科技日報

TELLING SCI-TECH INNOVATION STORIES, ENHANCING EXCHANGES BETWEEN NATIONS

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Science and Technology Daily

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China, Russia to Expedite Cooperation on Cutting-edge Technologies

Chinese President Xi Jinping said on December 15 that China and Russia should take the opportunities brought by the new round of scientific and technological revolution and industrial transformation, and expedite industrial cooperation on cutting - edge technologies.

Xi made the remarks at a virtual meeting with Russian President Vladimir Putin.

Xi pointed out that the two countries should share development opportunities and expand cooperation under new circumstances.

Russia is willing to continue strengthening cooperation with China in such fields as trade, oil and gas, finance, and aerospace and aviation, as well as major strategic projects, Putin said.

This year marks the 20th anniversary of the signing of the China- Russia Treaty of Good - neighborliness and Friendly Cooperation.

A series of new achievements have been made in science and technology.

In May, Xi and Putin witnessed the ground - breaking ceremony of Tianwan nuclear power plant and Xudapu nuclear power plant via video link.

The No. 7 and No. 8 units of the Tianwan nuclear power plant and the No. 3 and No. 4 units of the Xudapu nuclear power plant are the biggest China-Russia joint projects in the field of nuclear energy.

In March 2021, China and Russia signed a memorandum of understanding on jointly establishing an international scientific research station on the moon.

The China- Russia Year of Scientific and Technological Innovation concluded last month, which saw more than 1,000 events for exchanges on scientific innovation and cooperation.

Source: XINHUA

China's first homemade cruise ship conducted floating on Dec. 17 in Shanghai. (Photo provided by Shanghai Waigaoqiao Shipbuilding Co Ltd)

China, Africa Deepen Collaboration in Sci-tech Innovation

Edited by WANG Xiaoxia

The 2021 China- Africa Innovation Cooperation Conference opened on December 12 in Wuhan, capital of central China's Hubei province.

Under the theme of "Embracing a brighter future through innovation cooperation," the conference focused on the implementation of the Belt and Road Initiative and promoting the joint building of a China- Africa community with a shared future.

Hosted by the Ministry of Science and Technology (MOST) and the people's government of Hubei province, the two- day event included a series of activities, including a China- Africa innovation cooperation forum, a China-Africa innovation cooperation outcomes exhibition, and a visit by African diplomats based in China to Hubei, to experience scientific and technological innovation.

These initiatives all serve to help China and Africa better share international innovation resources. A total of 15 scientific and technological cooperation projects with multiple African countries were inked at the opening ceremony of the conference.

Officials and diplomats from African countries expressed their interest in further strengthening China-Africa cooperation in digital, ecology, AI, cultural exchange, innovation, entrepreneurship and other areas, so as to benefit more African people with China's innovation achievements.

In recent years, China-Africa scientific and technological innovation has been flourishing, said Foreign Ministry spokesperson Wang Wenbin at a regular press conference on December 14.

China has been working actively to carry out the Belt and Road Science, Technology and Innovation Cooperation Action Plan, implement the China-Africa Science and Technology Partnership Plan, share with African countries China's progress in science and technology, as well as experience in innovation development, said Wang.

To date, China has signed inter-government sci - tech cooperation agreements and launched related mechanisms with 16 African countries. Joint research platforms were developed and have supported over 130 bilateral research projects during the past decade, Wang added, noting the Talented Young Scientist Program of MOST has supported the research of more than 300 African young scientists in China.

With a total installed capacity of 47.5 megawatts, the Zhuying and Zhangpuying wind power plants in Chuzhou, Anhui province, were officially connected to the grid on Dec. 19. (PHOTO: XINHUA)

Editor's Pick

The Global Nature of Science, Technology and Innovation

—Ambassador Qin Gang's interview with AAAS Science & Diplomacy Magazine

Ambassador Qin Gang's interview with AAAS *Science & Diplomacy* Magazine was published on Dec. 17, 2021. Ambassador Qin spoke with Kim Montgomery, Director of International Affairs and Science Diplomacy and Executive Editor of Science & Diplomacy, on China's science diplomacy initiatives. Here is the full text of the interview.

Kim Montgomery: Since China and the United States established diplomatic relations in 1979, the U.S.- China Agreement on Cooperation in Science and Technology, renewed every year since, has led to robust collaboration in science and technology. You arrived in Washington, DC as Ambassador at a pivotal time, given the tensions between the countries. What are China's priorities for the bilateral relationship and what role do you see for science, technology, and innovation?

