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# Overseas Professionals and Technology Transfer to China

CSET Issue Brief



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## Executive Summary

Since the 1990s, the government of the People's Republic of China (PRC) and the Chinese Communist Party (CCP) have encouraged members of the Chinese diaspora to “serve the nation” from abroad (为国服务), in part by promoting technical exchanges between established groups of overseas professionals and entities in China.<sup>1</sup> Many Chinese professional associations (CPAs) operate independent of Party influence, and simply provide networking opportunities and social support to ethnic Chinese living outside China. But some CPAs serve as access points to technical information and expert personnel for Chinese laboratories and state-owned enterprises.<sup>2</sup> This report highlights the scale of China's technology transfer efforts that leverage professional associations abroad.

Among a limited sample of 208 overseas CPAs derived from lists of associations that participate in global “federations” of Chinese professional associations,<sup>3</sup> we found:

- Approximately 145,000 people are members of professional associations that advertise they transfer technology to China—a small portion of the broader diaspora, which numbers 60 million people.
- 126 groups (61 percent) indicate on their websites that they exchange technical information, bring scientists to China, or contribute to specific Chinese talent plans.
- Fewer than one-third are located in the United States; the remaining two-thirds of associations operate across 21 countries, most of which are U.S. allies and partners, including Germany, Canada, France, and the United Kingdom.
- Those CPAs that openly advertise their missions to transfer technology to China are more likely to receive public praise from instruments of the CCP, including the Overseas Chinese Affairs Office of the State Council (OCAO; 国务院侨务办公室) and the United Front Work Department (UFWD; 中共中央统一战线工作部).
- CPAs that advertise they transfer technology in Chinese also are more likely to omit information about that aspect of their missions from the English-language versions of their websites.

Although many Chinese professional associations' missions overlap with China's national development strategies, we cannot determine which of these

groups act as instruments of the Chinese state or Party, or merely exchange technology because it is in the nature of scientists to promote and share their knowledge. Note that members do not necessarily reflect the values espoused or activities advertised by the organizations in which they participate. Future research on this subject should shed light on overt connections between specific CPAs and China's science and technology (S&T) ecosystem; in particular, connections to military-civil fusion efforts and research parks.

## Introduction

Diaspora community groups—especially those based on professions—are natural information-sharing networks. Their *raison d'être* is to distribute information and pool support among otherwise-disconnected, isolated communities. Chinese professionals living overseas face unique disadvantages in the workplace that culminate in soft limits on career and leadership opportunities collectively referred to as the “bamboo ceiling.”<sup>4</sup> Professional associations can ameliorate some effects of workplace discrimination or bias by allowing Chinese workers to act in solidarity and support one another.<sup>5</sup>

At times, this support can extend across borders. Diaspora communities can provide home countries with foreign direct investment, commercial opportunities, international lobbying support, and technological know-how.<sup>6</sup> China is no exception. The State Council estimated in 2015 that 60 percent of actual foreign direct investment in China since the Reform and Opening Up in 1978 has come from its overseas population, which numbers at least 60 million people.<sup>7</sup>

Overseas Chinese associations are not a new phenomenon. The oldest groups studied in this paper, the Europe-China Investment (欧中投资协会) and French-Chinese Solidarity (法中整合协会) Associations, were founded in France in 1901 to serve as support networks for the growing Chinese diaspora in Europe. Since then, hundreds of overseas Chinese associations have been founded in dozens of countries.<sup>8</sup> Many of these associations are rooted not just in their members' shared Chinese heritage, but also in certain professions and industries that run the gamut from automobile engineering to biomedicine. Still others are generic “friendship” or “science and technology” associations.

From a security perspective, Chinese Communist Party and state-led efforts to acquire foreign technologies have called into question the role of overseas Chinese professional associations as conduits of technical information. The CSET report *China's Access to Foreign AI Technology* finds that these associations are central to the CCP's foreign technology and talent acquisition strategy.<sup>9</sup> Other think tank and media reports have showcased the role of the CCP's United Front Work Department in coordinating overseas associations' technology transfer activities.<sup>10</sup> The challenge for U.S. policymakers lies in differentiating between those professional associations providing crucial support for Chinese diaspora communities, and those that may serve as vectors of technology transfer at the direction of the CCP and PRC. Generally speaking, Chinese professional associations seem to fall into three categories:

1. *Independent*: associations that were founded and largely remain independent of Party influence or control, which aim to connect and support the Chinese diaspora and advance the frontiers of science globally;
2. *CCP/PRC Co-opted*: associations that were founded independently, but have since been co-opted by the Party to partially or primarily serve its interests; and,
3. *CCP/PRC Founded*: associations that were originally constructed or sponsored by Chinese government or CCP entities, and whose main purpose is to extract and relay foreign technical information and personnel in pursuit of China's modernization.

Using only publicly available information, it is hard to determine which professional associations are affiliated with the Party, or how closely. In reality, the relationship between CPAs and the CCP or Chinese government is more complicated than the categorization we have laid out.<sup>11</sup>

On the question of technology transfer, however, CPAs are surprisingly forthright. Of the 208 professional associations we considered, more than half (126 associations, 61 percent) openly advertise their involvement in transferring technology to China.

Figure 1. China-Silicon Valley Association Participates in Guangzhou Science, Technology and Innovation Commission Signing Ceremony



Source: Foreign Affairs Office of the Guangzhou Municipal People's Government.<sup>12</sup>

## Technology Transfer with Chinese Characteristics

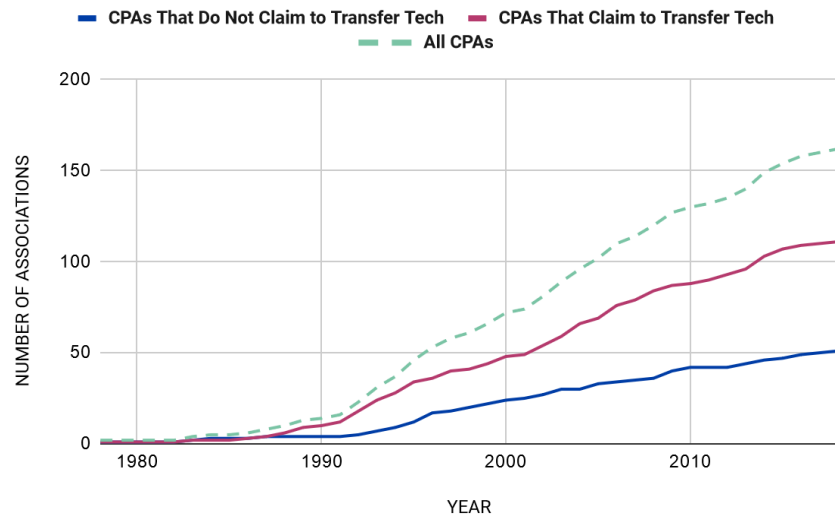
At its core, “technology transfer” simply refers to the exchange of information and ideas related to science and technology. Not all forms of technology transfer are problematic. Many transfers are part of well-established, U.S. government-led initiatives to propagate technologies to allies, partners, and even rivals in the name of international security and public welfare.<sup>13</sup> Beginning in the 1980s, the United States recognized the merits of technology transfer as a way to shape global norms and standards around certain technologies, and adopted a policy of deliberately transferring technology to China. The Congressional Office of Technology Assessment posited that technology transfer could help bring a billion people out of poverty, and maybe even woo the country to become a strategic partner in the U.S. competition with the Soviet Union.<sup>14</sup> Even today, Chinese professional associations often engage in the same tech transfer activities as associations that represent other diaspora groups. For example, the Japanese Technology Professionals Association works closely with the Japanese consulate in its mission to support Japanese technology-oriented professionals in Silicon Valley,<sup>15</sup> and the American Israeli Medical Association describes itself as a networking organization for medical and biotechnology professionals in the Los Angeles area.<sup>16</sup>

