REVIEWS

INEQUALITIES

Women in Science: Career Processes and Outcomes, by **Yu Xie** and **Kimberlee A. Shauman.** Cambridge, MA: Harvard University Press, 2003. 318 pp. $59.95 cloth. ISBN: 0-674-01034-5. $19.95 paper. ISBN: 0-674-01859-1.

MARY FRANK FOX
Georgia Institute of Technology
mary.fox@pubpolicy.gatech.edu

Science is an institutional medium of power, marked by immense inequality in status and rewards. It is a strategic research site for the study of gender in hierarchical contexts, reflecting and reinforcing features of gender stratification in society. Despite this breadth and depth of connection between the hierarchies of science and of gendered relations, studies of gender differences and inequalities in science have tended to focus on a particular stage or phase of participation, either a given level of education (pre-college, undergraduate, graduate) or careers, but rarely both. Yu Xie and Kimberlee Shauman's study *Women in Science*, in contrast, is distinguished by scope and scale: With detailed analyses of data in 17 large, national datasets, the volume addresses individual-level, gender differences in participation, performance, and rewards in science from middle school through career years.

Taking a demographic, life course approach, Xie and Shauman analyze women's and men's transitions into and exits from science over time, as contingent upon prior experiences and some social forces. They accomplish this with longitudinal data and "synthetic cohorts," created by putting together information from different sources corresponding to periods of the life course. This life course approach challenges the "scientific pipeline" model that conjures straight, narrow, unidirectional links between educational stages and occupational outcomes presumed to be positive; and instead, emphasizes fluid and dynamic processes.

Xie and Shauman examine processes and outcomes of women compared to men in areas including academic achievement in science and mathematics before college; expectations of enrolling as a major in science/engineering fields; career outcomes following completion of bachelor's and master's degree; demographic and labor force characteristics of scientists/engineers; geographic mobility among doctoral recipients in science/engineering; and research productivity among academic scientists.

Findings point to the complexity of patterns of gender, participation, and performance in science. First, in grades 7–12, mathematics achievement of girls is not significantly different from that of boys, especially among the most recent cohorts; but a gender gap, favoring boys, appears among the highest achievers. However, the significant gender difference in boys' compared to girls' expectation to major in science/engineering as undergraduates is not explained by the lower proportion of women in the right tail of highest achievers in mathematics.

Second, the majority of males who are recipients of bachelor's degrees in science/engineering have taken the path of "complete persistence" in science and math education from high school through bachelor's degrees; on the other hand, most females who receive bachelor's degrees in science/engineering entered the trajectory during their college years.

Third, an impediment of family for women in science occurs relatively early. At time of receipt of their bachelor's degree in science/engineering, women who are married, and especially those with children, are less likely to continue in science/engineering education and careers than are their male counterparts.

Fourth, among doctoral recipients, women with children show less geographic mobility than both women without children and all men; marital status, alone (apart from parental status), does not account for gender differences in geographic mobility. In addition, among academic scientists, women's lower publication productivity in science is attributed to gender differences in personal

characteristics, structural positions, and facilitating resources.

Xie and Shauman's volume *Women in Science* is a source of rich and detailed empirical analyses that take a bold and justified leap beyond the pipeline model, challenging assumptions and revealing complex processes. The findings and perspective of this study also frame areas for further research and consideration of research issues. Xie and Shauman's work points to "individual choice" as "a powerful determinant of gender differences in S/E careers" (p. 211). Although acknowledging that "career choices always reflect the broad social structure" (p. 211), their work does not delve into the ways and means whereby gender bias and discrimination operate and are experienced by women in science/engineering. We need to understand the reported experiences of women compared to men—and the features of the institutions in which they are educated and work—that accompany transitions with entry compared to exit from one stage to another in science.

Likewise, it is important to look beyond features of "role conflict" as an individual-level explanation that governs women's "greater propensity to make the transition to work instead of graduate education" (p. 128) after attainment of master's degrees in science/engineering. Practices and orientations of science/engineering departments, research groups, and faculty, are critical in shaping outcomes for gender (and racial/ethnic) groups in graduate education in science.

Although Xie and Shauman's work points to fluidity of exits and entries, it is also consequential to bear in mind that compared to other fields of study, education in science/engineering constitutes a more structured program of study, a sequencing wherein students master a given unit and progress to the next, complete a given course and advance to the following. Making a transition into science at a stage beyond undergraduate education is very difficult, as the volume acknowledges (p. 96), with implications for practice and policy to increase the representation of women in scientific careers.

What's Class Got to Do with It?: American Society in the Twenty-First Century, edited by **Michael Zweig.** Ithaca, NY: ILR Press, 2004. 211 pp. $17.95 paper. ISBN: 0-8014-8899-0.

JOHN RUSSO
Youngstown State University
jbrusso@ysu.edu

Over the last decade, a new academic field has emerged, New Working Class Studies. New working class studies draws on sociology, art, history, literature, material culture, geography, and other fields to develop critical analyses of the experiences and perspectives of working class people and institutions. Among the central issues in working class studies are the following: How has work changed over time, and how have those changes affected the lives of individuals and their communities? How has the working class been represented in art, literature, popular culture, and the landscape? How does class intersect with race, gender, sexuality, and other aspects of identity? *What's Class Got To Do With It?* by Michael Zweig is meant to be one of the first resource books for this newly emerging field.

In America, Zweig argues, there is no uniform working class; rather, there is a mosaic of class, race, and gender identities that correspond to "complex arrangements of power." Earlier working class theories tended to privilege class independent of other categories of identity. The first set of essays in *What's Class Got to Do with It?,* by historian Dorothy Sue Cobble, political scientist Jeff Lustig, and political activist Bill Fletcher, build on this theme. Cobble finds that feminism is missing from traditional male dominated labor history narratives, and conversely, working class women are often missing from feminist scholarship. She attributes this to gender bias on the part of labor historians and a class blind spot by feminists. Lustig attributes such divisions to cultural hegemonic forces. That is, working class experiences are filtered through both political and ideological narratives that isolate and undermine alliances based on identity. Fletcher takes a more structuralist view arguing that capitalism evokes competitions between workers that are only intensified by racial differences. Taken together, it is clear