2023开放的创新生态:创新与全球链接

Open Innovation Ecosystem: Innovation for Global Connectivity

浦江创新论坛(第十六届)

THE 16th PUJIANG INNOVATION FORUM

中 国 •上 海 Shanghai,China

2023.09.09-11

Conference Review (English Version)

专题报告集

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Objective

- Inspire Innovative Ideas
- Spread Innovative Thoughts
- Augment Innovative Spirits

Mission

- Construct an Innovation Network
- Identify the Future Trends
- Develop the Power of Youth

Vision

Becoming A Future-oriented Global Exchange Platform for Scientific and Technological Innovation and Opening-up Cooperation

Function

- A Hot Spring Bubbling with Innovative Ideas
- A Bellwether of Global Technological Advancements
- A Booster of Global Technological Cooperation
- A Gravitational Field for Global Innovation Talents
- A Hub for Global Technology Transfer

Pujiang Innovation Forum, founded in 2008, jointly hosted by the Ministry of Science and Technology of the People's Republic of China and Shanghai Municipal People's Government, is a high-level and widely influential international forum. Over the past 16 years, the forum consistently revolves around the theme of innovation, aiming to gather global innovative forces to discuss trends in technological innovation, build an open innovation ecosystem, forge consensus on innovation governance, and actively respond to the challenges of the times and significant global issues.

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Opening Ceremony and Plenary Session

Open Innovation Ecosystem: Innovation for Global Connectivity

Editor's note: *The Pujiang Innovation Forum 2023 was held in Shanghai from September 9 to 11. Under the theme of "Open Innovation Ecosystem: Innovation for Global Connectivity", the Forum this time included 1 main forum (Opening Ceremony and Plenary Session), 2 theme forums (Innovation System and Technology Evaluation, and Regional Innovation and Development), 9 special forums focusing on innovation culture, women scientists, young science and technology innovators, and green and low-carbon, 2 exhibitions for tech-matching (Global Tech-Matching Fair (InnoMatch EXPO), and WeStart Global Entrepreneurial Investment Conference), and 2 special dialogues (Foreign Scientists Symposium, and Symposium for Young Scientists). The collection of bulletins will compile the insightful viewpoints and important remarks of the guests to the Forum, and share the results of the Forums. This bulletin summarizes views of guests[1] at the Opening Ceremony and Plenary Session for your reference.*

A new revolution in science, technology and industry is gaining momentum. The scientific research paradigm has profoundly changed. Open innovation has become the general trend of the development of the times. General Secretary Xi Jinping pointed out that in order to solve the problems of common development, human beings require international cooperation and openness and sharing more than ever, and no country can become an independent innovation center or enjoy the results of innovation alone. The guests attending the conference agreed that we should always firmly implement a more open, inclusive, mutually beneficial, and shared international strategy for cooperation in science and technology, continue to deepen multilateral, inter-governmental and non-governmental international scientific and technological exchanges and cooperation in all dimensions, at different levels and in various areas, expand scientific and technological openness, build an open, innovative and cooperative ecosystem, achieve mutual benefit and win-win outcomes, pursue higher-standard opening up, and enhance the shared well-being of humanity.

CHEN Jining
Secretary of the Shanghai Municipal Committee of the CPC

DING Zhongli
Vice Chairman of the NPC Standing Committee, Chairman of the CDL Central Committee, Academician of the Chinese Academy of Sciences

WANG Zhigang
Minister, Ministry of Science and Technology then

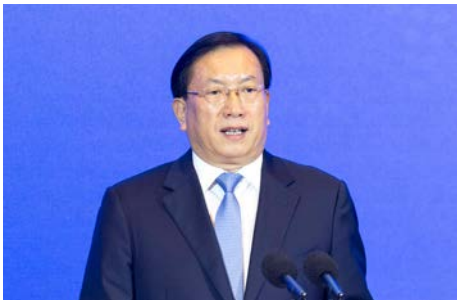
I. Open innovation is not only an integral component of the development of the times, but also an initiative for all countries to join hands for win-win results

First, an open innovation ecosystem provides a bigger platform for addressing the common challenges for human society. In his congratulatory letter to the Pujiang Innovation Forum 2023, President Xi Jinping stressed that scientific and technological innovation is an important force for humankind to jointly address risks and challenges and promote peace and development. Chen Jining, Secretary of the CPC Shanghai Municipal Committee, said that scientific and technological innovation is a common cause of all humanity; and that facing common challenges such as energy security, human health, and climate change, we should further expand global vision, enhance mutual strategic trust, deepen openness and cooperation, and bring more benefits to people across the world through technological innovation. Wang Zhigang, Minister, Ministry of Science and Technology then, proposed that expanding openness and cooperation in the field of science and technology is a strategic path for solving global problems and challenges by relying on scientific and technological innovation; and that technological innovation is changing the perspective and way we understand the world, it is an important and critical choice for addressing current global issues and challenges, and it

1 Chinese guests attending the conference included Chen Jining, Secretary of the CPC Shanghai Municipal Committee; Ding Zhongli, Vice Chairman of the Standing Committee of the National People's Congress and Chairman of the Central Committee of the China Democratic League; Wang Zhigang, Minister, Ministry of Science and Technology then; Huang Xiaowei, Secretary of the Leading Party Members' Group of the All-China Women's Federation and Vice-President and First Member of the Secretariat of the All-China Women's Federation; Wang Zhonglin, Deputy Secretary of the CPC Hubei Provincial Committee and Governor of Hubei Province; Hu Wenrong, Chairman of the Shanghai Municipal Committee of the Chinese People's Political Consultative Conference; Jin Li, Academician of Chinese Academy of Sciences and President of Fudan University; and Xu Donglian, T. D. Lee Fellow, Associate Professor of Physics, Tsung-Dao Lee Institute, Shanghai Jiao Tong University.Foreign guests included Celso Pansera, Head of the Brazilian Delegation and President of the Brazilian Innovation Research Agency; Hem Vanndy, Minister of Ministry of Industry, Science, Technology, and Innovation; Marcos Galvao, Ambassador of Brazil to China; Pietro Barabaschi, Director-General of the International Thermonuclear Experimental Reactor (ITER) Project; and Kumsal Bayazit, Chief Executive Officer of Elsevier.

Luciana Santos
Minister of Science, Technology and Innovation of Brazil

GONG Zheng
Mayor of Shanghai



WANG Zhonglin
Deputy Secretary and Governor of the Hubei Provincial Committee of the CPC

Celso Pansera
President, Financier of Studies and Projects of Brazil (FINEP)

even becomes the best approach. Luciana Santos agreed that it is necessary to resolve problems such as water shortages, sea level rise, public health emergencies, and food shortages through international cooperation, and to establish a new diplomacy model for international cooperation and scientific and technological innovation. Ding Zhongli, Vice Chairman of the Standing Committee of the National People's Congress and Chairman of the Central Committee of the China Democratic League, pointed out that energy security, climate change, human health and other fields face many challenges; and that the interests and destinies of people all over the world are more closely linked, and scientific and technological innovation and international cooperation are needed to address these challenges.

Second, an open innovation ecosystem is a prime mover in national and regional economic and social development. Ding Zhongli agreed that openness and cooperation directly promote global connectivity, while global connectivity in turn promotes multi-dimensional innovation among countries, thereby jointly promoting world development. In his congratulatory letter to the Pujiang Innovation Forum 2023, Brazilian President Luiz Inacio Lula da Silva said he sees great potential in the partnerships between Brazilian and Chinese science parks and advanced technology companies to facilitate more investment and increase competitiveness and productivity for the two nations. Celso Pansera, President of the Brazilian Innovation Research Agency, pointed out that exchanges and cooperation between China and Brazil in the field of scientific and technological innovation have laid a good foundation for cooperation in diplomacy, culture, economy and trade, etc. Luciana Santos, Minister of the Brazilian Ministry of Science, Technology, and Innovation, said that in his foreign policy, President Luiz Inacio Lula da Silva has given scientific and technological cooperation an important mission; and he anticipates to creating wealth through technological cooperation, promoting the process of re-industrialization based on innovation, reducing inequality, and overcoming poverty and hunger. Wang Zhonglin, Deputy Secretary of the CPC Hubei Provincial Committee and Governor of Hubei Province, stressed that opening and sharing have made Hubei a strong magnetic field for attracting global innovative factors, and that innovation has led Hubei to make big strides on the path of high-quality development.

II. Global connectivity: Taking multiple approaches to achieve openness, inclusiveness, mutual benefit and win-win outcomes through multi-party collaboration

First, international Big Science programs outline a common vision for humanity and create the "bearing beam" of global connectivity. Pietro Barabaschi, Director-General of the International Thermonuclear Experimental Reactor (ITER) Project, pointed out that the energy supply issues are global challenges, and it is necessary to use the wisdom of researchers around the world to carry out worldwide collaborative research for common goals. ITER is the core hub platform for international scientific and technological

Launch Ceremony of the 1st WeStart Global Entrepreneurial Investment Conference

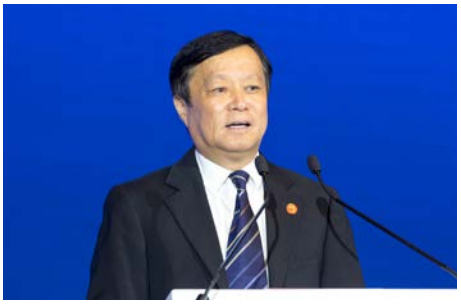
Launch Ceremony of the 4th China-Brazil Innovation Week

cooperation. All members work together as a team with the goal of demonstrating the potential of nuclear fusion as a future energy source. Chen Lingling, Principal Investigator at the CAS Center for Excellence in Molecular Cell Science, Chinese Academy of Sciences, pointed out that the preparations for next-generation neutrino telescopes with greatly improved performance are being carried out all over the world, such as the Lake Baikal Experiment Baikal-GVD, the Mediterranean Telescope KM3NeT, the Pacific Neutrino Experiment P-ONE, the South China Sea Neutrino Telescope TRIDENT, and the second-generation ice cube IceCube-Gen2. The cooperative networking between these Big Science facilities and international Big Science programs have formed the "bearing beam" of global connectivity.

Second, the Belt and Road scientific and technological innovation cooperation has advanced steadily, becoming the main line for global connectivity. We should build the Belt and Road into a road of innovation with high quality, optimize the construction layout and operation management of the Belt and Road Joint Laboratory, support enterprises, science and technology parks and other entities to build overseas innovation centers, incubators, accelerators and other offshore platforms in other Belt and Road countries, continuously expand scientific and technological exchanges as well as people-to-people and cultural exchanges, and support non-governmental cooperation on scientific and technological innovation. Wang Zhigang said that China has pushed forward scientific and technological innovation cooperation under the Belt and Road Initiative, advanced four actions including people-to-people and cultural exchanges, joint laboratory construction, park cooperation, and technology transfer, conducted joint research with scientists from many countries in the fields of climate change, food security, human health, peak carbon emissions and carbon neutrality, and has achieved fruitful results. Gong Zheng, Deputy Secretary of the CPC Shanghai Municipal Committee and Mayor of Shanghai, pointed out that as an important program of both the "Scientific and Technological Innovation China" and the Brazil's innovation diplomacy plan, the "China-Brazil Innovation Week" has been successfully held for three consecutive years and become an important platform for scientific and technological cooperation between China and Brazil. Wang Zhonglin pointed

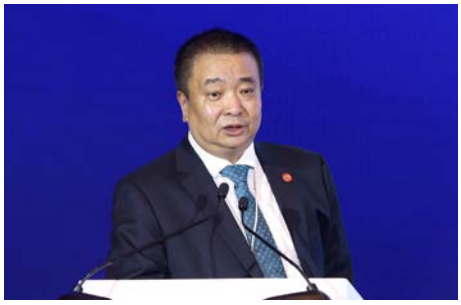
Marcos Galvão
Ambassador of Brazil in China

Pietro Barabaschi
Director-General of the International Thermonuclear Experimental Reactor (ITER) Project



HE Dongfeng
Secretary of the Party Committee and Chairman of the Commercial Aircraft Corporation of China, Ltd.

Kumsal Bayazit
Chief Executive Officer of Elsevier



JIN Li
Academician of Chinese Academy of Sciences, President of Fudan University and Dean of Shanghai Medical College of Fudan University

XU Donglian
T. D. Lee Fellow, Associate Professor of Physics, Tsung-Dao Lee Institute, Shanghai Jiao Tong University

ZANG Xi
Host of Shanghai Media Group

out that through scientific and technological exchanges and cooperation with more than 60 countries and regions, open Hubei has become a fertile ground full of energy for innovation.

Third, the depth and dimension of global connectivity are strengthened through mutual benefit and win-win outcomes. Ding Zhongli pointed out that the earth-shaking changes since China's reform and opening up have also benefited from an open and cooperative international environment. Such benefits are not one-sided, but bilateral or multilateral. Openness and cooperation promotes global connectivity, while global connectivity in turn promotes multi-dimensional innovation, thereby making the world a better place. Celso Pansera stressed that Brazil recently announced a new industrialization plan, and Brazil will strengthen learning from China in areas such as the digital economy, life and health, sustainable development, and advanced agricultural technology, implement all-round cooperation with China by relying on specialized research institutes in medicine, oil extraction, forest protection, and carbon emission reduction, and strengthen the mutual benefit and win-win cooperation between China and Brazil. Investment in science, technology and innovation between China and Brazil is always above the world average, and it is expected that China and Brazil will continue to increase investment in these areas in the future.

III. Institutional guarantee: Joining hands with other countries around the world to build an open innovation ecosystem

First, China should deepen inter-governmental and non-governmental cooperation on scientific and technological innovation, and raise innovation and cooperation to a higher level. Wang Zhigang pointed out that China should uphold multilateralism, give full play to the leading role of the intergovernmental science and technology cooperation mechanism, strengthen institutions such as the joint committee on science and technology cooperation, and the innovation policy dialogue, strive to enhance openness, trust, and cooperation in the international science and technology community, and promote multi-dimensional cooperation and connectivity in talent, technology, achievements, and platforms. Celso Pansera stressed that Brazil has recently revised relevant laws, and established the Brazilian Ministry of Science, Technological Development and Innovation, and it will continue to increase investment in scientific and technological innovation. Brazil will strengthen its exchanges of students and young scientists with China, and establish closer exchanges and cooperation in the field of scientific and technological innovation on the basis of close and stable diplomatic, cultural, economic and trade cooperation between the two countries.

Second, China should expand the public sharing of scientific and technological resources, and build more platforms for international cooperation and exchanges on science and technology. Wang Zhigang pointed out that China should step up the opening-up of the national science and technology

programs, actively participate in and take the lead in undertaking international Big Science programs and projects, and establish globally oriented scientific research funds and strategic cooperation projects. Nikos K. Logothetis, Director of the International Center for Primate Brain Research and Head of the Department of Physiology of Cognitive Processes, proposed that we should establish an international science and technology exchange platform, promote the development of integrated technology, and achieve international cooperation and exchanges in the field of brain science. Jin Li, Academician of Chinese Academy of Sciences and President of Fudan University, proposed that we should establish a scientific community, and further promote international scientific and technological exchanges and cooperation. At the same time, we should build a data sharing platform to achieve open access to and sharing of data. Kumsal Bayazit, Chief Executive Officer of Elsevier, proposed that Elsevier will support international cooperation and interdisciplinary cooperation through global journals, provide diverse open models for access to information, and help researchers share data while publishing scientific research results.

Third, China should cultivate a favorable internationalized environment for research, and support innovators of all kinds to conduct foreign exchanges and cooperation. Jin Li stressed that a favorable internationalized environment for research is an important guarantee for international cooperation; and that we should resolve the unfairness and inequalities brought about by global challenges, and achieve sustainable development. Wang Zhigang proposed that we should strive to remove institutional barriers hindering open innovation; create an open, equal, fair and non-discriminatory science and technology development environment; accelerate the wider application of new knowledge, new technologies, new products, and new industries; support enterprises, universities, research institutions, and science and technology associations to carry out extensive international scientific and technological exchanges and cooperation; encourage and support the construction of R&D and innovation platforms and cooperative institutions overseas; innovate mechanisms to attract overseas talents; rely on Big Science facilities and major research platforms to gather international high-end scientific and technological talents; increase funding for outstanding young researchers from abroad to come to China for conducting academic exchanges, pursuing doctoral degrees and engaging in postdoctoral studies; continuously optimize and innovate facilitation measures for foreign scientific and technological talents in research, residence, and entry and exit; and provide higher-quality services for scientists, entrepreneurs, and investors from various countries to come to China for innovation and entrepreneurship. Celso Pansera said that the governments at the federal and local levels should simultaneously increase financial support for scientific and technological innovation, improve institutional guarantee for scientific and technological innovation, and cultivate a favorable environment for scientific and technological development. Ding Zhongli agreed that we should create a favorable environment for research from both domestic and international perspectives. Domestically, we should start with breaking the "Four Only" (preferring academic papers, professional titles, diplomas, and awards) in the evaluation of scientific and technological talents, leveraging the "baton" role of scientific and technological evaluation in funding support, and establishing a good ecosystem for import substitution. Internationally, we should create a favorable environment for research by breaking the international scientific and technological blockade system, eliminating

Nikos K. Logothetis
Director of the International Center for Primate Brain Research, Head of the Department of Physiology of Cognitive Processes

CHEN Lingling
Principal Investigator at the CAS Center for Excellence in Molecular Cell Science, Chinese Academy of Sciences

Special Dialogue

international discrimination, and promoting global scientific and technological innovation connectivity.

Fourth, China should strengthen global scientific and technological governance, and promote the formation of an open cooperation framework for scientific and technological innovation. Wang Zhigang proposed that we should respond positively to UNESCO Recommendation on Open Science, conduct dialogues on Open Science under a multilateral framework, participate deeply in international cooperation on the rules and standards of Open Science, establish exchange and cooperation mechanisms with the international community by centering on issues such as application of emerging technologies and biosafety, and improve science and technology security systems and risk prevention mechanisms.

Jin Li pointed out that we should formulate fair and reasonable international rules and standards, protect intellectual property rights, and maintain the order and security of scientific and technological innovation. Xu Donglian, Associate Professor of Tsung-Dao Lee Institute and T. D. Lee Fellow, pointed out that researchers should put forward their own unique insights and innovative ideas, attract international peers to seek cooperation, connect with international peers more openly and confidently, actively communicate and exchange when encountering difficulties, lead student teams to attend international conferences, and contribute the teams' wisdom at international conferences.

Innovation Culture Forum

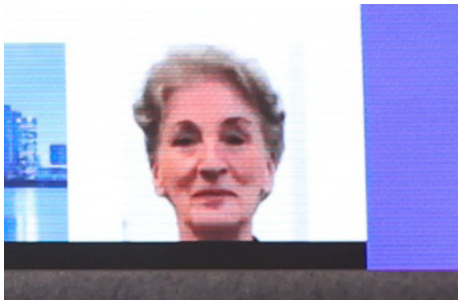
Chasing the Light: The Spirit and Momentum of Innovation

Editor's note: *The Innovation Culture Forum of the Pujiang Innovation Forum 2023, with the theme of "Chasing the Light: The Spirit and Momentum of Innovation", the experts from home and abroad in various fields conducted in-depth discussions on "nurturing a culture of innovation and fostering an enabling environment for innovation" from the perspectives of cultivating values, strengthening institutional guarantees, and promoting mutual learning among civilizations. This bulletin summarizes views of guests at the Innovation Culture Forum for your reference.*

ZHANG Biyong
Member of the Party Group of the Ministry of Science and Technology, President of Science and Technology Daily

Osório Coelho Guimarães Neto
Deputy Secretary of Technological Development and Innovation of MCTI, Brazil

LV Wei
Former member of the Standing Committee of the National People's Congress and Minister of Innovation and Development Research Department of the Development Research Center of The State Council



Donna Kurtz
Professor, Department of Engineering Science and Department of Classical Art, University of Oxford

Scientific culture is the spiritual soil and source of power of scientific and technological development and innovation. The report to 20th CPC National Congress pointed out that in order to improve the science and technology innovation system, we must "nurture a culture of innovation, encourage dedication to science, cultivate fine academic conduct, and foster an enabling environment for innovation"; and that innovation culture has become an important part of China's national science and technology innovation system. Innovation culture provides a good environment and atmosphere for nurturing innovative thinking, triggering innovation potential, and maintaining innovation vitality. It is the core support that motivates innovative behavior. The guests attending the Forum agreed that the cultivation of a culture of innovation is a multi-dimensional construction process. Countries around the world should take advantage of the opportunities of changes to foster innovative values, create a favorable environment for innovation with institutional guarantees, and promote international scientific and technological exchanges and mutual learning among civilizations through in-depth opening-up.

I. Stay confident and take advantage of the opportunities of changes to foster innovative values

On the one hand, we should develop a correct understanding of our country's fine traditions and current situation, and stay confident in science and culture. Zhang Biyong, President of Science and Technology Daily, pointed out that in 5,000 years of civilizing process, the Chinese nation has not only created achievements such as the Four Great Inventions (papermaking, gunpowder, printing and the compass), and developed scientific knowledge systems in agronomy, medicine, astronomy, and mathematics, but also nurtured unique innovative thinking and awareness. Mei Jianjun, Director of the Needham Institute, University of Cambridge, argued that under the influence of Western centrist thinking, China's scientific and cultural characteristics and China's contributions to the world have been ignored, and they should be understood and analyzed more objectively and accurately. Ji Zhigang, Professor of Shanghai Jiao Tong University, pointed out that as early as the early 17th century, Xu Guangqi collaborated with Matteo Ricci to translate The Elements of Geometry, which soon encouraged many people to publish related books in the field of mathematics. From this, you can see a glimpse of Chinese science and culture. Lv Wei, Former Director of the Innovation and Development Research Department of the Development Research Center of the State Council, pointed out that at present, Chinese citizens' scientific literacy has been elevated to a new level (from 1.6% in 2005 to 12.9% in 2022), and they have good scientific and cultural literacy and social culture atmosphere.

