

Interdisciplinary Open forum of Precision Health Care

In response to the super-aged society and precision health care as the industry development trend, this event will focus on precision health care, and science and technology as the theme of early planning and advanced deployment of physical, mental health, including precise detection to prevent diseases, and precision medicine to reduce medical expenses. We hope to share the latest health management information to build a happy society for the elderly, and promote the related MOST research results, further to promote medical care technology for a better future.

Date : May 6 (Thu.), 2021

Venue : Room 402, 4F, Taipei Nangang Exhibition Center, Hall 1

On-line Registration : <https://forms.gle/qQ2Xu61LvRwmCBRT8>.



Time	Activity	Speaker
13:10~13:20	Opening remarks by MOST officer.	
13:20~13:30	Messages from the Organizers.	Shwn-Jen Lee Director, The Research Center on ICF and Assistive Technology, National Yang Ming Chiao Tung University (RICFAT)
		Kuo-Sheng Cheng Director, Engineering & Technology Promotion Center, MOST
13:30~14:35 Keynote Addresses	A-1. Chances and Challenges of Precision Health Care Business,	Vincent Ho VP, ShareHope Medicine Co., Ltd. Missioncare Group. Chief Executive Officer, Digimed Co., Ltd. Missioncare Group.
	A-2. Cognition of Precision Prevention and Health Care.	Wei-Jen Chen President, Taiwan Functional Food Industry Association(TFIA)
	A-3. Gene Pilot-A new era for the development of precision health industry.	Yi-Fang Chen President, International Precise Health Development Association
14:35~14:50	Break	
14:50~15:40 Experience Sharing	Innovative Experience Sharing B-1. Interdisciplinary Integration of Future Healthcare.	Min-Huei Hsu Director, Office Of Data Science, Taipei Medical University
	All about New Venture B-2. BioMedical Device Commercialization: the pinpoint of the Innovation and Incubation.	Peng-Ting Chen Associate Professor, Department of Biomedical Engineering National Cheng Kung University
	Experience Sharing of MOST Industry-Academy B-3. Enhancing antidiabetic and antigout activity of Momordica charantia by fermentation with specific culture strains.	Chin-Hang Shu Professor, Department of Chemical and Materials Engineering National Central University
15:40~15:50	Break	
15:50~16:45	Research achievements demonstrations	
16:45~17:00	Matchmaking time	

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Organized by : Engineering & Technology Promotion Center, MOST

The Research Center on ICF and Assistive Technology, National Yang Ming Chiao Tung University (RICFAT)

Co-organized by : Ministry of Science and Technology Research Promotion Center of Life Sciences

Taiwan Functional Food Industry Association

International Precise Health Development Association

Taipei Computer Association

Future Tech Promotion Office

Taiwan Association of Gerontology and Geriatrics

Precision Medicine & Molecular Diagnostics Industry Association of Taiwan(PMMD)

Center for Precision Medicine Research, Asia University

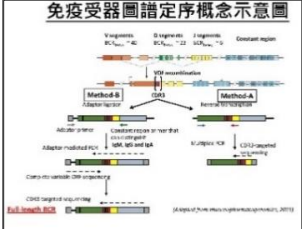
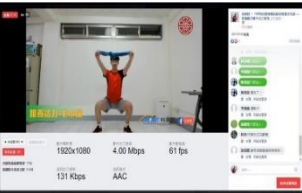
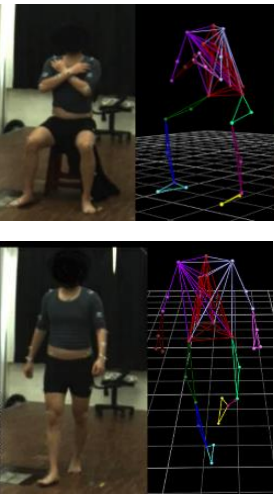
International Medical Security Consultant Management Association

