CS4RI 2.0

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Vic Fay-Wolfe, Carol Giuriceo, Jessie Barrett, Holly Walsh

Today's Agenda

- CS4RI Overview and Context – 10 min.
- CS Standards for Rhode Island Update - 10 min
- Script Activity - 15 min.
- Next Steps / Ways to Get Involved – 5 min
- Q&A – 5 min.

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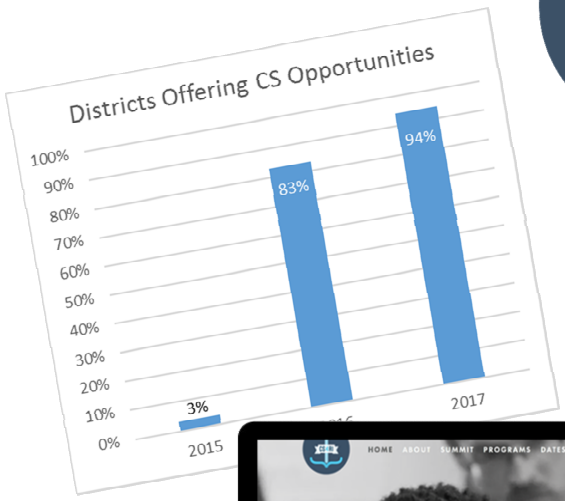
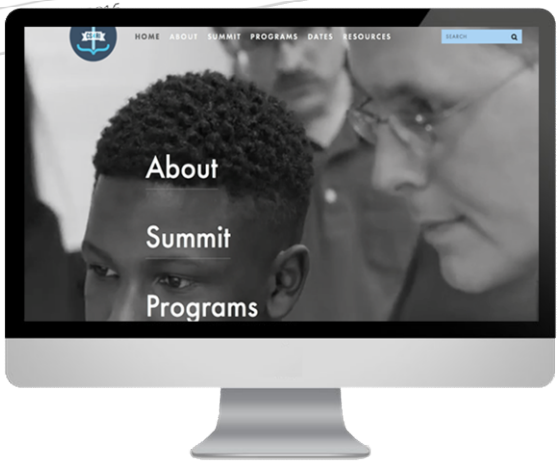
CS4RI Overview and Context

- Computer Science is Important
  - More than 600,000 high-paying tech jobs across the US were unfilled last year
  - 51 percent of all STEM jobs are projected to be in computer science related fields
  - Computer science is important for many industries, including transportation, healthcare, education, and financial services
- Phase 1 Goal: Every public school in Rhode Island will teach computer science by December 2017
  - Building educator capacity, by providing access to quality computer science professional development opportunities.
  - Developing rigorous and sustainable K – 12 pathways, by supporting districts in curating a relevant set of CS implementation strategies and resources.
  - Accelerating demand and momentum for CS education, through a robust community of practice and partnerships with diverse stakeholders for both students and teachers.





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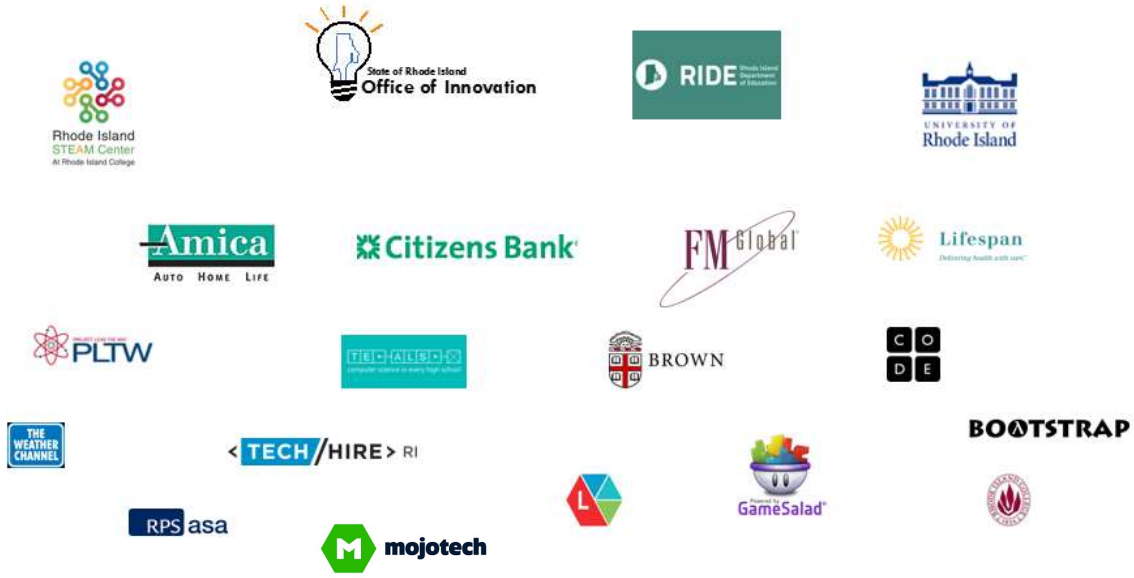
What's Working?

