

CONNECTION

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*Seeking Truth
Pursuing Innovation*



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MESSAGE FROM THE EDITOR-IN-CHIEF

With the new semester come new opportunities and experiences. As China sees virus under control, we are more than excited to embrace most of our students back to campus in September. Our time in quarantine has reminded us of the value of human connection, and we learn to cherish what we took for granted: campus life, offline courses, research in laboratory and direct interaction with peers and teachers.

In a time of change and challenge, creativity and mutual support become more important. From poverty relief to information accessibility, in various fields ZJUers have been actively creating a positive impact. We also explore new forms of cooperation with partner institutions, and are glad to provide domestic students from overseas universities with an exchange experience on our International Campus.

Stay connected with us and follow us on Facebook, Twitter, Instagram, YouTube and LinkedIn for more updates. Leave comments to let us know what you think!



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Z J U N E W S R O O M

Education

Reinvent international exchange programs: "Study Away" in China



On Sept. 10, over 300 Chinese students from UIUC and Cornell University came to the ZJU International Campus in Haining for an exchange study. They would enroll in offline courses at ZJU while taking online courses from their home universities.

"At ZJU, we will have a chance to experience a different campus life. Otherwise, we would have to learn remotely alone at home," said GAO Heyan, a freshman studying hospitality management at Cornell University.

2020 Yongping Teaching Award winners unveiled



In September before the 36th Teachers' Day, ZJU announced ten winners of the 2020 Yongping Teaching Award. HU Kexian from the School of Humanities and ZHAO Daomu from the Department of Physics won the 2020 Yongping Distinguished Teaching Award, each receiving ¥1 million award.

Yongping Teaching Award is ZJU's highest accolade for teaching excellence. It has been conferred annually since its establishment in 2011 by ZJU alumnus Mr. DUAN Yongping (Wireless Electronics Engineering, '82).



Research

High levels of CO2 cause severe losses of ammonium-nitrogen

The research team led by Prof. CHENG Lei at ZJU's College of Life Sciences investigates the influence of elevated CO2 on the transformation of ammonium-nitrogen in a rice ecosystem. They found that elevated CO2 could cause substantial losses of ammonium-nitrogen because of anaerobic oxidation of ammonium coupled to reduction of iron. Their research findings were published in *Science Advances*. This study sheds light on the coupled cycles of nitrogen and iron in terrestrial ecosystems and raises questions in future climate-change scenarios.

sDscams could mediate cell recognition in *Chelicerat*

Researchers at ZJU's College of Life Sciences published an article entitled "*Chelicerata* sDscam isoforms combine homophilic specificities to define unique cell recognition" in the September 22 issue of *PNAS*. JIN Yongfeng *et al.* found that *Chelicerata* sDscama and some sDscamβ protein trans interactions are strictly homophilic. sDscam has the potential to provide each neuron with a unique identity for self-nonself discrimination in *Chelicerata*. This study attests to the convergent evolution in neuronal self-avoidance.

International

Agreements signed online with Cornell University

On Sept. 3, ZJU and Cornell University signed the Student Exchange Agreement and renewed the MOA remotely. An in-depth discussion was held afterwards on how to further cooperation between ZJU and Cornell, especially on co-developing online courses and carrying out joint research to realize UN Sustainable Development Goals.

New partnership with MINES ParisTech in mathematics

On Oct. 21, a virtual signing ceremony for cooperation in mathematics was held between ZJU and MINES ParisTech, a top French grande école founded in 1783. Under this framework, both institutions will collaborate to train math talent through a wide range of programs, including double degree, student exchange and post-doc mobility programs.

ZJU jumped to 94th in the THE World University Rankings

ZJU leapt 13 places to 94th in the world and ranked fifth in China according to this year's Times Higher Education World University Rankings. "Although global rankings don't measure everything we value, I am delighted to see our research work and internationalization efforts being recognized," said ZJU Vice President HE Lianzhen.

Public Engagement

The 15th China Information Accessibility Forum held at ZJU



On Sept. 22, the 15th China Information Accessibility Forum and the National Accessible Environment Exhibition were held on Zijingang Campus. This year's theme is "Information Accessibility for Public Services". "The construction of an accessible environment mirrors humanistic care, solicitude for life, and an approach to improving the quality of life", said

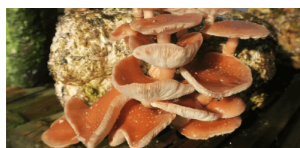
ZHANG Haidi, chairperson of China Disabled Persons' Federation. She expressed her gratitude to China Information and Accessibility Technology Research Center for Persons with Disabilities, which was co-established by Zhejiang University and China Disabled Persons' Federation, for their outstanding achievements in the past decade.



ZJUers contribute to poverty relief in Yunnan



October 17 marks China's National Poverty Relief Day. For years ZJU faculty and students have been dedicating their work to alleviating poverty in underdeveloped areas across China. Here are some shining examples of how ZJUers contribute to poverty reduction in Yunnan Province.



