

CONNECTION

The Official Newsletter of Zhejiang University

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A Brilliant Summer



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Message from the Editor-in-Chief

As the world becomes increasingly interconnected, the development of intercultural awareness and global competencies has become central to the higher education agenda. Here at Zhejiang University, we have been striving to offer an impressive array of global study programs, which our students have found inspirational and transformative.

This summer, over 1100 ZJU undergraduate students have traveled overseas to participate in a variety of activities, including summer schools, research internships, and international contests. At the same time, ZJU offered short-term programs for students from around the world. In this second volume of *Connection*, we are therefore very pleased to present you some snapshots of the students' brilliant summer.

I invite you to watch for exciting new developments as we report on ZJU faculty and students in and beyond their academic work here on campus. As always, we would also love to hear your thoughts.



LI Min, Editor-in-Chief
Director, Office of International Relations
Zhejiang University



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Coming Together for
a Better Ocean Future

ZJU and Alibaba join to promote cutting-edge research & development

In addition to the same head-quarter city (Hangzhou), Zhejiang University and Alibaba, the Chinese E-commerce Giant, are both reputed for their innovation capacity.

On May 31, the two sides signed a strategic cooperative agreement, signaling the inception of a new partnership.

In accordance with the agreement, Zhejiang University and Alibaba Group will collaborate in various domains through the Alibaba-ZJU Cutting-edge Technology Research Center, including cutting-edge technologies, health-care, humanities, and social

sciences, so as to promote the cultivation of innovative talents and the development of the society.

This new cooperative mode aims at maximizing technological values and endowing research products with more social significance.

Alibaba Group was founded in 1999 by 18 people led by Jack Ma, a former English teacher from Hangzhou. Now it is the world's largest retailer surpassing Walmart, with operations in over 200 countries.

The founders of Alibaba believed that the Internet would



level the playing field by enabling small enterprises to leverage innovation and technology to grow.

浙江大学—阿里巴巴集团 校企战略合作框架协议签署仪式



ZJU delegation attends Summer Davos in Dalian



The Annual Meeting of the New Champions in the World Economic Forum – also known as the Summer Davos – was held in Dalian, a financial, shipping, and logistics center in Northeast China.

Under the theme "Achieving Inclusive Growth in the Fourth Industrial Revolution", this year's meeting examined the potential for innovation, science, and technology to create economies that serve all sectors of society.

On June 27-29, a Zhejiang University delegation led by President WU Zhaohui attended the meeting. The delegation shared their views at several sessions, such as University Presidents Dialogue, Ideas Lab, Science Hub, and Dragon Science. They showcased the latest research achievements and innovative proposals concerning global challenges.

On the morning of June 28, WU had in-depth discussions on challenges faced by tertiary education in the Fourth Industrial Revolu-

tion, with other presidents from top universities in the UK, Singapore, Japan, and Korea.

"At the core of Industry 4.0 is the intelligent aspect of big data. While transforming the way mankind will produce and live, it will also reshape the content and pattern of future learning," WU says.



WU shared his views in the University Presidents Dialogue.

"Future learning will be data-augmented, innovation-driven and meaning-constructed. Higher learning should be dedicated to the development of mission-driven learning, the ideal of taking the world as one's

AT THE CORE OF INDUSTRY 4.0 IS THE INTELLIGENT ASPECT OF BIG DATA.

own duty, and the cultivation of abilities to tackle global challenges," he adds.

WU also shared the educational reform that Zhejiang University had carried out to respond positively to Industry 4.0, including the emphasis on general education, utilization of information technology, and internationalization.



YAN presented his research.

On the afternoon of June 28, ZJU and the Summer Davos Forum co-hosted the Ideas Lab under the theme of environmental protection. Faced with the increasingly severe environmental pollution across the world, scholars at ZJU have done tremendous work in providing innovative approaches.

