The Expanding Computing Education Pathways (ECEP) Alliance seeks to increase the number and diversity of students in the pipeline to computing and computing-intensive degrees by promoting state-level computer science education reform. ECEP supports 23 states and territories to develop effective and replicable interventions to **broaden participation in computing** (BPC) and to create state-level infrastructure to foster equitable computing education policies.

**Key Features of ECEP**

- ECEP focuses on **STATES as the unit** of change by supporting systemic improvements in policy, organization, and data systems that lay the foundation for large-scale and sustainable advances in BPC.
- ECEP provides **technical support** to state leadership teams for BPC data analysis, goal setting and tracking, and policy design and implementation rather than engaging in direct student interventions.
- ECEP outcomes are grounded in systems change, an approach that focuses on policies and practices that are often codified in law, leading to **policy based sustainability**.
- ECEP requires **cross-disciplinary collaboration** at a systems level among diverse stakeholders representing the computing, education, and policy components of the entire CS education ecosystem.
Core Activities

- Catalyze and incubate diverse state leadership teams that keep BPC at the forefront in state level actions around Capacity for CS ed, Access to CS ed, Participation in CS ed, and Experiences of CS ed (CAPE).
- Provide coaching and technical assistance to state ECEP leaders advancing them through the ECEP 5-stage change model.
- Connect ECEP leaders to expertise, resources, and promising practices to help them advance BPC through monthly virtual meetings, annual ECEP convening, special projects, website, and social media.
- Provide seed funding to ECEP states through mini-grants that facilitate state CS education summits, develop goals and metrics for tracking large scale, longitudinal change in BPC, create CS landscape reports, and support community building around BPC.

5-Stage Change Model

- Build/ utilize data infrastructure to provide evidence to inform strategic BPC efforts
- Understand the CS education landscape & identify the key issues/policies
- Get initial funding to support change
- Gather & organize your allies to establish goals & develop strategic plan
- Find your leader(s) & change agents

Examples of Equity Issues to Assess

- Student Outcomes: How does the quality of instruction differ across subgroups of students? How does this affect learning?
- Student Enrollment: Which subgroups are underrepresented in CS courses? To what extent?
- Course offerings: Are CS courses offered in low-income schools at similar rates to other schools?
- Teachers, Funding, Policies: Do districts in all areas have the resources to offer CS? To train and certify teachers?
- Do districts in all areas have the resources to offer CS? To train and certify teachers?

Capacity, Access, Participation, and Experience (CAPE) A Framework for Examining Equity in CS Education

ECEP Alliance Team and Contact Info

- **PI:** Carol Fletcher, The University of Texas at Austin
- **Co-PIs:** Maureen Biggers, Indiana University
  Leigh Ann DeLyser, CSforAll
  Anne Leftwich, Indiana University
  Debra Richardson, University of California-Irvine
  John Goodhue, Mass. Green High Performance Computing Center
- **Director:** Sarah Dunton, Mass. Green High Performance Computing Center
- **Email:** ecepalliance@gmail.com
- **Twitter:** @ECEP_CS
- **Website:** https://ecepalliance.org

This material is based upon work supported by the National Science Foundation under Grant No. NSF-CNS-1822011. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.