

State of K-12 AI Education in Your State

9 Month Updates

October 26, 2021



#AI4K12



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AI4K12 Community Updates

1. Duri Long - Interviews/Focus Group for the Project evaluation
2. [Certiport High School AI Exam](#) soon to be released

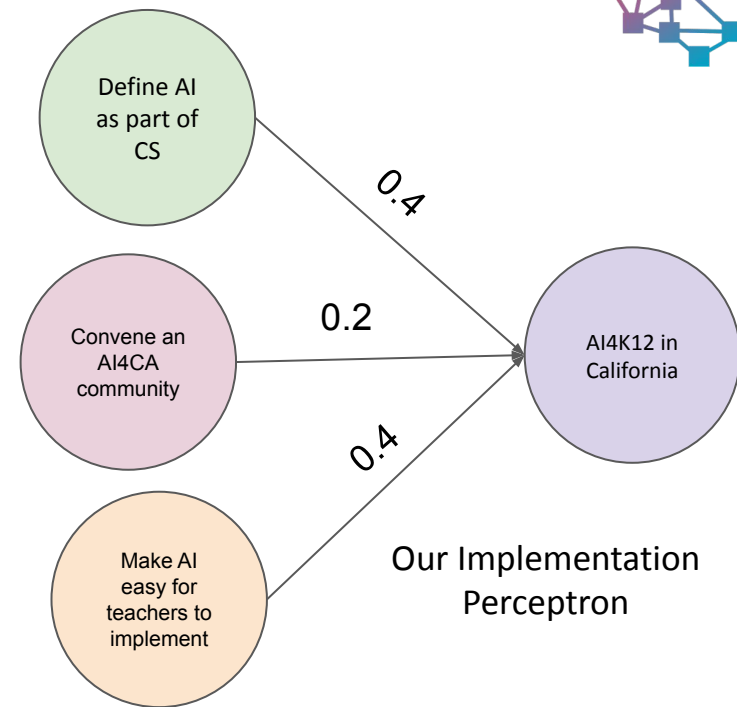
The AI exam will be included with our IT Specialist Certification program. The full Objective Domains are available when you click on the AI menu choice:

3. **Day of AI (dayofai.org)**. Modeled after hour of code, we are offering free teacher training for a 4 hr AI Literacy curriculum in 3 grade bands (upper elementary, middle school, high school). This is our first year, so MIT is providing the initial curriculum. But we will open it up to other contributors starting next year. We're already getting global interest, so although we're focusing on US in year 1, we see this going global, too. i2Learning is doing all the teacher training.
- 4.

California



Name	Organization	Role
Jared Amalong	Sacramento County Office of Education	Director of Computer Science Education, AI4K12 9-12 Grade Band Lead
Dr. Amy Eguchi	UC San Diego	Associate Teaching Professor of CS Education, AI4K12 Advisory Board member
Daniela Ganelin	Stanford Graduate School of Education	Ph.D. Student
Erle Wallace Hall	CA Dept Education	ICT Industry Sector Lead, CTE career pathways
Dr. Deblina Pakhira	Computer History Museum	Associate Director of Education
Vicky Sedgwick	Laurence School	K-6 CS Teacher AI4K12 K-2 Grade Band Lead
Dr. Emily Thomforde	CA County Boards of Education	Computer Science Program Advisor
Dr. Ning Wang	USC Institute for Creative Technologies	Research Assistant Professor
Emily Reid Sarah Judd	AI4ALL	VP Open Learning Curriculum Manager, Open Learning
Rudy Escobar	Stanislaus COE	STEM Coordinator



California



CS Updates

- Expecting a state CS Coordinator to start in 2022
- Awaiting state guidelines on use of \$15M funding for CS teacher credentialing

Awareness

✓ Inspirit AI gave a CSTA presentation in July on teaching algorithmic bias

✓ Came up with [Hour of AI](#) for May

✓ Drafted a [Getting Started Guide](#)

👁️ Reach out to CA state level math, science, language arts, organizations to present the AI literacy & Five Big Ideas.

