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China Association for Science and Technology

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Newsletter

Headlines

CAST

CAST officially releases Top *Academic Conference 2022* in Chinese and English

On April 13, 2022, the China Association for Science and Technology (CAST) officially released Top Academic Conference 2022 online and launched an English version of the guidebook. A total of 765 conferences are listed in the guidebook. Users can log on to the official website (https://tac.castscs.org.cn/) or follow the WeChat account "Top Academic Conference" to track the most influential academic conferences.

CCOS will organize a side event of the 7th Multi-stakeholder Forum on Science, Technology, and Innovation for Sustainable Development Goals

On March 25, 2022, CCOS/CAST was approved to organize a side event titled "Open Science Promoting Quality Graduate Education in Global South" online from 19:30 to 21:00 on May 4, 2022, Beijing time, as part of the 7th Multi-stakeholder Forum on Science, Technology, and Innovation for the Sustainable Development Goals (STI Forum 2022). The side event will bring together representatives of open science stakeholders, including top universities, global publishing institutions, NGOs, and academic associations. The focus will be on Sustainable Development Goal #4, quality education, and #5, gender equality, as well as other Sustainable Development Goals (SDGs). Participants will discuss the relationship between open science and high-quality graduate education in the Global South under the framework of South-South Cooperation.

The 7th STI Forum will be held from May 5 to 6, 2022, under the theme "Science, technology and innovation for building back better from the coronavirus disease (COVID-19) while advancing the full implementation of the 2030 Agenda for Sustainable Development."

CCIT holds virtual workshop "Joint Action Using Big Data and Internet of Things Technology on Geographical Indications for Environment & Sustainability"

On April 4, 2022, the Consultative Committee on UN Information Technology (CCIT) of the China Association for Science and Technology (CAST) held a virtual workshop titled "Joint Action Using Big Data and Internet of Things Technology on Geographical Indications for Environment & Sustainability" under the World Summit on the Information Society Forum 2022 (WSIS Forum 2022).

He Changchui, an academician with the International Eurasian Academy of Sciences and former Deputy Director-General of the Food and Agriculture Organization of the United Nations (FAO), presided over the workshop and delivered a speech. Liu Chuang, a member of CCIT and researcher at the Institute of Geographic Sciences and Natural Resources Research (IGSNRR) of the Chinese Academy of Sciences (CAS), Xuan Li, the Senior Policy Officer for the FAO Regional Office for Asia and the Pacific, Simon Hodson, the Executive Director of the Committee on Data of the International Science Council (CODATA), Namgay Wangdi, the National QUINOA Coordinator of the Ministry of Agriculture of Bhutan, and Gamini Samarasinghe, the Additional Secretary of the Ministry of Agriculture of Sri Lanka, were invited to address the forum. Gong Ke, the Chairman of CCIT and former President of the World Federation of Engineering Organizations (WFEO), and Horst Kremers, the CODATA-Germany Secretary General, participated in the roundtable discussion.

WSIS is co-organized by the International Telecommunication Union (ITU), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Development Programme (UNDP), and the United Nations Conference on Trade and Development (UNCTAD). It aims to provide a global multi-stakeholder platform for information exchange, the creation of knowledge, and sharing of best practices. It analyzes the development status of information technology and the knowledge society and promotes the sustainable development of the global information society.

Local associations for science and technology

Ningbo Association for Science and Technology holds virtual meeting with Embas-

sy of Hungary in China to deepen coopera-tion

On March 30, 2022, the Ningbo Association for Science and Technology (NBAST) held a virtual meeting with Balogh András Zoltán, the First Secretary for Science and Technology of the Embassy of Hungary in China. Shi Ying, the Secretary-General of NBAST, Zhou Tianwei, the Director of Ningbo Academician and Overseas Intellect Service Center, Zhang Mingming, the head of the Ningbo CEEC Innovation Center, participated in the meeting. They discussed ways to further deepen exchange of scientific and technological talent.

Building on the success of the Smart Hungary Travel Exhibition held in Ningbo last year, the two sides identified five areas for potential cooperation.

