

Broadening Participation in Computing



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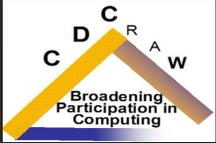
CISE Education & Workforce Program

BPC Department Plans Workshop

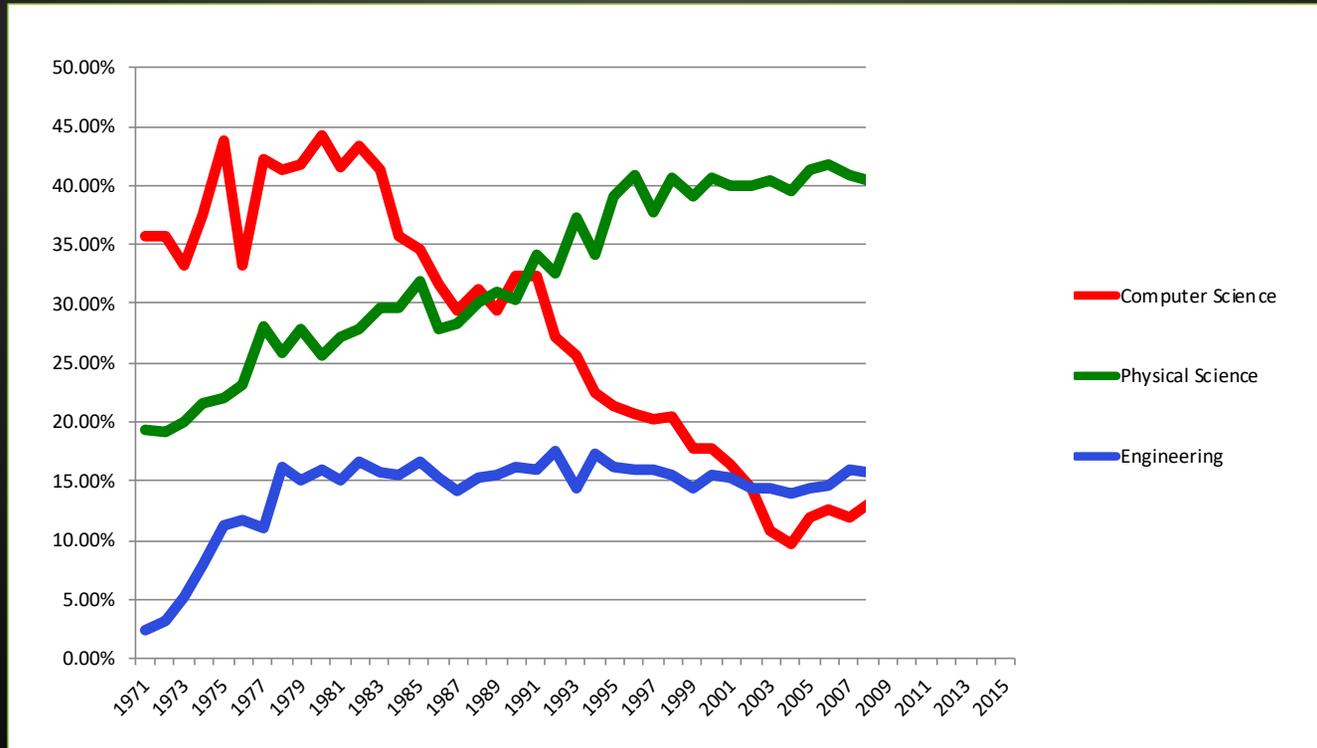
Nov. 14, 2019

CISE BPC ACTIVITIES

Level	CISE Programmatics	Alliance
PK-12	CSforAll	
UNDERGRAD	IUSE: CUE	
	CRA-W CREU and DREU Tapia, Grace Hopper	
GRAD	Research (6369) GRF (110) NSF Research Traineeships	
	CRA-W Grad Cohort CRA-W/CRA Career Mentoring Workshop CMD-IT URM Mentoring Workshop	
PROFESSORS	CRII, CAREER	
	CRA-W and CRA Career Mentoring Workshops CMD-IT URM Mentoring Workshops	