On the other hand, we should develop a thorough understanding of the new changes in the new era, and nurture scientific culture and innovation culture that keep pace with the times. Wang Yuan, Former Executive Vice President

of Chinese Academy of Science and Technology for Development, pointed out that the development of scientific culture and social culture interacts with each other; and that the new world pattern and scientific and technological development trends have brought about not only many challenges to social culture, but also changes in science and culture. Guo Zhe, Director of the Department of Publicity and Culture of China Association for Science and Technology, argued that new changes in the actors involved in scientific culture and innovation culture have occurred. What is particularly noteworthy is that the power of individualization is rising, which is also profoundly reconstructing the whole publicity system of scientific and technological innovation culture. Donna Kurtz, Professor, Department of Engineering Science and Department of Classical Art, University of Oxford, proposed that digitalization and open source have brought about the transformation of research paradigms, promoting the formation of scientific culture in the digital era. Adi Yoffe, Israeli futurist, pointed out that Israel has developed a scientific culture where individuals need to do things faster, better, and more unique. In addition, she also stressed that the "fragmentation" trend is a historical trend; and that it is by grasping such social change that TikTok has forged its own attainment.

II. Continuously explore and foster an enabling environment for innovation with institutional arrangements

On the one hand, the scientific and technological innovation system carries the cultivation of scientific culture. Osório Coelho Guimarães Neto, Deputy Secretary of Technological Development and Innovation of MCTI, Brazil, argued that a powerful and efficient national innovation system is the institutional foundation for cultivating scientific culture; and that without a complete national innovation system, it is impossible to talk about cultivating scientific culture. Zhang Biyong pointed out that Shanghai has begun exploring the construction of a special zone for basic research, providing a specific physical space for the cultivation of scientific culture from the field of basic research.

On the other hand, institutional mechanisms guarantee a stable environment for the development of scientific culture. Lv Wei pointed out that scientific culture at the research level is a value system, way of thinking, institutional constraints, code of conduct, and social norms formed by the scientific community in scientific activities; that the formation of original ideas requires a stable and predictable social environment, and the implementation of means that support innovation, such as the non-consensus project selection mechanism, requires institutional guarantees. Osório Coelho Guimarães Neto stressed that public policies provided by government departments, or the stable environment provided by the private sector, would be conducive to the cultivation of scientific culture.

Adi Yoffe
Israeli Futurist

MEI Jianjun
Director of the Needham Institute, Cambridge

JI Zhigang
Corresponding fellow, International Academy of the History of Science, Professor of Shanghai Jiao Tong University

Albert Sabater Coll
Professor, University of Girona, Spain

GUO Zhe
Minister of Propaganda and Culture, China Association for Science and Technology

YUAN Beixing
Hubei Academy of Social Sciences Party member, Vice President

SU Zhiliang
Director of Urban Culture Research Center of Shanghai Normal University, Ministry of Education

WANG Yuan
Former Executive Vice President of Chinese Academy of Science and Technology for Development

III. Promote mutual learning among civilizations, and through integration and connectivity, bolster international exchanges on science and technology

On the one hand, we should adhere to the principle of "seeking common ground while reserving differences in a world where diverse civilizations coexist". Mei Jianjun argued that the purpose of mutual learning among civilizations is to conduct in-depth analysis and comparison of different scientific, cultural, social and economic structures, reveal their differences and similarities, and determine their influence on the civilizing process, thus demonstrating observation and understanding of specific historical phenomena. Adi Yoffe pointed out that in Israel's scientific culture, there is a deliberately different way of thinking, which is reflected in innovation by manufacturing its own unique products, thereby strengthening its position in international cooperation and making Israel a typical country of innovators.

On the other hand, we should strengthen interdisciplinary integration and nurture new knowledge. Mei Jianjun pointed out that Xu Guangqi put forward a very famous slogan: "In order to surpass, it is necessary to integrate; before integration, first [it is] necessary to translate [their calendrical treatises]", and argued that translation is the first cornerstone of cultural exchange. However, translation is not a simple knowledge transfer, but it is more about understanding and learning Western knowledge during the transfer process. Therefore, integration is the only way to enhance mutual learning among civilizations. Donna Kurtz stressed that her team has more than 20 years of experience collaborating with people from various regions in China, and has established the "Oxford Linked Open Data (OXLOD)" with the participation of 500,000 people, which generates huge amounts of data, far exceeding the computational speed of the human brain. She argued that international cooperation not only integrates data resources, but also integrates the strengths of all parties.

Panel Discussion

Women Scientists Summit

Exploring Boundlessness, Linking to the Future

Editor's note: *The Women Scientists Summit of the Pujiang Innovation Forum 2023, with the theme of "Exploring Boundlessness, Linking to the Future", invited female elites from home and abroad in the realm of science and technology to conduct in-depth discussions on the development philosophy of "gender equality, unbounded disciplines, no restrictions on geographies, and unhindered application" from three dimensions including three dimensions including disciplinary interlinking, regional interlinking, and industry interlinking. This bulletin summarizes views of guests at the Women Scientists Summit for your reference.*

HUANG Xiaowei
Secretary of the Leading Party Members' Group of the All-China Women's Federation and Vice-President and First Member of the Secretariat of the All-China Women's Federation

ZHANG Biyong
Member of the Party Group of the Ministry of Science and Technology, President of Science and Technology Dail

WU Qing
Deputy Secretary of Shanghai Municipal Party Committee

ZHANG Xiaolan
Vice-president and Member of the Secretariat of the All-China Women's Federation

On the stage of exploring the unknown and pursuing technological progress, women are becoming increasingly active and their achievements are highly remarkable. Currently, over 33% of the world's women scientists and engineers are women. There are more than 40 million women scientists and engineers in China, accounting for 45.8%.As the social awareness and recognition of women scientists and engineers continues to rise, "Her Wisdom" and "Her Power" have yielded unusually brilliant results in the process of building China into a world leader in science and technology, and won "Her Glory" for promoting the development of global scientific and technological innovation. The guests attending the Summit agreed that in order to solve the problems of common development, more than ever, human beings require scientific and technological innovation, international cooperation and openness and sharing, and need women to participate in interdisciplinary, cross-regional and cross-sectoral exchanges and cooperation, to promote scientific and technological innovation, joint development of platforms, and the sharing of resources and achievements, and to demonstrate women's extraordinary creativity and influence on the world stage of science and technology.

I. Disciplinary interlinking: Break through disciplinary boundaries through multi-disciplinary cross-integration

First, multi-disciplinary cross-integration is conducive to achieving innovative breakthroughs. Human scientific development has long gone beyond the stage of do-it-alone and entered the era of cooperation and interlinking. Multi-disciplinary cross-integration is more likely to nurture major scientific discoveries and breakthroughs in technological innovation. Yuan Junying, Academician of the National Academy of Sciences (USA) and Director of Interdisciplinary Research Center of Biology and Chemistry of Shanghai Institute of Organic Chemistry at the Chinese Academy of Sciences, pointed out that the specialty of biochemistry she initially select is interdisciplinary; and that in her research, she discovered the molecular mechanisms of two major cell death mechanisms (apoptosis and necroptosis), achieving "Zero to One" breakthroughs, and thereby promoting clinical trials for multiple major diseases worldwide.

Second, multi-disciplinary cross-integration requires the full cooperation among government, industry, and academia. Ms. Laís Forti Thomaz, Secretary of International Relations, Federal University of Goiás, Brazil, pointed out that public policy is a catalyst that can effectively promote innovation and improve industrial effectiveness; and that policy regulation is a powerful means of innovation and development in the low-carbon field. In recent years, Brazil has been playing an important role in transitioning energy, establishing mechanisms, and reducing emissions. The Paris Agreement is a milestone event of international cooperation. The world today faces many challenges, and cooperation and coordination among multiple parties are very important. Only with the participation of the government, academia, industry and other

parties can the goal of sustainable development be achieved.

Third, women scientists can accomplish greater things in promoting multi-disciplinary cross-integration. As a vital part of scientific and technological human resources, women scientists are important strategic resources for scientific and technological innovation in the new era. They have a unique perspective and resilience. We should attach great importance to the power of women scientists. Huang Xiaowei, Secretary of the Leading Party Members' Group of the All-China Women's Federation and Vice-President and First Member of the Secretariat of the All-China Women's Federation, proposed that in order to solve the problems of common development, human beings require scientific and technological innovation and the strength of women more than ever. She hoped that women scientists and engineers of all countries would actively carry out multidisciplinary and collaborative research on major global issues such as climate change, energy security, and life and health, for the purpose of promoting scientific and technological innovation.

II. Regional interlinking: Promote global scientific and technological cooperation through open innovation

The first is to rely on international Big Science programs to break through regional boundaries and promote global joint innovation. Wang Pinxian, Academician of Chinese Academy of Sciences and Professor of the School of Ocean and Earth Sciences of Tongji University, pointed out that in order to "build China into a strong maritime country", we must build globally oriented research bases focusing on deep sea. Ocean drilling is an "Olympic" arena for international deep-sea research, with a history of 54 years and the participation of 22 countries. It has gathered the world's highest level of marine technology. It is not only the technological "aircraft carrier" leading contemporary international deep-sea exploration, but also the most important stage for international deep-sea competition. Wang Fengping, Vice Dean of the School of Oceanography of Shanghai Jiao Tong University, a female scientist who participated in IODP, proposed that international cooperation is the core magic weapon of ocean drilling. In order to make breakthroughs and move forward in ocean drilling, scientific cooperation without borders must be put in place and fully implemented, so that in terms of ocean drilling, China can become a core leader of and major contributor to international ocean drilling.

The second is to promote international scientific and technological cooperation at a higher level through an open innovation ecosystem. Liu Dongmei, Secretary of the CPC Committee of the Chinese Academy of Science and Technology for Development, pointed out that building an open innovation ecosystem is an essential requirement of fostering a new development pattern and promoting high-quality development, and an inevitable choice for China to work with other countries to solve the problems of common development. China has made a series of reforms and arrangements focusing on making China a global leader in science and technology and promoting high-standard opening up, laying a good policy foundation for creating an open

Marina Soković

Assistant Minister of Science, Ministry of Science, Technological Development and Innovation, Serbia. Senior Research Fellow at the Siniša Stankovic Institute of Biology (IBISS) of the University of Belgrade

YUAN Junying

Molecular Biologist, Fellow of the American Academy of Arts and Sciences, Fellow of the National Academy of Sciences (US), Tenured Professor of Cell Biology at Harvard Medical School, Director of Interdisciplinary Research Center on Biology and Chemistry

Laís Forti Thomaz

Secretary of International Relations, Federal University of Goiás

LIU Dongmei

Secretary the Party Committee of the Chinese Academy of Science and Technology for Development

WANG Pinxian

Marine Geologist, Academician of Chinese Academy of Sciences, Fellow of The World Academy of Sciences for the Advancement of Science in Developing Countries, Professor and Doctoral Advisor of School of Ocean and Earth Sciences, Tongji University

WANG Fengping

Vice Dean, Professor, Doctoral Advisor and Academic Leader, School of Oceanography, Shanghai Jiao Tong University, a female scientist who participated in IODP.

ZHANG Yulei

Member of the CPC Group and Deputy Director of the Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park

XIE Qirun

Chairman of the Executive Board Committee and Executive Director of Sino Biopharmaceutical Limited, Director of Chiatai Tianqing Pharmaceutical Holdings Co., Ltd. and Director of Nanjing Chia Tai Tianqing Pharmaceutical Co., Ltd.

and globally-competitive innovation ecosystem. In the future, China should create an open and globally-competitive innovation ecosystem from four aspects: international appeal to innovators of all kinds, cross-border mobility of innovation factors, role in global scientific and technological innovation networks, and contribution to global innovation governance.

The third is to create a more enabling internationalized development environment for female scientific and technological talents. Currently, many outstanding female scientific and technological talents have gained experience and become more competent in major scientific and technological tasks and talent programs. We should create a more enabling development environment for female scientific and technological talents. Zhang Biyong, Member of the Party Group of the Ministry of Science and Technology of the People's Republic of China and President of Science and Technology Daily, pointed out that we should continue to improve the institutional arrangements that can energize the creativity of women scientists; and that we should effectively reduce the burden on women scientists and engineers. Liu Dongmei proposed that we should appreciate the important role of women in international scientific and technological cooperation, so that more women can participate in global scientific research and innovation undertakings, and make positive contributions to enhancing global scientific research and innovation capabilities.

III. Industry interlinking: Upgrade industries through technological innovation

The first is to leverage incubation services, develop in-depth linking with cutting-edge innovation sources, and promote technological innovation. Zhang Yulei, Member of the CPC Group and Deputy Director of the Beijing Municipal Science & Technology Commission and the Administrative Commission of Zhongguancun Science Park, pointed out that the development of incubators in Beijing has realized a "co-frequency resonance" with the successive waves of entrepreneurship in Zhongguancun, promoting each other, and making important contributions to cutting-edge technological innovation, the cultivation of high-end, precision and sophisticated industries, and the construction and development of the Zhongguancun Demonstration Zone. In the future, we should build a professional technical service platform, focus on meeting industrial requirements, and deeply integrate and provide high-quality industrial chain and supply chain services.

The second is to upgrade products through technological innovation, and to refashion industrial chains through product innovation. China's innovative pharmaceutical industry has progressed from following others to keeping pace in international competition. In the future, innovative pharmaceutical companies should actively explore various new targets, new mechanisms, and new technologies, while making in-depth layout in key areas. Zhao Chunling, Executive Deputy Chief Designer of Long-range Wide-body Aircrafts of

ZHAO Chunling
Executive Deputy Chief Designer of Long-range Wide-body Aircrafts, and Deputy Head of Systems Engineering and Projects, Commercial Aircraft Corporation of China Ltd.

WANG Hongyang
Academician of Chinese Academy of Engineering, President of Chinese Women Scientist Association

HUANG Wei
YiCai

Launch Ceremony: Report of Female Scientific & Technological Talents in Shanghai

Linking Ceremony

the Commercial Aircraft Corporation of China Ltd., pointed out that the development of large aircraft is a reflection of comprehensive national strength, as well as an expression of overall high-end manufacturing capabilities. The development of large aircraft projects will also further accelerate and drive the development of related industries, and further play an important role in driving and enhancing China's core scientific and technological innovation capabilities, comprehensive high-end manufacturing capabilities, and overall national strength.

The third is to cultivate more women entrepreneurs. With their traits of perseverance, rigor, and refinement, women scientists and engineers have made outstanding contributions in various fields such as basic theory, applied technology, and engineering practice. We should improve services for women innovators and entrepreneurs. Zhang Yulei pointed out that at present, there are more and more women entrepreneurs in cutting-edge fields such as artificial intelligence, quantum information, and biomedicine. For this reason, incubators should also attach great importance to serving women entrepreneurs.

The “Belt and Road” Seminar

Creating an Open Innovation Ecosystem, and Embarking on a New Journey to Build the Belt and Road into a Road of Innovation

Editor’s note: *The “Belt and Road” Seminar of the Pujiang Innovation Forum 2023, with the theme of "Create an Open Innovation Ecosystem, and Embark on a New Journey to Build the Belt and Road into a Road of Innovation", the guests from China, Brazil, South Africa and other countries and the Organization for Economic Co-operation and Development conducted discussions on building the Belt and Road into a road of innovation by centering on sharing the development opportunities brought about by the new round of scientific and technological revolution and industrial transformation. This bulletin summarizes views of guests at the “Belt and Road” Seminar for your reference.*

This year marks the 10th anniversary of the joint pursuit of the Belt and Road Initiative. Over the past ten years, the joint pursuit of the Belt and Road Initiative has been transformed from the aspiration for cooperation into the reality of development and has become a popular international public good. By strengthening scientific and technological innovation cooperation, countries can share the outcomes brought about by the Belt and Road innovation road in science and technology people-to-people exchange, technology transfer, joint laboratory, and science park cooperation. The guests attending the Seminar agreed that over the past ten years, the Belt and Road scientific and technological innovation has been fruitful. Facing new opportunities and challenges, the Belt and Road scientific and technological innovation cooperation mechanism should be further improved, and a higher level of scientific and technological innovation cooperation should be carried out with firmer convictions, more effective efforts, greater patience and investment, and form an open innovation ecosystem with global competitiveness.

I. Seize new opportunities brought about by the Belt and Road to scientific and technological innovation

First, the foundation for scientific and technological innovation cooperation is becoming increasingly solid, bringing new opportunities to developing countries. Under the joint efforts of all parties concerned, positive progress has been made in scientific and technological cooperation among the Belt and Road countries. Dai Gang, Director General of the International Cooperation Department of the Ministry of Science and Technology of the People's Republic of China, said that China has made significant progress in the implementation of the Belt and Road Science, Technology and Innovation Cooperation Action Plan, supported more than 5,000 young scientists from other Belt and Road participating countries to carry out scientific research work in China, and trained more than 15,000 scientific and technological personnel from other Belt and Road participating countries; and that China has built nearly 10 multinational technology transfer platforms with ASEAN, South Asia, the Arab countries, Africa, Latin America and other regions; built 53 Belt and Road joint laboratories with 40 countries in the fields of agriculture, health, and environment, etc., and cooperated with 9 countries on science parks. Adriano Proença, Senior Researcher at the Brazilian Center for International Relations, Professor of Universidade Federal do Rio de Janeiro, Brazil, said that the joint efforts to develop the Belt and Road have created new opportunities for developing countries; and that taking the development of the Digital Silk Road as an example, driven by infrastructure construction such as 5G, factories and agricultural production are more efficient, bringing opportunities to developing countries like Brazil to apply smart technologies and reduce development inequalities. Ana Celia Castro, Director of Institute for Advanced Studies, Federal University of Rio de Janeiro, Brazil, proposed that the Belt and Road Initiative aims to connect China with countries in Asia,

DAI Gang
Director of the International Cooperation Department of the Ministry of Science and Technology

Adriano Proença
Senior Researcher at the Brazilian Center for International Relations, Professor of Universidade Federal do Rio de Janeiro, Brazil

HU Zhijian
Level II Researcher and former President of the Chinese Academy of Science and Technology for Development

Mlungisi Cele
Acting Chief Executive Officer of National Innovation Advisory Council, South Africa

Hui Hwang Goh
Head and professor of the Department of Electrics, School of Electrical Engineering, Guangxi University

Ana Celia Castro
Director of Institute for Advanced Studies, Federal University of Rio de Janeiro, Brazil

ZHAO Yi
President of Qianxun SI

Mario Cervantes
Senior Economist of Science and Technology Policy Sector, Organization for Economic Co-operation and Development (OECD)

Europe, Africa, and the Middle East; Latin America or Brazil could be the next hub; and building an innovation ecosystem will help Brazil become the next Belt and Road innovation center.

Second, the content of scientific and technological innovation cooperation has been enriched, injecting new momentum into the Belt and Road participating countries. The Belt and Road scientific and technological cooperation in various fields has been further pushed forward and has become an important choice for the Belt and Road participating countries to seek economic growth and sustainable development. Hu Zhijian, Level II Researcher and former President of the Chinese Academy of Science and Technology for Development, said that currently, the world, especially developing countries, are facing increasing challenges such as economic recession, widening wealth inequality, climate change, energy shortages, and public health emergencies; the ethical and security challenges brought about by new technology development require global collaborative governance; and higher-level and higher-quality Belt and Road scientific and technological innovation cooperation provides a new solution for achieving high-quality global development and building a community with a shared future for mankind. Mlungisi Cele, Acting Chief Executive Officer of National Innovation Advisory Council, South Africa, proposed that scientific and technological innovation can help South Africa achieve sustainable development in a changing world; in order to better cope with major challenges such as climate change and sustainable development, adapting to future society, and developing future-oriented education and skills, South Africa will take action in health, energy and other fields, strengthen international scientific and technological cooperation, and build a local innovation system. He argued that China and South Africa can promote win-win cooperation between the two sides through various forms of cooperation such as technology transfer. Hui Hwang Goh, Head and Professor of the Department of Electrics, School of Electrical Engineering, Guangxi University, focusing on scale effects, resources optimization, overall methodology, adaptability and resilience, knowledge and technology transfer, introduced the role of innovation cooperation in solving global challenges, explained the open innovation ecosystem from multiple perspectives, and proposed that there is great potential for scientific and technological innovation cooperation in fields such as the Internet of Things, renewable energy, health care artificial intelligence, blockchain technology, remote learning, and telemedicine.

Third, there are more and more ways to cooperate in scientific and technological innovation, providing countries with new ideas. In order to achieve a higher level of innovation cooperation, the Belt and Road should meet the development needs of all participating countries, and moves towards an open innovation ecosystem. Hu Zhijian said that currently, major-country rivalry and competition in scientific and technological innovation is intensifying, geopolitical changes in the countries and regions along the Belt and Road are becoming increasingly complex. The overall level of science and technology and the activity of scientific and technological

cooperation in the Belt and Road participating countries are low, and the depth of cooperation is insufficient. The joint pursuit of the Belt and Road Initiative mainly focuses on government promotion, project cooperation, and bilateral cooperation. However, the market-oriented, rule-based and institutional construction is insufficient; multilateral cooperation mechanisms, policy systematization, interdepartmental coordination, and top-level design need to be further improved; and it is necessary to change the mindset and move from international scientific and technological cooperation to an open innovation ecosystem. Hui Hwang Goh pointed out that through innovative practices such as public-private partnerships, international cooperation and diplomacy, cultivating a culture of innovation, and building platforms for knowledge sharing and collaboration, ASEAN has successfully tried using open innovation methods to resolve issues such as the digital divide, which helps expand the channels for scientific and technological cooperation between China and other Belt and Road countries. Zhao Yang, Researcher and Managing Director of CICC Research Institute, pointed out that in the current situation where the blocked fields have lost their impetus for technological progress, international scientific and technological cooperation needs to change the innovation cooperation model, to cultivate internal driving force for innovation, and to move from the G-2 model (Sino-US cooperation model) to a market-driven G-N innovation cooperation model (cooperation model between China and multiple countries), for the purpose of providing support for technological progress of China and other Belt and Road countries.

II. Embark on a new journey of scientific and technological cooperation for building the Belt and Road into a road of innovation

The first is to strengthen consensus on the concept of open innovation, and expand international scientific and technological exchanges and cooperation. Dai Gang said that China will deepen and expand the Belt and Road scientific and technological cooperation, further implement the Belt and Road Science, Technology and Innovation Cooperation Action Plan, and comprehensively pursue four major initiatives, namely the Science and Technology People-to-People Exchange Initiative, the Joint Laboratory Initiative, the Science Park Cooperation Initiative, and the Technology Transfer Initiative; launch and implement four new special cooperation programs, including programs on sustainable development technologies, poverty reduction through science and technology, innovation and start-up, and spatial information science and technology, providing stronger scientific and technological impetus to jointly promote high-quality Belt and Road cooperation. Hu Zhijian said that we should strengthen the top-level design and overall coordination of the Belt and Road science and technology cooperation, fully consider the characteristics and interests of different countries, and take into account the science and technology development strategies of different countries. We should Jointly discuss and formulate innovation plans and standards, facilitate the cross-border flow of scientific and technological innovation factors, remove various

ZHAO Yang
Researcher and Managing Director of CICC Research Institute

LIU Dongmei
Secretary of the CPC Committee of the Chinese Academy of Science and Technology for Development

ZENG Fang
President of Shanghai Institute of Science & Technology Management

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barriers, and create an ecosystem for the flow of factors at low cost. We should uphold the concept of openness and cooperation, explore and expand areas of cooperation with common interests, and welcome other developed countries to join in scientific and technological cooperation and technology transfer with the Belt and Road participating countries.