CHEN Zaiming, an expert in wild fungi, successfully cultivated and industrialized Shiitake mushrooms after seven-year experiments. Now, Shiitake has become a pillar industry to boost people's income.



Zijin Pu-erh Tea is highly-praised among ZJU alumni. Behind the popularity of Pu-erh Tea is Prof. WANG Yuefei, director of ZJU's Tea Research Institute. Zijin pu-erh tea has yielded over 30 million yuan for Jingdong people.



Jingdong silk chicken, also known as black-bone chicken, has remarkable nutritious value. Prof. YIN Zhaozheng developed a modern chicken farming industry, which lifted over 60,000 people out of poverty.

In the Media

Advancing telerobotics to make hospitals safer for health workers

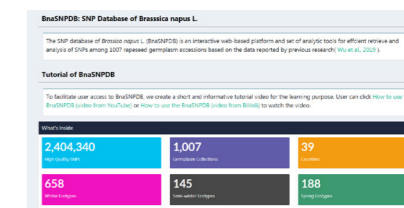


The pandemic has posed significant risks to healthcare workers. To reduce the risk of in-hospital transmission, Prof. YANG Geng at ZJU's State Key Lab of Fluid Power & Mechatronic System has pioneered a telerobotic system that uses wireless communication to allow doctors and nurses to treat patients through a "carebot" on the ward.

As YANG summarized, “the key idea here is that we want to use the robot as the medical professional’s second body.” Robotics projects like “carebot” constitute one element of the wider digital health agenda.

(Worldwide Universities Network)

BnaSNPDP :
an interactive web portal to
empower rapeseed breeding



Recently, ZJU's Provincial Key Laboratory of Crop Gene Resource launched BnaSNPDP, an interactive web portal with a user-friendly interface that provides multiple analysis modules for retrieving, analyzing, and visualizing single nucleotide polymorphisms among 1,007 accessions of worldwide rapeseed germplasm. Details were published online in *Computational and Structural Biotechnology Journal*.

This database is essential for accelerating studies on the functional genomics and screening of molecular marker-assisted breeding in rapeseed.

(Mirage News)

RESEARCH HIGHLIGHTS

Nanoparticle-enhanced chemo-immunotherapy could trigger robust antitumor immunity

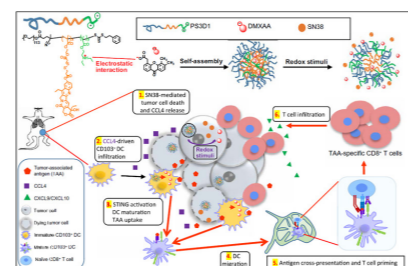
The research team led by Dr. SUN Jihong at Sir Run Run Shaw Hospital, ZJU's School of Medicine in co-operation with Prof. LIU Xiangrui at ZJU's College of Chemical and Biological Engineering developed a novel strategy to combine chemotherapy and immunotherapy to modulate the tumor microenvironment (TME) using triblock copolymer nanoparticles. It can enhance antigen cross-presentation and induce the conversion of the immunosuppressive TME to immunogenic TME. Their findings were published in *Science Advances*.

Cancer immunotherapy has succeeded on various fronts. Nevertheless, only a few patients of certain cancer types benefit from the present immunotherapies. In particular, the patient's response to immunotherapy and survival rate is closely correlated with the TME. The tumors with immunogenic

"hot" TME, highly infiltrated with CD8+ T cells, yield the best response to ICB immunotherapy.

SUN Jihong *et al.* proposed an anti-cancer chemo-immunotherapy approach by using novel nanoparticles systemically. It co-delivers the chemotherapeutic agent SN38 (7-ethyl-10-hydroxycamptothecin) and the STING agonist DMXAA (5,6-dimethylxanthenone-4-acetic acid), converting the immunologically cold tumors to immunogenic hot ones. This strategy can promote an enhanced expansion and tumor infiltration of CD8+ T cells that can potentiate strong antitumor immunity.

This engineered nanosystem offers a rational design of an effective immunotherapy combination regimen, one of the top challenges in cancer immunotherapy.



Angiogenin plays a key role in inhibiting intestinal inflammation

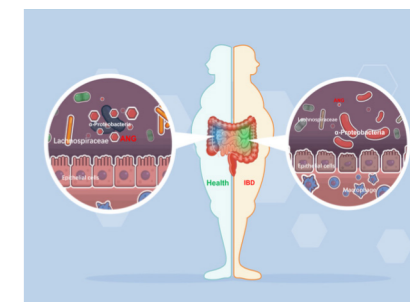
Dr. XU Zhengping and Dr. SHENG Jinghao at ZJU's School of Medicine led their research team to discover that Angiogenin (ANG) can maintain gut microbial homeostasis by balancing α -Proteobacteria and Lachnospiraceae. Their findings were published in *Gut*.