👁️ Incorporate [CS+Env Lit](#) and Data Science available from UCSD

👁️ AI CTE pathway

Community

✓ Organized leadership of 11 CSTA chapters

✓ We've been meeting monthly!

👁️ Create AIforCA website and logo

👁️ CSTA chapter outreach: draft an offer of AI sessions that we can give to all 11 chapters.

👁️ Identify how to leverage future industry partners, and reach out to potential industry partners.

Accessibility

👁️ Collect resources for AI in CA

👁️ Create [crosswalk](#) among the Five Big Ideas in AI, CA CS standards, and other core subject areas. <-seek funding

👁️ UCSD undergraduates working on create projects/lessons using the AI-robot kit

👁️ UCSD AI Literacy course (Spring)

👁️ UCSD Pathway2AI group is working on to create AI video series to promote the understanding of AI technology applications among teachers and students (focused on high school)

👁️ Stanford AI Literacy group is working on creating high-school curriculum materials

Florida



Name	Organization	Role
Sheryl Arriola	Broward County Schools	Instructional Facilitator
Alexis Cobo	University of Florida	Curriculum Developer, Graduate Student
Justin Feller	FL Department of Education	Computer Science Specialist, Innovation & Implementation
Katrina Figgett	FL Department of Education	Director, Innovation and Implementation
Dr. Christina Gardner-McCune	AI4K12 & University of Florida	Associate Professor
Dr. Kim Jacobs	University of Florida	Director of Engineering Outreach and Extension
Mike Martucci	Orange County Public Schools/Orange Technical College	Assistant Director
Lisa Milenkovic	Broward County Schools	STEM and Computer Science Supervisor
Ninafe Awong	FL Department of Education	Director of CTE
Dr. Nancy Ruzycki	UF	Faculty member, developing Teacher PD

Florida



To Date:

- Stakeholder meetings (FLDOE, UF, school districts, economic development & state workforce boards, philanthropic foundations, state colleges, technical colleges, SBO and industry)
- Developed industry AI workforce survey, collected and analyzed responses
- Piloted Summer '21 camp with support from UF, CareerSource Central Florida and OCPS
- Submitted 4 course CTE framework for high school students - <https://www.fldoe.org/core/fileparse.php/20062/urlt/9401100-2223.rtf>
- In discussions with FLDOE to pilot teacher PD program with a handful of districts
- Secured funding to support one districts development of AI related content in K12 (Okaloosa)

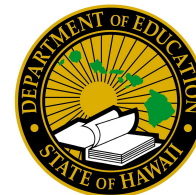
Next Steps (in progress):

- Secure funding to support teacher PD and promote smooth implementation of the AI Foundations CTE Framework in Fall 22 in piloting districts.
- Develop feedback mechanism to connect industry, the academy and K-12 educators around AI Education
- Working to develop MS frameworks in foundational data science to feed HS frameworks
- Identifying grant opportunities and submitting proposals to support continued efforts

Georgia State Updates

- High School [AI pathway](#) approved
- AI4GA grant was funded by NSF to create curriculum and PD for middle school AI instruction
 - Exploring existing curriculum to include in project
- AI task force plans to meet again after the semester ends/transitions

Hawaii



Brett Tanaka	Hawaii Department of Education
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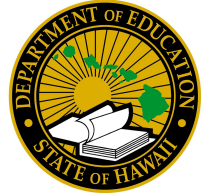
- **To Date:**

- Presented AI4K12 Initiative to the fifteen (15) complex area Computer Science Teams.
- Connected with Industry/Community Stakeholders to confirm their participation in this initiative.
- Incorporate AI education into ongoing Complex Area School Design for Computer Science Education implementation planning.
- Coordinate A.I. Professional Development opportunities

- **Next Steps:**

- Schedule focused meetings to deep dive into the AI4K12 goals and alignments.
- Coordinate with our Career and Technical Education that is in the process of implementing an A.I. Program of Study under their new Information Technology pathway.
- Coordinate additional A.I. related Professional Development opportunities with other partners/providers.

