

BITS & BYTES

THE OFFICIAL NEWSLETTER OF BRBYTES

BATON ROUGE: BRINGING YOUTH TECHNOLOGY, EDUCATION, AND SUCCESS

BRBytes teacher earns certification through new LSU program, plans to start robotics team at Istrouma

Brandon Sylve is the first to begin teaching through the Louisiana State University's new STEM Practitioner Teacher Alternative Certification Program.

Sylve graduated from LSU in December 2020 with his bachelor's degree in computer science and second discipline in software engineering. He is currently teaching Algebra I and BRBytes' Introduction to Computational Thinking course at Istrouma High School in Baton Rouge.

Sylve is passionate about computer science and robotics, and he is looking forward to sharing his knowledge with his students.

"I'm a puzzle type person," he said. "I love solving puzzles and using logic and ideas to figure out solutions, so that's one of the reasons computer science is so great for me, to present a problem and figure out how to break it down, and I'm excited to instill that level of thinking."

Originally, Sylve did not plan on teaching. He started at LSU with the goal of becoming a programmer, but he changed his mind along the way.

"I started realizing I love programming, but I could not do this for a living," he said. "It's nice, but nine to five coding all day isn't for me."

This realization led Sylve to reconsider teaching as a career. He had helped one of his high school teachers with her Algebra I class before and, based on that experience, said "teaching was always just something I naturally liked."

Coincidentally, it was not long after this realization that Sylve received an email inviting him to attend an informational session about a new LSU program, the STEM Practitioner Teacher Alternative Certification Program. He learned he could complete his computer science degree while taking a few education classes at LSU, begin teaching full-time right after graduation, and earn his teaching certification after a



Brandon Sylve

year of teaching. It was the perfect fit.

Though he's teaching both algebra and computer science this year, Sylve said, in his ideal world, he would be a full-time computer science teacher. He is hoping to attend BRBytes professional development over the summer to add another computer science course to his teaching repertoire this year.

Eventually, Sylve hopes to earn his master's and PhD in computer science education.

"My long-term goal is I want to teach at the college level," he said. "I love the material that college can offer."

In addition to classroom teaching, Sylve plans to start a robotics team at Istrouma.

"I'm going to try to get the robotics team going because I love robotics," he said. "I have a passion for it and... I love passing that knowledge and abilities on to other people."

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The team would compete in the FIRST Robotics Competition, an annual event for high school robotics teams hosted by FIRST (For Inspiration and Recognition of Science and Technology).

“The competitions can be anything, like one year that I did it, I had to [build a robot to] pick up an eight inch foam basketball and shoot it and make goals. One year was frisbee throwing,” Sylve said. “Every year is a different competition, and there’s always some extra gimmick too that you can get extra points. One year it was you had to create like a little tiny mini bot that your robot can release and it climbs a pole.”

The robotics team would also provide opportunities for student leadership.

“You can have it almost completely student run,” Sylve said. “When it’s student run, you have some students who are working on the marketing side of it, where they’re working to try to get sponsorships and trying to advertise, and then you have some students who are better at building, some students who are better on the programming side of it, some students who do better on the wiring. It’s so diverse and different skill sets that it’s not just robotics.”

LSU STEM Practitioner Teacher Alternative Certification Program & the SEED Scholarship

Computer science students pursuing the LSU STEM Practitioner Teacher Alternative Certification Program are required to take five specific courses to obtain education as a second discipline in their undergraduate studies. Most of these classes are cross-listed with the Geaux Teach program.

“There’s a lot of support on the Geaux Teach side to help us,” said Brandon Sylve, the first program participant to begin his full-time teaching experience.

Students are also required to take a class at LSU to learn how to teach BRBytes’ Introduction to Computational Thinking curriculum.

After graduating, students complete a one-year paid full-time teaching internship at a local school and must pass all Praxis Tests required to teach high school computer science in Louisiana to earn their teaching certification. This is the step Sylve is on now. He is teaching Algebra I and Introduction to Computational Thinking at Istrouma High School and will earn his teaching certification in December 2021.

Sylve’s efforts are being supported by the SEED Scholarship, offered by LSU and financed in part by the U.S. Department of Education. The scholarship is designed for “LSU computer science students who are interested in teaching computer science,” according to the LSU website.

The SEED Scholarship offers a \$7,000 stipend for students during their undergraduate study, covers the cost of registration for the required Praxis exams, and ensures school placement for the full-time teaching portion of the program, according to the website.

For more information about the LSU STEM Practitioner Teacher Alternative Certification Program and SEED Scholarship, please visit <https://www.lsu.edu/eng/cse/academics/undergraduate/seedteachcsc.php>.

Computer Science Career of the Month:

Computer Information Researcher

Computer information researchers evaluate existing computing technologies and improve them in order to solve problems in organizations. They work in industries like business, science and medicine, and they can specialize in robotics, data science or programming. Computer information researchers earn \$99,686 to \$148,158 annually and jobs in this field are expected to grow by 16% from 2018 to 2028. It is recommended that you earn a master’s degree in computer science, information technology, or a related field if you are interested in a career in computer information research. You should also build your skills in software development, machine learning, data analysis, UNIX, and programming languages.

