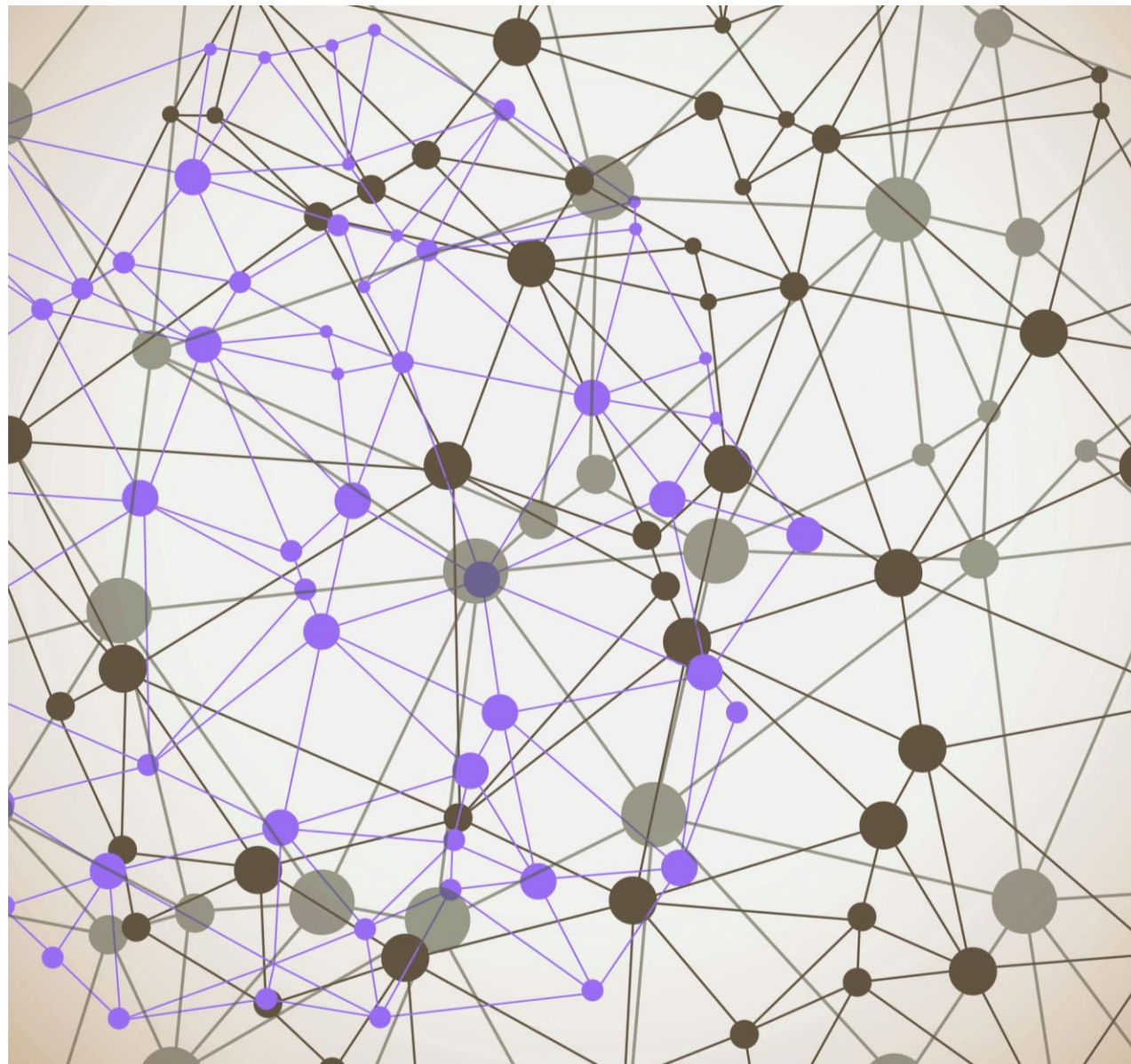# UNDERSTANDING RESEARCH SECURITY & INTEGRITY RISKS CONCERNING THE PRC

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Hoover Institution, Stanford University