Chinese leaders historically emphasized talent as a strategic resource in their high-level guiding science and technology policies, beginning as early as Zhou Enlai’s “Four Modernizations” (四个现代化).<sup>17</sup> Even prior to the Reform and Opening Up, Beijing understood the significance of sending its

students abroad, if only to the Soviet Union and Eastern Europe, to ensure that China did not fall behind amid global competition despite its otherwise closed society.<sup>18</sup>

However, it was not until after China opened its doors in 1978 that Chinese leadership began to really consider the effects of a potential “brain drain” when, for the first time, the issue of Chinese citizens choosing to stay overseas became a more plausible scenario. According to retired Hong Kong University of Science and Technology Professor David Zweig, the government learned that the best S&T talent strategy was to let “people go abroad freely, and then compete for them in the international marketplace by creating a domestic environment that could attract them back.”<sup>19</sup> The State Council established the Overseas Chinese Affairs Office and mobilized Chinese embassies and consulates to construct and promote professional associations. By the early 1990s, Zweig continues, “the government established 52 educational bureaus in embassies and consulates, which helped form over 2,000 Overseas Students Associations and over 300 professional associations for overseas scholars.”<sup>20</sup> Figure 2 reflects the founding years of 162 overseas Chinese professional associations for which we could find data in this study:

Figure 2. Growth in Overseas Chinese Professional Associations, 1978–2020



Source: CSET dataset of overseas Chinese professional associations (162 groups indicated years of founding).

The 2000s marked a shift in China’s policy toward its diaspora community. Realizing China was losing the global competition for its overseas talent, the

government adopted a new policy that encouraged Chinese expatriates to contribute to China's modernization—even if they stayed abroad—and outlined various ways they could help China.<sup>21</sup> A prime example of this strategy was the “Chunhui” or “Spring Light” Program (春晖计划), which was “the forerunner of the concept of ‘serving the nation’ from abroad (为国服务), rather than insisting that people ‘return to serve the country’ (回国服务).”<sup>22</sup> Even if Chinese scholars overseas decide not to move back to China for good, they bring with them “new information or technology, or transfer information to other overseas scholars or graduate students about conditions in China,” to the benefit of the state.<sup>23</sup> As a result, the CCP is attempting to transform its “brain drain” migration liability into a “brain gain” by tapping into overseas knowledge networks.<sup>24</sup> We highlight several examples of technology transfer methods in Appendix II.

Members of the Chinese diaspora may participate in professional associations—or, separately, engage in technology transfer—for any one of myriad reasons, ranging from a simple desire to stay informed, to earning arbitrage profits, to deep-seated patriotism.<sup>25</sup> Survey data from the early 2000s indicated that nearly half of Chinese professionals in the San Francisco Bay Area relied on professional associations for information about job opportunities and technological developments in their fields.<sup>26</sup> Intentionally or not, however, members also tended to fulfil the PRC’s technology transfer strategy: 44 percent of survey respondents had returned to China on business trips in the past three years, more than a third reported arranging contracts for mainland Chinese businesses, and 20 percent “regularly” exchanged technology-related information with friends, classmates, or business associates in the PRC.<sup>27</sup> It is unclear to what extent these numbers may have increased or decreased in the last 20 years, but the Communist Party has certainly ramped up the number and frequency of short-term exchanges and offered greater monetary rewards to returnees.<sup>28</sup>

Today, Chinese professional associations play an important role in China’s broader science and technology development strategies. Policies like the 2016 “Innovation-Driven Development Strategy” (国家创新驱动发展战略; or IDDS) emphasize what Beijing views as “indigenous” or “independent” innovation, sourcing knowledge from abroad by encouraging the appropriation of foreign technology and know-how, returning to China to tweak it, and creating Chinese “indigenous innovations.”<sup>29</sup> IDDS specifically prescribes ways by which China can attract foreign investment, talent, and technology, such as by “fully leveraging the roles played by various industry associations, foundations, and science and technology groups,” in addition to

academic research collaboration, technology transfer, mergers and acquisitions, and others.<sup>30</sup>

## Scope and Methodology

To populate the dataset, we searched the internet for members of two larger “federations” of professional associations—the Overseas Chinese Science and Technology Organization Federation (OCSTOF) and the Federation of Chinese Professional Associations in Europe (FCPAE)—and those collaborating with the China Association of Science and Technology under the “Haizhi” Plan, which is detailed later in this section. Each of these groups is discussed in greater detail below. Our sample is not necessarily representative of all Chinese professional associations. Findings in this paper are limited to the 208 CPAs identified in this study.

Two other conditions bound our findings: First, this paper does not discuss the role of Chinese Student and Scholar Associations or Chinese university alumni associations. In the course of our research, we found at least 48 CSSAs are members of the federations we looked at, but omitted them from this analysis due to difficulties in tracing CSSAs back to their source universities. Second, we only collected data about foreign-based Chinese professional associations, not technology transfer hubs, innovation parks, or incubators in China (侨梦苑; or “Dream Gardens”). We excluded 17 organizations that are based in China.

### *Populating a List of Chinese Professional Associations*

We began our analysis by searching for basic phrases, such as “Germany-China Technology Cooperation Association” (德中技术合作协会), but quickly discovered that many CPAs participate in larger regional or thematic “federations” of professional associations. We mainly populated the dataset with professional associations that were members of at least one of the following groups:

*The Overseas Chinese Science and Technology Organization Federation* intends “to integrate the resources of various parties at home and abroad [...] and carry out the work of introducing high-end overseas talents and advanced technology.”<sup>31</sup> Founded in 2015, OCSTOF partners with the Investment Promotion Agency of the Chinese Ministry of Commerce to host “roadshows” (路演) designed to integrate “international technologies and talents with domestic industries, capital, and markets,” and to help China’s



development and technology indigenization efforts across various industries.<sup>32</sup> In the course of our writing this paper, the OCSTOF website disappeared.<sup>33</sup>

*The Federation of Chinese Professional Associations in Europe* intends “to unite the Chinese professional associations in Europe; to maintain and protect the legitimate rights and interests of Chinese professionals in Europe; [and] to provide a platform for them to network and to assist Chinese students who plan to return to China to work or start a business.”<sup>34</sup> Founded in 2001, the FCPAE hosts annual forums that rotate between European countries, with its October 2020 forum in Manchester, UK set to focus on artificial intelligence and advanced manufacturing.<sup>35</sup> The federation is connected to the United Front Work Department of the CCP, and has been praised by the Overseas Chinese Affairs Office for helping Huawei’s human resources team recruit experts from Nordic countries.<sup>36</sup>

*Organizations Contacted Under China’s “Haizhi” Plan* are targeted as part of China’s campaign “to build a platform for overseas talents to return to work in and serve the country.”<sup>37</sup> The China Association for Science and Technology (CAST), the Central Organization Department, and the Ministry of Human Resources and Social Security jointly administer the plan; they began collaborating with professional associations of Chinese experts abroad in 2004.<sup>38</sup> CAST employs representatives of overseas S&T groups to serve as “CAST HOME Program experts,” who recruit members of overseas S&T organizations to apply for China’s talent plans or return to China to start businesses. The Haizhi Plan goes by several names, including the “Action Program for Overseas Intelligence for the Country” or the “Help Our Motherland through Elite Intellectual Resources from Overseas” (HOME) Program, but is colloquially referred to as “Haizhi.”<sup>39</sup>

In the process of searching for individual associations, we often stumbled upon several other groups with similar names, but which are not members of FCPAE, OCSTOF, or listed as Haizhi contacts. We incorporated all 50 of the organizations we found this way into the dataset. Our final dataset comprises 208 Chinese professional associations.

