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π -HuB Project Enters Implementation Stage

By LI Linxu

The Proteomic Navigator of the Human Body (π -HuB) project, an international big science project initiated under the leadership of Chinese scientists, has entered the implementation stage, according to the International Science and Technology Cooperation Center of the Ministry of Science and Technology. The project has proposed a research framework, which is undergoing review in accordance with procedures, while several pilot projects have achieved preliminary results.

At the 25th Human Proteome Organization World Congress held in Singapore from September 27 to October 1, He Fuchu, an academican of the Chinese Academy of Sciences, spoke of the project's progress during the π -HuB Project Global Day.

According to He, who spearheaded the initiative to launch the π -HuB project, the research framework under review consists of 13 interrelated research plans, covering technology and standards, proteomic atlases, navigation theory and computational models, as well as applications in medicine and pharmaceutical R&D.

Meanwhile, pilot studies supported by participating institutions have made preliminary progress in tissue and cell atlasing, large-scale population studies, proof-of-concept for proteomic navigation, and exploration of clinical applications.

An international working group has advanced work on common standards and data governance, while a data center platform is under construction in Guangzhou, south China.

Zhao Jing, director general of the International Science and Technology Cooperation Center, said the π -HuB project received project approval and funding support from the Chinese government in 2026. China will support the π -HuB project in continuously improving its governance structure and governance capabilities, driving it to pool international premium resources for collaboratively tackling key bottlenecks, share achievements, and enhance people's health.

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True Stories Behind the Long March

Edited by WANG Xiaoxia

In October 1934, a column of troops set out from Yudu in Jiangxi province in east China. Two years later, when the survivors reached Shaanxi in the northwest, just over 50,000 of the original 200,000 remained. They had crossed 18 mountain ranges, forded 24 rivers, traversed vast grasslands, scaled snow-capped peaks, and passed through hails of bullets. This was the Long March.

What was the spirit of the Long March? It was about upholding revolutionary ideals and the belief that a just cause would prevail. It was not an abstract slogan, but real people and their stories that continue to inspire generations.

While crossing the vast grasslands, when the troops ran out of food, a young soldier cut his rawhide belt into strips and boiled them for food, showing the resilience of the revolutionaries. They were convinced they would win. Even on his deathbed in the grasslands, a Red Army soldier said: "I know the cause of the Party will surely triumph! The revolution will surely triumph!"

The revolutionary ideals and convictions were not slogans but an unwavering belief even when starving and dying. It was a willingness to sacrifice everything to save the country, no matter what difficulties and obstacles lay ahead.

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A farmer harvests corns in a field in Xiayi county of Shangqiu city, central China's Henan province, October 8, 2026. (PHOTO:XIN-HUA)

STI Frontier

Smarter, Greener Grain Storage Gets Upgraded

By Staff Reporters

China has rolled out its fourth-generation grain storage facilities — a new breed of "air-dome" silos to make food stockpiling smarter, more energy-efficient, and far less reliant on chemicals.

The first domestically built 9,000-tonne units recently went into service at the Sinograin Changsha depot in Hunan, following initial trials in Chengdu in May 2023. The pilot phase proved the concept; now the technology is moving from the lab into real-world, large-scale application.

Key breakthrough

The five new silos at Changsha are hard to miss. Each stands 33.6 meters tall — roughly the height of an 11-story building — with a smooth cylindrical body and an egg-shaped dome roof. They have more storage space

and prevent rainwater from pooling.

China's grain storage has gone through three earlier generations. The first ones were simple earth, timber, or brick structures. The second improved on moisture protection, ventilation, and sealing with brick- and concrete warehouses, though temperature control remained elusive. The third generation introduced computerized monitoring, mechanical aeration, fumigation, and cooling — but still struggled with insulation and airtightness. The fourth generation was built to fill this gap.

The breakthrough is in the walls. The fourth-generation silos use a three-layer "sandwich" construction that works like high-performance outdoor gear. The outermost layer is a tough PVDF membrane — a waterproof, fire-resistant, heat-reflecting shell. The middle layer is polyurethane, which acts as a

thermal barrier while also serving as a mold during construction. The innermost layer is reinforced concrete, which bears the heavy lateral pressure of the thousands of tonnes of grain inside. The dome's lower interior height makes inspections safer and easier.

