Ethnic Networking in the Transnational Engagement of Chinese American Scientists

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This study, based on in-depth interviews, applies a social-network approach to examining the important role that ethnic networking has played in promoting the transnational engagement of Chinese American scientists in China’s science sector and in higher education. The study finds that the transnational involvement of Chinese American scientists is facilitated by both their strong and weak ethnic ties: strong ties provide connection and rapport, while weak ties facilitate access to position and resources. Keywords: transnational engagement, ethnic networking, Chinese science, engineering.

The Medium- to Long-Term Plan for the Development of Science and Technology (2006–2020) compiled by China’s State Council calls for transforming China into an innovation-oriented society by 2020 and a world leader in science and technology (S&T) by 2050 (State Council 2006). In 2007, China’s researchers were estimated to number more than 1.4 million, comparable to the estimates for the United States and the European Union (National Science Board 2010). China’s output of science and engineering (S&E) articles ranked second in the world in 2007, just behind the United States. China awarded about 21,000 natural science and engineering doctorates in 2006, nearly the same as were awarded in the United States. These achievements make many observers think that China is on track to become the world’s next scientific superpower.

The prodigious progress in Chinese science lies in the rapid growth of China’s higher education. Although there were just 404 institutions of higher learning in China in 1977, this number increased to 1,908 by 2007 (Wang and Liu 2009). As a result, China boasts the highest number of undergraduates in the world, increasing from 856,000 in 1978 to 17,388,000 in 2006 (National
Bureau of Statistics 2008). China awarded the largest number of S&E bachelor’s degrees in the world in 2006, accounting for 21 percent of the world’s total, compared with 19 percent for the European Union and 11 percent for the United States (National Science Board 2010). China admitted eighteen doctoral students for the first time in its history in 1978. In 2007 China admitted a total of 360,590 master’s degree students and 58,002 doctoral students into its graduate programs, becoming the top producer of doctorates in the world (Han 2009).

In addition to expanding its domestic higher education, China has been sending its students and scholars to developed countries since 1978. Chinese students have also been encouraged since the 1980s to pursue education abroad in an effort to match the developed world in higher education and science. Students from China earned the largest number of US S&E doctoral degrees (50,200) awarded to foreign students between 1987 and 2007, a figure that accounted for 24.3 percent of the total number of foreign doctorates (National Science Board 2010). Chinese students accounted for more than half of foreign undergraduate (68 percent) and graduate (54 percent) S&E students in Japan in 2008. Chinese students also made up 18 percent of foreign S&E graduate and undergraduate students in Canada in 2005–2006. Between 1978 and 2008, approximately 1.4 million Chinese students and scholars went overseas, and approximately 390,150 of them returned (Wang 2009).

Two major perspectives address the global flow of talent: the brain drain perspective (BDP) and the brain circulation theory. The BDP came into being after World War II and views the outflow of human capital as a net loss to developing countries and a significant gain for developed nations. Powerful in unveiling the lopsided global flow of talent and identifying the problems associated with this unbalanced situation (Patterson 2005; Saxenian 2005), the BDP has nonetheless been challenged for its focus since the 1990s on one-dimensional, homeland-to-host-nation migration (Saxenian 1999; 2002; 2005; 2007; Patterson 2006). The brain circulation theory argues that the migration of talented people from developing to developed countries does not necessarily lead to a brain drain. Scholars who favor this view contend that a few sending countries—especially Asian countries, including South Korea, Taiwan, India, and most recently China—have