Ambassador Qin: Since the establishment of diplomatic ties more than forty years ago, China - U.S. relations have made historic progress, despite some twists and turns and the many differences in our social systems, histories, cultures, and approaches to development. We are ready to work with the United States to respect each other, peacefully coexist, and pursue cooperation.

Scientific and technological exchanges and cooperation have played an important role in the development of China-U.S. relations and are still an important part of our bilateral relationship. Even before we officially established diplomatic relations, U.S. President Carter's science advisor visited China. In 1979, after diplomatic relations were established, Mr. Deng Xiaoping and President Carter signed the China-U.S. Agreement on Cooperation in Science and Technology, the first formal cooperation agreement between the two governments. Over the past forty years, more than thirty protocols and agreements in a wide range of areas including health, climate change, ecological protection, and nuclear safety have been signed under the framework of the Agreement.

When China and the United States work together to address global issues as the ones I just mentioned, and jointly manage the uncertainties of emerging technologies, we can deliver greater benefits to our two peoples and better prepare humanity for an uncertain future. Limitations on that collaboration, including restrictions on Chinese scientists and students, are in the interest of neither side.

Montgomery: You have more than thirty years of diplomatic experience, having served as Vice Minister of Foreign Affairs, Director- General of Protocol, and multiple posts related to European affairs, among other positions. What role has science, technology, and innovation played in your diplomatic career?

Ambassador Qin: Throughout my diplomatic career, exchanges and cooperation in science and technology have been an important part of state-to-state relations, in line with President Xi's vision of building a community with a shared future for mankind.

When I was posted in the UK, along with learning why the first Industrial Revolution took place there and how the country had produced renowned scientists from Isaac Newton to Michael Faraday, I worked hard to promote scientific and technological cooperation between China and the UK. Under the framework of the UK-China Research and Innovation Partnership Fund (the UK's Newton Fund), China and the UK have jointly funded more than two hundred Chinese and British research institutions to carry out hundreds of cooperative projects.

Montgomery: One key aspect of science diplomacy is the use of scientific knowledge and expertise to inform diplomatic objectives. China has a rich history with centuries of integrating science into its foreign relations. How is science integrated into China's present-day diplomatic activities? How is that influenced by historical endeavors?

Ambassador Qin: With a civilization more than 5,000 years old, China has produced world-renowned scientific and technological achievements, including the four great inventions of gunpowder, paper making, printing, and the compass. Traditional Chinese culture values harmony, with evidence easily found in the science of ancient China. For instance, Mozi, an eminent scholar of the Spring and Autumn Period (770 – 476 BC), denounced unjust wars and advocated for "universal love," while also researching techniques for the defense of cities. With a tabletop simulation of those techniques, he was able to persuade the king of Chu (a state) not to attack Song (another state).

The goal of China's diplomacy today is to work towards world peace and promote global development. We value the role of science and technology in diplomacy. For example, China is ready to carry out international space cooperation with other countries on the basis of mutual respect, openness, inclusiveness, equality, and mutual benefit. We will continue to intensify international cooperation in the expansion of space station functions, space science and its applications, and the joint flight of Chinese and foreign astronauts. We have invited all United Nations member states to submit cooperative pilot projects to board the Chinese space station to provide a new model of international cooperation for future space explorations. So far, nine projects from seventeen countries have been selected, and we will soon announce the second round of opportunities.

Montgomery: Fifty years ago, U.S. President Nixon's National Security Advisor Henry Kissinger made a secret visit to Beijing, which laid the foundation for President Nixon's 1972 visit to China. During that and subsequent trips, science was one of the areas noted for future cooperation. Earlier this year, you had the opportunity to meet with Dr. Kissinger. Did you discuss how science engagements can help improve relations between countries? Did he provide any insights on present and future U.S.-China relations?

Ambassador Qin: Dr. Kissinger is a senior statesman and strategic thinker. He is also a trailblazer in China-U.S. relations, supporting their development and making historic contributions. He is deeply respected by both the Chinese and the American people. ***See page 4***

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INTERNATIONAL UNION FOR SCIENCE AND TECHNOLOGY COMMUNICATION

Communication, Cooperation and Co-prosperity

Telling Sci-tech Innovation Stories, Enhancing Exchanges Between Nations

The relationship between China and the rest of the world is undergoing historic changes. China needs to know better about the world, and the world needs to know better about China.

