

# BITS & BYTES

THE OFFICIAL NEWSLETTER OF BRBYTES

BATON ROUGE: BRINGING YOUTH TECHNOLOGY, EDUCATION, AND SUCCESS

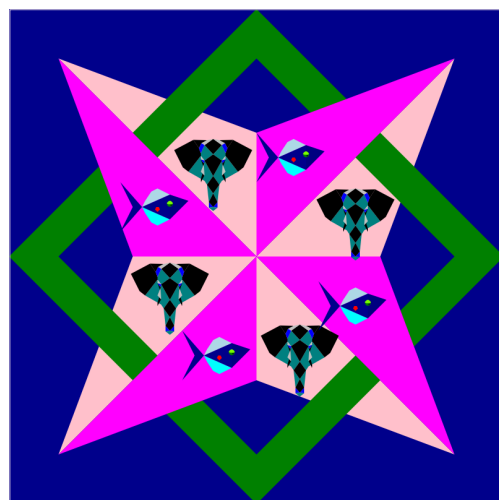
## Goodbye 2020-21, Hello 2021-22!

The 2020-21 school year was full of obstacles, and yet BRBytes was able to achieve success in expanding computer science education in Louisiana.

Covid-19 brought virtual and hybrid learning to K-12 classrooms, requiring schools and teachers to develop new procedures and strategies to educate their students. The BRBytes program also adapted to provide summer training for teachers in a completely virtual format for the first time ever. On top of these challenges, many BRBytes teachers were in their first year of teaching an unfamiliar curriculum.

In the midst of learning how to adapt to

*see End of Year, page 3*



### BRBytes to Participate in the 2021 STEM for All Video Showcase: May 11-18

BRBytes will be featured in the 2021 STEM for All Video Showcase funded by the National Science Foundation. This annual online event will be held May 11-18, 2021. The theme for this year is: Covid, Equity & Social Justice.

Now in its seventh year, the annual showcase will feature over 250 innovative projects aimed at improving Science, Math, Engineering and Computer Science education, which have been funded by the National Science Foundation and other federal agencies. During the eight day event, teachers, students, parents, researchers, practitioners, policy makers and members of the public are invited to view the short three minute videos, discuss them with the presenters online and vote for their favorites.

The BRBytes video features commentary from project leaders and teachers at Louisiana State University and the East Baton Rouge Parish School System. You can support BRBytes by viewing our video and voting for it at <https://stemforall2021.videohall.com/presentations/2215>. All project videos can be viewed at <https://stemforall2021.videohall.com/>.



Visit <https://stemforall2021.videohall.com/presentations/2215> to vote for our video to win the public choice award!

### IN THIS ISSUE

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# Virtual 2021 Summer Training Institute

Due to the continued uncertainties of the coronavirus pandemic, we will be offering this year's summer training for the LSU STEM Pathways in a virtual setting, with some required Saturday workshops this fall and next spring. Synchronous online meetings will occur at different points each day between **8 AM - 1 PM** and/or **12:00 PM - 5:00 PM**. Group synchronous time will be **12:00 PM - 1:00 PM** each day. Assignments and asynchronous materials will be completed between each synchronous online meeting. Courses available for graduate credit are denoted with a ✓

<p><b>Session I: June 7 to June 22</b> 12 Days: M 6/7 - F 6/11, M 6/14 - F 6/18, M 6/21 - T 6/22</p>	<p><b>Session II: June 23 to July 9</b> 12 Days: W 6/23 - F 6/25, M 6/28 - F 7/2, T 7/6 - F 7/9</p>
<p><b>Cybersecurity (CYB)</b> AM Synchronous — No Prerequisites</p>	<p><b>Survey of Computer Science (SCS) ✓</b> AM Synchronous — No Prerequisites</p>
<p><b>Introduction to STEM Pathways and Careers (ISPC)</b> AM and PM Synchronous — No Prerequisites</p>	<p><b>Interactive Computing (INCO)</b> PM Synchronous — Pilot Prerequisite: Introduction to Computational Thinking</p>
<p><b>Introduction to Computational Thinking I (ICT) ✓</b> AM Synchronous + Daily Homework — No Prerequisite Introduction to Computational Thinking II Required</p>	<p><b>Introduction to Computational Thinking II (ICT) ✓</b> AM Synchronous + Daily Homework Prerequisite: Introduction to Computational Thinking I</p>
<p><b>Data Manipulation and Analysis (DMA) ✓</b> AM Synchronous — Prerequisite: Introduction to Computational Thinking</p>	
<p><b>Programming for STEM (PRG)</b> Available on request to teachers who have taught at least two of the following programming courses: ICT, DMA, INCO</p>	

**Computer Science  
Career of the Month:**

**Software Developer**

Software developers design and create computer programs. They test software and write code. Their average salary ranges from \$61,140 to \$90,573, and jobs are expected to grow by 22% by 2029. If you are interested in pursuing a career in software development, you should earn your bachelor's degree in software development or a related field, like computer science or computer programming. You should also gain experience through internships, earn industry-based certifications, and learn several computer languages.