With Larry Diamond

January 21, 2024

First Principles

Facilitate collaboration

Values

Stakeholder Partnership
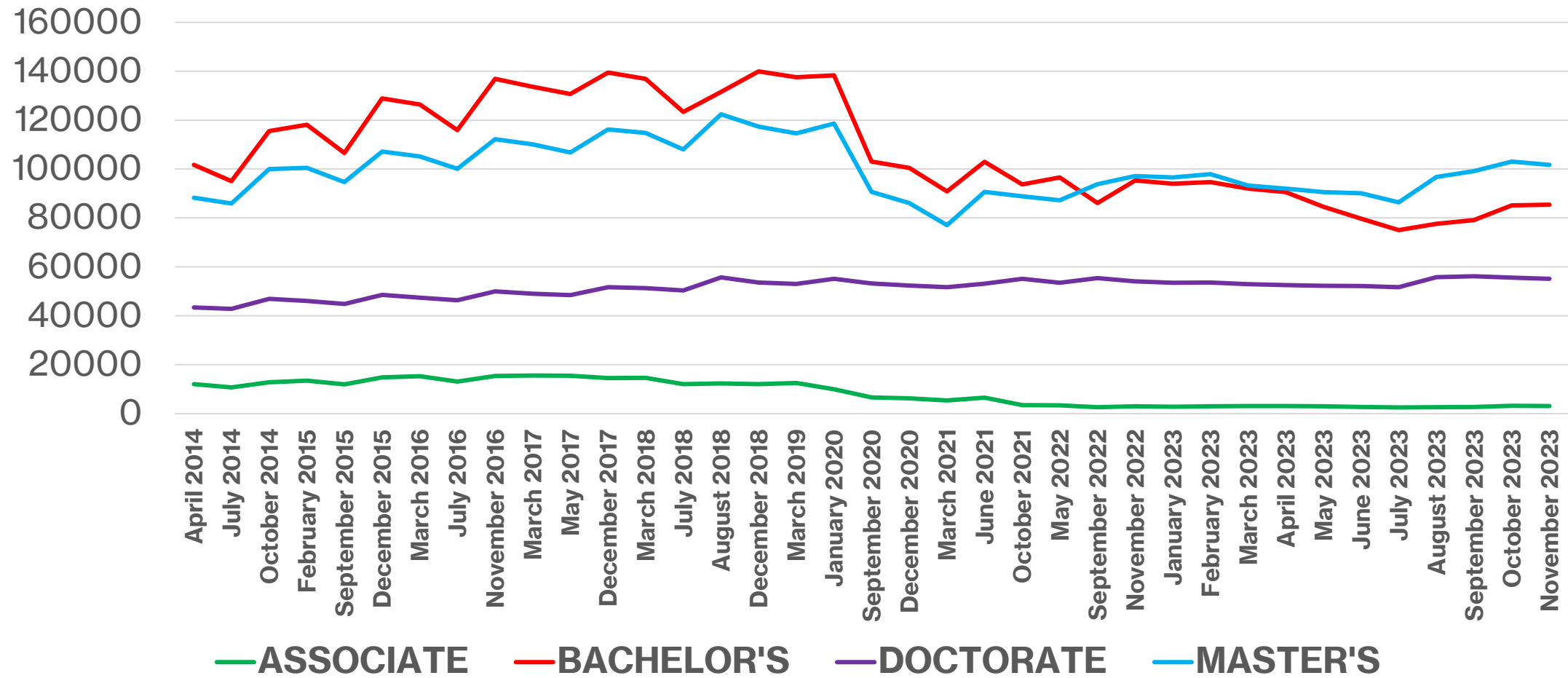
Institutional autonomy and openness