- Building Educator Capacity
  - Targeted PD interventions
  - Teacher PD grants
  - CS Standards
- Developing Rigorous Pathways
  - Menu of state funded program options
  - District coaching
  - Industry demand-driven pathways
  - Aligned to CTE Board Standards
- Accelerating Demand for CS Education
  - CS snapshot series
  - CS4RI Summit
- Strong Partnerships
  - Inter-agency partnerships
  - Industry partnerships
  - Matrix partnerships
  - District & school partnerships



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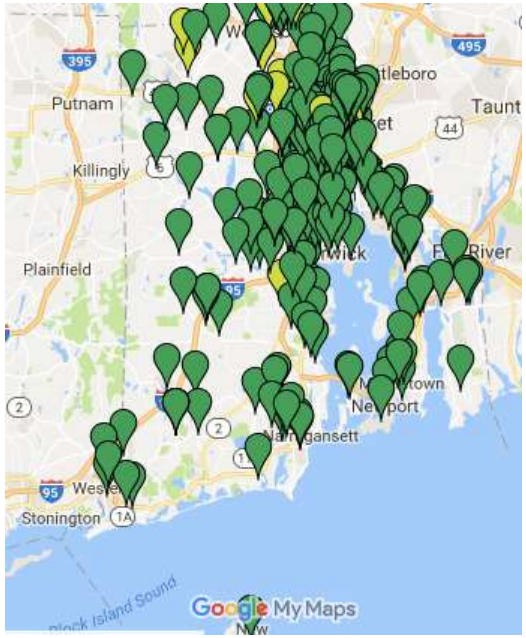
What's Working?



Building Educator Capacity

- **600+** teachers trained through CS4RI professional development opportunities
- **33%** of these educators have engaged in more than one professional development opportunity

Developing Rigorous Pathways

- **3x** the number of AP CS programs
- **747** dual/concurrent CS course enrollments & **80** ACN CS course enrollments
- In 2017, **260** students took AP CS exams, a **500%** increase from 2015

Accelerating Demand for CS Education

- **1,700** students engaged in the 2017 CS4RI Summit
- **100%** of traditional school districts offer CS opportunities

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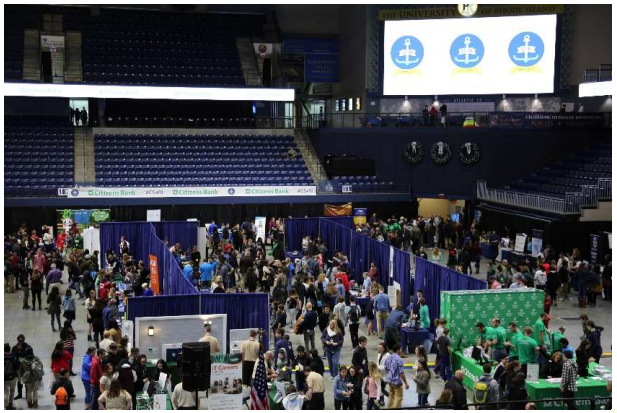
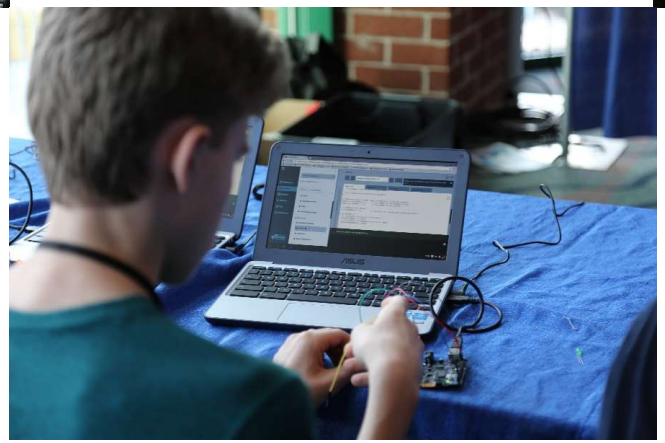
CS4RI Summits



