Gearing Up for Change
Institutional Reform in Undergraduate Computing Programs
Prerequisites to Transforming for Diversity in Undergraduate Computing

It is not easy to be a change agent. In order to be successful, change agents have to understand and consider their organization’s complex interlocking systems. Plans for change must ensure that subsystems work in harmony with each other to reinforce the envisioned change.

In the context of undergraduate computing programs, the system that affects student experiences includes the six major components shown in Figure 1. All of these components should be considered when trying to improve women’s representation. Without considering retention, for example, recruitment is a poor investment of time and energy. Likewise, overlooking policies that penalize faculty for their diversity efforts means that initiatives are likely to be short-lived. And, without evidence of success, it will be difficult to sustain external support for change efforts. Thus, as these examples show, a systemic view is crucial for successful, sustained organizational change. Without it, new ways of operating are undermined and progress is lost.

Even with a systemic view, however, organizational change is much more likely to occur when the seven conditions illustrated in Figure 2 and explained below are present.

1. **Dissatisfaction with the status quo**
   To motivate action, change agents must call attention to the problem. When there is discomfort with the current situation, they must communicate a clear and appealing vision of a better future. For example, is your applicant pool too small or poorly qualified? Are opportunities for organizational success lost due to insufficiently creative thinking? If the people in your organization experience frustration with these conditions, they are more likely to welcome the solutions you propose.

2. **Consensus and empowerment**
   Your vision for a better future must be translated into agreed-upon strategies for achieving that future. Consider the obstacles that could get in your way, and how they can be overcome. For example, do your colleagues have relevant information so they understand the situation and their options for effective action? Have they agreed upon a course of action including ways of overcoming potential obstacles? Do they believe they can achieve the goals they set?

3. **Resources**
   Change costs time and money even when the outcome saves both. Without sufficient resources, change is not likely to succeed. When diversity efforts replace other forms of departmental service, for example, faculty are better able to devote the necessary time.
4. **Rewards, incentives, monitoring and accountability to institutionalize change**

For change to persist, it should be embedded in the structure of the organization through policies, routines, and ceremonies. Incorporation into the organization’s reward system can go a long way toward this end, but it requires ongoing accountability to document whether new behaviors are adopted and maintained. So, for example, annual reports could include information about new behaviors and their results.

5. **Inclusive participation**

Broad engagement builds internal support and reduces resistance to change. Without widespread internal support, or at least a committed critical mass, little is accomplished. When people engage in planning and implementing change, they feel ownership and are less likely to impede change efforts. Other ways of reducing resistance to change include: compromises, guarantees against personal loss, celebration of accomplishments, and pride in past organizational achievements as current challenges are met with new solutions.

6. **Visible high-level and external endorsement and support**

Change is most likely to occur when there is visible support from those at the top levels of the organization. This support should include public endorsement of the change efforts and ongoing interest in progress toward goals.

In addition to high-level support, support from external stakeholders and power brokers contributes to successful organizational change. These people can affect the supply of critical resources to the organization, so their backing can be highly influential. Pressure from parents, customers, alumni, professional associations, and peer institutions, for example, can be quite persuasive.

7. **Change agent(s) or champion(s)**

A person or group of respected people who champion and guide the change effort help to keep attention focused and action underway. Change agents can lend legitimacy, garner resources, and recruit participants. They motivate and facilitate engagement in the change effort.
**Communication Creates Conditions for Change**
Changing the culture of an organization requires that members reach new understandings and act in new ways. Enlisting allies in this process requires persuasive communication.

To learn more about communication for organizational change, go to www.ncwit.org/commchange.

**NCWIT Resources for Departmental Change**
Achieve systemic change by addressing the six aspects of the departmental system that affect undergraduates. Plan for success with free advocacy tools, workbooks, Programs-in-a-Box, NCWIT Promising Practices, talking points, and multimedia resources at www.ncwit.org/resources.

1. **Recruit Strategically**
   Deliver effective messaging strategies to targeted audiences.

2. **Retain with Pedagogy**
   Use teaching strategies to keep students engaged and learning together.

3. **Retain with Curriculum**
   Use everyday examples, meaningful assignments, and relevant courses.

4. **Retain with Student Support**
   Create a sense of belonging and identity as a member of the field.

5. **Support Your Initiatives**
   Get buy-in and administrative support for your efforts.

6. **Assess Your Efforts**
   Evaluate initiatives to figure out where to put your scarce resources.