# KMU Newsletter

## Kaohsiung Medical University , Taiwan

Profile Interview • Research Achievements • Latest News

## Kaohsiung Medical University

**K**aohsiung Medical University (KMU) was established in 1954 as Kaohsiung Medical College. It was founded by Dr. Tsungming Tu, the first Taiwanese to earn a doctoral degree in medicine. It holds the distinction of being the first medical institution in Taiwan established and organized entirely by Taiwanese. The university was founded through the collective efforts and donations of prominent figures in the Taiwanese medical community, including Professors Li-Tung Ho and Pang-Hsing Hsu, as well as civic leaders from southern Taiwan, such as Mr. Chi-Chuan Chen and Mr. Chuan-Tsung Tang. KMU was the first private medical college in Taiwan, and in 1999, it was renamed Kaohsiung Medical University, becoming the first private medical university in Taiwan.


**D**r. Tsungming Tu, the university's founder, established the school motto: "Learning with Passion, Research as Priority." He encouraged students to emulate Dr. Albert Schweitzer's philosophy of "lifelong dedication, reverence for life, and respect for human dignity." From its inception, KMU has upheld the core value that "one must first learn to be a person before becoming a doctor," a foundational principle in its approach to medical education.

# Kaohsiung Medical University , Taiwan

## Profile Interview

**A**ssistant Professor Wan-Yi Ho of the Department of Anatomy at KMU, a recipient of the Ministry of Education's "Educator Role Model" and the National Excellent Teacher Award of MOE, is highly regarded for her teaching in gross anatomy, embryology, and histology. Known for her exceptional technical skills and patient instruction, Professor Ho is especially celebrated for her innovative use of digital teaching materials. She frequently incorporates videos and animations into her lectures, helping students explore the fascinating complexities of the human body through engaging and dynamic methods.

**I**nspired by free embryology animations and video lectures created by international scholars, Professor Ho developed three educational websites "Anatomy Laboratory Video Tutorials," "Osteology Video Lessons," and "Human Cross-Sectional Anatomy Resources" which are freely accessible to students in medical and health-related fields around the world.

**A**t every initiation ceremony for body donors—reverently referred to as "Cadaver" the donors' families share heartfelt stories and memories of their loved ones, along with the motivations behind their decision to donate. These deeply moving moments have further strengthened Professor Ho's dedication to her work."Learning anatomy is not only about honing medical skills," she reflects, "but also about understanding the value of life itself." Professor Ho aspires to continue dedicating herself fully to medical education, nurturing future talent with care and diligence. She urges her students to study earnestly, and contribute meaningfully to the cultivation of outstanding medical professionals for the nation.

# Kaohsiung Medical University , Taiwan

## Profile Interview

### 1.With the assistance of digital technology, you have developed several educational websites. Could you share the motivation behind creating these resources and the challenges you faced during their development?

**W**ith the aid of digital technology, Professor Ho independently filmed and developed an anatomy teaching website to address the lack of real-life imagery in textbooks. The platform enables students to clearly identify various human anatomical structures. Thanks to continuous updates, the three websites have collectively accumulated a vast archive of standardized specimen images and now attract nearly 300,000 visits annually. The website not only enhances student learning outcomes but has also become a valuable teaching resource for new faculty members. Professor Ho emphasizes that while AI and 3D simulations are useful teaching aids, they cannot fully replace hands-on cadaver dissection. Medical education, at its core, must remain human-centered and cannot be detached from the physical human body.

### 2.Have you received any memorable feedback from students that made you feel your teaching methods are truly worthwhile?

**E**ach year, students express their gratitude to Professor Ho for producing an extensive collection of instructional videos especially during the COVID-19 pandemic, when their impact was most profound. When cadaver labs were suspended, a decade's worth of accumulated digital resources and virtual lab sessions became essential, ensuring that students could continue to learn effectively in a remote environment. Many students conveyed heartfelt appreciation, noting that these efforts safeguarded their right to education. Professor Ho also noted that although restrictions remained during the second year of the pandemic, partial hands-on sessions were able to resume through staggered class scheduling.