Balancing opportunities AND risks
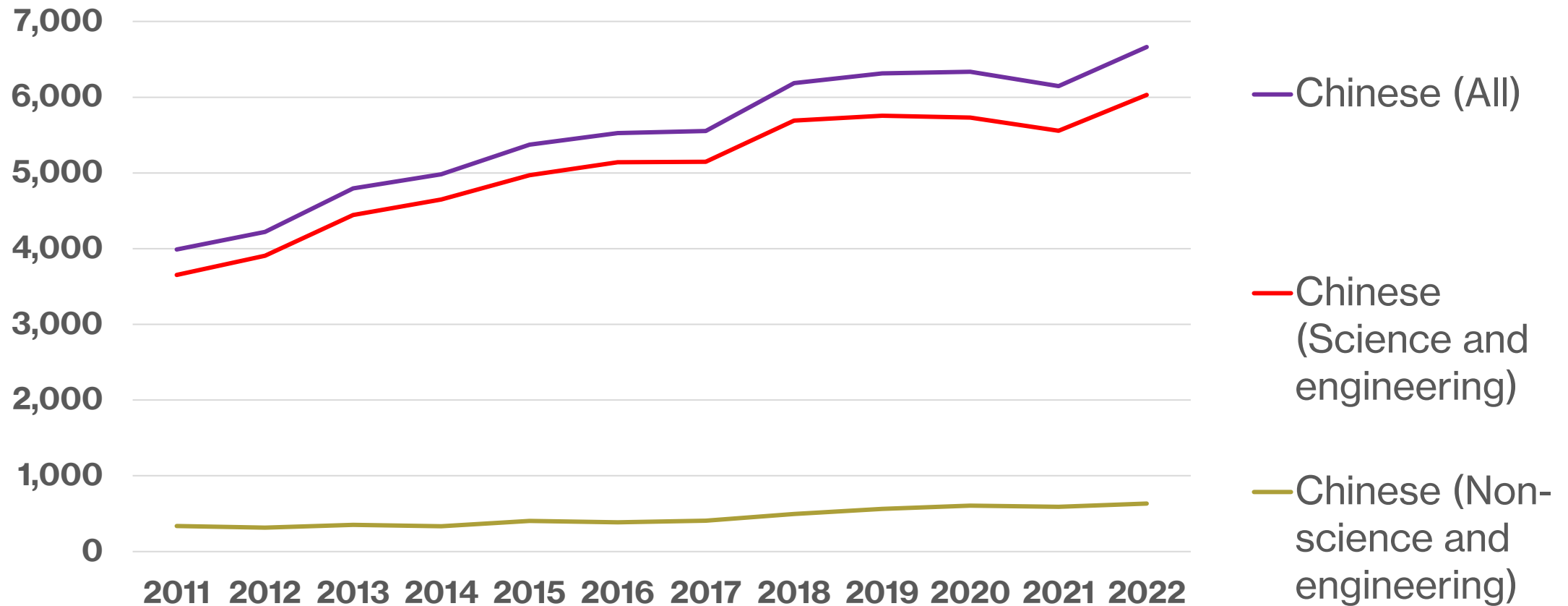
Non-discrimination

Transparency, integrity, and reciprocity

Active Students from the PRC (2014-2023)
November 2023 = 283,101

Source: Department of Homeland Security Student and Exchange Visitor Information System (SEVIS)

STEM And Non-STEM US PhDs Earned By PRC Students (2011-2022)

Legend:
- Chinese (All)
- Chinese (Science and engineering)
- Chinese (Non-science and engineering)

Source: NSF Survey of Earned Doctorates

Top International Research Partners
NatureIndex: August 01, 2022-July 31, 2023

CHINA, N=26544

Country	Share (%)
USA	41.92
Germany	11.17
UK	10.87
Australia	7.78
Singapore	6.82
Japan	6.16
Canada	5.21
France	4.07
South Korea	3.14
Netherlands	2.85

UNITED STATES, N=29405

Country	Share (%)
China	26.61
UK	13.86
Germany	13.25
Canada	10.35
France	7.95
Japan	6.54
Italy	5.46
Australia	5.45
Switzerland	5.34
Spain	5.2

Changing conditions require a rethink of research security

TRADITIONAL PARADIGM BREAKING DOWN

- Scopes of dual use and critical technologies are exploding.
- Small yard, high fences inadequate.
- Remote collaboration moots physical controls.
- Is military security enough? What about economic competitiveness, human rights, research integrity & ethics?

SPEED OF INNOVATION IS ACCELERATING

FLOW OF INNOVATION HAS FLIPPED

- Critical technologies increasingly begin in universities, labs, and industry and migrate to national security base, not other way around

BARRIERS TO TECH PROLIFERATION DROPPING

- Open-source models and libraries
- 3D printing
- Instrumentation (e.g. DNA sequencers)
- Autonomous synthesis

CANNOT PRESUME WESTERN LEADERSHIP

Research security risks include:

MISAPPRECIATION OF LOCAL ENVIRONMENT

- Weak institutional autonomy and academic freedom
- Weak protections of human subjects
- Corruption

LEGAL RISK

- Weak contracts and choice of law provisions
- Regulatory changes may render data management plans unenforceable
- Safety of researchers, collaborators, and informants

RESEARCH INTEGRITY RISKS

- Partners misrepresent identity and/or sponsors
- Research misconduct
- Diversion of research to undeclared applications (e.g., military, policing)

Research security risks also include:

CYBER INCIDENTS

- Network, Server, Device, & Email Attacks
- IP & Data Theft
- Denial of Service Attacks

ECONOMIC ESPIONAGE & PREDATORY CAPITAL

LEGAL EXPLOITATION OF US OPENNESS (NSDD-189)