### *Compiling Information About the Associations*

We systematically collected information from each association’s website. The overwhelming majority of associations (90 percent, 187 associations) host public-facing websites with “About Us” or “Introduction to” pages. However, we could not find websites for 21 associations. For 14 of those cases, we

were able to populate relevant fields by using indexed web pages on web archives like hmlink.com or information from Baidu knowledgebase.<sup>40</sup> For seven of the associations in our dataset, we were unable to find any record of their activities online beyond passive references in event descriptions or news articles. Professional associations may forego websites because they are defunct, too small to warrant a website, or because they prefer to remain offline.

Where data was available, we copied verbatim the Chinese- and English-language versions of each association's "About Us" page and manually recorded its host country, the year it was founded, and the number of members it reported to represent, among other information.<sup>41</sup>

## Findings

Using Chinese and English keyword searches on "About Us" web pages, we found that 126 of the 208 groups in our dataset (61 percent) advertise that they transfer technology to China. We also found that CPAs most commonly advertised the "technology transfer" components of their missions in Chinese, and in the 54 cases where English-language versions of websites were available, fewer than half mentioned technology transfer in English. We grouped the keywords into three sets of activities that constitute "technology transfer"—exchanging technical information, bringing overseas scientists to China, and contributing to Chinese state-run talent plans (numbers for the following categories overlap):

- 102 associations (49 percent) advertise exchanging technical information. Specifically, they facilitate "technology transfer" (技术转让), "technology exchange" (技术交流), "knowledge transfer" (知识传输), or other kinds of industrial "exchange and cooperation" (交流与合作) with experts in China.
- 67 associations (32 percent) advertise bringing scientists to China. These groups state their intent to "return" (返回中国) ethnically Chinese, "overseas Chinese" (华侨) people to China, to start businesses or work at Chinese research institutions.
- 27 associations (13 percent) advertise their contributions to Chinese talent plans. They discuss sending delegations or encouraging members to apply to specific Chinese state-run talent spotting plans

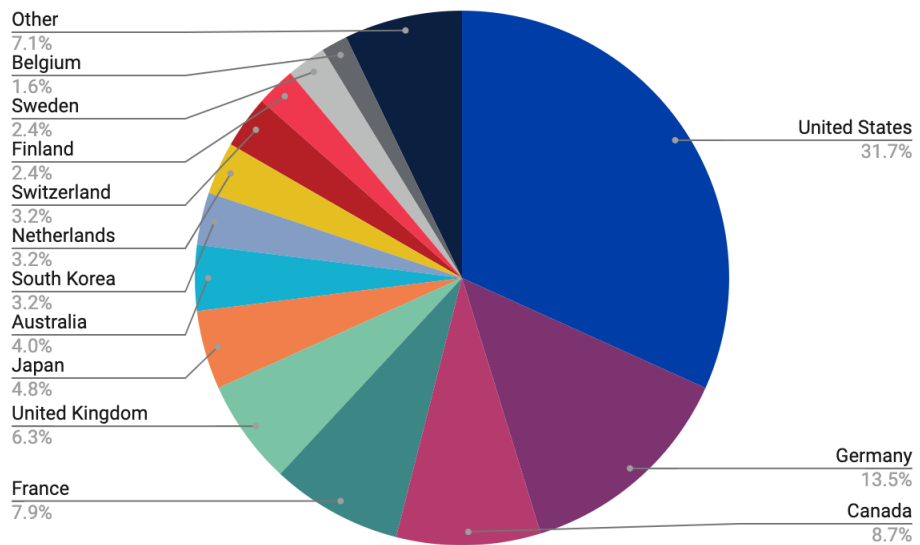
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<sup>i</sup> A full list of keywords used can be found in Appendix I.

and competitions, such as the “Thousand Talents Plan” (千人计划) or “Chunhui Cup” (春晖杯).<sup>42</sup>

Fewer than one-third of these groups are located in the United States; the remaining two-thirds of associations operate across 21 countries, most of which are U.S. allies and partners. Germany, Canada, France, the United Kingdom, and Japan host the largest number of technology-transferring CPAs after the United States. Relatively few professional associations in this study operate in Southeast Asia, the Mediterranean, Latin America, and Africa. This was surprising, considering more than 70 percent of the Chinese diaspora resides in Asia, primarily Southeast Asian countries.<sup>43</sup> CPAs exist in countries worldwide; the results of this study may be skewed by the selection of federations used to populate most of the dataset, or may reflect an active strategy to target technology hubs in Europe and North America.

Figure 3. Geographic Distribution of CPAs That Promote Technology Transfer



Source: CSET dataset of overseas Chinese professional associations (126 groups).

### Estimating Membership

We estimate that 145,000 people are members of overseas Chinese professional associations that transfer technology to China. We can confirm that there are 123,440 members in associations that say they transfer technology, based on information from 55 groups’ websites. Seventy-one associations indicate they transfer technology but do not list how many members are in their organizations. We estimate these groups account for at

least an additional 20,000 people, assuming 350 members are in each association.<sup>ii</sup>

*Table 1. Membership Counts of CPAs That Promote Technology Transfer*

<i>Type of Tech Transfer</i>	<i>No. of Groups</i>	<i>No. of Members</i>
Exchange Technical Information	102	112,000
Bring Scientists to China	67	64,000
Mention Specific Talent Plans	27	32,000
Total	168	145,000

*Source: CSET dataset of overseas Chinese professional associations. Numbers overlap: some associations advertise transferring technology in more than one way.*

These figures do not reflect who or how many members in a professional association may actually be exchanging technical information, bringing scientists to China, or participating in Chinese talent plans and competitions. Members do not necessarily reflect the values espoused or activities advertised by the organizations in which they participate. In fact, they may have no idea their organization advertises technology transfer to China. Additionally, membership among Chinese professional associations varies widely. The smallest group in our dataset consisted of 30 people—the largest, 30,000.

### *Technology Transfer by Field*

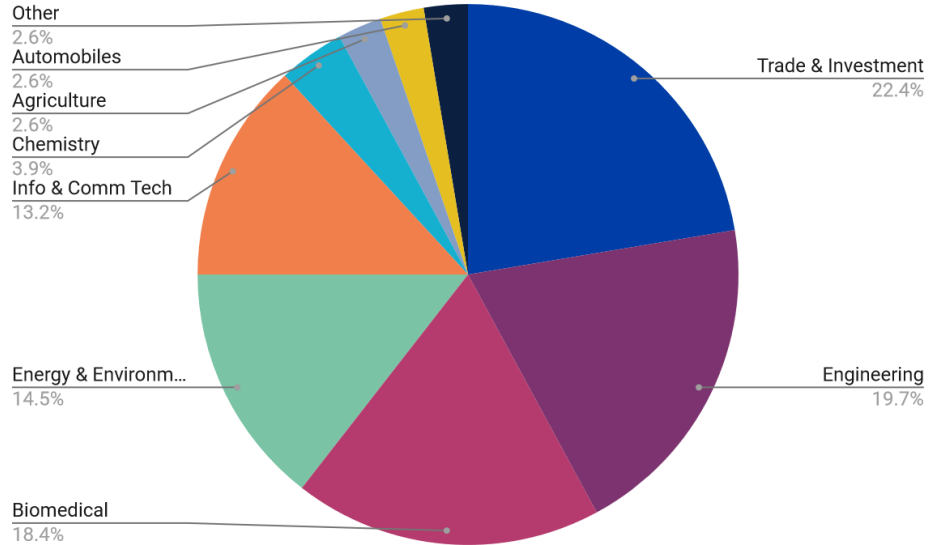
The largest plurality of Chinese professional associations in this study focuses on investing in technology startups or pooling the capital of Chinese people abroad. Take, for example, the Canada-China Trade Innovation Alliance (加中商贸创新联盟), which aims to assist Canadian and Chinese entrepreneurs looking to construct or expand businesses in both countries. While 76 associations in the dataset that promote technology transfer (60 percent) specialize in an industry or field of technology, 50 associations (40 percent) are generic “science and technology” or “friendship” associations,

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<sup>ii</sup> The median number of members in a professional association was 350, and the average was 823, with high variance in our sample despite an interquartile range of 515. There were some outliers with large numbers of people; this projection does not account for additional outliers.

and do not specify a field. Of the associations rooted in a certain profession, the most common were engineering and biomedical technology.