### 3.When students first begin learning anatomy, they often face psychological challenges. How do you help them adapt and develop a mindset of respect and gratitude?

**T**o help students overcome the psychological impact of studying anatomy for the first time and to cultivate a sense of respect and gratitude, activities were designed such as home visits to body donors' families and the writing of biographical and reflection reports. These experiences help students gain a deeper understanding of the donors' motivations and the profound value of life. Professor Ho noted that most body donors today are named individuals who voluntarily made the decision to donate, marking a significant shift from the earlier practice of using unclaimed or anonymous bodies. The cultivation of this culture owes much to the efforts of Tzu Chi Foundation, whose advocacy has contributed to a more stable supply of cadaver resources in southern Taiwan.

## Profile Interview

### 4.In addition to your current teaching methods, are there any other teaching models you would like to explore or implement in the future?

**E**mphasizing the importance of student-centered learning, Professor Ho advocates for instructional models that actively involve students in the teaching process. For example, during winter break, students are encouraged to produce instructional videos on human cross-sectional anatomy. This hands-on experience not only deepens their understanding but also fosters meaningful learning, enabling them to identify and solve problems more effectively than through passive, lecture-based instruction. Professor Ho also actively collaborates with colleagues to explore innovative teaching methods, such as conducting 3D scans of cadaver brain slices. These efforts aim to expand the possibilities of interactive learning, empowering students to move beyond passive knowledge intake and instead engage in active participation, reflection, and internalization of what they learn.

### 5.In your opinion, what aspects of anatomy education in Taiwan could be further improved to better meet the demands of modern medicine?

**T**he future of anatomical education in Taiwan should continue to recognize the irreplaceable value of hands-on cadaver dissection. While AI and virtual tools can serve as valuable supplements when resources are limited, overreliance on costly technologies such as virtual dissection tables and 3D systems may compromise the flexibility and depth of learning. In contrast, websites and instructional videos offer simpler, more practical digital tools that align better with students' everyday learning needs. Professor Ho emphasizes that anatomy education is not merely about acquiring technical skills; it also plays a critical role in helping students confront challenges, engage in self-reflection, and develop humanistic values, which are essential components of medical education.

## Research Achievements

# Development of Additive-Manufactured 3D Bioceramic Bone Graft Substitutes for Personalized Bone Defect Applications


## Abstract

**O**ur team designed a novel osteochondral osteochondral double-layer scaffold. The lower layer of the double-layer scaffold uses a 3D printed β−tricalcium phosphate (β−TCP) bioceramic scaffold, which uses digital light processing (DLP) technology and photo-cured and negative thermoresponsive (NTR) bifunctional bioceramic slurry achieved. This 3D bioceramic scaffold not only provides the necessary mechanical support and regeneration of subchondral bone tissue but also delays its biodegradation and provides a stable matrix for cartilage regeneration.

