

**Ocean Embraces Streams All  
Exploring Promises Reaching Far**



**Ocean University of China Newsletter**

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# NEWSLETTER

Fall 2019 · Issue 4





OCEAN UNIVERSITY OF CHINA  
NEWSLETTER  
Fall 2019 · Issue 4

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OUC Newsletter is a biannual publication for international partners, alumni, students and faculty of Ocean University of China, produced by the International Office. We welcome your suggestions for topics to cover and ways to improve future issues.

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The views expressed in this newsletter are the authors' views and do not reflect the views of the Editorial Board.



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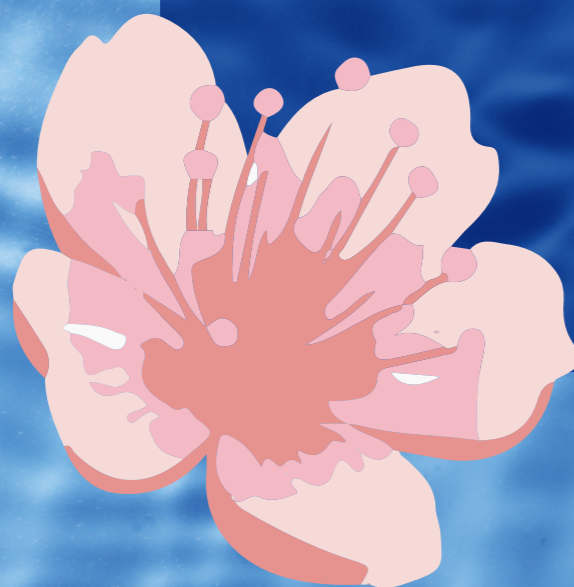
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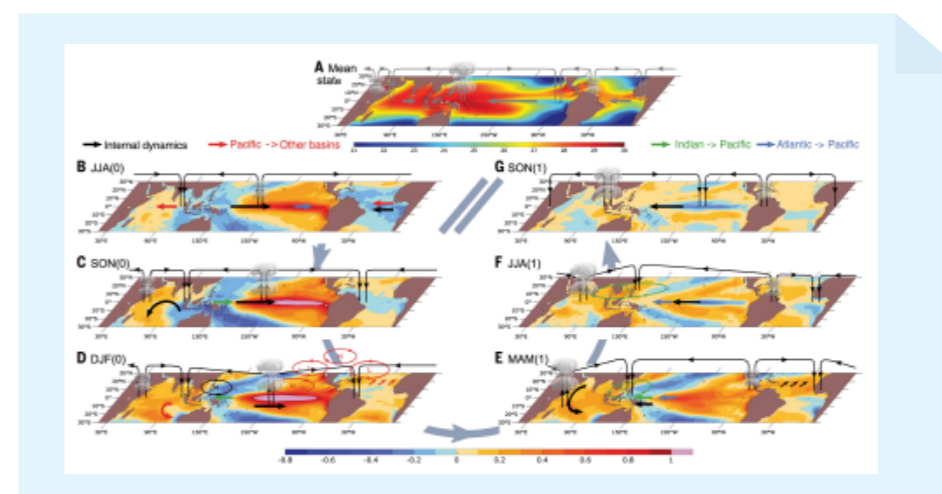
Academics

NEWS &  
EVENTS



Key Laboratory of Physical  
Oceanography Publishes Research  
Results in *Science*

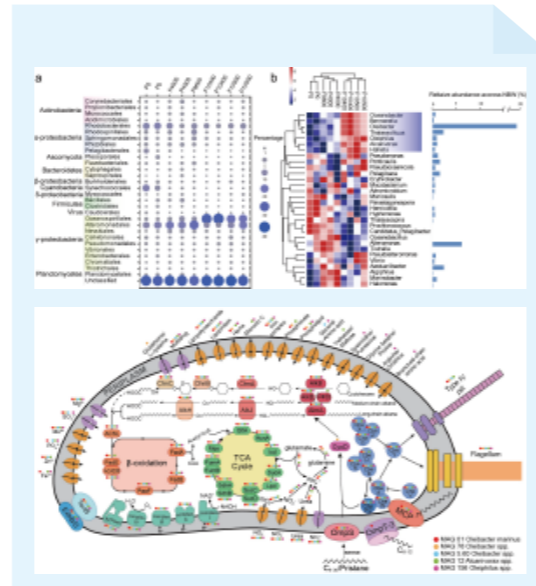
**In** March 2019, *Science* published a paper online titled “Pantropical Climate Interactions” by OUC’s Key Laboratory of Physical Oceanography. Prof. Cai Wenju of the laboratory is the first author, and Academician Wu Lixin, director of the laboratory, is the corresponding author. Discovery of pantropical interactions provides a pathway for improving the prediction of climate variability in the current climate and for refining projections of future climate under different anthropogenic forcing scenarios. The publication manifests the leading role that OUC and the lab play in the field of oceanography, climate dynamics and global climate change.





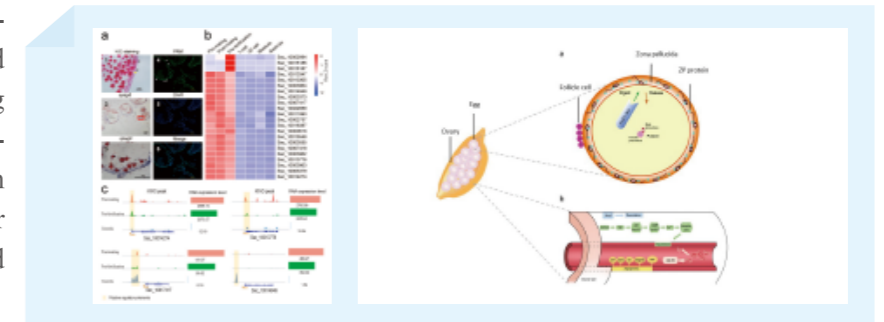
## Prof. Zhang Xiaohua and Prof. Tian Jiwei's Teams Publish Research Results in *Microbiome*

**On** April 12, 2019, two teams, led respectively by Prof. Zhang Xiaohua from the College of Marine Life Sciences and Prof. Tian Jiwei from the College of Oceanic and Atmospheric Sciences, published "Proliferation of Hydrocarbon-degrading Microbes at the Bottom of the Mariana Trench" in *Microbiome*, a leading journal in the field of microbiology. Prof. Zhang Xiaohua and Prof. Tian Jiwei are the article's co-corresponding authors, while Dr. Liu Jiwen and PhD candidate Zheng Yanfen are the co-first authors of the paper. The research results reveal that hydrocarbon-degrading microorganisms are abundant in the deepest seawater on Earth and shed a new light on potential biological processes in this extreme environment. The samples investigated were collected by the expedition to Mariana Trench, co-sponsored by the Pilot National Laboratory for Marine Science and Technology (Qingdao) and Ocean University of China.



## Prof. Zhang Quanqi's Team Publishes Research Results in *Molecular Ecology Resources*

**On** May 11, 2019, the team led by Prof. Zhang Quanqi published an article titled "A Chromosome-level Genome of Black Rockfish, *Sebastes Schlegelii*, Provides Insights into the Evolution of Live Birth" in *Molecular Ecology Resources*, a leading journal in the field of biological evolution. The research, co-conducted by Prof. Zhang Quanqi and BGI Group (Qingdao), provides the first analysis of the evolution of live birth in China. The genomic data in the paper reveal unprecedented insights into the evolution of teleosts from ovoviviparity to viviparity, and provides a sound foundation for studying viviparity in nonmammalian vertebrates and an invaluable resource for rockfish ecological and evolutionary research.



## Team of Academician He Manchao Collaborates with Key Laboratory of Ocean University of China

**On** May 11, 2019, the team of Academician He Manchao of the Chinese Academy of Sciences signed a cooperation agreement with Ocean University of China and its Shandong Provincial Key Laboratory of Marine Environment and Geological Engineering.

The team is well-renowned in the field of environmental geological engineering and it completed its first production line of Negative Poisson's Ratio (NPR), which was put into operation in Qingdao on May 10. The team will work more closely with OUC's relevant key laboratories to promote scientific and technological innovation and to transform research findings.