2,000 attendees

92 booth presenters



21 interactive sessions

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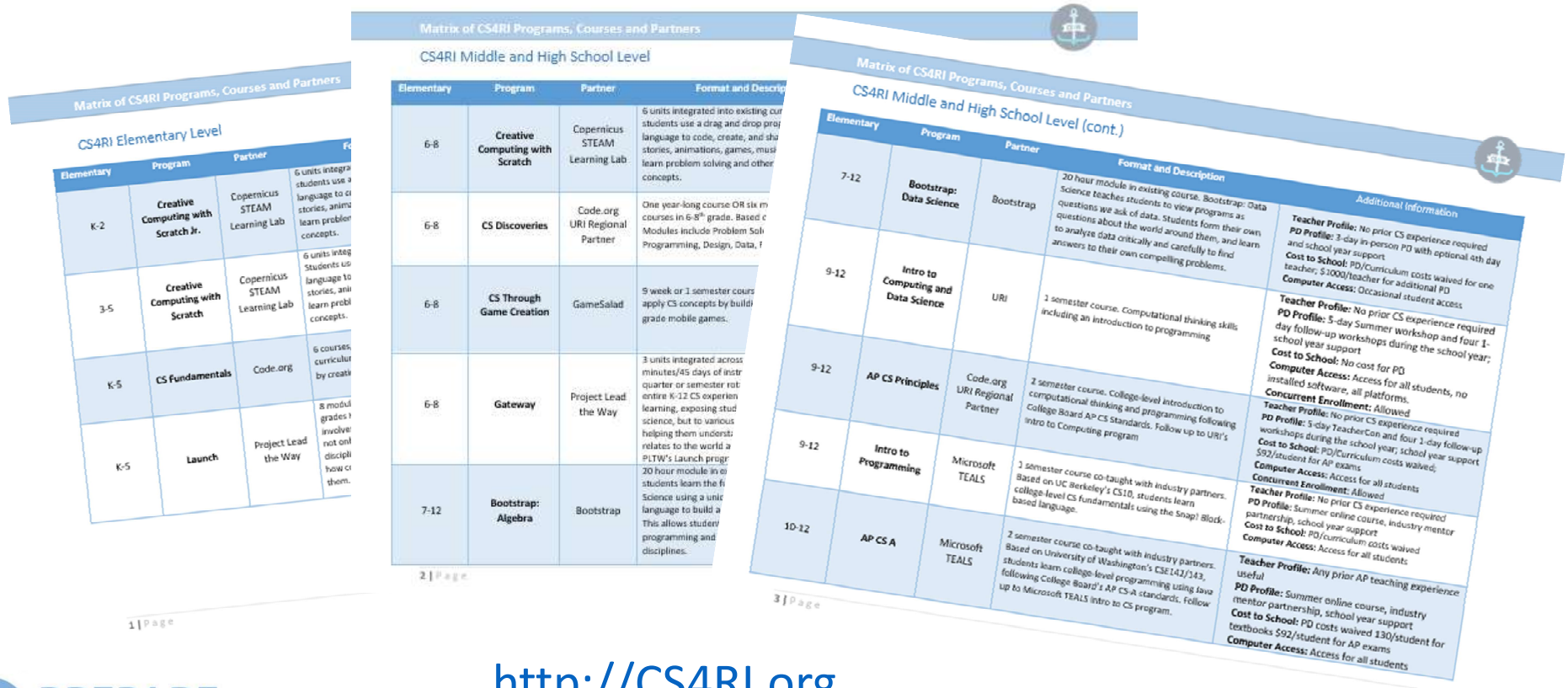
Matrix of CS Partners and Programs



Matrix of CS4RI Programs, Courses and Partners

CS4RI Elementary Level

Elementary	Program	Partner	Fo
K-2	Creative Computing with Scratch Jr.	Copernicus STEAM Learning Lab	6 units integra students use a language to c stories, anima learn problem concepts.
3-5	Creative Computing with Scratch	Copernicus STEAM Learning Lab	6 units integ Students us language to stories, ani learn probl concepts.
K-5	CS Fundamentals	Code.org	6 courses, curriculu by creati
K-5	Launch	Project Lead the Way	8 modu grades involve not onl discipli how c them.