The second is to deepen the mechanism of scientific and technological innovation cooperation and improve the system of scientific and technological innovation. Hu Zhijian proposed that we should further expand multilateral cooperation mechanisms on the basis of bilateral cooperation, and explore and expand areas of cooperation with common interests. On the basis of technology transfer cooperation, we should expand and enhance cooperation on national scientific research and cutting-edge technological capabilities of the Belt and Road participating countries; on the basis of the supply-side, we should increase policy supply to the supply-side, and giving full play to the roles of the market and the non-governmental organizations such as enterprises; and on the basis of project cooperation, we should expand cooperation in the development of rules, standards and institutions, and promote the construction of an open innovation ecosystem and the scientific and technological innovation governance cooperation. Zhao Yi, President of Qianxun SI, pointed out that China's Beidou satellite navigation system can make standard positioning, navigation and timing services available globally. Through cooperation with other Belt and Road participating countries, it provides services in satellite navigation, geographic information surveying and mapping applications in water conservancy, electricity, transportation, and agriculture, as well as smart cities and intelligent transportation. And through innovative infrastructure applications, it provides new ways of technological cooperation. Ana Celia Castro proposed that we should establish an open agricultural innovation ecosystem under the framework of the Belt and Road Initiative through measures such as cross-cultural cooperation, localization, capacity building and knowledge transfer, strengthening investment and financing, and giving better play to the role of country, for the purpose of providing new ideas for achieving efficient collaborative innovation in the agricultural sector.

The third is to improve the effectiveness of openness and cooperation in science and technology and create an open and globally-competitive innovation ecosystem. Mario Cervantes, Senior Economist of Science and Technology Policy Sector, Organization for Economic Co-operation and Development (OECD), described the OECD countries' attempt to achieve sustainable goals using the blended finance method that transcend traditional mechanisms, attract new partners to mobilize more resources, link financing to results, and redistribute risk. Blended finance can provide diversified financing for global public goods, and contribute new ideas to improving the efficiency of the Belt and Road science and technology innovation cooperation. Hu Zhijian proposed that we should coordinate the distribution of resources for Belt and Road scientific and technological innovation cooperation, develop the indicator system for monitoring the scientific and technological innovation cooperation and open innovation ecosystem of the Belt and Road participating countries, establish the think tank network of the Belt and Road participating countries, and negotiate the joint establishment of the Belt and Road scientific and technological innovation cooperation mechanism. Adriano Proença said that through the knowledge flow brought about by the Belt and Road scientific and technological cooperation and infrastructure construction, Brazil can learn from China's successful experience in building an open innovation ecosystem, enhance the competitiveness of local enterprises, and better support Brazil's participation in global competition. Zhao Yang said that in order to establish an international innovation ecosystem that matches the Belt and Road innovation cooperation model, it is necessary to strengthen global cooperation and regional cooperation. The path to creating an innovation ecosystem should follow the principles of easy at first but difficult later, that is, starting from regional cooperation that utilizes local resources and targets market segments, and then developing towards global cooperation that utilizes global resources and targets the mass market. In the process, the innovation ecosystem is gradually transformed from a low degree of coupling of "market demand - exchange and interaction - technical improvement" to an innovation ecosystem with a high degree of structural coupling of "knowledge dissemination - market integration - capital flow - standard unification".

Theme Forum

Innovation System and Technology Evaluation

Editor's note: *The Theme Forum: Innovation System and Technology Evaluation of the Pujiang Innovation Forum 2023 gives full play to the guiding role of scientific and technological evaluation, and invites experts from various fields at home and abroad to conduct in-depth discussions on the accurate evaluation of development effectiveness, the evaluation and prediction of frontier developments, and the motivation of scientific researchers. This bulletin summarizes views of guests at the theme forum "Innovation System and Technology Evaluation" for your reference.*

HE Defang
Deputy Secretary-General of the Ministry of Science and Technology

ZHANG Xu
President of Chinese Academy of Science and Technology for Development (CASTED)

FU Xiaolan
Fellow of the British Academy, Director of the Technology and Management Centre for Development (TMCD), University of Oxford

PAN Jiaofeng
President of the Institutes of Science and Development, Chinese Academy of Sciences, and Dean of the School of Public Policy and Management, University of Chinese Academy of Sciences

With the deepening of the new round of technological revolution and industry transformation, the importance of technological governance is increasingly highlighted. As an important technological governance tool for evaluating development effectiveness, supporting future decision-making, and guiding talent development, scientific and technological evaluation is drawing increasing attention from all parties. The guests present agreed that full play should be given to the guiding role of scientific and technological evaluation, and the accurate effectiveness judgment of current scientific and technological activities, the judgment of value decisions in cutting-edge technology fields, and the guidance of development directions for all kinds of innovation talents should be strengthened to enhance the overall effectiveness of the national innovation governance system.

I. Increasing importance of scientific and technological evaluation

First, countries generally attach great importance to the guiding role of scientific and technological evaluation in scientific research activities. He Defang, Deputy Secretary-General of the Ministry of Science and Technology, pointed out that countries around the world are increasingly emphasizing innovation-driven development, and scientific and technological evaluation is receiving special attention. The Chinese government has always regarded the reform of scientific and technological evaluation as an important part of the reform of the scientific and technological system to promote the high-quality development of the cause of science and technology. Nie Biao, Director of the National Center for Science and Scientific and Technological Evaluation, Ministry of Science and Technology, mentioned that scientific and technological evaluation is a policy tool highly valued by major innovation-oriented countries. At the beginning of this year, the U.S. Department of Energy evaluated Fermilab and proposed to replace the laboratory operation team based on the evaluation results.

Second, scientific and technological evaluation has become an important tool for predicting and evaluating cutting-edge technologies. Zhang Xu, President of Chinese Academy of Science and Technology for Development (CASTED), pointed out that the starting point of scientific and technological evaluation is to guide research institutions to serve the state's missions and strategies. Technology prediction and evaluation is another important direction of this guiding role, and the past technology prediction and evaluation activities have provided strong support for the formulation of China's scientific and technological development plans, and the identification of key technologies. Fu Xiaolan, Academician of the British Academy of Social Sciences, and Director of the Technology and Management Center for Development (TMCD), University of Oxford, said that recognizing the economic value of technology is crucial for high-quality development. Not only universities and startups need scientific and technological evaluation, but also investors need to evaluate technologies accurately.

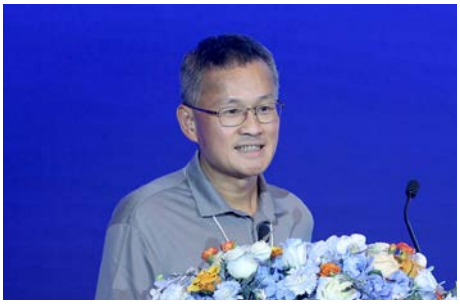
Third, scientific and technological evaluation provides accurate guidance for development directions of talents. Pan Jiaofeng, President of the Institutes of Science and Development, Chinese Academy of Sciences, suggested that scientific and technological evaluation will eventually act on people. How to evaluate research levels of scientific and technological talents, and their contributions to scientific and technological progress not only concerns the rational allocation of limited scientific and technological resources, but also has an important impact on the education, training and career development of scientific and technological talents. Pei Duanqing, Chair Professor and Assistant to the President of Westlake University, introduced that Westlake University is exploring the formulation of a standard for innovation-oriented scientific and technological evaluation to guide talents to further value the indispensability of their outcomes.

II. Problems and challenges in current scientific and technological evaluation

First, evaluation should be more systematic. He Defang said that scientific and technological evaluation should be strengthened in the following areas: (1) Insufficient coordination and synergies: Scientific and technological evaluation in various sectors is inaccurately positioned and not complementary enough, integration and coordination with funding, personnel, remuneration, etc. should be further strengthened, and connection with the application of evaluation results is not smooth enough; (2) The task of eliminating the old and bringing in the new has not been fully implemented, and scientific and technological evaluation is in a transitional stage of "breaking old standards and formulating new ones", and is affected by conventional thinking and social rankings; (3) The evaluation result transmission mechanism of "evaluation of organizations by the government and talents by organizations" is not sound enough, and the evaluation system for research institutions oriented to mission performance, and that for scientific research talents oriented to competence and contribution have not been fully established.

Second, higher requirements are imposed on evaluation capacity. Zhang Xu pointed out: (1) The task of exploring maiden fields is increasingly severe. With the rapid change of technologies and industries, we should aim at trends of global technological change, judge trends properly, and make iteration and adjustment timely. (2) The complicated international competition landscape aggravates uncertainties. We should judge the technological competitiveness and strength of all fields accurately and objectively, conduct a thorough evaluation, and identify weaknesses and breakthrough points accurately. (3) Changes in actual social demand bring more challenges, and all aspects should be better coordinated to find out future needs of economic and social development, and identify common key technologies.

Third, basic evaluation systems should be improved. Pan Jiaofeng pointed out that on the one hand, the orientation of quantitative evaluation is deviating from the essence of scientific value. The quantitative evaluation system tends



PEI Duanqing
Chair Professor of Westlake University and Assistant to the President

NIE Biao
Director of the National Center for Science and Technology Evaluation

JIANG Ge
Deputy Secretary of the CPC Committee and Vice President of ShanghaiTech University

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First-Secretary, Deputy HeadScience, Technology and Innovation DivisionMinistry of Foreign Affairs of Brazil

XIE Min
Director General of Department of Policies, Regulations and Innovation System Construction, MOST

WANG Yuan
Former Executive Vice President of Chinese Academy of Science and Technology for Development (CASTED)

to be limited to indicator calculation, and under the orientation of quantitative evaluation, a large number of papers are just a supplement to the existing knowledge system, and there is a lack of truly pioneering and original achievements. On the other hand, the classified and graded evaluation system for scientific and technological talents has not been established yet. The evaluation of technological talents emphasizes the universality of standards, while lacks the precise classification of different types of technological talents, a talent identification system based on their growth pattern and individualized considerations. In addition, utilitarianism has eroded the scientist spirit. Expert evaluation and peer review are likely to give rise to issues such as "circle culture" and "mogul culture", while quantitative evaluation methodology is not scientific and diverse, so there are still practical difficulties in their integration.

III. All-round exploration of effective paths for improving scientific and technological evaluation

First, integrate scientific and technological evaluation with scientific and technological activities closely. He Defang proposed to embed scientific and technological evaluation into the entire chain of scientific and technological activities and management, highlight the full process evaluation of scientific research activities, and develop more scientific evaluation tools; define key directions of evaluation reform, promote the direct linkup between national level evaluation, and the undertaking of major national scientific and technological tasks, establish an evaluation transmission chain of "evaluation

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of organizations by the government, teams by organizations and talents by teams", and adhere to the basic evaluation principles of "evaluation of whatever is positioned by the mission", "evaluation of talents by whoever using them" and "evaluation of whatever is agreed on"; accelerate the exploration and practice of "new standard formulation", standardize microscopic operations, develop scientific and technological evaluation tools around major strategic planning policies, and establish a negative list of scientific and technological evaluation.

Second, integrate technology prediction into scientific and technological evaluation to create a full closed loop. Zhang Xu proposed to always base planning on technology prediction and evaluation, and transform consensuses generated into planning tasks, and major scientific and technological projects; establish a stable and continuous technology prediction and evaluation mechanism, improve technological comparability on the timeline, and establish relevant standards and specifications; integrate technology prediction with evaluation deeply, realize the closed-loop management of prediction, planning, project implementation, budgeting, performance and evaluation, and strengthen the application of technology prediction and evaluation results to the performance evaluation of research institutions. Fu Xiaolan pointed out that AI can be used to explore solutions to bottleneck problems in technology valuation, establish a large specific database for each industry through the theory of technology value utility, and customize AI algorithms.

Third, establish a technology talent evaluation system that returns to the origin of scientific value. Pan Jiaofeng pointed out: (1) Establish a classified evaluation system. Conduct classified evaluation based on scientific, technological, economic, social and cultural values. (2) Improve refined evaluation indicators. Adhere to the practice and contribution orientation, and enhance the pertinence and accuracy of indicators by combining functions of different innovation entities to establish an objective and equitable system of classified talent evaluation standards. (3) Improve talent evaluation methods. Pay attention to the application of the latest achievements in the fields of sociology, psychology and management, and make comprehensive use of technical means such as scenario simulation and data mining. (4) Defining the division of labor between the government and market in evaluation. Promote the decentralization of talent evaluation autonomy reasonably based on value orientations of different types of technological talents.

Theme Forum: Regional Innovation and Development

New Areas, New Arenas, New Space

Editor's note: *The Theme Forum: Regional Innovation and Development" of the Pujiang Innovation Forum 2023, with the theme of "New Areas, New Arenas, New Space", explores how to promote regional scientific and technological innovation and transformation, and give further play to the important role of regional innovation in shaping new engines and new strengths in development by touching upon major regional development strategies such as the coordinated development in the Beijing-Tianjin-Hebei region, Yangtze River Economic Belt, Guangdong-Hong Kong-Macao Greater Bay Area and Yangtze River Delta, and ecological conservation and high-quality development in the Yellow River basin, etc. This bulletin summarizes views of guests at the theme forum "Regional Innovation and Development" for your reference.*

The regional innovation system is an integral part of the national innovation system. Since the 18th CPC National Congress, positive progress has been made in the building of China's regional innovation system, and its level of opening-up to and cooperation with the outside world has been increasing. The building of the Yangtze River Delta scientific and technological innovation community has become a hardcore impetus to integrated and high-quality development. The G60 Science and Innovation Corridor has promoted the cross-regional collaborative development of industry chains, the technological innovation capacity of the Yangtze River Economic Belt and the Yellow River Basin has been enhanced steadily, distinctive innovation and development paths have been explored, and regional innovation capacity and competitiveness have been improved in general. The guests present agreed that given the new situation and requirements, we should gain new development drivers and advantages in reliance on scientific and technological innovation, create more development opportunities through high-level opening-up, explore a new pattern of coordinated regional development, further strengthen international opening-up and cooperation, and make new contributions to the building of a community with a shared future for mankind.

I. Grasp new trends, and establish new theories of regional innovation and development.

First, scientific and technological innovation has become an important impetus to high-quality regional development. Sun Dong, Academician of the Canadian Academy of Engineering and Secretary for Innovation, Technology and Industry, Hong Kong Special Administrative Region Government, thought that scientific and technological innovation has become a key element in reshaping the world's political and economic landscape, and a main battlefield of international strategic gaming. Countries around the world are actively promoting scientific and technological innovation with focus on key regions to get the upper hand in new arenas. Wang Jixiang, Director of the Jingjinji National Center of Technology Innovation, thought that collaborative innovation is an important form of high-quality regional development and that an innovation system must be built persistently by integrating the best entities, factors and resources through cross-regional collaboration. He pointed out that we should further leverage advantages of multiple entities in different regions within the system, gain access to more high-end innovation resources around the world, and establish a regional innovation system with a core but no edge.

Second, regional innovation has become a common issue faced by all members of city clusters. Wu Zhiqiang, Academician of the Chinese Academy of Engineering, Chief Scientist of the CIUC (China Intelligent Urbanization Co-creation Center for High Density Region), and Former Vice President of Tongji University, thought that global competition has changed from the competition among representative cities to the competition among city clusters. The current

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WU Zhiqiang

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Erik Solheim

Former Executive Director of the UN Environment Programme, Vice President of the Belt and Road Green Development Coalition

WU Jun

Vice Director of Department of Science and Technology of Hubei Province

Paulo Wanderson Moreira Martins
Auditor at Federal Court of Accounts, Executive Director of Business, Science and Technology and Innovation at the Brasília Technological Park (BioTIC), Brazil

WANG Duoxiang
Director of Jinjingji National Center of Technology Innovation

SUN Dong
Secretary for Innovation, Technology and Industry Government of the Hong Kong Special Administrative Region

GU Xianglin
Vice President of Tongji University

global competition among innovation-oriented city clusters is increasingly fierce. For the Yangtze River Delta, a city cluster with great potential, all members must jointly face and explore tasks of collaborative innovation among cities. Wu Jun, member of the CPC Group and Deputy Director of the Department of Science and Technology of Hubei Province, pointed out that global regional scientific and technological innovation is taking on a trend of division of labor and collaboration, and city clusters have become clusters of global scientific and technological innovation factors, and main carriers of regional collaborative innovation and development. Global central cities of scientific and technological innovation have become the core force driving the integrated development of regional innovation through the siphon, radiation and backwash effects, and thus become the main force for countries to gain the upper hand in global economic development and be dominant in competition.

Third, the competition in innovation system is the core of the competition among city clusters. Wang Jixiang thought that innovation activities keep pushing the boundaries of disciplines, technologies and industries, and innovation competition is no longer the competition among individual entities, organizations, regions or even countries, but has essentially evolved into the competition in innovation system. Any organization, region or country must regard the establishment of an innovation system as a fundamental task in scientific and technological innovation.

II. Exploring new models and sharing new experience in regional innovation and development

First, the effective allocation of innovation resources is the key to regional innovation and development. Wu Zhiqiang thought that the combination of strengths and weaknesses of the cities within a city cluster helps to create a strong overall advantage for regional development. He also introduced the intelligent allocation system for the innovation city cluster of the Yangtze River Delta, and used Jinhua City, and the G60 Science and Innovation Corridor as examples to introduce the application of optimal allocation of regional innovation resources. According to Wu Jun, the development of the city cluster of the middle Yangtze River region also adheres to the concept of sharing of scientific and technological resources. Hubei Province has signed the Framework Agreement for Cooperation in Regional Collaborative Innovation among Hubei, Hunan and Jiangxi Provinces in the Middle Yangtze River Region with Hunan and Jiangxi Provinces, established the Scientific and Technological Service Alliance of the Middle Yangtze River City Cluster, and relied on the Hubei Technology Exchange to coordinate innovation resources of the three provinces. Keep exploring cross-regional collaborative innovation models among city clusters, build up examples of cooperation in regional collaborative innovation, leverage industry innovation advantages, create regional industry cooperation clusters, and explore cooperation in technology finance with the Yangtze River Delta and the Greater Bay Area to access

HUO Jiazhe
Executive Vice Dean and Professor of Chinese Academy of Science & Technology Management, Tongji University

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technological and financial resources.

Second, the coupling between innovation and industry chains should be deepened in regional collaborative innovation. Wang Jixiang introduced that during the building of the Jingjinji National Center of Technology Innovation, building a Beijing-Tianjin-Hebei collaborative innovation community with innovation and industry chains coupled, and a global collaborative innovation system was explored. Build technology platforms in clustering areas of high-level universities, cooperate with top universities at home and abroad, accelerate the industrialization of major basic research achievements, and organize national innovation highlands to carry out disruptive technological innovation. Deploy scientific and technological achievement transformation bases in important nodal cities in the three locations1, establish industry technology innovation centers in key industry clusters and at leading enterprises in the three locations, develop high-level, precision and advanced industries and new business formats, and promote industry upgrading.

Third, multiple parties collaborate to seize new arenas of green transformation. Erik Solheim, former Executive Director of the UN Environment Programme, and Vice President of the Belt and Road Green Development Coalition, thought that China has shifted from high-speed development to high-quality development in the past two decades, led green transformation, seized new arenas in the fields of green energy and new energy vehicles, and kept promulgating industry policies in the field of new energy. As a result, vigorous enterprise technology innovation and application practices have kept emerging. China's "Wise Mind (Green Transformation Plan)" can provide a reference for promoting green transformation in other parts of the world.

III. Seizing new opportunities and drawing a new blueprint for regional innovation and development

First, the Yangtze River Delta should focus on improving its innovation level. Wu Zhiqiang thought that the innovation and development of the Yangtze River Delta will attract more partner institutions, experimental platforms and investors, provide more resources and support for innovation, and improve the innovation level of the Yangtze River Delta, thereby promoting the building of a globally influential scientific and technological innovation center in Shanghai. Wang Jixiang thought that the Yangtze River Delta should accelerate the building of a regional innovation system with a more reasonable "functional-spatial" layout, support the building of some world-class mainstream and emerging disciplines by first-class universities in the region, and leverage the cluster advantages of national laboratories and technological innovation centers to accelerate collaborative innovation in strategic fields and create an innovation highland.

Second, the city cluster of the middle Yangtze River should actively explore regional opening-up and innovation. Wu Jun stated that Hubei will accelerate the construction of the middle Yangtze River scientific and technological innovation community by building the National Technological Innovation Center of the Middle Yangtze River, jointly developing some new R&D institutions named after the middle Yangtze River in Hunan, Hubei and Jiangxi Provinces, and jointly developing an innovation program for the middle Yangtze River city cluster; promote the high-quality development of the Yangtze River Economic Belt jointly by accelerating synergies among nodal cities in the Yangtze River Economic Belt, and establishing a consultation and cooperation mechanism for

the joint ecological protection and governance of the Yangtze River; deepen exchanges and cooperation among scientific and technological innovation centers, and organize activities such as the Pujiang Innovation Forum, China International Import Expo, East Lake Forum, and China-Africa Innovation Cooperation and Development Forum together with open cities like Shanghai and Shenzhen to jointly create an international highland for scientific and technological opening-up and innovation.

Third, the Greater Bay Area should seize the opportunity of deeply aligning with our country's new fields. Sun Dong thought that with the support of our country's forward-looking strategies and policies, the Greater Bay Area is faced with new opportunities in technological innovation and development. Hong Kong should fully leverage its advantages in basic research, integrate the advantages of Hong Kong and Shenzhen, and make good use of the government policy support in the Lok Ma Chau Loop to create an international industry-university-research platform. Build an important base for the global layout of advanced industries, and turn Loop Cooperation Zone into an important pole of the International Scientific and Technological Innovation Center of the Greater Bay Area and an important engine for high-quality development. Develop a digital economy and an international data port by taking advantage of Hong Kong's status of being part of the Chinese mainland yet overseas, and its advantage of pooling domestic and overseas data resources. Build an international innovation and talent exchange platform, and expand international scientific and technological exchanges and cooperation.

