

Indigenization and inclusion in Chinese academia

In the format provided by the
authors and unedited

Contents of Supplementary Information

1 Supplementary Texts: A Primer on National Academies in China	2
Text S1. Hanlin Academy	2
Text S2. Academia Sinica	2
Text S3. Chinese Academy of Sciences	2
Text S4. Chinese Academy of Engineering	3
Text S5. Chinese Academy of Social Sciences	4
Text S6. Historical Continuity	4
2 Supplementary Policy Documents: Classified Compilations of Key Policies	6
Policy S1. Preferential Policies on Country (esp. about the Belt & Road Initiative)	6
Policy S2. Preferential Policies on Province	8
Policy S3. Preferential Policies on Publication	10
Policy S4. Preferential Policies on Age	12
Policy S5. Preferential Policies on Gender	17
Policy S6. Preferential Policies on Discipline (esp. about the Matthew effect)	19
3 Supplementary Figures	25
Figure S1. Long-Term Changes in Educations of China's Academy Members	25
Figure S2. Average H-Index of Academy Members by Educational Background	26
Figure S3. Structural Changes in Birthplaces of China's Academy Members	27
Figure S4. Correlation Between Publication Number and Administrative Rank	28
Figure S5. Birth-Affiliation Mobility of China's Academy Members	29
Figure S6. Geographical Distributions of CAS & CAE Foreign Members	30
4 Supplementary Tables	32
Table S1. Regression Estimates of the Role of Academy Members' Hometown Distribution ...	31
Table S2. Regression Estimates of the Role of Foreign Academy Members in Collaboration	32
Table S3. Percentage of Funding Number Received from China by Returnee Academics	33
Table S4. Regression Estimates of the Role of Transferring Affiliations/Citizenship	34
Table S5. Descriptive Statistics of Key Variables: Academy Members Elected 1905–2022	35
Table S6. Correlation Matrix of Key Variables: Academy Members Elected 1905–2022	36
Table S7. Regression Estimates of Key Factors' Roles in Research Productivity	37
Table S8. Descriptive Statistics of Key Variables: Academy Members Elected 2018–2022	38
Table S9. Correlation Matrix of Key Variables: Academy Members Elected 2018–2022	39
5 Supplementary Movie	40
6 Supplementary Reference	41

1 Supplementary Texts: A Primer on National Academies in China

Text S1. Hanlin Academy

Hanlin Academy (*Hanlin yuan*) was “the most prestigious academic institution” as well as “a training ground for the highest echelon of officialdom” (Elman 1989: 383). Specifically, Hanlin members were appointed as Compilers (*Hanlin yuan bian xiu*), Correctors (*Hanlin yuan jian tao*), or Bachelors (*Hanlin yuan shu ji shi*) of the Hanlin Academy. Since 1900, the Qing court had launched several educational reforms as an organic part of the New Policies of the late Qing dynasty (*Qing mo xinzheng*, 1901–1911). Specifically, in 1905, the centuries-old system of official recruitment via the civil service examinations was also abolished, and instead the Qing government started to award *jinshi* degrees to returnee students. Almost all the recipients were educated in Western countries or Japan, and hence they were usually titled “foreign/exotic *jinshi* degree holders” (*yang jinshi*). Top candidates were further accepted as members of the Hanlin Academy (or translated as Hanlin academicians), and were labeled as “foreign/exotic Hanlin academicians” (*yang hanlin*, or translated as ‘alien academicians’).

Text S2. Academia Sinica

In line with the quest for modern science, Academia Sinica was founded in 1928 as the first modern national academy in Republican China. The first cohort of its academicians was elected in 1948 and was organised into three divisions: (a) humanities (& social sciences), (b) life sciences, and (c) mathematics & physical sciences (Guo 2020). In 1949, the fall of the Republic of China in mainland China drove 12 academicians of Academia Sinica to the United States while only 9 academicians to Taiwan. Academia Sinica was then re-established in Taiwan in 1949. Today, academicians of Academia Sinica are divided into four divisions, including three old divisions and another new division of engineering sciences. (Guo 2020)

Text S3. Chinese Academy of Sciences

The Chinese Academy of Sciences was founded in 1949, as the national academy of the People's Republic of China (Yao 1989). In 1955, the first cohort of its academic members (*xuebu weiyuan*; later renamed academicians, *yuanshi*) were elected and divided into two fields, i.e. (a) philosophy & social sciences and (b) science & technology. The Chinese Academy of Sciences served not only as a research institution, but also as an administrative organisation for S&T affairs. Therefore, the election of its academicians has deeper meanings in terms of social development and political affairs. (Cf. Cao 2004; Guo 2020 [2014]). Originally, the Chinese Academy of Sciences did not accept foreign (or honorary) members, forming a relatively closed and inner system. It was not until 1994 that, in line with China's opening up, the CAS (s)electd the first cohort of foreign academicians, including non-ethnic Chinese and ethnic Chinese without Chinese citizenship. With the spin-off of the Chinese Academy of Social Sciences in 1977, members of the Division of Philosophy & Social Sciences left the Chinese Academy of Sciences. Today, academicians of the Chinese Academy of Sciences are divided into six divisions, including (a) mathematics & physics, (b) chemistry, (c) life sciences & medicine, (d) earth sciences, (e) information technical sciences, and (f) technological sciences at present. (Ma 2019; Suttmeier, Cao, and Simon 2006; Baark 1988)

Text S4. Chinese Academy of Engineering

The Chinese Academy of Engineering was established in 1994 as a national academy of China devoted to engineering and technology. The Chinese Academy of Engineering and the Chinese Academy of Sciences are officially called together as China's *liang yuan* (two academies). The Chinese Academy of Engineering's academicians elected from 1994 to 2021 are officially divided into nine disciplinary areas, including (a) mechanical & vehicle engineering, (b) information & electronics engineering, (c) chemical, metallurgical & materials engineering, (d) energy & mining engineering, (e) civil, hydraulic, & architectural engineering, (f) environmental, light & textile industries engineering, (g) agriculture, (h) medicine & health engineering, and (i) engineering management. It also has foreign members who are elected from 1996 to 2021. (Wang 2020)

Text S5. Chinese Academy of Social Sciences

The Chinese Academy of Social Sciences is a spin-off of the Chinese Academy of Sciences established in 1977. It was originally composed of fourteen research departments/institutions from the Division of Philosophy & Social Sciences of the Chinese Academy of Sciences. Its members (*xuebu weiyuan*) were selected from 2006 to 2018, who are full-time employees within the academy (Sleeboom-Faulkner 2007; Kelly and Reid 1990).

In addition to our analysis of indigenization in the main text, it should be noted there is also an indigenization trend at CASS. During the four academician selections at CASS, the proportion of scholars with highest degrees obtained overseas was 5/46 (10.20%) for 2006, 3/10 (30.00%) for 2011, 0/4 (00.00%) for 2014, 2/12 (16.67%) for 2018, and 0/9 (00.00%) for 2024 (or 1/9 if we do not only focus on the highest degree) So, if we look at the educational backgrounds of the members of the academic divisions, the indigenization trend is relatively clear.

Text S6. Historical Continuity

In our field normalisation of scientometrics data, the classification of academics' specialised fields are roughly based on the classification of academic groups (*xuebu*) within China's national academies:

Our Classification	Academia Sinica (1948)	Academia Sinica (2024)	CAS (1955)	CAS (2024)	CAE (1994)	CAE (2024)	CASS (2024)
life sciences	life sciences	life sciences	science & technology	life sciences & medicine	N/A	medicine & health engr.	N/A
mathematics & physical sciences	mathematics & physical sciences	mathematics & physical sciences		mathematics & physics	N/A	N/A	N/A
				earth sciences	N/A	N/A	N/A
				chemistry	N/A	N/A	N/A
engineering sciences		mathematics & physical sciences			engineering sciences	chemical, metallurgical & materials engr.	chemical, metallurgical & materials engr.
	information technical sciences			information & electronics engr.		information & electronics engr.	N/A
	technological sciences			mechanical & vehicle engr.		mechanical & vehicle engr.	N/A
					energy & mining engr.	energy & mining engr.	N/A

					civil, hydraulic, & architectural engr.	civil, hydraulic, & architectural engr.	N/A
					agriculture, light & textile, & environmental engr.	environmental, light & textile industries engr.	N/A
					N/A	agriculture	N/A
					N/A	engineering management	N/A
humanities & social sciences	humanities	humanities & social sciences	philosophy & social sciences	N/A	N/A	N/A	unclassified

It is also worthy of noting that, while the Hanlin Academy may differ from modern national academies in its complex, changing nature, its legacy has been well inherited by and also deeply shaped the culture, identity, and value of modern national academies in Asia. The Hanlin Academy was compared by late Qing intellectuals to other national academies in the West and Japan. Late Qing officials also translated “Académie des sciences–Institut de France” as the “Hanlin Academy of Sciences” in France. In the Republic of China, government meetings recorded the foundational influence of the Hanlin Academy and its membership system on Academia Sinica. Beyond China, the Vietnam Academies of Science & Technology and Social Sciences still use the words *Hàn lâm* (*Hanlin*) in their Vietnamese names. The Korean Academy of Science & Technology and the National Academy of Engineering of Korea use the word *Hallim* (*Hanlin*) in their Korean names as well. (See Methods).

