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The Youth Thousand Talents Plan and China's Military

CSET Issue Brief



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Executive Summary

President Xi Jinping made equipping China's defense-affiliated science and technology professionals with overseas training a key goal during the military's reorganization in 2016.¹ In the years since, U.S. policymakers have voiced concerns that Chinese scientists may pursue advanced training in the United States or other countries, then return to China to aid in the country's military modernization. Some of the primary vehicles by which the Chinese Communist Party (CCP) attracts Chinese scientists back to China are state- and Party-sponsored talent plans, the largest being the Thousand Talents Plan (千人计划; TTP).²

To understand the scope of these programs better, CSET located and analyzed publicly available lists of the 3,586 disclosed individuals selected to receive awards under the "youth" branch of China's national Thousand Talents Plan during the program's lifetime, from 2011 to 2018. In 2019, the Chinese Ministry of Science and Technology absorbed and reorganized the Thousand Talents Plan and its administering agency.³ This paper explores awardees' career moves, including where researchers worked at the time of award and their intended destinations in China. Key takeaways include:

- From 2011 to 2018, the CCP Organization Department and State Administration of Foreign Experts Affairs offered nearly 3,600 people monetary awards and positions under the Youth Thousand Talents Plan.
- The clear majority of YTTP awardees were offered positions at China's leading civilian universities, which are not necessarily affiliated with the People's Liberation Army.
- About 300 awardees (eight percent) were offered positions at 11 institutions that are part of, or have close relationships with, China's defense industry.
- About 500 awardees (14 percent) were offered positions at laboratories managed by the Chinese Academy of Sciences.
- Two thirds of awardees were employed in the United States when offered awards and positions at Chinese research institutions.

Introduction

U.S. policymakers fear that China's talent plan awardees will return and support the People's Liberation Army either directly or indirectly. Awardees could become professors at defense-affiliated universities and teach students who go on to work for China's major defense companies or for the PLA. Alternatively, professors and scholars may spearhead research into useful technologies for the PLA, bringing with them foreign technological know-how or intellectual property. The Department of Justice has arrested several scientists under its China Initiative for concealing their involvement in Chinese talent plans, and in May 2020, the Trump administration issued an executive order designed to curb Chinese talent recruitment.⁴

So far, U.S. observers have only been able to guess how many talent plan awardees return to China to support military-related institutions. Recent reports have revealed the size and scale of China's talent plans, including aggregate numbers of program participants, as well as the quantity and quality of their research output.⁵ However, open-source analysts have lacked information about where talent awardees work before returning to China—and how many awardees return to teach students or conduct research relevant to China's national defense.⁶

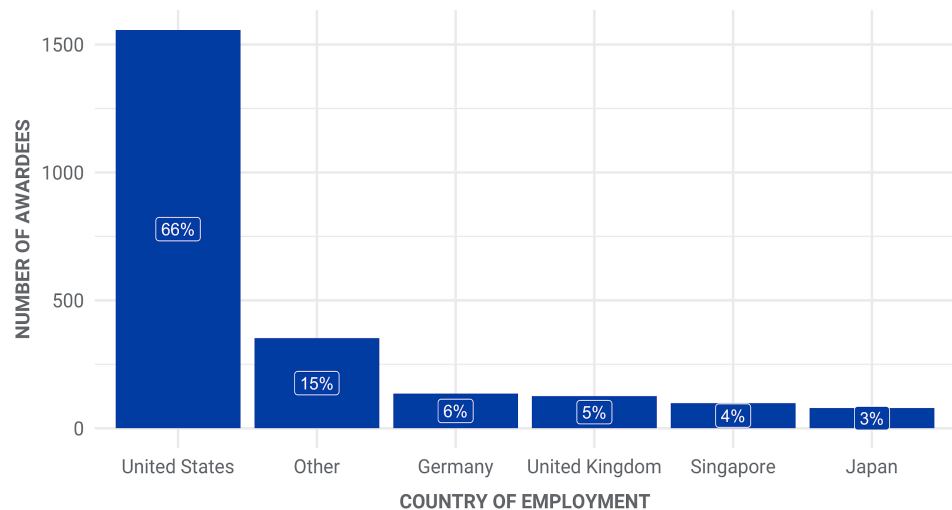
CSET has located publicly available lists of 3,586 disclosed individuals selected to receive awards under the "youth" branch of China's Thousand Talents Plan from 2011 to 2018.* The Youth Thousand Talents Plan (青年千人计划; YTTP) recognized outstanding scientists under the age of 40. It was the largest branch of China's broader Thousand Talents Plan, accounting for more than a third of all Thousand Talents awardees.⁷ In this paper, we outline trends in where YTTP awardees worked when offered awards and where in China they were offered positions, including institutions affiliated with China's military and defense-industrial base.