Young Elite Scientist Summit

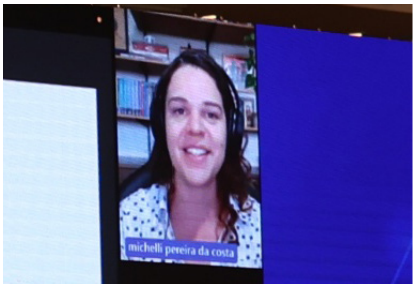
Open science: Embrace the Future of Knowledge Sharing and Scientific Cooperation

Editor's note: *The Young Elite Scientist Summit of the Pujiang Innovation Forum 2023, with the theme of " Open science: Embrace the Future of Knowledge Sharing and Scientific Cooperation ", invited young technological talents both at home and abroad to explore the value and practice of open science in depth. This bulletin summarizes views of guests at the Young Elite Scientist Summit for your reference.*

LI Xin
Deputy Director General, Ministry of Science and Technology

Pier-Luc Tremblay
Professor of School of Chemistry ,Chemical Engineering and Life Sciences of Wuhan University of Technology

ZHANG Xiao
Head of Tencent SSV Data Center, Deputy General Manager of Technology Department



Michelli Pereira da Costa
Professor of the Faculty of Information Science of University of Brasília

JIN Jiangang
Professor in the School of Naval Architecture, Ocean & Civil Engineering, Shanghai Jiao Tong University

SUN Bowen
Director of AI Engineering Infrastructure of ANT GROUP

General Secretary Xi Jinping pointed out that young talents are the active source of national strategic talents, and more trust, and better assistance and support should be given to young people. Currently, the open science initiative that shoulders the mission of the times is becoming a global consensus, and young scientists also shoulder the important mission of turning the initiative into reality. The guests present agreed that breaking disciplinary boundaries and realizing data openness is the only way to realize open science, but there are still some challenges in knowledge and data sharing. We should seize development opportunities of open science, and guide young talents to participate actively in and practice the new paradigm of open science by creating an open and inclusive international technological innovation environment and building a platform for young international talents.

I. Crossover and integration is the only approach to open science.

First, the opening and fusion of disciplinary boundaries will significantly improve innovation efficiency. Liu Ying, Professor and Associate Dean of the College of Future Technology and Vice President of the Institute of Molecular Medicine, Peking University, said that aging in biology is a very complex process that is not caused by any single factor. Currently, there is no consensus on mechanisms and causes of aging, and solutions thereto in the academic community, and scientists' understanding of this problem is far from enough. Therefore, more people in different research directions are urgently needed to participate in research in this field. Lu Boxun, Professor at the School of Life Sciences, Fudan University, pointed out that with the assistance of AI technology, the efficiency of drug R&D will be greatly improved. For example, a biopharmaceutical enterprise's database has over 3 million data entries on compounds. If these compounds are screened for binding to specific proteins for a specific target, a tremendous time and high costs will be consumed, while introducing an AI big model for virtual screening will shorten drug development lead times and improve R&D efficiency significantly.

Second, interdisciplinary crossover will drive the development of more frontier fields. Pier-Luc Tremblay, Professor at the School of Chemistry, Chemical Engineering and Life Sciences, Wuhan University of Technology, proposed to integrate

LU Boxun
Professor in the School of Life Sciences, Fudan University

LIU Ying
Professor and Associate Dean of College of Future Technology, Peking University

LI Xuecao
Professor of College of Land Science and Technology of China Agricultural University

Mariana Lyra Silveira
Ph.D. in Electrical Engineering of the Federal University of Espírito Santo (UFES)

YU Kequan
Professor of College of Civil Engineering of Tongji University

Anna Kostianko
Distinguished Professor of Zhejiang Normal University

chemistry and biology to carry out research on biological corrosion, providing a new technical tool to address this phenomenon that causes losses of $2.7 trillion annually. Lu Boxun mentioned that the fusion of AI and gene technologies has given rise to many frontier research fields. For example, by using machine learning to analyze and predict RNA structures, scientists have been able to design corresponding RNA vaccines for viral sequences. Clinical trials have proven preliminarily that RNA vaccines produced using this method are much better than conventional methods in therapeutic effect and efficiency.

Third, the opening of scientific data is conducive to the development of new application scenarios. Li Xuecao, Professor at the College of Land Science and Technology, China Agricultural University, pointed out that since one decade ago, more and more open data on remote sensing at home and abroad have been available to scientists, leading to explosive growth in the application of remote sensing technology. In 2022, remote sensing science and technology was elevated to a first-level discipline. It has expanded gradually from a niche technology to a larger scale, and become a technology closely related to daily life. Now, from drone aerial photography to satellite-scale observation, scientists can integrate data of different scales on Earth and develop more application scenarios. Zhang Xiao, Head of the SSV Data Center and Deputy General Manager of the Technology Department of Tencent, thought that the sharing of core scientific research knowledge and data is the cornerstone of technological development of mankind and also the foundation of open science. Generative AI can utilize the efficient summarization, generalization and understanding capabilities of large language models based on massive scientific research sub-vertical data to help researchers find truly relevant parts in massive data. In addition, with the help of generative AI, we can develop corresponding technologies and products in scenarios such as agriculture, education and emergency training.

II. Knowledge sharing and data openness still face severe challenges.

First, it is difficult to establish a mutually beneficial and win-win mechanism for knowledge sharing. Li Xuecao pointed out that although data sharing may seem simple, it is actually a relatively difficult task that requires sound systems of patent

MA Junheng
New Cornerstone Science Foundation Director

WEN Yan
Host of YICAI

protection, data intellectual property protection, etc. to protect the interests of all data owners. Mariana Lyra Silveira, Ph.D. in Electrical Engineering, Federal University of Espírito Santo (UFES), proposed that the biggest challenge to knowledge sharing lies in the free access to internet academic resources, such as digital libraries. Currently, most repositories of academic journals are paid, which restricts the sharing of academic knowledge. u Kequan, Research Fellow at the College of Civil Engineering, Tongji University, thought that the current anti-globalization trend hinders exchanges among international researchers and lowers the efficiency of open science.

Second, the problem of technical support for data sharing has not been solved. Li Xin, Deputy Director-General of the Department of Foreign Expert Services, Ministry of Science and Technology, stated that our country has released many policy documents on scientific research data sharing and established the National Data Bureau, but still faces many policy and data challenges. Sun Bowen, Technical Director of Reliable AI "Ant Authentication" and Director of AI Engineering Infrastructure of Ant Group, said that generative AI is exposed to many technical security risks, such as audio, video and image falsification, contamination of low-quality generative AI content, and infringement of AI generated content. Li Xuecao thought that data management and storage models should be further optimized to minimize repetitive data collection, and better coordinate and efficiently utilize nationwide scientific and technological innovation resources. Anna Kostianko, Distinguished Professor of Zhejiang Normal University, pointed out that the biggest challenge to open

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science lies in the difficulty of realizing complete and equal openness, and researchers face many difficulties in accessing journal resources across disciplines, different fields and different periods.

III. Guide young scientists to actively practice open science.

On the one hand, we should create an open and inclusive growth environment for young talents. Li Xin pointed out that China has issued a series of policies, including Several Measures to Further Strengthen the Training and Use of Young Technological Talents, the Joint Action Initiative on Supporting the Comprehensive Development of Young Technological Talents, and the Notice on Carrying out the Special Campaign to Reduce Burdens of Young Researchers, in order to steadily increase the scale of funding from the National Natural Science Foundation for young technological talents, encourage national scientific and technological innovation bases to initiate research projects for them independently, reduce their burdens, and create an open and inclusive growth environment for them.

On the other hand, international exchanges and cooperation among young talents should be strengthened. Li Xin mentioned that a number of world-class or even globally unique big science programs and projects established in China have attracted scientists from all countries, including young scientists, to China for innovation and entrepreneurship, and a high-level international talent research platform has been established. For example, Experimental Advanced Superconductive Tokamak (EAST) in Hefei has attracted many young scientists, including foreign ones, to work in China. The Five-hundred-meter Aperture Spherical radio Telescope (FAST) in Guizhou has attracted a large number of young foreign scientists to participate in global observation programs. Michelli Pereira da Costa, Professor of the Faculty of Information Science, University of Brasília, thought that open international exchanges and cooperation help elevate the common international scientific research status of both parties. By working together with public universities and research institutions to create an open science platform, young Brazilian researchers have improved their academic exchange efficiency, and benefited from more transparent academic knowledge sharing.

Symposium for Young Scientists

Editor's note: *At the Symposium for Young Scientists of the Pujiang Innovation Forum 2023, 12 young scientists from different fields conducted in-depth discussions on how young talents should play a more important role in high-level sci-tech self-reliance and self-strengthening, and building China's strength in science and technology responsibly and boldly. This bulletin summarizes views of guests at the Symposium for Young Scientists for your reference.*

The report of the 20th CPC National Congress emphasizes that the strength of a country relies on its youth, and work related to youth should be taken as a strategic priority. Contemporary Chinese young people live in a golden age, and have a vast stage to showcase their competencies and an extremely bright prospect to realize their dreams. Young scientists should forge ahead, and be proactive and leading in building China's strength in science and technology. The young scientists present unanimously proposed that to realize high-level sci-tech self-reliance and self-strengthening, collaborative efforts are urgently needed in improving the level of scientific and technological innovation talent teams, deepening the reform of scientific and technological systems and mechanisms, and creating a first-class innovation environment.

I. Enhancing motivation and strengthening the training of young scientific and technological talents

First, promote the growth of young scientific and technological talents. Gao Yawei, Professor at the School of Life Sciences and Technology, Tongji University, said that research projects and talent programs have strict age restrictions, and that if young talents cannot control paces well, they may be unable to obtain sufficient financial support. A more inclusive supporting mechanism for young talents should be established to better assist young talents in the early stage of scientific research and the exploration bottleneck stage in getting through critical periods. Lu Chaochao, young scientist at the Pujiang National Laboratory, said that providing locally trained young talents with the same opportunities and treatment as those for overseas talents is conducive to further retaining top-level local talents.

The second is the supporting mechanism for training basic research talents continually. Shao Yangyang, Research Fellow at the Life Sciences Institute, Zhejiang University, proposed that the key to realizing high-level sci-tech self-reliance and self-strengthening is to create high-level original innovation outcomes. We should focus more on key areas and offer greater support to gather a number of experts and scholars to carry out basic research jointly. Liu Ying, Associate Dean of the College of Future Technology, Peking University, proposed that inspirations in basic research are random and need to be verified with corresponding instruments and equipment. However, a certain period is required to apply for the purchase of research instruments, and application approval and fund use management processes suited to basic research requirements should be further established. Zhu Qigao, Deputy Director of the Science and Technology Commission of Shanghai Municipality, stated that Shanghai will offer classified support to basic research talents, and for strategically oriented basic research, provide proper support in coordination with the central government; for basic research of free exploration, provide long-term stable support following the scientific and talent growth patterns; and for market-oriented basic research, improve institutional arrangements such as exploration and leadership programs.

Third, keep expanding talent teams for interdisciplinary and integrated innovation. Fei Peng, Vice Dean of the School of Optical and Electronic Information at Huazhong University of Science and Technology, proposed to pay equal attention to the training of engineering and academic talents, introduce differentiated training options in graduate schooling program and curriculum, and establish different curriculum systems around key research directions to train interdisciplinary and integrated innovation talents more effectively. Fu Haohuan, Tenured Professor at the Department of Earth System Science, Tsinghua University, said that focusing on building a national supercomputing application software R&D base and a talent training base with crossover R&D capabilities is the key to sustainable development in the software field.

II. Strengthening driving forces, and deepening the reform of talent systems and mechanisms for scientific and technological innovation

First, explore new organizational models for scientific and technological innovation. Qian Xiaoshi, Professor at the State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, stated that currently, technological breakthroughs require a stronger research organization model, where a centralized mechanism for scientists linked up by major infrastructure may be explored to realize breakthroughs in core technologies through closer collaboration and normalized exchanges. Feng Han, Senior Engineer at the Central Iron & Steel Research Institute, said that for "strangleholds" with clear requirements, we should apply an enterprise-centric approach, and guide stakeholders in the entire chain to establish coalitions for collaborative innovation. For research in maiden fields, we can draw on the DARPA model in the U.S., and stick to the strategic layout of

developing one generation and reserving the next generation. Xu Shu, Director of the Advanced Algorithm Laboratory, Hikvision Research Institute, stated that young talents should be trusted with more significant tasks practically, because they are good at breaking away from conventions, and adapting to changes in research methods and innovation paradigms.

Second, deepen the reform of scientific research management systems. Jia Sisi, Research Fellow at the Zhangjiang National Laboratory, said that for purposes of the laboratory's confidentiality management, researchers are not well aware of the organization's development goals, and there is limited collaboration among teams, so a two-way interaction mechanism between talents and the platform should be established as soon as possible. Shen Feixiang, Research Fellow at Shanghai Marine Diesel Engine Research Institute, proposed that for major scientific research projects and technological achievements independently carried out by enterprises, a channel for ascending to state-level scientific research projects should be available when certain national strategic requirements are met. In terms of the incentive reform of state-owned enterprises, further break through payroll restrictions on them, and implement incentive and reward policies for technological innovation and achievement transformation effectively. Fei Peng proposed to break interdisciplinary barriers through reforms in the sorting of paper titles, ownership of achievements and university enrollment indicators.

Third, improve the classified evaluation mechanism for scientific and technological talents. Gao Yawei stated that contribution levels of scientific research achievements should not be based solely on author rankings; instead, classified talent evaluation should be further improved, and a more refined indicator system established to further suit different types of talents. Qian Xiaoshi proposed that for industrialization talents concerning basic research fields, their innovation abilities cannot be measured solely by papers, and more individualized evaluation criteria should be tailored. Fu Haohuan said that in addition to focusing on top-level talents, it is also necessary to strengthen the evaluation and motivation of core talents in order to retain all kinds of supportive talents more effectively.

Fourth, establish a two-way fast lane between R&D and industrialization. Xu Shu proposed that guided by national demand, enterprises should sum up industrial development requirements, and scientists and enterprise R&D personnel should participate together to further align technological innovation achievements with industries. Qian Xiaoshi said that basic issues should be summed up from engineering application scenarios to promote breakthroughs in basic research innovation in the reverse direction. Fei Peng stated that there are still many gaps in the ramp-up stage of small and pilot trials, and the further industrialization of early-stage R&D achievements can be supported by establishing university industrialization funds and professional market-oriented teams, and offering university-enterprise joint support. Wang Shiquan, Founder of Shanghai Flexiv Robotics Technology Co., Ltd., suggested that enterprise researchers should have more opportunities to pursue part-time doctoral studies, thereby involving enterprises in frontline scientific research.

III. Offering stable support, and optimizing the soft environment for the development of technological innovation talents

First, establish an information exchange resource matchmaking platform. Qian Xiaoshi said that establishing a normalized dialogue platform between researchers and government agencies is conducive to the timely communication between researchers and policymakers. Liu Ying stated that a data sharing center should be established at the national level to facilitate scientists' access to data resources and help them generate high-quality achievements. Wang Shiquan proposed that we can draw on the model of the Transformation Center at Stanford University to further help scientists extend innovation achievements and match industry applications through professional achievement transformation platforms and talent teams.

Second, improve the scientific literacy of young talents. Liu Ying pointed out that currently, college students generally lack the courage to challenge authority, and graduate students' interest in scientific research is weakening. We should pay more attention to the development of the spirit of science, innovation capacity and critical thinking, strengthen STEM education, and involve more scientists in science popularization at primary and secondary schools to motivate students to pursue scientific research. Gao Yawei proposed to increase opportunities of contact between researchers and students, arouse students' interest in technological innovation through interactions between teachers and

students, and disseminate scientific ideas more effectively. Lu Chaochao suggested that universities should establish rapid response mechanisms to suit the rapid iteration of scientific development, update the curriculum training system timely, and enhance students' professional competencies in frontier fields.

Third, optimize the sociocultural environment to make it open and inclusive. Gao Yawei stated that scientific research relies on a supportive environment, and to realize high-level sci-tech self-reliance and self-strengthening, and build a sound capability system, we should pay more attention to opening-up and cooperation, and master international frontier research developments timely. Feng Han suggested that it is crucial to create a research environment that fosters innovation and tolerates failures, encourage scientists to venture into maiden fields, and do well in the R&D and reservation of non-consensual projects.

2023 WeStart Global Entrepreneurial Investment Launch Ceremony and High-Quality Development of Incubators Forum

Conducting unbounded innovation and shaping the future through integration

Editor's note: *The 2023 WeStart Global Entrepreneurial Investment Launch Ceremony and High-Quality Development of Incubators Forum of the Pujiang Innovation Forum 2023, with the theme of "Conduct Unbounded Innovation, and Shape the Future through Integration ", gathered experts from various fields at home and abroad to discuss the high-quality development of incubators in depth. This bulletin summarizes views of guests at the WeStart Global Entrepreneurial Investment Conference for your reference.*

Currently, overall social investment in R&D has risen significantly, and a number of major original achievements have emerged successively. The endogenous power of high-quality development enabled by technology is growing. The change in incubation model is gradually shifting to Version 4.0, and incubators are actively seizing major opportunities such as technological innovation globalization for high-quality development. The experts present agreed that high-quality incubators are carriers for the in-depth integration of innovation, industry, capital and talent chains, and constructing high-quality incubators can accelerate the development of the entire technological innovation chain, and improve the quality and efficiency of technological entrepreneurship and incubation.

I. New innovation and development paradigm for high-quality incubators

First, incubators provide a network for resource integration. Xu Tian, Chair Professor in Genetics and Vice President of Westlake University, and Chairman of Fosun Lead, pointed out that hard and soft platforms provided by incubators include office spaces, mentor guidance, financial support, marketing, legal advice, etc. Such comprehensive support helps entrepreneurs overcome various challenges in the entrepreneurship stage and accelerate their growth.

Second, the aggregation effect of incubators accelerates the transformation of technological achievements. Incubators are typically located at centers of innovation ecosystems, such as technology parks or innovation zones, where a large number of technology companies, venture investors, universities and research institutions gather. A centralized environment is conducive to innovation communication and cooperation, and promotes crossover cooperation and knowledge sharing. Xu Tian pointed out that in the cycle of scientific research projects from the generation of research findings to transformation into products, original achievements in basic research are the origin, and the transformation role of incubators is a key step in promoting economic development through technological innovation.

Third, incubators provide a global perspective and help startups expand into the international market. Incubators can provide international market research, international partners and international business strategies. Xu Jieping, Executive Director and CEO of Plug and Play China, pointed out that high-quality open innovation incubators can create a highland for technological innovation in Shanghai in the future.

II. Industry upgrading enabled by the "investment + incubation" service system

First, the full chain financial service system drives the higher-quality development of industries. Shanghai has established a technology finance system based on technology credit, technology insurance, equity investment and a multi-level capital market with focus on supporting the development

HE Defang
Deputy Secretary-General of the Ministry of Science and Technology

LIU Duo
Vice Mayor of Shanghai Municipal People's Government

HOU Angui
Deputy General Manager and Executive Member of the CPC Committee of China Baowu Steel Group Co., Ltd.

WANG Shi
Founder and Honorary Chairman of Vanke Group, and Founder of Hiddengem Group

XU Tian
Chair Professor in Genetics and Vice President of Westlake University, and Chairman of Fosun Lead

XU Jieping
Executive Director and CEO of Plug and Play China

MI Lei
Founding Partner of CASSTAR

Todd Dollinger
Chairman and CEO of Trendlines group

of technology enterprises. It is an important guarantee for supporting higher-level innovation breakthroughs and driving the higher-quality development of industries. Mi Lei, Founding Partner of CASSTAR, pointed out that every financial revolution is accompanied by a technological revolution, and the financial system and venture capital must match technological revolutions. Xu Tian pointed out that U.S. high-tech companies have generated huge profits by combining technology with finance, and the Rothberg converter is a successful case.

Second, high-quality incubators can expand innovation and development paths for major enterprises. The incubator industry has driven a number of leading enterprises in the industry to build professional incubators around their own industry chains, kept giving birth to new products, industries, services and business formats, and become an important front for technological innovation and entrepreneurship. New technologies of incubated enterprises can meet the innovation demand of major enterprises, improve their innovation efficiency, promote the transformation and upgrading of conventional industries, back-feed major enterprises from innovation efforts of small and medium enterprises, promote the integration and development of enterprises of all sizes, accelerate the introduction of achievements, and provide preferential and convenient policies. Hou Angui, Deputy General Manager and Executive Member of the CPC Committee of China Baowu Steel Group Co., Ltd., pointed out that Baowu Group has created a good innovation and entrepreneurship environment, incubated and developed innovation startups, promoted the transformation of technological achievements, and connected all upstream and downstream breaking points in the industry chain.

Third, technology finance boosts hard technologies and incubates future new industry directions. Incubators help startups explore new fields, innovative technologies and new markets by providing resources, guidance, market insights and an innovation culture, thereby opening up new arenas ultimately. Mi Lei pointed out that hard technologies require long-term R&D investment and continual accumulation, and have extremely high technological barriers. Moreover, hard technologies are from innovation in the physical world other than the virtual world, innovation in technology other than model, and innovation in a real economy other than a virtual economy. Ren Jia, Chairman and General Manager of SIMIC Holdings Co., Ltd., pointed out that members of incubation teams should go to scientist teams, and both capital and people should be put into scientist projects together for co-creation with scientists. Capital should be an engine that truly empowers technology incubation. Zhou Yingying, Director of Research and Analytics, Elsevier Greater China, stated that data mining can help industrial investors find hot research directions and themes, and explore the latest frontier arenas from forefront research insights.

III. Actively building a high-quality incubation ecosphere

First, give active play to the leading role of policies. Promote financial

reform and financial product innovation, and provide full lifecycle financial services to technology enterprises. Deeply expand financial and tax policies, technological resources, capital markets, industry resources, etc. The government should implement targeted policies to accelerate the aggregation of incubated enterprises. In addition, improve the mechanism for selecting the superior and eliminating the inferior for maker spaces and incubators, and strengthen supervision, evaluation and regulation. The Implementation Plan for Developing High-quality Incubators in Shanghai (issued on July 21) states that it is planned to accelerate the development of a number of high-quality incubators with focused industries, prominent professional capabilities and obvious demonstration effects to drive the transformation of incubators from basic services to targeted services, from aggregating enterprises to creating new industries, and from incubation chains to consolidated ecology, thereby creating two or three technological innovation explosion points with an output value of around 100 billion yuan.