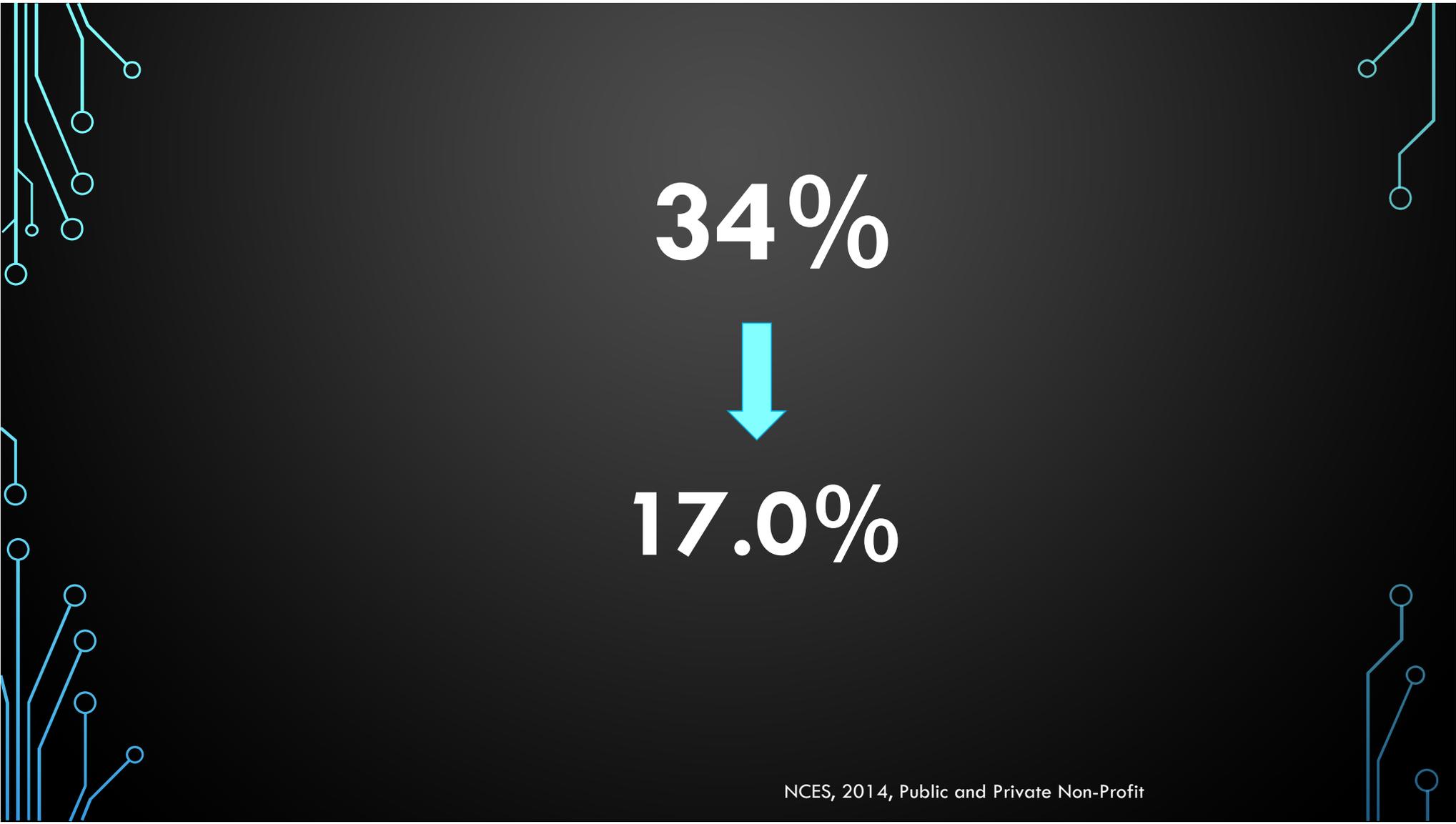
% WOMEN OF INTENDED CS MAJORS



1971

2005

2017

A decorative background pattern of light blue circuit board traces and nodes is visible in the corners of the slide.