Professor YAN Jianhua, Professor GAO Xiang, and Professor HE Yan introduced cutting-edge technologies for solid waste utilization, air pollution control, and soil remediation, which riveted the audience's attention.

China donates collection of Yuan dynasty paintings to FU Berlin



For anyone who is fascinated with Chinese culture, the cultural feast in Berlin must not be missed. On July 5, a series of events kicked off in Berlin to bring Chinese arts and culture to the German public. This event

was co-organized by the State Council Information Office and the Chinese Embassy in Germany.

At the opening ceremony, Mr. HUANG Kunming, Executive Vice Minister of the Publicity Department of the CPC Central Committee, donated *A Collection of Yuan Dynasty Paintings* to Freie Universität Berlin.

This collection is part of a series on ancient Chinese paintings compiled by Zhejiang University and Zhejiang Bureau of Cultural Relics. A companion of *A Collection of Song Dynasty Paintings*, *A*

Collection of Yuan Dynasty Paintings is hailed as the most authoritative and complete compilation of paintings of that period of time. Known as the "Empire of the Great Khan", the Yuan dynasty (1271-1368) saw the development of a rich cultural diversity in China.

Both collections have been acquired by world-renowned institutions, including UNESCO, the United States Library of Congress, and the British Library.

ZJU researchers participate in 43rd ocean expedition



On the afternoon of July 9, China's ocean scientific survey ship, Xiangyanghong 10, completed her 43rd ocean expedition and sailed back to Zhoushan. On board were two

professors (HAN Xiqiu, HE Zhiguo) and one Ph.D. candidate (ZHU Rui) from the Ocean College of Zhejiang University, who participated in the fifth leg of the expedition.

The 50-day expedition focused on a scientific survey on polymetallic sulfide in the Carlsberg Ridge in northwestern Indian Ocean. Rich mineral and biological samples were obtained during the survey.

"Our major task is to conduct research into the structural features of underwater hydrothermal plumes through exploration and data analyses, thereby helping pinpoint the location of hydrothermal vents more accurately and improve the simulated model of hydrothermal plumes," Professor HE says.

"Although it involves a lot of hard work and unpredictable risks, it is of immense help for the identification of research questions in a more rational and profound manner," HE adds.



ZJU makes debut on THE Rankings by Subject (Arts and Humanities)

The Times Higher Education World University Rankings 2018 by subject – Arts and Humanities – were unveiled on September 13.

For the first time, Zhejiang University is listed on this subject ranking. ZJU ranks 101-125 together with Nanjing University, second to Peking University (17th) and Tsinghua University (48th) nationwide.

This year's ranking has expanded to include 400 institutions, up from 100 last year. It highlights

the universities that are leading across art, performing arts, languages, history, philosophy, theology, architecture, and archaeology subjects. Mainland China has eight representatives in total.

The ranking is based on five criteria: citation, industrial income, international outlook, research, and teaching. ZJU outperforms Tsinghua University in citation and Nanjing University in teaching and research. However, there is much room for

improvement in terms of industrial income and international outlook.

The result suggests that ZJU can strengthen its cooperation with enterprises in knowledge transfer and elevate its prestige on the international stage.

The ranking also indicates that the rise of higher education in China is not just limited to science and technology subjects.

China tops men's 4x100 meters relay in IAAF Diamond League



Left to right: SU Bingtian, XIE Zhenye, ZHANG Peimeng, WU Zhiqiang

On July 22, Chinese men's 4x100 meters relay team finished first in the 2017 International Association of Athletics Federations

(IAAF) Diamond League in Monaco. The Chinese team, including XIE Zhenye, a master's candidate in athletic training at Zhejiang University, put on a dazzling

performance. They together beat the other strong teams from the US, France, and Canada in 38.19 seconds.