2 Supplementary Policy Documents: Classified Compilations of Key Policies

Policy S1. Preferential Policies on Country (esp. about the Belt & Road Initiative)

* Candidates from developing countries and Belt & Road Initiative (BRI) cooperation countries are encouraged

Texts: “适当关注发展中大国和科技实力较强的中小国家以及“一带一路”沿线国家的人选”

Translation: Give due attention to candidates from large developing countries, small- and medium-sized countries with strong scientific & technological capabilities, and countries along the Belt & Road.

Source: Chinese Academy of Sciences, Notification on the Nomination of CAS Foreign Member Candidates by the Chinese Academy of Sciences, 2023 [In Chinese]

Site: casad.cas.cn/yszx/yszx2023/tzgg/202305/t20230513_4887159.html

Texts: “加强对“一带一路”沿线国家候选人的关注”

Translation: Pay greater attention to candidates from countries along the Belt & Road.

Source: Chinese Academy of Engineering, Notification on the Nomination of Foreign Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081338241688216_1.html

Texts: “重点关注“一带一路”沿线国家和科技实力较强的中小国家的候选人”

Translation: Focus on candidates from countries along the Belt & Road and small- and medium-sized countries with strong scientific & technological capabilities

Source: Hou Jianguo, Work Report by the Presidium of the 20th Academician Congress of the Chinese Academy of Sciences, 2021 [In Chinese]

Site: www.cas.cn/zt/hyzt/ysdh20th/yw/202105/t20210531_4790652.shtml

* A balanced distribution of foreign members across different countries is encouraged

Texts: “在推荐外籍院士候选人时，应注意学科专业、国别等的分布”

Translation: When recommending candidates for foreign academicians, attention should be paid to the distribution of disciplines, specialties, and countries, etc.

Source: Chinese Academy of Sciences, Notification on the Nomination of CAS Foreign Member Candidates by the Chinese Academy of Sciences, 2023 [In Chinese]

Site: casad.cas.cn/yszx/yszx2023/tzgg/202305/t20230513_4887159.html

Texts: “注意候选人专业、国别和年龄等情况”

Translation: Paying attention to candidates' specialisation, country, age, etc.

Source: Chinese Academy of Engineering, Notification on the Nomination of Foreign Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081338241688216_1.html

Policy S2. Preferential Policies on Province

* Candidates from less-developed provinces in West China are encouraged

Texts: “注重对在西部边远地区的贵州、云南、广西、甘肃、青海、宁夏、西藏、新疆、内蒙古 9 个省、自治区和新疆生产建设兵团工作累计 20 年以上的专家的推选”

Translation: Focusing on the selection of experts who have worked for a total of 20 years or more in Guizhou, Yunnan, Guangxi, Gansu, Qinghai, Ningxia, Tibet, Xinjiang, and Inner Mongolia.

Source: General Office of the China Association for Science and Technology, Notification on the Nomination of CAS/CAE Member Candidates in 2023 by the General Office of the China Association for Science and Technology, 2023 [In Chinese]

Site: www.cast.org.cn/xw/tzgg/ZH/art/2023/art_109c3d10318143799f0d8a7f88bbec44.html

Texts: “关注长期工作在西部边远地区的专家”

Translation: Focus on experts who have been working in remote areas in the West for a long time.

Source: Chinese Academy of Engineering, Notification on the Nomination of Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081808441709462_1.html

Texts: “4 个名额用于支持在西部边远地区（贵州、云南、广西、甘肃、青海、宁夏、西藏、新疆、内蒙古 9 个省、自治区和新疆生产建设兵团）工作 20 年以上的候选人”

Translation: 4 places to support candidates who have worked for more than 20 years in remote areas in the West (Guizhou, Yunnan, Guangxi, Gansu, Qinghai, Ningxia, Tibet, Xinjiang, Inner Mongolia, 9 provinces and autonomous regions and the Xinjiang Production and Construction Corps).

Source: Chinese Academy of Engineering, Guideline on the Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531082229268300720_1.html

Texts: “关注院士人数较少地区候选人”

Translation: Focus on candidates from regions with low numbers of academicians.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “对于在西部边远地区的贵州、云南、广西、甘肃、青海、宁夏、西藏、新疆、内蒙古 9 个省、自治区和新疆生产建设兵团工作累计 20 年以上的专家，应给予倾斜支持。在向中国工程院报送的候选人中，来自西部边远地区候选人的比例建议为 15%左右”

Translation: For experts who have worked in the nine provinces and autonomous regions of Guizhou, Yunnan, Guangxi, Gansu, Qinghai, Ningxia, Tibet, Xinjiang, and Inner Mongolia in the remote western region and the Xinjiang Production and Construction Corps for a cumulative total of 20 years or more, support should be given. Among the candidates submitted to the Chinese Academy of Engineering, the proportion of candidates from remote western regions is proposed to be about 15%.

Source: Chinese Academy of Engineering, Letter from the Chinese Academy of Engineering on Entrusting Academic Associations to Nominate 2023 Academician Candidates, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531083326940187497_1.html

Texts: “开展西部边远地区院士增选专题调研，制定倾斜支持政策”

Translation: Carrying out thematic research on the election of academicians in remote areas in the West and formulating preferential policies.

Source: Li Xiaohong, Speech at the 15th CAE Academician Conference, 2021 [In Chinese]

Site: www.cae.cn/cae/html/main/col1/2021-05/29/20210529150821038732119_1.html

Policy S3. Preferential Policies on Publication

* At least one publication in leading Chinese-language journals is required or preferred

Texts: “被推荐人……原则上应有一篇或以上在《中国科学》、《科学通报》或其他中国优秀期刊上发表”

Translation: In principle, the nominee should have one or more publications in *Zhongguo kexue*, *Kexue tongbao*, or other outstanding Chinese journals.

Source: Chinese Academy of Sciences, Notification on the Nomination of CAS Member

Candidates by the Chinese Academy of Sciences, 2023 [In Chinese]

Site: casad.cas.cn/yszx/yszx2023/tzgg/202305/t20230513_4887157.html

Texts: “论文原则上至少有 1 篇在中国优秀期刊上发表”

Translation: In principle, at least one paper should be published in a prestigious Chinese journal.

Source: Chinese Academy of Engineering, Nomination Form for CAE Member Candidates, 2023 [In Chinese]

Site: www.cae.cn/cae/html/files/2023-05/31/20230531081914470410665.pdf

* In general, Chinese scholars are advised to list a certain percentage of publications in home-grown journals as their representative works in research evaluations

Texts: “代表作…其中，国内科技期刊论文原则上应不少于 1/3”

Translation: In principle, a third of representative works listed by scholars should be from domestic journals.

Source: Ministry of Science & Technology of P.R. China, Tentative Measures to Eliminate the Wrong Paper-Oriented Culture in Science & Technology Evaluation, 2020 [In Chinese]

Site:

www.most.gov.cn/xxgk/xinxifenlei/fdzdgknr/fgzc/gfxwj/gfxwj2020/202002/t20200223_151781.html

Texts: “代表作中必须包含一定比例的中国期刊论文”

Translation: A certain percentage of representative works should be from China's journals.

Source: Ministry of Education of P.R. China, Working Plan for the Fifth Round of Discipline Assessment, 2020 [In Chinese]

Site: www.gov.cn/xinwen/2020-11/03/content_5556900.htm

Notes: Additionally, similar regulations can also be found in the selection and evaluation for 286 academic honours in China. For scholars, starting in 2019, China's highly regarded National 287 Science & Technology Awards have been, one after another, encouraging candidates to list 288 publications from local journals as representative works. For students, the eligibility criteria for 289 China Computer Federation's Outstanding Doctoral Dissertation Award and Incentive Scheme 290 both necessitate that candidates have at least one Chinese-language article. Similarly, the 291 Chinese Institute of Electronics also requires each doctoral applicant to have at least one 292 Chinese-language article for its Outstanding Doctoral and Master's Dissertations.