Second, establish a synergy mechanism for incubator innovation factors. A professional incubator brings resources such as technologies, talents and capital together to build a positive and stable operating model, which is crucial for bringing various factors into play in innovation. Xu Jieping said that an incubation ecosystem is a base of innovation ecology that combines research institutions, entrepreneurs, capital markets and urban resources. It is very important to combine virtual digital spaces with spatial carriers to provide a platform for close interactions with entrepreneurs and technology companies. Bases, technology incubation and acceleration, and investment should form an organic whole. Mi Lei stated that a research and achievement transformation model based on four parts and four integrations should be explored, in which the four parts are suitable leading talents, mature innovative technologies, patient early-stage capital, and professional scientific and technological innovation services, and the four integrations refer to the integration of technology and finance, technology and services, technology and markets, and research institutions and society.

Third, strive to improve the service level of incubators. High-quality incubators are high-level innovation and entrepreneurship service providers that focus on the origination of high-tech innovation, the transformation of disruptive technological achievements, the incubation of hard technology enterprises, and the integration of all-round resources, with first-class incubation talents being the core driving force. It is crucial to improve the service level and build incubation talent teams. Qu Yi, Founder and Chairman of Xinze Incubator, pointed out that we should focus on the technological transformation of high-level research institutions, and incubation should also be upgraded, from more extensive services to original and disruptive innovation serving scientists, and no longer limited to model and application innovation. During incubation, we will experience iteration and upgrading together with scientists in a spiral process, and should have patience and confidence in high-level projects.

ZHOU Junfu
Host of Shanghai Media Group

Launching Ceremony of Shanghai International Creators Competition 2023

Establishment of Advance Incubation Alliance and Release of Future Incubation Tracks

Penal Discussion

The 4th World Technology Transfer Managers Summit

Ecological Construction, Explore the Future of Innovation

Editor's note: *The 4th World Technology Transfer Managers Summit of the Pujiang Innovation Forum 2023, with the theme of "Ecological Construction, Explore the Future of Innovation", technology managers from worldwide technology transfer associations, universities, innovation incubation platforms, etc. conducted in-depth discussions, with focus on the co-building of innovation ecology, training of technology managers, innovation interconnection and development reshaping in the technology service industry, etc. This bulletin summarizes views of guests at the InnoMatch EXPO for your reference.*

Technology transfer and achievement transformation are an important tie connecting scientific research, technological innovation and industrialization, and also an important channel that promotes the cross-regional flow of innovative factors and the extensive sharing of innovation achievements. Currently, global technological opening-up and cooperation have brought new opportunities for the development of technology transfer, and governments, enterprises, universities and research institutions around the world are actively promoting technology transfer and achievement transformation. The guests present agreed that innovation demand, talent support and capital strength are the three core factors of technology transfer. In the future, we should improve the technology transfer ecosystem in three aspects – talent support, intellectual property protection and application, and financial instruments – to create a new pattern of technological opening-up and cooperation.

Osório Coelho Guimarães Neto
Deputy Secretary of Technological Development and Innovation of MCTI, Brazil

Gene Hartigan
Director and Chief Media Officer of Shanghai Zhangjiang Boston Enterprise Park

XI Lifeng
Member of the Standing Committee of the Party Committee and Vice President of Shanghai Jiao Tong University

Vukašin Grozdić
State Secretary (Deputy Minister) of the Ministry of Science, Technological Development and Innovation, Serbia

I. Global technology opening-up and cooperation brings new opportunities for technology transfer.

First, international exchanges and cooperation keep expanding the global technology transfer network. Zhang Yongmin, Academician of the French Academy of Pharmaceutical Sciences, and First-level Chief Research Fellow at the French National Center for Scientific Research (CNRS), pointed out that CNRS is the largest public research organization in Europe, and one of the first international organizations to sign bilateral cooperation agreements with Chinese research departments and institutions. Some top-tier research institutions and universities in China, such as the National Natural Science Foundation Committee, Peking University and Tsinghua University, have signed cooperation agreements with CNRS. Wong Lup Wai, CEO of IPI Singapore, pointed out that the Singaporean and Chinese governments are committed to creating a strategic unity in the technological cooperation environment, and both sides will share knowledge and information through sharing infrastructure and platforms to realize mutually beneficial and win-win cooperation.

Second, the transformation of technological innovation models accelerates the deep integration of innovation and industry chains. Chen Hanmei, Head of the Hubei Technology Exchange, pointed out that the deep integration of technological innovation, business models and financial capital has further accelerated significant breakthroughs and industrialized applications in the crossover and integration of cutting-edge technologies. New formats and models in technologies such as AI, big data and the Internet of Things are emerging faster, and the two-way circulation technological innovation model of "science-market-science" will be further deepened. The accelerated deep integration of innovation and industry chains expands channels for technology transfer.

II. Multiple parties make collaborative efforts to improve the global technology transfer ecosystem.

First, governments are actively providing policy and organizational support

ZHANG Yongmin
Academician of the French Academy of Pharmaceutical Sciences, First-level Chief Researcher at the French National Center for Scientific Research (CNRS), and Doctoral Supervisor at the French Sorbonne University (formerly Paris VI University)

Wong Lup Wai
CEO of IPI Singapore

CHEN Hanmei
Director of Hubei Technology Exchange

ZHANG Renhe
Academician of Chinese Academy of Sciences, Vice-president of Fudan University

for technology transfer. Osório Neto, Deputy Secretary of Technological Development and Innovation of MCTI, Brazil, pointed out that the Brazilian government is formulating a new round of scientific and technological innovation strategies to realize synergies across regions, and create a more equitable environment for innovation and technology transfer. Vukašin Grozdić, State Secretary (Deputy Minister) of the Ministry of Science, Technological Development and Innovation of Serbia, pointed out that in order to consolidate its position as a leading innovator in Southeast Europe, Serbia will continue to pursue broader measures, strengthen research and legal frameworks, and ensure smooth financing channels, so that sufficient funds are available to technological R&D companies and startups. In addition, it also provides tax incentives for startups and research activities, promotes technology transformation, and trains a number of highly skilled talents.

Second, enterprises from all countries look for cooperation opportunities actively and lead ecology construction for technology transfer. Gene Hartigan, Director and Chief Media Officer of Shanghai Zhangjiang Boston Enterprise Park, pointed out that as an important carrier of high-tech cooperation between China and the U.S., Boston Enterprise Park has been striving to promote cooperation among high-tech enterprises in both countries in such fields as clean energy, life sciences and information technology. Huang Liwei pointed out that IPI is committed to encouraging cross-border cooperation among enterprises through various international innovation cooperation projects, and providing platforms, channels and new markets for startups, and small and medium enterprises to accelerate industry innovation. Vukašin Grozdić pointed out that Serbia will continue to develop its own knowledge-based economy, create an ecosystem of startups, and increase research output. To this end, Serbia has been looking for interested international partners to help realize development goals of both sides.

Third, universities and research institutions promote the transfer and transformation of technological achievements through various channels. Zhang Renhe, Academician of the Chinese Academy of Sciences and Vice President of Fudan University, pointed out that the Department of Environmental Science and Engineering, Fudan University has made remarkable progress in teaching and research talent training, industry university research cooperation, etc., and developed comprehensively in all aspects. The Shanghai International Green and Low-carbon Concept Verification Center, jointly built under the strong partnership with National Eastern Tech-Transfer Center, is an important move taken by Fudan University for development in the field of low carbon and environmental protection. Xi Lifeng, Executive Member of the CPC Committee and Vice President of Shanghai Jiao Tong University, pointed out that Jiao Tong University promotes the transfer and transformation of achievements through reforms in the talent team, transformation mechanism, and scientific and technological innovation environment. The university has established a master training system in the discipline of technology transfer, and offers incentives to full-time talents and teachers engaged in transfer and

The Signing Ceremony between the SJTU-BOC Institute of Technology & Finance and the National Eastern Tech-Transfer Center

Strategic Partnership Agreement Signing Ceremony between InnoMatch (Shanghai) Technology Services Co., Ltd. and the Association of Chinese Scientists in France

The Unveiling Ceremony of Yangtze River Delta Technical Managers Joint Training Center

Release of the First Batch of Results of Shanghai International Green and Low Carbon Concept Verification Center

Penal Discussion

transformation at the university; compliance rectification is available in the transformation mechanism to help enterprises develop positively; the university can benchmark Stanford University's Silicon Valley model and create a full-round transformation ecosystem.

III. Relevant suggestions

First, accelerate the building of technology transfer talent teams. Chen Hanmei stated that the new trend of deep integration between technology and economy has put forward new requirements for technology brokers. In the new era, technology brokers are no longer just "middlemen" who remove information gaps or "matchmakers" of transactions, but have new competency requirements, roles and missions. To overcome obstacles and difficulties in the transformation of technological achievements, technology brokers should play at least five roles: translator, architect, enabler, crossover man and designer. Zhang Yongmin indicated that Zhejiang University conducts cooperative research with the Ecole normale supérieure to jointly train graduate students, and cooperate in research project application, scientific research and technology transfer.

Second, strengthen the protection and application of intellectual property rights. Martin Rune Hoxer, Innovation Consul of the Consulate General of Finland in Shanghai, pointed out that Denmark can draw on advanced experience of London in intellectual property protection to establish a sound ecosystem, and join forces with both Europe and China. Gene Hartigan stated that in terms of intellectual property protection, life science is an area where China and the U.S. have common interests, and both countries can expand their development spaces through cooperation to benefit mankind.

Third, empower technology transfer and transformation with financial instruments. Osório Neto said that tax benefits for companies should be increased to reduce their R&D costs, allowing them to realize a 20% or even 30% tax reduction. In this way, companies can reduce their tax burden. Vukašin Grozdić stated that Serbia has established science and innovation foundations in breakthrough research and application fields. The science foundation provides financial and other support to domestic researchers, including the Excellent Project Program for Young Talents, which provides support for early-career researchers in project implementation, strengthens their professional skills, and offers training in project management, so that they can better receive financial support both at home and globally in the future.

The 1st Brazil-China Nanotechnology Seminar

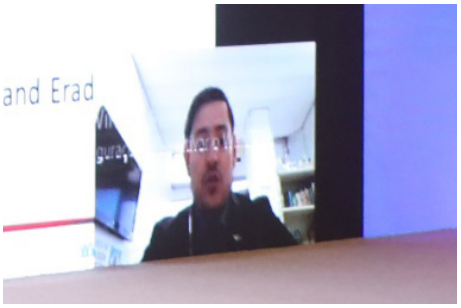
Editor's note: *At the 1st Brazil-China Nanotechnology Seminar of the Pujiang Innovation Forum 2023, experts and scholars from China and Brazil conducted in-depth discussions on nanotechnology innovation and industrial development, focusing on exchanges and cooperation in key areas. This bulletin summarizes views of guests at the 1st Brazil-China Nanotechnology Seminar for your reference.*

Over the past 50 years since the establishment of diplomatic ties between China and Brazil, they have forged strategic or comprehensive strategic partnerships, and their relations have maintained a momentum of steady progress. Since China and Brazil signed a science and technology cooperation agreement in 1982, they have achieved fruitful results. The two sides have carried out extensive and fruitful cooperation in platform construction, joint research, science and technology parks, and exchanges of scientific and technological personnel, etc. The field of nanotechnology is the core of scientific and technological cooperation between the two countries. The guests attending the Seminar agreed that China and Brazil have a solid foundation and broad prospects for nanotechnology innovation cooperation. Both countries attach great importance to nanotechnology and industrial development. They have achieved results in nanotechnology research and development and in the application of research results to production. In the future, they should continue to explore new directions and new paths for comprehensive cooperation between the two countries.

First, Brazil-China cooperation in nanotechnology innovation has a solid foundation and broad prospects. Xu Jie, Deputy Director General of the Department of International Cooperation of the Ministry of Science and Technology of the People's Republic of China, pointed out that under the framework of intergovernmental scientific and technological cooperation mechanisms such as the Scientific and Technological Innovation Sub-committee of the Sino-Brazilian High-level Coordination Commission and the China-Brazil High-level Dialogue on Science, Technology and Innovation, the two sides have carried out extensive and fruitful cooperation in the establishment of cooperation platforms, joint research, policy coordination in science and technology parks, and exchanges of scientific and technological personnel, etc. The methods and contents of scientific and technological cooperation between China and Brazil continue to expand, and new highlights of cooperation continue to emerge, delivered tangible benefits to the peoples of both sides and further strengthening confidence of China and Brazil to jointly meet common challenges. Nanotechnology is one of the key areas of scientific and technological cooperation between China and Brazil. The two sides have supported scientific research institutions and universities to establish joint laboratories in the field of nanotechnology, and they have carried out practical exchanges and cooperation. José Roberto de Andrade Filho, Deputy Consul General of the Consulate General of Brazil in Shanghai, pointed out that China and Brazil have a ten-year history of cooperation in the nano field and laboratories. Wang Jingfeng, National Engineering Research Center for Nanotechnology, pointed out that in 2011, China and Brazil established the China-Brazil Nanotechnology Joint Research Center to promote the application of nano achievements to production and build a bridge between industry and scientific research through cooperative absorption.

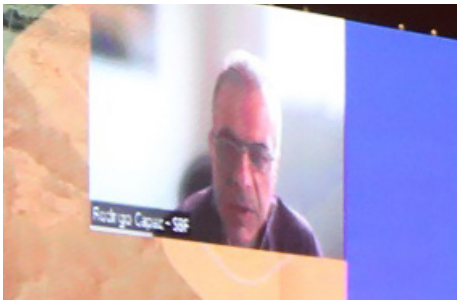
José Roberto de Andrade Filho
Deputy Consul General of the Consulate General of Brazil in Shanghai, China Brazil Innovation Week (CBIN)

Osório Coelho Guimarães Neto
Deputy Secretary of Technological Development and Innovation of MCTI, Brazil



Felipe Bellucci
General Coordinator of Enabling Technologies /MCTI (video)

CUI Daxiang
National Engineering Research Center for Nanotechnology of Shanghai Jiao Tong University



Rodrigo Capaz
CNPEM/LNNano (video)

Xu Jie
Deputy Director General, Department of International Cooperation, Ministry of Science and Technology

Arnaldo Gomes
Universidade Federal do Espírito Santo - UFES

WANG Jingfeng
National Engineering Research Center for Nanotechnology

Second, both China and Brazil attach great importance to nanotechnology research and industrial development. Cui Daxiang, National Engineering Research Center for Nanotechnology, pointed out that China has initiated the National High-tech R&D Program of China (863 Program), the National Key Basic Research Program (973 Program), and the National Key R&D Program; and that China has set up the National Center for Nanoscience and Technology in Beijing, mainly conducting basic scientific research on nano; and set up the National Engineering Research Center for Nanotechnology in Shanghai, mainly conducting applied nano-based research and industrialization of technology. Since 2010, researchers in China have published more than 15,000 papers on nanotechnology every year. China has become a country with the highest number of published papers in the world. It has applied for more than 2,000 invention patents every year, and trained more than 5,000 graduates in the field of nanotechnology every year. Rodrigo Capaz, Representative of the Brazilian Center for Research in Energy and Materials, pointed out that the Brazilian Nanotechnology National Laboratory is the largest nano-strategic laboratory, including the nanomaterials department, the nanobiotechnology department, and the nanoequipment department, with high-end, precision and sophisticated research infrastructure in Brazil. Felipe Silva Bellucci, General Coordinator of Enabling Technologies at the Brazilian Ministry of Science, Technology and Innovation, pointed out that 17 of the national institute of science and technology are dedicated to the fields of nanotechnology and advanced materials. The Brazilian nanotechnology laboratory system consists of 23 highly advanced nanoscience and nanotechnology laboratories, covering such fields as medicine, agriculture, and telecommunications. Brazil attaches great importance to research and industrial innovation. It has established the Brazilian Association for Research and Industrial Innovation under the Ministry of Science, Technology, and Innovation (MCTI) to help Brazilian industries innovate by increasing cooperation between industry and universities. Among others, 77 institutions are engaged in research on advanced materials with nanotechnology.

Third, exchanges and cooperation between China and Brazil in nanotechnology research and development and in the application of research results to production are beginning to take shape. Cui Daxiang noted out that since the National Engineering Research Center for Nanotechnology was awarded an international cooperation base by the Department of International Cooperation of the Ministry of Science and Technology of the People's Republic of China in December 2007, it has been conducting international exchanges and cooperation on nanotechnology research and development and on the application of research results to production, and it has carried out academic exchanges and in-depth cooperation with universities, institutions, and enterprises in Brazil, Japan, Russia, the United Kingdom, Cuba, the United States, Germany, Australia and other countries. Wang Jingfeng pointed out that since China and Brazil signed a number of cooperation agreements in 2012,

Ivair Santos
INCT Ferroic Materials for Energy Converters

WU Shuhong
National Engineering Research Center for Nanotechnology

Dr. Gary Li
Suzano Asia

YU Xujiang
Shanghai Jiao Tong University

ZHU Jun
Deputy Director of NERCN

JIN Han
Researcher at NERCN, Deputy Dean of School of Sensing Science and Engineering， Shanghai Jiao Tong University

they have jointly published more than 50 papers and achieved a number of results, such as the project of "Preparation of Activated Carbon Materials from Sugar Bagasse". The prepared materials are environmentally friendly and inexpensive, and have demonstrated good water treatment results. Arnaldo Gomes Leal Júnior, Professor of the Universidade Federal do Espírito Santo, pointed out that the Universidade Federal do Espírito Santo cooperates with Chinese universities in textile fabrics, which are mainly used in the field of smart health care and clothing accessories. Meanwhile, Chinese and Brazilian scientists are actively cooperating on the projects under the BRICS Science and Technology Initiative Framework. For example, Arnaldo Gomes Leal Júnior participated in the BRICS Science and Technology Initiative framework cooperation project involving China and India. Ivair Aparecido dos Santos, Professor of the State University of Maringá, participated in the BRICS Science and Technology Initiative framework cooperation project involving Russia and China, conducting research on magneto-electric spin-orbit (MESO) logic devices for ultra-low power consumption computation.

Fourth, the future model and path for innovation cooperation between China and Brazil in the nano field. Cui Daxiang pointed out that the directions of our cooperation include nano-environmental energy, nano-information, sensing, nano-biomedicine, and engineering. The integration of medicine and engineering is a good path for the innovation and development of precision medicine. Medicine-engineering interdisciplinary cooperation is the in-depth integration of molecular biology, genomics, artificial intelligence technology, big data, cloud computing, Internet of Things, quantum computing, 5G/6G, and AR/VR, etc., which is mainly used for disease diagnosis, prevention, and treatment. Dr. Gary Li, Chief Scientist of Suzano, pointed out that Suzano has built an entity innovation center in China, to develop bio-based nanomaterials and promote the development of a low-carbon economy. In the future, it can unite with universities, research institutions, and enterprises related to bio-based materials, to promote open, collaborative, and sustainable development.

Green and Low-Carbon Innovation Forum

Focus on Green Transition, and Share a Low-Carbon Future

Editor's note: *The Green and Low-Carbon Innovation Forum of the Pujiang Innovation Forum 2023, with the theme of "Focus on Green Transition, and Share a Low-Carbon Future", renowned experts from various fields made in-depth discussions on the development status, challenges and future prospects of green and low-carbon technologies. This bulletin summarizes views of guests at the Green and Low-Carbon Innovation Forum for your reference.*

LIU Duo
Deputy Mayor of Shanghai Municipal People's Government

H.E. Hem Vanndy
Minister of Ministry of Industry, Science, Technology, and Innovation (MISTI-Cambodia)

ZHU Xuehua
Director of Department of Science and Technology of the People's Republic of China for Social Development

Edward Kwakwa
Assistant Director General of the World Intellectual Property Organization (WIPO) (Video)

SHANG Yuying
Vice Secretary General of Shanghai Municipal People's Government

Beate Trankmann
Representative of the United Nations Development Programme in China

Realizing the carbon neutrality goals and the sustainable development of human society is an important topic in current global technological cooperation. Accelerating the green transformation of development patterns, and promoting carbon peaking and carbon neutrality actively and steadily is also an inherent requirement for China to promote high-quality development and realize Chinese-style modernization. The guests present agreed that promoting the comprehensive green transformation of economic and social development is a broad and profound systemic economic and social change, and that we should give full play to the global influence of the Chinese wisdom and solution to further deepen international scientific and technological cooperation in the green and low carbon field, and jointly promote global green transformation and development.

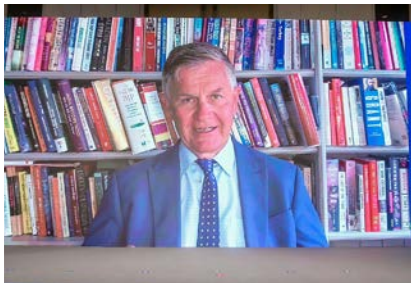
I. Green technology innovation supports the green transformation and development of society strongly.

On the one hand, green technology innovation accelerates the realization of the low-carbon development goals. Erik Solheim, Vice President of the Belt and Road Green Development Coalition, stated that China has made gratifying achievements in green technology innovation, and taken the lead in green energy, low-carbon transportation, nature-based solutions, circular economy and other fields. These achievements have benefited from the three primary factors of "political leadership, market development and enterprise participation, and the subjective initiative of the people". Wei Wei, Vice President of the Shanghai Advanced Research Institute, CAS, proposed that carbon accounting is a fundamental task to realize the dual carbon goal and the most direct quantitative basis for assessing carbon reduction benefits. Accelerating the development of carbon accounting technology can support carbon reduction path planning on different levels, including national, regional and industrial.