## *Crassostrea Gigas* "Haida 3" Developed by Team of Prof. Li Qi

**The** new *Crassostrea gigas* "Haida 3" (Register Number: GS-01-007-2018) was authorized by the Ministry of Agriculture and Rural Affairs as one of the 14 new breeds of aquatic product in its No.155 Announcement. "Haida 3" is a new variety of oyster cultivated by Prof. Li Qi's team, following "Haida 1" in 2014 and "Haida 2" in 2017. The shell and outer membrane of "Haida 3" are black and bright, so it is commonly known as the "Black Gold Oyster" by farmers. As a high-end variety of oyster, "Haida 3" improves the quality and level of oysters in China, building a local brand to meet the consumers' demand for high-quality oyster, and reducing the dependence on overseas oysters of China's high-end market.





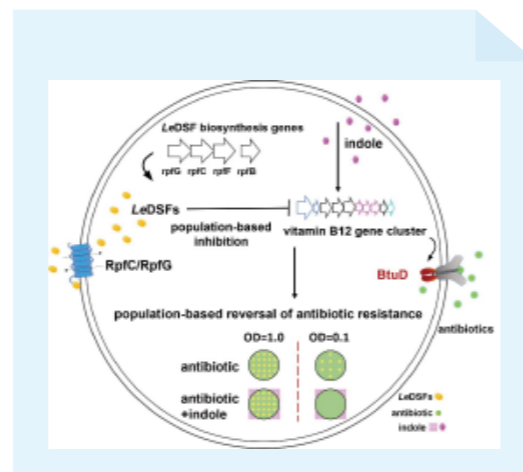
## OUC Alumnus Liu Wei Wins 2019 Sloan Research Fellowship

**On** February 19, 2019, the Alfred P. Sloan Foundation announced the winners' list of 2019 Sloan Research Fellowships. Liu Wei, an alumnus of Ocean University of China (OUC), is one of the eight fellowship recipients in ocean sciences. Liu Wei earned his bachelor's and postgraduate degrees at OUC. Later he went to the University of Wisconsin Madison for a PhD degree in atmospheric and oceanic sciences. He conducted postdoctoral research at numerous institutions in the United States afterwards. He is currently an associate professor of geosciences at the University of California, Riverside.



## Prof. Zhang Xiaohua's Team Publishes Research Results in *mBio*

**On** May 28, 2019, the team of Prof. Zhang Xiaohua from the College of Marine Life Sciences published a paper titled "Indole Reverses Intrinsic Antibiotic Resistance by Activating a Novel Dual-function Importer" in *mBio*, a leading journal in the field of microbiology. This study highlights the dynamic regulation of bacterial antibiotic resistance by small signaling molecules and points to new therapeutic strategies using traditional antibiotics in combination with signaling molecules. Associate Prof. Wang Yan from the College of Marine Life Sciences of OUC and Researcher Bai Fan from the Biomedical Pioneering Innovation Center of Peking University are the corresponding authors. The team led by Prof. Du Liangcheng from the University of Nebraska Lincoln offered their help to the research.



## Conferences



## Symposium on Blue Carbon Sink and Its Practice in China

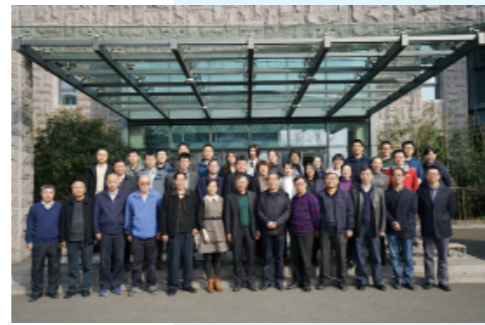
**The** Symposium on Blue Carbon Sink and Its Practice in China, co-sponsored by the Academy of Ocean of China and China Association of Marine Affairs, was held at Ocean University of China on March 23, 2019. As the 7<sup>th</sup> session of the China Marine Development Research Forum, the symposium brought together top experts in the field to discuss their latest research on the development of blue carbon sink in China. The development of blue carbon sink provides a new way for China to reduce greenhouse gas emissions, protect coastal ecosystem and develop low-carbon marine economy, which is of positive significance to improve China's marine governance. The experts also engaged in communications with current students on the latest technology of blue carbon sink.





## The 4<sup>th</sup> Session of the 2<sup>nd</sup> Academic Committee of the Key Laboratory of Marine Process in the Polar Region and Ocean Global Change

**The** Key Laboratory of Marine Process in the Polar Region and Ocean Global Change was co-founded by Ocean University of China and Chinese Arctic and Antarctic Administration, and the 4<sup>th</sup> session of the 2<sup>nd</sup> academic committee of the lab was held in Qingdao on March 24, 2019. During the session, the Annual Work Statement and the latest research results over the past year were presented. The research papers on global changes and Arctic ocean published by the laboratory, especially in *Nature*, manifest the leading role of the lab in the research field. The committee members also discussed the overall positioning and future development of the laboratory.



## International Conference on Mathematical Modeling and Scientific Computing

**From** May 30 to June 2, 2019, the International Conference on Mathematical Modeling and Scientific Computing, hosted by Ocean University of China, was held in Qingdao. OUC is committed to promoting its mathematics major through advantageous disciplines such as marine sciences, aquaculture, and constantly exploring effective ways for the cross development of mathematics and marine science. 51 reports were delivered, including 2 from academicians and 19 from overseas experts. The conference covered a wide range of topics, especially practical application of mathematical modeling and scientific computing in physics, biology, materials science, geosciences and image processing. Participants discussed the latest progress in the field and shared new perspectives.



## Symposium on Maritime Power and Marine Cultural Heritage

**As** the 8<sup>th</sup> session of the China Marine Development Research Forum, the Symposium on Maritime Power and Marine Cultural Heritage, co-sponsored by the of Ocean of China and Ocean University of China (OUC)- was held at OUC. The research on ocean development is an indispensable part of OUC's disciplinary construction, in which marine culture is a key aspect for further development. Prof. Wang Xiaoqiu from the Department of History at Peking University, Prof. Li Jinming from the South China Sea Institute of Xiamen University and Mr. Jiang Bo, Director of the Institute of Underwater Archaeology, National Center of Underwater Cultural Heritage, made keynote speeches.



## Forum on Social Sciences in China's Universities 2019

**The** Forum on Social Sciences in China's Universities 2019, co-hosted by the editorial department of *Social Sciences in Chinese Higher Education Institution*, School of Marxism and School of International Affairs and Public Administration of Ocean University of China, was hosted in Qingdao. The keynote speech entitled *Understanding the Maritime Community of Shared Future in the Perspective of Global Ocean Governance* was delivered by Prof. Pang Zhongying, Director of the Institute of Marine Development of OUC. Centered around the six topics of "Thought and theory on ocean power", "Belt and Road and polar governance", "Marine economy", "Marine rights and safety", "Marine governance" and "Marine environment, culture and achievements", the forum attracted experts from top media, universities and R&D institutions in China.





## China Ocean Public Management Forum

### Sponsored

by Ocean University of China, and co-organized by School of International Affairs and Public Administration and MPA Center of Ocean University of China and the Institute of Public Administration Qingdao, the China Ocean Public Management Forum was held in Qingdao on June 16, 2019. With the theme of “Ocean Governance Revolution and Innovation in New Era”, the forum attracted nearly a hundred scholars from top universities in China. Two keynote reports were delivered and there were three parallel sessions. The School of Law and Public Administration of Jiangsu Ocean University was selected to organize the next forum.



## International Symposium on Joint Education with the University of Arizona

### The

International Symposium on Joint Education, co-hosted by Ocean University of China (OUC) and the University of Arizona (UA), was held in Qingdao from July 1 to 2. OUC’s President Yu Zhigang, Vice President Li Huajun and UA’s President Robert Robbins and Vice Provost Brent White were in attendance. President Robert Robbins delivered a keynote speech entitled “The Trend of Joint Education and Higher Education in the Perspectives of the Fourth Industrial Revolution”. Topics such as cooperative education, innovative teaching methods, flipped classroom, English teaching in Sino-US joint education and global scientific research cooperation were discussed during the meeting.