How to tell China's sci-tech innovation stories, in order to help present a true, multi-dimensional and panoramic view of China to the world, promote international sci-tech cooperation, share experiences and achievements, and ultimately help build a community with a shared future for humankind is an important question of our time. It is not only becoming a dominant issue for the global media trying to understand China, but also becoming the mission of the Chinese media in the new era.

Over the years, *Science and Technology Daily (S&T Daily)* has been deeply involved in covering major science and technology events. It has played an important role in advocating sci-tech innovation and popularizing science.

S&T Daily stays true to the mission of communicating China to the world. In particular, with your support, we initiated the IUSTC as a cooperative mechanism on September 20, 2018. The union has become a multilateral cooperation platform focusing on dissemination of sci-tech information worldwide.

On July 1 this year, we launched the Weekly Edition of *Science and Technology Daily* (in English), providing information and cases to tell China's sci-tech innovation stories and to help deepen international sci-tech cooperation. The Weekly Edition also aims to offer IUSTC members a new perspective, so that you can have a better understanding of China's sci-tech progress.

Over the past few years, on major international issues such as the global fight against COVID-19, tackling global climate change, and the application of 5G technology to the global media, the IUSTC members have worked together and played our part in information exchange and communication interaction.

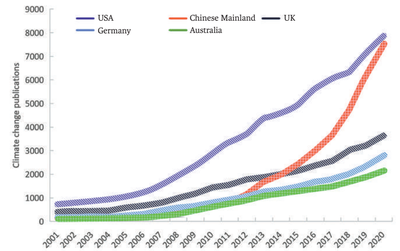
Exchanges and mutual learning between nations create an important vehicle for human progress, world peace and development. Science and technology have no borders. Today, via this video conference, we hope all IUSTC members could exchange ideas and work together to write a new chapter in promoting the integration and interaction of global intellectual resources.

Science and Technology Daily

Global Efforts to Achieve Carbon Neutrality

During the IUSTC annual conference, a report, titled *Science and Technology in Supporting Global Efforts to Achieve Carbon Neutrality*, was released by *S&T Daily* and supported by the data from Clarivate. The key findings are as follows:

- The research output related to climate change is increasing, and the growth of such research is faster than that of the overall indexed papers in the database;
- The disciplines covered by climate change research have changed;
- The output of climate change publications in the U.S. began to grow rapidly as early as 2006. Relevant research on the Chinese mainland began to increase significantly after 2012 with the highest growth rate;
- The percentage of international collaboration papers has increased rapidly, far exceeding the overall proportion of global international collaboration papers in the same period;
- China and the U.S. are each other's largest partners;
- Half of the Top 10 countries with the most collaboration in climate change research with the Chinese mainland are from Europe. The Chinese mainland is also the second largest partner of the EU27+UK;
- China and ASEAN countries began to collaborate in climate change research since 2003. More collaborations appear in recent ten years, particularly in recent five years.



Top 5 countries/regions with most output in climate change related research. In 2020, the total number of relevant papers in the Chinese mainland ranked second in the world.

Top 10 Research Frontiers in Climate Change

- The number of global insect declines
- Using climate models to study climate change
- Peer-to-Peer (P2P) energy trading
- River or soil forecast based on neural network theory
- Global glacier mass changes
- Decoupling economic growth and carbon emissions
- Efficient electrocatalytic nitrogen fixation under ambient conditions
- Aerosol research
- Research on shared bicycles
- Greenland and Antarctic ice sheet research

Actively Engaged in International Discussions

S&T Daily is Sputnik's largest science news partner in China. Cooperation between *S&T Daily* and Sputnik is a vivid example of general news outlets and specialized media effectively working together to promote scientific topics in the international information landscape and further develop this practice.

In this regard, we are very pleased that our partners are actively engaging us in international discussions, such as the World 5G Convention, where Sputnik experts have shared their views on the use of advanced media technologies for two years.

Special events promoting the exchange of science news also deserve a mention here.