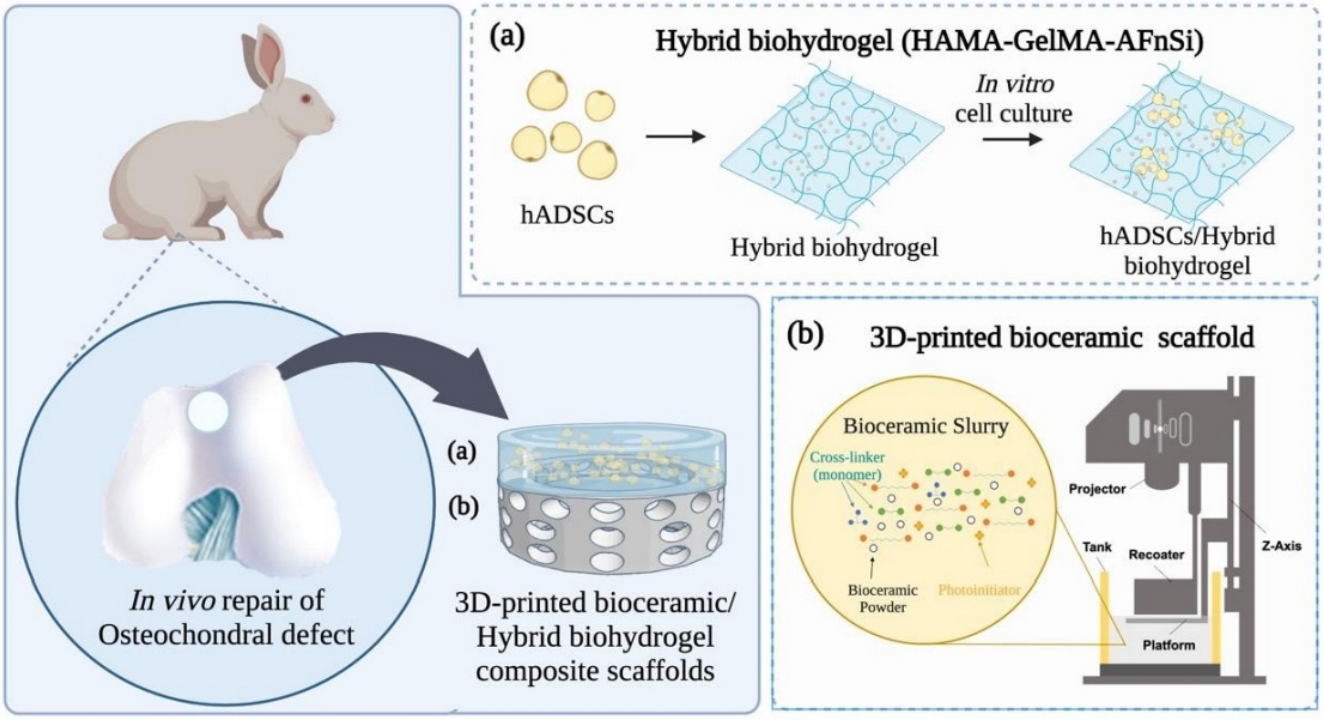


## Read more

**T**he upper layer of the double-layer scaffold is a three-dimensional bio-inspiral hybrid hydrogel, which is mainly composed of hyaluronic acid methacryloyl (HAMA) and gelatin methacryloyl (GelMA) copolymers. Acrylate functionalized nano-silica (AFnSi) is innovatively used to enhance the mechanical properties of the hybrid light-cured hydrogel, slows down the degradation rate of organisms, has excellent results in cytocompatibility in vitro, and promotes cartilage differentiation.

**T**he research results show that when the double-layer osteochondral scaffold composed of this 3D bioceramic scaffold and photo-cured hybrid hydrogel rich in human adipose stem cells (hADSCs) showed sound osteochondral defect repair effects in the rabbit knee cartilage defect model, can accelerate bone formation and promote fusion with adjacent bone tissue. The above research has confirmed that 3D printing technology has broad application potential in tissue repair. The team is fortunate to receive the NSTC Grant's two-year industry perspective for Applied Research Incubation Project (I) (II) (Cranial burr hole cover of 2021~2024) 3D bioceramic bone graft substitute using the additive manufacturing method), and based on this 3D bioceramic scaffold bone graft material product technology, "Precisely Printed Medical Co., Ltd." is a new start-up company that focuses on developing active materials Layer-fabricated 3D bioceramic bone graft substitutes for personalized bone defect indications.

## Research Achievements





## Application and Highlights

**T**he team currently holds three globally filed patent systems related to negative thermoresponsive ceramic slurries. Their research is dedicated to advancing additive manufacturing technologies for "faster-healing, mechanically supportive 3D bioceramic bone materials," aimed at developing personalized and precise bone graft substitutes for enhanced bone healing. Promoting human health and well-being remains the core mission of this work.

# Avian Influenza Virus and Its Influencing Factors in Migratory Bird Habitats

## Abstract

**T**his study provides epidemiological insight into the avian influenza virus, revealing that airborne avian flu virus could be affected by temperature, cold air masses, and specific species of birds.