ZJU hosts National University Innovation and Entrepreneurship Alliance Summit

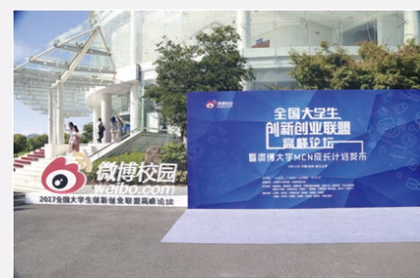
On August 23, the 2017 National University Innovation and Entrepreneurship Alliance Summit was held at Zhejiang University.

"Innovation and entrepreneurship stand for a state of mind," Professor ZHENG Qiang, vice secretary of ZJU Party Committee, says in his welcome address. "I hope that less attention should be paid to wealth and capital while more emphasis be laid on diligence and spiritual pursuit."

The summit brought together

over 300 new media specialists from various universities and a galaxy of experts and celebrated entrepreneurs. They explored the trend of innovation and entrepreneurship among college students as well as its strong impact on the new economic climate.

At the summit, the National University Innovation and Entrepreneurship Alliance and Weibo University MCN Growth Plan were launched. Meanwhile, Weibo Campus set up the Cyber Culture Achievement Institute



and the Cyber Culture Branding Institute with Zhejiang University and Shanghai Jiao Tong University respectively.



Perfect "alliance" between best hospitals

On September 7, Sir Run Run Shaw Hospital affiliated with the Zhejiang University School of Medicine signed an agreement to join the Mayo Clinic Care Network.

"Sir Run Run Shaw Hospital is China's first comprehensive hospital to join Mayo Clinic. It is a perfect 'alliance' between America's best hospital and China's best hospital," says Dr. David Hayes,

Medical Director of the Mayo Clinic Care Network.

Mayo Clinic is a group of independent organizations committed to improving the quality and delivery of health care through collaboration. In the U.S. News & World Report rankings of top hospitals, Mayo Clinic is the #1 hospital overall, as well as #1 in more specialties than any other hospital in the United States.

As a new member of the Network, the care providers of Sir Run Run Shaw Hospital can access the latest Mayo Clinic knowledge and expertise through digital technology, consult Mayo Clinic physicians via email, and discuss complex cases with their American counterparts via video conferences, thereby boosting the hospital's health care to a new level.

ZJU Summer Photo Contest 2017

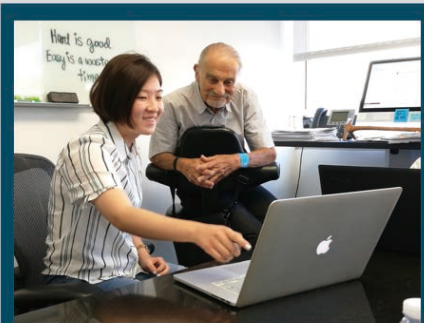
hosted by the Office of International Relations



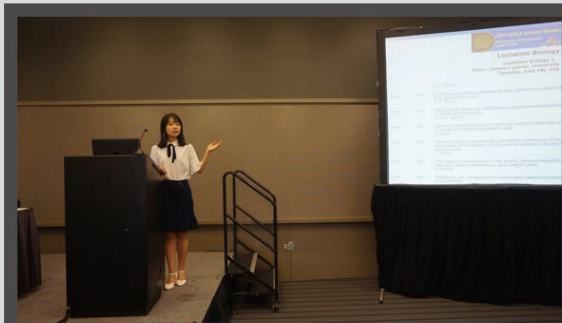
August 10, 2017

University of Hawaii professor Joanna Philippof is instructing ZJU students during a biological experiment.

(Photo courtesy of Jinhui Zhang, undergraduate student from College of Education)



Making a project pitch



Presenting "nutrition"



17th-century dissection room

A Brilliant Summer

Mapping the mobility of ZJU undergraduates through summer programs in 2017

Continent	Number of programs	Number of students
North America	47	531
Asia	31	376
Europe	19	146
Oceania	9	86
Africa	1	8



Moment of concentration



3 days after terrorist attack



Staying warm in the sun



Practical session



Kissing a rock specimen



Presenting "health care"



Research is fundamental to ZJU.
We try to address global challenges and are
making an impact on many fields.

