



國立勤益科技大學  
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### [SDGs 3] Good Health and Wellbeing 健康與福祉

[3.3.1] Does your university as a body have current collaborations with local or global health institutions to improve health & wellbeing outcomes?

## NCUT Collaborates with Medical Institutions to Develop Technologies and Organize Activities

### 1. Anti-Epidemic Air Conditioning Seminar

NCUT organized an "Epidemic Prevention Air Conditioning Seminar" which featured the participation of experts, scholars from various fields, air conditioning technicians, and practitioners specializing in epidemic prevention. The main focus of the event was "Epidemic Prevention Air Conditioning," specifically addressing air conditioners capable of instantly inactivating microorganisms and eliminating odors.

During the seminar, discussions covered a range of topics, including:

- The purification principles and applications of epidemic prevention air conditioners.
- Practical use of these air conditioners in hospitals for epidemic prevention.
- Integration of AIoT (Artificial Intelligence of Things) for intelligent control.

These discussions clarified the specific requirements for "epidemic prevention air conditioners" and proposed concrete solutions for environmental purification and space odor removal. The overarching goal is for air conditioning professionals not only to function as "environmental doctors" but also to enhance the quality of life for consumers.

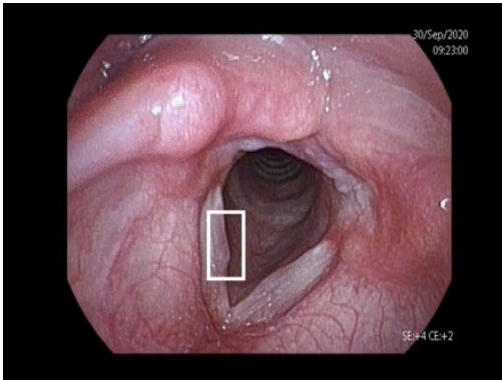
### 2. Seminar for Epidemic Prevention Air Conditioning and Environmental Doctors

On June 10, 2023, NCUT hosted the "Epidemic Prevention Air Conditioning and Environmental Doctors Seminar," bringing together experts and scholars to explore the "Relationship between Epidemic Prevention Air Conditioning and Environmental Doctors." The discussion encompassed the principles of environmental purification and their practical application in treating microorganisms and chemical pollutants.

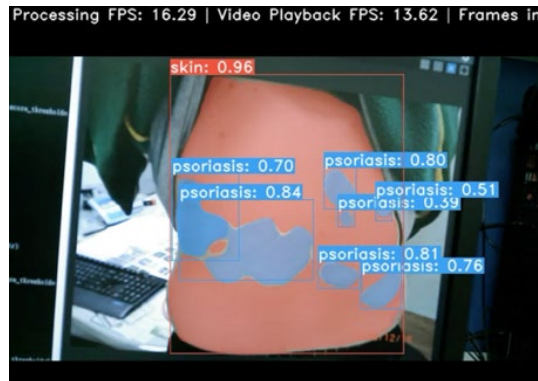
#### Key points of discussion included:

- The principles of environmental purification.
- Practical application in treating microorganisms and chemical pollutants.
- Case studies and proposed solutions aimed at improving home quality and enhancing the overall environment.

These activities and collaborations underscore NCUT's commitment to advancing technology and public health through interdisciplinary collaboration and innovative solutions.



▲ Vocal cord disease detection assistive technology



▲ Machine vision for dermatophyte detection



▲ Mobile bed exit warning device won the 17th National Innovation Award

## NCUT Collaborations with Local Health Institutions to Improve Health & Wellbeing

### AI-Powered Auxiliary Medical Services

The Department of Engineering at NCUT, involving both teachers and students, leverages AI technology to develop auxiliary medical services, significantly enhancing the accuracy of diagnosis and treatment. Specific areas of focus include:

- **Vocal Cord Diseases:** AI analyzes endoscopic images of the larynx, assisting doctors in identifying critical areas for disease diagnosis during consultations.

- **Psoriasis Diagnosis:** Machine vision technology is used to determine the extent and type of psoriasis, facilitating remote diagnosis by providing doctors with essential information.

In clinical care, integrating the Internet of Things (IoT) and smart judgment systems enables:

- **Patient Bed Departure Sensing:** This technology issues warnings when patients leave their beds, thereby reducing the time and effort required by medical staff for patient care.

These innovations have been recognized externally, with significant accomplishments achieved in collaboration with Changhua Christian Hospital. Notably, the mobile bed exit warning device earned the 17th National Innovation Award after successful field verification.

### **Industry-University Cooperation with National Military General Hospital**

NCUT signed a memorandum of cooperation with the National Military Taichung General Hospital, initiating the "Precision Sports Instructor Training and Sarcopenia Detection Service Plan for the Elderly." This collaborative effort aims to promote health and well-being while exerting a positive influence. Key components of the project include:

#### **1. Improving Physical Fitness and Health:**

- Providing professional athlete guidance, training, and sarcopenia testing services for the elderly.
- Personalized exercise guidance helps seniors choose methods tailored to their needs, reducing injury risks, enhancing fitness, preserving health, and ultimately improving quality of life.

#### **2. Enhancing Medical Care Quality:**

- The involvement of the National Military Taichung General Hospital ensures the delivery of high-quality health management services.
- Training senior sports instructors ensures they have the necessary professional knowledge and skills to offer tailored exercise programs.
- The sarcopenia detection service plays a crucial role in early identification and prevention of sarcopenia-related issues, enhancing the overall quality of medical care.

#### **3. Increasing Professional Consulting Services:**

- Training senior sports instructors allows more seniors to access professional sports consultation, benefiting them regardless of socioeconomic status or background.
- This initiative aims to reduce potential problems associated with age inequality.

#### **4. Providing Education and Training Opportunities:**

- Through industry-university cooperation, relevant education and training courses are offered to cultivate more professional health management personnel.



- This effort contributes to establishing a more comprehensive health management system, fostering heightened awareness and knowledge of health and well-being among the population.

These collaborations and initiatives underscore NCUT's commitment to enhancing health and well-being through innovative technology, professional training, and comprehensive health services.