

# ECNU



# Newsletter

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EAST CHINA NORMAL UNIVERSITY



# Headlines

## University deepens cooperation with Hainan Province



Three years since the release of “The Overall Plan for the Construction of the Hainan Free Trade Port” in 2018, Hainan has been experiencing great changes and the free trade port has witnessed vigorous development. ECNU has paid close attention to the development of Hainan, founding Ledong Huangliu High School, the second affiliated High School of ECNU, and Chengmai Experimental Senior High School of ECNU in 2016 and 2018, respectively.

On May 20, Mei Bing, Chair of University Council, led a research delegation to Hainan, with a view to linking the university’s disciplines with the further development of Hainan.

After observing the rich club activities and the featured courses on science, technology and the ocean in Chengmai Experimental Senior High School, Mei Bing pointed out that based on the major national strategy of comprehensively deepening reform in Hainan, ECNU is duty-bound to build public affiliated schools in Hainan to serve the province’s economic take-off. In addition, Chengmai Experimental Senior High School of ECNU and Ledong Huangliu High School, the second affiliated High School of ECNU, are expected to become a model for quality and balanced development of basic education between Shanghai and Hainan.

Accompanied by Li Hongmei, Chair of Hainan Normal University Council, Mei Bing investigated the South Longkun Road Campus of Hainan Normal University. Both sides had a discussion and signed a framework agreement for comprehensive cooperation between the two universities. Mei Bing indicated that the new round of rapid development of Hainan Province will generate new growth opportunities for Hainan Normal University. Therefore, the two universities are expected to develop innovative modes of cooperation under the new situation.

On May 21, Shen Xiaoming, Secretary of the Hainan Provincial CPC Committee, met with Mei Bing in Haikou. They discussed cooperation in such fields as teacher cultivation, basic education reform and innovation, international cooperation in school-running, philosophy and social sciences development, translation of achievements in biomedical science and technology, and coastal and marine ecosystem conservation.

## ECNU awarded “Shanghai Advanced Collective for Promoting Poverty Alleviation”

On May 20, the commendation conference to mark Shanghai’s accomplishments in poverty alleviation was convened, honoring the entities and individuals for their outstanding work in promoting poverty alleviation. The Education Research Center for Languages in Ethnic Areas of ECNU was awarded “2017-2020 Shanghai Advanced Collective for Promoting Poverty Alleviation”.

The center was officially launched in 2018. Based on the advantages of ECNU in preschool education, language education, and language work, the center has laid a solid foundation for language education. It is now among Shanghai’s first model schools for language standardization, the national model schools for language standardization, and first national language promotion bases. Led by Prof. Zhang Jianmin, the team has been effective in alleviating poverty through language education.

## Cornerstone-laying ceremony held for ECNU affiliated school in Changzhou

On May 22, a cornerstone-laying ceremony for the ECNU Affiliated Changzhou West Taihu Lake School was hosted in West Taihu Lake Science and Technology Industrial Park of Changzhou City. Dai Liyi, Vice President of ECNU and Director of ECNU Education Group, Li Lin, Vice Mayor of Changzhou City and Secretary of Wujin District Party Committee, and other related personnel attended the ceremony.

According to Li Lin, the West Taihu Lake area, where the school is located, is not only the core area of the city for strategic development, but also the “most beautiful bay in the Yangtze River Delta” Changzhou is striving to build.

Dai Liyi said that ECNU will gather first-class educational resources, offer diversified courses, and implement elite education, in an effort to build West Taihu Lake School into a top-ranking school leading the development of basic education in China, and provide educational support for the concentration of high-end resources in West Taihu Lake. The affiliated school, a K12 full-time international school jointly founded by the Wujin government, ECNU and Jiangsu Zhiyuan Education Development Co., Ltd., consists of a kindergarten, a primary school, a junior high school, a domestic senior high school and an international senior high school. It is scheduled to open in September 2023.

## ECNU participates in Shanghai EDU EXPO

On May 22, the Shanghai Education Expo opened at the Shanghai Exhibition Center, participated by the education bureaus and more than 100 educational exhibitors from the Yangtze River Delta and the 16 districts of Shanghai. ECNU is also the invited participator.

The Expo not only displays the achievements made by the university in talent cultivation, but also creates an interactive platform for the university to present itself. Furthermore, student volunteers are also invited for on-site explanation.