Performance-wise, the numbers speak for themselves. These new silos are over six times more airtight than what the national standard requires — a huge leap that means nitrogen gas, used to suppress oxygen and pests, stays trapped inside much longer, so refills are far less frequent. They're also about three times better insulated than conventional granaries, keeping the average grain pile temperature comfortably below 15°C. That steady chill slows down the natural aging of grain, keeps mold at bay, and cuts post-harvest losses significantly. See page 3

2026 Nobel Prizes Honor Pioneering Scientific Achievements

By Staff Reporters

Every year, the Nobel Prizes in Physiology or Medicine, Physics, and Chemistry recognize scientists for their outstanding contributions to their respective fields. This October, the laureates for 2026 were announced.

Physiology or Medicine: Karl Deisseroth, Peter Hegemann, Georg Nagel

The Nobel Assembly at Karolinska Institutet awarded the 2026 Nobel Prize in Physiology or Medicine jointly to Karl Deisseroth, Peter Hegemann and Georg Nagel "for their discoveries concerning light-gated ion channels and optogenetics."

Optogenetics is a method that makes it possible to show how nerve cells shape memories, feelings and behaviors in the living brain. "Optogenetics

provides opportunities for mapping the brain in a way that we could once only dream of," Per Svenningsson, chair of the Nobel Committee for Physiology or Medicine, said.

Hegemann and Nagel discovered a remarkable protein, channelrhodopsin, in a single-celled alga. Deisseroth transformed the protein into a light-controlled switch for nerve cells. "The laureates have laid the foundation of a new era in neuroscience," the press release said.

Physics: Francis Halzen

The Nobel Prize in Physics 2026 was awarded to Francis Halzen by the Royal Swedish Academy of Sciences "for decisive contributions to the IceCube Neutrino Observatory and the discovery of high-energy neutrinos of astrophysical origin."

The IceCube Neutrino Observatory is a cubic kilometer of ice equipped with light sensors at the South Pole. Using IceCube, researchers can capture neutrinos from extremely energy-rich processes in the distant universe.

The neutrino interactions that are continuously collected by IceCube will provide researchers with novel knowledge about the violent settings in which high-energy neutrinos can be created and could even reveal previously unknown cosmic phenomena.

"Francis Halzen has led an international team of researchers and engineers who have provided us with a fantastic instrument. His tenacity and scientific vision have paved the way for a new kind of astronomy," Mark Pearce, chair of the Nobel Committee for Physics, said.

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International Cooperation

Satellite Remote Sensing Empowers China-Africa Cooperation

By LI Linxu

Themed "Intelligent Earth Observation Empowering China-Africa, Win-Win Cooperation Forging a New Chapter," the China-Africa Cooperation Center on Satellite Remote Sensing Application (CACSA) Week 2026 was recently held in Beijing.

Zhou Xing, vice minister of natural resources, said since its establishment four years ago, CACSA has been rooted in Africa's development realities, consolidating the foundation for cooperation through data sharing, overcoming development bottlenecks through technological empowerment, and stimulating endogenous momentum through talent cultivation. It has advanced the development of cooperation mechanisms and promoted the alignment of China's satellite remote sensing application technologies with Africa's sustainable development needs.

In data sharing, statistics show that to date, CACSA has signed cooperation memorandums with the government departments of 20 African countries and the Regional Centre for Mapping of Resources for Development.

It has established 16 natural resources satellite remote sensing cloud service platform nodes, providing African partners with free access to more than 90,000 scenes of high-resolution remote sensing images, covering fields such as land surveys, forest monitoring, and disaster prevention and mitigation.

CACSA attaches great importance to sharing and dissemination of knowledge and technology, and has strengthened the provision of public goods in the field of satellite remote sensing applications.

It has provided African partners, free of charge, with a series of remote sensing AI large models, software solutions and thematic atlases. These efforts promote the use of satellite technologies by African countries in fields such as cultivated land protection and ecological governance, thereby benefiting local people's livelihoods and well-being.

In talent cultivation, the center has carried out training on satellite data processing and applications through various means, reaching about 500 person-times of professionals from African countries. See page 2

New Graphic



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