## Visits



## Vice President Li Huajun Visits Higher Education Institutions in New Zealand and Australia

### From

April 7 to 13, 2019, Vice President Li Huajun of Ocean University of China (OUC) and his delegation visited higher education and research institutions in New Zealand and Australia, to expand international cooperation in marine-related research and joint talent cultivation, which achieved desired results.

On April 8, the delegation visited the University of Waikato in New Zealand and was warmly received by Pro Vice-Chancellor Alister Jones. The two institutions signed an agreement of cooperation, laying a solid foundation for further substantive cooperation. On April 9, the delegation visited GNS Science and met with senior scientist Paul A. White and four other scientists. Two of them gave an introduction to their creative solutions to real-life problems with geothermal resources and progress. On April 10, the delegation went to Wellington, the capital of New Zealand, and visited Victoria University, accompanied by Dong Zhixue, Education Counselor of the Chinese Embassy in New Zealand. After expressing his welcome, Deputy Vice-Chancellor Blair McRae elaborated on the institution’s academic development and international cooperation guided by the principle of “Capital thinking, globally minded”.

On April 11, the delegation visited the Education Office, Consulate-General of the People’s Republic of China in Sydney, and attended a meeting. Lu Ping, Counselor for Scientific and Technological Affairs, put a particular emphasis on the establishment of China-Australia Joint Research Center to encourage joint research among higher education and research



institutions in certain areas. On April 12, when visiting the University of New South Wales (UNSW), the delegation was warmly received by Pro-Vice-Chancellor Laurie Pearcey. He introduced UNSW’s recent developments and its 2025 strategic initiative, and expressed his expectation for joint program for doctoral degree and other relevant research. The two sides engaged in in-depth discussions about joint research.





## Dr. María Julia Muñoz, Uruguayan Minister of Education and Culture, Visits OUC

**This** spring, the Uruguay delegation led by Dr. María Julia Muñoz, Uruguayan Minister of Education and Culture visited Ocean University of China (OUC). Dr. Tian Hui, Chairman of OUC's University Council and Vice President Li Huajun met with the guests. The two sides discussed possibilities of developing blue economy, promoting mutual visits among teachers and students and advancing cultural exchanges.

On the signing ceremony of cooperation projects between Qingdao Municipal Government and Uruguay later, Dr. Tian Hui signed the MoU with the University of the Republic (Uruguay) on behalf of OUC.



## Norwegian Ministry of Education and Research Delegation Visits OUC

**In** June, a Norwegian delegation led by Toril Johansson, Director of the Higher Education Department at the Norwegian Ministry of Education and Research, visited Ocean University of China (OUC). The two sides engaged in a discussion about promoting China-Norway cooperation in education and research and establishing a China-Norway Alliance of Marine-Related Institutions. President Yu Zhigang extended the university's wish to lead Chinese marine-related universities to establish the China-Norway Alliance of Marine-Related Institutions with Norwegian universities, so as to promote cooperation in research and education in marine science, fisheries and ocean engineering. It is also hoped that the Norwegian Ministry of Education and Research could provide great support for this cooperation by establishing a platform for academic research and talent cultivation to promote the common development of both countries' marine economies.



## OUC Signs Cooperation Agreement with Russian State Hydrometeorological University

**This** summer, the delegation of Russian State Hydrometeorological University (RSHU) led by Rector Valeriy Mikheev visited Ocean University of China (OUC). The two sides engaged in discussions about cooperation on research and education in marine, atmospheric and polar sciences before signing a cooperation agreement. The two institutions, with distinctive features and highly connected disciplinary strengths, had promising prospects for cooperation in oceanic, meteorological and polar research as well as in joint education. OUC's President Yu Zhigang outlined the university's hope to increase their cooperation based on the jointly established platform for China-Russia cooperation in higher education.

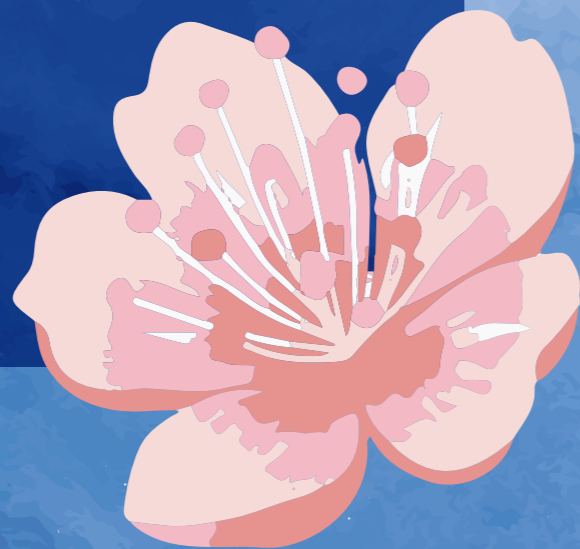


## University of Arizona President Robert Robbins Visits OUC

**At** the beginning of July, a delegation from the University of Arizona (UA) led by President Robert Robbins, Vice Provost Brent White and Vice President Shane C. Burgess visited Ocean University of China (OUC). OUC's President Yu Zhigang and Vice President Li Weiran received the guests, and the two sides engaged in discussions about joint education and research cooperation. The two institutions enjoy great potential for cooperation and could further the cooperation in the advantageous disciplines of the two universities including law, management, finance, quantum science, optics, life sciences and medicine.



# SPOTLIGHT



## *OUC Alumni Group Wedding*

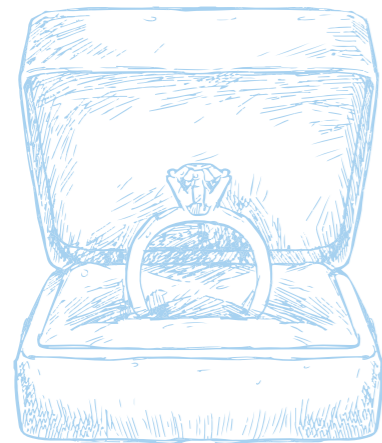
**On**

April 6, 2019, the OUC Alumni Group Wedding was held on the university's Laoshan campus,

in which 66 couples participated. President Yu Zhigang, Academician and Former President Guan Huashi and Former President Wu Dexing attended the ceremony.

The 66 couples walked the red carpet along the Cherry Blossom Avenue, among the cheers of their families and friends. Group photos were taken, with the couples standing to form the shapes of a heart, "OUC" and "95". They waved bouquets to extend their best wishes for the 95<sup>th</sup> anniversary of their alma mater.





Ms. Zhang Jing, Deputy Party Secretary of OUC and Vice President of the OUC Alumni Association, hosted the wedding, attended by the 66 couples and over 2,000 families, friends, students and faculty members. She said, "the newlyweds, who took with them the love from their alma mater when they graduated and embarked on new journeys in the country's various sectors, have brought home to OUC their loved ones."

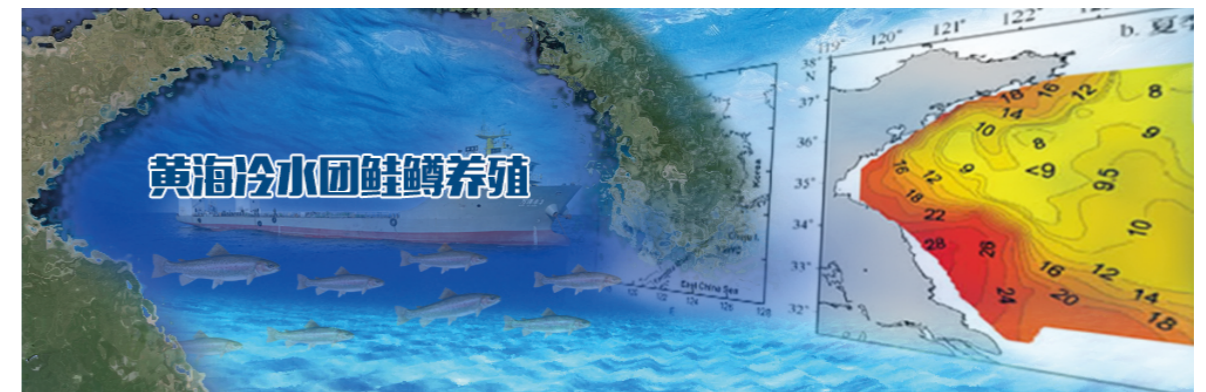
A video of congratulatory messages from the alumni's favorite professors was played. The couples then exchanged wedding rings with the inscription of "Love@OUC", and made the vow and love and to hold each other for the rest of their lives.