On the other hand, green technology innovation contributes to high-quality social development. Professor Keo Vanthoeun, Ministry of Environment of Cambodia, thought that green technology innovation benefits all aspects of society, such as reducing energy consumption, waste, water consumption, carbon footprint, business costs and pollutant emissions, improving product performance, and promoting eco-friendly agriculture, thereby providing new opportunities for social development. Gui Xude, Board Chairman and Secretary of the CPC Committee of Shanghai Investigation, Design & Research Institute Co., Ltd. (SIDRI), pointed out that China Three Gorges Group has achieved fruitful results in marine green energy innovation, such as the localization of integrated control systems for offshore wind turbines, which is accelerating the development of marine green energy. Wei

Keo Vanthoeun
Deputy Director of Department of Green Economy, General Directorate of Policy and Strategy, Ministry of Environment

WEI Wei
Prior of Shanghai Advanced Research Institute, CAS



Erik Solheim
President of the "the Belt and Road" Green Development International Alliance

GUI Xude
Board Chairman and Secretary of Party Committee of Shanghai Investigation, Design & Research Institute Co., Ltd. (SIDRI)

Wichai Narongwanich
First Senior Vice President of Head Office of KASIKORN BANK

Sean Kidney
Co-Founder and CEO of Climate Bonds Initiative (online)

Wei suggested that product carbon footprint expresses carbon emissions as a result of interrelated and dynamic carbon flows using products as carbon carriers, which is conducive to promoting the establishment of a low-carbon consumption concept in the whole society.

II. Challenges in realizing social green transformation and development

One is the shortage of resources. Keo Vanthoeun stated that Cambodia still faces a series of resource shortage problems in promoting green transformation and development, including a low starting point in infrastructure, human resources, etc., and relatively insufficient research resources and infrastructure of universities. He also pointed out that as a developing country, Cambodia still needs to make every effort to develop its economy, but cannot consume future resources for economic development. Sean Kidney, Co-Founder and CEO of Climate Bonds Initiative, thought that renewable energy technology is booming globally, new technologies are emerging, and costs are also decreasing. The primary challenge now is resource endowment, including capacity building and production efficiency improvement.

The second is technological challenges. Wei Wei pointed out that in terms of carbon footprint assessment technology, the existing methodology is still unable to meet the requirements for raw material carbon footprint assessment, and there are still deficiencies in underlying logic and theoretical research, and inconsistencies in target scope definition and inventory analysis principles among different standards. Gui Xude said that in the development of offshore new energy, achievements of offshore wind power hydrogen production technology should be extended downstream of the industry chain in the future to promote the extraction of green methanol and green jet fuels around the construction of offshore comprehensive energy islands.

The third issue is investment. Wichai Narongwanich, Senior Vice President of Kasikorn Bank, pointed out that climate change has brought great challenges to the whole society. To realize economic decarbonization, and ultimately carbon peak and carbon neutrality successfully, huge investment is needed, which involve all relevant sectors such as transportation, energy and agriculture, as well as emerging economic fields such as the intelligent manufacturing and carbon neutrality industries. A single entity or sector cannot provide such tremendous financial support, and multi-party cooperation is required. Sean Kidney suggested that Shanghai must be prepared to cope with the changeful climate risks such as heat waves and typhoons. According to relevant data, the total

ZHENG Guanghong
Counsel of Science and Technology Commission of Shanghai Municipality

Release of the National Green and Low-Carbon Advanced Technology Achievements Catalogue

MOU for Cooperation between China and Cambodia on Green Technology and Talent Cultivation

MOU for Carbon Labellibng Industry Joint Innovation Center

MOU for Green Credit Cooperation

Launching Ceremony of the UNDP-Green Technology Bank Yangtze River Delta (Suzhou) Green Technology Application Demonstration Platform

investment in responding to risks and challenges is estimated to be as high as 650 billion yuan.

III. Relevant suggestions

First, establish an international cooperation and exchange platform to promote multilateral international scientific and technological cooperation. Keo Vanthoeun pointed out that to promote green transformation and development, more international cooperation platforms should be established, such as the China-Cambodia Cooperative Platform for Green Technology and Talent Training, which will play an important role in promoting future China-Cambodia cooperation. Erik Solheim proposed that China has achieved excellent results in green transformation and development, but global green development cannot be realized in reliance on any single country; instead, countries around the world must be united and make joint efforts to be successful. We call on the international community to stop all so-called decoupling or trade wars, and work together to realize green development.

Second, strengthen innovative research and practice, and promote green technology innovation. Wei Wei proposed that to promote the development of raw material carbon footprint, the first step is to carry out methodological innovation and strive for international discourse power. In addition, establish a sound coordinate system of accounting rules and standards, improve data management capabilities, and conduct research on the carbon footprint assessment practices for raw materials in key fields. Gui Xude proposed to promote the construction of marine central cities, accelerate research on key technologies for the integration and development of marine new energy, deepen the building of marine think tanks, and strengthen policy research on the construction of marine central cities.

Third, launch innovative financial models and tools to promote green technology investment. Keo Vanthoeun pointed out that to promote green transformation and development, we should establish a financial support system suited to a country or region based on the green technology development paradigm, strengthen synergistic support from green technology banks, social capital and financial institutions, establish an annual reporting mechanism for green investment, and analyze green investment trends timely. Wichai Narongwanich stated that to realize green transformation and development, greater financial support should be provided to promote joint efforts of the government, society, financial institutions and multilateral development banks, innovative financial means should be launched, and green and sustainable development financial instruments such as loans, bonds, and funds should be fully leveraged to support green technology innovation.

Global Health and Development Summit

New Applications and Markets for Innovative Technologies Accelerating Global Health and Development

Editor's note: *The Global Health and Development Summit of the Pujiang Innovation Forum 2023, with the theme of "New Applications and Markets for Innovative Technologies Accelerating Global Health and Development", renowned experts and scholars from universities, institutions, hospitals, enterprises and society conducted in-depth discussions on accelerating the development and transformation of innovative products to serve global health and development. This bulletin summarizes views of guests at the Global Health and Development Summit for your reference.*

Currently, emerging technologies represented by digital technology and genome sequencing have improved the level of health management for mankind. Digital technologies such as AI, big data and cloud computing have expanded new applications and markets of pharmaceutical and medical products in the global health sector. Drugs, medical devices and innovation platforms based on new technologies have bridged gaps in medical resources among countries, and improved the global ability to combat the COVID-19 pandemic. The guests present agreed that with scientific and technological cooperation as the tie, international organizations, government agencies, research institutions, enterprises and other parties should collaborate across borders to jointly explore new application scenarios of innovative technologies and new market changes, and find new paths and solutions to promote the development of the global health sector continually and efficiently.

ZHENG Zhijie
Director, China Country Office, Bill & Melinda Gates Foundation

Steve Kern
Executive Director, Global Health Labs (GH Labs)

SUN Kun
Director, Xinhua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine

Marta Fernández Suárez
Chief Technology Officer, Foundation for Innovative New Diagnostics (FIND)

I. The application of emerging technologies gives rise to new changes in the medical sector.

Zheng Zhijie, Director, China Country Office, Bill & Melinda Gates Foundation, pointed out that mankind has kept pushing the boundaries of science and technology into such fields as agriculture, medical care and medicine, enabling more people to enjoy a longer, healthier, more vigorous and fulfilling life. The application of new technological achievements has promoted the well-being of mankind.

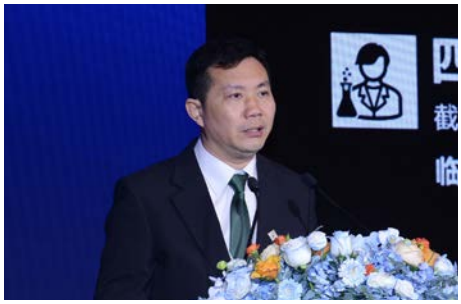
First, new technologies have changed traditional diagnosis and treatment methods, and improved the quality of medical services. Marta Fernández Suárez, Chief Technology Officer, Foundation for Innovative New Diagnostics (FIND), thought that during the pandemic, many countries have introduced regulatory regulations and related policies for pharmacy testing, making it increasingly popular. Pharmacy has become the first stop for many patients seeking testing and care, and diagnostic testing and medical care services in unconventional environments will become a future trend. She also pointed out that AI technology will not only help patients identify symptoms, make decisions on the need for diagnosis and treatment, provide treatment suggestions, and screen symptoms, but also assist patients in making clinical treatment decisions, such as judging what kind of testing is required, and even assist in conducting epidemiological analysis, and designing intervention measures and public health policies. Steve Kern, Executive Director, Global Health Labs (GH Labs), stated that AI is becoming an auxiliary medical tool that provides care consultation to people through remote medical systems, improves nursing capabilities in situations of unreasonable patient to healthcare staff ratios, and narrows clinical medical gaps arising from resource shortage.

Second, new technologies have greatly reduced drug development lead times. Ren Feng, Co-CEO of Insilico Medicine, thought that traditional drug R&D faces bottlenecks such as high R&D costs, low success rates and long R&D lead times. The application of AI technology can greatly shorten R&D lead times, reduce R&D costs, and solve the three problems that hinder drug development efficiently: how to discover target points, how to design

Paul Pronyk
Director, Duke-NUS Centre for Outbreak Preparedness (CoP)

ZHU Chouwen
Director, Shanghai Clinical Research and Trail Center (SCRTC)

NI Dong
Deputy Director (Professor), School of Biomedical Engineering, Health Center, Shenzhen University; Founder, RayShape



REN Feng
Co-CEO, Insilico Medicine

preclinical candidate compounds with better druggability, and how to better design clinical experimental methods. Ni Dong, Deputy Dean of the School of Biomedical Engineering, Medical School, Shenzhen University and Founder of RayShape, pointed out that the field of prenatal ultrasound is highly specialized, and in the whole scanning process, a doctor has to find dozens of standard sections based on personal experience to screen and eliminate a number of common deformities. It takes about 10 years to train a prenatal ultrasound doctor, and using AI to guide doctors to find different standard sections can reduce the training period of prenatal ultrasound doctors greatly.

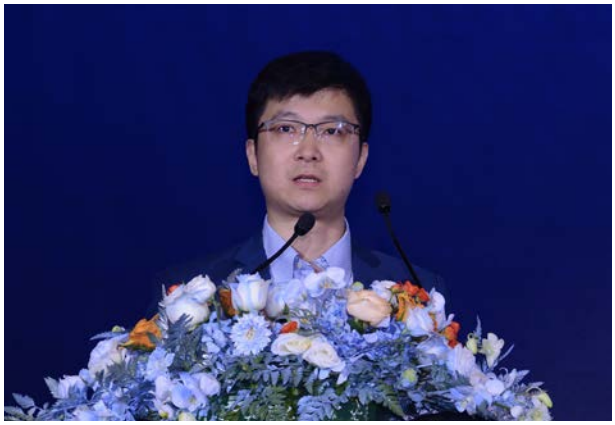
II. Challenges to the application of emerging technologies

On the one hand, population and regional differences should be taken seriously. Marta Fernández Suárez pointed out that to give fully play to AI, it must undergo training and development. The dataset required for AI development must be geographically diverse, otherwise algorithms developed based on North American populations may not be suitable for African populations. This is also a problem that must be addressed and improved in the process of promoting the development of AI. Steve Davis, Senior Advisor of McKinsey & Company, and Lecturer of the Stanford Graduate School of Business, stated that digital technology and AI have many applications in developed countries and markets, but are rarely applied in resource-scarce and relatively poor countries.

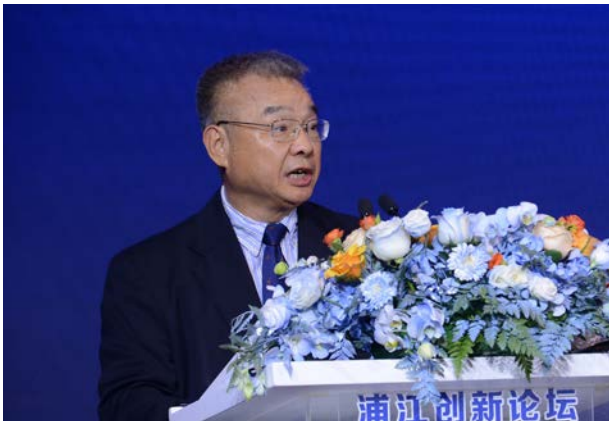
On the other hand, potential risks of AI technology cannot be ignored. Gao Fu, Academician of the CAS Member and Researcher of the Institute of Microbiology of the Chinese Academy of Sciences, pointed out that if the data obtained by AI is not cleaned manually, its inference may mislead people and cause huge consequences. Guo Jinjiang, Head of Data Science Department, Global Health Drug Discovery Institute, emphasized that data quality not only includes the authenticity of data, but also depends on whether AI understands operational mechanisms of organisms or disease development. Therefore, researchers need to input more dynamic, temporal, multimodal and multi-level information, including environmental variables, into AI to truly understand mechanisms of disease development and operational patterns of organisms. This will provide researchers and drug developers with more insights to generate new and more effective drugs.

III. Relevant suggestions

First, establish institutional support for the application of new technologies. Zhao Wei, Academician of the International Eurasian Academy of Sciences, emphasized that social progress requires data sharing, but the effectiveness and non-gratuitous nature of data sharing should be protected by technical and legal means so as to create a healthy business model that benefits mankind. Li Xin, Deputy Director-General of the Department of Foreign Expert Services, Ministry of Science and Technology, stated that better arrangements are needed for intellectual property rights. Although drug patents are subject to compulsory licensing, in many cases, they are not just final products or certain drugs, but enabling or platform technologies. The protection of intellectual property rights



CHEN Noah
Chief Executive Officer, Pluslife



CAO Jinghua
Executive Director of the Secretariat, Alliance of International Science Organizations (ANSO)

XU Fujie
Deputy Director, China Country Office, Bill & Melinda Gates Foundation

Panel Discussion

plays a role in the better diffusion and application of these technologies. Sun Kun, Director of Xinhua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, said that taking the newly established department of intrauterine pediatrics at Xinhua Hospital as an example, the establishment of new disciplines requires the support of new teams, standards, mechanisms and systems, and even legal and insurance considerations.

Second, establish a powerful data foundation platform. Steve Davis pointed out that the influence of innovative products is closely related to digital infrastructure. We should build the entire digital underlying technology and infrastructure. Only with powerful infrastructure and systems can innovation achievements be sustainable and most influential. Chen Chong, CEO of Pluslife, suggested that the R&D of technologies and products must originate from needs of target markets. Products should be developed in a targeted manner as required by target markets, and be practical to empower grassroots healthcare.

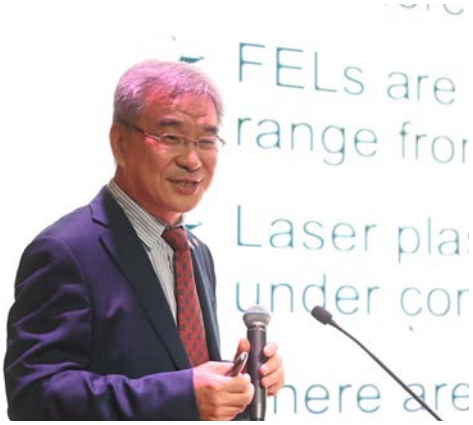
Third, gather worldwide outstanding talents and strengthen cooperation for a win-win situation. Gao Fu emphasized that talents are the primary resource, and the ultimate subject of innovation is people. Shanghai, as an international metropolis, should gather worldwide outstanding talents and maximize human potential in order to play a great role in future product innovation. Li Xin thought that whether in North-South or South-South cooperation, it is expected to further bridge gaps in the health field through cooperation. Zhao Wei pointed out that ethnic differences bring about differences in drug efficacy, and progress in human health cannot be made without cooperation among countries.

Future Science Forum

Frontiers of Fundamental Physics in the "Big Science" Era: Massive Scientific Facilities, International Collaborations and Innovations

Editor's note: *The Future Science Forum of the Pujiang Innovation Forum 2023, with the theme of "Frontiers of Fundamental Physics in the "Big Science" Era: Massive Scientific Facilities, International Collaborations and Innovations", experts from particle physics and related fields conducted in-depth discussions on physical research empowered by big science installations at home and abroad. This bulletin summarizes views of guests at the Future Science Forum for your reference.*

ZHAN Wenlong
Academician of the Chinese Academy of Sciences, and Member of the Construction Commission of the National People's Congress



ZHAO Zhentang
Academician of Chinese Academy of Engineering, Researcher of Shanghai Institutes for Advanced Studies, Chinese Academy of Sciences, Director of Shanghai Light Source Science Center

Advanced big science installations are pillars of a country and important platforms of basic scientific and technological conditions that support original innovation. Particle physics, which explores structures and patterns of atomic and sub-nuclear scale substances, has gradually become a research paradigm that relies on big science installations and international cooperation to tackle frontier problems. China is seizing the major opportunity of accelerated evolution in the new round of technological revolution to conduct international dialogues with countries around the world based on the construction and application of big science installations. The guests present agreed that in the current international environment, it is still necessary to promote international scientific and technological cooperation with open thinking and actions, plan and participate in global scientific and technological governance, improve the efficiency of big science installations, promote international cooperation in advanced technologies, and realize the integrated development of education, technology and talents in reliance on international big science cooperation.

I. From microscopy to cosmoscopy: exploration of new frontiers in physics research enabled by big science installations

First, big science installations assist scientists in obtaining new discoveries, revealing new patterns and exploring new applications continually. Luciano Musa, Senior Research Fellow at the European Nuclear Center and former spokesperson for the LHC-ALICE International Cooperation Group, stated that the European Organization for Nuclear Research (CERN) has the world's largest particle physics laboratory, and is able to reveal various fundamental particle laws and cosmic laws. Toshitaka Kajino, Professor at Beijing University of Aeronautics and Astronautics/University of Tokyo, and Director of International Center for Cross-Science Research on Big Bang Cosmology and Origin of Elements, pointed out that the discovery of supernovae is the result of international cooperation in multiple bands, means and disciplines, such as the Gamma Ray Observatory (E&M), Optical Observatory (LAMOST, Subaru), Jiangmen Underground Neutrino Observatory (JUNO), and Laser Interferometer Gravitational-Wave Observatory (LIGO, Kagra).Zhan Wenlong, Academician of the Chinese Academy of Sciences, and Member of the Construction Commission of the National People's Congress, stressed that the Huizhou Nuclear Science Center (HNSC) can generate a beam with a light intensity of μ, and theoretically, the physical motivation of μ may discover evidence of the existence of a fifth force through g-2; from an application perspective, μ spin probes can be applied to superconductors, and μ meson perspectives can be applied to fields such as large-mass and thick-volume imaging, heavy metal detection, etc.

Second, big science installations are increasingly large, and material structure research is tending lower limits in scale. Karim Trabelsi, Researcher of IJC Laboratory, France, and Spokesperson of Belle II International Cooperation Group, stated that CERN has manufactured the world's largest accelerator and detector for studying the smallest particles in the universe, and also kept developing new technologies using computer algorithms in an attempt to exceed limits. The Large Hadron Collider (LHC) is a circular accelerator with a tunnel perimeter of as large as 27 kilometers. Particles are magnetically constrained by superconducting magnets to move around the circular structure almost at the speed of light, generating over 1 billion particle collisions per second to excite

Toshitaka Kajino
Director of International Center for Cross-Science Research on Big Bang Cosmology and Origin of Elements, Beijing University of Aeronautics and Astronautics, Beijing, China

MA Yugang
Academician of Chinese Academy of Sciences, Dean of the Research Institute of Fudan University

Luciano Musa
Senior Researcher of CERN, Former Spokesperson of the LHC-ALICE International Collaboration Group

Karim Trabelsi
Researcher of IJC Laboratory, France, Spokesperson of Belle II International Cooperation Group

new microscopic particles. A Large Ion Collider Experiment (ALICE) generates extremely high temperatures and energy densities by colliding lead nuclei with center of mass energy of 2.76TeV per nucleus, generating a quark-gluon plasma that is sufficient to release quark confinement. Toshitaka Kajino stated that neutrino mass ranking constrained by synthetic isotope ratio in supernova nuclei is a reverse mass ranking formed based on three major conditions – the SN1987A supernova model, solar system abundance and observed values of cosmic rays. Currently, he is conducting research on the nuclear synthesis law of 138La and 11B by capturing neutrinos based on the SN1987A model.

Third, big science installations keep evolving through upgrading and iteration. Zhao Zhentang, Academician of the Chinese Academy of Engineering, Researcher of the Shanghai Institutes for Advanced Studies, Chinese Academy of Sciences, and Director of the Shanghai Light Source Science Center, said that synchrotron radiation light sources were designed and built for high-energy physics only in first generation, dedicated to synchrotron radiation applications in the second generation, and developed in reliance on ID (attenuator/wiggler) low emissivity mainly in the third generation. Now, fourth-generation installations are developing rapidly around the world, with focus on diffraction limiting emissivity with high coherence. Zhan Wenlong stated that the ability of the high-intensity Heavy Ion Accelerator Facility (HIAF) and the China Initiative Accelerator Driven System (CIADS) to transport relativistic strong ion beams (RI2B) is iterated and upgraded constantly.

Fourth, energy levels of big science installations are increasingly higher, and the scope of empowerment is widening. Karim Trabelsi stated that Belle II is based on the SuperKEKB accelerator and Belle II detector of Japan's High Energy Accelerator Research Organization (KEK), and is designed as a double-ring circular electron-positron collider with asymmetric energy. After ten years of operation, the SuperKEKB collider achieved instantaneous brightness of 2.226×10^34 cm^-2s^-1, which has broken the CERN record and set a new record in physics. Zhao Zhentang stated that the Shanghai Synchrotron Radiation Facility, as a representative of China's third-generation synchrotron radiation facility, generates X-rays that can be used to study structure of matter in atomic and molecular scales, and applied to spectroscopic and macromolecular structure research through imaging. It can be applied to both basic scientific research and industrial applications. As a result, the Shanghai Synchrotron Radiation Facility has given rise to many heavyweight scientific research and industrial technology achievements since its completion and opening in 2009.

II. From domestic to international: integrated development of education, science and technology, and talents boosted by global interconnection

First, the construction and operation of big science installations requires international support. Ma Yugang, Academician of Chinese Academy of Sciences, Dean of the Research Institute of Fudan University, thought that particle and nuclear physics belongs to the field of big science, and large-scale international cooperation is a natural attribute for it. Without international cooperation, the Solenoidal Tracker (STAR) at the Relativistic Heavy Ion Collider (RHIC) would not have been so successful. Luciano Musa pointed

out that the European Organization for Nuclear Research (CERN), founded in 1954, has always been committed to the development of geographical and cultural diversity. CERN has 23 member states, 12 EU member states, 10 associate member states and 4 observers, with users from over 110 countries, in which 23% are women. Karim Trabelsi stated that for Belle II, as a unique installation for exploring and understanding the universe, international cooperation is the key to expanding the human understanding of the limits of the universe. This calls for integrating international forces, and leveraging advanced technologies to design and build detectors, and collect, process, analyze and interpret data.