TALENT PROGRAMS ARE ALIVE AND WELL

COLLABORATION AMONG COUNTRIES OF CONCERN

DIVERGENT STANDARDS AMONG US PARTNERS / WEAKEST LINK

China's 14ᵗʰ Five-year Plan (2021-2025): A Shopping List

Frontier Technologies	Manufacturing Sectors	Digital Economy Sectors
Next Generation Artificial Intelligence	High-End New Materials	Cloud Computing
Quantum Information	Major Technology Equipment	Big Data
Integrated Circuits	Smart Manufacturing and Robotics	Internet of Things
Brain Science and Brain-Like Intelligence Research	Aero Engines and Gas Turbines	Industrial Internet
Genetics and Biotechnology	Beidou Applications	Blockchain
Clinical Medical and Health	New Energy and Smart Vehicles	Artificial Intelligence
Deep Space/Earth/Sea, and Polar Exploration	Medical Equipment and Pharmaceuticals	Virtual and Augmented Reality
	Agricultural Machinery and Equipment	

中华人民共和国国家发展和改革委员会
National Development and Reform Commission

中华人民共和国
国民经济和社会发展
第十四个五年规划
和2035年远景目标纲要

清华大学中国发展规划研究院 制作 / 中国经济导报社 技术支持

Unprecedented CCP Takeover of University Leadership

Example: Tsinghua University President's Office Merged with Party Committee
January 14, 2024

(translation from Tsinghua website)

Institutional setup

The Party Committee Office (Principal's Office) is the functional department of the school's party and government. It implements two signs of one institution, referred to as the Party and Government Office, and the English name is Office of the CPC Tsinghua University Committee (Office o f the President, Tsinghua University), responsible for the comprehensive coordination of the important party and government work of the school, the promotion and implementation of decision–making and deployment, as well as the domestic cooperation office, counterpart support office, the letter and visit office, and the supervision and supervision office of the affiliated institutions. The office provides business guidance.

Party Committee Office (President's Office)

Domestic Cooperation Office

Counter–to–port support office

Office of Letters and Visits

Supervision and Supervision Office

Secretariat

Information room

Comprehensive room

General duty room

The necessary room

Administration office

Talent Programs Going Underground

Talent recruitment ad from a Seven Sons University

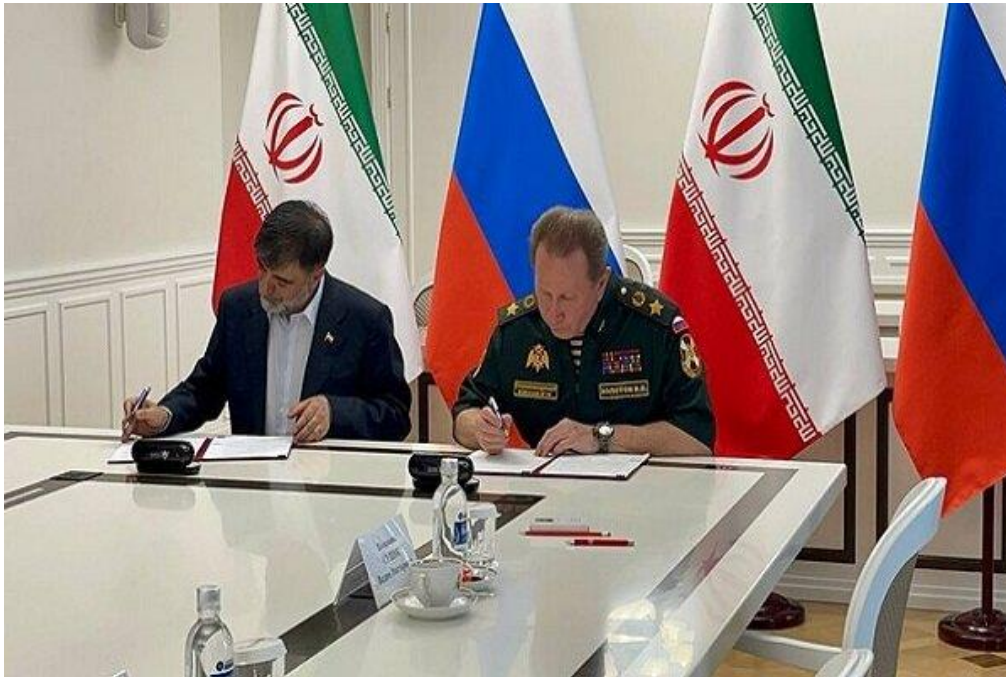posted to a private WeChat group used by PRC scholars and students in the US (2023)

