free care.

this project comes around, we combine into small groups to come up with ideas



to educate or fundraise for a health issue in our community. Each group develops an idea and writes a grant proposal. Then we pitch our ideas to an expert panel. Then with the panel's results and a class vote, the winner's idea is placed into action. Last year the LSA did "Hearts @

Play: A Field Day for Heart Health" with more than 100 girls from Girls Inc. (pictured above).

Right now we are working on our grant proposals for our next project! We asked some of our fellow classmates about their group's ideas. Ashton Crowe's group plans to do a Date Night for parents in Owensboro with proceeds to go toward breast cancer research and

awareness. Annie Miller excitedly told us that her group's idea is to hold an "Everybody is a Person Party" in partnership with a local agency dedicated to working with people with mental and physical disabilities. Our class has many ideas for this year's event, and we can't wait to see what happens!

We have started a new Christmas tradition of community service. This year we partnered with the Daniel Pitino Shelter to help needy children have the Christmas

they've always dreamed of. Groups of LSA students each "adopted" a child from the Pitino Shelter and granted their desired Christmas wishes (pictured below). The students and their families

provided more than 75 gifts for 13 underprivileged children staying at the shelter.



Christmas is about giving and spreading joy and Miranda McCormick summed it up best with this quote, "... we feel that helping the Pitino shelter is important in our community because the LSA believes that we should give back to those who need it."

## College Trip

On September 26th, some of our juniors and sophomores took a trip to the University of Kentucky campus to learn about nursing, pharmacy, and physiology. During our trip, our students got to observe demonstrations performed by Dr. Dexter Speck (Science Outreach and Physiology) including: demonstrations of the motion of joints, ultrasonography, and lectures about various preserved specimens. The students also got to tour a mock-up of the new Universi-

ty of Kentucky Hospital with Kerrie Moore (Student Affairs and Nursing),



seeing the life-like human analogues used to train nursing students.

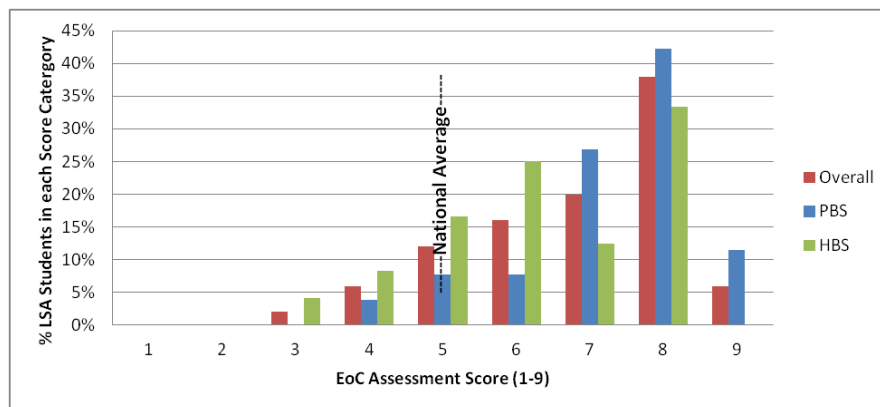
Our students also learned about the possible educational opportunities at UK. They were given information about the Public Health degree pathway from a student at the university, along with degrees in other health-related fields. Our students got to see the best that UK has to offer!

By: Alek Blandford & Elaine Leslie

# Assessment Success!

By: Dakota Edgell, Makayla Claiborne, Nikita Gupta,  
Jenna Jones & Marie McClary

The Life Science Academy is filled with brilliant minds and last year's end of course (EoC) assessment scores prove it! LSA students participate in national EoC Assessment every year through Project Lead the Way, a leader in STEM (science, technology, engineering and math) education. Our students consistently outperform the national average (see figure). We scored in the top 25% nationally, thanks to our wonderful teachers. On average a student was expected to get a 4-6, but as you can see we only had few scores in that range and most scored above (7-9). Over 80% of the students achieved mastery of the content of the course and some even achieved a nine,



the highest score possible! These scores show LSA students are well-prepared for a future in biomedical science! We are very proud of our LSA students!

## Interview Excerpts from the Pros

By: Emily Clark, Olivia Clements, Robert Daley,  
Jacob Howard, Makenzie Nelson, Frankey Onley  
& Adrienne Peech

Many of us here at the Life Science Academy have hopes of becoming a medical professional when we get older. The following excerpts are from interviews we conducted with the pros and highlight our favorite quotes and stories.

"When I was drawing blood for a drug test for a teacher. She had her young son with her. When he found out that I 'liked to draw too', he asked me for some crayons and a piece of paper."

—Sandy Bivens RN, Methodist

"My most memorable experience was when I was working to save dying patients." —Roger Adams, former laboratory director at Daviess County Hospital

"I always enjoyed math and science classes in school and wanted to be challenged in those classes. In high school, I volunteered at the hospital and shadowed doctors, which helped me decide that this

was what I wanted to do."

—Dr. Hulse, Orthopedic Surgeon

"I decided when I was a Junior in High School that I wanted to be a Nurse. I loved the idea of helping others and felt this is how I was going to accomplish this goal." —Dana Burch, RN

"I find my career so rewarding. I work in the NICU and see 2 lb babies grow over the weeks to become chubby little 6 pounders when they go home...I cannot imagine a more rewarding place to work."

—Candace Lanham, Nurse

"[The LSA] challenges students to think critically and gives them a taste of a future career in the sciences."

—Dr. Martin, Pediatrician

"[The LSA] is part of enhancing the medical field in our area...it is a great opportunity to learn more about Life Science

careers to assist students in choosing their career paths."

—Dana Burch, RN



We get access to many pros in the LSA. This year, Mr. Jones, Daviess County Coroner, received a Certificate of Appreciation for his continued involvement in the LSA.



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