

torian reading the book, in places the subject cried out for a wider historical frame. For instance, Lathers suggests that “the seeds, both economic and social” of women’s liberation and the civil rights movement were “planted in the 1950s” (p. 10), setting up her assertion that women appeared in space (both in fiction and reality) only as the movements of the 1960s also created public space for them on the ground. But Buck Rogers’ sidekick Wilma Deering, created in 1928, owed much to the fin-de-siècle New Woman and the decades-long fight for woman suffrage starting in the nineteenth century. Given how well the history of second-wave feminism and women’s changing status has been documented elsewhere, Lathers’s book does not address the broader real-life historical context supporting her narrative arc (such as equal-opportunity employment protections or Title IX).

Given the potentially enormous scale of her topic, Lathers narrows the examples in ways that focus the book but leave the reader wondering what close reading she might have offered for some very popular pieces of space film and television. For instance, Lathers begins in the 1960s, arguing that other scholars have already sufficiently dissected the 1950s. Likewise, she omits the *Star Wars* franchise and touches only briefly on episodes from *Star Trek* television and film.

The book’s fluid analyses of the interrelationships of examples may frustrate readers less attuned to Lathers’s literary interplay of juxtaposed texts. But her core assertion that “the ways that women in space have been depicted in popular film and literature parallel the way [that] government officials, scientists, and the public have reacted to the idea” (p. 7) is a useful one for historians of science and technology. Far from being neutral or empty, Lathers argues, “space has . . . already been colonized by gender” (p. 210).

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Instrumental Community: Probe Microscopy and the Path to Nanotechnology.

By Cyrus C. M. Mody. Cambridge Mass.: MIT Press, 2012. Pp xi+260. \$36.

The scanning-probe microscope, and one particularly successful variant, the scanning-tunneling microscope (STM), provide the context for this timely study. The real focus, however, is not the instrument itself but the community of “probe microscopists” who developed and applied this technology from the 1980s to create the new science of nanotechnology during the 1990s. As the author notes (p. 5), popular historical accounts that focus on the hardware fail to register the role of microscopists in making the new tools economically and scientifically important.

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Cyrus Mody coins the term *instrumental community* to describe this influential group, a phrase hinting at both the instrumentation they developed and their intentions to create a new instrumentality that would “propagate beyond their laboratories and change the world” (p. 6). His study explores these technologists as both microscope developers and community builders. He identifies their environment as one that included multiple universities, firms, and disciplines, with frequent movement of people and ideas among them.

This notion owes much to Terry Shinn and Bernward Joerges’s concept of “research technologists” and to Carsten Reinhardt and Thomas Steinhäuser’s more inclusive definition of a scientific-technical community. A key question for scholars is, of course, when a “community” becomes a community: How does such a group become self-aware and collective in aims and actions, under what circumstances, and to what end?

It appears to be a difference of emphasis that distinguishes the author’s account from these previous frameworks. Mody suggests the probe microscopy community’s determined intent to found a scientific field, and stresses its contributors’ roles as academic entrepreneurs motivated by the non-economic influences of scientific curiosity and technical problem-solving. This perspective orients the study more usefully toward historians of business and management than prior studies, and especially links it to prior scholarship on postwar American high-technology industries.

A second nuance of this technological case study is its relatively brief lifetime. Unlike previous accounts of research technologies, which identified fields of expertise that often entrained their proponents in careers perpetually on the margins of recognition in institutions and disciplines, STM developers evince special circumstances during the decade or so in which they and their instruments became successful and influential.

The format of the book underlines this investigative perspective. The individual chapters focus on distinct sub-networks—some associated with a discipline, others with key inventors, and yet others serving as bridges linking disciplines. The author identifies these sub-networks as serially influential, briefly defining “a version of the technology [that] set the wider community’s agenda” (p. 23).

Between the lines is an account hinting at collective confidence and perhaps even hubris of a cohesive but intellectually dispersed social group. It raises the general question of whether such seeming intentionality is more obvious in retrospect, part of the collective myth-making that surrounds successful new fields, or a hitherto underestimated factor largely undetected by retrospective analyses.

Given the recent emergence of scanning-tunneling microscopes and nanotechnology, the study took advantage of the availability of active practitioners to capture near-contemporary accounts. It was based on ethnographic research and interviews with materials scientists, mainly at Cornell

University, and relevant conferences, and supplemented by documentary evidence, both published and unpublished. This approach provides both strengths and weaknesses. The actor-centered approach paints a living picture of research in the field from the American perspective of the period, convincingly capturing the evolving social networks, team decisions, and—perhaps less compellingly—personal motivations. As a sociologically oriented analysis of a recent historical episode, it provides a perspective well suited to scholarship in science and technology studies.

Aspects of wider interest to historians of technology, business, or economics will also find valuable perspectives, though less explicitly explored. These dimensions include the decline of large American corporate laboratories and the rise of academic entrepreneurialism and spin-offs. Global developments of probe microscopy and nanotechnology beyond the United States—a truly transnational affair—are also touched on, but not as clearly sketched. Overall, this is a valuable addition to work on the birth of the new technologies of our time, the experts who created them, and the new perspectives and powers they provided.

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Bastard Culture! How User Participation Transforms Cultural Production.

By Mirko Tobias Schäfer. Amsterdam: Amsterdam University Press, 2011.
Pp. 249. \$35.

In *Bastard Culture!* Mirko Tobias Schäfer examines the consequences of the mass adoption of computers and the internet. Many scientists were already using the internet in the 1980s and by the early 1990s, when web browsers were developed, other users began to access text and images through the world wide web. Schäfer is most interested, however, in the years after 2000, when mass online participation followed the introduction of easy-to-use web applications (often referred to as “Web 2.0”). His approach to this activity is less historical than analytical and taxonomic. A professor of digital culture and new media at Utrecht University, he describes and categorizes the users and media practices involved in such mass participation, the technology facilitating those practices, and the policies which media and consumer electronics companies deployed in response to emerging new media.

At the heart of Schäfer’s book and the subject of its longest chapter is “Bastard Culture,” his term for the complex “interactions between users and corporations, and the connectivity between markets and media practices”