34%



17.0%

NCES, 2014, Public and Private Non-Profit

CISE BP Strategic Plan

“It will take more than good intentions or business as usual, however, to reverse longstanding underrepresentation. **It will take committed, focused, and sustained efforts on the part of many in the computing community.”**

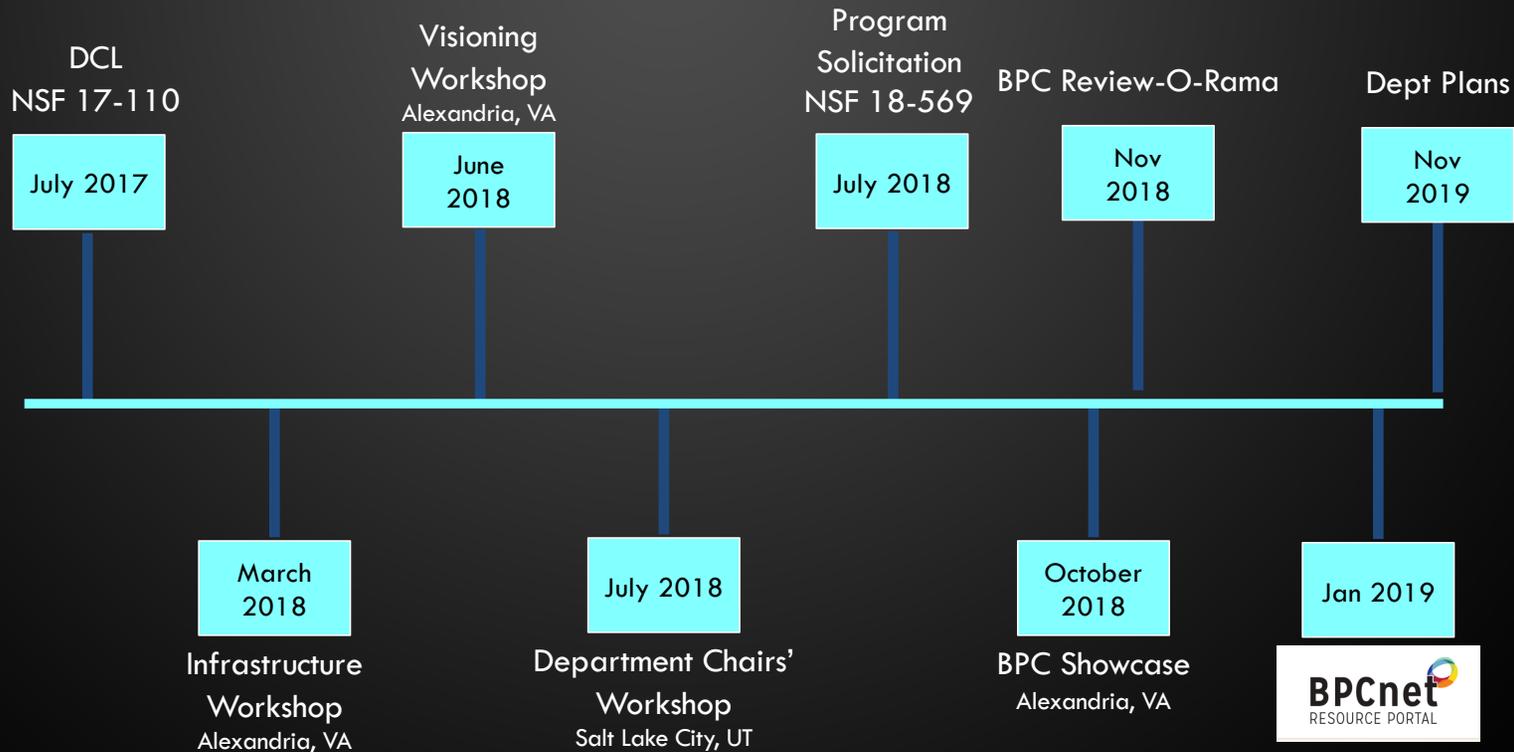
ALMOST EVERYONE

https://www.nsf.gov/cise/oad/cise_bp.jsp

Guiding Principles for BPC Effort

- BPC requires **culture change** in colleges/universities, departments, classes, research groups, professional organizations & K-12
- Culture change begins with **enhanced exposure** to BPC throughout the CISE community
- PI engagement must be **tailored to individuals and organizations** as appropriate