* The National High-end Foreign Experts Recruitment Plan replaced the Thousand Talents Plan in 2019. See explanations in "Thousand Talents Plan," *China Innovation Funding*, 2019, <http://chinainnovationfunding.eu/thousand-talents-plan/>; and "National High-end Foreign Experts Recruitment Plan (2019 annual call)," *China Innovation Funding*, 2019, <http://chinainnovationfunding.eu/project/2019-high-end-foreign-experts-recruitment-plan/>.

Where Experts Worked When Offered Awards

Most Youth Thousand Talents awardees were Chinese postdoctoral researchers or professors working abroad when the Chinese government offered them monetary awards and positions at Chinese research institutions under YTTP. According to the program website (now removed), each awardee received a lump-sum signing bonus of \$72,000 USD (500,000 RMB) and a position at a Chinese research institution, plus additional research funding over several years.⁸ At the time they were offered awards, two thirds of awardees were working in the United States. Other common countries included Germany, the United Kingdom, Singapore, Japan, Australia, and Canada.

Figure 1. YTTP Awardees by Country of Employment (Pre-Award), 2011–2016



Source: CSET Youth Thousand Talents Awardee Dataset (2,350 awardees with known employment at time of award).[†]

The Chinese government most frequently offered awards to postdocs and researchers from top universities and research institutions, such as Harvard, Stanford, and the Max Planck Society. Nearly 500 YTTP awardees (19 percent of those with identified employers) worked for these 10 employers when offered awards:

[†] After piecing together information from each batch of awardees, our dataset of 3,586 experts likely includes all disclosed Youth Thousand Talents Plan awardees from 2011 to 2018 and their destinations in China. However, we were only able to find lists that included details about pre-award employment for 2011 to 2016, accounting for 2,350 awardees (65 percent).

Table 1. Top 10 Employers of People Selected for YTTP Awards, 2011–2016

<i>Employer at Time of Award</i>	<i>No. of YTTP Awardees</i>	<i>Portion of Total YTTP Awardees</i>
Harvard University	77	3%
Stanford University	67	3%
Max Planck Society (Germany)	52	2%
MIT	45	2%
UCLA	43	2%
Nanyang Technological University (Singapore)	38	2%
Yale University	38	2%
UC Berkeley	34	1%
UC San Diego	33	1%
University of Michigan	31	1%

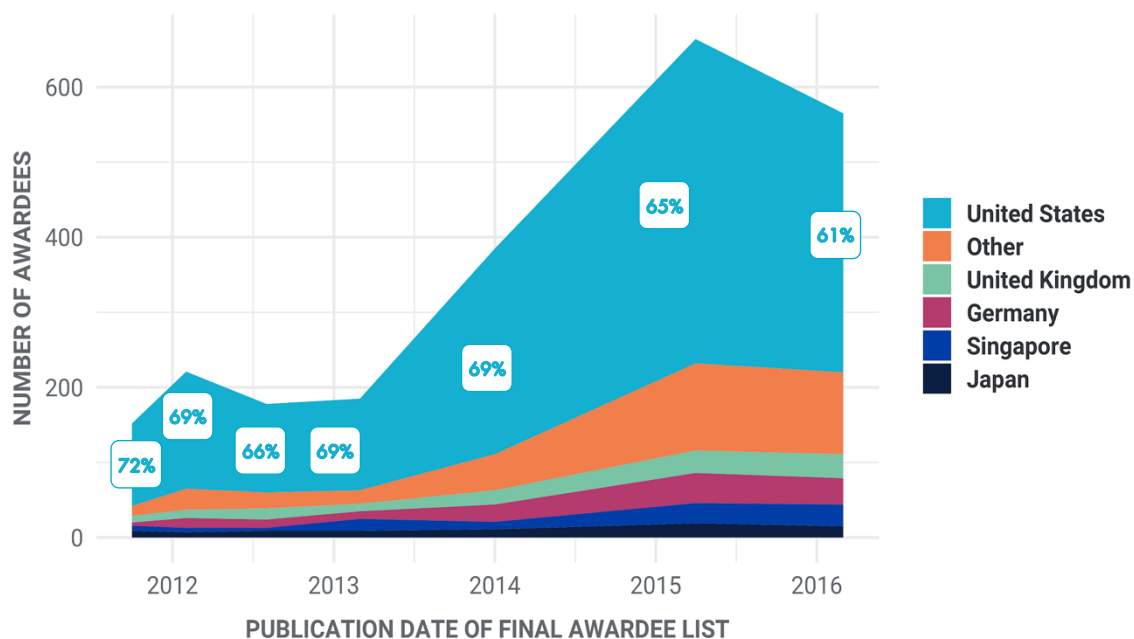
Source: CSET Youth Thousand Talents Awardee Dataset (2,350 awardees with known employment at time of award).[‡]