First, using the China (Ningbo)-CEEC Innovative Technology Matchmaking Conference as a platform, the two sides will work to consolidate the success of the Smart Hungary Travel Exhibition and make it a regular event in Ningbo.

Second, with all necessary COVID-19 precautions in place, Ningbo will welcome representatives of Hungarian small and medium-sized companies to visit the city and network with the local SMEs.

Third, known as "the country of innovation" and an innovation and knowledge hub of Europe, Hungary has produced 14 Nobel Prize winners with Hungarian origins. NBAST will study the practices that led to the "Hungary science phenomenon," explore ways to carry out greater popular science exchange with Hungary, and organize broader scientific and technological exchange targeting young people. Meanwhile, to promote rural revitalization and collective prosperity, NBAST will push for "cooperation across mountains and seas" and bring the best Hungarian scientific and technological resources and popular science resources to share with partner cities.

Fourth, to meet China's "two carbon" goals, NBAST will hold more project technology and experience exchanges with Hungary in the field of sustainable development, with Planet Hungary, Sustainable Development Expo, and other themed events in the pipelines.

Fifth, the two sides will explore opportunities in talent exchange between Ningbo and Hungarian hospitals and organize exchanges of teachers and students from scientific research institutes.

Beijing Association for Science and Technology holds a symposium to discuss ways to optimize the National Center for Science & Technology Innovation

On April 1, 2022, the Beijing Association for Science and Technology (BAST) held a symposium to discuss ways to optimize the National Center for Science & Technology Innovation.

Sima Hong, the Executive Vice Chairman of BAST, stressed that different scientific organizations, such as national societies, municipal societies, science and technology associations of enterprises and universities. He also emphasized that international organizations should all be an integral part of the work of BAST and provide key support to the National Center for Science & Technology Innovation.

For the next step, BAST will strengthen exchange and cooperation with national societies, establish a long-term cooperation mechanism with them, and form synergies in regional innovation and development and the formation of third-party market-oriented technology evaluation. It will strengthen capacity building of municipal societies and their members, improve access to membership of scientific and technological associations, and promote cross-fertilization of ideas with cutting-edge interdisciplinary societies.

BAST welcomes international technological organizations to set up offices in Beijing, encourages young science and technology workers to work in international organizations, and fully supports the international exchange of the Zhongguancun Forum (ZGC Forum). It will work to increase scientific and technological associations in institutions of higher learning, boost cooperation between university and corporate associations for science and technology and accelerate the transformation and application of independent innovation achievements.

Last, it will strengthen the building of corporate associations for science and technology and promote the establishment of associations for science and technology in central enterprises located in Beijing, Beijing municipal state-owned enterprises, and private enterprises, including leading small and medium-sized enterprises that specialize in niche sectors, to integrate resources, promote exchange, and better serve the society.

National societies

Zhang Yuzhuo proposes requirements for CSES to increase international cooperation

On April 10, 2022, the Chinese Society for Environmental Sciences (CSES) held its 9th national congress in Beijing. Zhang Yuzhuo, Executive Vice President and Chief Executive Secretary of CAST, and Huang Runqiu, Minister of Ecology and Environment of China, attended the meeting and delivered speeches.

In his speech, Zhang Yuzhuo commended the progress CSES has made in academic exchange, environmental protection, training of scientific and technological talent, capacity building, and solidarity with science and technology workers in the environmental field. All these efforts have contributed to the development of ecological and environmental protection in China in recent years. In the future, he expects CSES to increase efforts towards openness and cooperation, contribute to global governance, deepen ties and cooperation with important international and national scientific and technological organizations working in environmental science, lead reform of the global environment and climate governance, promote joint construction, and governance and sharing, and work together to build a better future for humankind.

Zhang Yuzhuo proposes requirements for CRES to increase international cooperation

On March 18, 2022, the China Renewable Energy Society (CRES) held its 10th national congress in Beijing in hybrid mode. Zhang Yuzhuo, Executive Vice President and Chief Executive Secretary of CAST, was invited to give a video speech. The opening ceremony was presided over by Tan Tianwei, academician with the Chinese Academy of Engineering and chairman of CRES.

