CSTA Session Proposal

Session Title: Collaborating for Success—Implementing ECS in Chicago and Beyond

Background of the Topic: As part of the CS10K project the Exploring Computer Science program has begun to expand to districts across the nation. What ingredients are necessary for new ECS sites to experience success? The story of Chicago Public Schools provides some answers to this question.

The key to success in Chicago has been establishing an active partnership. Connections to area public and private high school teachers were initiated through the 120-member Chicago CSTA. This active partnership connects Chicago and Los Angeles (UCLA), multiple Chicago universities (DePaul, UIC, Loyola) and Chicago Public Schools administrators and teachers.

Description of the Information to be Covered and What Attendees will Learn: In this session we will examine more closely the steps required to start and sustain an ECS program.

The session will provide a brief overview of Exploring Computer Science with a high level review of the curriculum, instructional philosophy and professional development (PD). We will then describe the history of the Chicago partnership and status to date.

Based on lessons learned from both LA and Chicago the key ingredients for success will be summarized. Each of the following ingredients for success will be discussed and supported with examples:

1. **Collaborative partners** are needed to bring together high school teachers, university faculty and school district administrators.
2. **Adequate time** is needed both for initial planning and a measured expansion plan.
3. **Teacher community** is built through effective PD and facilitating ongoing teacher communication and mutual support.
4. **Sustainability** requires school district ownership and long-term vision of a core group.
5. **Equity** requires deliberate outreach to and inclusion of students traditionally underrepresented in computer science, if we are to accomplish the goal of opening the door to technological education and careers for all students. Teaching of this diverse group of students must be supported by the curriculum and the PD model focused on the three pillars of computer science concepts, inquiry strategies and equitable classroom culture.

Finally, we will engage in a dialogue with the participants about where they are in the process and what their next steps might be.

The presentation, dialogue and discussion involved with this session will benefit the entire computer science community in understanding the level of commitment necessary to ensure that the efforts we make on behalf of CS10K are sustained.
Attendees will leave the presentation with a better sense of the following items:

1. What ECS is/is not
2. Steps required to implement ECS in a school/district
3. Elements that make ECS PD effective
4. Why belief systems matter

**Description of Relevance:** Scaling is not equivalent to sustaining. There are many efforts underway to support the CS10K initiative, but in order for them to be successful they need to be sustained over time. Involvement of both school leaders and teachers in planning and implementation of curriculum and professional development is critical.

Many teachers, professors, administrators and policymakers underestimate the importance of creating and fostering these connections. Many HS teachers underestimate their importance and as a result lack the confidence to establish a connection with a university.

The story of replicating ECS from Los Angeles to Chicago well-illustrates the issues involved. Telling this story will touch on the following needs:

1. Defining the right entry point(s) help establish the curriculum. This may be CTE, Math courses or elective courses.
2. Although the process may be started by any of the main stakeholders (teachers, universities, school districts,) teachers need to be involved in planning from the beginning.
3. Success in funding requires multiple tries. The vision of providing compelling CS education is work that needs to be done regardless of funding. Grants simply help do it better and faster.
4. Relational trust needs to be built between the partners, and this takes time on the order of years, not months.
5. Fidelity to established successful curriculum is needed for successful replication.

**Presenter Background:** Our presentation team has extensive experience presenting to computer science teacher and student learners in professional development and classroom settings. All presenters are teachers teaching Exploring Computer Science or are part of our Exploring Computer Science team. See: http://www.exploringcs.org

*Gail Chapman* is the Director of Outreach for Exploring Computer Science. Gail works with partner districts on strategic planning related to implementation of ECS, including professional development, leadership development, and sustainability. Prior to joining the ECS team, Gail was the Director of Leadership and Professional Development at the Computer Science Teachers Association. She taught high school mathematics and computer science, including AP Computer Science, for 15 years and subsequently worked on the AP Computer Science program at both ETS and College Board; this work included assessment development, curriculum design, and professional development.

*Don Yanek* is the department chair for Computer Science at Northside College Prep high school where
he has taught for the last 10 years. Don is a founding member and president of the Chicago CSTA and has been a teacher in the Chicago Public Schools for 21 years. Don is a co-PI on the NSF grant to replicate ECS, helping customize the curriculum and he has been active in planning and leading ECS PD experiences in the greater Chicago area.

*Dale Reed* is a faculty member at the University of Illinois at Chicago where he has taught in the Computer Science Department for 17 years. He is in charge of undergraduate recruitment for the Computer Science Department. As a founding member of the Chicago CSTA he gives presentations at area high schools and has organized Microsoft and Google sponsored PD experiences for high school teachers. He is a co-PI on the NSF grant to replicate ECS in Chicago Public Schools.

**Handouts:** At this point we have not finalized any handouts for this presentation. We will most likely share information with attendees about how they can find further information about presentation topics on our website.