Awards Over Time

The number of yearly YTTP offers increased significantly over the life of the program. Before 2012, the Chinese government distributed batches of awards on a seasonal, not annual, basis. Beginning in 2013, however, the government annualized the Thousand Talents award cycle, established the Innovative Long- and Short-term Talent Plans, and offered a larger number of YTTP awards each year. The absolute number of talent awardees both from the United States and overall increased, but the proportion of awardees who were working in the United States declined from 72 percent in 2011 to 61 percent in 2016.

[‡] For awardees with multiple employers or affiliations, we report only the first position listed.

Figure 2. Awardees' Countries of Employment (at Time of Award) by Year (2011–2016)



Source: CSET Youth Thousand Talents Awardee Dataset (2,350 awardees with known employment at time of award).

Where Awardees Were Offered Positions in China

The Youth Thousand Talents Plan aimed to recruit experts who would become professors at leading Chinese universities. The Chinese government most frequently offered awardees professorships at universities in China's elite C9 League (九校联盟); Tsinghua University was the most-offered host institution for awardees. These institutions represent China's leading civilian universities and are not directly affiliated with the People's Liberation Army.

Table 2. Top 10 Offered Host Institutions for YTTP Awardees, 2011–2018

<i>Name (English)</i>	<i>Name (Chinese)</i>	<i>YTTP Awardees Offered Positions</i>
Tsinghua University	清华大学	204
Zhejiang University	浙江大学	192
Peking University	北京大学	175
University of Science and Technology of China	中国科学技术大学	162
Shanghai Jiaotong University	上海交通大学	147
Fudan University	复旦大学	129
Nanjing University	南京大学	120
Sun Yat-sen University	中山大学	111
Huazhong University of Science and Technology	华中科技大学	108
Wuhan University	武汉大学	91

Source: CSET Youth Thousand Talents Awardee Dataset (3,586 awardees).

Employment Offers at Defense-Affiliated Institutions

Defining which Chinese institutions have relationships with the military (and to what extent) is a difficult task; CSET and other institutions continue to pursue this line of inquiry. To determine how many YTTP awardees may contribute to organizations overtly affiliated with the PLA, we counted the number of people offered positions at China’s “Seven Sons of National Defense” (国防七子) and universities on the U.S. Commerce Department Bureau of Industry and Security’s Entity List.⁹ Unlike other universities in China overseen by the Ministry of Education, the Seven Sons are managed by the State Administration for Science, Technology and Industry for National Defense (国家国防科技工业局) and have long-standing relationships with China’s military.¹⁰ We also included the Chinese Academy of Engineering Physics (CAEP)—not a university, but China’s “sole nuclear warheads research, development, and production facility.”¹¹

Table 3. Number of YTTP Awardees Offered Positions at Military-Affiliated Institutions, 2011–2018

<i>Name (English)</i>	<i>Name (Chinese)</i>	<i>Seven Sons</i>	<i>Entity List</i>	<i>YTTP Awardees Offered Positions</i>
University of Electronic Science & Technology of China	电子科技大学		X	63
Sichuan University	四川大学		X	61
Beijing University of Aeronautics and Astronautics	北京航空航天大学	X	X	54
Chinese Academy of Engineering Physics	中国工程物理研究院		X	36
Harbin Institute of Technology	哈尔滨工业大学	X	X	29
Northwestern Polytechnical University	西北工业大学	X	X	25
Beijing Institute of Technology	北京理工大学	X		22
Nanjing University of Aeronautics and Astronautics	南京航空航天大学	X		6
Harbin Engineering University	哈尔滨工程大学	X	X	3
Nanjing University of Science and Technology	南京科技大学	X		0
National University of Defense Technology of China	国防科技大学		X	0 ¹²

Source: CSET Youth Thousand Talents Awardee Dataset (3,586 awardees).