Source: computerscience.org

ANNOUNCEMENTS

BRBytes is seeking collaboration with new teachers, schools, and districts! If you know of anyone who may be interested, please send their contact information to us at info@brbytes.org.

Our next Community of Practice Meeting is scheduled for Thursday, Feb. 18 and Saturday, Feb. 20. Remember, if you are teaching a BRBytes course this semester, you must attend a session.

Hack-A-Thon has been re-scheduled for Friday, April 30.
Stay tuned for more information!

View our curriculum on our website! The BRBytes program utilizes the open sourced curriculum from LSU’s Computing Pathway. We invite public comment and review.



web: brbytes.org
email: info@brbytes.org

partners & funding agencies:



STUDENT SPOTLIGHT | TI' LEAH GREEN

Coding is something that just makes sense to Ti'Leah Green, senior at Belaire High School in Baton Rouge.

She has taken the BRBytes Introduction to Computational Thinking and Survey of Computer Science courses, as well as another computer science course that was offered her sophomore year, before the BRBytes curriculum was added at her school.

"I like making codes now that I'm really understanding it," she said.

Green said there are some things she can just look at and know she can code.

"Say for instance there is a billboard sign and I know the certain coordinates for how big the letters are," she said. "I can pull up CodeWorld and code it on there."

This school year began with Green making a code to write her name, and recently she has been working on making a bird by adding color to the picture. Her favorite coding project was completed on CodeWorld.

"It was a rectangle inside of a circle and when I did it, it was like I put my name on there and then I put the color on it," Green said. "That's when I really started to get used to the coding. I was like, 'Oh, I could do this.'"

When Green struggles with a code,

she has several methods of overcoming the challenge.

"Sometimes I do get confused with some stuff, but I can break it down to myself and understand it," she said. "If I do need some help, I end up looking back at some stuff that I previously did, like some notes and stuff on the stuff that I'm doing now."

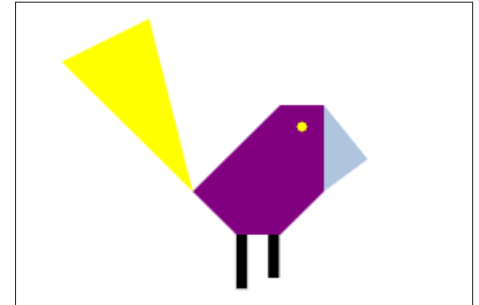
Green also gets help from classmates, who she helps in return, and her computer science teacher, Brittany Jackson.

"[Jackson's] a very big help with me because sometimes when I don't understand anything or when I just need somebody to talk to, she's always there for me and she listens," Green said. "You know, some people, they listen to you, but they won't really give good feedback on what you're saying and stuff like that? She is one person that really listens to me and really helped me with my school and even personal problems. She's always there for me."

As she looks forward to her future career, Green is torn between two options.

"I've been wanting to be a chef since I was in kindergarten really, and I like to cook," she said. She has also been considering going to Louisiana State University for computer science.

"It's either I'm gonna go to college



Coded Designs by Ti'Leah Green

for computer science or I'm going to go for culinary arts," Green said. "I'm really leaning towards computer science because it somewhat excites me a little bit more than culinary arts now because I'm understanding more."

If she pursues computer science, Green said she is interested in becoming a tech engineer.

Have you seen our new website? Check out what's new at brbytes.org!

As you have noticed, the BRBytes website has undergone a makeover, and we are very excited for you to explore the new site!

You can scroll through the banner at the top of the homepage to see announcements and upcoming dates. Also on the homepage is some information about BRBytes and the necessity of computer science education.

The "teachers" tab provides links with direct access to the BRBytes teacher portal, the Mattermost community support chat, and Etherpad. There you can also find the dates for upcoming community of practice meetings.

The "students" tab still takes students to the BRBytes course list for them to choose their course and login.

The "parents" tab provides information on computer science pathways and BRBytes course descriptions. Coming soon

will be information on computer science careers.

The "news" tab can take you to the BRBytes newsletter archive and announcements pages.

Finally, check out the "about" tab to learn more about BRBytes and our goals. Coming soon, you will be able to see all participating schools and meet our team of researchers, educators, and staff.

Baton Rouge:
 Bringing Youth Technology,
 Education and Success

Contact BRBytes: info@brbytes.org

TEACHERS

STUDENTS

PARENTS

SCHOOLS

NEWS

ABOUT

Happy Mardi Gras, from BRBytes!

Community of Practice

Thursday, February 18 at 6 p.m. —OR— Saturday, February 20 at 9 a.m.

BRBytes was formed through a Research Practitioner Partnership between East Baton Rouge Parish School System (EBRPSS) and Louisiana State University (LSU) to bridge the gap in computer science and computational thinking education in Louisiana. The program does this by developing and implementing several middle and high school courses in EBRPSS and surrounding school districts.

CLASSROOM SPOTLIGHT

BRITTANY JACKSON | BELAIRE HIGH

SURVEY OF COMPUTER SCIENCE & INTRODUCTION TO COMPUTATIONAL THINKING

Brittany Jackson graduated Howard University as a computer engineer and gained nine years of industry experience. Now, she is sharing her passion and knowledge with her students as a computer science and robotics teacher at Belaire High School in Baton Rouge.