BPC: A BRIEF TIMELINE



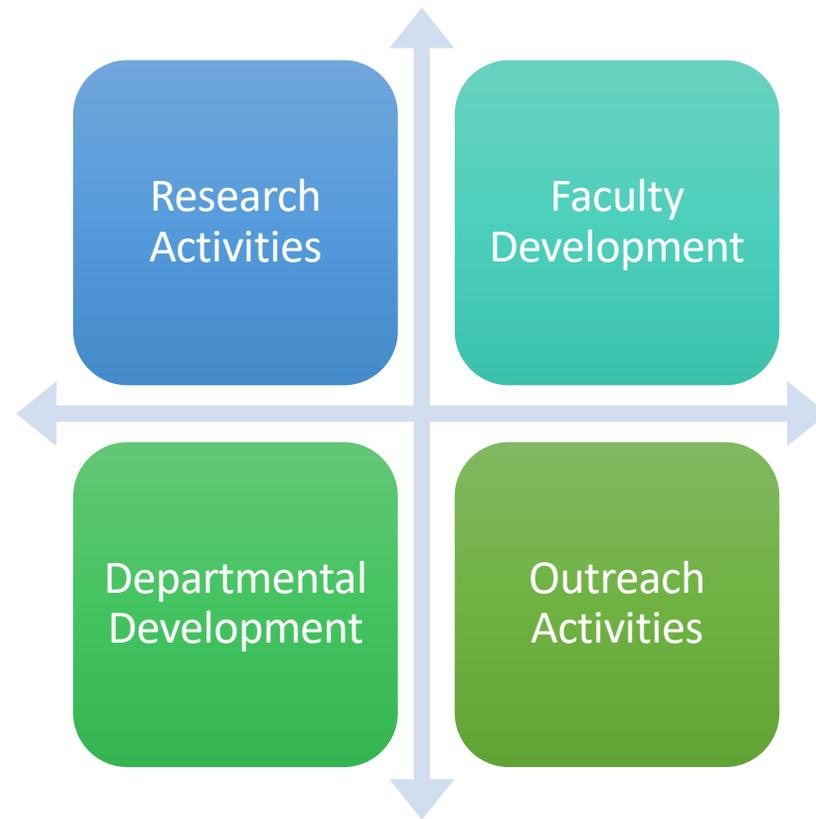
Components of BPC effort

Requirements: Encourage → Require meaningful BPC activity in an expanding set of CISE Programs

Support: Provide resources and support for PIs

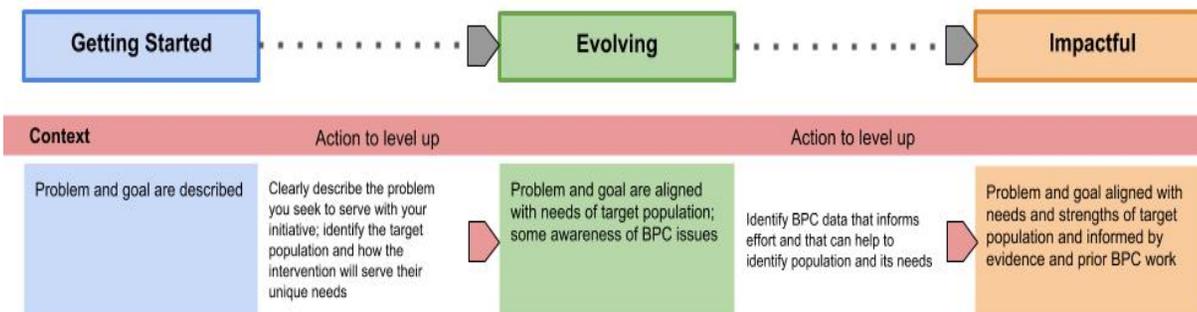
Review/Report: Require reporting of BP outcomes in annual reports