Policy S4. Preferential Policies on Age

* Young candidates under 65 (or sometimes 55) years of age are encouraged

Texts: “候选人的年龄原则上不超过 65 周岁”

Translation: In principle, the age of a candidate shall not exceed 65 years old.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “候选人获得 1 位拟提名学部院士提名即为有效，且仅能接受 1 位院士的提名。年龄超过 65 周岁的候选人，获得 2 位院士的提名方为有效，且仅能接受 2 位院士的提名，其中至少 1 位应是拟提名学部院士”

Translation: A candidate shall be validly nominated by one academician in the same division, and can only accept nominations from one academician. Candidates who are over 65 years of age shall be validly nominated by 2 academicians and can only accept nominations from 2 academicians, at least 1 of whom shall be an academician in the same division.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “中国工程院委托中国科学技术协会组织全国性学术团体的提名工作，候选人年龄不得超过 65 周岁”

Translation: The Chinese Academy of Engineering commissions the China Association for Science and Technology to organise the nomination of national academic societies, and the candidates shall not be older than 65 years old.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “候选人年龄原则上不超过 65 周岁，候选人获得 1 位拟提名学部院士提名即为有效，且仅能接受 1 位院士的提名。年龄超过 65 周岁的候选人，获得 2 位院士的提名方为有效，且仅能接受 2 位院士的提名，其中至少 1 位应是拟提名学部院士”

Translation: In principle, the age of a candidate shall not exceed 65 years old. A candidate shall be validly nominated by one academician in the same division, and can only accept nominations from one academician. Candidates over 65 years of age shall be validly nominated by two academicians and can only accept nominations from two academicians, at least one of whom shall be an academician in the same division.

Source: Chinese Academy of Engineering, Notification on the Nomination of Member

Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081808441709462_1.html

Texts: “候选人获得 1 名院士推荐且该院士所在专业学部与该候选人被推荐的参评专业学部相同，或两者专业领域相近，方为有效。2023 年 1 月 1 日前年满 65 周岁的候选人需要 2 名院士推荐，且须有 1 名院士所在专业学部与该候选人被推荐的参评专业学部相同，或两者专业领域相近，方为有效”

Translation: Candidates are only valid if they are recommended by one academician, and this academician should be from the same division as the one in which the candidate is recommended, or both of them are in the same field of specialisation; candidates who have reached the age of 65 before January 1, 2023 need to be recommended by two academicians, and one academician should be from the same division as the one in which the candidate is recommended, or both of them are in the same field of specialisation.

Source: Chinese Academy of Sciences, Notification on the Nomination of CAS Member

Candidates by the Chinese Academy of Sciences, 2023 [In Chinese]

Site: casad.cas.cn/yszx/yszx2023/tzgg/202305/t20230513_4887157.html

Texts: “年满 65 周岁的候选人需要 2 名院士推荐，且须有 1 名院士所在专业学部与该候选人被推荐的参评专业学部相同，或两者专业领域相近，方为有效”

Translation: Any candidate who have reached the age of 65 need to be recommended by two academicians, and one academician must be in the same division as the candidate's, or in a similar field of specialisation.

Source: Chinese Academy of Sciences, Regulations for the Implementation of CAS Member Elections, 2023 (Tentative) [In Chinese]

Site: casad.cas.cn/yszx/yszx2023/bfgd/202305/t20230513_4887166.html

Texts: “被推荐人年龄不超过 65 周岁”

Translation: The nominee should not exceed 65 years of age.

Source: Chinese Academy of Sciences, Regulations for the Implementation of CAS Member Elections (Tentative), 2023 [In Chinese]

Site: casad.cas.cn/yszx/yszx2023/bfgd/202305/t20230513_4887166.html

Texts: “院士候选人年龄不得超过 65 周岁”

Translation: Candidates for academician shall not exceed 65 years of age.

Source: General Office of the China Association for Science and Technology, Notification on the Nomination of CAS/CAE Member Candidates in 2023 by the General Office of the China Association for Science and Technology, 2023 [In Chinese]

Site: www.cast.org.cn/xw/tzgg/ZH/art/2023/art_109c3d10318143799f0d8a7f88bbec44.html

Texts: “推选中国科学院院士候选人应注重推选 55 周岁以下的人选”

Translation: The selection of candidates for election as academicians of the Chinese Academy of Sciences should focus on selecting candidates under 55 years of age.

Source: General Office of the China Association for Science and Technology, Notification on the Nomination of CAS/CAE Member Candidates in 2023 by the General Office of the China Association for Science and Technology, 2023 [In Chinese]

Site: www.cast.org.cn/xw/tzgg/ZH/art/2023/art_109c3d10318143799f0d8a7f88bbec44.html

* young & middle-aged candidates are encouraged

Texts: “注重发现和推选符合标准和条件的优秀中青年科技专家”

Translation: To focus on identifying and selecting outstanding young & middle-aged scientific & technological experts who meet the criteria and conditions.

Source: General Office of the China Association for Science and Technology, Notification on the Nomination of CAS/CAE Member Candidates in 2023 by the General Office of the China Association for Science and Technology, 2023 [In Chinese]

Site: www.cast.org.cn/xw/tzgg/ZH/art/2023/art_109c3d10318143799f0d8a7f88bbec44.html

Texts: “注意候选人专业、国别和年龄等情况”

Translation: Paying attention to candidates' specialisation, country, and age, etc.

Source: Chinese Academy of Engineering, Notification on the Nomination of Foreign Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081338241688216_1.html

Texts: “注重对优秀的民营企业专家、中青年专家、女性专家的推选”

Translation: Focusing on the selection of outstanding private enterprise experts, young & middle-aged experts, and female experts.

Source: General Office of the China Association for Science and Technology, Notification on the Nomination of CAS/CAE Member Candidates in 2023 by the General Office of the China Association for Science and Technology, 2023 [In Chinese]

Site: www.cast.org.cn/xw/tzgg/ZH/art/2023/art_109c3d10318143799f0d8a7f88bbec44.html

Texts: “关注中青年和女性工程科技专家”

Translation: Focusing on young & middle-aged and female engineering and science experts.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “应特别注重对.....中青年和女性工程科技专家的提名”

Translation: Special emphasis should be placed on the nomination of young & middle-aged and female engineering and science experts.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “关注优秀的民营企业专家、中青年专家和女性专家”

Translation: Focusing on outstanding private enterprise experts, young & middle-aged experts and female experts.

Source: Chinese Academy of Engineering, Notification on the Nomination of Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081808441709462_1.html

Texts: “关注优秀的民营企业专家、中青年专家和女性专家”

Translation: Focusing on outstanding private enterprise experts, young & middle-aged experts and female experts.

Source: Chinese Academy of Engineering, Letter from the Chinese Academy of Engineering on Entrusting Academic Associations to Nominate 2023 Academician Candidates, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531083326940187497_1.html

Policy S5. Preferential Policies on Gender

* Candidates with the underrepresented gender, i.e., female, are encouraged

Texts: “注重对优秀的民营企业专家、中青年专家、女性专家的推选”

Translation: Focusing on the selection of outstanding private enterprise experts, young & middle-aged experts, and female experts.

Source: General Office of the China Association for Science and Technology, Notification on the Nomination of CAS/CAE Member Candidates in 2023 by the General Office of the China Association for Science and Technology, 2023 [In Chinese]

Site: www.cast.org.cn/xw/tzgg/ZH/art/2023/art_109c3d10318143799f0d8a7f88bbec44.html

Texts: “关注中青年和女性工程科技专家”

Translation: Focusing on young & middle-aged and female engineering and science experts.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “应特别注重对……中青年和女性工程科技专家的提名”

Translation: Special emphasis should be placed on the nomination of young & middle-aged and female engineering and science experts.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “关注优秀的民营企业专家、中青年专家和女性专家”

Translation: Focusing on outstanding private enterprise experts, young & middle-aged experts and female experts.

Source: Chinese Academy of Engineering, Notification on the Nomination of Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081808441709462_1.html

Texts: “关注优秀的民营企业专家、中青年专家和女性专家”

Translation: Focusing on outstanding private enterprise experts, young & middle-aged experts and female experts.

Source: Chinese Academy of Engineering, Letter from the Chinese Academy of Engineering on Entrusting Academic Associations to Nominate 2023 Academician Candidates, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531083326940187497_1.html

Policy S6. Preferential Policies on Discipline (esp. about the Matthew effect)

*** A principle of academician elections is to contain the Matthew effect**

Texts: “注重领域学科间的平衡发展，防止“马太效应””

Translation: Focusing on balanced development between fields and disciplines to prevent the Matthew effect.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “在院士增选中明确优先支持专业学科以及具体落实措施，避免马太效应”

Translation: Clarifying the disciplines to be supported in the selection of academicians as well as the specific implementation measures to avoid the Matthew effect.