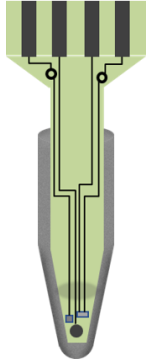

Center for Innovative Research on Aging Society

MOST R&D Achievements

No.	Research Institute		Project info	Market potential	Demonstration by image
C-1	Yang-Cheng Lin Professor and Chair	National Cheng Kung University Department of Industrial Design	Intelligent Health Promotion Service System	The global population of the elderly is about 727,606,000. According to statistics from the World Health Organization, 50% of the aging population has frailty problems, and the population of the elderly with a frailty disease is estimated to be as high as 360 million.	
C-2	Pei-Jung Lin Associate Professor	Department of Computer Science and Information Engineering, HUNGKUANG University	Virtual Reality Rehabilitation Training System with Compensatory Movement Detection	For Business opportunities in the medical and healthcare field are unlimited, VR technology is great for realizing the vision of precision medicine. This invention includes auxiliary functions such as mirror therapy for stroke rehabilitation, Constraint Induced Movement Therapy (CIMT), occupational therapy, and cognitive improvement. The system can assist physical therapists to provide remote care, and the development of diversified and advanced application functions for stroke rehabilitation. The VR immersive guidance function of this system affects the brain through visual realism, allowing patients to feel that they perform and achieve movement tasks, thereby helping patients to improve the effectiveness of home rehabilitation by reorganizing limb motor functions.	

