



COMPUTER SCIENCE

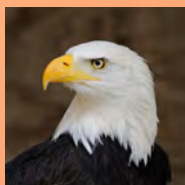
in

ARKANSAS



SUMMER PARTICIPANTS REFLECT ON CSFORAR PROFESSIONAL DEVELOPMENT

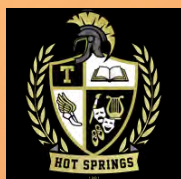
Summer 2020 was a busy and eventful summer for the CSforAR Team. For the first time, the CS Specialists digitally provided more than 300 hours of professional development to educators all across Arkansas using Zoom. From early June’s K-4 Introduction to Computer Science through the concluding July’s Advanced Java, 468 unique Arkansas educators received CS training this summer. Despite this new digital format, the CSforAR Team was proud of the work accomplished this summer, and they received a lot of feedback from educators that participated in this summer PD sessions. Here is what some participants shared:



Des Arc School District

“Summer PD has been different this year. However, what has remained the same is the commitment of our CS Specialists and educators. I am always excited to engage in learning with the CSforAR team because of the innovative ways our team works together. The advanced Python training with Zack Spink, Jim Furniss and Eli McRae pushed my thinking and gave me the opportunity to learn new skills and projects for my students to code in the future. Thank you to the top notch team for always putting AR kids first! :)”

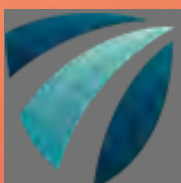
- Alison Cox, Des Arc School District



Hot Springs School District

“Initially I was apprehensive about attending the ARKANSAS K-8 Computer Science Lead Teacher professional development, but after attending, I would highly recommend it to all Arkansas educators. This 5-day training provided attendees with a foundational understanding on Computer Science, numerous ways to easily implement CS activities in our schools, and valuable resources that can be used to help other educators.

Due to COVID-19, the PD this summer was offered virtually, but it did not disappoint. The presenters did an amazing job of providing help to teachers who were more inexperienced, while also providing new information and learning opportunities to those who were already more knowledgeable about CS. Those that wish to complete the Lead Teacher program were given the information needed to do so, and those who may choose not to were empowered with the knowledge to better incorporate computer science and to be a CS resource for their school. The training provided many opportunities to collaborate with other teachers and numerous resources that can immediately be implemented in our schools and classrooms.



Bentonville School District

I was also grateful that we were given the opportunity to complete activities that can apply in a blended or virtual learning environment. There was so much information provided, but it was presented well and was engaging even with the online platform. I was impressed by how patient and helpful everyone was. Thank you so much! I look forward to my next training with the CSforAR team!”

- Barbara Thrasher, Hot Springs School District

"I have never had any formal training in Python. Everything I knew up until taking this training were concepts and techniques I taught myself or learned from watching YouTube or reading online. Most was taking concepts I knew from Java and simply reformatting them to make them work in Python. So, when I heard at the end of last school year [that] the state was offering through the co-ops Advanced Python and Advanced Java training this summer... I jumped at the chance!

I've completed the Python training, and was not disappointed. Our teacher was Zack Spink. Mr. Spink came to our school a couple of years ago to give teachers and students training on Unity3D so that we could fully realize the potential of the new Oculus Rift VR packages every high school received. He did a great job and I was looking forward to hearing from him again.

Mr. Spink kept his training on point and showed us how to do all of the things he said that he would. He even gave us several choices on what to learn. I took away from his training several new insights into how Python works differently from Java or C++ and knowledge of several new websites to learn from. This new knowledge will be very useful in the coming years to show students how to tackle problems in various languages. The training was fun and relatively easy. I would highly recommend it to anyone who is interested in learning more about Python."

- Chris Olson, Bentonville School District

Learn from Arkansas' digital economy quest

By Ray Tsuchiyama

students studied CS,

ISLAND VOICES

school student CS

course to count in place of a high school fourth-year math or

YOUTH

Continued from E1

way to authentically elevate our

CSFORAR TEAM HIGHLIGHTED NATIONALLY

The CSforAR Team is diligently promoting the wonderful things happening in CS education in our great state! Some of the team members have recently been able to share this exciting news outside of Arkansas.