Source: Li Xiaohong, Speech at the 15th CAE Academician Conference, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col1/2021-05/29/20210529150821038732119_1.html

Texts: “跳出个人研究领域看待院士队伍的整体建设，确保各个学科、研究领域和研究手段均衡发展，避免马太效应”

Translation: Looking beyond individual research fields to the overall construction of the academician team, to ensure the balanced development of various disciplines, research fields & research approaches, and to avoid the Matthew effect.

Source: Wu Xiangping, Deepening academician system reforms should focus on the root cause, 2023 [In Chinese]

Site: ad.cas.cn/ysdt2022/202303/t20230308_4878776.html

*** A balanced distribution of members across different disciplines is encouraged**

Texts: “明确院士增选领域学科方向、名额分配、资格条件等”

Translation: Clarifying the discipline distribution, quota allocation, and eligibility conditions for academician election.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “在推荐外籍院士候选人时，应注意学科专业、国别等的分布”

Translation: When recommending candidates for foreign academicians, attention should be paid to the distribution of disciplines, specialties, and countries, etc.

Source: Chinese Academy of Sciences, Notification on the Nomination of CAS Foreign Member Candidates by the Chinese Academy of Sciences, 2023 [In Chinese]

Site: casad.cas.cn/yszx/yszx2023/tzgg/202305/t20230513_4887159.html

Texts: “注意候选人专业、国别和年龄等情况”

Translation: Paying attention to candidates' specialisation, country, age, etc.

Source: Chinese Academy of Engineering, Notification on the Nomination of Foreign Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081338241688216_1.html

* Candidates working on fields in line with national strategy/defense are encouraged

Texts: “注重推选国家急需的关键领域和基础学科、新兴学科、交叉学科人选，注重推选承担国家重大科研任务、重大科技基础设施建设和重大工程中作出突出贡献的人选”

Translation: Focusing on the selection of candidates in key fields and foundational, emerging & interdisciplinary disciplines that are urgently needed by the country, as well as on the selection of candidates who have made outstanding contributions to major national scientific research tasks, the construction of major scientific & technological infrastructures, and major projects.

Source: General Office of the China Association for Science and Technology, Notification on the Nomination of CAS/CAE Member Candidates in 2023 by the General Office of the China Association for Science and Technology, 2023 [In Chinese]

Site: www.cast.org.cn/xw/tzgg/ZH/art/2023/art_109c3d10318143799f0d8a7f88bbec44.html

Texts: “特别关注科研和工程技术一线专家，国家急需的关键领域和新兴学科、交叉学科专家，承担国家重大工程、重大科研任务和重大科技基础设施建设并作出突出贡献的专家”

Translation: Special attention will be paid to experts on the front line of scientific research & engineering technology, experts in key fields and emerging & cross-disciplinary disciplines urgently needed by the country, and experts who have made outstanding contributions to the construction of major national projects, major scientific research tasks, and major scientific & technological infrastructures.

Source: Chinese Academy of Engineering, Notification on the Nomination of Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531081808441709462_1.html

Texts: “各学部至少 1 个名额用于新兴交叉学科领域。各学部专业组名额分配方案将根据有效候选人及评选情况做适当调整。全院至少 5 个名额用于承担国家重大工程、重大科研任务和重大科技基础设施建设并作出突出贡献的专家团队候选人”

Translation: At least 1 place in each division will be used for emerging cross-disciplinary areas. The quota allocation plan for groups of each division will be adjusted appropriately according to the valid candidates and the selection situation. At least 5 quotas of the whole academy shall be used for the candidates from expert teams who have made outstanding contributions and undertaken national major projects, major scientific research tasks, or construction of major scientific & technological infrastructures.

Source: Chinese Academy of Engineering, Guideline on the Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531082229268300720_1.html

Texts: “特别关注科研和工程技术一线专家，国家急需的关键领域和新兴学科、交叉学科专家，承担国家重大工程、重大科研任务和重大科技基础设施建设并作出突出贡献的专家”

Translation:

Source: Chinese Academy of Engineering, Letter from the Chinese Academy of Engineering on Entrusting Academic Associations to Nominate 2023 Academician Candidates, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531083326940187497_1.html

Texts: “向国防和国家安全领域倾斜，对承担国家重大工程、重大科研任务和重大科技基础设施建设并作出突出贡献的专家团队可定向增加名额”

Translation: Paying attention to the fields of national defense and national security, and increasing the number of quotas for teams of experts who have made outstanding contributions to the construction of major national projects, major scientific research tasks, and major scientific & technological infrastructures.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “设立国防和国家安全领域院士增选特别通道，实行单独提名、单独评审、单独分配增选名额”

Translation: Establishing a special channel for the co-option of academicians in the field of national defense and national security, and implementing separate nominations, separate evaluations, and separate allocations of quotas.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “特别关注长期奋战在科研和工程技术一线的工程科技专家，特别关注国家急需的关键领域、新兴学科、交叉学科以及尚无院士的学科、行业候选人”

Translation: Special attention is paid to the engineering and science experts who have been fighting in the front line of scientific research and engineering technology for a long time, and to the key fields, emerging disciplines, cross-disciplines as well as the disciplines and industries that have no academicians yet, which are in urgent need of the country.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

Texts: “增选前，根据国家战略需求和学科发展布局制定院士增选指南”

Translation: Before elections, formulating guidelines for academician elections according to the national strategic needs and the landscape of development in academic disciplines.

Source: Chinese Academy of Engineering, Regulations for the Implementation of CAE Member Elections, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col244/2023-05/31/20230531081256138374494_1.html

* To improve the unbalanced distribution of different disciplines in academician elections, a quota system has been adopted since 2023

Texts: “2023 年中国工程院院士增选总名额为不超过 90 名，其中机械与运载工程学部 10 名，信息与电子工程学部 10 名，化工、冶金与材料工程学部 10 名，能源与矿业工程学部 10 名，土木、水利与建筑工程学部 10 名，环境与轻纺工程学部 8 名，农业学部 10 名，医药卫生学部 12 名（含中医药 2 名），特别通道 6 名”

Translation: The total number of additional academicians to be elected to the Chinese Academy of Engineering in 2023 is not more than 90, of which 10 will be from the Division of Mechanical and Transportation Engineering, 10 from the Division of Information and Electronic Engineering, 10 from the Division of Chemical, Metallurgical, and Materials Engineering, 10 from the Division of Energy and Mining Engineering, 10 from the Division of Civil, Hydraulic, and Architectural Engineering, 8 from the Division of Environmental and Textile Engineering, 10 from the Division of Agriculture, 12 from the Division of Medicine and Health (including 2 from Traditional Chinese Medicine), and 6 from the special route.

Source: Chinese Academy of Engineering, Guideline on the Member Candidates in 2023 by the Chinese Academy of Engineering, 2023 [In Chinese]

Site: www.cae.cn/cae/html/main/col245/2023-05/31/20230531082229268300720_1.html

Texts: “数学物理学部。1. 数学 4 名，其中基础数学不少于 2 名、应用数学不少于 1 名。2. 物理 I 3 名，其中声学 1 名，3 个名额中实验工作者不少于 2 名。3. 物理 II、力学和天文学 4 名。4. 量子信息 1 名。5. 物理与光电信息 1 名.....化学部.....生命科学和医学学部.....地学部.....信息技术科学部.....技术科学部.....特别推荐领域.....”

Translation: Division of Mathematical Physics. (A). 4 in Mathematics, of which not less than 2 in Basic Mathematics and not less than 1 in Applied Mathematics. (B). 3 in Physics I, of which 1 in Acoustics, and not less than 2 experimentalists out of the 3 slots. (C). 4 in Physics II, Mechanics, and Astronomy. (D). 1 in Quantum Information. (E). 1 in Physics and Electro-Optical Information... Division of Chemistry... Division of Life Sciences and Medicine... Division of Geosciences... Division of Information Technology Sciences... Division of Technological Sciences... Special Recommended Fields...