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Matrix of CS4RI Programs, Courses and Partners

CS4RI Middle and High School Level

Elementary	Program	Partner	Format and Descrip
6-8	Creative Computing with Scratch	Copernicus STEAM Learning Lab	6 units integrated into existing cur students use a drag and drop prog language to code, create, and sha stories, animations, games, musi learn problem solving and other concepts.
6-8	CS Discoveries	Code.org URI Regional Partner	One year-long course OR six m courses in 6-8th grade. Based c Modules include Problem Sol Programming, Design, Data, I
6-8	CS Through Game Creation	GameSalad	9 week or 1 semester cours apply CS concepts by buildi grade mobile games.
6-8	Gateway	Project Lead the Way	3 units integrated across minutes/45 days of instr quarter or semester rot entire K-12 CS experien learning, exposing stud science, but to various helping them understi relates to the world a PLTW's Launch progr
7-12	Bootstrap: Algebra	Bootstrap	20 hour module in ei students learn the fi Science using a unic language to build a This allows studen programming and disciplines.

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Matrix of CS4RI Programs, Courses and Partners

CS4RI Middle and High School Level (cont.)

Elementary	Program	Partner	Format and Description	Additional Information
7-12	Bootstrap: Data Science	Bootstrap	20 hour module in existing course. Bootstrap: Data Science teaches students to view programs as questions we ask of data. Students form their own questions about the world around them, and learn to analyze data critically and carefully to find answers to their own compelling problems.	**Teacher Profile:** No prior CS experience required **PD Profile:** 3-day in-person PD with optional 4th day and school year support **Cost to School:** PD/Curriculum costs waived for one teacher; $1000/teacher for additional PD **Computer Access:** Occasional student access
9-12	Intro to Computing and Data Science	URI	1 semester course. Computational thinking skills including an introduction to programming	**Teacher Profile:** No prior CS experience required **PD Profile:** 5-day Summer workshop and four 1-day follow-up workshops during the school year; school year support **Cost to School:** No cost for PD **Computer Access:** Access for all students, no installed software, all platforms. **Concurrent Enrollment:** Allowed
9-12	AP CS Principles	Code.org URI Regional Partner	2 semester course. College-level introduction to computational thinking and programming following College Board AP CS Standards. Follow up to URI's Intro to Computing program	**Teacher Profile:** No prior CS experience required **PD Profile:** 5-day TeacherCon and four 1-day follow-up workshops during the school year; school year support **Cost to School:** PD/Curriculum costs waived; $92/student for AP exams **Computer Access:** Access for all students **Concurrent Enrollment:** Allowed
9-12	Intro to Programming	Microsoft TEALS	1 semester course co-taught with industry partners. Based on UC Berkeley's CS10, students learn college-level CS fundamentals using the Snap! Block-based language.	**Teacher Profile:** No prior CS experience required **PD Profile:** Summer online course, industry mentor partnership, school year support **Cost to School:** PD/curriculum costs waived **Computer Access:** Access for all students
10-12	AP CS A	Microsoft TEALS	2 semester course co-taught with industry partners. Based on University of Washington's CSE 142/143, students learn college-level programming using Java following College Board's AP CS-A standards. Follow up to Microsoft TEALS Intro to CS program.	**Teacher Profile:** Any prior AP teaching experience useful **PD Profile:** Summer online course, industry mentor partnership, school year support **Cost to School:** PD costs waived $30/student for textbooks $92/student for AP exams **Computer Access:** Access for all students

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CS4RI 2.0 Goals and Strategies

- Build capacity to provide high quality CS education to ***ALL*** K-12 students in Rhode Island
  - Eye on Broadening Participating in Under Represented Groups
- Strengthen CS workforce development
- Align with other state and national education and workforce efforts
- Make data driven decisions
- Obtain adequate funding

