

National Center for Women & Information Technology

PROMISING PRACTICES

Regional Celebrations of Women in Computing – R-CWIC (Case Study 1)

An Example of Intentional Role Modeling



Undergraduate



Graduate

The **Indiana Celebration of Women in Computing (InWIC)** and the **Ohio Celebration of Women in Computing (OCWIC)** are small regional conferences modeled after the International Grace Hopper Celebration of Women in Computing. Attendees number about 100, including undergraduate and graduate students, faculty, and industry professionals in computing. Activities involve a keynote speech by a highly successful technical woman, panels about careers in industry and academia, technical paper presentations, and undergraduate research posters. These conferences are developed and supported by the ACM-W.

Like the Grace Hopper Celebration, the R-CWICs intend to provide social support for women in computing, and they feature role modeling and networking.

EVIDENCE OF EFFECTIVENESS

Given that women leave the computer science major at higher rates than men, role modeling is an important practice that can increase women's intentions to enter and persist in the field. Unfortunately, the many programs that employ role models seldom measure outcomes. R-CWICs and the Grace Hopper Celebration are, to some degree, exceptions.

Surveys indicate that almost all InWIC attendees considered their time to be time well spent (97%), would like to attend again in the future (98%), and would recommend it to a friend (93%). Similar results were obtained for OCWIC. Likewise, more than half (57%) of InWIC attendees felt that it reinforced their computing career plans. Evaluations of the Grace Hopper Celebration found that women who had attended in the past returned, in large part, because they valued being with technical women like themselves and the inspiration the experience provided solidified their decision to major in computing. These findings document the positive assessment attendees have and their enhanced commitment to computing, but they relate these outcomes to the use of role models only by implication.



GENERAL PRINCIPLES AND ESSENTIAL INGREDIENTS

Speakers are selected to represent the various career interests and educational backgrounds of attendees. In this way, women who are academic and computing professionals, computing graduate students, and computing undergraduate students, made presentations.

Only the keynote speaker was coached in advance to focus on her personal experiences and to highlight obstacles that she had overcome. (To maximize effectiveness, the literature indicates that all intended role models should be encouraged to include similar information.)

For more specific information, contact Bettina Bair, bbair@cse.ohio-state.edu, or Gloria Townsend, gct@depauw.edu, for a copy of "A How-to Guide for Planning, Executing, Enjoying, and Evaluating your own R-CWIC." This detailed booklet provides step-by-step advice from the rationale for holding the event to raising funds and measuring its success.

RESOURCES

Several papers by Penelope Lockwood are a good source of research on role modeling.

Marx, D. M. & Roman, J. S. (2002). Female role models: Protecting women's math test performance. *Personality and Social Psychology Bulletin*, 28(9), 1183-1193.

Townsend, G.C. (1996). Viewing video-taped role models improves female attitudes toward computer science. *SIGCSE Technical Symposium* (pp. 42-46).

NCWIT offers practices for increasing and benefiting from gender diversity in IT at the K-12, undergraduate, graduate, and career levels.

This case study describes a research-inspired practice that may need further evaluation. Try it, and let us know your results.

ncwit.org Authors | Lecia Barker and J. McGrath Cohoon
Copyright © 2007-2008

NCWIT Investment Partners: National Science Foundation, Avaya, Microsoft, Pfizer, and Bank of America

How Do You Provide Intentional Role Modeling?

with Case Study 1

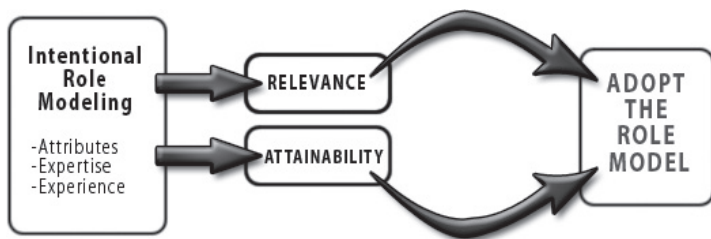


Undergraduate



Graduate

Role models can overcome the negative effects of stereotypes by increasing self-ratings and by inspiring and motivating achievement. They may even shape opinions. For example, one study showed that videotaped role models improved girls' attitudes toward computer science. These positive effects are the reason speaker programs invite successful women and members of other underrepresented groups, and why textbooks and websites highlight the achievements of diverse professionals. But effective role modeling may require more than simply parading a successful person before an audience. Inciting observers to compare themselves with and adopt a role model as a "possible self" requires communicating the role model's relevance to the observer's life and goals and the attainability of her successes for the observer. Intentional role models consciously convey this information to observers.



HOW TO INTENTIONALLY ROLE MODEL

Observers are most likely to compare themselves with someone they perceive as similar both demographically and in ability-related performance, so intentional role models communicate information about their own background, experiences, and concerns. Intentional role modeling involves the following:

- Explaining what makes your role relevant to your audience.
- Describing your personal history and highlighting the elements that your observers are likely to share.
- Speaking about your strengths and weaknesses and how they relate to your expertise and experiences.
- Helping observers see how they could attain the position you are modeling, and describing barriers you encountered and how you overcame them. (A role is perceived as attainable only if the observer believes they have control over their future performance and could realistically reach their goal.)

ROLE MODELING v. MENTORING

Role models are people who exemplify to an observer the values, attitudes, and behaviors that are associated with a position. By describing the values, knowledge, expertise, strategies, and experiences that got them to their position, role models make it possible for observers to imagine themselves in a similar role.

Role modeling is not the same as mentoring, although it is typically an element of mentoring (intentional or not). This connection often leads to confusing role modeling with mentoring. But role modeling is less interactive than mentoring, which involves interpersonal communication and is usually in the context of an ongoing relationship. In contrast, role modeling involves only demonstrating that a particular status is possible to achieve and how it can be achieved. Women's role models may be more effective if they are the same sex (although cross-sex mentoring can be effective).

Observers can be more or less open to being influenced, so role modeling is not always effective. Effectiveness can be maximized by intentionally demonstrating how relevant and attainable a role is, and by employing appropriate types of motivation. But overdoing it can have a negative effect.

Role models motivate in a positive or negative fashion by exemplifying someone an observer will want to emulate (or not). The type of motivation that is most effective depends on the characteristics of the observer.

Research cautions that role modeling's positive effects are not always obtained. For example, having more women faculty does not reliably increase enrollment of women students in an academic program. A large study showed that women graduate students did not want to become like women faculty members whose lifestyle included a poor work-life balance. Another undesirable outcome – reduced self-confidence – can result from presenting role models whose success seems unattainable to the observer.

NCWIT offers practices for increasing and benefiting from gender diversity in IT at the K-12, undergraduate, graduate, and career levels.

Visit www.ncwit.org/practices to find out more.

ncwit.org Authors | Lecia Barker and J. McGrath Cohoon
Copyright © 2007-2008

NCWIT Investment Partners: National Science Foundation, Avaya, Microsoft, Pfizer, and Bank of America