



## Computer Science Work Group

**March 9, 2021, 3:30-5:00 p.m.**

### Members Present

Co-Chair Kathleen Kay, Co-Chair Jeff Weld, Wendy Batchelder, Dan Carver, David Collison, Nicole Crain, Samantha Dahlby, Jacquie Drey, Annette Dunn, Debi Durham, Linda Fandel, Dan Greteman, Dee Hamlett, Wren Hoffman, Doug Jacobson, Joe Murphy, Melissa Pettigrew, Kyle Rector, Ryan Schaap, Ben Schafer, Lance Stonehocker, Joe Stutting, Beth Townsend, Timothy Urness, Brian Waller

### Roll Call

Department of Education Computer Science Consultant Wren Hoffman facilitated the roll call of members.

### Welcome/Opening Remarks

Co-Chair Kathy Kay, Senior Vice President and CIO at Principal Financial, welcomed and thanked everyone for their engagement and continuing progress at the subcommittee level.

### Subcommittee Refined Recommendations

Wren Hoffman facilitated the presentations of subcommittees' refined lists of narrowed, consensus, high-impact draft recommendations, including questions, suggestions and advice which included how their recommendations:

- Build upon and integrate with current rules, regulations and policies that govern computer science education in Iowa;
- Have a firm basis in research or known best practices in Iowa or elsewhere (while not ruling out novel and imaginative recommendations);
- Do not necessarily require significant new dollars, though may certainly involve modest new funding; and
- Do not necessarily require new state staffing, though may certainly involve redistribution of responsibilities for current staff at agencies or within initiatives.

**Computer Science Education Policy**, Joe Stutting, chair. Members include: Annette Dunn, David Collison, Ryan Schaap, Ben Schafer

Refined recommendations:

- Flex credit option;
- Teacher incentives; and
- Alternative licensure programs

**Computer Science Educator Support**, Ben Schafer, chair. Members include: Dan Carver, Samantha Dahlby, Dee Hamlett, Denise Hoag, Tim Urness

Refined recommendations:

1. In-service professional development for secondary teachers



- Create and maintain a curated repository of materials for districts and teachers to reference as they plan curriculum and develop their district plans;
  - Review and revise the Computer Science Professional Development Incentive Fund;
  - Create and maintain a curated, public list of CS content and contacts in each school district;
  - Create a specific and automatic financial reward for in-service teachers who earn a secondary CS endorsement;
  - Create a tuition credit for pre-service teaching majors who pursue adding a secondary CS endorsement to their undergraduate program of study;
  - Create a “Center for Teaching and Learning in Computer Science” to offer low-cost coursework for in-service teachers to earn a CS endorsement and/or current CS professionals to earn teaching credentials to enter the classroom; and
  - Set a timeline for requiring a CS endorsement at the secondary level.
2. Micro-credentials targeted towards elementary educators
- This subcommittee feels that there is a distinct difference in the needs of training elementary educators (where all teachers need to know a little about computer science) vs. secondary educators (where specific educators need to be better trained). The subcommittee does not feel that elementary educators need to be endorsed in computer science at this time.
- Create a working group of AEA employees and CS specialists to establish a policy for what types of workshops, courses, and training programs would qualify for micro-credential status in CS; and
  - Create a working group of AEA employees and CS specialists to consider how multiple micro-credentials could be combined to earn an endorsement or “specialist” certificate.

**Computer Science Education for the Underserved**, Kyle Rector, chair. Members include: Wendy Batchelder, David Collison, Samuel Padilla

Refined recommendations:

- Provide remote instruction to students in districts that do not have the same level of access to quality computer science instruction;
- Train people who already do technology support for the district to turn around and teach students;
- Leverage existing community college, state college, and larger school district programs to recruit mentors for K12 computing experiences;
- Connect with national networks and encourage students to join peer groups that broaden participation;
- Offer curriculums that emphasize inquiry-based learning/problem solving first (e.g., robotics, cybersecurity, HCI), coding second, to reach broader groups of individuals. These must be culturally responsible; and
- Scaffold collaborative learning with evidence-based findings that include students of different abilities.

**Computer Science Education Work-Based Learning**, Beth Townsend, chair. Members include: Nicole Crain, Dan Greteman, Joe Stutting, Melissa Pettigrew

Refined recommendations:



- Each K-12 school district will have access to (either shared or individual) WBL coordinator with a clear and sustainable source of funding beyond operational sharing;
- Create a WBL playbook for schools and employers to increase participation by both groups and insure that both know the full range of available WBL options as well as how to (best practices) to set up each program in the range. This will help dispel any concerns that may intimidate or discourage either group from participating. Include best practices such as utilized at Waukee Apex and iJag;
- Provide financial incentives to employers to invest in WBL programs and to defray costs associated with creating a program;
- All WBL experiences will contain some IT component regardless of the industry or occupation;
- Request employers to commit to a certain level of program per semester (beyond the current or first semester) to insure sustainability of the program; and
- Increase awareness of opportunities and benefits of developing WBL programs and the virtual clearinghouse by creating and funding a marketing program that would target employers, parents, students and educators. Could use multimedia presentations, various social media platforms and could be tailored to specific school district or community or employer needs.

**Computer Science Education Promotion**, Joe Murphy, chair. Members include: Doug Jacobson, Melissa Pettigrew, Robert Stough

Refined recommendations:

- Make computer science inclusive and demystify it;
- Take advantage of bully pulpits across the state; and
- Develop an ambassador program.

**Computer Science Education Youth Programming**, Doug Jacobson, chair. Members include: Jacquie Drey, Samuel Padilla, Lance Stonehocker

Opening remarks included the following goals:

- Grow participation in IT Olympics and other competitions;
- Expand summer formal and informal CS opportunities; and
- All with a watchful eye on equity and access, informed by domain experts.

Refined recommendations:

- Database/clearinghouse created to provide information on the various co-curricular activities available to support computer science education;
- Competition funding support;
- Summer programs; and
- Statewide Tech Jam.

## Summary of Key Ideas and Final Remarks

Co-Chair Jeff Weld, executive director of the Iowa Governor's STEM Advisory Council, remarked that after starting with a blank canvas in December, the paint is beginning to reveal a pattern. He finds it exciting what is in store for Iowa's next generation.



Dr. Weld asked if outside expertise was needed at this point, such as additional research into best practices. The membership was invited to weigh in on this question and to suggest any outside groups in the broader community from whom it would be worthwhile to bounce ideas and recommendations by to vet these recommendations.

To dial in and strengthen recommendations, the subcommittees will be provided a prescribed format to follow for recommendations moving forward, as well as guidance as to next steps for the upcoming April 13 Computer Science Working Group meeting.

Meeting adjourned at 4:51 p.m.

### **Next Meeting**

April 13, 2021, 3:30-5:00 p.m.