

# **Undergraduate-to-graduate student mobility reveals academic hierarchy and educational disparities**

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**Higher education plays an important role in training a skilled workforce and provides a promising path to disrupt the lasting effects of disadvantages. Despite enormous efforts to understand how education affects career mobility after graduation, little is known about mobility patterns and disparities at earlier stages of the higher education pipeline. Here we build a promotional student mobility network based on a large-scale digital resume dataset containing the educational trajectories of individuals who have obtained a bachelor's degree and studied for a master's degree in China. Our analysis of this mobility network that captures student flows from undergraduate to graduate university conveys several findings. First, we find empirical evidence for academic hierarchy in which student mobility is highly stratified and undergraduate university rankings are predictive of graduate university rankings. Second, while a mechanism model reproduces the observed pattern and interprets empirical results, it appears to indicate cost-benefit considerations for students attending graduate education at higher-ranked schools. Third, prestigious universities in China are highly concentrated in developed cities, and the economic status of the university-hosting city substitutes for the university's prestige in impacting student flows. Our findings paint a picture of educational stratification at the undergraduate-to-graduate stage of education and provide insights into promotional student mobility patterns and educational disparities.**