$63-$83k annual salary
$280-$640k annual research budget
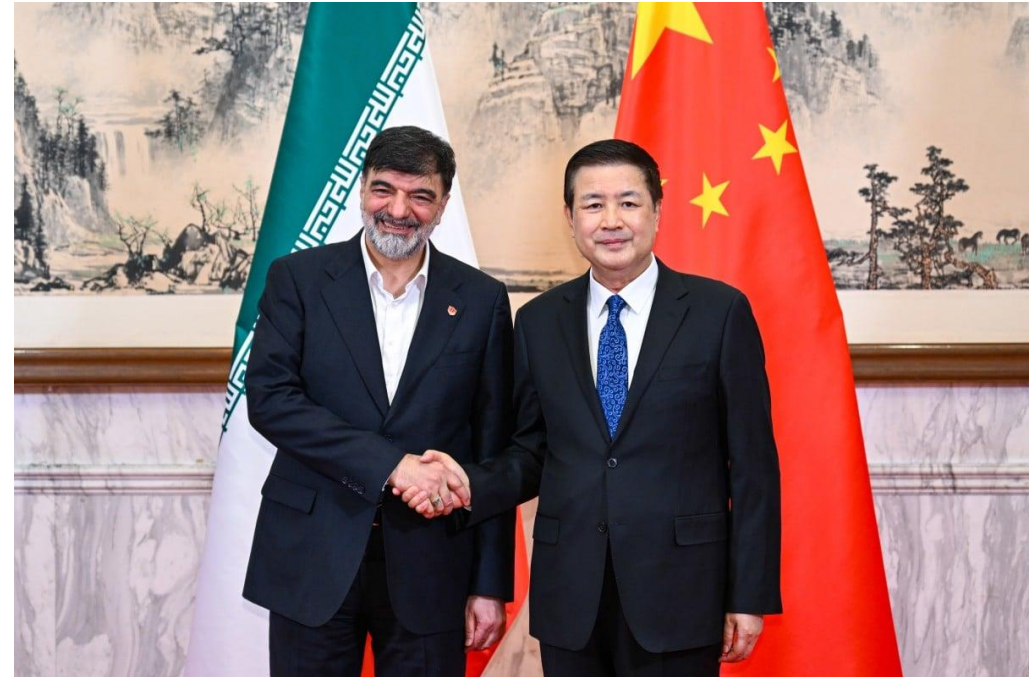$280k one-time housing subsidy

"There's a job for you!"

Iran-Russia & Iran-China Cooperation in Law Enforcement and Policing Technology

**IRAN-RUSSIA MOU (2023)**

IRAN-CHINA MOU (2024)

Examples that Cross the Line

- Using genetic analysis to police ethnic minorities like Uyghurs

- Research collaboration with a leading PRC engineer/computer scientist who has been a founder or chief scientist of several computer vision companies that serve PRC organs of state repression. (Close ties to the MSS, is sanctioned by the US Treasury Dept, now the Party Secretary of a major university)

- A visiting scholar at a US university working on how swarms of offensive drones could attack aircraft carriers

- US-PRC academic collaboration on using AI to guide the atmospheric entry of hypersonic vehicles

- US-PRC academic collaboration on using AI to improve underwater detection of submarines in the South China Sea.
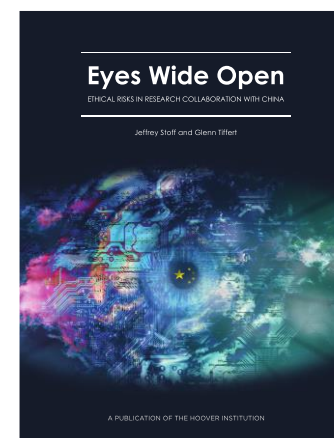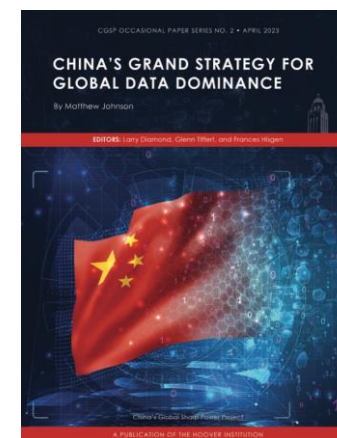
HOOVER RESEARCH ON RSI

2018

2020

2020

2021

2023

https://www.hoover.org/cgsp
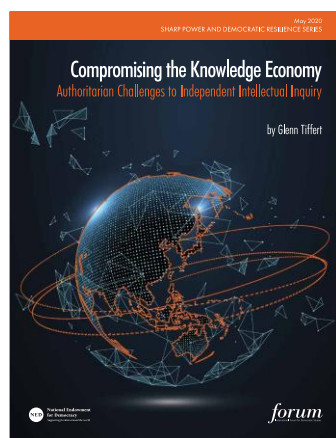
China's Global
Sharp Power
A Hoover Institution Project