# Focus

## ECNU presents Intelligent Education Week



Teaching music together with art, collecting the health data of children during physical exercises, assessing students' cognitive ability via games - these are some of the scenarios local families can experience about how artificial intelligence can empower education during an activity at ECNU.

On June 29 and 30, more than 1,000 families have attended the "Intelligent Education Week" activity at the university which opened its campus to the public to show its latest research achievements and their application scenarios.

In one room at the university's School of Design, a tablet enabled children to learn musical sounds via paintings and create their own music by arranging the paintings.

The music-painting system was developed by a team from the university, whose research involves various disciplines including brain science, neuroscience and cognitive science.

"The system combines music and art with emotion as a bond to promote children's aesthetic perception and creation," said Chen Jinming, an associate professor at the School of Design. "The teaching process of the music-painting system is not training a single skill, but to help children develop their structure of aesthetic psychology via multi-sensory approaches."

More than 20 such online applications and offline teaching tools have been developed, and some are being trialed in local kindergartens.

In another scenario, eight robots were painting cartoons, elaborate-style drawings and Picasso's well-known works. Based on the drawings, children began to make secondary creations by coloring them. It showed how people and machines can work together in artistic creation and education.

Also, a series of textbooks published by the university's publishing house for robot, artificial intelligence and STEAM (science, technology, engineering, arts and mathematics) education were on display.

On the playground, the university showed its self-developed sport courses for children. As children wore heart rate monitors and sports bracelets when doing physical exercises, their heart rate can be seen on a large screen so that teachers can watch over the change of the rates to assess the real-time condition and physique of children and adjust exercise intensity accordingly.

Jumping on a building-shape map, playing with rubber bands, sandbag throwing and other traditional games popular in China were also staged on the playground.

"These games are organized not only to pass on traditional Chinese sport culture, but also to inspire students'

interests in sports," said Wang Xiaozan, a professor at the university's school of sport and health. "We've found in our research that these games have irreplaceable value for young kids to develop basic sport skills and promote health condition."

She said researchers from the university have developed several mini programs online for students to finish homework assigned by physical education teachers, and teachers can easily get to know children's performance via the mini applications.

"The human-machine interaction technology can help promote students' interests in taking part in sports after school and provide preferences for policymakers and executives," said Wang.

The university also showed a set of systems for assessing children's sensory and cognitive abilities, which has been found important in children's learning ability.

Zhang Changxin, Deputy Director of the university's education department, said they have immersed the assessment approaches into games to evaluate children's abilities in visual and auditory concentration, memory and special movements.

Children tried the games, including one requiring students to find out moving thieves among smiling faces, while researchers explained the results to parents and gave suggestions on children's growth and education.

The university's affiliated maternity and childcare hospital and its education department have joined hands to screen babies' brain development and take intervening measures to improve their growth in aspects including early movement, language, cognition and social adaptation to unlock children's brain development at a super early stage.

Case studies, games and consultation services were in place to help parents find out possible psychological risks, such as autism, depression and attention deficit hyperactivity disorder, and corresponding measures to ensure children's mental health.



# Research

## Prof. Wu Jian's research team selected for 2020 China's Top Ten Advances in Optics

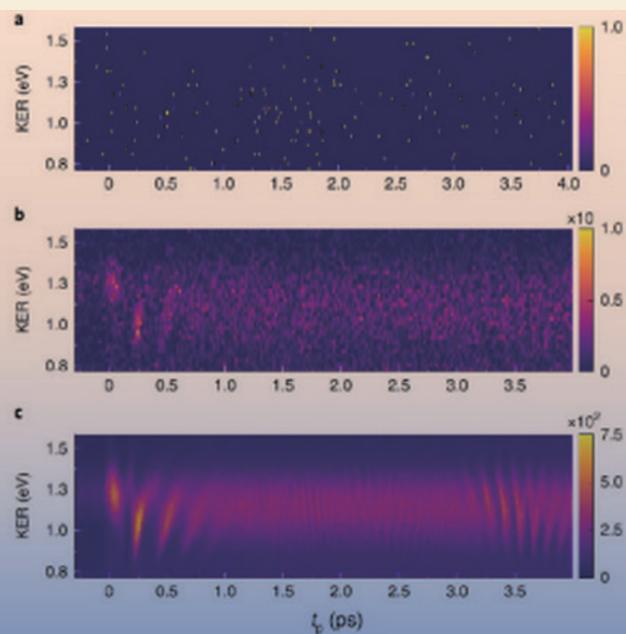
The first Optics Frontier Summit and the award ceremony of the 2020 China's Top Ten Advances in Optics were held in Fuyang District of Zhejiang Province. After the first round of recommendations, preliminary evaluation and final evaluation, 10 basic researches and 10 outstanding results of applied researches in optics were finally selected by the secret ballot of 48 evaluation experts who have comprehensively considered the academic value and application value of candidate results for the competition of China's Top Ten Advances in Optics this year.