*Figure 4. Field Distribution of CPAs That Promote Technology Transfer*



*Source: CSET dataset of overseas Chinese professional associations (76 groups advertise they transfer technology and specialize in a field).*

#### *Discrepancies Between Chinese and English Versions of Websites*

Professional associations that transfer technology to China were more likely to omit important information about their missions than those that did not.<sup>iii</sup> Of the 53 associations that had both Chinese and English-language versions of their websites, we counted 20 cases (38 percent) where the English presented was substantively different from the Chinese—that is, key sentences or entire paragraphs were missing from the English.<sup>44</sup> In 19 of these 20 cases, the associations advertised (in Chinese) that they transfer technology to China, but not in English.

<sup>iii</sup> The difference of proportions in our sample is statistically significant at  $p < 0.05$  ( $z = 2.389$ ,  $p = 0.01684$ ). Of the 208 groups in this study, 75 published English-language versions of their websites. Of them, only 23 reported transferring technology to China in English. Of the 52 that did not mention it in English, half (26 groups) reported transferring technology in Chinese.

*Table 2. Organizations That Promote Technology Transfer in Chinese Were Less Likely to Do So in English*

	Mentions technology transfer	Does not mention technology transfer	Total
EN & CN websites are the same	22	11	33
EN & CN websites are different	19	1	20
Total	41	12	53

*Source: CSET dataset of overseas Chinese professional associations.*

Some of these discrepancies may be ascribed to infrequent website updates, short-cutting translations, or formatting mistakes. However, the prevalence of English-Chinese discrepancies, and the nature of the content omitted, suggest that some overseas Chinese professional associations—especially those that transfer technology—are deliberately sending different signals about their missions to English-language and Chinese-language audiences. Other Chinese institutions have historically been reticent to advertise their talent recruitment or technology transfer activities in English. China’s Northwestern Polytechnical University, for example, scrubbed references to talent recruitment plans from its English-language online job application.<sup>45</sup> Below we list two examples of noticeable differences in English and Chinese versions of CPAs’ websites. Additional examples can be found in Appendix III.

- The Canada-China Sci-Tech Alliance’s (加中科技联盟) Chinese-language website states that it “often organizes and leads corporate and expert delegation visits to China” and “invites and receives Chinese local government representatives in Canada and corporate delegations.” Additionally, “many key members have received awards from the governments of China and Canada and have been chosen to participate in China’s National Thousand Talents Program.”<sup>46</sup> The English-language version of the website omits these details.<sup>47</sup>
- The Houston-based Sino Professionals Association (华夏学人协会) states on its Chinese-language website that it has “actively participated in the reception of scientific and cultural delegations from China, exchanged and cooperated with the Overseas Chinese Affairs

Office, the All-China Federation of Returned Overseas Chinese, and other applicable government departments.”<sup>48</sup> The English-language version does not mention any of these organizations.<sup>49</sup>

*Connections to the Party*

CPAs that were openly engaged in technology transfer were praised more often by instruments of the Chinese Communist Party. We searched the websites of the Overseas Chinese Affairs Office of the State Council and the United Front Work Department to see which associations in our dataset are mentioned by name, and in what contexts. The United Front Work Department is the Party’s primary tool in monitoring, influencing, and controlling the Chinese diaspora worldwide.<sup>50</sup> In 2018, it was placed in charge of the Overseas Chinese Affairs Office; both groups report directly to the Central Committee of the CCP.<sup>51</sup>

In total, 78 of the professional associations in our dataset (38 percent) were praised by name in articles on the OCAO and UFWD websites. Organizations that reported transferring technology to China were more likely to receive praise. CCP organizations praised 43 percent of the associations in our dataset that were openly advertising they transferred technology, and 29 percent of the ones that were not.<sup>iv</sup>

*Table 3. Organizations That Promote Technology Transfer Were More Likely to Receive Praise from the CCP*

	Mentions technology transfer	Does not mention technology transfer	Total
Praise from the CCP	54	24	78
No praise	72	58	130
Total	126	82	208

*Source: CSET dataset of overseas Chinese professional associations.*

Most often, the Party praised CPAs for sending or receiving delegations to or from China or co-hosting events with provincial government or Party entities. Of the 78 associations mentioned on Party websites, 45 (58 percent) were praised for holding conferences in China, taking meetings with Chinese

<sup>iv</sup> The difference of proportions in our sample is statistically significant at  $p < 0.05$  ( $z = 1.9783$ ,  $p = 0.048$ ).

government officials, or signing agreements or memoranda of understanding with China-based technology transfer hubs, China's "Dream Gardens."<sup>v</sup> An example of one such cooperation agreement can be found in Appendix IV.

### China's Strategy to Leverage Overseas Professionals Yields Mixed Results

The Chinese government has seen mixed success in encouraging overseas Chinese technology professionals to return. Many left for political reasons, and CSET reports indicate that U.S.-based Chinese PhD graduates tend not to leave after completing their degrees.<sup>52</sup> In the artificial intelligence field specifically, nearly 90 percent of Chinese graduates remain in the United States five years after completing their programs.<sup>53</sup>

Nonetheless, Chinese media outlets frequently boast about how many people have returned to start businesses or commercialize foreign products. Seventeen "Overseas Chinese Dream Gardens" are tasked with helping foreign scientists and entrepreneurs settle in China.<sup>54</sup> These are essentially technology parks constructed by the Overseas Chinese Affairs Office and run by local governments, which offer discounted or subsidized office space, personal awards for entrepreneurs who hold foreign patents, and startup grants sometimes exceeding \$140,000 USD (1 million RMB). There is some evidence that China's Dream Gardens are bearing fruit. The State Council estimates that between 2015 and 2018, the parks collectively attracted more than 40,000 overseas businesses, which employ "tens of thousands of overseas technology professionals."<sup>55</sup> As of 2016, at least 63 overseas Chinese professional associations had apparently signed 103 strategy documents, contracts, and cooperation agreements with China's Dream Gardens.<sup>56</sup> Many CPAs advertise their contributions to China's national talent plans on their own websites; we found one professional association in France that had posted pictures of 19 award certificates it had received from various national and local departments of the CCP for "overseas talent work" (海外引才工作).<sup>57</sup>

However, successful technology transfer does not demand that scientists and engineers pick up and leave their current occupations or move across borders. Since the 1990s, the CCP has focused on retaining Chinese talent at home and making China's barriers to foreign technical information more porous—usually by establishing short-term exchanges and remote contact

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<sup>v</sup> We copied the headlines of OCAO and UFWD articles that mentioned CPAs and ran a keyword search to compute how many mentions were related to meetings or agreements. A full list of keywords can be found in Appendix I.



with overseas professionals. For example, Yang Chunlai, a former president of the Association of Chinese-American Scientists and Engineers, pleaded guilty in 2012 to stealing computer source code from a Chicago-based derivative exchange company.<sup>58</sup> The Chinese government and Communist Party have since systematized their overseas outreach efforts.<sup>59</sup> In its 2018 report, the State Council praised itself for building on “the world’s institutionalized conferences of overseas Chinese community associations, Chinese-American outstanding youths, and other international institutionalized meetings,” “continuing to promote the comprehensive construction of overseas harmonious overseas Chinese societies,” and “organizing more than 300 service groups for overseas Chinese every year.”<sup>60</sup>

## Conclusion

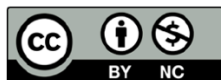
As noted, a majority of CPAs in this study mention technology transfer as a key part of their missions. Although technology transfer as a concept is not inherently problematic, broader changes in the U.S.-China relationship have made U.S. officials more wary of transferring technology to China.