Distribution Combined with Multi-media

PR Newswire today provides optimized and targeted content and news with distribution measure results. The development of search engines, social media, digital technology and the popularity of mobile devices have fundamentally changed the pattern of global news distribution. In China, more and more media have been very successful in distribution combined with the social media, video, photo, and big data technology. In addition to their authority, more importantly, they have found the best way to tell stories on different distribution platforms. In 2018, PR Newswire joined in IUSTC, which is the first platform with the mission of "international dissemination for science and technology" found by *S&T Daily*. We made the international channel wider, besides, more deeply contents can also be shared freely and immediately among IUSTC members.

Communication Improved on Sci-tech Information

IUSTC is a great platform for the global audiences to learn science and technology development. Clarivate has been a member of IUSTC since its establishment in 2018. We are truly thankful for the great support from all IUSTC members. At Clarivate, our vision is to improve the way the world creates, protects and advances innovation. To achieve this, we deliver critical data, information, workflow solutions and deep domain expertise to innovators everywhere. This is well aligned with the aim of IUSTC, which is to improve the efficiency of communication on science and technology related information. Science and technology are the foundation for the better future of our world. I look forward to working more closely with each member of IUSTC in telling more good stories in science and technology development. I am sure that our work will help the world better understand science and technology frontiers that are shaping our future.

Mutual Benefit Expected in the Future

Since its establishment in 2018, IUSTC has played an important role in promoting the exchange and dissemination of scientific and technological information globally. Despite the COVID-19 pandemic, the schedule of this annual worldwide meeting remained unchanged. I would like to express my heartfelt respect to this meaningful meeting for science and technology exchange, and innovations. Major changes are expected in the future internationally, I believe that cooperation between China and Japan will become more and more important. In the future, mutually beneficial relationships where all parties can learn together are highly anticipated. I would like to make efforts with IUSTC members, with continued support in the future. Lastly, I would like to express my heartfelt hopes and welcome the success of this meeting.

Scientific Information Spread through Digital Outreach

Initiated by *S&T Daily*, IUSTC was established in September 2018.

Since its establishment, IUSTC has played its important role in promoting global sci-tech exchanges and cooperation, improving the efficiency of sci-tech information, communication, and enhancing media influence.

In 2020, ICGEB Regional Research Centre was established in Taizhou, Jiangsu province. The research center is expanding interactions between the international communities, in particular Italy, and China, focusing on vaccines, antibody drugs and in-vitro diagnostics.

Through digital media platforms, public engagement, and media relations, ICGEB contributes to promoting international sci-tech cooperation together with IUSTC.

Besides, the collaboration with *S&T Daily* makes us find common ground and areas of interest, and publishes several articles on Chinese media platform.

IUSTC Annual Conference: Information Exchanges Promote Global Collaboration

In order to strengthen exchanges among members of the IUSTC, seek more cooperation possibilities, and promote international sci-tech cooperation, the first annual conference of IUSTC was convened on December 21 in Beijing, online and offline.

The IUSTC was initiated in September 2018, and its members reviewed the past three year's work, presented the prospects for future cooperation, and discussed how to better facilitate international sci-tech cooperation with the help of multi-media during this year's annual conference.

Speaking at the conference, the head of *S&T Daily* hoped that IUSTC would be committed to telling stories of sci-tech innovation, and promoting sci-tech cooperation and cultural exchanges. He also announced Xu Zhilong, editor-in-chief of *S&T Daily*, as the new chairman of IUSTC.

Xu reviewed three achievements of cooperation among IUSTC members at the conference. First, the increasing exchange of manuscripts and information of interview. Second, providing a platform for communication and cooperation. Third, jointly developing think tank initiatives.

Xu introduced the Weekly Edition of *S&T Daily*. Launched on July 1, 2021, the Weekly Edition covers contemporary topics related to science and technology, such as climate change, tracing the source of novel coronavirus, and the digital economy. In addition, the Weekly Edition keeps up with the cutting edge of sci-tech development and offers professional analysis.

IUSTC members, including representatives from Sputnik News Agency and Radio, PR Newswire, Japan Science and Technology Agency (JST), Clarivate and International Center for Genetic Engineering and Biotechnology (ICGEB), presented their congratulations at the opening ceremony, summarized their past sci-tech cooperation, especially with *S&T Daily* and looked forward to more exchanges among IUSTC members.

To help promote the spread of scientific and technological information, the IUSTC Secretariat issued four working initiatives for IUSTC members.

In addition, a report titled *Science and Technology in Supporting Global Efforts to Achieve Carbon Neutrality-Global technology development report 2021 climate change* was released on the conference by *S&T Daily*, and supported by the data from Clarivate.