Multiple Approaches to BPC Requirement

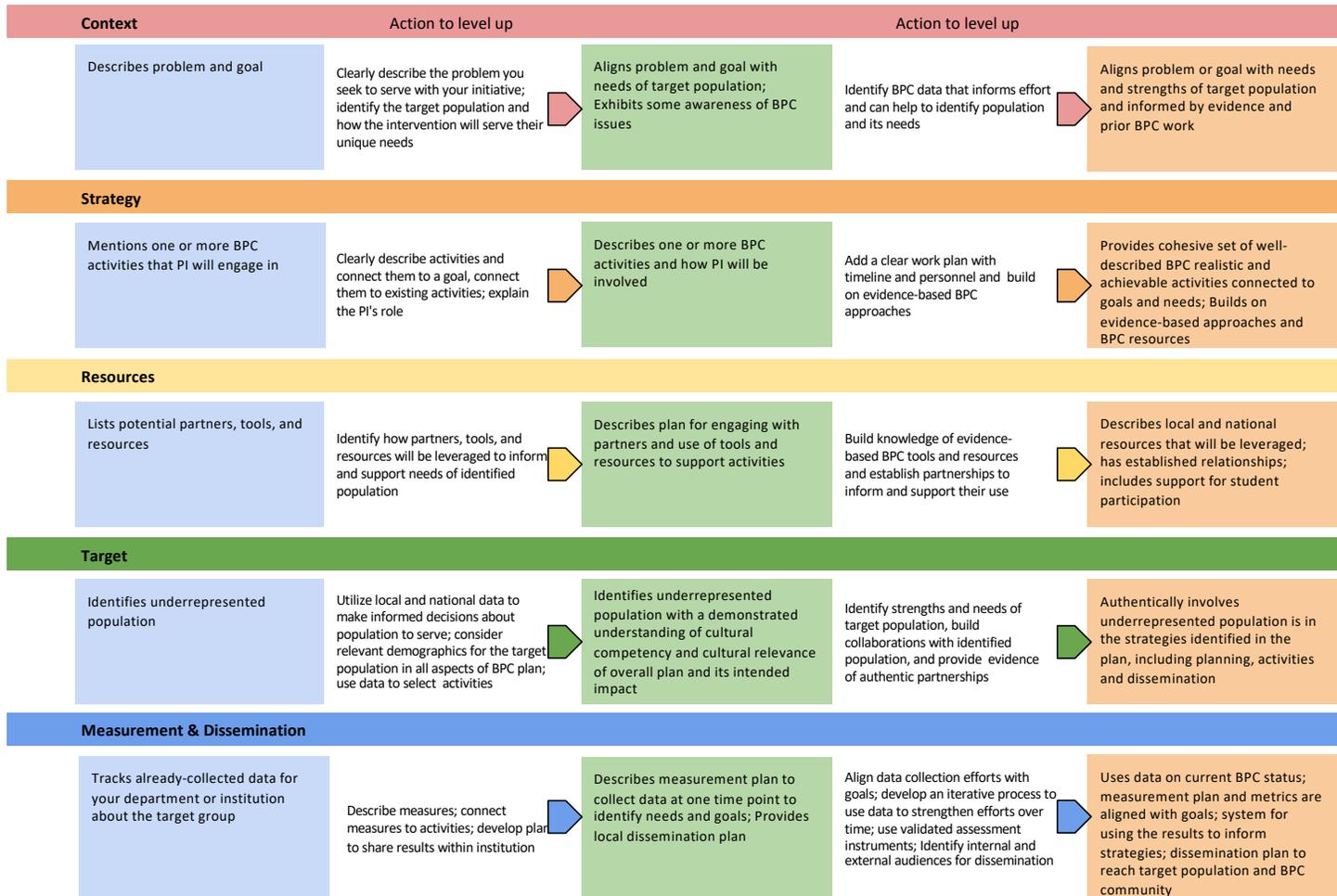


Broadening Participation in Computing (BPC)

- BPC requires culture change in the computing community
 - increased exposure and engagement
- CISE now requires meaningful BPC activities in all Core research programs
 - Equip program officers and reviewers to evaluate BPC activities in proposals
- White paper of best practices and resources on BPCnet.org



BPCnet
RESOURCE PORTAL



- Developed and curated by CRA (M. Hall, N. Amato) and NCWIT (L. Sanders, D. Richardson)
- Best and promising practices: Evidence-based and vetted resources
- Programs-in-a-box
- Not just ***What*** but ***How***
- Showcase for BPC-A Alliances, NSF-supported projects, etc.