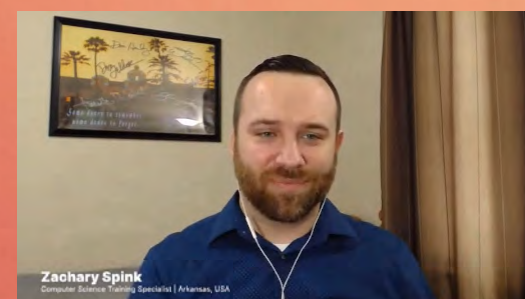
Anthony Owen, State Director of Computer Science, met Ray Tsuchiyama, a Technology Consultant in Hawaii, at a Code.org conference a couple years ago. During that conference, Mr. Owen spent time with Hawaii representatives and informed them about Governor Hutchinson's guidance of the Computer Science work of the state. Mr. Owen is featured in an interview with ThinkTech Hawaii, a response to an article written by Mr. Tsuchiyama that was published in the Honolulu Star-Advertiser paper. You can see the interview here: <https://youtu.be/1Rao9dbwMrU>

CS Specialist Tammy Glass was recently selected as a National Math and Science Institute (NMSI) Computer Science Coach and Content Developer. Glass was also selected as one out of three educators chosen to serve on the AP CS Principles Curriculum Development Team for NMSI. (include photo). Glass's recently presentation, a NMSI Ed Talk titled "Destination Unknown," can be viewed here: <https://bit.ly/NEDTalkVideoTammy2020>



CS Specialist Zackary Spink, was invited to provide commentary for the online course Unity for Educators: A Beginner's Guide, that was developed for educators around the world. Spink's educational experience in teaching and training was leveraged through various segments of the Unity course. He provided information on how he started teaching with Unity, and how to develop effective differentiation and technical troubleshooting strategies for it as a teacher. To sign up for the course, please visit:

<https://learn.unity.com/course/unity-for-educators-a-beginner-s-guide>



THE CS INITIATIVE ON THE NATIONAL LEVEL: FEATURING SENATOR JOHN BOOZMAN

Editor's Note: In the coming months, the CSforAR team will be inviting elected officials to share their thoughts on the importance of CS education, and how Arkansas is leading the way.

By Senator John Boozman, United States Senator for Arkansas

“Recent news of Russian and Chinese cybercriminals attacking vaccine research and development organizations as we continue to fight COVID-19 makes it even more imperative that we have a skilled workforce that can counter this infiltration and protect sensitive and proprietary information. Arkansas is preparing the next generation of cyber warriors to identify potential cyberattacks and prevent them from occurring.

The University of Central Arkansas developed a cyber range to provide students with real-world experience so they can learn to defend against security threats. Students across the state have used this cyber tool. Additionally, the range has been used to develop modules for courses in Arkansas high schools. I was proud to visit UCA with former Air Force Secretary Heather Wilson and show her how Arkansas is playing a role in advancing cyber education.

Additionally, the University of Arkansas and the University of Arkansas at Little Rock are designated as National Centers of Academic Excellence in Cyber Defense. This designation is jointly sponsored by the National Security Agency and the Department of Homeland Security to promote higher education and cyber defense research. Schools in the state have placed a high priority on training the next generation of cybersecurity professionals. I will continue to support these programs so we can defend our nation's cyberspace.

The Little Rock Air Force Base is also playing an essential role in the development of cyber capabilities to help the U.S. Air Force. We helped secure a cybersecurity mission to train more cyber warriors. The unit has been designated as the 223rd Cyberspace Operations Squadron. Its members' work helps protect our national security and engages in outreach to communities and organizations in Arkansas.



As a member of the Senate Appropriations Committee, I've supported programs to improve cybersecurity and worked to ensure we have the resources and tools to safeguard our network and prioritize computer science education. We were able to secure \$65 million in Fiscal Year 2020 for dedicated STEM education funding within the Education Innovation and Research program.