Second, international cooperation based on big science installations is an effective way to train young talents. Ma Yugang thought that international cooperation is an effective way to train young talents, and enhance bilateral friendship and multilateral communication. Karim Trabelsi pointed out that Belle II's organizational members come from around the world, and its diverse working environment helps young people grow. Toshitaka Kajino emphasized that basic physics research is to discover principles from phenomena, so researchers must be down-to-earth and avoid following suit. He sent a message to young scientists – exploring the truth, working hard and discussing with others.

Third, international cooperation and exchanges based on big science installations promote interdisciplinary integration. Zhan Wenlong stated that in future research on the μ-meson, from a disciplinary perspective, fundamental physics is the key, and the power of interdisciplinary integration is indispensable; from the perspective of big science installations, heavy ion accelerator facilities (HIAFs) and plasma wake-field accelerators (PWFAs) play a crucial role, while other scientific instruments such as spectrometers should also be used.

Penal Discussion

Agenda for Opening Ceremony & Plenary Session of the 16th Pujiang Innovation Forum 2023

2023.09.10（Sunday）	
09:00-10:15	**Opening Ceremony** **Zijin Hall, 1F, Convention Center, Shanghai DongJiao Hotel**
09:00-09:20 **Welcome Address**	**Moderator:** GONG Zheng, Mayor of Shanghai
	CHEN Jining, Secretary of the Shanghai Municipal Committee of the CPC, reads out the congratulatory letter of President XI Jinping and makes address
	Marcos Galvão, Ambassador of Brazil in China, reads out the congratulatory letter of President Luiz Inácio Lula da Silva, then Luciana Santos, Minister of Science, Technology and Innovation of Brazil makes address (video)
	WANG Zhonglin, Deputy Secretary and Governor of the Hubei Provincial Committee of the CPC
09:20-09:30 **Ceremony**	**Launch Ceremony of the 1st WeStart Global Entrepreneurial Investment Conference**
	Launch Ceremony of the 4th China-Brazil Innovation Week
09:30-10:15 **Keynote Speech**	WANG Zhigang, Minister, Ministry of Science and Technology then
	Celso Pansera, President, Financier of Studies and Projects of Brazil (FINEP)
	DING Zhongli, Vice Chairman of the NPC Standing Committee, Chairman of the CDL Central Committee, Academician of the Chinese Academy of Sciences
10:15-10:25	**Break**
10:25-12:10	**Plenary Session**
10:25-11:35 **Speech**	Pietro Barabaschi, Director-General of the International Thermonuclear Experimental Reactor (ITER) Project
	HE Dongfeng, Secretary of the Party Committee and Chairman of the Commercial Aircraft Corporation of China, Ltd.
	Kumsal Bayazit, Chief Executive Officer of Elsevier
	JIN Li, Academician of Chinese Academy of Sciences, President of Fudan University and Dean of Shanghai Medical College of Fudan University
	Special Lecture for Youth: XU Donglian, T. D. Lee Fellow, Associate Professor of Physics, Tsung-Dao Lee Institute, Shanghai Jiao Tong University
11:35-12:10 **Special Dialogue: Global Cooperation on Science, Technology and Innovation**	**Moderator:** JIN Li, Academician of Chinese Academy of Sciences, President of Fudan University and Dean of Shanghai Medical College of Fudan University
	Guests： Pietro Barabaschi, Director-General of the International Thermonuclear Experimental Reactor (ITER) Project Nikos K. Logothetis, Director of the International Center for Primate Brain Research, Head of the Department of Physiology of Cognitive Processes CHEN Lingling, Principal Investigator at the CAS Center for Excellence in Molecular Cell Science, Chinese Academy of Sciences XU Donglian, T. D. Lee Fellow, Associate Professor of Physics, Tsung-Dao Lee Institute, Shanghai Jiao Tong University

2023.09.09（Saturday）	
09:30-12:30	**Innovation Culture Forum** **Chasing the Light: The Spirit and Momentum of Innovation** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: Science and Technology Daily, Chinese Academy of Science and Technology for Development, Science and Technology Commission of Shanghai Municipality, Tongji University, Jiefang Daily, Shanghai Institute for Science of Science** **Yulan Hall, 2F, Convention Center**
Theme Interpretation	Scientific culture is the spiritual soil and source of power of scientific and technological development and innovation. Different countries and regions have formed their own scientific cultures with local characteristics in pursuit of scientific and technological progresses. "Civilizations are wonderful by exchanges, civilizations are enriched by mutual learning." Xu Guangqi, the pioneer of scientific and cultural exchanges between China and the West, once expressed his feelings: "In order to surpass, we must first integrate." Exchange and integrating are the basic connotations of science and culture. Today, the world is experiencing profound changes unseen in a century, and a new round of scientific and technological revolution and industrial transformation continues to develop in depth. Cultivating a scientific culture that keeps pace with the times has become a decisive force for the further development and innovation of science and technology in all countries. Therefore, it's time for us to do some reflection and discussion - What kind of scientific culture are countries shaping? What kind of scientific culture does China need to accelerate the promotion of high-level science and technology self-reliance? This forum will invite experts from home and abroad to discuss the topic of science culture, further promote mutual learning of science culture, and jointly promote the development of human science and technology civilization.
Host	WANG Yuan, Former Executive Vice President of Chinese Academy of Science and Technology for Development
09:30-10:40 Keynote Speech	ZHANG Biyong, Member of the Party Group of the Ministry of Science and Technology, President of Science and Technology Daily
	Osório Coelho Guimarães Neto, Deputy Secretary of Technological Development and Innovation of MCTI, Brazil
	LV Wei, Former member of the Standing Committee of the National People's Congress and Minister of Innovation and Development Research Department of the Development Research Center of The State Council
	Donna Kurtz, Professor, Department of Engineering Science and Department of Classical Art, University of Oxford
10:40-10:45	**Break**
10:45-11:55 Keynote speech	Adi Yoffe, Israeli futurist
	MEI Jianjun, Director of the Needham Institute, Cambridge
	JI Zhigang, Corresponding fellow, International Academy of the History of Science, Professor of Shanghai Jiao Tong University
	Albert Sabater Coll, Professor, University of Girona, Spain
11:55-12:25 Panel Discussion	Osório Coelho Guimarães Neto, Deputy Secretary of Technological Development and Innovation of MCTI, Brazil. GUO Zhe, Minister of Propaganda and Culture, China Association for Science and Technology Adi Yoffe, Israeli futurist. YUAN Beixing, Hubei Academy of Social Sciences Party member, Vice president SU Zhiliang, Director of Urban Culture Research Center of Shanghai Normal University, Ministry of Education
12:25-12:30	Question and Summary

09:00-12:00	**Women Scientists Summit** **Exploring Boundlessness Linking to the Future** **Host: All-China Women's Federation, Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: Shanghai Women's Federation, Shanghai Municipal Party Committee for Science and Technology, Science and Technology Commission of Shanghai Municipality, Shanghai Association for Science and Technology, and Chinese Women Scientists Association** **Co-organizers: SMG Yicai, Shanghai Women Scientists Association** **Special supporters: Shanghai Rural Commercial Bank** **Zijin Hall, 1F, Convention Center**
Theme Interpretation	The Women Scientists Summit will reveal the development philosophy of "gender equality, unbounded disciplines, no restrictions on geographies, and unhindered application" in contemporary science and technology innovation, and promote the construction of an open global innovation ecosystem. The Summit plans to conduct parallel discussions from the three dimensions including disciplinary interlinking, regional interlinking, and industry interlinking. In the session of "Disciplinary Interlinking: Unbounded Sciences, Multi-disciplinary Cross-integration", the Summit will gather outstanding women scientists from different disciplines to share research results and innovative thinking and experience, discuss in depth the interlinking and integration between disciplines, the derivation and development of interdisciplinary disciplines, and the changing trends in scientific research paradigms, for the purpose of promoting the development of science and technology at the source of the innovation chain. In the session of "Regional Interlinking: Global Consolidation, Open Cooperation", the Summit will invite women scientists from different countries and regions to share the research results and experiences of cross-border strategic layout of basic research and collaborative research and development of domestic and foreign teams under the Big Science Program, jointly address global scientific issues, explore opportunities and challenges for global scientific cooperation, and promote the sharing of cross-regional talent chains and technology resources. In the session of "Industry Interlinking: Innovation Ecosystem, Dynamic Application", the Summit will invite experts in science and technology industry management and representatives of women entrepreneurs to have in-depth exchanges and cooperation, explore the development trend of science and innovation ecosystem environment and the construction of new innovation models, explore how to strengthen the connection between science and industry, promote the practical application of scientific and technological innovation achievements, and strengthen the connection and transformation between innovation and industry chains.
09:00-09:30 Opening Ceremony	**Opening Video**
	Host: ZHANG Xiaolan, Vice-president and Member of the Secretariat of the All-China Women's Federation **Leaders' Address:** HUANG Xiaowei, Secretary of the Leading Party Members' Group of the All-China Women's Federation and Vice-President and First Member of the Secretariat of the All-China Women's Federation ZHANG Biyong, Member of the Party Group of the Ministry of Science and Technology, President of Science and Technology Dail WU Qing, Deputy Secretary of Shanghai Municipal Party Committee
	Host: HUANG Wei, YiCai **Special Address:** Marina Soković, Assistant Minister of Science, Ministry of Science, Technological Development and Innovation, Serbia. Senior Research Fellow at the Siniša Stankovic Institute of Biology (IBISS) of the University of Belgrade **Launch Ceremony:** Launch of "Report of Female Scientific & Technological Talents in Shanghai"
Academic Link: Intersection and Integration of Science that Knows No Boundaries	
09:30-10:15 Keynote Speech	YUAN Junying, Molecular Biologist, Fellow of the American Academy of Arts and Sciences, Fellow of the National Academy of Sciences (US), Tenured Professor of Cell Biology at Harvard Medical School, Director of Interdisciplinary Research Center on Biology and Chemistry
	Laís Forti Thomaz, Secretary of International Relations, Federal University of Goiás
Geographical Link: United Globally, Open Collaborations	
10:15-11:00 Keynote Speech	LIU Dongmei, Secretary the Party Committee of the Chinese Academy of Science and Technology for Development
	WANG Pinxian, Marine Geologist, Academician of Chinese Academy of Sciences, Fellow of The World Academy of Sciences for the Advancement of Science in Developing Countries, Professor and Doctoral Advisor of School of Ocean and Earth Sciences, Tongji University
	WANG Fengping, Vice Dean, Professor, Doctoral Advisor and Academic Leader, School of Oceanography, Shanghai Jiao Tong University, a female scientist who participated in IODP.

Industry Link: Dynamic Transformation of the Innovation Ecosystem	
11:00-11:45 **Keynote Speech**	ZHANG Yulei, Member of the CPC Group and Deputy Director of the Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park
	XIE Qirun, Chairman of the Executive Board Committee and Executive Director of Sino Biopharmaceutical Limited, Director of Chiatai Tianqing Pharmaceutical Holdings Co., Ltd. and Director of Nanjing Chia Tai Tianqing Pharmaceutical Co., Ltd.
	ZHAO Chunling, Executive Deputy Chief Designer of Long-range Wide-body Aircrafts, and Deputy Head of Systems Engineering and Projects, Commercial Aircraft Corporation of China Ltd.
Conclusion: Linking "Women Power" in Tribute to Brilliant Women Exuding Wisdom and Courage	
11:45-12:00 **Panel Discussion**	**Topic: Passing the Torch to the Future** **1. "Women Love Science" video showcase** **2. Women academicians share their thoughts on the future of "Women Power"** WANG Hongyang, Academician of Chinese Academy of Engineering, President of Chinese Women Scientist Association **Future Women Power:** WU You, from Xianghong Branch of Yuyi Primary School in Changning District, Shanghai, winner of the first prize at the 38th Shanghai Youth Science and Technology Innovation Competition, and the Chairman's Award of the Shanghai Association for Science and Technology ZOU Baoni, from the No.2 High School of East China Normal University (Putuo Campus), and winner the first prize of "Youth Science and Technology Innovation Achievements" at the 35th Shanghai Youth Science and Technology Innovation Competition LIN Xinyan, from the College of Materials Science and Engineering, Donghua University, winner of the first prize of the "Future Her Strength" "Challenge Cup" Competition for high school and college students XU Jie, attending physician and associate researcher at Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, and member of the Shanghai Youth Science and Technology Morning Star Program **3. Linking Ceremony Segment**
14:00-17:30	**The "Belt and Road" Seminar** **Create an Open Innovation Ecosystem, and Embark on a New Journey to Build the Belt and Road into a Road of Innovation** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: Chinese Academy of Science and Technology for Development, Shanghai Institute of Science & Technology Management** **Supporters: International Cooperation and S&T Diplomacy Committee, Chinese Association of Science for Science and S&T Policy Research, "Digital Silk Road (China-ASEAN)" Think Tank Alliance** **Yulan Hall, 2F, Convention Center**
Theme Interpretation	2023 marks the 10th anniversary of the proposal of the Belt and Road Initiative. From 2013 to date, the co-construction of the Belt and Road has turned from a Chinese initiative into a global consensus, and from a desire for cooperation into a reality of development, and become a popular international public product and a platform for international cooperation. By strengthening cooperation in scientific and technological innovation, countries have shared development opportunities brought by a new round of technological revolution and industrial transformation, and made remarkable progress in the exploration of building the Belt and Road into an "innovation path". This sub-forum will summarize the achievements and experiences in the building and upgrading of bilateral and multilateral scientific and technological cooperation mechanisms, technological and cultural exchanges, joint laboratory co-construction, science park cooperation, technology transfer, and other aspects, analyze the strategic opportunities, problems and challenges encountered in the promotion of the high-quality development of the Belt and Road, fully explore and improve scientific and technological cooperation mechanisms for the Belt and Road, expand international scientific and technological exchanges and cooperation, start a new journey of constructing the innovation path of the Belt and Road, and contribute to global interconnections. By building an open and innovative ecosystem for the Belt and Road, we will grasp new opportunities, respond to new challenges and shape new advantages together.
14:00-14:10 **Opening Address**	Leaders of MOST's International Cooperation Departments

14:10-15:20 Keynote Speech	**Host:** LIU Dongmei, Secretary of the CPC Committee of the Chinese Academy of Science and Technology for Development
	Adriano Proença, Senior Researcher at the Brazilian Center for International Relations, Professor of Universidade Federal do Rio de Janeiro, Brazil
	HU Zhijian, Level II Researcher and former President of the Chinese Academy of Science and Technology for Development
	Mlungisi Cele, Acting Chief Executive Officer of National Innovation Advisory Council, South Africa
	Hui Hwang Goh, Head and professor of the Department of Electrics, School of Electrical Engineering, Guangxi University
15:20-15:30	**Break**
15:30-16:40 Keynote Speech	**Host:** ZENG Fang, President of Shanghai Institute of Science & Technology Management
	Ana Celia Castro, Director of Institute for Advanced Studies, Federal University of Rio de Janeiro, Brazil
	ZHAO Yi, President of Qianxun SI
	Mario Cervantes, Senior Economist of Science and Technology Policy Sector, Organization for Economic Co-operation and Development (OECD)
	ZHAO Yang, Researcher and Managing Director of CICC Research Institute
16:40-17:20 Panel Discussion	**Questions and Discussions** **Host:** ZENG Fang, President of Shanghai Institute of Science & Technology Management Adriano Proença, Senior Researcher at the Brazilian Center for International Relations, Professor of Universidade Federal do Rio de Janeiro, Brazil HU Zhijian, Level II Researcher and former President of the Chinese Academy of Science and Technology for Development Mlungisi Cele, Acting Chief Executive Officer of National Innovation Advisory Council, South Africa ZHAO Yang, Researcher and Managing Director of CICC Research Institute Mario Cervantes, Senior Economist of Science and Technology Policy Sector, Organization for Economic Co-operation and Development (OECD) ZHAO Yi, President of Qianxun SI
17:20-17:30 Summary	ZENG Fang, President of Shanghai Institute of Science & Technology Management
2023.09.10（Sunday）	
14:00-17:00	**Theme Forum: Innovation System and Technology Evaluation** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: Department of Policy, Regulation and Innovation System of the Ministry of Science and Technology (MOST), Chinese Academy of Science and Technology for Development** **Zijin Hall, 1F, Convention Center**
Theme Interpretation	Scientific and technological evaluation is an essential tool for scientific and technological governance. As the new round of scientific and technological revolution is progressing with more multiple breakthroughs and group breakthroughs, and the scientific research system is moving towards "open science" and organized scientific research, countries are being increasingly emphasized on supporting and leading economic and social development with scientific and technological innovation. In the new context, giving full play to the guiding role of scientific and technological evaluation is crucial to stimulating the innovation vitality of scientific and technological personnel, instructing the allocation of scientific and technological resources, optimizing the ecosystem of innovation, and improving the overall effectiveness of the national innovation system. Some countries have made new progress in optimizing scientific research evaluation methods and the orientation of institutional assessment. This forum aims at accelerating the transformation of China's scientific and technological evaluation system so as to build up high-standard self-reliance and self-improvement in science and technology. It will discuss how to understand the connotation of scientific and technological evaluation in the new context; how to guide scientific researchers to devote to research and produce high-quality results, and guide scientific institutions to serve the national mission and fulfill the national strategic demand with scientific and technological evaluation; and how to improve the level of governance of science and technology and enhance the efficacy of the national innovation system by improving scientific and technological evaluation system.

14:00-14:05 Opening	Warm-up movie of Innovation System and Science &Technology Governance Forum
14:05-15:45 Keynote Speech	**Host:** XIE Min, Director General of Department of Policies, Regulations and Innovation System Construction, MOST
	HE Defang, Deputy Secretary-General of the Ministry of Science and Technology
	ZHANG Xu, President of Chinese Academy of Science and Technology for Development (CASTED)
	FU Xiaolan, Fellow of the British Academy, Director of the Technology and Management Centre for Development (TMCD), University of Oxford
	PAN Jiaofeng, President of the Institutes of Science and Development, Chinese Academy of Sciences, and Dean of the School of Public Policy and Management, University of Chinese Academy of Sciences
	PEI Duanqing, Chair Professor of Westlake University and Assistant to the President
15:45-15:55	**Break**
15:55-16:50 Panel Discussion	**Host:** WANG Yuan, Former Executive Vice President of Chinese Academy of Science and Technology for Development (CASTED) FU Xiaolan, Fellow of the British Academy, Director of the Technology and Management Centre for Development (TMCD), University of Oxford PAN Jiaofeng, President of the Institutes of Science and Development, Chinese Academy of Sciences, and Dean of the School of Public Policy and Management, University of Chinese Academy of Sciences NIE Biao, Director of the National Center for Science and Technology Evaluation JIANG Ge, Deputy Secretary of the CPC Committee and Vice President of ShanghaiTech University PEI Duanqing, Chair Professor of Westlake University and Assistant to the President Guilherme Fitzgibbon Alves Pereira, First-Secretary, Deputy HeadScience, Technology and Innovation DivisionMinistry of Foreign Affairs of Brazil
16:50-17:00	**Forum Summary**
14:00-17:00	**Theme Forum: Regional Innovation and Development** **New Areas, New Arenas, New Space** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: Department of Research Commercialization and Regional Innovation of Ministry of Science and Technology (MOST), Tongji University** **Guest Hall, 1F, Convention Center**
Theme Interpretation	The report of the 20th CPC National Congress points out that it is critical to open up new areas and new arenas of development and to continuously develop new engines and new strengths in development. This important idea has the strategic blueprint for China's regional development, that is, to deepen regional scientific and technological innovation and transformation. And new arenas should be incubated in new space shaped by science and technology innovation to boost sustained social development in various regions. Under the theme of "New Areas, New Arenas, New Space", this session will explore how to promote regional scientific and technological innovation and transformation and further play the important role of regional innovation in shaping new engines and new strengths in development by touching upon major regional development strategies such as the coordinated development in the Beijing-Tianjin-Hebei region, the development of the Yangtze Economic Belt, the construction of the Guangdong-Hong Kong-Macao Greater Bay Area, the integrated development of the Yangtze River Delta, and ecological conservation and high-quality development in the Yellow River basin, etc.
Host	GU Xianglin, Vice President of Tongji University
14:00-14:10 Address	LIANG Yingda, Director of the Strategic Planning Department of the Ministry of Science and Technology
14:10-15:05 Keynote Speech	WU Zhiqiang, Academician of Chinese Academy of Engineering, Chief Scientist of the CIUC (China Intelligent Urbanization Co-creation Center for High Density Region), Former Vice President of Tongji University
	Erik Solheim, Former Executive Director of the UN Environment Programme, Vice President of the Belt and Road Green Development Coalition
	WU Jun, Vice Director of Department of Science and Technology of Hubei Province

15:05-15:15	**Break**
15:15-16:00 Keynote Speech	Paulo Wanderson Moreira Martins, Auditor at Federal Court of Accounts, Executive Director of Business, Science and Technology and Innovation at the Brasília Technological Park (BioTIC), Brazil
	WANG Duoxiang, Director of Jinjingji National Center of Technology Innovation
	SUN Dong, Secretary for Innovation, Technology and Industry Government of the Hong Kong Special Administrative Region
16:00-17:00 Panel Discussion	**Host:** HUO Jiazhen,Executive Vice Dean and Professor of Chinese Academy of Science & Technology Management, Tongji University WU Zhiqiang, Academician of Chinese Academy of Engineering, Chief Scientist of the CIUC (China Intelligent Urbanization Co-creation Center for High Density Region), Former Vice President of Tongji University WU Jun, Vice Director of Department of Science and Technology of Hubei Province WANG Duoxiang, Director of Jinjingji National Center of Technology Innovation
14:00-17:30	**Young Elite Scientist Summit** **Open science: Embrace the Future of Knowledge Sharing and Scientific Cooperation** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: Shanghai Center for Pujiang Innovation Forum, Chinese Academy of Sciences Shanghai Branch, Tencent Academician Station** **Supporters: Shanghai Office for Promotion of Sci-tech innovation Center Development, Shanghai Consulting & Academic Activities Center for Academicians of Chinese Academy of Engineering, Deep Tech** **Yulan Hall, 2F, Convention Center**
Theme Interpretation	The faster the speed, the greater the resistance. The same applies to scientific progress. When there are more and more difficulties, and it is harder to make breakthroughs, open science with the philosophy of "transparency, openness, freedom, cooperation and sharing" may become a key for achieving breakthroughs. The sharing of wisdom, methods and results enables knowledge to cross national borders and penetrate disciplines, becoming a new paradigm for scientific progress. For young scientists who shoulder the future, this will not only be an idea, but also a practice. The Pujiang Innovation Forum 2023, Young Elite Scientist Summit will build an international platform, and invite bright young scientific talents from many countries, so that they can explore the value and practice of open science with an international vision. With an open attitude, we will build a new global innovation ecosystem; with the power of cooperation, we will work together to promote global innovation and progress.
Host	WEN Yan, Host of YICAI
14:00-14:15 Opening Speech	LI Xin, Deputy Director General, Ministry of Science and Technology
14:15-14:20 Ceremony	**Future Echoes: 2023 "Seeking the Voice of Youth" Selection Debuts**
14:20-15:35 Keynote Speech	Pier-Luc Tremblay, Professor of School of Chemistry ,Chemical Engineering and Life Sciences of Wuhan University of Technology
	ZHANG Xiao, Head of Tencent SSV Data Center, Deputy General Manager of Technology Department
	Michelli Pereira da Costa，Professor of the Faculty of Information Science of University of Brasília
	JIN Jiangang, Professor in the School of Naval Architecture, Ocean & Civil Engineering, Shanghai Jiao Tong University
	SUN Bowen, Director of AI Engineering Infrastructure of ANT GROUP
15:35-15:45	**Break**
15:45-16:45 《Parallel Future N Dimension》 Special Edition	**Host:** MA Junheng, New Cornerstone Science Foundation Director LU Boxun, Professor in the School of Life Sciences, Fudan University LIU Ying, Professor and Associate Dean of College of Future Technology, Peking University