Hawaii



To Date:

- Adopted CS standards aligned to the CSTA K-12 CS Standards and CS Teaching license options with the Hawaii Teachers Standards Board.
- Established fifteen (15) complex area CS Team who are developing their “school design” K-12 CS education implementation plans.

Next Steps:

- CTE Information Technology Pathway - AI Program of Study - SY22-23
- Establish Hawaii State AI Team/Delegation
- Incorporate AI Concepts and Resources

Illinois



To date: A committee met with Illinois State Board of Education over the last 2 months to write new CS standards. A sub committee met to organize a beta version of a toolkit that will include emerging technologies, such as the AI4K12 framework. The beta version toolkit will be open to teachers. Committees will meet to update and revise the toolkit over the next 3 years, once it is complete and formalized, then it will go to the board to be approved and adopted.

Next steps: Today, March 2nd, the CS standards will be presented to the Board and made available for public comment. Then moved forward to get approval and adopted by the board. This process should be completed by the summer and ready for teachers to use the beginning of next school year.

Indiana

Jake Koressel	Indiana Department of Education
Stephanie Zircher	Nextech
Anne Leftwich	Indiana University
Krista Glazewski	Indiana University
Amanda Moore	MSD Wayne Township
Raj Acharya	Indiana University

Indiana

Updates:

- Finalizing [AlforIN Plan](#) and adding dates for 2021
- AI professional development opportunities on calendar for elementary and middle school
- Work related to K-8 standards updates and CTE pathway development is underway



Maryland team



1. Elissa Hozore, CS Specialist, MD state department of education
2. Jan Plane, Iribe initiative for inclusion, CS/cyber faculty at UMD
3. Nora Burkhauser, CS teacher, AI4All camp leader, Md
4. Dianne O'Grady-Cunniff, Director, MCCE

Current observations:

- AI is an excellent entry point into computer science for diverse subject areas.
- AI is often left out of discussions about data science and ML
- The math monolith appears to be shifting to more consideration of data science
- How do we create a skills progression for CS that includes concepts in AI, cyber ,and DS?

The challenges of communication:

Understanding AI is integral to understanding how our world works. Our goal is to educate informed citizen.

Maryland



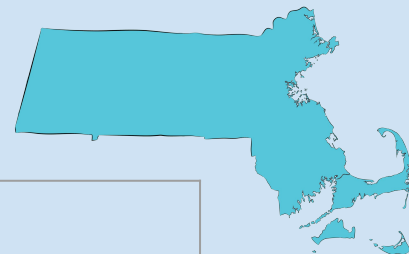
Happening now:

- BCPS CTE Artificial Intelligence/Machine Learning CTE Pathway in development. AACPS starting theirs.
- Planning our second AI Symposium to include K12 & higher ed
- First middle school pilots happening this school year
- Doing pilot AI in ELA, over 50 HS english teachers applied

Continuing to develop AI learning pathway for teachers. Looking at microcredentials and badging as a way for teachers to choose their own pathway to CS expertise. Building our facilitator pool. Moving content to hybrid

1. Introduction to AI 1 credit
2. Applying AI 1 credit
3. AI and equity 1 credit ,<-- not yet offered

Massachusetts



Name	Organization	Role
Cynthia Breazeal	MIT	Professor, AI4K12 working group
Hal Abelson	MIT	Professor, AI4K12 working group
Irene Lee	MIT	Research Scientist, AI4K12 working group
Fred Martin	Univ. of MA Lowell	Professor, AI4K12 working group
Padmaja Bandaru	Adv. Math and Science Academy Charter School	CS Teacher
Anne DeMallie	MA Dept. of Elementary and Secondary Education	STEM, DLCS Content Support Lead
Paula Moore	MA Dept of Education (DESE)	Digital Literacy and Computer Science Specialist