Source: Chinese Academy of Sciences, Guideline on the Member Candidates in 2023 by the Chinese Academy of Sciences, 2023 [In Chinese]

Site: casad.cas.cn/yszx/yszx2023/tzgg/202305/t20230513_4887168.html

3 Supplementary Figures

Figure S1. Long-Term Changes in Educations of China's Academy Members

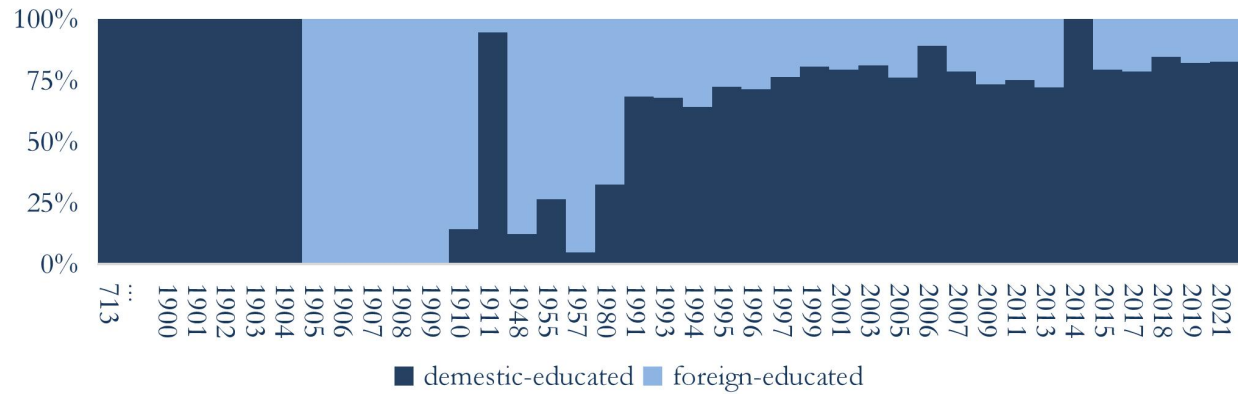


Fig. S1|Long-Term Changes in Education Backgrounds of China's Academy Members: Hanlin Academy, Academia Sinica, and the Chinese Academies of Science, Engineering, & Social Sciences. Indicating the highest education backgrounds of regular members only. (Additional illustration to Figure 1 and Extended Data Figure 6)

Figure S2. Average H-Index of Academy Members by Educational Background

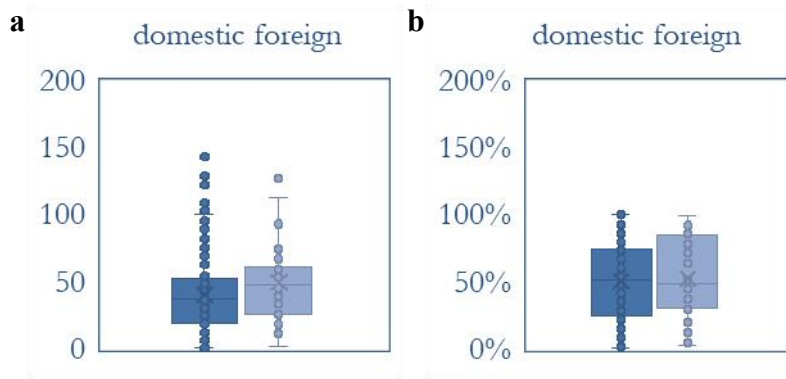


Fig. S2|Average H-Index of Academy Members by Educational Background. **a.** h-index ($p = 0.060$) and **b.** normalized h-index (field normalisation by percentile ranks; $p = 0.755$) of members elected in the last five years (2018–2022). Domestic $n = 185$; Foreign $n = 44$. P -value: tests are two-tailed. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Error bars are standard errors clustered by scholars.

Figure S3. Structural Changes in Birthplaces of China's Academy Members

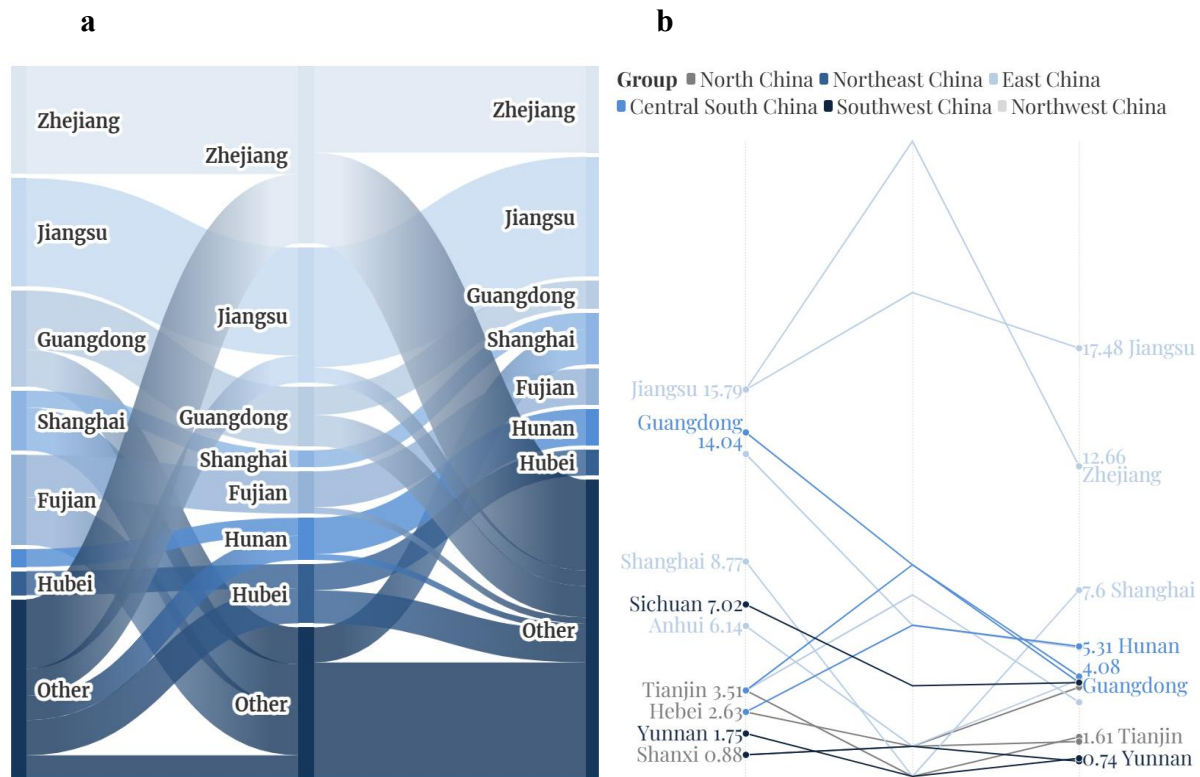


Fig. S3|Structural changes in Birthplaces of China's Academy Members. Changes are presented **a.** by percentage and **b.** by ranking. Hanlin Academy in late imperial China (left column), Academia Sinica in modern China (middle column), and the Chinese Academy of Sciences in Contemporary China (right column). Indicating regular members only. (Additional illustration to Figure 3)

Figure S4. Correlation Between Changes in Publication Number and Growth in Administrative Rank

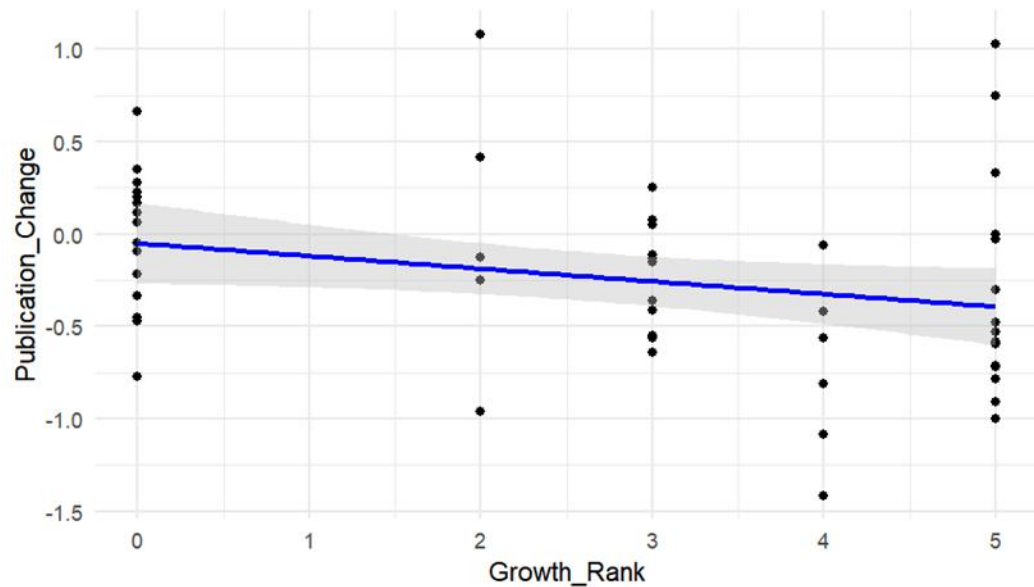


Fig. S4|Correlation Between Changes in Publication Number and Growth in

Administrative Rank: The highest pre-return administrative ranks and highest post-return administrative ranks (as of 2024) for returnee academicians are coded as 1: Administrative rank at the vice department/division level or below, 2: at the department/division level, 3: at the vice school/faculty level, 4: at the school/faculty level, 5: at the vice university/institute level, 6: at the university/institute level or above. We further test the correlation between publication changes and growth in rank using a two-line linear regression analysis, with $\beta = -0.069$ and $p = 0.044$. Dash area indicated 95% confidence interval.

