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Abstract
Today, interest in women's work in science, technology, engineering, and math (STEM) runs high, a natural topic for classroom attention. Two films reviewed here may interest educators seeking to promote understanding and discussion of gender and STEM. The Gender Chip Project follows sophomore-to-senior-year experiences of five female STEM majors at Ohio State University. Multiyear tracking shows these women growing into their studies in engineering, biology, and computers. The women enthuse about their fascination with STEM work and their dreams of discovering life-saving cures or inventions to make communities better. They credit parents with inspiring their determination, independence, and curiosity. Interviews also document the women's frustration at being patronized by peers and teachers, feeling the need to work twice as hard, and facing problems of low self-confidence as a lone woman amidst male classmates with big attitudes. Conversations about post-graduation paths show these students worrying about family/career balance, even as they tell younger women to look for supportive contacts and to believe that “anything is possible—dream big and work hard.”

Disciplines
American Film Studies | Feminist, Gender, and Sexuality Studies | Film and Media Studies | Science and Mathematics Education | Women's Studies

Comments
These reviews are published as Amy Bix, Review of two films, “The Gender Chip Project” and “Great Unsung Women on Computing,” Films for the Feminist Classroom (Texas Woman's University), issue 7.2 (fall, 2017). Posted with permission.
Today, interest in women’s work in science, technology, engineering, and math (STEM) runs high, a natural topic for classroom attention. Two films reviewed here may interest educators seeking to promote understanding and discussion of gender and STEM. *The Gender Chip Project* follows sophomore-to-senior-year experiences of five female STEM majors at Ohio State University. Multiyear tracking shows these women growing into their studies in engineering, biology, and computers. The women enthuse about their fascination with STEM work and their dreams of discovering life-saving cures or inventions to make communities better. They credit parents with inspiring their determination, independence, and curiosity. Interviews also document the women’s frustration at being patronized by peers and teachers, feeling the need to work twice as hard, and facing problems of low self-confidence as a lone woman amidst male classmates with big attitudes. Conversations about post-graduation paths show these students worrying about family/career balance, even as they tell younger women to look for supportive contacts and to believe that “anything is possible—dream big and work hard.”

Such advice makes *The Gender Chip Project* perhaps most useful for high-school-age audiences or first-year collegians still pondering choices of major. Young women potentially interested in science or engineering may find it valuable to hear others speaking firsthand about both their love for STEM and its challenges. The conversations do not explore any of the difficulties and frustrations for women in STEM very deeply, however, and since the film is from 2005, some statistics on women’s representation in STEM are outdated. Educators looking for more recent figures, for more substantive insight into stereotypes and bias, and for ideas on improving women’s opportunities in STEM might consult the AAUW reports *Why So Few?* and *Solving the Equation.*

*The Gender Chip Project*’s own website, [http://genderchip.org](http://genderchip.org), offers a downloadable curriculum guide and workshop toolkit containing advice for using the film, discussion suggestions, and resource lists.

Educators seeking additional material about women in STEM could also explore *Great Unsung Women of Computing*, a three-part documentary highlighting both past and present. The three parts mesh beautifully yet could also be used independently. Part one, “The Computers” (twenty minutes), details how female mathematicians who were employed during World War II to calculate ballistics trajectories became the first modern computer programmers. Credit for the ENIAC computer went to its male engineering creators, yet the women who kept this pioneering
technology operational, literally wiring together the ENIAC machine’s thousands of cables, switches, and vacuum tubes, remained invisible. This segment adds to recent efforts to recover their stories and honor their historic role, featuring engaging interviews from the 1990s with these women (all have since passed away). It therefore represents an excellent introduction to this key episode in computer development and gender/technology history; the accompanying website, http://eniacprogrammers.org, offers further information.

Part two, “The Coders” (seventeen minutes) tells the story of two women who “fell in love with computers” and contributed to major technical advances of recent years. Pavni Diwanji developed a key part of the Java programming language, vital to the Internet’s rapid expansion. Sarah Allen helped create Flash software, crucial to web graphics, videos, and animations. As entrepreneurs and engineers, both women speak about the excitement of creative problem solving in vibrant fields of cloud-computing applications, smartphones, and movie special effects. The film declares, “Sarah and Pavni proved that women can thrive in the traditionally male-dominated culture” of high tech.

Part three, “The Future Makers” (eleven minutes), profiles MIT PhD student Andrea Colaço and her research into methods for controlling devices through gesture recognition. Footage shows her working in the lab, presenting at conferences, and leading a team that wins a major award for technical entrepreneurship. The film concludes, “While it wasn’t always so, the world of technology is now wide open to women.” Such a heartening message leaves warm feelings, but it fails to reflect accounts of Silicon Valley’s “brogrammer culture,” sexual harassment, and discrimination that still disproportionately drive away talented women. To capture the full complex story of women in computing, educators might refer to works from Janet Abbate, Thomas Misa, Jane Margolis, and Allan Fisher.

Together or separately, these two films represent worthwhile options for classes and programs aimed at encouraging more young women to enter STEM. Especially when rounded out with additional perspectives to deepen the picture, these movies can help educators foster critical thinking about gender, science, and engineering in our modern world.


Amy Bix ([abix@iastate.edu](mailto:abix@iastate.edu)) is professor of history at Iowa State University. Her 2013 book *Girls Coming to Tech! A History of American Engineering Education for Women* (MIT Press) won the History of Science Society’s Margaret Rossiter Prize plus IEEE-USA’s Award for Distinguished Literary Contributions. Her book in progress is Recruiting Engineer Jane and Astrophysicist Amy: American STEM Advocacy for Girls, 1965-Present.


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