On behalf of CAST, Zhang Yuzhuo congratulated the convening of the congress and proposed several requirements for the future development of CRES: CRES should develop a global vision, deepen exchanges, and forge new partnerships. CRES should work with international and national organizations to build a more active image in international scientific and technological governance. It should recruit foreign scientists who are familiar with and friendly to China, and welcome membership from Hong Kong, Macao, and Taiwan to elevate its influence.

Working meeting of the Organizing Committee of the International Space Science and Payload Competition held in Beijing

On March 19, 2022, the first plenary working meeting of the Committee of the First International Space Science and Payload Competition was held in hybrid mode. All members of the Committee reviewed and approved the implementation plan of the competition.

The First International Space Science and Payload Competition will be jointly organized by the Chinese Institute of Electronics (CIE), Beijing Institute of Technology (BIT), International Academy of Astronautics (IAA), China Space Foundation, and Chinese Society of Astronautics (CSA). The aim of the competition is to bring together and nurture outstanding space science and payload technology talent and projects from around the world, promote major scientific discoveries and technological innovations in space, and build an international academic exchange community centered on space science experiments and payload design.

S&T News

China's Shenzhou-13 crew returns to Earth using a rapid return maneuver

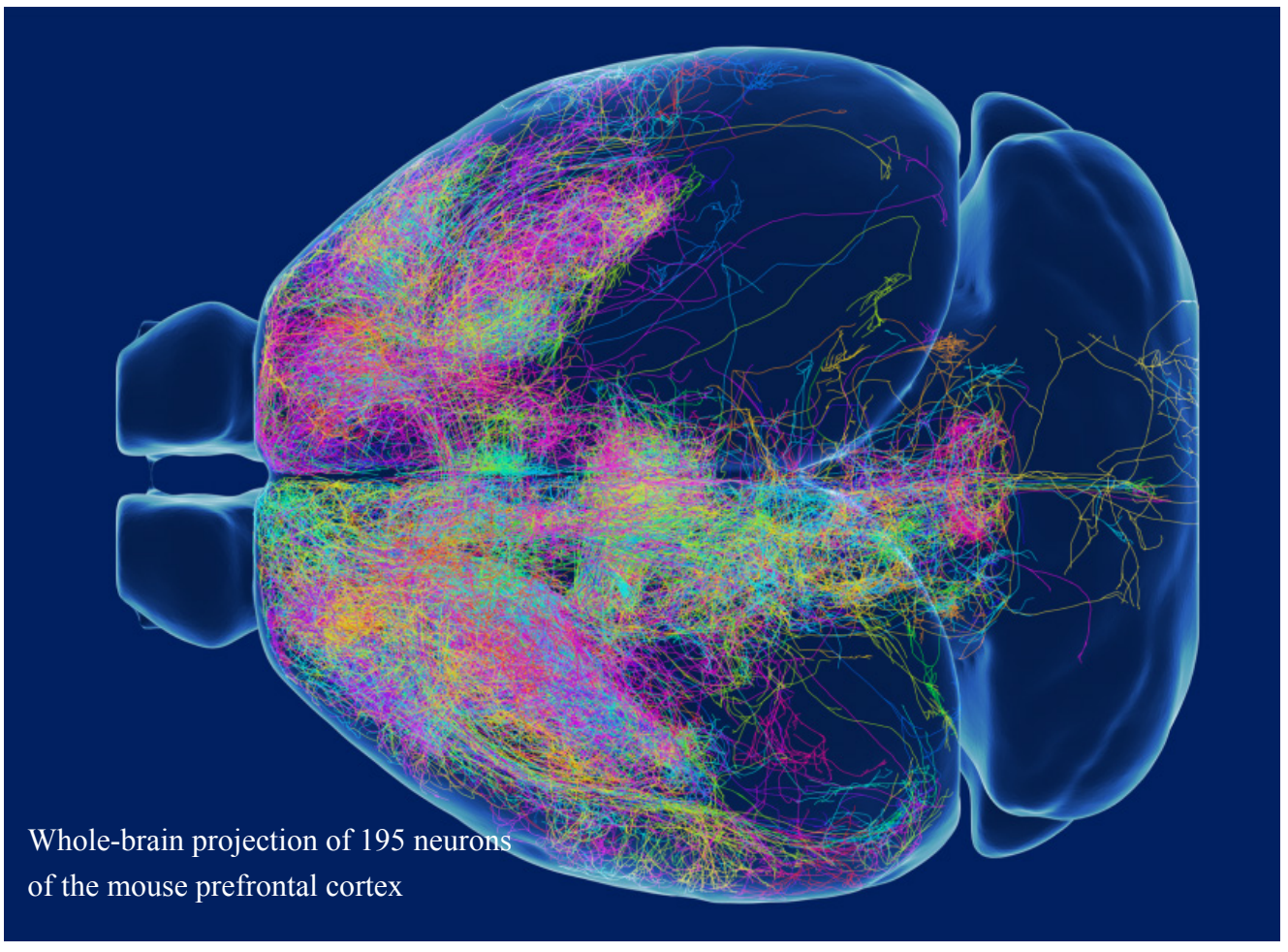
On the morning of April 16, 2022, China's Shenzhou-13 manned spacecraft landed safely at the Dongfeng landing site in northern China's Inner Mongolia Autonomous Region. The three astronauts it carried—Zhai Zhigang, Wang Yaping and Ye Guangfu—all reported feeling good after the touchdown. They had spent a record six months in orbit, completing China's longest space mission yet.

