RESEARCH SUMMARY

Trends in China's Space Workforce

China is among the world's most active spacefaring nations, yet relatively little has been published on the scientists and engineers advancing China's ambitions. This summary describes research that attempts to close this gap in understanding.

Lincoln M. Butcher, Kelsey L. Schoeman and Asha Balakrishnan are members of the team of Institute for Defense Analyses (IDA) researchers that took on an examination of developments in China's space workforce. Data on space talent within Chinese government organizations were limited likely due to their political sensitivities. So, the team based its analysis largely on several top academic institutions as well as the two major state-owned enterprises (SOEs) contributing to space outcomes, China Aerospace Science and Technology Corporation (CASC) and China Aerospace Science and Industry Corporation (CASIC).

The team web-scraped employment information from university websites and SOE reports, supplementing this information with citation data from Chinese aerospace publications. Among the key findings about China's space talent, the following emerged:

- Academic institutions training China's top space researchers are similar to China's top research institutions across all disciplines.
- The majority of faculty at the top Chinese aerospace research institutions are domestically trained.
- Most master's and doctoral degree holders from China's top aerospace research institutions seek employment with academia or SOEs after graduation.
- American researchers coauthor more space publications with Chinese researchers than researchers from any other country. Two-thirds of Chinese space publications have no

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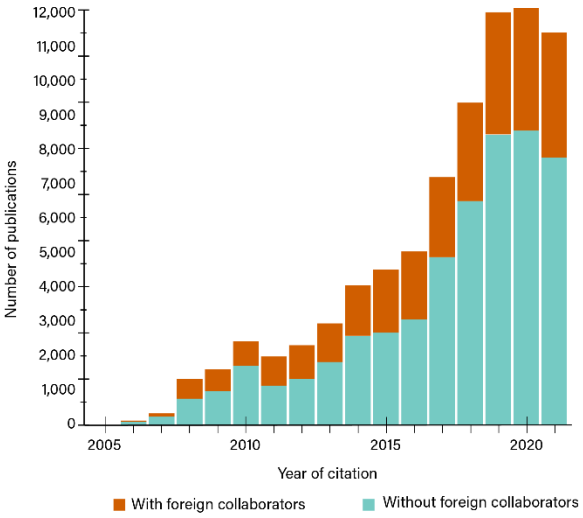


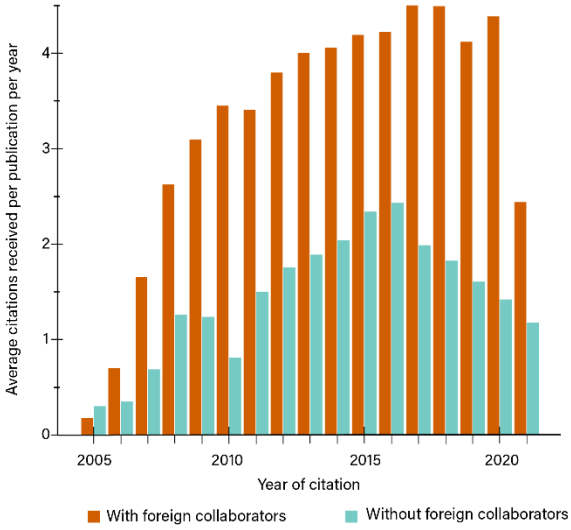
Source: Analysis of space publications listed in Web of Science.

foreign collaborators, but collaboration has increased over time.

— China's space sector relies on STEM talent from fields beyond aerospace engineering, including computer science, software engineering, mechanical engineering, electrical engineering, and control science and engineering. Aerospace science and technology was the seventh most frequently listed required major on CASC and CASIC job postings.

The results of our analysis on foreign collaboration and research impact are shown in the figures above. The graph on the left shows numbers of space publications from 2005-2021 with and without foreign collaborators. The graph on the right shows average numbers of citations per publication per year from 2005-2021.

One interesting finding on employment pointed to household registration ("hukou") being one of the more desired benefits an employer can offer. An individual's hukou determines where they can work, reside and go to the hospital and where their children can attend school. An employer that sponsors an employee to work and receive public services in a new location is therefore highly desirable.



Source: Analysis of space publications listed in Web of Science.

For details, see the report this summary is based on, IDA Product 3000742, "China Space Talent," October 2023.

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