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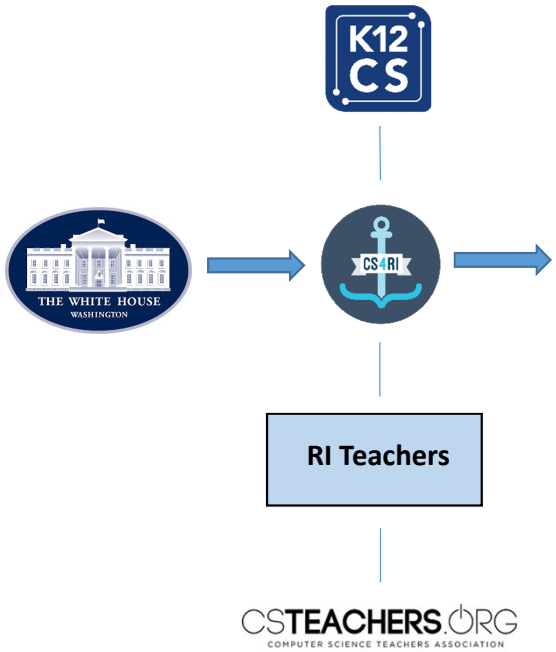
Update: CS Education Standards for RI

What are standards?

Standards:

1. *Define the knowledge, practices, and skills student should possess at critical points in their educational career.*

2. *Help frame realistic pathways for all students.*



Why now?

RI Computer Science Education Standards Advisory Committee

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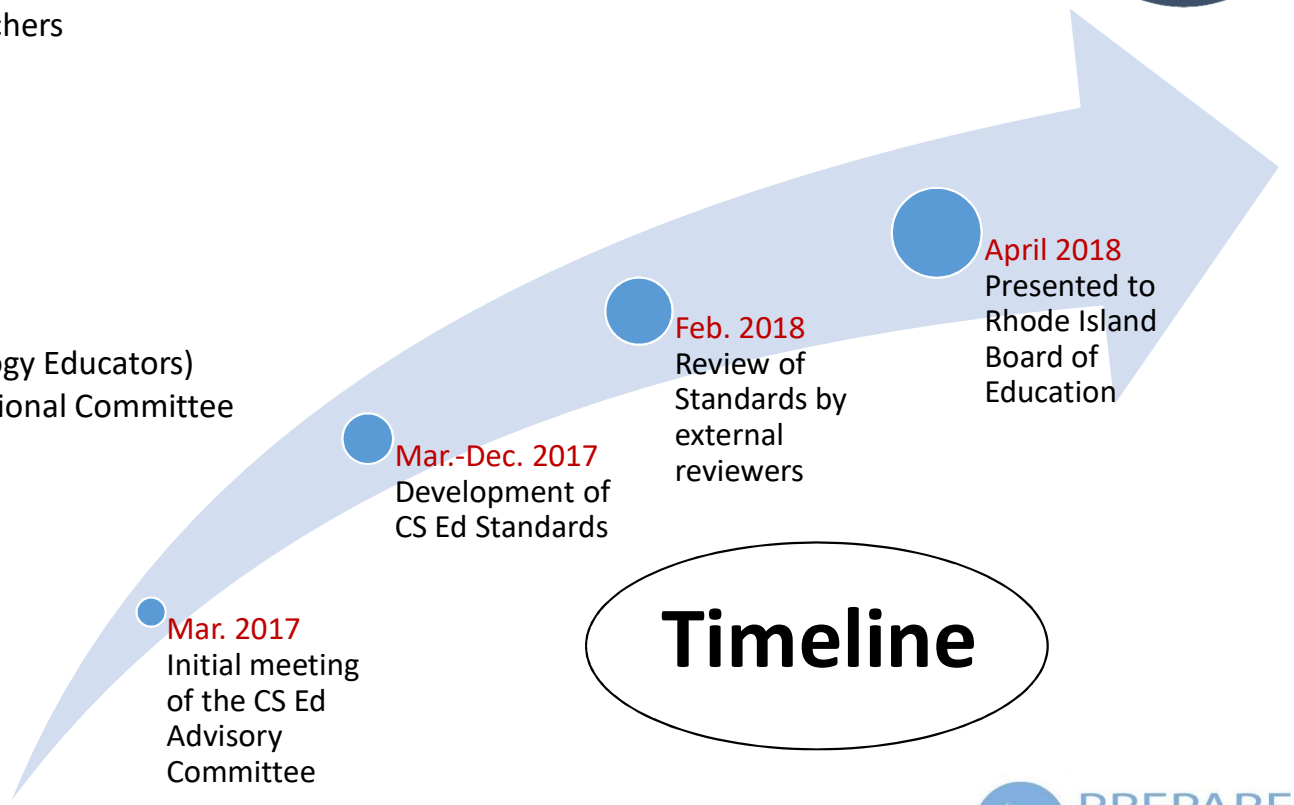
Update: CS Education Standards for RI