*Source: computerscience.org*

## ANNOUNCEMENTS

Summer training for new teachers and returning teachers adding a new course to their BRBytes teaching repertoire will take place June 7 to July 9. Contact us at [info@brbytes.org](mailto:info@brbytes.org) for more information. We hope to see you there!

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](mailto:info@brbytes.org).

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](http://brbytes.org)  
email: [info@brbytes.org](mailto:info@brbytes.org)

partners & funding agencies:



# CLASSROOM SPOTLIGHT

TAMMY WASHINGTON | ISTROUMA MIDDLE MAGNET  
COMPUTING EVERYWHERE & SURVEY OF COMPUTER SCIENCE

Teaching students to teach themselves is one of Tammy Washington's favorite things to do in her classes.

Washington teaches Computing Everywhere (CEW) and Survey of Computer Science (SCS) at Istrouma Middle Magnet School.

In SCS, she taught her students how to find the answers to their own questions during a website coding activity. Washington said she created a skeleton program for their websites. Students were then able to look up HTML codes and experiment by adding website features and customizing the colors to make their own unique websites.

"Instead of me just telling them, they were actually working together and learning on their own and learning at their own pace," Washington said.

Students were able to debug, change, upgrade, and update their websites by researching how to make the changes themselves.

Washington tries to keep the class on pace and working together so no one gets too far behind.

"Here's what I tell the students who are behind: 'If you're always doing the work that's behind you,'" she said, "you can never be with the class and you will always be behind."

Because of this, when she is teaching, students are expected to be doing the assignment of the day. Then, when they finish, they can complete assignments they might have fallen behind on.

Students falling behind or not understanding the material has been a particular challenge this year, with many of Washington's students learning virtually.

"Teachers are used to being able to go to a student and ask them 'do you understand?' And they say 'yeah,' and we're used to seeing their moves and their expressions to understand whether or not they really understand," she said. "Even though they don't want to say they don't understand, we can see that they don't and then we know what to do from there."

However, with students not turning on their cameras virtually, it can be hard to tell who is actually understanding the material.

Despite challenges like this, Washington has seen many of her students flourish in the BRBytes courses.

"I had this little young man [in CEW] and I was just explaining Scratch to him, he was just 'Ms. Washington, can I do the assignment now?' I said, 'I'm trying to show you how to do it.' He said, 'yeah, okay, thank you, but can I do it now? I

know how to do it.' And he just started doing it... [he] was way ahead of everybody," she said.

That student stays ahead of the class and writes his own code in his free time, and he isn't the only one finding success in these courses.

"I have a lot of students who are taking the course seriously and enjoying and learning very much," Washington said. "I think we sometimes, as teachers, we speak on what we need to correct because we figure if we correct the 5-10% then it makes us have hundred percent, but it's good to hear about the 80-90% that we know are doing outstanding."

This is Washington's first year teaching BRBytes courses, and she is enjoying it.

"It's a break for me from the traditional career courses," she said. "It touches on so many different avenues, you know, you have cybersecurity, you have programming, writing programs, you touch on so many different careers that's outside of the norm that we normally see as teachers, and that's opened up avenues for the students to see them as well."

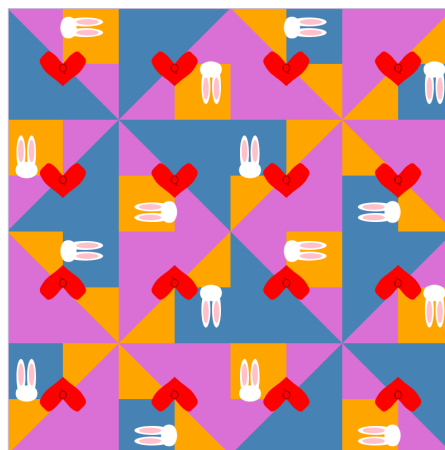
BRBytes is making computing seem relevant to her students, and Washington said "when they see things as relevant, you never know who's going to come out as a shining star."