Collectively, the Chinese government selected 299 YTTP awardees (8.3 percent) to work at these 11 institutions from 2011–2018. This is not to say that all 299 people contribute to China’s military or defense industry. We do not know if awardees accepted these positions; if they did, we do not know how many professors teach relevant classes or collaborate on research projects with the PLA. However, we can say that roughly eight percent of disclosed YTTP awardees were nominated to work for defense-affiliated universities in China. This finding challenges the prevailing narrative that

China's talent awardees frequently contribute to the country's military or defense-industrial base.¹³

Employment Offers at the Chinese Academy of Sciences

We counted employment at the Chinese Academy of Sciences separately. As the largest research organization in the world, the CAS employs over 60,000 researchers and comprises 114 research institutes throughout China.¹⁴ Collectively, the Chinese government offered 504 YTPP awardees (14 percent) positions within the CAS from 2011 to 2018. This table showcases the top 10 CAS-affiliated host institutions offered to YTPP awardees:

Table 4. Number of YTPP Awardees Offered Positions at CAS Institutions, 2011–2018

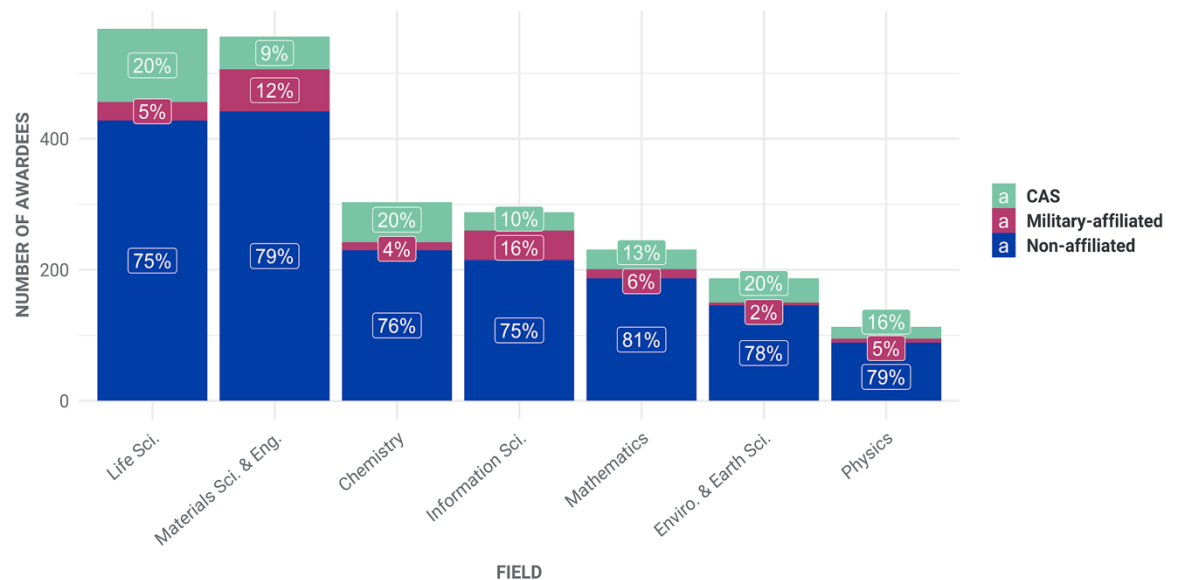
<i>Name (English)</i>	<i>Name (Chinese)</i>	<i>YTPP Awardees Offered Positions</i>
Shanghai Institutes for Biological Sciences	上海生命科学研究院	67
Shanghai Institute of Organic Chemistry	上海有机化学研究所	23
Dalian Institute of Chemical Physics	大连化学物理研究所	22
Institute of Biophysics	生物物理研究所	21
Institute of Physics	物理研究所	18
Shenzhen Institute of Advanced Technology	深圳先进技术研究院	17
Institute of Chemistry	化学研究所	14
Fujian Institute on the Structure of Matter	福建物质结构研究所	13
Suzhou Institute of Nano-tech and Nano-bionics	苏州纳米技术与纳米仿生研究所	12
Chinese Academy of Sciences University	中国科学院大学	10

Source: CSET Youth Thousand Talents Awardee Dataset (3,586 awardees).