The Shenzhou-13 spacecraft performed a rapid return maneuver for the first time, which enabled the astronauts to come back faster and more comfortably. Chinese scientific and technical workers have made detailed preparations for the return. They reduced the time required for the return from the previous 11 orbits to 5 by carefully adjusting and sequencing the flight tasks and compressing the operation time. After Shenzhou-13 separated itself from the Tianhe core module of the Tiangong space station, it made 5 orbits around the earth before landing, each taking about 1.5 hours. The previous Shenzhou-12 mission circled the earth 18 times when it returned, which lasted more than a day.

Chinese scientists map the whole mouse brain

On March 31, 2022, Nature Neuroscience published an online cover story by Chinese scientists on the high-resolution projectome of neural connectomes of the mouse brain. The study reported the first release of a whole-brain projectome comprising 6,357 single neurons in the mouse prefrontal cortex (PFC), making it the largest database of a whole-brain, single-neuron mouse projectome to date.
The study, titled "Single-neuron projectome of mouse prefrontal cortex," was a collaboration between the Chinese Academy of Sciences (CAS) and the Huazhong University of Science and Technology, among others. It provided a structural basis for the neural mechanisms of high-level PFC cognitive functions and laid the foundation for future research on whole-brain mesoscopic connectomes in model organisms.

The study identified 64 projectome-defined neuron subtypes in the mouse PFC and their spatial organization, the modularity and hierarchy of intra-PFC connectivity, and the correspondence between transcriptome-defined and projectome-defined neuron subtypes. It shed light on the laws of internal connections and external projections of the prefrontal cortex and proposed a plausible working model of the prefrontal cortex.



Whole-brain projection of 195 neurons of the mouse prefrontal cortex

Chinese research team discovers a method to convert human pluripotent stem cells to 8C-like cells

On March 21, Nature published a breakthrough study by a Chinese research team online, which reported a new method to convert 8C-like cells (8CLC) from human pluripotent stem cells (PSC).

As totipotent stem cells in early development, 8C-like cells (8CLC) can differentiate into all types of cells within placental tissue embryonic tissues but also have the potential to develop into more mature tissues and organs. The experiments described by the study demonstrated the totipotency of these cells.

The study was the first to demonstrate that converted cells can produce placental tissues in vivo. Understanding totipotency in human cells would have very broad implications in regenerative medicine in terms of helping to regenerate human organs, reducing dependence on organ donation, and generating artificial blastocysts and blastocysts. The research method used in the study will also help scientists unravel the secrets of embryogenesis and treat diseases associated with human embryonic development.

CAST is the largest non-governmental organization of scientific and technological professionals in the world. Through its 211 member societies and local branches all over the country, CAST maintains close ties with millions of Chinese scientists, engineers, and other professionals working in fields of science and technology.
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