The report is a fundamental study of global climate change over the past 20 years, putting forward relevant suggestions for international cooperation on climate change.

Global Carbon Neutrality Requires Closer International Cooperation

The COP26 in Glasgow, convened in November 2021, saw a changing phase of the Paris Agreement from rule-making to implementation for the global climate governance—using emerging technologies for climate change mitigation and adaptation to reach the agreed temperature objectives.

It is reported that the U.S., China, the UK, Germany, Australia and Canada are the most productive countries in terms of total number of publications on climate change. The U.S. tops the list; China's publications outnumbered the UK in 2014 after significant increase from 2012. The growth of publications is closely related to China's growing input in scientific research on climate change over the past ten years.

With a determined goal, we should make more efforts on research and development of carbon neutrality technologies as solutions, and make more interdisciplinary and cross-sector international sci-tech cooperation. As such, we'll quicken the green and low-carbon transition globally at a lower cost within a shorter period of time.

Technology Empowers 'Dual Carbon' Goals

Climate issues need multilateral cooperation. It must be made clear that the natural risks brought by climate change are featured by a systematic and spatially differentiated increase, while atmospheric control has obvious public benefits.

Science and technology is one of the core and key issues of global climate cooperation. Global climate governance under the multilateralism framework, which promotes green and low-carbon technology innovation and application deployment, will become an important part of global climate cooperation. The research and development, deployment and large-scale popularization and application of major sci-tech innovations in key areas determine the global climate governance capacity.

The mid- and long-term emission reduction technologies focus on fossil energy, industry, construction, transportation, energy storage, etc. The strategic role of deep carbon emission reduction or zero emission technology, negative emission technology and geoengineering technology in the future global emission reduction framework has attracted much attention.

Supporting Role of Adaptation Actions to Be Maximized

It has become the consensus of the international community that mitigation and adaptation, as two basic countermeasures to meet the challenge of climate change, are equally important and cannot be neglected.

Developed countries, which bear major historical responsibilities, should take the lead in substantially reducing carbon emissions. Most developing countries should vigorously carry out actions to adapt to climate change while making their own contributions to emission reduction.

In the past 20 years, substantial progress has been made in theoretical research and technology research, and development of adaptation to climate change at home and abroad. In China, there are a number of examples of adapting to climate change, such as solving climate poverty, protecting fragile ecosystems, developing climate-intelligent agriculture, and solving the problem of unstable frozen soil subgrade while building the Qinghai-Tibet Railway.

Collaborative Governance Between 'Dual Carbon' Goals and Human Health

Human society is a community with a shared future. It is difficult for any country in the world to be immune to the climate crisis. The public health and biosafety risks caused by climate change are global and public, which requires the cooperation of governments and the scientific community.

We need to fully understand and pay attention to the connections between climate policy, air quality, lifestyle and public health, so as to provide key catalysts for climate change mitigation and adaptation actions.

In view of the high public attention to health, it is urgent to integrate health into the climate decision-making process, and fully consider the potential impact and synergetic benefits of climate policies and systems on health. In this way, we'll develop a more cost-effective and socially acceptable technological path.

Aiming to Conquer Obesity

By BI Weizi

As an emerging hub of high-tech talent, China is attracting an increasing number of esteemed scientists in a wide range of skills. Doctor John Speakman is one of them. He is currently head of the Shenzhen Key laboratory of Metabolic Health, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences.

Speakman's main areas of expertise are the causes and consequences of changes in energy balance, particularly expenditure-limiting factors, the genetic and environmental drivers of obesity, and the energetic contribution to aging. He recently sat down with *Science and Technology Daily* to discuss his research on these topics.

Interest is the best teacher

Speakman's interest in science was sparked by his early interest in birds. "When I was younger I used to spend a lot of time watching birds," he recalled, adding that he would go to the same spot every day to count small wading birds and try to figure out what factors were affecting their numbers.

Professor John Speakman. (COURTESY PHOTO)

After graduation from high school, Speakman enrolled at the University of Stirling in Scotland, where he was able to study wading birds for his undergraduate project and went on to complete his PhD. It was there that the idea of seeking a career in science was cemented in his mind.

Why do we get fat?