Seagrass at Sanur Beach, Bali Island

The seagrass (*Halophila ovalis*) is healthy and well developed. It can only survive in clean water, which provides better light for photosynthesis.

(Photo courtesy of HUANG Yuzhou, student from the Ocean College, who came across the seagrass on a geological excursion. This was a pure serendipity for Yuzhou, as he had been fascinated with marine ecology research.)

THE PROBLEM: BEHAVIORAL SCIENCE

We may have heard of the so-called "winner effect". For instance, animals tend to increase their probability of victory after previous winnings. But what is the secret of this phenomenon? Is there any neural switch in the brain for becoming an alpha male?

ZJU solutions

The brain region, called the dorsal medial prefrontal cortex (dmPFC), was already known to light up during social interactions involving decisions about whether to be assertive or submissive with others. But brain imaging alone could not determine whether the circuit was ultimately controlling how people behave.

A research team led by Professor HU Hailan, a neuroscientist at ZJU, used optogenetics to pinpoint and ultimately take control of the neuronal circuits involved in socially dominant behavior. Optogenetics is a biological technique which involves the use of light to control cells in living tissue, typically neurons, which have been genetically modified to express light-sensitive ion channels.

What we do

The scientists located a brain circuit that, when activated in mice, transformed timid individuals into bold alpha mice that almost always prevailed in aggressive social encounters.

Mice generally organize themselves in stable social hierarchies that minimize conflict between cage mates. So the scientists pitched animals of different rank against each other in a range of tests to assess dominance.

In one, pairs of mice engaged in a head-to-head contest to shove their opponent backwards out of a narrow tube. In the video*, one subordinate mouse is seen putting up only light resistance, but when the "alpha" circuit is stimulated for 10 seconds it adopts a rugby-style drive, propelling its opponent along the tube. With brain stimulation, low ranking mice won 90% of the time against animals they would normally have lost to.

Intriguingly, the experience of winning appeared to leave an imprint on the mice, making them more assertive, even when their brains were no longer being artificially controlled. They were found to be more combative in a second scenario in which they competed to occupy the warm corner in a cage with an ice-cold floor.

Implications

The scientists noted that similar circuitry exists in the human brain, and although our own social hierarchies are less rigid they argue that similar mechanisms may be at play. The findings could have applications in understanding a variety of psychiatric conditions where people exhibit overly dominant behaviors, or lack motivation to compete socially.

If the "winner effect" translates to humans, it would suggest that experience of success in one area of life could help build confidence in another.



<https://www.theguardian.com/science/2017/jul/13/scientists-discover-brains-neural-switch-for-becoming-an-alpha-male>



HOME testing cleaning above water

THE PROBLEM: INTELLIGENT MACHINE

The surface of steel pipelines is in constant contact with air and water, thus accelerating the proliferation and growth of such sea life as oysters and barnacles. This not only adds the weight of the drilling platform, but also increases its affected area, which poses a danger threat.

Take China National Offshore Oil Corporation as an example: It has more than 200 offshore drilling platforms. On average, every platform should be cleaned by divers every four years, and the annual cleaning cost adds up to a staggering 100 million yuan.

ZJU solutions

A research team headed by ZJU Professor YANG Canjun developed a specialized robot named HOME, which is able to automatically clean marine life within 100 meters under the sea.

In late August, HOME succeeded in its first trial operation in Pinghu oil and gas field in the East China Sea. This is the first time in China that a specialized robot has been used to clean marine life on the jacket system of oil drills.

What we do

Clinging to a pipe, HOME would spray water with bubbles at a high speed and immediately sweep away shells attaching to the pipe. The sprinkler is a new design that produces a large number of cavitation bubbles by flowing water speedily through a cavitation nozzle.