Most commonly, professional associations in this study hosted conferences and colloquia, job fairs, and entrepreneurship competitions abroad or in China. Some associations distributed industry newsletters, published their own journals, or hosted file-sharing forums and repositories of technical papers for members to share with one another. Although many Chinese professional associations’ missions overlap with China’s national development strategies, it is hard to ascertain which of these groups act as instruments of the Chinese state or Party, or merely exchange technology because it is in the nature of scientists to promote and share their findings.

Chinese professional associations often engage in the same tech transfer activities as associations that represent other diaspora groups. However, as the CCP under Xi Jinping aims to push the Chinese diaspora to “serve the nation” from abroad, China’s whole-of-society approach to technology transfer remains uniquely worrisome for U.S. policymakers.<sup>61</sup> Future research should shed light on overt connections between specific CPAs and China’s S&T ecosystem—in particular, connections to military-civil fusion efforts and research parks.

## Acknowledgments

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## Appendix I: Keywords Used to Identify Technology Transfer

After compiling the raw text of their “About Us” pages, we searched for the following keywords to identify groups that reported exchanging technical information:

高科技交流	high-tech exchanges	科学交流	science exchange
分享出版物	share publications	知识传输	knowledge transfer
技术合作	technology cooperation	全面交流与合作	comprehensive exchanges and cooperation
科技交流	science and technology exchange	交流与合作	exchange and cooperation
技术转让/转移	technology transfer	交流信息	exchange information
交换技术	exchange technology	转让/转移技术	transfer technology
技术交流	technology exchange		

We used the following keywords to identify groups that reported bringing scientists to China:

返回中国	return to China	对接平台	docking platform
回归中国	return to China	对接站	docking station
回到中国	returned to China	对接	docking
人才回流	returning talents	码头	dock
回国学生	returning students	回国	back to China
华侨	Overseas Chinese	为祖国服务	serve the motherland
侨务办公室	Overseas Chinese Affairs Office	统一战线	United Front

We used the following keywords to identify groups that mentioned specific Chinese talent plans:

百人计划	Hundred Talents Plan	海外赤子为国服务行动计划	Homeland-Serving Action Plan for Overseas Chinese
春晖	Chunhui	北京海外人才聚集工程	Beijing Overseas Talent Aggregation Project
人才计划	talent plan	两江学者	Two Rivers Scholars (Chongqing)
千人计划	Thousand Talents Plan	闽江学者	Minjiang Scholars
海智	Haizhi	宁波市海鸥计划	Ningo Seagull Plan
国有企业	state-owned enterprise	草原英才工程	Grassland Talent Project (Inner Mongolia)
一带一路	Belt and Road Initiative	双百千万人才计划	Double Hundred-Thousand-Ten-Thousand Talents Plan
珠江人（人才）计划	Pearl River Talent Program	英才555工程	Yingcai 555 Project (Jiangxi)
双创人才计划	Jiangsu Double Innovation Talent Plan	海创计划	Overseas Innovation Plan
泰山学者	Taishan Scholars (Shandong)	紫金人才计划	Zijin Talent Program (Nanjing)
深圳市孔雀计划	Shenzhen Peacock Project	八桂学者	Bagui Scholars (Guangxi)
530计划	Plan 530 (Wuxi City)		

After compiling the text of OCAO and UFWD article headlines that mentioned the groups of this study, we used the following keywords to code which headlines referred to meetings or agreements with Chinese officials:

Meet, met, meeting, delegate, delegates, delegation, travel, serve, agreement, forum, symposium, conference, mission, signs, signed, contract, discuss, summit, host, cooperation, cooperate, visit, visits, Qiaomengyuan, Dream Garden, established, establish

## Appendix II. Examples of Technology Transfer in Practice

- The Chinese Institute of Engineers in the United States (美洲中国工程师协会; CIE-USA) hosts an annual conference to “explore deep problems in engineering.”<sup>62</sup> Its members have “put forward nearly 1,000 technical innovation and enterprise development suggestions” for firms in China.<sup>63</sup> The group prides itself for having “promoted the technological progress of large and medium-sized state-owned enterprises,” including PetroChina, Baosteel Group, China Telecom, China Netcom, and Lenovo Group.<sup>64</sup> CIE’s San Francisco Bay chapter advertises an eclectic group of sponsors, including Boeing, Siemens, and Sandia National Labs, in partnership with Huawei, SMIC, and TSMC, among others.<sup>65</sup>
- The New Jersey Chinese Computer Professionals Society (新州华人电脑协会) hosts small group discussions about outsourcing and entrepreneurship, job security, and interview skills. They also maintain “close and good relations with the Chinese Academy of Sciences, Consulate General ... the Ministry of Science and Technology of China, and the provincial and municipal industrial information units.”<sup>66</sup>
- The China Overseas Students Entrepreneurship Association (中国留学人员创业协会) “integrates global Chinese talents and technical resources, recommends high-tech projects for China, and jointly introduces, incubates and develops talents and projects” in China.<sup>67</sup> Its purpose is to “effectively promote the docking of overseas students who want to start a business in China.”<sup>68</sup> Its last major conference in 2017 aimed “to promote Nanjing's entrepreneurial and innovative environment, promote the preferential policies of the Nanjing Talent Program, and introduce the first overseas Chinese dream garden in the Yangtze River Delta—the ‘Nanjing Overseas Chinese Dream Garden.’”<sup>69</sup>
- The Silicon Valley Chinese Overseas Business Association (硅谷留美博士企业家协会) aims to “assist domestic enterprises to develop international markets, introduce overseas talents, intelligence, and venture capital to China, bring high-tech products back to China for development, and found international student enterprises and

international student entrepreneurship parks.”<sup>70</sup> Before its official founding, “SCOBA founders had participated in 2 business trips to China, in 1998 and 1999, both sponsored by the ‘Chun-Hui Program’ [sic] of PRC Ministry of Education.”<sup>71</sup>

- The Canada-China Society of Science and Technology Industries (加拿大中国科学技术协会) prides itself in having “recruited a large number of overseas high-level talents.”<sup>72</sup> According to its website, “many members have been successfully selected into the National Thousand Talents Plan, the Youth Thousand Talents Plan, and local talent introduction plans.”<sup>73</sup> Despite its success, the website continues, “the development of the motherland is changing with each passing day, and it is still thirsty for high-tech talents. ... we hope to continue to contribute to the scientific and technological exchanges between Canada and China. Whether you want to come to North America for a technology visit, recruit talent, or organize a large seminar, we will do our best to assist you.”<sup>74</sup>

## Appendix III: English-Chinese Website Discrepancies

The following excerpts are missing from the English-language versions of CPAs' websites, but are available in Chinese. These are only five examples of the 20 instances found in this study.