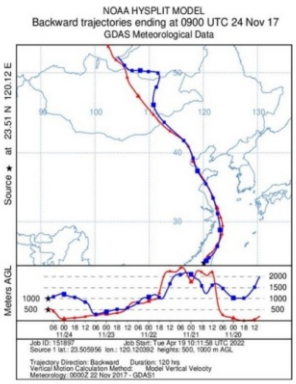
## Read more

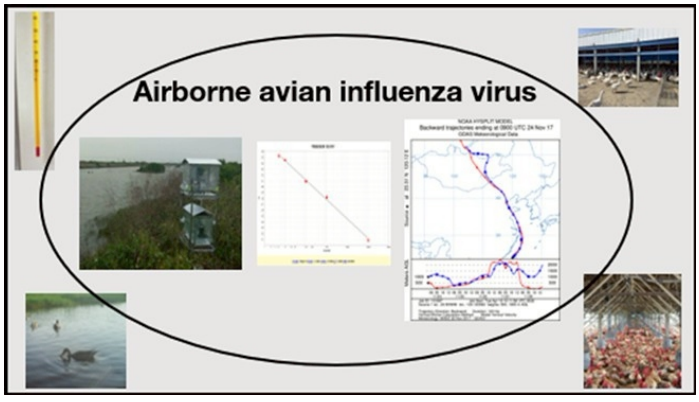
**T**he outbreaks of avian influenza virus affect economic and public health worldwide. Previous studies have proved that the avian influenza virus could spread through air in poultry farms and live poultry markets. In addition, due to migration, migratory birds could transmit the avian influenza virus and cause poultry to be infected. So far, no study has investigated airborne influenza virus in the winter habitat of migratory birds and the influence factors.

**W**e conducted a study to detect airborne influenza virus in the winter habitat of migratory birds and used quantitative real-time polymerase chain reaction to analyze viral RNA. In our finding, the positive rate of H7 (12%) was higher than H5 (8%) and H9 (10%). A negative correlation was observed between temperature and avian influenza virus.

## Application and Highlights

**T**his study collaborated with Chen-Chih Chen, from the National Pingtung University of Science and Technology. Jia-Lin Zhang, the first author, presented this paper at the 2022 Asian Aerosol Conference and won second place in the "Tai & Chyun Student Oral Award". In addition, Professor Pei-Shih Chen from the Department of Public Health has an H-index of 22. Furthermore, Professor Pei-Shih Chen was invited and won the "21st National Innovation Award - Academic Innovation Award".



## Latest News

# KMU and Namasia Achieve New Milestone: Awarded the 2025 《Global Views》 USR Model Award

**K**MU's Namasia USR Project was honored with the《Global Views》USR Model Award in the Sustainable Curriculum Category on April 8, recognizing its long-standing commitment to community-based learning and environmental sustainability.

**T**he award-winning program, Ecological and Cultural Diversity: Namasia Studies Learning from the Local, centers on 'Namasia Studies' and emphasizes close collaboration between the university and Indigenous communities. Through a multifaceted approach encompassing medical services, educational outreach, and regional revitalization, the program actively promotes the goals of good health and well-being, as well as quality education. For many years, faculty and students from KMU have been deeply engaged in the Namasia District, working alongside local communities to advance multicultural education, respond to local needs, and foster the sustainable development of Indigenous communities.

**I**n addition, the Namasia USR Project has actively expanded its international collaboration network, extending local experiences to New Southbound countries such as Vietnam, Indonesia, the Philippines, Thailand, and Malaysia. By fostering dialogue and cooperation between indigenous and urban communities, as well as between domestic and international partners, the project deepens the practice of university social responsibility on a global scale.

**K**MU  remains committed to advancing its USR initiatives with the goals of health equity and cultural inclusion. By working hand in hand with local communities to co-create a sustainable future, KMU continues to align its efforts with the United Nations Sustainable Development Goals (SDGs), particularly 'Good Health and Well-being' and 'Quality Education,' demonstrating its positive impact on society.