By studying wading birds Speakman acquired several techniques that he has been able to apply to more applied health related issues in humans - particularly obesity. Obesity is a major health hazard in the modern world. Why do people become fat? How do we prevent them from becoming fat? What's the relationship between energy expenditure and energy intake? These are the areas in which Speakman has taken his research in the past years. "One suggested reason behind obesity is that it's a gradual reduction in our energy expenditure as we develop as a society. We do less and less. We don't have to hand wash our clothes anymore. We don't have to walk 10 miles to get things. So as we developed, there's less and less incentive for us to expend energy," he explained.

However, while there are lots of anecdotes about reducing our expenditure, there is very little data. Speakman has been compiling data on this issue and the surprising result is that expenditure on physical activity has not declined over time. People nowadays expend the same amount of energy as people did in 1990.

"So it seems that the main problem then is something to do with our food. There's something in our food or something about our food that makes us eat more. We have too much energy coming in. We have to put that energy somewhere, [so] we store it as fat."

Many experiment results conducted by Speakman and his team revealed that fat contents of the food we eat is a key element related to energy density. In order to fight against the obesity pandemic, which is a result of prolonged energy imbalance, a healthier lifestyle of eating less fatty food is promoted by scientists. By contrast Speakman suggests increasing physical activity will be much less effective for weight control. "Being more active is great for your health, and you should do it, just don't expect it to solve your obesity issue if you have one." he said.

China's attractive research environment

Speakman came to China in 2011 when he was successfully appointed on a talents program in Beijing. By that time he had already been coming to China every summer and most winters for about five years, during which his extensive traveling experience around the country provided him with a more comprehensive perspective on local customs and practices and opportunities to try authentic Chinese food. "Both my wife and I really enjoy going to restaurants. When I was in the UK we went out once or twice a week, but now [in China] we go out maybe three or four times a week. It seems that we are on holiday all the time."

But he didn't just come to China for the excellent cuisine, the main reason motivating Speakman to come to China was the research environment. According to him, the Chinese Government is attracting experts to move to China to experience the advantages of doing research in the country.

"The funding level is much higher [in China] than it is in the UK. The success rate to get grants is [also] much higher than it is in the UK. I'd already had lots of contact with Chinese researchers before I came here. So I kind of knew there are lots of talented people here, and I was looking forward to collaborating with them and doing a lot of interesting research," he said.

Since 2011, he has established a world-class metabolic research platform and undertaken several major research projects in China, making breakthroughs in human and animal energy metabolism and evolutionary mechanisms of obesity.

Meanwhile, he has led and participated in many international collaborative research projects and promoted the leap of China's research level in the field of energy metabolism research.

For his hard work and contributions to China's development Speakman was awarded the Chinese Government Friendship Award in 2021. He was overjoyed to receive the award, saying it would encourage him to make even greater efforts with his research so as to bring real benefits to the people.

Letter to the Editor

The Engineering Behind Gelato-making

By Andre Slawik

In 2006 I was working in the construction industry in Germany when I got the opportunity to interview for a job as a construction manager for the company's branch office in Shanghai. I applied for the position and was successful, moving to China in January 2007.

On the way over I started to get anxious as I was not sure what to expect when I arrived with just my passport and a suitcase filled with winter clothes. The size of the airport shocked me and I wondered how my driver would find me. It needn't have worried as he was waiting at the arrivals hall with my name on a signboard. It was at that moment that I fell in love with China and felt I should have come much earlier in my life.

During my first few years in China, from 2007 to 2014, I worked as a construction engineer and project manager on the outskirts of Shanghai, Beijing, Yinchuan and Nanjing. Construction work takes place much faster here in China. The labor force is incredibly large but there needs to be more checks and quality control.

When the financial crisis began in 2014, I returned to Germany and worked in my old company office. There I noticed how different the construction work in Germany was. For example, Chinese projects were handled by 20 engineers, whereas in Germany we need 3 times more than that. So, it was not a surprise that I took the first good offer available to head back to China which I was missing so much. Five months after returning to Germany, I got an offer from another German company in Beijing with a high-rank position.

I lived in Beijing from 2007 until 2008 and I loved the art scene there. I usually spent my Sunday afternoons, which was my only day off, walking around the hutongs (narrow alleyways in the old parts of the city), which was always a delight. I really love Chinese food, as the delicious tastes range from spicy to sweet and sour. Additionally, I love how nice and friendly the people are, even if a person can't communicate in German or English, they are willing to listen, help and become your friends.