The robot is equipped with self-adaptive permanent magnetic modules, which are able to adhere steadily to steel pipes and move across different steel pipes regardless of their diameters. YANG's team applied technologies including cavitation jetting, pipe self-adaptation, and visual navigation control.

In practice, HOME managed to clean an area of 21.7 square meters per hour with a water pressure of 20 MPa, far below the water pressure of 70 MPa as required by artificial cleaning while achieving the same effect.

Implications

The trial operation shows that this new type of robot can improve the convenience and feasibility of offshore work and replace divers completely in cleaning marine life. Experts think it may also be applied to other domains, such as vessel and bridge cleaning.



HOME cleaning the surface of a pipeline



ZJU team at China College Students "Internet Plus" Innovation and Entrepreneurship Competition 2017

Summer means different things to different people. To students, it traditionally equates to “holiday” and “idleness” rather than “work” and “sweat”. However, a look back at summer 2017 generates some new meanings.

Over the past months, students of Zhejiang University have clinched many titles in national and international competitions, overcoming challenges with wit and grit.

Here is a glimpse of the competition results:

CHAMPION



Student Poster Competition, Global Grand Challenges Summit

Jul. 18-20

International Aerial Robotics Competition (Asia/Pacific Venue)

Aug. 25-27

China Youth Internet Entrepreneurship Contest

Aug. 28-30

China College Students “Internet Plus” Innovation and Entrepreneurship Competition

Sept.15-18

This summer, college students from around the world were presented with a unique opportunity in the field of ocean science and engineering.

Hosted by the Ocean College, an Ocean Youth Camp took place over two weeks (June 26-July 7) at the Zijingang Campus in Hangzhou and the coastal Zhoushan Campus, just 500 meters from the East China Sea.

This camp attracted more than 30 students from seven countries, including Portugal, Indonesia, Thailand, India, and Guyana. Some of them came from renowned universities such as the Indian Institute of Technology and the University of Porto.

“Ocean research calls for collaboration,” says Suppakarn Jandang, PhD candidate from Chulalongkorn University. “Everyone here will have the opportunity to contribute to the development of regional and global ocean research. I’m very pleased to meet friends equally interested in this field.”

Under the theme “For a Better Ocean Future”, various activities were designed to provide participants with an insight into ocean science and Chinese culture, including academic courses, cultural lectures, field studies, and research projects. The lectures covered important topics such as marine environmental protection, deep sea AUVs, and marine life.

Embrace the ocean hand in hand

In addition to visits to marine labs and state-of-the-art facilities, students also got a glimpse of the traditional Chinese tea ceremony, Tai Chi, and Chinese calligraphy, which they found equally rewarding.



Visit to ocean research facilities



Students in front of “Zijingang”, the training ship of the Ocean College



Discover China in the paradise for entrepreneurs

37 overseas students, 16 countries and regions, 19 universities.... From June 21 to July 11, the School of Management held a unique program which offered participants an opportunity to understand the entrepreneurial spirit in Hangzhou, one of China's most dynamic innovation hubs.

This year's theme is "Entrepreneurship in China & One Belt One Road (OBOR)". Combining fieldwork with courses, the program encourages participants to observe and learn from real busi-

ness settings via company visits, networking and tours.

Participants attended a sequence of lectures on entrepreneurship-related topics, such as doing business in China from a cultural perspective, Chinese family business, and global innovation. As cultural immersion sessions were offered throughout the program, participants were able to experience how to speak, write, and dress like a Chinese.

In the end, as part of their assessment, participants pitched their business models and

received feedback from six ZJU faculty members who acted as mentors.

Through this three-week program, many participants not only have developed theoretical understanding, practical knowledge and leadership skills, but also have become close friends with student volunteers from the University.



Yale Patt: "The students are bright, but more than that."