16:45-17:30 **Penal Discussion**	**Host:** LI Xin, Deputy Director General, Ministry of Science and Technology LI Xuecao, Professor of College of Land Science and Technology of China Agricultural University Mariana Lyra Silveira, Ph.D. in Electrical Engineering of the Federal University of Espírito Santo (UFES) YU Kequan, Professor of College of Civil Engineering of Tongji University Anna Kostianko, Distinguished Professor of Zhejiang Normal University
14:30-16:00	**Symposium for Young Scientists** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Jinxiu Hall, 1F, Convention Center**
Moderator	LIANG Yingda, Director of the Strategic Planning Department of the Ministry of Science and Technology
Speeches by young Scientists	FU Haohuan, Professor in Department of Earth System Science, Tsinghua University
	LIU Ying, Professor and Associate Dean of College of Future Technology, Peking University
	QIAN Xiaoshi, Professor in State Key Laboratory of Mechanical System and Vibration
	GAO Yawei, Professor in School of Sciences and Technology, Tongji University
	FEI Peng, Associate Dean of School of Optical and Electronic Information, Huazhong University of Science and Technology
	SHAO Yangyang, Researcher of Life Sciences Institute, Zhejiang University
	LU Chaochao, Young Scientist of PUJIANG LAB
	JIA Sisi, Researcher of ZHANGJIANG LABORATORY
	FENG Han, Senior Engineer of Central Iron & Steel Research Institute
	XU Shu, Director of the Advanced Algorithms Laboratory of Haikang Research Institute
	SHEN Feixiang, Researcher of Shanghai Marine Diesel Engine Research Institute
	WANG Shiquan, Founder of FLEXIV
Exchange & Discussion	All attendees
14:45-17:20	**The 4th World Technology Transfer Managers Summit** **Ecological Construction, Explore the Future of Innovation.** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: National Eastern Tech-Transfer Center** **ZhangJiang Science Hall**
Theme Interpretation	The report of the 20th CPC National Congress highlighted the importance of "maintaining the central position of innovation in the overall picture of China's modernization", and "accelerating the development of high-level independent scientific and technological capabilitie", putting forward requirements for further improvement of the scientific and technological innovation system. The 27th meeting of the CPC Committee for Comprehensively Deepening Reform, chaired by General Secretary Xi Jinping, also emphasized the necessity of speeding up the transformation of the government's science and technology management functions, creating a good innovation ecosystem, and stimulating the vitality of the main body of innovation. This year's World Technology Managers Summit will take "Envision the Future of Innovation with Co-construction of Innovation Ecosystems" as the theme and the clue, inviting technology managers from professional technology transfer associations, technology transfer offices of universities, innovation incubation platforms and other technology transfer chains across the world to share and discuss the construction of innovation ecosystems, the development of technology transfer and cultivation of technology managers, and explore the innovative interconnection and development reshaping in the field of science and technology service industry.

Host	WANG Zhaoyang, Moderator of Shanghai TV
14:45-15:30 Keynote Speech	Osório Coelho Guimarães Neto, Deputy Secretary of Technological Development and Innovation of MCTI, Brazil
	Gene Hartigan, Director and Chief Media Officer of Shanghai Zhangjiang Boston Enterprise Park
	XI Lifeng, Member of the Standing Committee of the Party Committee and Vice President of Shanghai Jiao Tong University
15:30-15:35 Ceremony	**The Alliance Initiative of Shanghai International Technology Transfer Institute and the Signing Ceremony between the SJTU-BOC Institute of Technology & Finance and the National Eastern Tech-Transfer Center**
15:35-16:05 Keynote Speech	Vukašin Grozdić, State Secretary (Deputy Minister) of the Ministry of Science, Technological Development and Innovation, Serbia
	ZHANG Yongmin, Academician of the French Academy of Pharmaceutical Sciences, First-level Chief Researcher at the French National Center for Scientific Research (CNRS), and Doctoral Supervisor at the French Sorbonne University (formerly Paris VI University)
16:05-16:10 Ceremony	**Strategic Partnership Agreement Signing Ceremony between InnoMatch (Shanghai) Technology Services Co., Ltd. and the Association of Chinese Scientists in France**
16:10-16:40 Keynote Speech	WONG Lup Wai, CEO of IPI Singapore
	CHEN Hanmei, Director of Hubei Technology Exchange
16:40-16:50 Ceremony	**The Unveiling Ceremony of Yangtze River Delta Technical Managers Joint Training Center**
	Release of the First Batch of Results of Shanghai International Green and Low Carbon Concept Verification Center
16:50-17:20 Penal Discussion	Freek-Jan Frerichs, Science and Technology Counselor of the Dutch Embassy in China Lee Jin-soo, Technology Officer and Minister-Counselor of the Embassy of the Republic of Korea in China Martin Rune Hoxer, Director of Innovation Centre Denmark Andras Zoltan BALOGH, First Secretary of Science and Technology of the Embassy of Hungary in China
15:30-18:35	**2023 WeStart Global Entrepreneurial Investment Launch Ceremony and High-Quality Development of Incubators Forum** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers：Shanghai Technology Innovation Center / Shanghai Baoshan District Science and Technology Commission** **Co-Organizer: Shanghai East China Science and Technology Magazine Co.Ltd.** **China Baowu Steel Exhibition and Expo Center**
Theme Interpretation	For the purpose of further implementing the guiding principles of the 20th CPC National Congress, and upholding the basic principles of regarding science and technology as our primary productive force, talent as our primary resource, and innovation as our primary driver of growth, for a long time, Shanghai has been committed to building and establishing a world-class incubation system, focusing on optimizing the innovation and entrepreneurship ecosystem and promoting high-quality economic development, concentrating efforts on pooling innovative resources, applying scientific and technological achievements, incubating hard technology enterprises and fostering future industries, continuously opening up new fields and succeeding in new arenas, fostering new growth drivers and building new strengths, and comprehensively supporting the construction of Shanghai International Science and Technology Innovation Center. Nowadays, the changes of the incubation models are ushering in the 4.0 model one after another. The high-quality development of incubators is actively seizing major opportunities such as the globalization of technological innovation, continuing to deepen international cooperation in science and technology innovation, and connecting with and introducing top overseas innovation institutions. Driven by trends such as the deployment of overseas offshore innovation centers in innovation-intensive regions, how can we focus on improving the allocation capacity of international innovation resources and factors? How can we drive and enable the industry to raise the capacity level? How can we open up the upstream and downstream resources chains? How can we tap the source of innovation? This forum will conduct in-depth discussions on these issues in order to promote the further development of the innovation ecosystem.

15:30-15:40	**Conference Tour**
15:40-15:45	**Host Opening**
15:45-15:50	**WeStart Global Venture Capital Conference Promo Video**
15:50-16:05 Leadership Remarks	HE Defang, Deputy Secretary-General of the Ministry of Science and Technology
	LIU Duo, Vice Mayor of Shanghai Municipal People's Government
16:05-16:35 Keynote Speech	HOU Angui, Deputy General Manager and Executive Member of the CPC Committee of China Baowu Steel Group Co., Ltd.
16:35-17:50 TED Speech	WANG Shi, Founder and Honorary Chairman of Vanke Group, and Founder of Hiddengem Group
	XU Tian, Chair Professor in Genetics and Vice President of Westlake University, and Chairman of Fosun Lead
	XU Jieping, Executive Director and CEO of Plug and Play China
	MI Lei, Founding Partner of CASSTAR
	Todd Dollinger, Chairman and CEO of Trendlines group
17:50-18:05 Ceremony	**Launching Ceremony of Shanghai International Creators Competition 2023**
	Establishment of Advance Incubation Alliance and Release of Future Incubation Tracks
18:05-18:35 Penal Discussion	WENG Wei, Deputy Chief Economist of Lingang Group, Chairman of Lingang Science Investment Company HE Wei, Director of the Siemens Healthineers Shanghai Innovation Center ZHOU Yingying, Director of Research and Analytics, Elsevier Greater China REN Jia, Chairman and General Manager of SIMIC Holdings Co., Ltd. QU Yi, Founder and Chairman of Xinze Incubator ZHOU Wei, Founder and CEO of XNode
2023.09.11（Monday）	
09:00-12:15	**1st BRAZIL-CHINA NANOTECHNOLOGY SEMINAR (BCNS)** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: National Engineering Research Center for Nanotechnology** **Co-organizers: China Health Culture Association Medical and Industrial Integration Sub Society** **Guest Hall, 1F, Convention Center**
Theme Interpretation	Focus on technological development and innovation projects, not too technical presentations. Presentation of infrastructure, lines of action, possibilities for applying nanotechnology to improve products and processes, developed products, success cases on the development of projects that work on application and development in nanotechnology, and network to bilateral cooperation.
09:00-09:10 Opening Session	José Roberto de Andrade Filho, Deputy Consul General of the Consulate General of Brazil in Shanghai, China Brazil Innovation Week (CBIN)
	Osório Coelho Guimarães Neto, Deputy Secretary of Technological Development and Innovation of MCTI, Brazil
09:10-10:10 Keynote Speech	Felipe Bellucci, General Coordinator of Enabling Technologies /MCTI (video)
	CUI Daxiang, National Engineering Research Center for Nanotechnology of Shanghai Jiao Tong University
	Rodrigo Capaz, CNPEM/LNNano (video)
	CUI Daxiang, (National Engineering Research Center for Nanotechnology of Shanghai Jiao Tong University

10:10-10:27	**Break**
10:27-10:30 Address	Xu Jie, Deputy Director General, Department of International Cooperation, Ministry of Science and Technology
10:30-12:00 Keynote Speech	Arnaldo Gomes, Universidade Federal do Espírito Santo - UFES
	WANG Jingfeng, National Engineering Research Center for Nanotechnology
	Ivair Santos, INCT Ferroic Materials for Energy Converters
	WU Shuhong, National Engineering Research Center for Nanotechnology
	Dr. Gary Li, Suzano Asia
	Li Wan-wan, YU Xujiang, Shanghai Jiao Tong University
12:00-12:15 Closing Ceremony	Osório Coelho Guimarães Neto, Deputy Secretary of Technological Development and Innovation of MCTI, Brazil
	José Roberto de Andrade Filho, Deputy Consul General of the Consulate General of Brazil in Shanghai, China Brazil Innovation Week (CBIN)
12:15-13:30	**Lunch**
13:30-16:30	**Visiting National Engineering Research Center for Nanotechnology**
09:00-11:40	**Green and Low-Carbon Innovation Forum** **Focus on Green Transition, and Share a Low-Carbon Future** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers：Department of Science and Technology for Social Development of the Ministry of Science and Technology (MOST), Ministry of Science and Technology of the People s Republic of China, The People's Government of Shanghai Hongkou District, Green Technology Bank, Shanghai Science and Technology Exchange Center** **Co-organizers: China Association of Environmental Protection Industry, Green Technology Bank (Shanghai) Technology Development Co., Ltd.** **Supporters: United Nations Development Programme, China International Center for Economic and Technical Exchanges, Administrative Committee of Suzhou High-tech Zone** **W Shanghai - The Bund**
Theme Interpretation	Mankind has only one earth and it is home to all countries. Using technological innovation to address global climate change, achieve carbon neutrality goals and ensure sustainable human development are crucial topics in technological cooperation. Accelerating green transformation and prudently advancing carbon peak and carbon neutrality are also intrinsic requirements for a quality development of China's model of modernization. Promoting a comprehensive green transformation of economic and social development entails a broad and profound reform of economic and social systems. In recent years China had explored various innovative policies and social governance practices to promote technological innovation and other innovative elements, and made remarkable progress in green development transformation. At the same time China actively shares its development experiences and technological achievements with other countries under multilateral cooperation frameworks such as South-South cooperation and the Belt and Road Initiatives. Green Technology Bank, as a platform and window for technological cooperation will take this forum as an opportunity to further promote exploration of green transformation and experience sharing. This will include discussion of policy innovation for technological reform, release best practices of technological solutions in key areas of green and low-carbon development, promote the "technology + finance" model for green technology transfer and transformation, and deepen international cooperation by exporting China's wisdom and solutions.

09:00-9:30 Opening Address	**Host:** SHANG Yuying, Vice Secretary General of Shanghai Municipal People's Government
	LIU Duo, Deputy Mayor of Shanghai Municipal People's Government
	H.E. Hem Vanndy, Minister of Ministry of Industry, Science, Technology, and Innovation (MISTI-Cambodia)
	ZHU Xuehua, Director of Department of Science and Technology of the People's Republic of China for Social Development
	Edward Kwakwa, Assistant Director General of the World Intellectual Property Organization (WIPO) (Video)
09:30-09:35 Release Ceremony	**Host:** Master of Ceremony
	Release of the National Green and Low-Carbon Advanced Technology Achievements Catalogue ZHU Xuehua, Director of Department of Science and Technology of the People's Republic of China for Social Development
09:35-10:00 Signing and Launching Ceremony	**Host:** Master of Ceremony
	1. MOU for Cooperation between China and Cambodia on Green Technology and Talent Cultivation H.E.Mr.Chuop Paris,Secretary of State of Ministry of Environment of Cambodia GU Xianglin,Vice President of Tongji University WANG Zhen,Director of the Administration Center of Green Technology Bank
	2. MOU for Carbon Labellibng Industry Joint Innovation Center WANG Zhen,Director of the Administration Center of Green Technology Bank WEI Wei,Prior of Shanghai Advanced Research Institute, CAS LI Peng,Executive Secretary-General of the China Electronic Energy Saving Technology Association
09:35-10:00 签约与启动	**3. MOU for Green Credit Cooperation** JI Lei,Assistant President of the China Economic Information Service and Director of the Shanghai Center, Xinhua News Agency WANG Zhen,Director of the Administration Center of Green Technology Bank YU Tao, President of the Shanghai University of Engineering Science LI Jing, General Manager of Shanghai Lingang Special Area Cross-border Data Technology Co., Ltd
	4. Launching Ceremony of the UNDP-Green Technology Bank Yangtze River Delta (Suzhou) Green Technology Application Demonstration Platform WANG Dong, Director of the Localization Project for Sustainable Development Goals of the United Nations Development Programme ZHANG Yi, Deputy Director of China International Center for Economic and Technological Exchange ZHU Junhao, General Manager of Green Technology (Shanghai) Technology Development Co., Ltd YU Meihua, Member of the Party Working Committee and Deputy Director of the Management Committee of Suzhou High-tech Zone
10:00-10:10	**Break**
10:10-11:40 Keynote Speech	**Host:** ZHENG Guanghong, Counsel of Science and Technology Commission of Shanghai Municipality
	Keo Vanthoeun, Deputy Director of Department of Green Economy, General Directorate of Policy and Strategy, Ministry of Environment
	WEI Wei, Prior of Shanghai Advanced Research Institute, CAS
	Erik Solheim, President of the "the Belt and Road" Green Development International Alliance
	GUI Xude, Board Chairman and Secretary of Party Committee of Shanghai Investigation, Design & Research Institute Co., Ltd. (SIDRI)
	Wichai Narongwanich, First Senior Vice President of Head Office of KASIKORN BANK
	Sean Kidney, Co-Founder and CEO of Climate Bonds Initiative (online)

13:30-17:00	**Green and Low Carbon Technology Matching Session**
09:00-17:00	**Green Technology Innovation Exhibition (preface hall)**
13:00-17:00	**Global Health and Development Summit** **New applications and markets for innovative technologies accelerating global health and development** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: Shanghai Center for Pujiang Innovation Forum, and Shanghai Center of Biomedicine Development** **Supporters: Bill & Melinda Gates Foundation, China Science and Technology Exchange Center, Alliance of International Science Organizations** **Zijin Hall, 1F, Convention Center**
Theme Interpretation	Nowadays, innovative technologies such as digital technology, genomic sequencing, and POCT are fast developing in the health field, offering potentials to improve health management through prevention, screening, and diagnosis. The development of innovative technologies such as artificial intelligence, cloud computing and big data, digital PCR, genomics, and sequencing have expanded new applications and markets for pharmaceutical and medical products in the global health and development field. The development of pharmaceuticals, medical devices and innovative platforms based on innovative technologies will bridge the gap in healthcare resources between regions and improve global resilience to pandemics. The summit aims to connect multiple parties including international organizations, government sectors, scientific research institutions and businesses to exchange latest developments in their respective sectors through dialogues and jointly explore innovative technologies and their applications adapting to emerging market trends and providing solutions to tackle global health and development challenges in sustainable and efficient manner.
Host	CAO Jinghua, Executive Director of the Secretariat, Alliance of International Science Organizations (ANSO)
13:00-13:10 Opening Ceremony	ZHENG Zhijie, Director, China Country Office, Bill & Melinda Gates Foundation
13:10-14:50 Keynote Speech	Steve Kern, Executive Director, Global Health Labs (GH Labs)
	SUN Kun, Director, Xinhua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine
	Marta Fernández Suárez, Chief Technology Officer, Foundation for Innovative New Diagnostics (FIND)
	Paul Pronyk, Director, Duke-NUS Centre for Outbreak Preparedness (CoP)
	ZHU Chouwen, Director, Shanghai Clinical Research and Trail Center (SCRTC)
14:50-15:00	**Break**
15:00-16:00 Project Speech	NI Dong, Deputy Director (Professor), School of Biomedical Engineering, Health Center, Shenzhen University; Founder, RayShape
	REN Feng, Co-CEO, Insilico Medicine
	CHEN Noah, Chief Executive Officer, Pluslife
16:00-17:00 Panel Discussion	**Host: XU Fujie, Deputy Director, China Country Office, Bill & Melinda Gates Foundation** **George F. GAO, Member, Chinese Academy of Sciences; International Member, National Academy of Sciences; Professor, Institute of Microbiology, Chinese Academy of Sciences** **Steve Davis, Senior Advisor, McKinsey & Company; Lecturer, Stanford Graduate School of Business** **ZHAO Wei, Member, International Eurasian Academy of Sciences; Deputy Director, Preparatory Office, Shenzhen Institute of Advanced Technology** **LI Xin, Deputy Director, Ministry of Science and Technology** **GUO Jinjiang, Head of Data Science Department, Global Health Drug Discovery Institute**

2023.09.12（Tuesday）	
08:30-12:00	**Future Science Forum: Frontiers of Fundamental Physics in the "Big Science" Era: Massive Scientific Facilities, International Collaborations and Innovations** **Host: Ministry of Science and Technology of the People's Republic of China, Shanghai Municipal People's Government** **Organizers: Fudan University** **Supporters: National Natural Science Foundation of China / Chinese Academy of Sciences** **Lecture Hall E1006, Building 2, Jiangwan Campus, Fudan University**
Theme Interpretation	Exploring the structure and laws of matter at nuclear and subnuclear scales is one of the core issues in physics. Due to the characteristics of the discipline and the huge demand for resources and manpower, international collaboration based on large experimental facilities is the common paradigm in this field. Major countries in the world have launched big international experiments, such as the Large Hadron Collider at CERN, which is the commanding height of the science and technology. During the "14th Five-Year Plan" period, a new round of international scientific and technological revolution is approaching, and China is also striving to seize the opportunity. This forum will focus on the frontiers of fundamental physics in the era of "big science", discuss how to fully rely on large scientific facilities to promote innovation in physics research, how to promote scientific and technological collaboration with open thinking and measures in the current international environment, how to plan and participate in global science and technology governance, and how to promote the development of advanced technologies and young scientists.
08:30-08:40 Opening Introduction	MA Yugang, Academician of Chinese Academy of Sciences, Dean of the Research Institute of Fudan University
08:40-09:55 Keynote Speech	ZHAN Wenlong, Academician of the Chinese Academy of Sciences, and Member of the Construction Commission of the National People's Congress
	ZHAO Zhentang, Academician of Chinese Academy of Engineering, Researcher of Shanghai Institutes for Advanced Studies, Chinese Academy of Sciences, Director of Shanghai Light Source Science Center
	Toshitaka Kajino, Director of International Center for Cross-Science Research on Big Bang Cosmology and Origin of Elements, Beijing University of Aeronautics and Astronautics, Beijing, China
09:55-10:15	**Break**
10:15-11:30 Keynote Speech	MA Yugang, Academician of Chinese Academy of Sciences, Dean of the Research Institute of Fudan University
	Luciano Musa, Senior Researcher of CERN, Former Spokesperson of the LHC-ALICE International Collaboration Group
	Karim Trabelsi, Researcher of IJC Laboratory, France, Spokesperson of Belle II International Cooperation Group
11:30-12:00 Penal Discussion	Q&A and round-table dialogue of the 6 panelists

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中华人民共和国科学技术部 Ministry of Science and Technology of the People's Republic of China
上海市人民政府 Shanghai Municipal People's Government

承　办：Organizers:
上海市科学技术委员会 Science and Technology Commission of Shanghai Municipality
中国科学技术发展战略研究院 Chinese Academy of Sciences and Technology for Development
上海推进科技创新中心建设办公室 Shanghai Office for Promotion of Sci-tech Innovation Center Development
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