Figure S5. Birth–Affiliation Mobility of China’s Academy Members

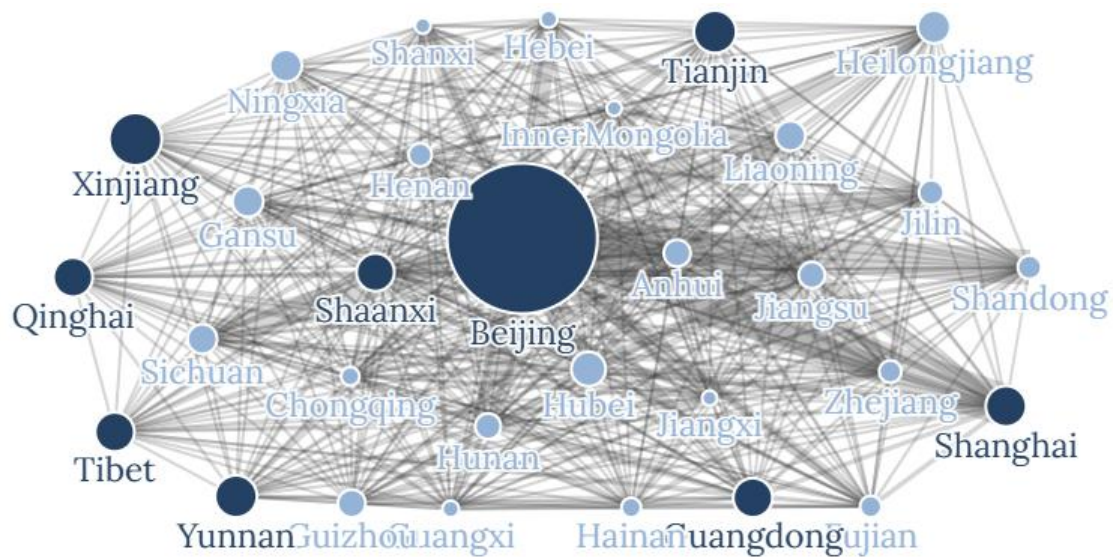


Fig. S5|Birth–Affiliation Mobility of China’s Academy Members, cumulated over 1999–2023. Points are colored as birth sources (light) and affiliation contributor (deep). Points are distributed and placed according to different provinces’ geographical positions. Point sizes indicate the affiliation/birth ratio and line weight indicates mobility intensity. (Additional illustration to Figure 2b)

Figure S6. Geographical Distributions of CAS & CAE Foreign Members

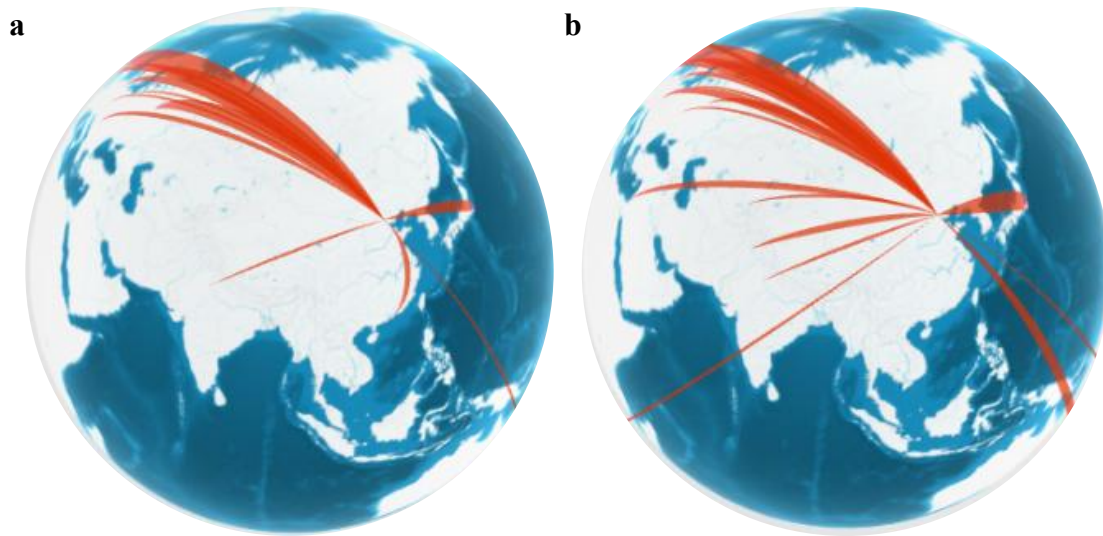


Fig. S6|Geographical Distributions of CAS & CAE Foreign Members. a. before 2010. b. after 2010. (Additional illustration to Figure 4a and Figure 4b)

4 Supplementary Tables

Table S1. Regression Estimates of the Role of Academy Members' Hometown Distribution in Education, Research, and Science

	# Education Expenditure	% Education Expenditure	# R&D Expenditure	% R&D Expenditure	# NSFC Grant	% NSFC Grant
# Academy Member	0.003*** (< 0.001)		0.004*** (0.001)		0.003*** (0.001)	
<i>N</i>	31		31		31	
<i>Adjusted R</i> ²	0.343		0.472		0.343	
% Academy Member		0.371*** (0.065)		0.776*** (0.079)		0.535*** (0.090)
<i>N</i>		31		31		31
<i>Adjusted R</i> ²		0.358		0.563		0.422

Models in Table S1 are ordinary least squares (OLS) regressions using the number and percentage of national academy members across 31 provinces in China as key explanatory variables. The logarithm (base = 10) and percentage of education expenditure, R&D (research & development) expenditure, or NSFC (Natural Science Foundation of China) grants by province is used as response variables. Robust standard errors clustered by province are reported in parentheses. *P*-value: tests are two-tailed. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Data sources: [1] Ministry of Education, *Statistical Report on National Education Expenditure in 2021*, Site: www.moe.gov.cn/srcsite/A05/s3040/202212/t20221230_1037263.html (2022) [In Chinese]. [2] National Bureau of Statistics, et al., *Statistical Report on National S&T Expenditure in 2021*, Site: www.gov.cn/xinwen/2022-08/31/content_5707547.htm (2022) [In Chinese]. [3] Hao Hongquan, et al., Introduction on NSFC proposals receiving and accepting for the 2022 batch, *Zhongguo kexue jijin*, 3, 477–482 (2022) [In Chinese].

Table S2. Regression Estimates of the Role of Foreign Academy Members in Transnational Research Collaboration

Collabora- -tion	Total	U.S.	U.K.	France	Sweden	Germany	Japan	Israel
# Academy Member (OLS Regression)	0.019*** (0.002)	0.032*** (0.003)	0.144*** (0.014)	0.339*** (0.038)	0.407*** (0.051)	0.615*** (0.072)	0.348*** (0.025)	0.807*** (0.567)
<i>N</i>	91	91	91	91	91	91	91	91
<i>Adjusted R²</i>	0.572	0.649	0.700	0.623	0.574	0.659	0.611	0.886
<i>Log Likelihood</i>	-138.474	-119.965	-95.612	-102.009	-93.59	-106.742	-108.96 3	-76.388

Models in Table S2 are OLS regressions using the logarithm (base = 10) of foreign academician numbers in different calendar years as the key explanatory variable, respectively. Transnational co-authorship number between the CAS/CAE and foreign countries over 91 years from the Web of Science is used as the response variable. Robust standard errors clustered by scientist are reported in parentheses. *P*-value: tests are two-tailed. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table S3. Percentage of Funding Number Received from China by Elite-Level Returnee Academics

Academics		Elected as Foreign Members	Returned to China (Full-Time)	Transferred to PRC Citizenship	Became Regular Members
Descriptive Statistics	N	23	27	7	8
	SD	0.30	0.27	0.27	0.29
	Mean	10.97%>54.70%	11.43%>53.76%	23.39%>78.50%	36.96%>83.16%

Table S3 (as well as Fig. 6, Extended Data Fig. 5, and Table S4) covers (1) Chinese academics' foreign members who returned to Greater China for full-time employment and (2) elite academics who transferred their citizenship back to China. Results are *incomplete* statistics of reported funding in articles indexed on the Web of Science (Methods). The sample size remains small as there are very few academy members returning to China with full-time employment (and those returned in 2024-2025 have not been covered in this table as it is still too early to observe his post-return performance). Due to the limitations on searching and filtering on the Web of Science, the scope of statistics includes the funds received by the co-authors of China's academy members. *P*-value: tests are two-tailed. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table S4. Regression Estimates of the Role of Transferring to Chinese Affiliations/Citizenship in Research Performance