At the end of 2016, I had to leave the construction company that I had joined in 2014 due to some internal issues. However, I decided to stay in Shanghai for an extra year developing an ice-machine to produce a special type of ice. By then, I had decided to set up my own business and decided to start making gelato (a type of ice-cream), which I had become very interested in. In 2016, I moved to Xiamen to be with my girlfriend and started to work on my project called "Papa Gelato," which was the name I gave my slightly risky shop concept.

Unfortunately, due to circumstances beyond my control, I only started work on getting the correct business documents and licenses in 2018. Then in 2019, I had to postpone the process until the beginning of 2020. That year, my girlfriend went home to Malaysia for Chinese New Year and in the meantime I continued to search for a suitable shop location. Then the pandemic and the lockdown happened and once again I had to postpone my plans.

However, something great happened during the pandemic outbreak, my girlfriend got pregnant and our first baby arrived in December 2020. It was the best thing that could ever happen to us during the pandemic.

The birth gave me the motivation to continue with my gelato project. In February 2021, I again went in search of a suitable shop location and finally after a few weeks found a place and started creating my dream in March. Most of the renovation work was completed by the end of July. In August 2021, Papa Gelato opened for business in Xiamen.

There is a secret formula to making gelato that nobody will tell you unless you buy a gelato company or find out by yourself. It requires lot of experimentation, and exact calculations are needed to find the right balance of ingredients. So, after (only) 4 failures I found my secret recipe! It's always different when I start making new flavors, hoping that the customers will love it. Listening to them gives me new ideas for further flavors. It is thanks to all my supporters and family that I embarked on this challenging gelato journey. Nothing feels better than putting a smile on a child's face when they eat gelato.

Andre Slawik is a former technical manager in construction and current gelato maker.

The Global Nature of Science, Technology and Innovation

From page 1

Dr. Kissinger believes that a conflict between China and the United States can have no winner. The two sides should strive to build a candid bilateral relationship, avoid mutual threats and conflicts, and work together to improve bilateral relations and coexist peacefully. I strongly agree with Dr. Kissinger on this point.

When we met in September, he expressed his concerns about the risks and negative impacts of the rapid development of artificial intelligence and other emerging technologies. He supports China and the United States participating in dialogue and cooperation regarding the ethical regulatory management of those technologies.

Montgomery: Diplomatic initiatives can help to foster international scientific collaboration and strengthen scientific capabilities worldwide. These efforts are instrumental in addressing global challenges such as climate change. Can you elaborate on China's diplomatic priorities in working with the United States and the international community to find science-based solutions to these shared problems?

Ambassador Qin: Confronted with the pandemic, China has shared information and experience and strengthened international cooperation in the joint R&D for vaccines, treatments, and testing. China has provided more than 1.8 billion doses of vaccines to more than one hundred countries and international organizations, and the total number of vaccines we provide for the world this year will reach two billion doses. China has partnered with thirty countries in the Initiative for Belt and Road Partnership on COVID-19 Vaccines Cooperation to promote the fair international distribution of vaccines. We hope that China and the United States will strengthen their scientific and technological cooperation to help the world overcome the pandemic as soon as possible.

Climate change is a common challenge to mankind, and all countries need to work together to address it. As the world's largest developing country, China has adopted a host of strategies and actions on climate despite economic and social difficulties. These efforts have paid off. President Xi Jinping recently announced that China is striving to reach peak CO_2 emissions before 2030 and carbon neutrality before 2060.

There is much room for China-U.S. cooperation regarding climate change. In both countries, fossil fuels account for more than 80% of energy consumption. Both are also transitioning to renewable energy faster than any other countries in the world, and are looking for advancements in clean energy technologies. The U.S.-China Clean Energy Research Center (CERC), a typical example of bilateral research cooperation, has produced many mutually beneficial achievements in the past decade. The project has been suspended, but we hope to find a new model of cooperation regarding clean energy.

Montgomery: In the past few decades, China has significantly increased its international scientific collaborations, including a focus on South-South collaboration with S&T programs in Africa, South Asia, and Latin America. How are these international scientific engagements advancing China's diplomatic objectives in general and in the Global South specifically?

Ambassador Qin: South-South cooperation is an essential means for less-developed countries to help each other and develop together. China is always prepared to work with other developing countries on scientific and technological exchanges.