Participation by:

- Elementary, Middle, & High School Teachers
- Higher Education Faculty
- District/STEM Coordinators
- Administrators
- Industry
- Media/Information Literacy Specialists
- Cybersecurity experts
- Code.org
- RISTE (Rhode Island Society of Technology Educators)
- Next Generation Science Standards National Committee
- Cyber Innovation Center



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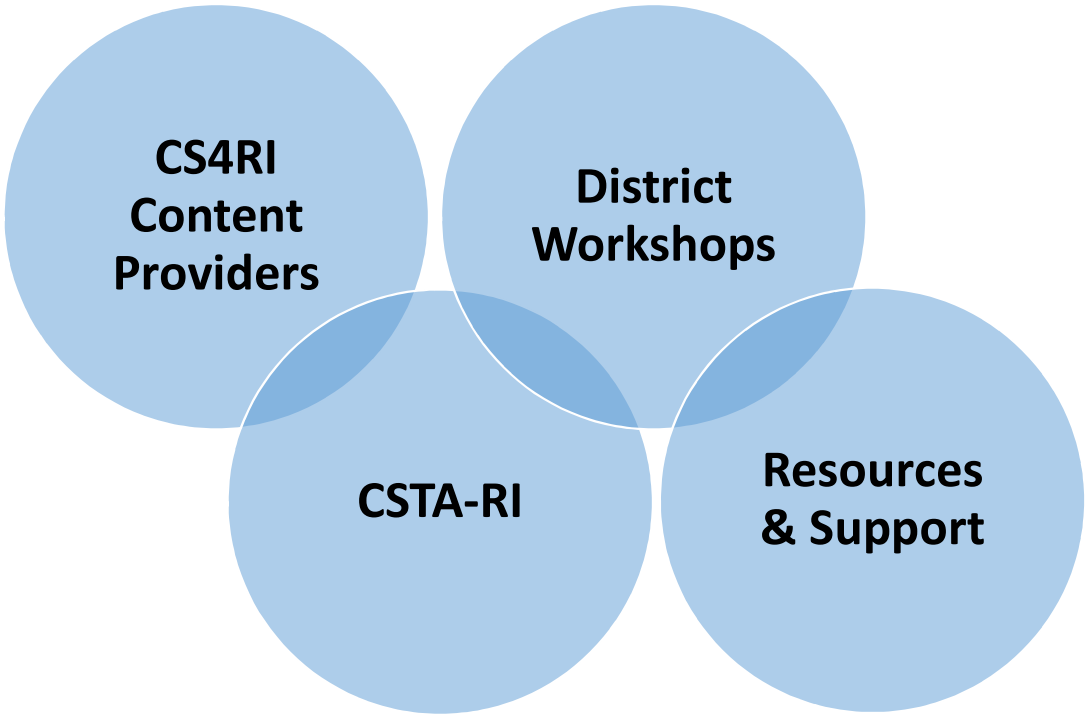
Update: CS Education Standards for RI

What are the next steps?

Implementation!