Research Metrics	Publication Number	Citation Growth	Funding \$ from China	Funding % from China
Transferring to Chinese Affiliation	−0.026** (0.012)	−0.104*** (0.008)	0.101*** (0.017)	0.289*** (0.029)
<i>N</i>	270	270	270	270
<i>Log Likelihood</i>	−159.826	−61.614	−45.123	−138.840
Transferring To Chinese Citizenship	−0.151*** (0.036)	−0.028*** (0.005)	0.118*** (0.027)	0.091*** (0.027)
<i>N</i>	50	50	50	50
<i>Log Likelihood</i>	−58.535	33.010	−21.972	−18.104

Models here are linear mixed-effect regressions (LMER) using yearly research metrics as key response variable. The year after transferring to Chinese affiliation/citizenship (from year −3 to year +6) is used as a fixed effect, while academy member is used as a random effect. Standard errors are reported in parentheses. *P*-value: tests are two-tailed. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table S5. Descriptive Statistics of Key Variables: Academy Members Elected 1905–2022

	N	Median	Average	SD	Min	Max
Specialised Field	3326	3	2.30	1.28	1	4
Place of Birth	3326	18	17.08	8.69	1	35
Year of Birth	3326	1935	1934.42	22.37	1865	1956
Year of Election	3326	1997	1992.93	26.17	1905	2021
Elected Age	3326	59	58.59	10.10	17 (Hanlin)	94
Highest Education	3326	3	2.62	3.40	1	34
Academy	3326	2	3.71	1.13	1	5

Specialised field, place of birth, highest education, and academy are indicator variables that take on values ranging from 1–4, 1–35, 1–34, and 1–5, according to general specialisation, province of birth, country of the highest degree awarded, and associated academy, respectively.

Table S6. Correlation Matrix of Key Variables: Academy Members Elected 1905–2022

		N	Mean	SD	1	2	3	4	5	6	7
1	Specialised Field	3326	2.30	1.28	1						
2	Place of Birth	3326	17.08	8.69	−0.03	1					
3	Year of Birth	3326	1934.42	22.37	−0.10***	0.03*	1				
4	Year of Election	3326	1992.93	26.17	−0.09***	0.06***	0.93***	1			
5	Elected Age	3326	58.59	10.10	−0.03	0.06***	0.03*	0.45***	1		
6	Highest Education	3326	2.62	3.40	0.14***	0.00	−0.17***	−0.17***	−0.04**	1	
7	Academy	3326	3.71	1.13	−0.41***	0.08***	0.48***	0.63***	0.43***	−0.18***	1

Results are Spearman correlation coefficients. *P*-value: tests are two-tailed. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table S7. Regression Estimates of Key Factors' Roles in Research Productivity : Academy Members Elected 2018–2022

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Regression	OLS	OLS	LMER	LMER	LMER	LMER
Sample	Full Sample	Full Sample	Full Sample	Mathematics & Physics	Engineering Sciences	Life Sciences
Foreign Education	9.068* (4.955)	3.170 (6.713)	0.065 (0.069)	−0.159 (0.109)	0.325*** (0.116)	0.031 (0.088)
West China	−20.401* (12.108)	−19.363* (11.098)	−0.783*** (0.169)	0.035 (0.329)	−0.588** (0.238)	−1.566*** (0.194)
Elected Age		−1.291*** (0.388)				
Place of Birth		0.187 (0.254)				
Specialised Field		8.515*** (1.456)				
Highest Education		−0.339 (1.151)				
Place of Affiliation		0.301 (0.185)				
#	226	226	226	52	133	41
R ²	0.029	0.213	0.317	0.273	0.236	0.713
Log Likelihood	−1091.12	−1053.125	−110.667	−11.356	−66.308	1.479

Model 1 is OLS regression using the h-index of academy member as the key response variable, and 2 dummy variables (Foreign Highest Education; West Chinese Affiliation) as explanatory variables. Model 2 adds 1 count variable (Elected Age) and 4 nominal variables (Place of Birth; Specialised Field; Country of Highest Education; Province of Affiliation) as control variables. Considering the limited sample size, we treat certain parameters as control variables wherever appropriate, rather than modeling them as high-dimensional fixed effects (e.g., individual or province fixed effects), which would lead to excessive parameter consumption. Models 3 is LMER regression using the base-10 logarithm of h-index as the key response variable. 5 demographic characteristics (Elected Age; Place of Birth; Specialised Field; Country of Highest Education; Province of Affiliation) are used as random effects, while Foreign Highest Education and West Chinese Affiliation are used as fixed effects. Models 4–6 replace the full sample in Model 3 with sub-samples from 3 different specialised fields. Standard errors clustered by academy member are reported in parentheses. *P*-value: tests are two-tailed. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table S8. Descriptive Statistics of Key Variables: Academy Members Elected 2018–2022

	N	Median	Average	SD	Min	Max
Specialised Field	301	2	2.06	0.752	1	4
Place of Birth	301	15	15.37	7.192	1	28
Year of Birth	301	1963	1961.90	4.781	1943	1976
Year of Election	301	2019	2019.95	1.063	2018	2021
Elected Age	301	57	58.04	4.703	43	76
Highest Education	301	4	4.76	2.194	1	12
Academy	301	2	1.61	0.565	1	3
Place of Affiliation	297	5	10.73	9.803	1	30
Foreign Education	301	0	0.18	0.382	0	1
West China	301	0	0.03	0.161	0	1
H-Index	229	39	42.23	29.539	0	164
Field: Engineering Sciences	301	1	0.55	0.498	0	1
Field: Life Sciences	301	0	0.20	0.398	0	1
Field: Mathematics & Physical Sciences	301	0	0.21	0.410	0	1

Specialised field, place of birth, highest education, academy, affiliation, foreign education, West China, and three scientific specialisations are indicator variables that take on values ranging from 1–4, 1–28, 1–12, 1–3, 1–30, 0–1, 0–1, and 0–1 according to general specialisation, province of birth, country of the highest degree awarded, associated academy, province of affiliation in elected year, foreign highest education, West Chinese affiliation, and specific specialisations respectively.

Table S9. Correlation Matrix of Key Variables: Academy Members Elected 2018–2022

		1	2	3	4	5	6	7	8	9	10
1	Specialised Field	1									
2	Place of Birth	−0.020	1								
3	Year of Birth	−0.093	−0.015	1							
4	Year of Election	0.064	0.106	0.119*	1						
5	Elected Age	0.107	0.038	−0.977***	0.096	1					
6	Highest Education	−0.127*	−0.052	−0.053	0.031	0.060	1				
7	Academy	0.396***	0.077	−0.051	0.020	0.056	−0.221***	1			
8	Place of Affiliation	0.186***	0.075	−0.131**	0.090	0.151**	−0.067	0.091	1		
9	Foreign Education	−0.205***	−0.02	−0.117*	0.032	0.124*	0.710***	−0.295***	−0.114*	1	
10	West China	−0.018	0.031	0.011	0.132**	0.018	−0.051	−0.001	0.074	−0.069	1

Results are Spearman correlation coefficients. *P*-value: tests are two-tailed. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5 Supplementary Movie

(See Huang, J., Cao C., and Liu, H., Replication data for “Indigenisation and Inclusion Politics in Chinese Academia”, <https://doi.org/10.7910/DVN/VRREMK>. Harvard Dataverse.)

Movie S1. Highest Educational Backgrounds of China’s Academy Members.

5-cohort average by elected year, from 1905 to 2021. Regular members only. CN: China; JP: Japan; US: United States; UK: United Kingdom; EU: Continental Europe ex. RU; RU: USSR or Russia.