"Echo in a single vibrationally excited molecule", the research result achieved by the research team led by Prof. Wu Jian from State Key Laboratory of Precision Spectroscopy of ECNU and cooperators, stands out from more than 100 pieces of candidate works to be successfully selected into the list of 2020 China's Top Ten Advances (basic researches). The team first observed the ultrafast vibrating echo in the single molecular system in the experiment with ultrafast femtosecond lasers and coincidence detection technologies.

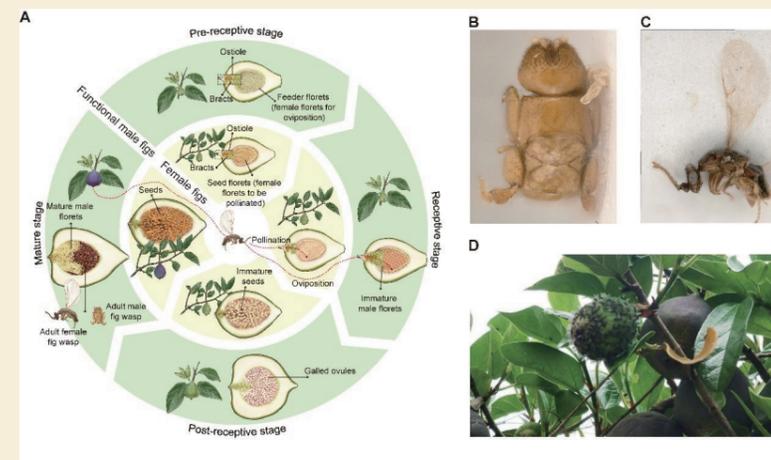
Compared with the traditional echoes, the vibrational wave packet echoes occur in a single and isolated molecule while it reveals strong quantum effects. Besides that, given the universality of the molecular vibrational wave packet echoes in other systems, with the development of detection technology, researchers are expected to reveal the ultrafast dynamic process and more physical information inside the macromolecules by virtue of the single molecular vibrational echo.

Initiated by *Chinese Journal of Lasers*, the "China's Top Ten Advances in Optics" competition has been successfully held for 15 years, aiming to promote the wide spread applications of China's outstanding research achievements in optics, as well as the development of China's optics undertakings.

Prof. Wu Jian, who has been engaged in the frontier research of ultrafast laser physics for a long time, has made innovative contributions in the precision measurement and control of molecular ultrafast dynamics. Furthermore, he has published more than 130 SCI theses.



## Researchers discover the molecular mechanisms of mutualistic interactions in a plant-pollinator association



On May 17, the research entitled "Molecular mechanisms of mutualistic and antagonistic interactions in a plant-pollinator association" was published online in a form of article in *Nature Ecology & Evolution*. In this study, the authors focused on the mutualism between *Ficus pumila* var. *pumila* and its specific pollinator *Wiebesia pumilae* and revealed the molecular mechanisms of reciprocal adaptation between plants and pollinating insects.

Many insects metamorphose from antagonistic larvae into mutualistic adult pollinators, with reciprocal adaptation leading to specialized insect-plant associations. However, it still remains unknown how such interactions are established at the molecular level, and therefore the authors assembled high-quality genomes of the two studied species. They then combined multi-omics with validation experiments to reveal molecular mechanisms underlying this specialized interaction.

During the mutualistic interaction (i.e., pollination), the researchers identified the specific compound attracting pollinators and validated the function of several key genes regulating its biosynthesis in the plant. For the pollinator, they found a highly reduced number of odorant-binding protein genes and an odorant-binding protein mainly binding the attractant. These uncovered the mechanisms underlying the high host-specificity of the pollinator.