The group wedding was widely covered by major media in China such as People's Daily, China Daily and Weibo, as well as local media, attracting great attention from the public.



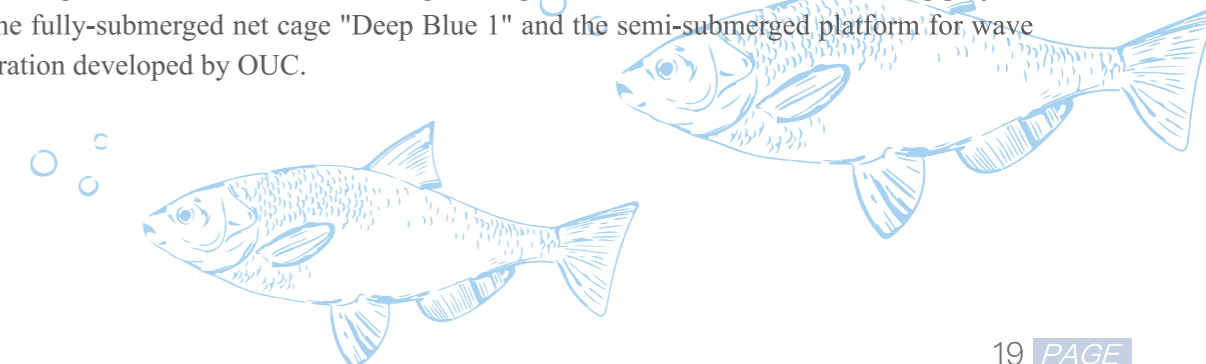
## OUC's Cold Water Mass Salmon Farming Project in the Yellow Sea

**This** year, a team at OUC, led by Prof. Dong Shuanglin, made remarkable progress in the large-scale farming of salmon in the cold water mass of the Yellow Sea, which proved to be suitable for the breeding of high-value cold water fish such as salmon and trout.



With an investment of 4.356 billion yuan, the project of deep-sea salmon farming, co-initiated by OUC and a company in Rizhao, has been carried out in the cold water mass of the Yellow Sea, using intelligent net cages. The planned farming area reaches 3,000 hectares, and around 46 hectares of onshore industrial park and further processing facilities will be constructed. The annual output of salmon is estimated to be 45,000 tons after 5 years' operation.

The project was covered by several major media in China such as China Central Television (CCTV) and Xinhua News Agency. Focusing on high-quality offshore engineering equipment, the CCTV documentary *Across China* reported on the ocean farming industry, highlighting the "Deep Blue 1" intelligent net cage. In the interview, Prof. Dong Shuanglin introduced the salmon farming project, as well as the fully-submerged net cage "Deep Blue 1" and the semi-submerged platform for wave power generation developed by OUC.



# INTERNATIONAL COLLABORATION



## *Successful Collaboration in Legal Education Encourages OUC and University of Arizona to Expand Partnership*

**The** year of 2019 has witnessed a series of landmark achievements for the partnership between Ocean University of China and the University of Arizona.

In late June, the inaugural class of graduates from the OUC-UA Undergraduate Legal Education Cooperative Program (“ULECP”) successfully completed their studies in the program and received dual degrees from both of OUC and the UA. The ULECP, first approved by China’s Ministry of Education in 2015, has been the first and only Sino-U.S. dual degree undergraduate program that offers students the unique opportunity to study both Chinese and U.S. legal systems in four years and graduate with both an LL.B. from OUC and a B.A. in law from UA. Students in the program take courses with leading

faculty members from OUC and UA. They are also offered intensive training in legal English administered by highly experienced UA language specialists. With nearly 70% of students in the inaugural class now admitted to prestigious graduate law programs in China, U.S., U.K. and Australia, and the rest pursuing promising career options in law and government, this high-profile program has made its name for exceptional academic rigor and professional prospect among students, parents, and the legal circle in both China and the U.S.



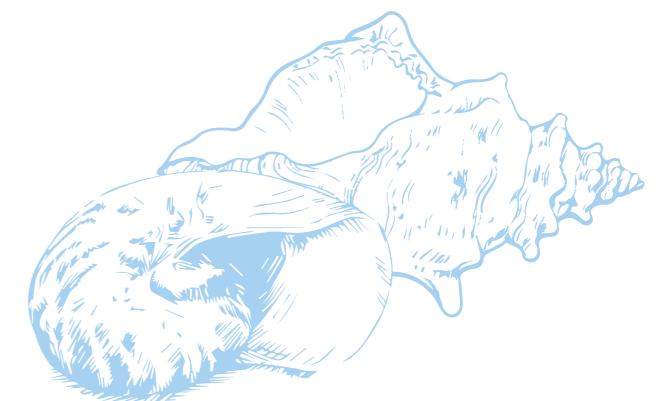
The success of the ULECP has been premised on the unprecedented collegiality and collaboration between two flagship universities and their highly renowned law schools. Legal education at OUC dates back to 1980. With a faculty that boasts nationally acclaimed experts and rising young scholars in such areas as legal theories, criminal justice, procedural laws, international law, and environmental law, OUC Law school now offers the full suite of degree programs in law, including the traditional LL.B, LL.M, J.M, Ph.D in law programs as well the dual degree program and an international LLM

program. The Law School received a “B” level grade (top 20-30%) from China’s Ministry of Education during the most recent round of its nationwide review of law programs, and it ranked #41 in a recent nationwide ranking by a leading independent agency. OUC law graduates go on to important and coveted positions in the nation’s judicial system, administrative agencies, state-owned and private enterprises, higher educational institutions and leading think tanks; many also devote their career to service areas such as Xinjiang and Tibet.



The University of Arizona James E. Rogers College of Law, meanwhile, has consistently ranked top-tier among U.S. law schools, and has also long been a leader in innovation in legal education. UA Law was the first law school in the U.S. to accept the GRE for its JD applicants, a move that is now radically reshaping law school admission practices and has been followed by many other top law schools. While U.S. law schools are traditionally offered at the graduate level, in 2014 UA launched the now highly successful BA in Law program, creating a new class of legal professional that is trained for modern workforce and a wide variety of careers that require a strong legal foundation. It was also such audacious reform and the progressive spirit that have made the launch and the successful delivery of the ULECP possible. In October 2019, the MOE formally notified OUC that the ULECP passed its first formal assessment after operating for four years. Attracting ever stronger classes of new students, the ULECP now sets the standard for dual degree programs in not only law but all disciplines of higher education in China.

Leveraging the prolific relationship formed through the ULECP, OUC and UA now looks to further deepening and expanding their ties. In early July 2019, UA and OUC co-host in Qingdao the high-profile inaugural conference for the UA global network of micro-campuses, which was attended by dozens of leaders of higher education institutions from Southeast Asia, the Middle East, Africa, Latin America, and North America. As Dr. Yu Zhigang, the OUC President and Dr. Robert Robbins, UA President met on OUC campus during the conference, the two sides agreed to explore collaborative opportunities in areas and projects beyond the law program. Both sides are now working to establish a OUC-UA Joint Research Center that will become a dedicated platform to coordinate wide range collaborative projects.



## Arctic Research Cooperation of OUC Arctic Team

**With** sea ice melting, rich Arctic resources is already available and Arctic passage especially Northeast Passage is becoming navigable and viable. Arctic region has been recognized to an international hot zone, and improved to new strategic frontier in China New Security Strategy.

OUC has the biggest and earliest Arctic team in mainland China, made up of eight professors focusing on polar research. We established Polar Research Center in 2007 in OUC and has been one of the most famous think tanks in China specializing at polar affairs. Our polar research mainly covers two key academic disciplines involving international relations and international law (law of the sea). Our colleagues go far ahead in Chinese publication related to polar issues.

The Features and Achievements of OUC Arctic team lies in its international research cooperation, mainly reflected in four aspects: China-Russia Arctic Workshop, website of Polar and Ocean Portal, associate membership of UArctic and International Arctic Summer School.