It's encouraging to see the enthusiasm of Arkansans interested in studying STEM. Investing in these aptitudes will lead to a skilled and competitive workforce that will attract businesses to Arkansas. I'm proud of how Governor Hutchinson, other Arkansas leaders, educators, parents and students embrace the STEM field and I will continue to support these efforts.”

GOVERNOR'S COMPUTER SCIENCE & CYBERSECURITY TASKFORCE: ECONOMIC DEVELOPMENT SUBCOMMITTEE OVERVIEW

By Anna Beth Gorman
Executive Director, Women's Foundation of Arkansas

As the Executive Director of the Women's Foundation of Arkansas, I lead our effort for the Foundation to be the leading equity partner in building women's economic security across the state through strategic efforts. The Foundation has two signature initiatives: Girls of Promise and Women Empowered. Girls of Promise focus of work is ensuring that girls in Arkansas are being introduced, nurtured, and supported in pursuing education and career paths in emerging occupations focused on science, technology, engineering, arts, and math (STEAM). The goal of Women Empowered is to strengthen the economic worth and well-being of women in Arkansas.

I was humbled to be selected to join the Governor's Computer Science and Cybersecurity Taskforce and to serve as Chair of the Economic Development Subcommittee. Being at the table literally allowed me to advocate for young women across Arkansas; we want these women to take advantage of the incredible opportunities our state has to offer in careers and education in Computer Science and Cybersecurity. A tenet of our Foundation's work is to ensure Arkansas girls see themselves in the future of our STEAM workforce, which we achieve through programs such as our Girls of Promise annual activities. Over the last few years, it has been a privilege to work closely with the ADE Computer Science Initiative, and to showcase how our state is truly leading the country on creating the infrastructure that will lead to a diverse and talented STEAM workforce. Arkansas is making a difference in the future of our workforce by intentionally including gender and racial diversity in its strategic planning, and for that, I am very grateful.

Also, I am grateful for my fellow Economic Development Subcommittee members; John Ciesla, Angela Kremers, Jeston George, Charisse Childers, Ann Clemmer, Cheryl May, and James Hendren. Our subcommittee members represent an intersection of education, industry, nonprofit, and economic development practitioners. While each of us is quite passionate about our individual area of interest, we are able to come together to respond to the high-level questions posed by our Governor and the taskforce with recommendations we feel will serve the entire state. Our subcommittee--and moreover, our larger taskforce--feels strongly that economic development in Arkansas will not be successful without Computer Science and Cybersecurity at the forefront of our plans. We look forward to the release of the Governor's report and are very proud to have contributed in this important endeavor.



2019 Annual Girls of Promise 8th Grade girl conference.

COMPUTER SCIENCE MASTER'S PROGRAM AT THE SOUTHERN ARKANSAS UNIVERSITY: A UNIQUE OPPORTUNITY FOR THE PROFESSIONALS

By Md Karim
Chair, Mathematics and Computer Science Department, Southern Arkansas University

The Southern Arkansas University offers an MS in Computer and Information Science (MCIS) degree with focus on Data Science, Cyber Security and Privacy, and General Computer Science - all with thesis and non-thesis options. Few key features of our program make it very attractive to the professionals intending to develop their career in the IT field. Professionals from all over the USA attend our program, and many of our graduates work in the top companies.

MCIS is a 30 credit hour program that can be completed 100% online in 18 to 24 months. Professionals with no background in computer science can attend this program by completing two specially designed comprehensive prerequisite courses that cover the required background concepts in depth. Individuals who are not sure if they can commit to a 30 credit hour program, can try out our 12 credit hour graduate certificate programs in Data Analytics or Cyber Security and Privacy, and can use those hours if they decide to continue their masters. By the way, our Data Analytics graduate certificate program is a cross-disciplinary initiative jointly offered by the mathematics and computer science department, and the business school. Students completing the Data Analytics certificate can pursue either an MBA in data analytics, or an MCIS in data science.



Our Data Science and Data Analytics options focus on data mining, machine learning, big data, decision science, data visualization, and topological data analytics. We are part of an NSF EPSCoR data science initiative, which is developing a cyber-infrastructure for data science education and research. We have a strong group of computer scientists and mathematicians with expertise in diverse areas of data science, some with extensive experience in the industry.