During the antagonistic interaction, they found similar chemical profiles and turnovers throughout the development of galled ovules (ovules parasitized by pollinator larvae) and seeds, and a significant contraction of detoxification-related gene families in the pollinator. These results suggested that the pollinator has adapted to the specialized environments inside galled ovules.

Overall, their results showed that plant-pollinator mutualisms rely on interactive genes, establishing expectations for more diffuse pollination systems.

Dr. Rong Wang and Yang Yang from the School of Ecological and Environmental Sciences (SEES) of ECNU, Jing Yi from BGI Genomics, and Dr. Simon T. Segar from Harper Adams University are the first authors of this paper. Professor Xiao-Yong Chen from SEES of ECNU, Yu Hui from South China Botanical Garden of CAS, Stephen G. Compton from University of Leeds, and Yue Zhen from BGI Genomics are the corresponding authors.

Other institutes participating in the study included Xishuangbanna Tropical Botanical Garden of CAS, Mianyang Normal University, INRAE, Northwest University, the University of Hull, the French Academy of Sciences, Sichuan University, Guangzhou University, the University of Maryland, the University of Illinois, Fujian Agriculture and Forestry University and Xiamen University.

# ECNUers

## Volunteers serve at 10th China Flower Expo



On May 21, a grand opening ceremony for the 10th China Flower Expo was hosted on the Chongming Island in Shanghai.

Over 3,500 volunteers from the universities in the city serve at the Expo. 60 ECNUers are volunteering for the expo. ECNU volunteers mainly serve the Century Pavilion, one of the landmark venues in the Flower Expo garden, providing tourists with such services as field guidance and consultation, welcome and escort support, epidemic prevention and health promotion, and helping carry out other theme activities in the garden.

“This is my first participation in such a large volunteer activity. I’m so proud and excited,” said Wei Gongye, a 2018 History major from ECNU.

According to Li Xin, a Chinese Language and Literature major of ECNU, “I work at the exit of the Century Pavilion and receive a large number of tourists every day. I am very much affected by the smiles on the faces of the tourists.”

Wang Jiaqi, a Politics and Administration major of the 2020 class of ECNU, is proud of being a volunteer. She said, “I am so delighted to see that tourists’ needs are met with my help.” “It is our duty to serve every tourist well, and each volunteer is a brand name of ECNU”, she added.

Zhu Yongyan, a Chinese Language and Literature major of the 2020 class of ECNU, said, “We not only answered every question of tourists patiently, but also handled emergencies quickly. The work itself is trivial and painstaking, but we are all optimistic and willing”.

## 7 years! ECNUer draws posters to raise public disaster awareness

Li Lang, a graduate student majoring in Public Art from the ECNU School of Design, has been voluntarily drawing blackboard newspapers for fire stations across Shanghai in her spare time, with a view to raising public awareness of the importance of disaster risk reduction. This year marks her 7th year of drawing blackboard newspapers for fire stations.

Dreaming of joining the army since her childhood, Li Lang has always been looking for opportunities to contribute to the fire fighting forces.

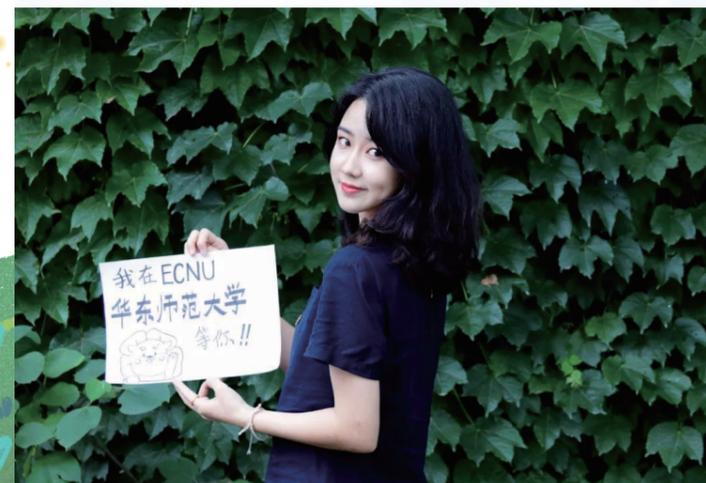
She first learned about blackboard newspapers when she had the freshmen military training at ECNU. One of the instructors, who was from a fire station, said to her, “You are learning design. Would you mind coming to our fire station to tell us how to make a nice blackboard newspaper?” This led to her first experience in blackboard newspaper design at fire stations.