6 Supplementary Reference

- Ai, M. & Masood, M. De-Westernization in journalism research: a content and network analysis of the BRICS journals. *Scientometrics* 126, 9477–9498 (2021).
- Ajlan, A. A. How academia should support scholars fleeing war and persecution, *Nat. Hum. Behav.*, 6.9: 1188–1190 (2022).
- Alesina, A., *et al.* Religion and educational mobility in Africa. *Nature* 618, 134–143 (2023).
- Baark, E. High technology innovation at the Chinese Academy of Sciences. *Sci. Publ. Policy*, 15(2), 81–90 (1988).
- Beyler, R., Kojevnikov, A. & Wang, J. Purges in comparative perspective: rules for exclusion and inclusion in the scientific community under political pressure, *Osiris*, 20: 23–48 (2005).
- Bhattacharya, J. *et al.* Resting on their laureates? research productivity among winners of the Nobel Prize in Physiology or Medicine, *National Bureau of Economic Research Working Paper*, 31352 (2023).
- Bol, T., Vaan, M. & Rijt, A. The Matthew effect in science funding, *Proc. Natl. Acad. Sci. USA.*, 115.19: 4887–4890 (2018).
- Cao, C. *China's Scientific Elite* (London and New York: Routledge, 2004).
- Cao, C. *et al.* Returning scientists and the emergence of China's science system, *Sci. Publ. Policy*, 47(2):172–183 (2020).
- Cao, C. & Simon, D. F., China's talent challenges revisited, in *Innovation and China's Global Emergence*, E. Baark, B. Hofman, & J. Qian, Eds. (NUS Press, 2021), pp. 90–112.
- Cao, C & Suttmeier, R. P. Challenges of S&T system reform in China, *Science*, 355.6329: 1019–1021 (2017).
- Cheng, B., Lin, L., & Fan, A. *The New Journey to the West: Chinese Students' International Mobility* (Singapore: Springer, 2020).
- Chen, T., Kung, J. K.-S. & Ma, C. Long live *Keju*! The persistent effects of China's Civil Examination System, *The Economic Journal*, 130.631: 2030–2064 (2020).
- China Association for Science and Technology. “Guanyu zuzhi tuixuan 2023 nian Zhongguo kexueyuan he Zhongguo gongchengyuan yuanshi houxuan ren de tongzhi” [Notification on the Nomination of CAS/CAE Member Candidates in 2023],

- www.cast.org.cn/xw/tzgg/ZH/art/2023/art_109c3d10318143799f0d8a7f88bbec44.html (2023). [In Chinese]
- Chinese Academy of Sciences. “Guanyu tuijian Zhongguo kexueyuan waiji yuanshi houxuanren de tongzhi” [Notification on the Nomination of CAS Foreign Member Candidates], www.casad.cas.cn/yszx/yszx2023/tzgg/202305/t20230513_4887159.html (2023). [In Chinese]
- Cohen, C., & Sterba, J. P. *Affirmative action and racial preference: a debate* (New York: Oxford, 2003).
- Elman, B. A. Imperial politics and Confucian societies in late imperial China: the Hanlin and Donglin Academies, *Mod. China*, 15.4: 379–418 (1989).
- Fisman, R., et al. Social ties and favoritism in Chinese science, *J. Political Econ.*, 126.3: 1134–1171 (2018).
- Guo, J. *The Establishment and Reconstruction of the Academician System in China* (Singapore: Springer, 2020).
- He, Q., & Xie, Y. The moral filter of patriotic prejudice: How Americans view Chinese in the COVID-19 era. *Proc. Natl. Acad. Sci. USA*, 119(47): e2212183119 (2022).
- Horie, M. The internationalization of higher education in Japan in the 1990s: A Reconsideration, *High. Educ.*, 43.1: 65–84 (2002).
- Huang, J. Drug licensing as the evidence of evolution, diffusion and catch-up in East Asia, *Nat. Biotechnol.*, 41.2: 189–192 (2023).
- Huang, K. G. China’s innovation landscape, *Science*, 329(5992): 632–633 (2010).
- Jia, H. Chinese Academics who work abroad are slower to win honour. *Nature*, 577(7790): 302–303 (2020).
- Kelly, D. & Reid, A. Weathering a political winter: the Chinese Academy of Social Sciences, 1990, *Aust. J. Chin. Aff.*, 24: 347–355 (1990).
- Kühner, H. Between autonomy and planning: the Chinese Academy of Sciences in transition, *Minerva*, 22: 13–44 (1984).
- Li, F. & Tang, L. When international mobility meets local connections: evidence from China, *Sci. Publ. Policy*, 46(4): 518–529 (2019).
- Li, J. et al. Scientific elite revisited: patterns of productivity, collaboration, authorship and impact. *J. R. Soc. Interface*, 17: 20200135 (2020).

- Liu, H. Chinese overseas and a rising China: the limits of a diplomatic “diaspora option”, in Zheng, Y. ed. *China and International Relations: The Chinese View and the Contributions of Wang Gungwu*, London and New York: Routledge, pp. 177–200 (2010).
- Looy, B. et al. Combining entrepreneurial and scientific performance in academia: towards a compounded and reciprocal Matthew-effect? *Res. Policy*, 33(3): 425–441 (2004).
- Ma, D. Boundary repair: science and enterprise at the Chinese Academy of Sciences, *Soc. Stud. Sci.*, 49: 381–402 (2019).
- Mallapaty, S. What Xi Jinping’s third term means for science, *Nature*, 611.7934: 20–21 (2022).
- Merton, R. K. The Matthew effect in science. *Science*, 159.3810: 56–63 (1968).
- Mervis, J. Pall of suspicion, *Science*, 379.6638, 1180–1184 (2023).
- Meyer, J.-B. et al. Turning brain drain into brain gain: the Colombian experience of the diaspora option, *Sci., Technol. Soc.*, 2.2: 285–315 (1997).
- Miao, L. et al. The latent structure of global scientific development, *Nat. Hum. Behav.*, 6.9: 1206–1217 (2022).
- Morgan, A.C., et al. Socioeconomic roots of academic faculty. *Nat. Hum. Behav.*, 6, 1625–1633 (2022).
- Noorden, R. V. The number of researchers with dual US–China affiliations is falling, *Nature*, 606(7913): 235–236 (2022).
- Pellerin, H. & Mullings, B. The ‘diaspora option’, migration and the changing political economy of development, *Rev. Int. Polit. Econ.*, 240: 942–968 (2020).
- Ren, B. Y., Chen L. & Lee, J. Z. Meritocracy and the making of the Chinese academe, 1912–1952. *China Quart.*, 40: 35–61 (2005).
- Ren, N. & Liu, H. Domesticating ‘transnational cultural capital’: the Chinese state and diasporic technopreneur returnees, *J Ethn. Migr. Stud.*, 45(13): 1–20 (2018).
- Saxenian, A. From brain drain to brain circulation: transnational communities and regional upgrading in India and China. *St. Comp. Int. Dev.*, 20.1: 89–120 (2013).
- Shi, D., Liu, W. & Wang, Y. Has China’s Young Thousand Talents Program been successful in recruiting and nurturing top-caliber scientists? *Science*, 379.6627: 62–65 (2023).
- Sleeboom-Faulkner, M. *The Chinese Academy of Social Sciences: Shaping the Reforms, Academia and China (1997–2003)* (Leiden: Brill, 2007).

- Sun, Y., & Cao, Cong. *The Political Economy of Science, Technology, and Innovation in China: Policymaking, Funding, Talent, and Organization* (Cambridge: Cambridge University Press, 2023).
- Suttmeier, R. P., Cao, C. & Simon D. F. ‘Knowledge innovation’ and the Chinese Academy of Sciences, *Science*, 312(5770): 58–59 (2006).
- Tenzin, J. The ecology of Chinese academia: a third-eye perspective, *China Quart.*, 231: 775–796 (2017).
- Wang, N. Origin and operation of the Chinese Academy of Engineering: an interaction between expertise and politics, *Eng. Stud.*, 12.1: 39–57 (2020).
- Wapman, K., et al. Quantifying hierarchy and dynamics in US faculty hiring and retention. *Nature*, 610, 120–127 (2022).
- Wiesel, T. Fellowships: turning brain drain into brain circulation, *Nature*, 510: 213–214 (2014).
- Wu, S. China: How science made a superpower, *Nature*, 574, 25–28 (2019).
- Xie, Q. & Freeman, R. B. Creating and connecting US and China Science: Chinese diaspora and returnee researchers. *National Bureau of Economic Research Working Paper*, 31306 (2023).
- Xie, Y. et al. Caught in the crossfire: fears of Chinese-American scientists. *Proc. Natl. Acad. Sci. USA*, 120(27): e2216248120 (2023).
- Yang, X., Zhou, X. & Cao, C. Remaking the Chinese Academy of Sciences, *Science*, 379.6629: 240–243 (2023).
- Yao, S. Chinese intellectuals and science: a history of the Chinese Academy of Sciences (CAS), *Sci. Context*, 3(2): 447–473 (1989).
- Yin, D & Yuan, S. “Xin Zhongguo 70 nian lai renkou fenbu bianqian yanjiu: jiyu Hu Huanyong xian de kongjian dingliang fenxi” [A study on 70-year change in China’s population distribution: a spatial quantitative analysis based on the Hu Huanyong Line], *Zhongguo renkou kexue* [Chinese Journal of Population Science], 5: 15–28 (2019). [In Chinese]
- Zweig, D., Chung, S. F. & Han, D. Redefining the brain drain: China’s ‘diaspora option’, *Sci., Technol. Soc.*, 13.1: 1–33 (2008).