"I feel strongly that this class offers the best introduction for serious students of computing, and I am delighted to have the opportunity to teach it at one of the top universities in China," says Yale Patt, Honorary Professor at Zhejiang University.

Every summer, Professor Patt comes to ZJU to teach "Introduction to Computing Systems" to undergraduate students. He believes the course can provide a foundation that allows students who master it to soar to whatever levels their intellect and energy can take them.

"Many professors are willing to SAY what is important; I prefer to DO what is important," Patt says. In the eyes of the students, Patt has exactly demonstrated the importance of the course by his own commitment.

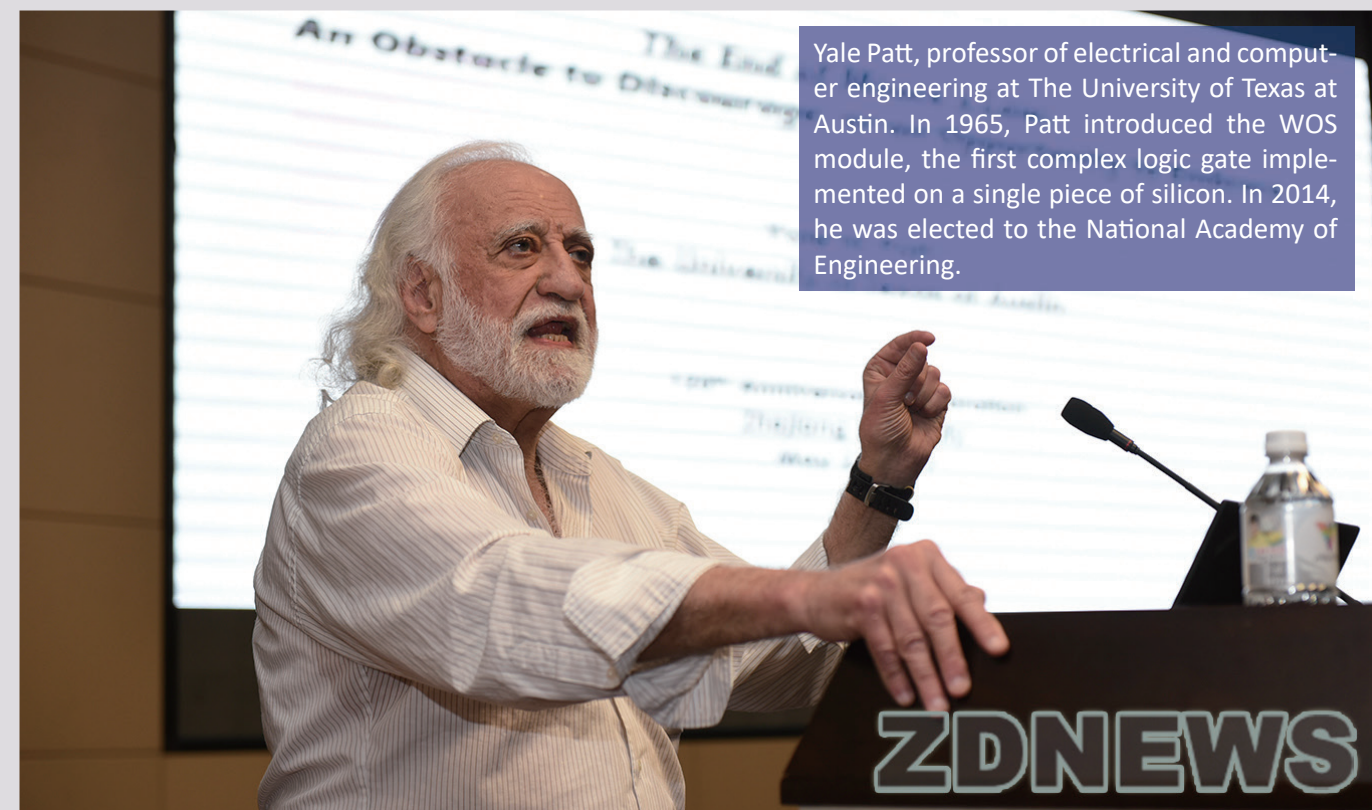
In turn, Patt has been very impressed with ZJU students. When he was first invited to teach the course in an accelerated fashion (15 hours/week for 3 weeks, rather than 3 hours/week for 15 weeks), he was afraid it would not work. He thought the students would need more time between lectures to digest what had been taught.