Afterwards, Li Lang worked in various fire stations across Shanghai on a voluntary basis in her spare time to help firefighters with blackboard newspaper creation and display board production.

Li Lang cannot remember how many fire stations she has visited over the past seven years and how many blackboard newspapers she has helped design. She works for the fire stations 2 or 3 times a month and enjoys her work there. Whenever her blackboard newspaper appreciated by the firefighters, she feels her work pays off.

Li Lang also said that every time she draws on a blackboard, she silently pays tribute to all the firefighters in her heart.

This June, Li Lang is about to graduate and start her career. Will she continue to be dedicated to this voluntary work in the future? For this question, Li Lang answered, “It’s cool to stick it out. I wish that at the age of 80, I could still remain active in fire stations and promote disaster risk reduction among the public.”



# Campus

## Pottery history comes alive at ECNU museum



On May 7, ECNU launched the “Pottery Drum Casting: Exhibition of Stamped Hard Potteries Donated by Huang Zhirong”. A collection of 167 stamped hard potteries traveled through time and space to meet with ECNUers at the university’s museum. They were donated by Huang Zhirong, a cultural relics collector in Liyang City of Jiangsu Province.

On display were the best pieces in this collection. Starting with “The Birth of Pottery”, the exhibition introduced the evolution from early pottery to stamped hard pottery, focusing on displaying the shape, use, decorative features, and production processes of stamped hard pottery and the relationship between stamped hard pottery and bronze ware and glazed porcelain of the same period.

The stamped hard pottery displayed in the exhibition, including the pots, jars and urns typical of the pre-Qin period and the relatively rare square vessels and statues, not only present the pottery culture of the Yangtze River Delta, but also reveal the profound cultural connotation of Jiangnan culture (the regions south of the Yangtze River).

Huang Zhirong has been dedicated to collecting stamped hard pottery for decades. He donated this collection to ECNU, hoping that with the university’s research advantages, the historical and academic values of stamped hard pottery can be further explored.

He also wishes that his effort may promote the protection and research of cultural relics in general. “We should let cultural relics, history and culture speak for themselves,” said Huang.

## Consular officials embark on a cultural journey

More than 30 consular officials from 18 countries in Shanghai, including those of Russia, Germany, Finland, Hungary, Mexico, Pakistan and Poland, gathered by the Liwa River of ECNU on May 22 for a wonderful immersive experience tour of the Song Dynasty (960-1279) culture.

Consular officials participating in the event are all from a summer camp sponsored by Shanghai Education Commission and Shanghai Foreign Affairs Office and organized by ECNU. The activity is based on the restoration of the trading market of Xiangguo Temple in the Northern Song Dynasty (960-1127).

Through the revival of the prosperous market scene in the Song Dynasty, it brings consular officials an immersive Song Dynasty experience. The participants can truly experience the life of the Song people and decode the historical origin of China's stall economy.

Consular officials not only had the opportunity to make traditional props of shadow play, but also enjoyed a wonderful performance by the children of Qibao Mingqiang Primary School.

At a tea stall, consular officials learnt the art of

making tea in the Song Dynasty, and also tasted licorice iccold water, a popular beverage at that time.

Guozi (now commonly known as dim sum and pastry) in the Song Dynasty was the general name of all kinds of dried fruit, candied fruit and pastry. It was rich in variety and diverse in shape, reflecting the aesthetic pursuit of the Song people.

During the activity, consul officials followed Chinese pastry chefs to learn the traditional method of making mung bean cake and gained a deeper understanding of the culinary culture of the Song Dynasty.

Movable type printing is one of the four great inventions of ancient China. The consul officials experienced the whole process of this ancient technique.

Callum Neil Starr, Consul of the Australian Consulate General in Shanghai, said the shadow play was impressive, and Chinese traditional art and culture have been well inherited by the teenagers. Mauricio Chavez, Consul from Ecuador, added: The event is very vivid, as if you were really in the market of the Song Dynasty.





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