### (1) China-Russia Arctic Workshop

In 2012, GUO Peiqing co-initiated jointly with Professor Nadezhda Kharlampieva from Saint Petersburg State University, China-Russia Arctic Workshop. The workshop has been held for 8 conferences up till this year between Qingdao and Saint Petersburg/Moscow/Yakutsk, which has been already institutionalized. Our workshop has attracted most of excellent Russian and Chinese Arctic scholars, entrepreneurs

and former officials. Diplomats from Russian Embassy in Beijing are frequent participants for workshop. Our workshop has contributed much to bilateral Arctic cooperation and plays an active role to promote Arctic cooperation to be integrated into Russia-China comprehensive strategic partnership. That is recognized by Foreign Ministry of PRC.



### (2) Polar and Ocean Portal

In order to constitute our own Arctic discourse system, GUO Peiqing founded the international think tank “Polar and Ocean Portal” in 2015, with Chinese and English version of website [www.polaroceanportal.com](http://www.polaroceanportal.com). Most of outstanding Arctic scholars around the world are involved in the groups of consultants and research fellows, and a huge network based on “Polar and Ocean Portal” is emerging. The portal keeps a close eye on changes of Arctic geopolitics, geoeconomy and Arctic states’ policy and set the topics initially and guide academic opinion among scholars. The news and articles issued by our website has received worldwide readers citations. It has been developed into a common goods for different areas.

### (3) Associate member of UArctic

Due to wonderful research and much contribution, OUC was admitted as the first university member of the Arctic University Alliance (UArctic) in China. GUO Peiqing travelled to Fairbanks for submitting application in 2013 and won the universal acceptance of UArctic committee. The associate member of UArctic has brought much chances for our colleagues and students to collaborate with distinguished scholars from other member institutes.



### (4) International Summer School

OUC and Saint Petersburg State University jointly launched International Summer School in 2018. -OUC sent 3 students to Yamal-Nenets autonomous Okrug in August 2018, and we sent 11 students in August 2019. Our students had much in-depth contact and communication with indigenous people and learned a lot. OUC students actively participated in the summer school and won the high praise by Russian host. They are called as “Chinese Arctic ambassadors”. Both universities have reached a consensus on institutionalizing International Summer School. We will send more youth talents to the summer school in 2020.



International Summer School in 2018



International Summer School in 2019

In summary, OUC Arctic team has been paying much attention at international cooperation and highlighting exchanges at different levels. At present, OUC is planning to set up “International Polar Academy”, which will concentrate on the

Arctic education cooperation, aiming at training Chinese and foreign students. We are committed to raise new generation for international Arctic cooperation in the near future.



# PEOPLE



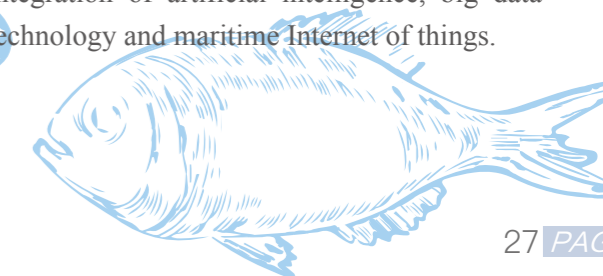
## *Prof. Wei Zhiqiang Talks about Intelligent Ocean in the Age of Big Data*

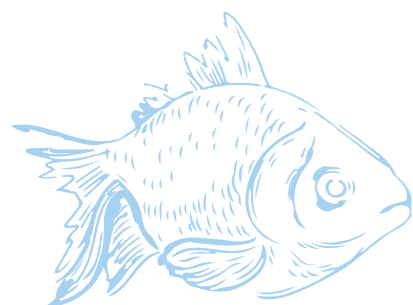
**In** today's world, how to obtain, manage and use maritime big data and integrate it with artificial intelligence has become an essential topic in the field of ocean sciences.

Prof. Wei Zhiqiang is the Dean of the College of Information Science and Engineering and Director of High Performance Computing Center of the Pilot National Laboratory for Marine Science and Technology (Qingdao) (hereinafter referred to as "QNLN"). He led the application of building a National-Regional Engineering Research Center for Maritime Big Data, approved by the National Development and Reform Commission. As the first of its kind at OUC, the center would contribute to Qingdao's innovation in marine science and technology, particularly to the forming of "Intelligent Ocean", centered around maritime big data.

What is the Intelligent Ocean? In Wei's eyes, Intelligent Ocean integrates the new-generation information technology, represented by big data, supercomputing and artificial intelligence (AI), with ocean sciences. He summarized the data science and big data technology in the field of ocean sciences as the acquisition, processing and application of maritime big data.

To break the bottlenecks in ocean observation and acquiring maritime big data, Wei believes that the key lies in the "Maritime Intelligent Internet of Things", an idea in the "Transparent Ocean" mega science project. The Maritime Intelligent Internet of Things refers to the deep integration of artificial intelligence, big data technology and maritime Internet of things.

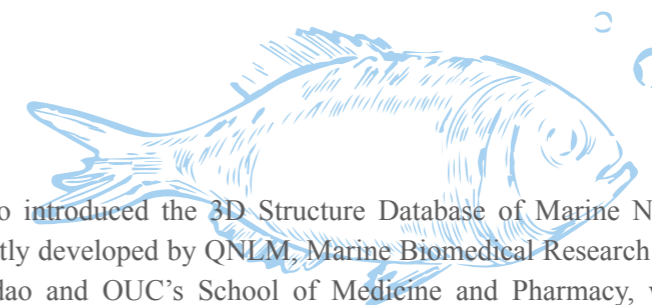
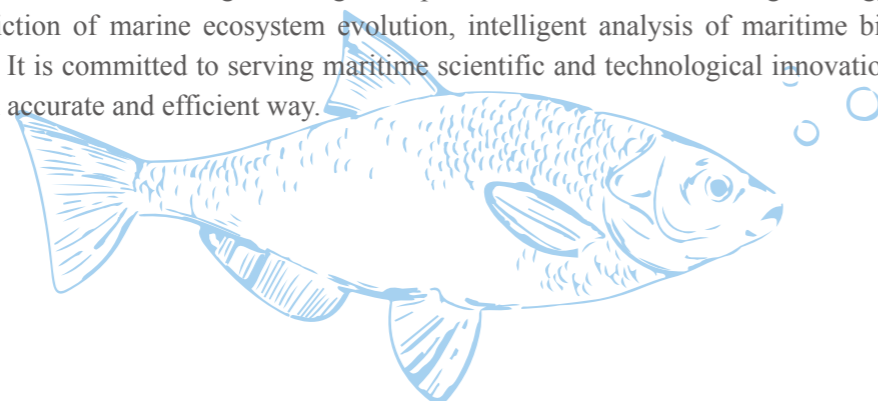




QNLN boasts the world's fastest P-Level supercomputer in ocean sciences, with a speed of up to 2600 trillion times per second, and has built the fastest 100G/s broadband and the low-delay 100KM/millisecond supercomputing Internet. "We have connected QNLN's supercomputing center with the National Supercomputing Centers in Jinan and Wuxi, to form a supercomputing cluster, to analyze and process huge volumes of maritime big data, to make China a strong maritime country" Wei said.

Prof. Wei recalled that in June 2018, President Xi Jinping visited QNLN, where he reiterated China's ambition to become a strong maritime country. He inspected the operation of high-performance scientific computing and simulation platform, and asked researchers about the latest development of the Internet of supercomputers, the "Blue Brain" and the first-class national marine system simulator. President Xi was happy to learn that supercomputers had solved the problem of "fragmentation" in maritime data and greatly improved the ability of observation and prediction of oceanic conditions.

The "Blue Brain" is a global oceanic AI and big data system, developed by QNLN's High Performance Computing Center. The system covers such aspects as the prediction of global and regional oceanic and climate conditions, intelligent selection of marine drugs, intelligent exploration of submarine strategic energy, prediction of marine ecosystem evolution, intelligent analysis of maritime big data. It is committed to serving maritime scientific and technological innovation in an accurate and efficient way.



Prof. Wei also introduced the 3D Structure Database of Marine Natural Products, jointly developed by QNLN, Marine Biomedical Research Institute of Qingdao and OUC's School of Medicine and Pharmacy, which contains the accurate 3D structures of 30,117 marine natural products. The database is used in virtual screening and intelligent drug design, improving the efficiency of the R&D of marine drugs. Prof. Wei is working with Prof. Yang Jinbo from OUC's School of Medicine and Pharmacy, to push forward the "Intelligent Supercomputing Pharmacogenomics" project, exploring new resources to contribute to China and all mankind.

