MentorNet (www.mentornet.net), the National Electronic Industrial Mentoring Network for Women in Engineering and Science, is a nation-wide electronic mentoring (e-mentoring) program which taps the power of the Internet to support women students in fields where they are underrepresented. MentorNet pairs women studying engineering, related sciences, technology, and math with professionals in industry who serve as mentors via email. Electronic communications provide unprecedented opportunities for large-scale efforts supporting e-mentoring relationships, regardless of location and distance. Designing and leveraging technology-supported systems and structures, MentorNet matched 1,250 women studying engineering and related sciences at 36 colleges and universities with professionals in industry for yearlong, structured e-mentoring relationships this past year; in the fall of 2000, 2,200 students and an equal number of professionals are expected to be involved in this growing program. This session will provide an in-depth look at this dynamic national program, showcasing the program design, its reliance on the elements of structured mentoring programs (such as coaching and training), share student reports of their experiences, and the results of the program evaluation to date. (Received September 12, 2000)