“As long as I get to teach what I’m passionate about to students who are just like me when I was younger... I’m happy,” she said.

Jackson currently teaches Introduction to Robotics and BRBytes courses Introduction to Computational Thinking and Survey of Computer Science.

“I love [BRBytes] because it deals with a lot of stuff that [students will] learn if they decide to take this on post-secondary to college and to actually work in the industry,” she said. “I like that it’s also not just boring computer stuff. They make it hands on.”

In addition to teaching two BRBytes courses, Jackson was part of a small team that helped create the pilot for the Survey of Computer Science course, based on the computer science principles’ seven big ideas.

“We had to find standards for each idea and then find activities that really explained and that would help the kids understand each idea,” she said. “We kind of split up into partners and everybody took a big idea and then we all came together and brought it together.”

There are a few best practices Jackson utilizes to keep her students learning and motivated. At the top of her list is genuinely making sure each student understands the material.

“I legit get with each child and I ask them ‘Are you lost? What do you understand? What don’t you understand?’” she said. “And when I do that with one child... if the other students feel the same way, they’re like, ‘Yeah, Ms. Jackson, I’m having issues with this part too.’”

She uses different motivational techniques, like showing her students videos from motivational speaker Eric Thomas (YouTube Username: etthehiphop-preacher). The class also takes time to discuss what is going on in their lives, which fosters positive class culture.

In Survey of Computer Science, Jackson’s students recently learned about cryptography, and she said “they feel like they’re hackers.”

“It’s giving them a different perspective on internet security,” Jackson said. “A lot of them have created algorithms and changed their passwords on all the websites because they don’t want a hacker to get their information.”

During cryptography, her students also had fun creating messages for her and other teachers to decipher.

“[One of the football coaches] came in, and my kids had just learned how to do a rail fence cipher, and so they were giving him this message, and he was trying to figure it out, and I’m giving him the key and trying to help him understand how to actually decipher the secret message,” Jackson said. “He came in here every day this week just to see what new message they had for him.”

“I love the fact that it made my kids become creative, like instead of short messages, they were figuring out different messages and different keys,” she said.

Jackson’s favorite activity was during the unit on domain name systems and IP addresses.

“I ended up creating an activity within this section where they were FBI agents, and they had to play as the lady from Criminal Minds, you know, and we had

to figure out, like what location was this person in at this time,” she said. “A lot of teachers came in and they were playing as different criminals and they were like ‘You have to prove that I was here at this time.’”

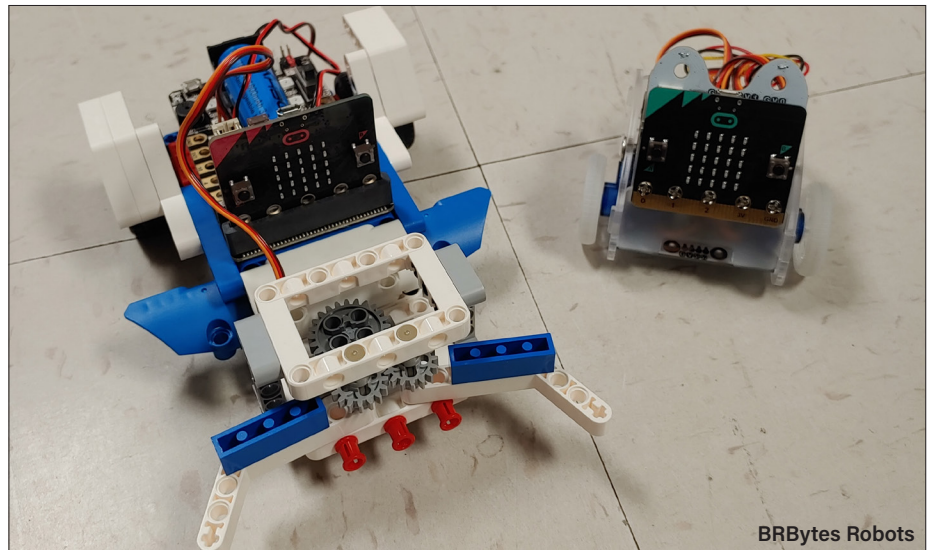
Jackson has been proud of her students’ successes and plans for the future.

“For the past two years, I have had at least one senior, who was not planning on going to school for computer science, actually go to school and major in computer science, just from being in my class that one year,” she said. “I’m grateful, and now I’m just on a scholarship scavenger hunt for them because I want to make sure that they stay there, you know, and have the money to actually succeed.”

Jackson also started a robotics team at Belaire, which had its first year of competition in the 2019-2020 school year.

“My students made it all the way to the world competition,” she said. “They were state finalists, and so they were supposed to compete at the world competition. And that was just beyond exciting for us, that in our very first year we were able to make it all the way to the end pretty much, and we received so much recognition.”

The robotics and computer science experience Jackson’s students are gaining through the team and their classes is just the beginning of a bright future for them.



BRBytes Robots