Massachusetts

University Work

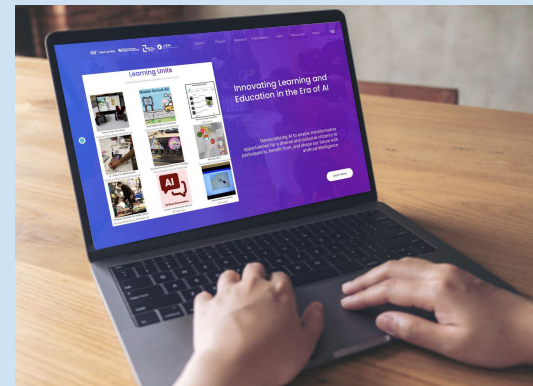
MIT's new initiative on AI education has been actively involved in a wide range of activities to support AI and ethics education in MA and across the USA.

- Developing a range of K12 AI Literacy curriculum, assessments and teachers guides that span the 5 Big Ideas of AI.
- K12 AI Literacy materials available on aieducation.mit.edu under creative commons license
- Developing innovative tools to support project based learning with AI technologies such as enhancements to App Inventor, a custom scratch-based AI tools, and web apps, robot kits, and more.
- Running pilot and evaluation workshops with schools and afterschool programs (upper-elementary thru high school)
- Developed the first AI & Ethics curriculum for Middle School
- Developed the first AI curriculum for MA STEM Week
- Developing a comprehensive middle school curriculum on Responsible AI for Computational Action
- Contribution to MA DLCS Standards
- Teacher PD development for middle school and high school

DESE's Work

The goal of the Massachusetts public K-12 and adult education is to prepare all students for success in life. The ability to effectively use and create technology to solve complex problems is the new and essential literacy skill of the twenty-first century.

- K-12 Digital Literacy and Computer Science Curriculum Frameworks
- Teacher and Specialist Educator Preparation Programs and Licensure
- Approved Courses may swap for Math or Science course in high school
- State Grants
- Actively engage stakeholder groups



New Mexico

Name	Organization	Role
Yolanda Lozano	CS Alliance CSTA NM	COO President
Paige Prescott	CS Alliance Supercomputing Challenge	Exec Dir
Jaime Cherry	NM Department of Education	Dept of Workforce Development
Amery Martinez-	NM PED	CS Specialist

New Mexico's Initiatives

1. CS Summit Oct 15 & 16
 - a. Welcome NM Sec of Education
 - b. 150 teachers
 - c. DS/ ML learning
2. CS endorsement to be announced by end of year
3. New CS specialist position filled for K-8- getting up to speed
4. NSF Grant - Culturally Relevant Pedagogy for CS- Micro Credentialing
5. New CS Pathway Courses Art and CS, Cybersecurity....advanced topics
6. Planning for AI PD in June 2022



North Carolina - AI4NC Team

Charlotte Dungan - State Lead

AI Program Architect, NC School of Science and Mathematics, AlforTeachers.org

Deborah Seehorn

CS4NC/NC ECEP

Dr. Tiffany Barnes

Faculty, NC State University, Beauty and Joy of Computing, CS4NC

Marnie Hill

CSTA NC President, SCRIPT facilitator

Sam Morris

Friday Institute for Educational Innovation

Kim Forbes

CTE, NC Dept of Public Instruction

Cheryl Cox

Workplace Based Learning, NC Dept of Public Instruction

Dr. Jeff McDaris

Superintendent of Transylvania County Schools

Dr. Sambit Bhattacharya

Faculty, Fayetteville State University

~~Dr. Cameron Harmon~~, replacement nominated

Fayetteville Community College

Kiy Benton

AI Educator Advocate, AlforTeachers.org

TBD - Informal Education/K5 Team Member

North Carolina - Progress Update

1. CTE - working on approval for AI track
2. **Fall Statewide Summit** is November 12; we have 3 tracks in AI, Stem Integration and CS.
3. CSTA NC - increased enrollment and regular meetings.
4. CSisElementary, Invent XYZ
5. Ethics and Leadership in Cybersecurity: ELC.NCSSM.EDU - free, high school, on Friday!
6. NCSSS - three AI tracks

TAKEAWAYS:

1. Learn from other states. Learn from each other. (Teamwork!)
2. Teachers and schools are still struggling. How are you coping?