## from *End of Year, page 1*

new methods of teaching brought on by Covid-19, hurricanes and ice storms closed schools across the state, bringing further complication to an already difficult school year.

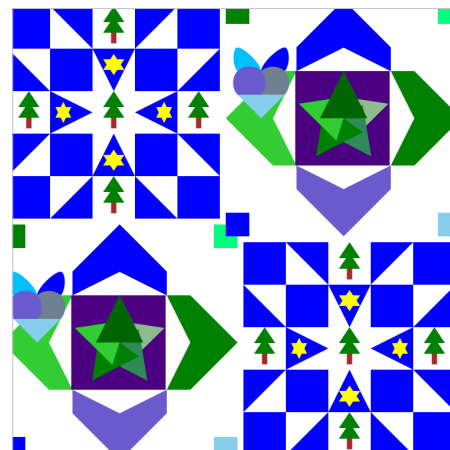
Much has changed over the course of the tumultuous 2020-21 school year, but as we near the end of it, we want to thank all BRBytes teachers for their adaptability, determination, and resilience. It is through their perseverance that we were able to bring computer science education to over 2,000 students this year.

BRBytes classes are now being taught in 30 schools across 14 parishes, and we are excited to be expanding to many new schools and parishes for the 2021-22



school year.

Summer training for new teachers and those wanting to add another



BRBytes course or two to their teaching repertoire will be held June 7 to July 9, 2021. We hope to see you there!

# CLASSROOM SPOTLIGHT

KATY ULLRICH | LIBERTY HIGH  
INTRODUCTION TO COMPUTATIONAL THINKING

Anything that gets students excited about programming is something Katy Ullrich is into.

Ullrich is an Introduction to Computational Thinking teacher at Liberty High School. Over the past few years, she has started and advised several clubs, all with the goal of fostering student interest in computing and growing the computer science program at Liberty.

Though Covid has made it difficult to lead clubs this year, Ullrich typically advises Girls Who Code, CyberPatriot, the Computer Science Honor Society, and middle and high school robotics teams.

"I think some people think, you know, only nerds program, but actually it's really fun and I want students to know that it's engaging too," Ullrich said.

Ullrich observed that most of her classes are male-dominated. Because of this, Girls Who Code provides "an opportunity for girls to come together with other girls that program and code and make projects and have a club that's just their own," she said.

CyberPatriot is a national program led by the Air Force Association that focuses on cybersecurity and other STEM disciplines. The JROTC program at Liberty High has a team that competes in the All Service Division while Ullrich coaches the civilian team in the Open Division.

Ullrich said Liberty is one of only two Louisiana schools to have a Computer Science Honor Society. This group puts focus on both grades and service.

"The idea behind it is not only to have good grades within computer science, but to give back," Ullrich said. "What we wanted to do this year, which we couldn't because of Covid, was go into the elementary schools and code with the little kids, the kindergartners, the first graders, and so that's what we hope to do post-pandemic."

The honor society also hosts an induction ceremony. Recently, eight new

students were inducted at Liberty.

Through her work to bring additional computer science opportunities to the students at Liberty, Ullrich was awarded with the National Center for Women and Information Technology's Aspirations in Computing Louisiana Educator Award in 2020.

"I've really tried to make a concerted effort at recruiting women into technology," Ullrich said.

Last year, one of her students also received an award from the same organization.

Before teaching computer science, Ullrich earned her undergraduate degree in business and spent 10 years in the corporate world before transitioning into teaching. She began as a business teacher, but her position evolved when the school needed someone to teach web design and then, eventually, computer science.

Ullrich's approach to these new subjects has been "I can figure out how to do that" and because of this she is completely self-taught and knows four programming languages.

"It's my favorite thing to teach," she said. "It's the only thing I really want to teach."

Ullrich was one of the first teachers to pilot BRBytes courses at Liberty High.

"I think the curriculum is phenomenal, and I tell my students all the time how lucky they are to be at a school that offers this curriculum because there's nothing else like it being offered, both statewide and nationally," Ullrich said.

For students, taking BRBytes courses is a step towards excitement and engagement in computer science that will help them succeed in the future.

"I have a lot of students that number one, realize that they're really good at it, and they may never have thought that before," Ullrich said. "And two, it really sparks an interest in something they enjoy, and if they hadn't taken the course, they may never have found that passion."