## Latest News

# Breakthrough in Hepatitis B Research: President Ming-Lung Yu of KMU Collaborates with University of Ulsan in Study Published in Leading International Journal

**O**n February 4, 2025, President Ming-Lung Yu of KMU and Professor Young-Suk Lim, Dean of the University of Ulsan College of Medicine, published groundbreaking interim results from a randomized controlled clinical trial ATTENTION in The Lancet Gastroenterology & Hepatology, a top 1% international journal in the field of hepatology with an impact factor of 30.9. The study provides compelling evidence that early antiviral therapy significantly reduces the risk of severe liver complications in patients with chronic hepatitis B.

**T**he clinical trial was conducted across 22 centers in Taiwan and South Korea, aiming to challenge the current treatment guidelines for hepatitis B. Presently, antiviral therapy is primarily recommended for patients with significant liver fibrosis or markedly elevated alanine aminotransferase (ALT) levels. However, for patients with moderate to high viral loads but without cirrhosis or elevated liver enzymes, existing guidelines offer limited recommendations and lack robust evidence. The ATTENTION study demonstrated that early intervention with tenofovir alafenamide (TAF) significantly reduces the risk of severe liver-related outcomes, including hepatocellular carcinoma, liver decompensation, liver transplantation, and all-cause mortality in adults with chronic hepatitis B who have moderate or high viremia, regardless of ALT levels and in the absence of cirrhosis.

**P**resident YU and Professor Young-Suk Lim stated that the study challenges conventional approaches to managing hepatitis B, demonstrating that early antiviral treatment can significantly reduce the risk of serious liver complications. These findings have the potential to improve long-term health outcomes for millions of people living with chronic hepatitis B worldwide. In light of these results, the researchers urge revisions to current clinical guidelines and reimbursement policies to ensure earlier access to treatment for those in need.

**T**he study is registered on ClinicalTrials.gov (NCT03753074) and was conducted under rigorous oversight to ensure the highest scientific standards. This achievement marks a significant milestone for the global medical community at the start of the year and underscores KMU's leadership in international hepatitis research.

## Latest News

# KMU Strengthens Taiwan-India Nursing Education Ties with MOU Signed with Shivalik Institute of Nursing

**T**o promote academic exchange and collaboration in nursing education between Taiwan and India, the College of Life Science at KMU signed a MOU with the Shivalik Institute of Nursing in India on March 20 during a virtual signing ceremony. This strategic partnership marks the beginning of a new chapter in bilateral academic cooperation and cultural exchange. The event was organized under KMU's initiative "Sustainability Beyond Summer: Namasia and International Rural Development Program." KMU Senior Vice President Fan-Hao Chou remarked that the collaboration will further strengthen the two institutions' efforts in nursing education and USR, contributing to global healthcare advancement.

**T**his collaboration also represents a meaningful extension of KMU's USR initiatives, aiming to realize the shared vision of global resource equity in nursing education through international cooperation. As part of this effort, KMU organized a campus-wide donation drive to collect gently used nursing and medical education materials. These resources were donated to both the Shivalik Institute of Nursing and the Modern College of Nursing in India as a practical step toward enhancing the quality of nursing education. The initiative promotes shared access to teaching materials and helps create a more supportive learning environment for nursing students in underserved regions.

# Kaohsiung Medical University , Taiwan

## Latest News

**K**MU's USR initiatives have long been guided by the goals of "cultivating local health professionals" and "promoting harmonious coexistence between people and the environment." The signing of this MOU marks a new chapter in the Taiwan-India collaboration. Moving forward, both institutions will engage in academic resource sharing, promote international exchange programs, and foster cross-cultural learning, jointly nurturing nursing professionals with a strong global perspective.

**K**MU remains committed to advancing International University Social Responsibility (iUSR) by promoting meaningful exchange and resource sharing. Through such efforts, KMU aims to contribute to the development of global health care and looks forward to collaborating with more international partners to elevate the standards of nursing education worldwide.

## Latest News

# KMU Joins Forces with Humanitarian Aid Society in Indonesia to Promote Cultural Diplomacy and Demonstrate International Humanitarian Commitment



**I**n response to the government's New Southbound Policy and pursuit of its commitment to social responsibility and citizen diplomacy, KMU has once again joined hands with the Kaohsiung Humanitarian Aid Society. In April 2025, the delegation traveled to the remote Indonesian island of Sumba to carry out educational and cultural exchanges as well as humanitarian assistance efforts, underscoring KMU's dedication to international engagement and its cross-border compassion in action.