Nonetheless, Patt was soon amazed by how much the students could master under this very adverse pedagogical environment. "The students are bright, but more than that," Patt says. "They are committed to working hard to learn the material."

The summer course exemplifies ZJU's endeavor to internationalize its curricula and pedagogy. According to Patt, all top universi-



ties should embrace globalization and more international interaction will facilitate more accomplishment.



Yale Patt, professor of electrical and computer engineering at The University of Texas at Austin. In 1965, Patt introduced the WOS module, the first complex logic gate implemented on a single piece of silicon. In 2014, he was elected to the National Academy of Engineering.

UPCOMING EVENTS

Hangzhou Belt and Road Forum for World Chinese Literature

📅 October 8-10, 2017
📍 Qizhen Hotel, Zijingang Campus

Pacific Rim Research Library Alliance 2017 Annual Meeting

📅 October 18-20, 2017
📍 Alumni Building, Zijingang Campus

Chu Kochen Distinguished Lecture Series: Opportunities in Microbial Bioenergy

👤 Bruce E. Rittmann (Member of the
National Academy of Engineering, USA)
📅 October 24, 2017
📍 Mong Man Wai Building, Zijingang
Campus

The 14th China National Model United Nations Conference

📅 October 27-29, 2017
📍 Zijingang Campus
As the most influential Model UN
Conference in China, this year's
CNMUN will continue to simulate
different UN bodies and conferences
and discuss global hot-spot issues.

The 11th Entrepreneurship Competition of Zhejiang University

📅 TBD, October 2017
📍 Zijingang Campus

High Art into Campus: per- formance by Hangzhou Opera and Dance Theatre

📅 TBD, November 2017
📍 Zijingang Campus

UPCOMING EVENTS

Zhejiang University Global Lecture Series: Ultrafast Light-Matter Interaction

👤 Eric Mazur (President of the Optical
Society, USA)
📅 around November 9, 2017
📍 College of Optical Science and Engi-
neering, Yuanquan Campus

Zhejiang University Global Lecture Series: Concept and Implementa- tion of Whole-Genome Sequencing

👤 Joachim Messing (Member of the
National Academy of Sciences, USA)
📅 mid-November, 2017
📍 College of Agriculture and Biotech-
nology, Zijingang Campus

International Symposium on Natural Products Chem- istry and Chemical Biology

📅 November 23-26, 2017
📍 Hangzhou Jinxi Hotel

Electrical Design of Ad- vanced Packaging Systems Symposium (2017 IEEE EDAPS)

📅 December 12-15, 2017
📍 Haining International Campus

Zhejiang University Global Lecture Series: Earth Evolu- tion and the Link with Human and Environment

👤 Charles H. Langmuir (Fellow of the
American Academy of Arts and Sciences)
📅 mid-December, 2017
📍 Linshui Lecture Hall, Zijingang
Campus

High Art into Campus: Per- formance by the National Ballet of China

📅 TBD, December 2017
📍 Zijingang Campus

The 4th Zhejiang University Student Festival

📅 December 31, 2017
📍 all campuses
As a traditional event on ZJU campus, the
festival is hugely popular among
students. The festival is a lively banquet
celebrating the passion of youth. Activi-
ties consist of parades, games, artistic
performances, a gala performance, and a
bonfire party, etc.

📄 For updated information, please visit:
<http://www.zju.edu.cn/english/main.htm>