Association	Excerpt of Missing Text (Translation)	Excerpt of Missing Text (Original)
Sino-U.S. High Level Talent Exchange Association (中美高层次人才交流协会)	Through annual activities such as the North American Entrepreneurship Competition, Silicon Valley Matchmaking, Angel Investment and Incubation, Mentor Program, Technical Salon, China Park Market Matching, and Returning to China, [the association] has discovered, nurtured and invested more than 100 companies, helping more than 300 companies settle in investment.	协会通过北美创业大赛、硅谷对接、天使投资和孵化、导师计划、技术沙龙、中国园区市场对接、回国考察等常年活动，发掘、培育和投资了百多个公司，帮助300多个公司落户并获得投资。
North American Chinese Technology Entrepreneurship Association (北美华人科技企业及创业协会)	In recent years, the association has also actively connected with China's talent programs, established cooperation relations with talents and entrepreneurial projects in many regions, and actively communicated with various fields in the country to promote mutual understanding and effective cooperation and assist members to connect with domestic enterprises and park projects, get funding, and successfully start a business.	近年来，协会也积极与中国的人才计划对接，与许多地区建立了人才与创业项目合作关系，并积极与国内各领域交流沟通，促进双方了解与有效合作，协助会员与国内企业和园区对接项目，获得资助，成功创业。
New Jersey Chinese Computer Professionals Society (新州华人电脑协会)	We maintain close and good relations with the Science and Technology Counselor / Consul of the Chinese Consulate General in New York, the Ministry of Science and Technology of China, and the provincial and municipal industrial information units. We have received unanimous praise.	我们与中国驻纽约总领馆科技参赞/领事，中国科技部，省市产业信息单位，保持密切与良好的关系。深得一致赞许。
Belgian Chinese Professionals Association (旅比华人专业人士协会)	ACPBA is experienced in organizing and recommending overseas talent recruitment, providing various services for Chinese companies, and successfully connecting with local companies.	ACPBA在组织推荐海外人才招聘，为中方企业落地并成功与当地企业对接提供各种服务等活动中经验丰富，实力可嘉。

<p>Chinese Association of Engineers in Denmark (旅丹华人专业人士协会)</p>	<p>At the same time, the Association pays attention to domestic development trends, cooperates with relevant domestic institutions to Promote Sino-Danish science and technology exchanges, and overseas talents serve the country and return to China.</p>	<p>协会关注国内发展动态, 与国内相关机构合作促进中丹科技经贸交流, 及留学人员回国创业的活动.</p>
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## Appendix IV: Example CPA-OCAO Cooperation Agreement

The following document is the text of a cooperation agreement between a Chinese-American professional association and a PRC provincial-level Overseas Chinese Affairs Office. Although dated (December 2000), it is one example of how provincial and local governments in China attempt to reach out to Chinese communities overseas to recruit S&T talent and acquire technology. This document was translated by Etcetera Language Group, Inc., and edited by CSET Translation Lead Ben Murphy. The original document is available online at

<https://web.archive.org/web/20191025005310/http://www.scoba.org/hzxy.html>.

Party A: Silicon Valley Chinese Overseas Business Association (SCOBA)

Party B: Overseas Chinese Affairs Office of Sichuan Provincial People's Government

(四川省人民政府侨务办公室)

In order to strengthen exchange and cooperation in science, technology, culture, education, and trade between Sichuan Province and overseas Chinese and overseas Chinese science and technology societies, the Silicon Valley Chinese Overseas Business Association (SCOBA, hereinafter referred to as Party A) and the Overseas Chinese Affairs Office of the Sichuan Provincial People's Government (hereinafter Party B) reached the following cooperation intent after friendly consultation:

1. The two parties shall support and collaborate with each other in the areas of science, technology, culture, education, and economic and trade exchanges and cooperation and provide facilitation and services for such undertakings.
2. Party A is obliged to recommend to Party B excellent overseas talent in the fields of science, technology, and economics for investigation, exchange, entrepreneurship, and investment by Sichuan, so as to promote their development in Sichuan.
3. Party B promises to coordinate the relevant departments and institutions at the provincial and city levels in Sichuan to help match overseas science and technology experts and professionals with exchange, cooperation, and entrepreneurship opportunities that bring them back to China, provide services to such experts and professionals, protect their legitimate rights and interests according to

- law, and assist relevant departments to implement relevant preferential policies and measures at all levels of government.
4. Party A promises to actively pay attention to the Sichuan Provincial Party Committee and the Sichuan Provincial Government's No. 1 Project (一号工程) to accelerate the development of Sichuan's information industry, and to provide constructive suggestions and opinions to help Sichuan to build itself into the Silicon Valley of western China (西部硅谷). Party B promises to quickly pass these suggestions and opinions on to the main leaders of the Provincial Party Committee and Provincial Government, competent departments, and relevant enterprises for serious analysis and study.
  5. Carry out counterpart economic and trade cooperation and exchanges with high-tech enterprises in Sichuan, provide excellent human resources and project information for Sichuan's special scientific and technological foreign investment and intellect attraction activities (对外引资, 引智活动), and help Sichuan Province solve practical problems.
  6. Establish an information exchange mechanism. The two parties shall regularly conduct exchanges of information, materials, and related matters in the fields of economics and trade, science and technology, and education.
  7. Party A shall serve as Sichuan's overseas portal to help publicize and introduce Sichuan to overseas Chinese, such as by facilitating the establishment of special content sections (专版) in overseas newspapers and publishing information online. Party B shall provide the relevant materials required for such activities.
  8. The key areas and key industries the two parties shall cooperate in are the following areas and industries promoted by the Sichuan Provincial Government:
    - a. Priority is given to the development of the technologies and industries of electronic information, modern biology, medicine and chemicals, food and beverages, and machinery and metallurgy.
    - b. Ecological protection and new- and high-tech agricultural industries.
  9. The two parties shall conduct exchanges and cooperation through the following methods:
    - a. According to the needs of Sichuan Province and the situation of overseas experts and scholars, both parties shall negotiate to determine the candidates. Party B shall report to the Overseas Chinese Affairs Office of the State Council in order to apply to the relevant national departments for funding for

certain projects and funding support for short-term cooperation work that brings overseas Chinese back to China.

- b. Party B shall directly invite experts and scholars from Party A to come to Sichuan for exchanges. Party B will contact and arrange for the exchange institutions to conduct the reception work in a proper manner according to the content of the exchanges.
- c. The candidates recommended by Party A to come to Sichuan for exchanges shall be confirmed by relevant scientific research institutions, colleges, universities, enterprises, and institutions in Sichuan Province. These bodies shall be jointly responsible for the reception of the candidates along with Party B and are responsible for arranging exchange projects and event funding.

10. For new technologies, new products, funds, and projects successfully introduced by Party A, Party B will coordinate relevant departments to implement incentive measures at all levels of government.

11. For matters not covered herein, the two parties shall negotiate in a friendly manner and in the spirit of complementarity when implementing the terms of the agreement.

12. This agreement is made in duplicate, with each party holding one copy.

Party A: Silicon Valley Chinese Overseas  
Business Association (SCOBA)  
President: Dr. Zhu Dongping (朱东屏)  
Date: December 8, 2000

Party B: Overseas Chinese Affairs Office of  
Sichuan Provincial People's Government  
Director: Wang Songda (王宋达)  
email: scocao@mail.sc.cninfo.net  
Date: December 8, 2000

## Endnotes

<sup>1</sup> This report attempts to disambiguate between arms of the Chinese state (PRC) and the CCP that are involved in technology transfer and overseas influence operations. However, in many cases, it is difficult to differentiate between state and Party efforts—a conscious move by Chinese leadership.