**L**ed by Professor Aij-Lie Kwan of the Department of Neurosurgery at KMU, the 2025 "KMU/Kaohsiung Humanitarian Aid Society Educational and Cultural Delegation to Indonesia "comprised eleven members, including members from the Humanitarian Aid Society, KMU international students, and alumni from Indonesia. Before departure, KMU President Ming-Lung Yu personally presented the delegation flag, encouraging the team to carry forward their mission by bringing hope through education and warmth through healthcare.

**S**umba Island, located at the southern end of Indonesia's Nusa Tenggara archipelago, has long suffered from limited resources. KMU had previously partnered with the International College of Surgeons to provide medical aid on the island in 2016 and 2017, forming strong bonds with the local community. Returning this year for further educational and cultural exchange, the team not only distributed essential living and learning supplies but also sparked enthusiasm for learning among local children through language lessons and life-skills guidance. The delegation engaged deeply with multiple schools, churches, special education institutions, and orphanages, further strengthening ties through meaningful collaboration.

## Latest News

**T**he delegation also visited Bali, where they toured Udayana University, a partner institution with which KMU has signed a memorandum of understanding, and attended the graduation ceremony of eleven local surgeons who had completed a training program. Professor Aij-Lie Kwan delivered a speech on behalf of KMU, sharing her clinical experience and reaffirming her commitment to strengthening bilateral collaboration in the future.

**K**MU will continue to uphold its core values of 'people-centered care and love-driven service' by collaborating with civil society organizations to promote international education and humanitarian outreach. Through deepening global partnerships, the university remains committed to showcasing the warmth and strength of Taiwan on the international stage.


## Latest News

# KMU 2025 International Conference on Environmental Air Pollution and Health Promotion: Integrating Global Insights and Collaborative Strategies

**K**MU, in collaboration with Kaohsiung Municipal Siaogang Hospital, held the 2025 International Conference on Environmental Air Pollution and Health Promotion on March 12. The conference focused on key issues, including air pollution, environmental exposure, and pulmonary-related diseases.

**D**istinguished experts were invited to participate, including Professor Pei-Song Gao from Johns Hopkins University, Professor Yuanpu Peter Di from University of Pittsburgh, Researcher Tzong-Shi Lu from Harvard University, Deputy Director Lung, Shih-Chun from the Research Center for Environmental Changes at Academia Sinica, Professor Chih-Da Wu from the Department of Geomatics at National Cheng Kung University, Dr. Shau-Ku Huang and Pulmonologist Da-Wei Wu from Kaohsiung Municipal Siaogang Hospital, as well as Professor Shih-Hsien Hsu from the Graduate Institute of Medicine at KMU.

**T**he event brought together cross-disciplinary and international experts from academia and the medical field to address the growing issue of air pollution. Participants shared the latest research findings, examined the health impacts of environmental exposure, and proposed strategies and healthcare solutions to improve public health outcomes.

## Latest News

**S**enior Vice President Yeou-Lih Huang of KMU stated that in recent years, the university's Research Center for Precision Environmental Medicine has actively collaborated with Kaohsiung Municipal Siaogang Hospital through the University Social Responsibility (USR) program on environmental education and health promotion under air pollution conditions.

**T**he initiative aligns with several United Nations Sustainable Development Goals (SDGs), including SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), SDG 9 (Industry, Innovation, and Infrastructure), SDG 10 (Reduced Inequalities), SDG 11 (Sustainable Cities and Communities), and SDG 17 (Partnerships for the Goals). The program focuses on in-depth research into the impact of environmental pollution on human health while also promoting environmental medicine education in local schools and communities. These efforts reflect KMU's ongoing commitment to fulfilling its social responsibility as a medical university.