Ohio



Name	Position	Affiliation
Lisa Patt-McDaniel	Chief Executive Officer	Workforce Development Board of Central Ohio
Dr. Debbie Jackson	Professor & Department Chair, Teacher Education	Cleveland State University
Mark Black	Executive Director, Secondary Education	Akron Public Schools
Alyse Clark	Executive Director, Secondary Curriculum	Columbus City Schools
Ora D Tanner	Co-Founder, Chief Learning Officer	The AI Education Project

Ohio

What we've done:

- Piloted an 'Intro to AI' course developed by the national non-profit, [The AI Education Project](#), district-wide with 9th graders in Akron Public Schools and in several other individual schools throughout the state. Currently working with Ohio Educational Service Center Association (OESCA) and other ESCs to scale the curriculum.
- Ohio Lieutenant Governor, Jon Husted, delivered opening remarks at the [Forum on AI Education and Workforce Readiness](#) in December 2020. Individuals from various levels of leadership in the state also participated in the virtual gathering of more than 100 leaders from government, K12 education, academia, and civil society for a conversation about how to bring AI education to K12 schools. .
- *InnovateOhio* Initiative and the Governor's Office of Workforce Transformation is working to help people gain the skills they need to participate in the economic success that technology will bring forth.
- Work is being done to prioritize CS education for the state's K-12 students.

Pennsylvania

Brandt Hutzel	Pennsylvania Department of Education
Judd R. Pittman	Pennsylvania Department of Education
Sara Frey	Pennsylvania Training and Technical Assistance Network (PaTTAN)
Jeremy Gabborin	Pennsylvania Training and Technical Assistance Network (PaTTAN)
Avni Dyer	Pennsylvania Training and Technical Assistance Network (PaTTAN)
Ethan Pan	Pennsylvania Training and Technical Assistance Network (PaTTAN)
Dr. Brian Stamford	Allegheny Intermediate Unit (AIU3)

Pennsylvania

- **Pennsylvania's AI work is happening under the umbrella of our existing CS work, which is part of our PAsmart Initiative.**
- **Reviewing standards**
- **Informal and formal discussions**
- **New advisory think tank**

South Carolina

Name	Organization	Role
Angel Malone	SC Dept. of Education	CTE Director
Dominick Sanders	SC Dept. of Education	CS State Supervisor
Steven Watterson	SC Dept. of Education	Education Associate
Andrew Cook	SC Dept. of Education	Education Associate
Rosemary Bianchi	N/A	Independent Contractor
Jennifer Albert	The Citadel	STEM Center Director
Tim Swick	Sandlapper Elementary	CS Teacher

South Carolina

- We are currently in the beginning of stages of AI program development.
- We are working on course development and instructional support materials.
- We plan to have a program of study created by 2022-2023
- Working to create a committee for write standards (infuse in CS and manufacturing)

Texas

Dan Blier	Plano ISD
Joy Schwartz	TACC
Dara Betz	Del Mar College
Philip Davis	Del Mar College
Korinne Caruso*	Del Mar College

Texas

- Texas is in the beginning stages of looking into AI for our K-12 schools.
- No courses have been approved by our State Board of Education.
- There is a legislative passed requirement to develop a K-12 CS Strategic Plan. This hasn't started being built yet. This opens an opportunity to bring AI into the process.
- STEM & CS Summer camps will continue ... don't include AI



VIRGINIA
IS FOR
LEARNERS

Virginia

Name	Organization	Role
Dr. Brendon Albon	VA Department of Education	Director, STEM
Keisha Tennessee	VA Department of Education	Computer Science Coordinator
Dr. Paula Leach	Longwood University - ITTIP	Director
Michael Bolling	VA Department of Education	Assistant Supt, Learning and Innovation
Dr. Helen Crompton	Old Dominion University	Associate Professor
Dr. Manorama Talaiver	Cogent Cause (Retired from Longwood University)	Professional Learning Consultant - STEM C
<i>Jill Collins</i>	<i>Martinsville City Public Schools</i>	<i>Educator</i>
<i>Brandie Wright</i>	<i>Newport News Public School</i>	<i>Educator</i>