According to Wei, the "Blue Brain" will transform from machine intelligence to brain-inspired intelligence. It will progress from machine learning to deep learning and then to independent learning. This is the way that the "Blue Brain" will evolve and an important path for the development of marine science and technology.

To cultivate the future talent in this field, Prof. Wei has already outlined a future path. OUC has added the new program of Intelligent Science and Technology in 2018 and it plans to launch such new majors as Data Science and Big Data Technology and Microelectronics and Integrated Circuit. Efforts will be made to include Artificial Intelligence in the curriculum for general education.







## Prof. Wang Zhuquan, a Leading Researcher of Accounting and his Team

**Over** the past 30 years, Prof. Wang Zhuquan has been dedicated to research and talent cultivation in the field of capital efficiency and financial risk analysis. He and his team have achieved fruitful results that benefit the industry and the society.

In 1999, Prof. Wang Zhuquan enrolled at Zhongnan University of Economics and Law as a PhD student, where he studied economics and management theory. He deepened his understanding of corporate governance and modern enterprise system.

In the late 1990s, local enterprises in Qingdao such as Haier and Aucma began to extend their businesses to other cities, setting up offices and conducting cross-regional distribution. Prof. Wang noticed the importance of working capital management and proposed the "Working Capital Management Theory based on Channel Management", which integrates the concepts and methodology of supply chain management, channel relations management and customer relationship management.

Together with the Accounting Society of China, Prof. Wang and his team developed the

"Working Capital Management Performance Ranking of China's Listed Companies", which has been issued annually since 2007. Besides, he also built up the "Working Capital Management Database of China's Listed Company" and "Working Capital Management Case Library of China's Listed Company".

In August 2009, China Enterprise Working Capital Management Research Center was established at Ocean University of China, serving as a new innovative platform of accounting that closely connects the government, community, universities and enterprises.

China Capital Management Think Tank Summit, initiated by Prof. Wang and his team, has been held annually since 2011 and became a brand in the field of capital management. In the past eight years, it has attracted more than 2,000 experts from universities and enterprises.

Prof. Wang and his team provided consultation service for the decision-making of China National Petroleum Corporation in 2016 with innovative capital concepts and an evaluation system for capital efficiency and financial risk, contributing to the capital allocation strategy of the corporation.

As an advocate of working capital management research, Prof. Wang set up the course "Working Capital Management" for undergraduates in 2008, a subject that was later included as a research direction for postgraduates. For more than ten years, he has been teaching this course, sharing with the students the latest development in this area.



In 2016, Prof. Wang and his team developed a MOOC course entitled "Working Capital Management". In 2018, more than 40,000 people have registered for the course, which was awarded the Best National Online Course.

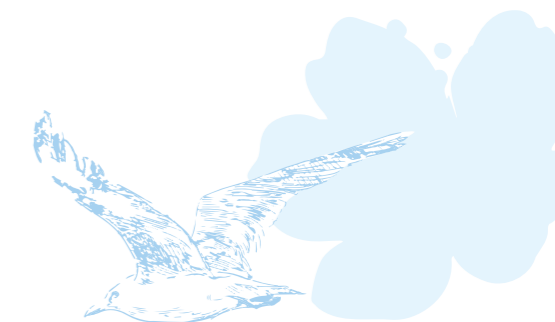


A journey of a thousand miles begins with a single step. Thanks to the unremitting efforts of Prof. Wang and his team, OUC ranked the 17th among the 480 colleges that offer accounting programs in China, according to the 2017-2018 ranking published by RCCSE and China Education Quality Evaluation Center of Wuhan University. OUC became the only university in Shandong Province to enter top 20 on the list.

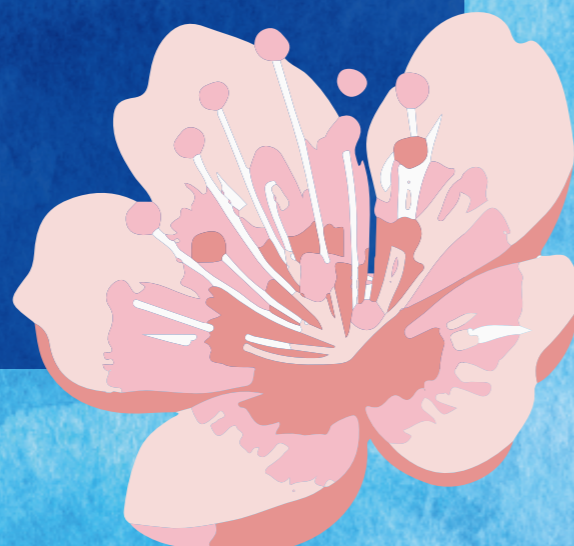


The ultimate value of his work, according to Prof. Wang, is to contribute to the national economy, social development and student success. He said, "we will always be on our way of exploring and striving for greater achievements."





# VOICES



## *Participating in the CVPR2019*

Han Lei, Yang Jitao

**The** International Conference on Computer Vision and Pattern Recognition (CVPR) is a top academic conference in the field of artificial intelligence. Focusing on deep learning technology, it includes the main conference, seminars and short courses. Since several research projects that we are conducting require deep learning technology, we could promote the application of new technologies in our projects and push for smooth implementation of our projects through participating in this conference.

CVPR 2019 was held at the Long Beach Convention Center in Long Beach, California from June 16 to 20, 2019, and was organized by the Institute of Electrical and Electronics Engineers (IEEE). The IEEE, an international association of electronic engineers and information science engineers, is

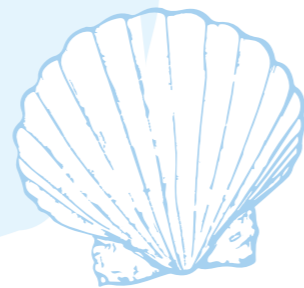
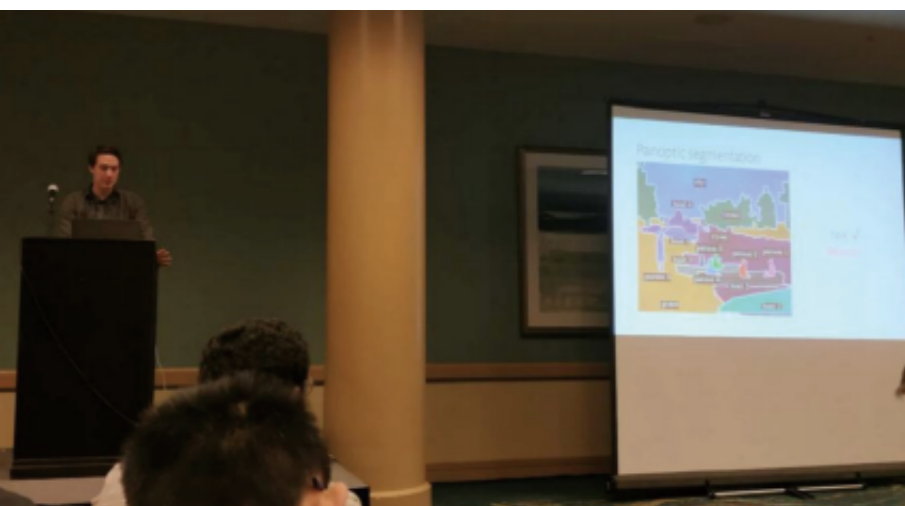
by far the world's largest non-profit professional and technical institute with over 400,000 members from more than 160 countries. IEEE is committed to the R&D of electric, electronic, computer engineering and science-related fields, and has developed more than 900 industrial standards in fields of space, computers, telecommunications, biomedicine, electricity and consumer electronics. Now IEEE has developed into an international academic organization with great influence. CVPR is a top international academic conference on machine learning, computer vision and pattern recognition. Till the submission deadline, the conference has received a total of 5,165 valid submissions, an increase of 55% over the last year. 1,300 submissions were accepted, with an acceptance rate of 25.17%.