| Time | Topic / Presenter |
|---|---|
| 09:00-09:30 | Registration |
| 09:30-09:45 | Honorable Guests / Group Photo |
| Moderator: Shih-Hsien Hsu (Professor, Graduate Institute of Medicine, Kaohsiung Medical University (KMU)) | |
| 09:45-10:25 | Mechanistic Insights into the Role of Environmental Exposures in Asthma Pathogenesis<br>**Pei-Song Gao**<br>Professor, School of Medicine, Johns Hopkins University, USA |
| Moderator: Pei-Shih Chen (Professor, Department of Public Health, KMU) | |
| 10:25-11:00 | Multi-dimensional Investigation of the Gene-environmental Interaction in Asthma<br>**Shau-Ku Huang**<br>Distinguished Investigator, Kaohsiung Municipal Siaogang Hospital (KMSH)<br>**Kwei-Yan Liu**<br>Postdoctoral Research Fellow, National Institute of Environmental Health Sciences, National Health Research Institutes |
| 11:00-11:15 | Break |
| 11:15-11:50 | How Environmental Exposure Affects Oncogenic Activity and Immunotherapy Efficiency<br>**Shih-Hsien Hsu**<br>Professor, Graduate Institute of Medicine, KMU |
| 11:50-12:10 | Q & A |
| 12:10-13:30 | Lunch |
| Moderator: Tusty-Jiuan Hsieh (Professor, Graduate Institute of Medicine, KMU) | |
| 13:30-14:10 | Environmental Air Pollution and Lung Tumorigenesis<br>**Yuanpu Peter Di**<br>Professor, Department of Environmental and Occupational Health, University of Pittsburgh, USA |
| 14:10-14:45 | Applying Research-grade low-cost Sensors to Evaluate $PM_{2.5}$ Exposure and its Association with Heart Rate Variability<br>**Shih-Chun Candice Lung**<br>Research Fellow and Deputy Director, Research Center for Environmental Changes, Academia Sinica |
| 14:45-15:20 | Geospatial Artificial Intelligence and Air Pollution Exposure Assessment<br>**Chih-Da Wu**<br>Professor, Department of Geomatics, National Cheng Kung University |
| 15:20-15:35 | Break |
| Moderator: Wei-Ting Liao (Professor, Department of Biotechnology, KMU) | |
| 15:35-16:15 | Omics Study in Environmental Toxin-induced Kidney Injury<br>**Tzong-Shi Lu**<br>Research Fellow, Harvard Medical School, USA |
| 16:15-16:50 | Health Effects of Industrial Air Pollution Exposure on Residents' Pulmonary Function and Health<br>**Da-Wei Wu**<br>Attending Physician, Department of Pulmonary and Critical Care Medicine, KMSH |
| 16:50-17:20 | Q & A |

指導單位｜教育部高等教育深耕計畫、國科會　　主辦單位｜高雄醫學大學、高雄市立小港醫院(委託財團法人私立高雄醫學大學經營)
協辦單位｜高雄醫學大學精準環境醫學研究中心、環境職業醫學博士學位學程、空污下的大學社會責任-環境教育與健康促進永續發展計畫

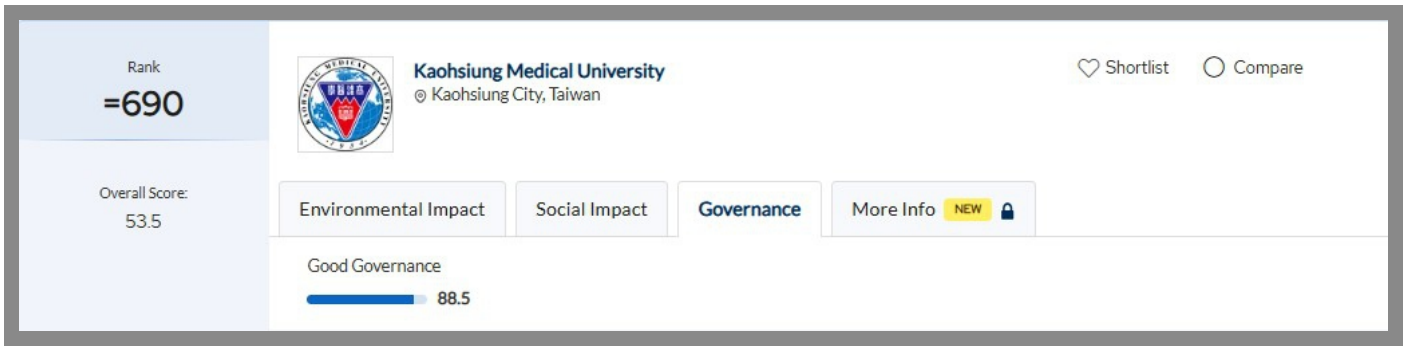
**T**hrough the sharing of the latest research findings by participating scholars and experts, the conference aims to promote broader academic and practical collaboration, sparking innovative solutions to address environmental pollution. It also seeks to advance environmental education as a means of providing accurate knowledge and encouraging behavioral change, ultimately safeguarding public health.