Research Fields

Among awardees with clearly identified research fields, the Chinese government most frequently recruited people specializing in life science and materials science. Relative to other fields, awardees who specialized in life science, earth science, and chemistry were more likely to be offered positions at the CAS. Those specializing in information or materials science were more likely to be offered awards at military-affiliated institutions. The proportion of awardees in each field remained relatively stable from 2011 to 2018.

Figure 3. YTTP Awardees' Fields of Research and Destination Type in China, 2011–2018



Source: CSET Youth Thousand Talents Awardee Dataset (2,350 awardees with clearly identified research fields). We counted the few awardees specializing in “medicine” as “life science.”

Conclusion

There is merit to concerns that talent plan awardees aid in China’s military modernization. We confirm, for example, that at least 13 people working in the United States applied for the Youth Thousand Talents Plan and were offered positions at CAEP, China’s leading nuclear weapons lab, from 2011 to 2018.[§]

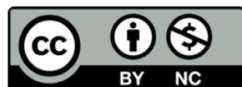
[§] Thirty-six of the 3,586 disclosed YTTP awardees in our dataset (one percent) were offered positions at CAEP. Pre-award employment data was available for 22 individuals. Thirteen of them were working in the United States.

However, from what we observe of where disclosed YTTP awardees were offered positions, the vast majority would not have returned to directly support the Chinese military. Throughout the program’s lifetime, the Chinese government offered positions at military-affiliated institutions to fewer than 300 YTTP awardees (8.3 percent). It is unclear whether trends in the “youth” branch reflect trends in the broader Thousand Talents Plan—if they do, fewer than 100 TTP participants were probably selected to work at defense-affiliated institutions each year, and many of the participants offered such positions were trained outside of the United States.

These findings may help craft a U.S. approach to the Thousand Talents Plan’s successor, the National High-end Foreign Experts Recruitment Plan. While government-run talent plans represent an obvious way for China to lure back overseas professionals, future CSET research will focus on the relative importance of such programs in the context of global talent flows, especially where the military is concerned.

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Appendix: Two Data Limitations and a Caveat

Two primary data limitations bound the findings of this paper:

First, we could not confirm that the Chinese government actually offered everyone identified in our dataset an award and position under YTTP.¹⁵ Some lists of talent plan awardees used here were uploaded publicly by organizations within the Chinese government; other documents were hosted on unofficial Chinese file-sharing websites. To verify the authenticity of the lists, we selected 100 people and searched for publicly available information from their LinkedIn, ResearchGate, and other online profiles. Some individuals explicitly listed that they had accepted YTTP awards. Online biographical information matched details contained in the lists for each of the 100 individuals we closely examined.

Second, our data only reflects which individuals the Chinese government selected to receive YTTP awards, not who actually took them. It is likely that some of the 3,586 disclosed participants in our dataset did not follow through in receiving YTTP awards, are not members of the program, and have no affiliation with Chinese institutions. At least one scholar specified on his public *curriculum vitae* that he declined the award due to a conflict of interest with his ongoing employment at a U.S. university. However, from our research into a sample of 100 awardees, a majority likely accepted the YTTP award: as of January 2020, 75 worked at the destination university indicated in our dataset; 15 at other Chinese universities; and 10 at private companies or other institutions.

Finally, we wish to underscore that accepting an award under the Youth Thousand Talents Plan does not imply that the participant engaged in inappropriate or improper activity. This paper speaks only to available data, and we caution against assuming ill intent on the part of any awardee.

Endnotes

¹ Joel Wuthnow and Phillip C. Saunders, "Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications," *Center for the Study of Chinese Military Affairs, China Strategic Perspectives*, no. 10 (March 2017): <https://www.hsdl.org/?view&did=810931>.

² "Threats to the U.S. Research Enterprise: China's Talent Recruitment Plans," *Senate Permanent Subcommittee on Investigations*, November 2019, <https://www.hsgac.senate.gov/imo/media/doc/2019-11-18%20PSI%20Staff%20Report%20-%20China's%20Talent%20Recruitment%20Plans%20Updated.pdf>.