With strict acceptance criteria, the overall acceptance rate of CVPR is usually no more than 30%, among which the accepted papers that are presented orally account for no more than 5%. The review of CVPR is double-blind, which means neither the reviewer nor the contributor knows the information of each other. A paper usually needs to be reviewed by three reviewers, before being handed over to the chair for a final decision.

When we look at the keywords of the papers in CVPR 2018 and those in CVPR 2019, we find that deep learning is of great importance. The most popular topics are still images, detection, 3D, objects, video, segmentation, confrontation, recognition and vision. At the moment, according to the ranking of international academic conferences recommended by China Computer Federation, CVPR is a Class-A conference in the field of artificial intelligence.

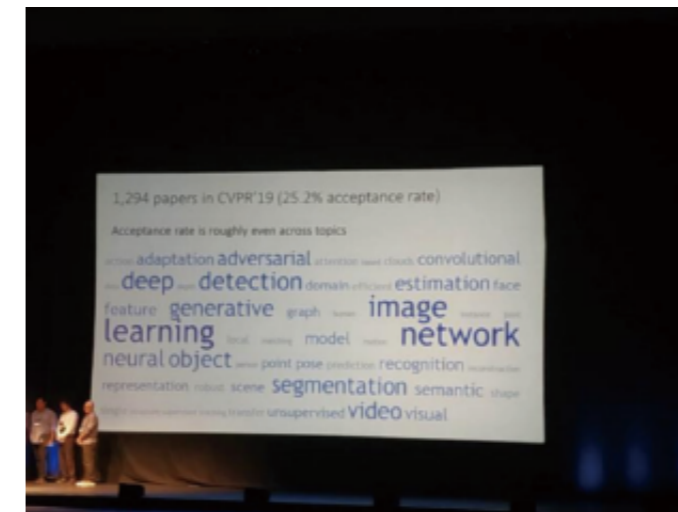


We attended the Tutorial/Workshop: Benchmarking Multi-Target Tracking: How Crowded Can It Get, a seminar jointly organized by scientists and researchers from the Technical University of Munich, the University of Adelaide, Swiss Federal Institute of Technology Zurich and Amazon. The seminar was centered around such topics as the development of multi-target tracking from classic to modern, the latest research results of multi-target tracking and understanding of objects in space and time.

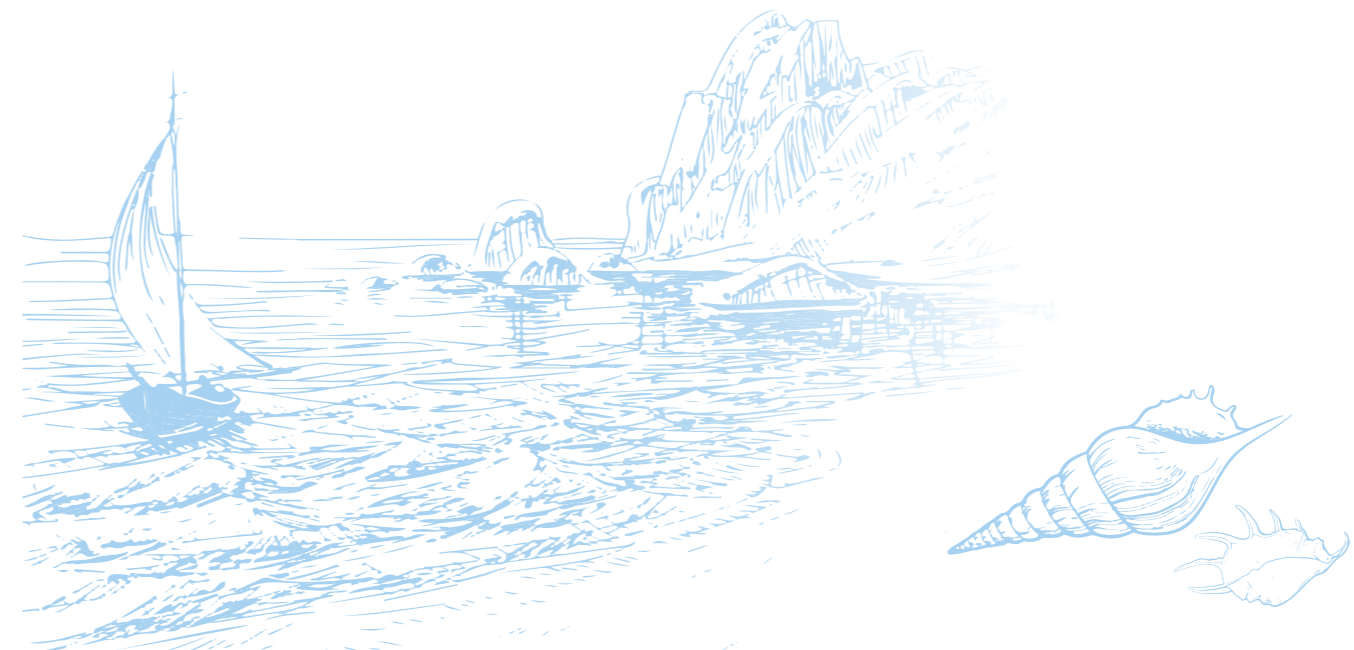


Six experts were invited to discuss the methods and challenges of multi-target tracking. The participants engaged in in-depth discussions about how to improve multi-target tracking evaluation and expand existing benchmarks.

The parallel conference on image segmentation was organized by Kaiming He, a famous scholar from Facebook. The session, attracting a large number of audience, introduced the development from R-CNN to Mask R-CNN in a systematic way. We learned a lot about the latest development in the unrecognized, behind-the-scenes technology.

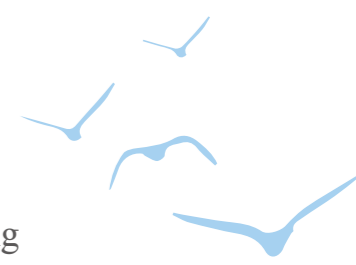


In the parallel session on Deep Reinforcement Learning for Computer Vision, the speaker introduced the research status and pointed out the next stage of development. The opening ceremony of the main conference was presided over by Prof. Songchun Zhu, Director of the Department of Statistics and Computer at UCLA. He said that there were a total of 9227 people registered for the conference this year, which broke the previous records. The number of participants from China's mainland reached 1,044, second only to that of the United States.