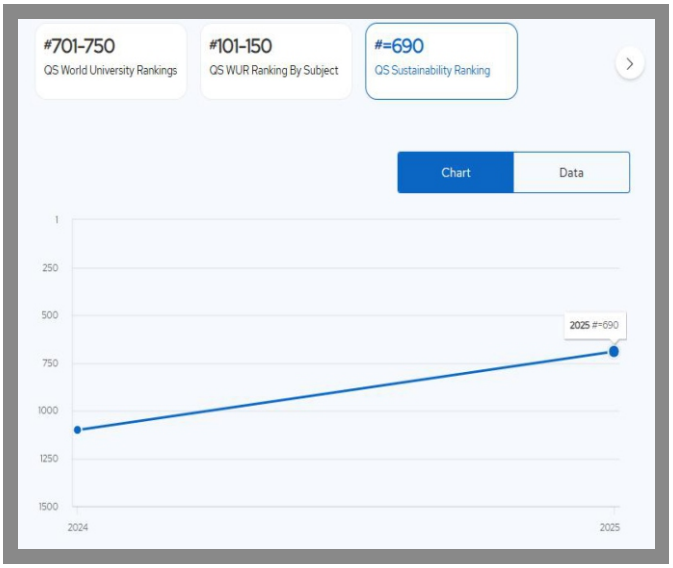
## Latest News

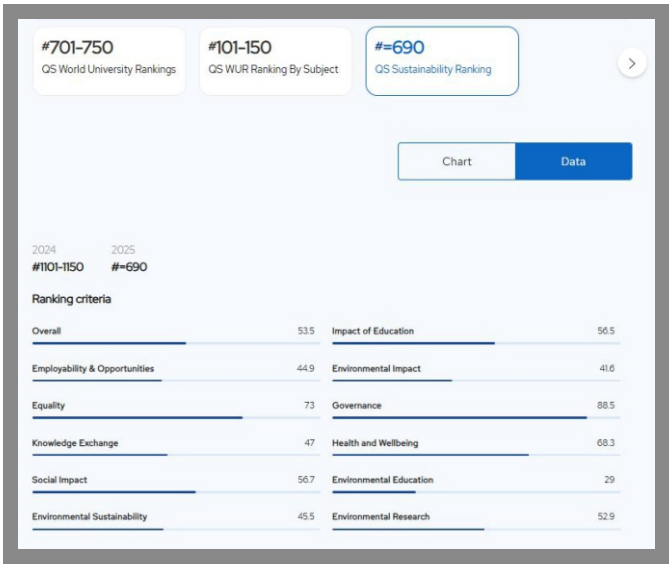
# KMU Achieves Significant Leap in 2025 QS Sustainability Rankings, Advancing 40% in Global Standing

In the 2025 QS Sustainability Rankings, KMU was ranked 690, marking a significant improvement from its 2024 ranking of 1101 to 1150, representing a 40% advancement. This notable progress reflects KMU's ongoing efforts and achievements in the area of sustainable development.

Looking ahead, KMU will continue to strengthen its sustainability policies and action plans by integrating sustainability into teaching, research, and campus operations. KMU remains committed to aligning with the United Nations Sustainable Development Goals (SDGs), actively promoting transformation and accountability in higher education's response to global sustainability challenges.



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