³ The Thousand Talents Plan was replaced by the National High-end Foreign Experts Recruitment Plan in 2019. See explanations in "Thousand Talents Plan," *China Innovation Funding*, 2019, <http://chinainnovationfunding.eu/thousand-talents-plan/>; and "National High-end Foreign Experts Recruitment Plan (2019 annual call)," *China Innovation Funding*, 2019, <http://chinainnovationfunding.eu/project/2019-high-end-foreign-experts-recruitment-plan/>.

⁴ "University of Arkansas Professor Arrested for Wire Fraud," *U.S. Department of Justice*, May 11, 2020, <https://www.justice.gov/opa/pr/university-arkansas-professor-arrested-wire-fraud>; and "Former Cleveland Clinic Employee and Chinese 'Thousand Talents' Participant Arrested for Wire Fraud," *U.S. Department of Justice*, May 14, 2020, <https://www.justice.gov/opa/pr/former-cleveland-clinic-employee-and-chinese-thousand-talents-participant-arrested-wire-fraud>. Also see "Proclamation on the Suspension of Entry as Nonimmigrants of Certain Students and Researchers from the People's Republic of China," *White House*, May 29, 2020, <https://www.whitehouse.gov/presidential-actions/proclamation-suspension-entry-nonimmigrants-certain-students-researchers-peoples-republic-china/>.

⁵ David Zweig and Siqin Kang, "America Challenges China's National Talent Programs," *Center for Security and International Studies*, May 5, 2020, <https://www.csis.org/analysis/america-challenges-chinas-national-talent-programs>.

⁶ David Bekkers has provided the most detailed analysis of Thousand Talents source countries to date; see Bekkers, "China's Pursuit of Overseas Brains: The 1,000 Talents Policy," *Dutch Innovation Attaché for China*, January 31, 2017, <https://www.rvo.nl/sites/default/files/2017/01/1000-Talents-Policy-Article.pdf>.

⁷ According to data from David Zweig and Siqin Kang, "America Challenges China's National Talent Programs," YTTP accounted for over one third of Thousand Talents awards. Other branches of the Thousand Talents Plan included the Innovative Talents (Long Term) Plan, Innovative Talents (Short Term) Plan, the Entrepreneurial Talent Project, and the Foreign Expert Talent Project. See "Thousand Talents Plan" [千人计划], *China Innovation Funding*, 2019, <http://chinainnovationfunding.eu/zh/thousand-talents-plan-2/>.

⁸ "The Recruitment Program for Young Professionals," *Organization Department of the Central Committee of the Communist Party of China*, accessed January 2020,

<https://web.archive.org/web/20191205030256/http://www.1000plan.org.cn/en/young.html>.

⁹ The U.S. Bureau of Industry and Security's Entity List includes the names of people and entities subject to certain export license requirements and sanctions. Typically, institutions on the Entity List are closely affiliated with a foreign military, implicated in human rights abuses, or are otherwise in violation of some U.S. policy.

¹⁰ Alex Joske, "The China Defence Universities Tracker," *Australian Strategic Policy Institute*, November 25, 2019, <https://www.aspi.org.au/report/china-defence-universities-tracker>.

¹¹ "Chinese Academy of Engineering Physics," *Australian Strategic Policy Institute*, 2019, <https://unitracker.aspi.org.au/universities/chinese-academy-of-engineering-physics/>.

¹² Given heightened security protocols at the university, awardees set to work at China's National University of Defense Technology may not have been disclosed in the public awardee lists we analyzed.

¹³ "Threats to the U.S. Research Enterprise: China's Talent Recruitment Plans," *Senate Permanent Subcommittee on Investigations*, 2-5.

¹⁴ Dexter Roberts, *The Myth of Chinese Capitalism* (St. Martin's Press: New York, 2020).

¹⁵ Chinese media typically published two lists for each YTTP award cycle: an initial list, which detailed awardees' employers, fields, and educational histories; and a final list, which included only the names of selected awardees. The lists of individuals remained identical, but typically the Organization Department removed five or six people from consideration. Data in this paper are based on the more detailed, initial awardee lists (3,586 people), not the final lists (3,536 people); our results include 50 people who were ultimately not accepted into the program.