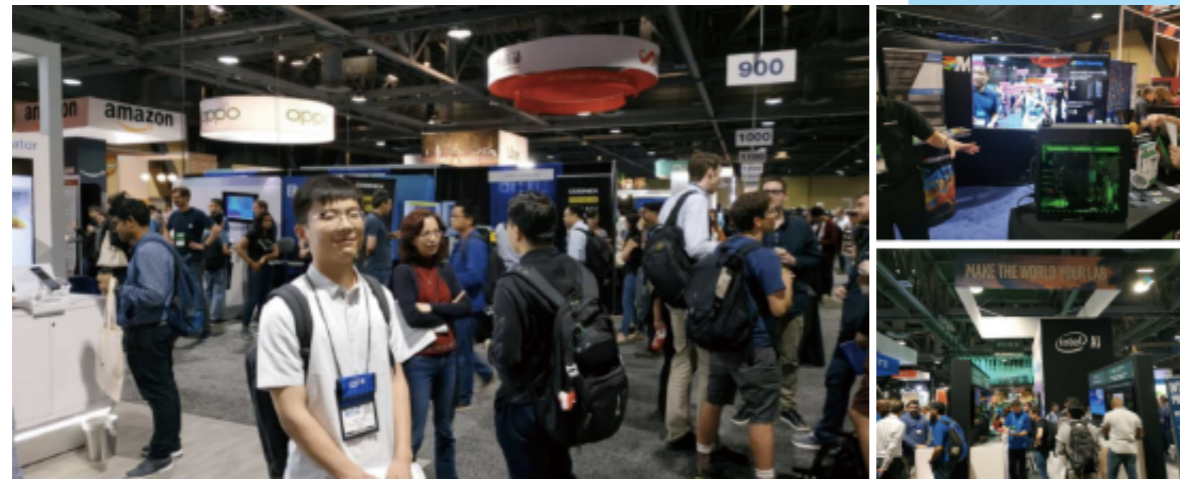


## My Trip to OMAE

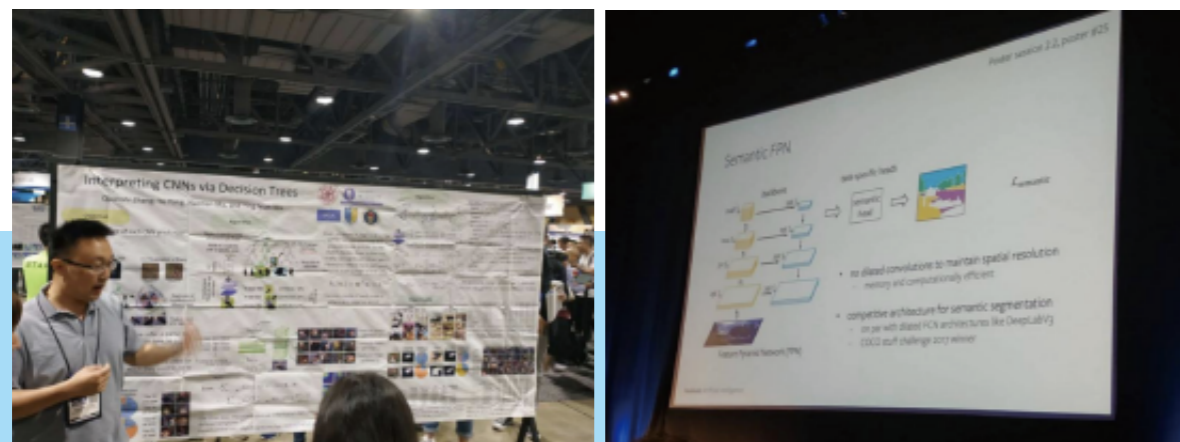
Wang Gang



In the following days, we attended sessions about Tracking, Verification and Certification of Neural Networks, and Analysis of Marine Video. We also participated in the poster show and visited exhibitors' booths to learn about the latest scientific and technological achievements of major tech companies in the world.



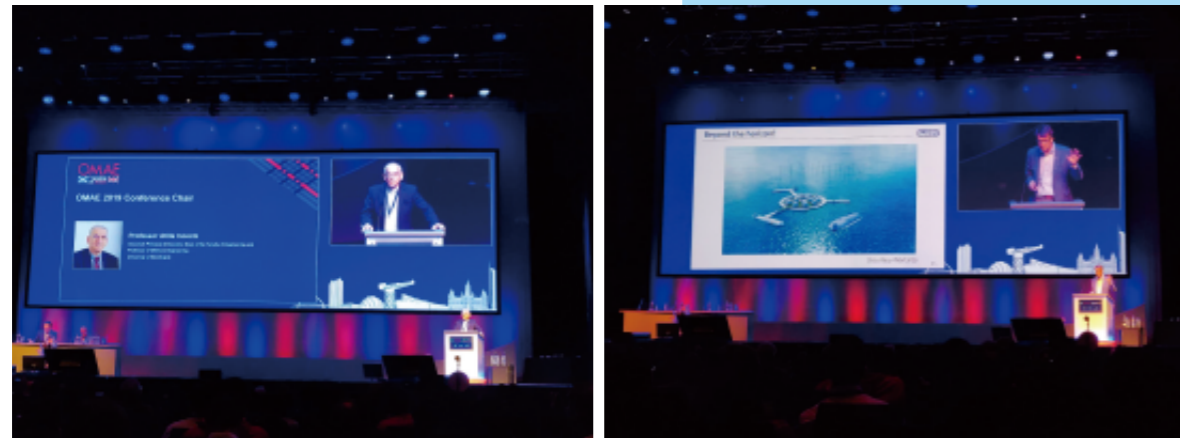
We understand from this conference that deep learning is a dominant method in this field today, and its popularity is on the rise. Various new algorithms, models, datasets and evaluation methods of deep learning are being improved and optimized. It is foreseeable that the research enthusiasm for AI will keep growing and bring about positive impacts on other fields. Participating in this conference has indeed been a rewarding experience for us, as we gained new ideas to continue our own research.



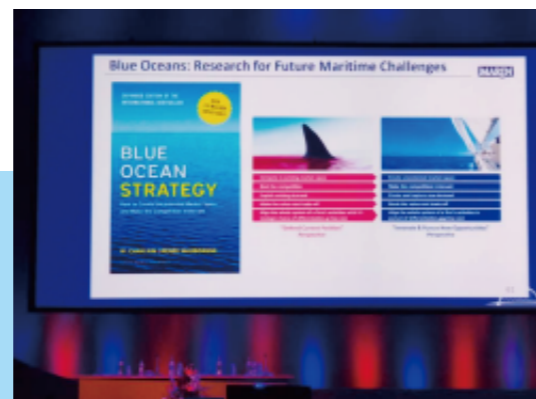
**From** June 8 to 14, 2019, the 38th International Conference on Ocean, Offshore & Arctic Engineering (OMAEO) was held in Glasgow, UK. OMAEO is an annual event for researchers from scientific and industrial communities around the world, engineering technical managers and students. It aims to facilitate the exchange of knowledge and technology, and to promote technological progress and its application in industry. The conference also pushed for international cooperation in the field of ocean, land and polar engineering. The conference was hosted by the University of Strathclyde, and attended by nearly 1000 experts and scholars from universities, research institutions, enterprises and the industry.

The chairman of the meeting was professor ATILLA Incecik, editor of the magazine *Ocean Engineering*. Famous experts and scholars, such as Bas Buchner, David Dickson, Xiaozhi Wang, Kjetil Skaugset, Rodney Eatock, Takeshi Kinoshita, were delivered reports. There were 219 branch venues, where scholars from all over the world discussed hot-spot issues and the latest research results related to offshore technology, safety and reliability of marine structures, material technology, marine pipeline and riser technology, design and construction technology of offshore platforms, marine space utilization, marine engineering and polar science and technology, computational fluid dynamics and vortex induced vibration, marine renewable energy, marine geology as well as marine hydrodynamics and flow.





Human beings have paid a high price in the course of developing and utilizing the ocean. Ocean engineering is characterized by high technology, high risk and high investment. The development of marine resources is full of risks due to many uncertainties, such as bad and changeable marine environment, complex development conditions and human errors. To overcome the risks and challenges brought about by deep water, accidents, natural disasters and operational errors, to ensure the safety of life and property and environment and to guarantee the safe, economic and stable supply of offshore oil and gas, is the most important thing in the development of offshore platform technology. In the recent decade, the price of oil has been rising. It has been proved that 90% of the marine oil reserve is in the deep sea, and it has become an inevitable trend that the exploitation of oil and gas has reached the deep sea. Marine engineering technology has received unprecedented attention, paying closer attention to health, safety and environmental protection. Marine engineering R&D seeks innovation and breakthroughs in safety performance, production capacity, and the balance between cost and operating cost.



On June 8, I participated in the short course "Verification and Validation of Industrial CFD". Professor Vaz from the University of Lisbon taught us how to ensure accuracy in complex CFD calculations. In practical application, using verified and validated results to assist decision-making requires more preparation than estimation experiment, numerical value and modeling errors. The short course mainly explains the errors and uncertainties of numerical simulation. Code verification can ensure that we use the correct model and solution in the calculation process. In terms of solution or calculation verification, the main purpose is to minimize the numerical error of calculation. Validation verification refers to the difference between the actual and simulation scales in the whole calculation process. The mathematical or computational model is defined in the sense of continuity. Therefore, the model error does not include discretization or numerical error. Furthermore, it may contain errors from domain size, boundary conditions, fluid properties or heat transfer coefficients. So it is necessary to explore all kinds of errors in CFD calculation. That day, I also attended a short course on how to prevent corrosion and deposit in the marine engineering environment. The researchers explained the basic types of corrosion and how to prevent them. I also participated in several sub-sessions related to my own research. I listened to many excellent reports of scholars in my field and other fields, and exchanged ideas with colleagues from different countries.

This is the first international academic conference that I have participated in since I became a postgraduate student. Through this meeting, I realized that cooperation is crucial to research and fishery engineering needs to be combined with advanced theories and good practices in the field of marine engineering. I would like to thank my university, Ocean University of China, for its support. I have broadened my vision and gained a better idea on the current and future research topics.

