**Settling the Digital Frontier:**
**New Technology, New Work, and Labor Market Mobility**

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Debate over the impact of innovative information and communication technologies (ICTs) on work and employment has recently centered on the hypothesis of "skill biased technological change": ICTs generate rewarding jobs for educated workers and reduce opportunities for the less-educated, thereby increasing overall wage and skill inequality. Though popular, this idea has also come under criticism due to the "bluntness" and determinism of its causal model and to inconsistencies with empirical data. For instance, many studies of technology adoption show that the effects of ICTs on job characteristics vary because they are complicated by a range of organizational, occupational, and institutional influences. However, the impact of innovation on inequality cannot be understood solely by examining changing jobs; to see how its benefits and costs are distributed, we also need to know who gets these altered positions and how. The proposed paper takes up the latter question by examining worker mobility into jobs that were created or transformed by the adoption of an emerging ICT, the World Wide Web, during its first ten years of existence (1993-2003). In doing so, it weighs the theoretical claims underlying the notion of skill-biased technological change—that mobility into new, innovation-linked jobs is mediated by skill or human capital—against two alternative approaches. One of these hypothesizes that mobility is shaped by Bourdieuian cultural capitals, while the other suggests that it is structured by workers' "adjacency" to new positions, i.e. by their prior location in industries and occupations where technology use is expanding.

Data includes the employment histories of sixty individuals who worked in website production jobs (e.g., design, coding, information architecture) in New York City, a center for web and other "new media" work, during the period under consideration. Respondents, recruited via listserv postings and personal networking at industry events, entered web work at different stages in its development, performed diverse occupational roles, and are (almost) evenly divided by gender. Resumes, in-depth interviews, and questionnaires were used to collect workers' career histories, including information about their pre-web employment, education, and family background, their web jobs, employers, and job transitions, and their reflections and observations on web production in general. Supplementary data comes from preliminary interviews, field

research at industry events, and industry media. Qualitative data from interviews, field research, and media are used to provide background on the development of web production work, to examine how the three mobility theories outlined above fare in the web case, and to describe variables corresponding to each. These variables, which were coded with resume, interview, and questionnaire information, are then used to assess the theories via correlations and logistic regression. Quantitative analysis focuses on determining which theories best account for the timing of workers' entry into web production (i.e., entry into their first web jobs) and the labor market mechanism (e.g., internal promotion, help-wanted ad) that facilitated the move. It also addresses a career outcome: whether workers were able to persist in paid web production jobs during the field's decline. Timing of entry is especially important: those who entered web production last came during the dotcom "boom," a period of exceptional employment growth, and may represent the types of workers who under more normal circumstances do not get jobs associated with innovative technology at all.

Qualitative findings offer at least some support for all three approaches to mobility. However, they problematize the human capital model by suggesting that in the new and rapidly changing web production world, employers faced difficulties both in defining their skill demands and in gauging workers' abilities, while workers had difficulty demonstrating their skills to employers. Perhaps as a result, workers claimed that web employers hired on the basis of characteristics such as lifestyle (participation in arts, travel), liberal arts education, educational prestige, and appearance—all of which can be understood as forms or indicators of cultural, rather than human, capital. In addition, there is support for the theory of labor market adjacency: workers already in occupations and industries where web use was expanding reported obtaining their first web jobs early on and easily, either through transformation of their existing positions or by hearing about the new technology and pursuing web jobs via intra-organizational mechanisms or interpersonal networks. The importance of adjacency is further suggested by quantitative findings: adjacency variables yield significant and expected relationships to the timing and mechanisms of workers' entry into web jobs, while the human and cultural capital variables do not. Further, it is non-adjacent workers who entered web jobs during the dotcom boom, and who thus represent the sorts of workers that might ordinarily not get jobs involving new technology at all. However, adjacency tells us little about workers' web career outcomes. The same is true of human capital, but one cultural capital variable, educational prestige, is positively correlated with web career persistence. Overall, findings show little support for the human capital model and thus for the theory of skill-biased technological change. Instead, they indicate that "where" workers are —their labor market locations—as new technologies emerge is most decisive in shaping their entrance into associated jobs, and that "who" they are—in this case, their cultural rather than human capital—may shape their longer-term trajectories. One implication is that if new technology is expected to yield rewarding jobs and if policymakers wish to target these to particular types of workers (e.g., women, minorities, less-skilled), strategies aimed at encouraging technology adoption in structural locations where those workers already exist could be as or more effective than strategies aimed at increasing their individual human capital.