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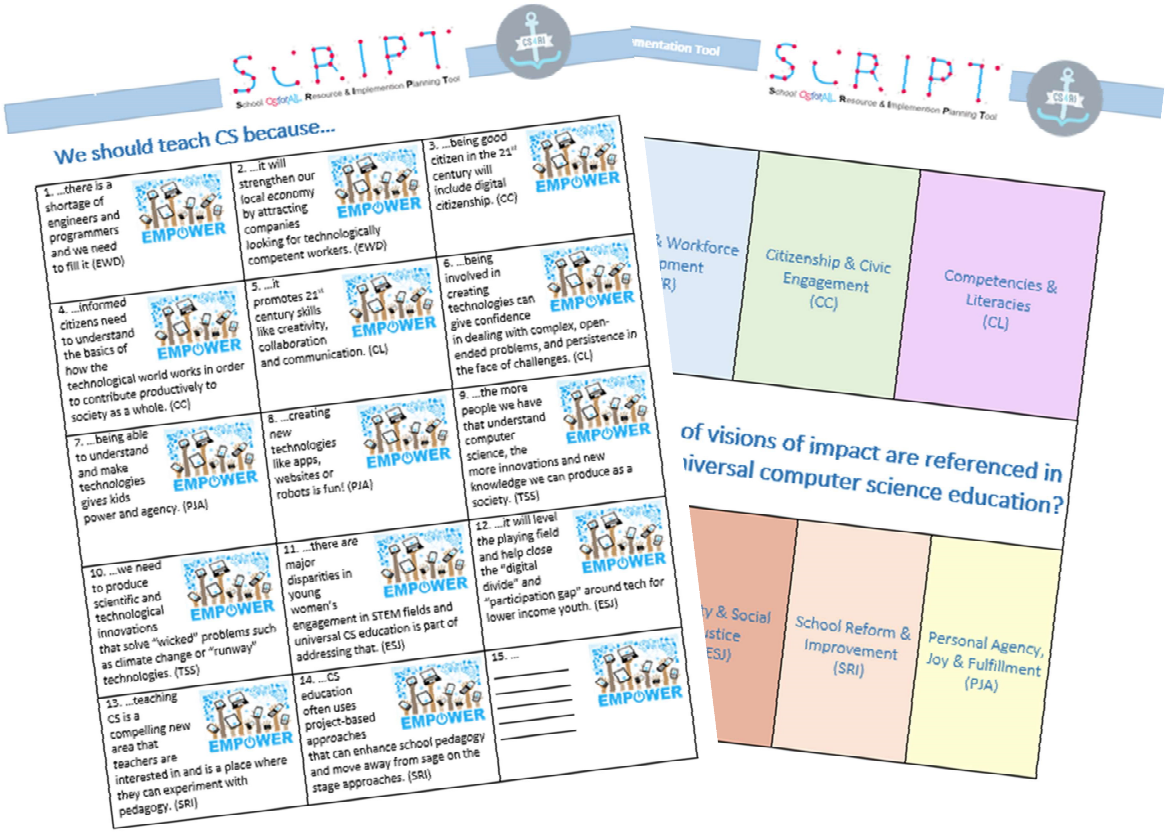
SCRIPT

School CSforALL Resource & Implemention Planning Tool

Visioning K-12 Computer Science Pathways



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Economic & Workforce Development (EWR)	Citizenship & Civic Engagement (CC)	Competencies & Literacies (CL)	
What kinds of visions of impact are referenced in talk about universal computer science education?			
Technological, Social, & Scientific Innovation (TSS)	Equity & Social Justice (ESJ)	School Reform & Improvement (SRI)	Personal Agency, Joy & Fulfillment (PJA)

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SCRIPT

School CSforALL Resource & Implemention Planning Tool

Hands-on, active participation workshops to empower district and school teams to answer the "WHY" question; to value different perspectives; and to equip with tools and supports for prioritizing and decision making at the local level.

- **Audience:**
  District / School Leaders & Educators
- **Save the Dates:** (2 - Two Day Workshop)
  URI - August 15th and 16th
  RIC - August 21st and 22nd
- **Time:**
  8:30 – 3:30
- **Registration:**
  https://www.cs4ri.org/upcoming-events/

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CS4RI Team Next Steps

- **RIDE in partnership with URI and the RI STEAM Center will implement CS4RI's Phase Two goals.** This partnership will support Rhode Island in meeting both secondary and postsecondary goals.
- **RIDE and the RI STEAM Center will be bringing Computer Science Standards** to the K-12 Council in April for possible endorsement. Standards, developed by RI's educator and business leaders, will support educators looking to expand computer science.
- **RIDE in partnership with Districts and Schools will improve and streamline data collections related to CS courses and programming.** This will inform data driven decisions by all to best support the CS4RI goals

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Ways for *YOU* to Get Involved in CS4RI

- Script Workshops for School Leaders and Educators
  - Strategic planning support; grounding activities securing community buy-in; district / school tools, resources and support
- Matrix Partner Professional Development for Educators
  - Program / Course specific professional development
  - Late spring and Summer 2018 – register online
- Community of Practice for Educators
  - Practical focus on pathway support and decisions, standards implementation, strategies and advice
  - Monthly meetings – register online
- Volunteers
- 2018 CS4RI Summit
  - Student engagement is the name of the game!
  - Student presenters & active participants
  - School Leader activities and sessions
  - Save the Date: December 2018

NEXT STEPS

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Questions and Open Conversation

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- Team Members
  - Vic Fay-Wolfe – vfaywolfe@uri.edu
  - Holly Walsh – Holly.Walsh@ride.ri.gov
  - Carol Giuriceo - cgiuriceo@ric.edu
  - Jessie Barrett - jwbarrett@uri.edu
- Website: http://CS4RI.org

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