Virginia



VIRGINIA
IS FOR
LEARNERS

As of October 26, 2021

Updates

- Focus on advocacy and education: sharing of resources-via computer science newsletter, community presentations (VA Science Museum), and conference presentations (upcoming VSTE Conference-AI-In Your World and AI Tools)
- Planning professional development-online modules/asynchronous & Regional PLCs (hybrid)

Next Steps

- Educator AI Summit: Conference Planning, Funding Source
- Crosswalk & Standard Alignment: Review of Big Ideas 1-3 with Current Computer Science Standards (Target Date for Completion: January 2022)

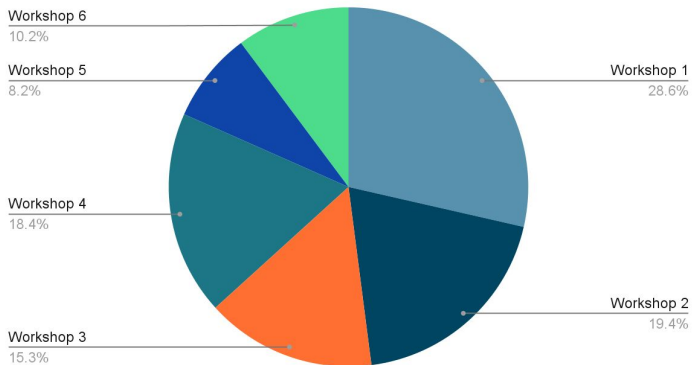


Puerto Rico and US Virgin Islands

Name	Roles and Institution
Dr. Juan Arratia	PR - Committee Leader and Workshop coordinator, SCF
Dr. Elba Sepúlveda	PR - General Activities Coordinator, JHU
Dr. Sol León Prof. José Torres	PR Department of Education Coordinator, CROEV Director MS FarmBeats Project
Dr. Marc Boumedine	USVI, UVI St.Thomas Coordinator
Dr. Michael Francois	USVI, UVI St Croix Coordinator

Summary from PR and the USVI

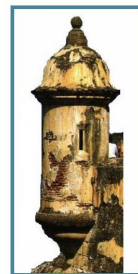
Participants



- 1) A total of 6 workshops for teachers about CS and AI
- 2) PR and the USVI are planning planning on how to integrate AI into the curriculum.

Implementation and integration

- 1) CROEV - PR MS Farm Beats
 - a) MS FarmBeats - kits available from Microsoft for participant teachers to request and support them in classrooms - Prof. José Torres implemented



Scientific Caribbean Foundation

Actual plans

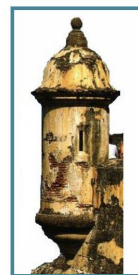
- Continue
 - Implementation and integration
 - Workshops for teachers
- Support CSK5
- Approved Grant - Citizen Diplomacy Action Fund - Grant
 - Impacting K14
 - Puerto Rico
 - Dominican Republic
 - Russia



ExchangeAlumni
CONNECT EMPOWER INSPIRE

Future plans

- We are submitting grants for getting funds to work on the integration of AI, CS & STEM into curriculum.
- Three proposals submitted to NSF
 - IRES
 - DRK12
 - RPP-CS4All



Scientific Caribbean
Foundation

Additional Participants

Also joining us in the conversation about K-12 AI Education are representatives from the following states/territories and organizations:

Alabama
Colorado
Connecticut
Delaware
England
Hawaii
Kentucky
Michigan
Mississippi
Nevada
New Mexico
New York

Oklahoma
Puerto Rico
US Virgin Islands
Utah
Virginia
Washington
Washington, DC
Wisconsin

And representatives from the
National Science Foundation
and ECEP