<sup>2</sup> William C. Hannas, James Mulvenon, and Anna B. Puglisi, *Chinese Industrial Espionage: Technology acquisition and military modernization* (New York, Routledge, 2013).

<sup>3</sup> This is not an exhaustive list of professional associations. We also do not include Chinese Student and Scholar Associations, university alumni groups, or technology transfer hubs in China in our analysis. See the Scope and Methodology section of this paper for details.

<sup>4</sup> Jane Hyun, *Breaking the Bamboo Ceiling: Career Strategies for Asians* (New York: Harper Business, 2006).

<sup>5</sup> Xiao-e Sun, “Transnationalism of Ethnic Chinese Scientists in the United States,” (PhD diss., University of Oregon Department of Sociology, June 2009), <https://search.proquest.com/openview/00552c34338e1d9a78b36cc3db976a4e/1?q-origsite=gscholar&cbl=18750&diss=y>.

<sup>6</sup> Paula Doherty Johnson, “Diaspora Philanthropy: Influences, Initiatives, and Issues,” *The Philanthropy Initiative*, May 2007, [https://www.tpi.org/sites/default/files/pdf/diaspora\\_philanthropy\\_final.pdf](https://www.tpi.org/sites/default/files/pdf/diaspora_philanthropy_final.pdf).

<sup>7</sup> “Overseas Chinese affairs work is long-term and important work of the party and the country” [侨务工作是党和国家的一项长期重要工作], *State Council Information Office*, June 29, 2015, <http://www.scio.gov.cn/xwfbh/xwfbfh/wqfbh/2015/33028/zy33033/Document/1439226/1439226.htm>.

<sup>8</sup> David Zweig, “Learning to compete: China’s Efforts to Encourage a ‘Reverse Brain Drain,’” in *Competing for Global Talent* (Geneva: International Institute for Labour Studies, 2006): 195, [http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms\\_publ\\_9290147768\\_en.pdf#page=198](http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_publ_9290147768_en.pdf#page=198).

<sup>9</sup> William Hannas and Huey-meei Chang, “China’s Access to Foreign AI Technology,” *Center for Security and Emerging Technology*, September 2019, <https://cset.georgetown.edu/wp-content/uploads/CSET-Chinas-Access-to-Foreign-AI-Technology-2.pdf>.

<sup>10</sup> See analysis by Alex Joske, “The Party Speaks for You,” *Australian Strategic Policy Institute*, June 9, 2020, <https://www.aspi.org.au/report/party-speaks-you>; and Didi Kirsten Tatlow, “The Chinese Influence Effort Hiding in Plain Sight,” *The Atlantic*, July 12, 2019, <https://www.theatlantic.com/international/archive/2019/07/chinas-influence-efforts-germany-students/593689/>.

<sup>11</sup> David Hutt, "The 'Communist Party evil; Chinese people good' myth," *Asia Times*, July 10, 2020, <https://asiatimes.com/2020/07/the-communist-party-evil-chinese-people-good-myth/>.

<sup>12</sup> "Guangzhou Stanford International Research Institute was inaugurated in the Guangzhou Development Zone," [广州斯坦福国际研究院在广州开发区揭牌成立], *Foreign Affairs Office of the Guangzhou Municipal People's Government*, January 23, 2018, <https://archive.vn/VhutC>.

<sup>13</sup> For examples of U.S.-led technology transfer, see the National Cancer Institute's Technology Transfer Center, <https://techtransfer.cancer.gov/>; and the China Energy Group at Lawrence Berkeley National Laboratory, <https://china.lbl.gov/>.

<sup>14</sup> Office of Technology Assessment, *Technology Transfer to China* (Washington, DC: Office of Technology Assessment, July 1987), <https://www.princeton.edu/~ota/disk2/1987/8729/8729.PDF>.

<sup>15</sup> "About JTPA," Japanese Technology Professionals Association, accessed May 2020, <https://www.jtpa.org/about>.

<sup>16</sup> "About," American Israeli Medical Association, 2018, <https://www.aima4u.com/about/>.

<sup>17</sup> "Zhou Enlai and the four modernizations" [周恩来与四个现代化], *People's Daily* rehosted by *Qiushi* [求是], October 24, 2018, [http://www.qstheory.cn/2018-10/24/c\\_1123603774.htm](http://www.qstheory.cn/2018-10/24/c_1123603774.htm).

<sup>18</sup> Denis Fred Simon and Cong Cao, *China's Emerging Technological Edge: Assessing the Role of High-End Talent* (New York: Cambridge University Press, 2009), 214–217.

<sup>19</sup> Zweig, 187.

<sup>20</sup> Zweig, 195.

<sup>21</sup> David Zweig, Chung Siu Fung, and Donglin Han, "Redefining the Brain Drain: China's 'Diaspora Option,'" *Science, Technology and Society* 13, no. 1 (May 2008): 1–33, <https://doi.org/10.1177/097172180701300101>.

<sup>22</sup> Zweig, 198. For a comprehensive guide to how overseas Chinese "serve the nation" from abroad, see Clay G. Wescott and Jennifer M. Brinkerhoff, *Converting Migration Drains into Gains: Harnessing the Resources of Overseas Professionals* (Mandaluyong: Asian Development Bank, 2006).

<sup>23</sup> Zweig, 198.

<sup>24</sup> Jean-Baptiste Meyer and Jean-Paul Wattiaux, "Diaspora Knowledge Networks: Vanishing Doubts and Increasing Evidence," *International Journal on Multicultural Societies* 8, no. 1 (2006): 4, <http://www.unesco.org/shs/ijms/vol8/issue1/art1>.

<sup>25</sup> See explanations in David Zweig, *Internationalizing China: Domestic Interests and Global Linkages* (Ithaca: Cornell University Press, 2002); and Zweig, Siu Fung Chung, Wilfried Vanhonacker, "Rewards of technology: Explaining China's reverse migration," *Journal of International Migration and Integration* 7 (2006): 449–471, <https://link.springer.com/article/10.1007/BF02934904>.

<sup>26</sup> See analysis by AnnaLee Saxenian, Yasuyuki Motoyama, and Xiaohong Quan, "Local and Global Networks of Immigrant Professionals in Silicon Valley," *Public Policy Institute of California*, 2002, [https://www.pplic.org/content/pubs/report/R\\_502ASR.pdf](https://www.pplic.org/content/pubs/report/R_502ASR.pdf).

<sup>27</sup> AnnaLee Saxenian, Yasuyuki Motoyama, and Xiaohong Quan, "Local and Global Networks of Immigrant Professionals in Silicon Valley."

<sup>28</sup> Ryan Kellogg concludes that returnees are "largely driven by the economic opportunities back home and cultural comfort, although the desire to give back to their homeland is also a prominent factor," in "China's Brain Gain? Attitudes and Future Plans of Overseas Chinese Students in the US," *Journal of Overseas Chinese* 8, no. 1 (2010): 10.2139/ssrn.1882435. Also see analysis commissioned and supported by the Overseas Chinese Affairs Office, by Xiang Biao, "A Ritual Economy of 'Talent': China and Overseas Chinese Professionals," *Journal of Ethnic and Migration Studies* 37, no. 5 (March 2011): 821–838, <https://www.tandfonline.com/doi/abs/10.1080/1369183X.2011.559721>.