I would like to highlight three measures that we have carried out. First, we share with these countries mature and applicable technologies, putting them to local use to boost those countries' economic development. Second, we have established joint laboratories with them, conducting joint research in agriculture, radio and television, clean energy, and more. Third, we hold training classes on applicable technologies and carry out exchanges among young scientists. With the implementation of the Belt and Road Science, Technology and Innovation Cooperation Action Plan, we have supported over 8,300 young foreign scientists to work in China. We have established thirty-three joint laboratories and five technology transfer platforms with less-developed countries, as well as science parks with eight of them.

One exciting example is China's cooperation with the Comoros, an island country in East Africa, to fight malaria. Mohéli, the Comoros' smallest island, had suffered from malaria for years. When the Comoros sought to cooperate with China to fight the disease, the medical professionals of our two countries agreed to use Artequick, a Chinese-developed artemisinin-piperaquine tablet. Within five years (2008-2013), the annual incidence of malaria in Mohéli dropped by 95% and the death rate fell to zero. The research on using artemisinin to fight malaria was initiated by a Chinese female scientist, Dr. Tu Youyou, in 1969, who shared the 2015 Nobel Prize in Physiology or Medicine with two other scientists.

Montgomery: You served as the head of the information office of the Chinese Foreign Ministry. What advice would you give to scientists who want to communicate their research and findings more effectively to the diplomatic community and the public?

Ambassador Qin: We have much to learn from the popularization of science in the United States. For example, Science magazine, published by the AAAS, does an outstanding job. In addition to scientific research papers, each issue of the magazine includes short stories on current affairs regarding scientific areas such as quantum mechanics, black holes, and artificial intelligence.

My impression is that when scientists communicate scientific information to the public, the difficulty of the concepts and complexity of the data create some barriers. For example, it is difficult for the public to understand the concepts of 1.5 °C and 2 °C of global average temperature rise, as described in the Sixth Assessment Report of the IPCC. These abstract concepts should be illustrated through real-life scenarios. For instance, scientists could explain that if the temperature rise exceeds 1.5 ° C, some natural disasters which used to happen once in a century will likely occur every year. This explanation will make the temperature rise easier to understand and could help increase support for action.

Montgomery: China is a vast and diverse country. When travel is more feasible, what destination highlights would you recommend people to see when visiting China, particularly if they are interested in science and technology?

Ambassador Qin: China is a vast country, with immense geographic and cultural diversity and time-honored historical traditions.

If you are interested in the Chinese scientific achievements of the past, I would recommend the ancient observatory in Beijing and the Dujiangyan irrigation project in Chengdu, Sichuan Province. Dujiangyan was built in 272 BC. I have been there myself, and have seen how it is able to control the river and use the floodwater for irrigation. It is amazing that the 2,000-year-old project is still running today. If you are interested in something modern, the "Sky Eye" (Five-Hundred-Meter Aperture Spherical Radio Telescope, FAST, one of the largest in the world) in Guizhou, the Jiuquan Satellite Launch Center in Inner Mongolia and the remote sensing satellite ground station in Hainan can give you a good idea of China's scientific achievements in current times.

Of course, I would also recommend metropolises such as Beijing, Shanghai, and Shenzhen, which are home to many well-known universities, research institutions, and high-tech enterprises.

As Chinese ambassador to the U.S., I warmly and sincerely welcome you and the American people to visit my country. With its long history and a vibrant future, and the perfect blend of art and science, China will not let you down.

Source: Embassy of the People's Republic of China in the United States of America

Photo News

Sci-tech Sparks the Vitality of Traditional Culture

The Youth Works Exhibition on Cultural Confidence and Sustainable Development - Tiangong Xiwu was held on December 19, which was jointly sponsored by Science and Technology Daily and the Palace Museum. It is the first time that the youth works were showcased in the Forbidden City.

This activity aims to encourage young people to use modern science and technology to stimulate history and culture's inherent vitality constantly so that traditional Chinese culture can be kept vibrant and innovated.

Wang Xudong, director of the Palace Museum, said in the event that many of the Forbidden City's structures and cultural relics reflect the ancient people's understanding of natural laws and constant use of science and technology to adapt to their surroundings. In terms of ecological and environmental protection, the Palace Museum has also made significant efforts in energy conservation, emission reduction, and low-carbon development to guide the audience to understand the importance of environmental protection.

The teenagers participate in the event of Youth Works Exhibition on Cultural Confidence and Sustainable Development in the Palace Museum.
(PHOTO: Zhou Weihai from S&T Daily)