Gut microbiota are the microorganisms that live in the digestive tracts of humans. They are instrumental in keeping intestines healthy. The immune system sustains a healthy host-microbe interface through production of IgA, secretion of mucus and induction of antimicrobial peptides (AMPs). ANG, originally isolated as a tumor angiogenic factor, is an AMP.

Researchers investigated the effect of ANG on microbiota and its contribution to colitis in different colitis models with co-housing and faecal microbiota transplantation. It is suggested that

ANG could regulate microbiota composition and inhibit intestinal inflammation. Specifically, Ang1 deficiency in mice led to a decrease in the protective gut commensal strains of Lachnospiraceae but an increase in the colitogenic strains of α -Proteobacteria. Direct binding of ANG to α -Proteobacteria resulted in lethal disruption of bacterial membrane integrity, and consequently promoted the growth of Lachnospiraceae, which would otherwise have been antagonized by α -Proteobacteria. Oral administration of ANG1 reversed the dysbiosis and attenuated the severity of colitis in Ang1-deficient mice.

Their findings demonstrated the important role of ANG in maintaining gut health, suggesting that the ANG-microbiota axis could be developed as a potential preventive and therapeutic approach to dysbiosis-related gut diseases.



SPOTLIGHT ON

FACULTY

Dialogue@ZJU: With Prof. DONG Danshen about balance architecture



Prof. DONG Danshen (Architecture, '86), chairman of the Architectural Design & Research Institute, director of the Center for Balance Architecture, founder of the "Balance Architecture" theoretical framework and author of *Towards Balance* and *Knowledge and Practice in the Construction of University Campuses*.



Q: As the Director of the newly established Center for Balance Architecture, how do you understand "balance" in the architectural design?

DONG: Architecture is not simply about building a house. You may find that an impressive building strikes a relative balance with nature, the needs of the owner as well as the demands of society. In architectural design, we should direct meticulous attention towards the fundamental demands of various entities and respond to them through various means in the design process. "Balance", so to speak, satisfies the needs and conditions of each and every field in current society. With "balance" as a core principle of design, the Zhejiang University Center for Balance Architecture was established in 2020.

Q: What is the design concept of the Haining International Campus?

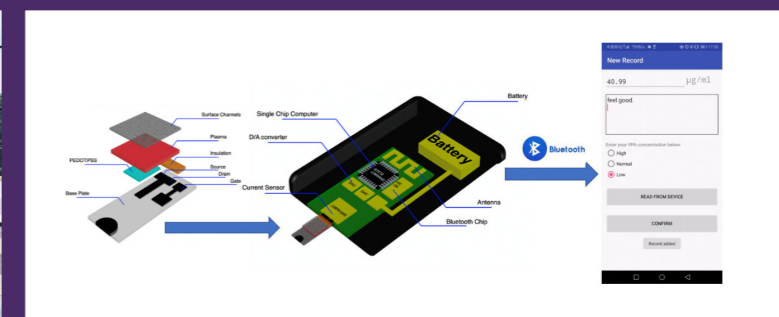
DONG: The construction of Haining International Campus adheres to the "people-oriented" design concept. Here, teaching buildings, the canteen and the library are compactly connected. The teaching complex in each residential college can satisfy students' need to study and socialize. It brings in its wake an integration of multiple functions, which can contribute to dynamic and comprehensive communication and interaction, thus stimulating the vitality and attraction of a particular place. For example, the canteen becomes an extension of teaching space. It is much more than a dining space. Our library is open 24 hours and there is a café in it. Students can read, think, communicate and rest anytime and anywhere. Whether it is in the teaching building, the canteen or the library, we try every means to create social areas to encourage vibrant and casual interactions, enriching students' experience in ways that can spark novel ideas.

STUDENTS

Interdisciplinary team shined at SensUs 2020

The TruSense team comprised of 15 students from diverse backgrounds won the Gold Medal and Public Inspiration Award on SensUs 2020.

The TruSense team from Zhejiang University was invited to participate in the competition as the only Asian team for three consecutive years. Teams from universities are required to design and build biosensor systems and business models based on each year's theme compounds. This year SensUs focuses on Valproic acid (VPA), a broad-spectrum anti-epilepsy drug that dominates the domestic anti-epilepsy drug market. This drug requires regular blood monitoring in case of inaccurate dosage which would cause severe side effects. TruSense's idea of portable biosensor of VPA detection can simplify the tedious process in the hospital, saving patients' time and money.



TruSense gives full play to the TruSense spirit, showing the courage and self-confidence to explore and conquer the unknown field.

YUAN Yuyang,
College of
Life Sciences

It has been a journey of curiosity and passion. To develop an original biosensor, all members were fully devoted and spent countless hours designing, testing and verifying.

WU Haoyu,
College of
Agriculture
and Biotechnology

Participating in the SensUs competition not only improves my scientific research ability, broadens my horizon, but also brings me valuable friendship.

CHEN Zhe,
College of
Life Sciences