<sup>29</sup> Hannas, Mulvenon, and Puglisi, 55–56. A prime example of China's "indigenization" can be found in similarities between China's Chengdu J-20 fighter jet and the Lockheed Martin F-35. See Siobhan Gorman, August Cole, and Yochi Dreazen, "Computer Spies Breach Fighter-Jet Project," *Wall Street Journal*, April 21, 2009, <https://www.wsj.com/articles/SB124027491029837401>; and Jon Ostrower, "Chinese Executive Pleads Guilty to Hacking U.S. Defense Contractors," *Wall Street Journal*, March 24, 2016, <https://www.wsj.com/articles/chinese-executive-pleads-guilty-to-hacking-u-s-defense-contractors-1458774419>.

<sup>30</sup> "The Central Committee of the Communist Party of China Issued the 'Outline of the National Innovation-Driven Development Strategy'" [中共中央国务院引发《国家创新驱动发展战略纲要》], *Xinhua News*, May 19, 2016, [http://www.xinhuanet.com/politics/2016-05/19/c\\_1118898033.htm](http://www.xinhuanet.com/politics/2016-05/19/c_1118898033.htm).

<sup>31</sup> "Brief Introduction of Overseas Chinese Science and Technology Organization Federation" [海外中国科学技术组织联合会简介] attachment posted under "2019 International Artificial Intelligence Project Roadshow," promoted by the *Austrian-Chinese Technology Exchange Association*, January 23, 2019, <https://www.pasconet.at/2019/01/23/2019%E5%9B%BD%E9%99%85%E4%BA%BA%E5%B7%A5%E6%99%BA%E8%83%BD%E9%A1%B9%E7%9B%AE%E8%B7%AF%E6%BC%94%E4%BC%9A/>.

<sup>32</sup> "Brief Introduction of Overseas Chinese Science and Technology Organization Federation." Also see "Invitation letter from Overseas Chinese Technology Organization Federation-Overseas High-tech Project Roadshow" [海外华人科技组织联合会—海外高科技项目路演会邀请函], *Career Engine*, August 30, 2018, <https://posts.careerengine.us/p/5b8765a2c08fdb1767bed3c5>.

<sup>33</sup> OCSTOF's domain name, <http://www.co-st.org/>, was allowed to expire in January 2020. A list of affiliated organizations could previously be found at <http://www.co-st.org/index.php?s=/home/about/partner.html>. The authors and other scholars have noticed that Chinese websites often disappear or are blocked after increased internet traffic.

<sup>34</sup> "Federation of Chinese Professional Associations in Europe," *FCPAE*, accessed October 2019, <https://www.fcdae.com/?lang=en>.

<sup>35</sup> "About FCPAE & AIAM2020," *International Conference on Artificial Intelligence and Advanced Manufacturing*, accessed January 2020, <http://www.icaiam.com/en/>.

<sup>36</sup> Didi Kirsten Tatlow, "The Chinese Influence Effort Hiding in Plain Sight."

<sup>37</sup> "Haizhi Overview" [海智概览], *Zhongshan City Association for Science and Technology*, July 31, 2017, <http://www.zssta.org/Article/view/cateid/205/id/2368.html>.

<sup>38</sup> "Haizhi Overview."

<sup>39</sup> "Haizhi Overview."

<sup>40</sup> Readers may judge the reliability of information found on Baidu knowledgebase or hlink; in some cases it may be outdated or inflated by self-reporting.

<sup>41</sup> We included English-language searches because several associations in non-Anglophone countries still hosted English versions of their websites; and conversely, some professional associations in Anglophone countries did not include "About Us" pages in Chinese, but only in English.

<sup>42</sup> For instance, the German-Chinese Society for Molecular Science (德国中国留德学者医学及生命科学学会) "recommends outstanding talents to corresponding organizations and institutions, including the Thousand Talents Plan." Original text: "在适当的时候, 将其中特别优秀的人才, 推荐给相应的组织、机构 (如 "千人计划" 或国内相应的招聘单位等)."

<sup>43</sup> Dudley L. Poston and Juyin Helen Wong, "The Chinese diaspora: The current distribution of the overseas Chinese population," *Chinese Journal of Sociology* 2 (July 2016): 348–373, doi:[10.1177/2057150X16655077](https://doi.org/10.1177/2057150X16655077).

<sup>44</sup> We expected the content of websites to vary slightly due to differences in translation, and accounted for this when coding whether website versions were substantively different.

<sup>45</sup> "Threats to the U.S. Research Enterprise: China's Talent Recruitment Plans," Staff Report by the Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs, United States Senate, November 2019, <https://www.hsgac.senate.gov/imo/media/doc/2019-11-18%20PSI%20Staff%20Report%20-%20China's%20Talent%20Recruitment%20Plans%20Updated2.pdf>.

<sup>46</sup> "Activity Report" [活动报告], Canada-China Sci-Tech Alliance, accessed October 2019, <http://www.ccsta.org/index-cn.html>.

<sup>47</sup> "Activity Report."

<sup>48</sup> "About Us" [关于我们], *Houston, Texas Association of Chinese Scholars*, accessed December 2019, <http://www.sinoprofessionals.org/about/>.

<sup>49</sup> "About Us" (English), *Houston, Texas Association of Chinese Scholars*, accessed December 2019, <http://www.sinoprofessionals.org/about-us/>.

<sup>50</sup> See Anne-Marie Brady, "Magic Weapons: China's Political Influence Activities Under Xi Jinping," *Wilson Center*, September 18, 2017, <https://www.wilsoncenter.org/article/magic-weapons-chinas-political-influence-activities-under-xi-jinping>.

<sup>51</sup> See Alex Joske, "Reorganizing the United Front Work Department: New Structures for a New Era of Diaspora and Religious Affairs Work," *China Brief* 19, no. 9 (2019), <https://jamestown.org/program/reorganizing-the-united-front-work-department-new-structures-for-a-new-era-of-diaspora-and-religious-affairs-work/>.

<sup>52</sup> See Andrew Browne, "The Great Chinese Exodus," *The Wall Street Journal*, August 15, 2014, <https://www.wsj.com/articles/the-great-chinese-exodus-1408120906>; and Remco Zwetsloot, Jacob Feldgoise, and James Dunham, "Trends in U.S. Intention-to-Stay Rates of International Ph.D. Graduates Across Nationality and STEM Fields," *Center for Security and Emerging Technology*, April 2020, <https://cset.georgetown.edu/wp-content/uploads/CSET-Trends-in-U.S.-Intention-to-Stay-Rates.pdf>.

<sup>53</sup> Remco Zwetsloot, James Dunham, Zachary Arnold, and Tina Huang, "Keeping Top AI Talent in the United States," *Center for Security and Emerging Technology*, December 2019, <https://cset.georgetown.edu/wp-content/uploads/Keeping-Top-AI-Talent-in-the-United-States.pdf>.

<sup>54</sup> Many of China's Dream Gardens are located in major cities, including Beijing, Tianjin, and Guangdong. Information about them is limited, but points of contact can be found at "Overseas Chinese Dream Garden" [侨梦苑], *China Overseas Chinese Network*, accessed April 15, 2020, <https://web.archive.org/web/20200529194022/http://www.chinaqw.com/qmy/>.

<sup>55</sup> "State Council Report on the Protection of Overseas Chinese Rights and Interests" [国务院关于华侨权益保护工作情况的报告(全文)], *Overseas Chinese Affairs Office of the State Council*, April 26, 2018, <https://web.archive.org/web/20200529195150/http://www.gqb.gov.cn/news/2018/0426/44797.shtml>.

<sup>56</sup> "Overseas Chinese Professional Associations Signed Contracts with 13 'Qiaomengyuan'" [63家海外华侨华人专业协会与13个“侨梦苑”签约], *Overseas Chinese Affairs Office of the State Council*, September 13, 2016, <https://web.archive.org/web/20190401103150/http://www.gqb.gov.cn/news/2016/0913/40560.shtml>.



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