SIDEBAR

Considerations for International Comparisons of S&E Doctoral Degrees

Several factors warrant consideration in international comparisons of S&E degree production, especially comparisons between the United States and China at the doctoral level. First, calculations of S&E degree awards can vary based on the selection of data sources. For international comparisons of U.S. S&E degrees, this report uses data published by the Organisation for Economic Co-operation and Development (OECD); these data are derived from an international effort to facilitate cross-nationally comparable statistics on education (see the **Technical Appendix** for more information). The OECD data used in this section can differ from the Integrated Postsecondary Education Data System (IPEDS) Completions Survey data that are used elsewhere in this report for analyzing domestic U.S. S&E degree trends.

Second, the calculation of aggregate measures of S&E degrees across different data sources can present analytical trade-offs. This report does not include degrees classified by China under medicine within S&E because this report does not consider medical degrees and other professional and practitioner doctoral degrees as S&E degrees. However, doctoral degrees in medicine in China could be regarded as S&E (or science, technology, engineering, and mathematics) on the basis that many degree recipients in this field are expected to have research experience under the Chinese educational system (Zwetsloot et al. 2021). Regardless of how Chinese degrees in medicine are classified, China has been the top producer of natural sciences and engineering degrees (i.e., excluding social and behavioral sciences) since 2007. (See *Indicators 2022* report "**Higher Education in Science and Engineering**" section "**U.S. Position in Global S&E Higher Education**.")

Finally, the high representation of international students among S&E doctorate recipients in the United States is also worth noting. In 2021, 37% of U.S. S&E research doctorate recipients were temporary visa holders (NCSES ***SED 2021***: **Table 1-6**). China was the most common country of origin for temporary visa holders, accounting for 5,600 S&E research doctorate recipients (Figure HED-27) out of a total of 41,000 S&E research doctorate recipients that year. However, many temporary visa holders who earn S&E doctorates in the United States, including a large majority of individuals from China, remain in the country after graduation. For example, 40,000 temporary visa holders from China received S&E doctorates from U.S. institutions from 2006 to 2015. As of 2017, 87% of these doctorate holders were still residing in the United States (Okrent and Burke 2019).