Our Cyber Security and Privacy option focuses on security analytics (penetration testing and vulnerability assessment), cyber defense and recovery, digital forensics, and privacy compliance. We have recently developed a cyber-range to facilitate cybersecurity education. I personally lead our cyber security group and bring nearly 20 years of experience in cybersecurity research and education, including working on many DoD sponsored projects.

For additional information about our master's program, please contact me at mdkarim@saumag.edu.

DO YOU LIKE VIDEO GAMES? THEN CHECK OUT THESE TITLES

CS Specialist John Hart offers some nifty titles for gamers (or their parents) to check out:

- **The Outer Wilds** - This is a very intricate and no-fail puzzler. 20 hours of gameplay, but very rewarding and requires some brainpower as well as hand-eye coordination. Not recommended for those who turn to YouTube after 3 minutes for a solution.
- **Slime Rancher** (all kinds of systems), **Ooblets** (Epic store on PC) / **Animal Crossing New Horizons** (Nintendo Switch) / **Stardew Valley** (all kinds of systems) - These games are all about building a peaceful community. No-to-low violence including dance battles, angry scorpions, and technically a monster-infested dungeon, but all of these games let you explore, meet interesting characters and build a community, instead of just earning a high score.
- **Horizon Zero Dawn Complete** debuts this month on many systems. The main hero is trying to save her people against a world of angry robot animals. It's beautiful to see and a well-crafted narrative. Some language, no real gore, very little violence against "living" targets. Gameplay is fluid, and one of the strongest story-based IP in years.





CS SPECIALIST SPOTLIGHT

I remember it being somewhere around first grade when I was introduced to computers at school. This was at a time when floppy disks were commonplace and many advancements were being made in regards to what computers were used for. There was an allure about computers that drew me in, especially with their ability to offer an escape through games. I remember playing games like SkiFree and The Oregon Trail and I soon found myself wanting to play around on any computer I could find. The very first computer that I could call my own and not one that I had to share with my twin sister was an EVEREX eXplora RS2800. I still have it.

I originally went to college to be a Psychiatrist, which is a goal I had since I was little because I wanted to help people who felt like they couldn't be helped. I ended up changing my mind and decided that I wanted to become a Special Education teacher, but when I graduated I didn't immediately go into education.

I worked a few different jobs then ended up working as a digital learning facilitator and A/V Coordinator but was eventually approached by administrators who recognized my passion for technology and asked if I would like to teach Computer Science. I quickly obtained my certification and worked diligently to build and foster a wholesome Computer Science program.


I was teaching a robotics class and there was a girl in the class who took to the building process quickly, so I encouraged her to build a robot to compete with. She was initially hesitant to do it but I encouraged her to invite a few friends and come to just one practice. I also encouraged some other students in my classes to go to just one practice, and before I knew it we had a wonderfully diverse team of students who would beg me to have extra practices because they found value in what they were doing. Their hard work and dedication paid off and they ended up winning their first competition. This was a small thing that had a large impact on our school as well as our CS program. Before I knew it, our robotics program was growing much larger (district-wide) and the students were sharing what they were passionate about with the community and with other students around the school.

I took a group of students to High School Hack. Prior to arriving, they had no idea what to expect and were even a little unsure about how they would like it. I watched a transformation happen at that event where students developed a love for something new and challenged themselves while also having more fun than they expected to have. Many of these students are now moving on to pursue Information Security at the college level. The ability to help someone find something they enjoy is what makes education special--to see that passion develop and grow--is truly a gift.

Coding is a highly marketable skill and the beauty of it is that there are so many ways to start. I've always followed the philosophy "The best programming language to learn is always the FIRST one you learn", meaning that just as long as you get started with coding it does get more familiar from that point on. My favorite quote to sum up my feelings about the Computer Science initiative would be "Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important." - Bill Gates

UPCOMING EVENTS

<http://bit.ly/CSforARPD>



CSFORAR COFFEE CAFE
Join the CSforAR Team everyday from 8:00 A.M. - 4:00 P.M. via Zoom:
bit.ly/ARCSCoffee

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