**Diversity Drives Innovation—
Taking action to Change the Face
of Computing**



The BPCnet Resource Portal is a clearinghouse for the community to learn about and engage with ongoing projects to diversify computing. The BPCnet serves two key roles:

- Increase visibility of ongoing broadening participation efforts and community awareness of these efforts.
- Assist NSF PIs in planning meaningful Broader Impact components of their proposals.

Partnering Activities
These resources are designed to increase NSF PI understanding of, interest in, and ability to engage with existing activities designed to support BPC at All levels.
[VIEW](#)

Departmental Activities
These resources are designed to simplify departments' BPC efforts by assisting departments in establishing a plan that fits and engages in impactful projects.
[VIEW](#)

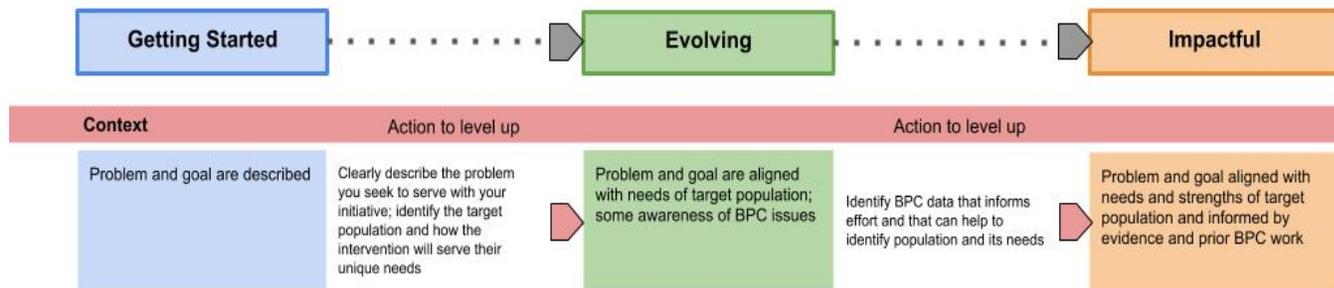
White paper

- 2 experts from each panel
Captured what was learned from the panels
- Created a description of components and characteristics of meaningful BPC plans



Key Takeaways of White Paper

- Ideal BPC plan is well-developed, impactful, and cohesive
 - Describes an evidence-based, sustained response to a well-articulated aspect of broadening participation
- Many CISE PIs, especially those new to BPC, will not initially be in a position to develop or execute such an ideal plan
 - Every effort should be made, however, to articulate a plan in which the actions and impacts are clear and compelling.

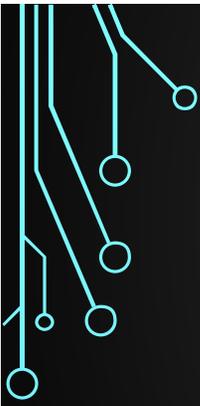


Need for Institutional Efforts to address BPC

- Encourage units to develop their own departmental BPC plans to which their faculty can contribute
 - e.g., 1-2 pages of department plan + 1 page of project-specific plan
 - Enable *sustained* cultural change & assessment of impact
- BPC Plan Components
 - Context: What are your demographics and local challenges/opportunities?
 - BPC Mission: What is the strategic mission of your dept w.r.t BPC?
 - Goals and Activities: What are your specific and measurable goals? What activities contribute to those goals?
 - Metrics for success: How will you monitor and review progress toward BPC goals?

BPC Plan Logistics

- CISE Core Solicitation ([19-589](#))
 - Medium & Large must have approved plan at time of award
 - Proposals that submit plan will receive comments
 - PO
- Common Pitfalls
 - Broader Impacts != BPC
 - Assuming BPC → K12 Outreach
 - Novelty vs. building upon best practices and existing efforts
 - Not connecting activities to BP goals
 - Listing goals without strategies



“ Talent is everywhere.

Not all talent has access. ”

- Megan Smith, former U.S. Chief Technology Officer