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C-3	Lung-Ping Hung Professor	National Taipei University of Nursing and Health Sciences - Department of Information Management	Using multi-channel transmission technology to construct a health internet of Things based medical grade home caring service model	Through a good communication service model to establish a complete information integration home care framework, including IOT sensors, communication gateways to a quasi-medical cloud platform, etc.; it can make the total solution model of health care Internet of Things home application effective and feasible. The concept proposed in this project will be applied in the fields of smart home, smart institution, smart city and other healthcare related fields, which will make the health care environment application more potential for market development.																													
C-4	Chang-I Chen Assistant Professor	Taipei Medical University School of Health Care Administration	Cloud artificial intelligence cardiovascular disease risk monitoring and analysis service platform	Leadtek wearable ECG recorder (H2 Plus) is a watch-type ECG recorder, which can be used to record single-lead ECG. It also provides a photoplethysmograph for continuous recording of heart rate, heart rhythm variability, and the occurrence of arrhythmia events, such as atrial fibrillation...etc. You can observe and upload the recorded ECG signal or other physiological parameters through the Health Keeper software installed on the Android or iOS system, through the connection of Bluetooth technology. Leadtek amor health keeper health management App and health manager platform can integrate a variety of home physiology devices, including "leader" wearable ECG recorder... and other data uploading and management functions.																													
C-5	Chin-Kuo Chang Associate Professor	Institute of Epidemiology and Preventive Medicine, National Taiwan University	Cloud artificial intelligence cardiovascular disease risk monitoring and analysis service platform	With data from Taiwan Biobank, we found specific acidic gas air pollutants would increase the risk of chronic inflammatory airway disease. We also reported the remarkable synergistic interactions between CO and PM10 for their risks. Besides, the genetic characteristics of genome-wide approach and circadian genes were both found related to lung function significantly. All these findings will enhance the development of personalized prevention or intervention strategies in future.	 <table border="1"> <thead> <tr> <th>Risk Factor</th> <th>Adjusted Odds Ratio</th> <th>95% Confidence Interval</th> <th>P-value</th> </tr> </thead> <tbody> <tr> <td>Cumulative PM2.5 exposure in Z score</td> <td>1.63</td> <td>0.95, 1.12</td> <td>0.42</td> </tr> <tr> <td>Cumulative PM10 exposure in Z score</td> <td>1.62</td> <td>0.95, 1.11</td> <td>0.48</td> </tr> <tr> <td>Cumulative NO₂ exposure in Z score</td> <td>1.67</td> <td>1.01, 1.14</td> <td><0.05</td> </tr> <tr> <td>Cumulative SO₂ exposure in Z score</td> <td>1.23</td> <td>1.15, 1.31</td> <td><0.01</td> </tr> <tr> <td>Cumulative CO exposure in Z score</td> <td>1.01</td> <td>0.96, 1.06</td> <td>0.71</td> </tr> <tr> <td>Cumulative O₃ exposure in Z score</td> <td>1.00</td> <td>0.94, 1.05</td> <td>0.84</td> </tr> </tbody> </table> <p><small>* Adjusting for age, gender, marital status, drinking habit, smoking status, self-reported hypertension, type 2 diabetes mellitus, and body mass index.</small></p>	Risk Factor	Adjusted Odds Ratio	95% Confidence Interval	P-value	Cumulative PM2.5 exposure in Z score	1.63	0.95, 1.12	0.42	Cumulative PM10 exposure in Z score	1.62	0.95, 1.11	0.48	Cumulative NO ₂ exposure in Z score	1.67	1.01, 1.14	<0.05	Cumulative SO ₂ exposure in Z score	1.23	1.15, 1.31	<0.01	Cumulative CO exposure in Z score	1.01	0.96, 1.06	0.71	Cumulative O ₃ exposure in Z score	1.00	0.94, 1.05	0.84
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C-6	Tai-Ming Ko Assistant Professor	Department of Biological Science & Technology, National Yang Ming Chiao Tung University	Identification and application of immune receptor repertoire in the fever of unknown origin & Development of a clinical diagnosis kit for Kawasaki disease	<ol style="list-style-type: none"> 1. The key to preventing fever-related diseases of unknown origin is to find the source of the disease, but it is difficult to find the confirmed source of the infected person from the current test methods. This technology platform reversely infers possible pathogens based on the information of the patient's own immune cell receptor gene sequences that have been altered by unknown pathogens. 2. Kawasaki disease is an important cause of acquired heart disease in children, but the inability of current methods to diagnose effectively and timely may lead to its sequelae. This technology platform is based on the key protein markers of Kawasaki disease, and successfully prepared test reagents for clinical use. 	
C-7	Shao-Hsi Chang Professor	Department of Physical Education, National Taiwan Normal University	Constructing an interactive smart- aging home-based exercise platform for older adults	This research is promoted by the intervention of the home sports interactive platform, which can reduce the influence of force majeure (such as COVID-19), make up for the dilemma of forced interruption of exercise, provide an effective solution to traditional sports courses, and implement smart aging and home health. Promote the vision of integration.	
C-8	Bing-Shiang Yang Professor and Chair	Department of Mechanical Engineering, National Yang Ming Chiao Tung University	Individualized ADL Health Prescription Generator	<p>Modern people consider personal health more seriously. As a result, it is urgent to provide the customized and beneficial health promotion prescriptions according to individual in different aged groups. This system provides users with quantitative and customized prescriptions according to individual's activities of daily living and environment.</p> <p>Furthermore, prescriptions could be integrated into user's daily exercises such as high intensity interval training (HIIT), health/wellness coaching, and fitness programs for older adults. In addition to home environment, this system could be implemented in exercise centers or care institutions, allowing users and coaches to utilize objective data analysis to improve user's health condition.</p>	

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C-9	Hsien-Chang Chang Professor	National Cheng Kung University, Department of Biomedical Engineering	Diagnostic Platform for Mosquito-Borne Viral Diseases	Beginning at the end of 2019, COVID-19 has become the fastest spreading human-to-human virus infection in the world. At present, more than 100 million people have been infected with SARS-COV-2 virus. Dengue fever is transmitted through vector mosquitoes. Every year, there will be outbreaks of viral infections, and more than 390 million people have been infected. Cancer is the top ten cause of death, 20% of which are caused by viruses or bacteria. Epstein-Barr virus can cause nasopharyngeal cancer, and certain subtypes of human papilloma virus can cause cervical cancer. In order to improve human public health and personal health and well-being, the demand for real-time nucleic acid testing of various emerging infectious diseases and carcinogenic viruses will continue to rise in the future, and the market for precision testing has great potential.	
	Yong-Li Pan Postdoctoral Research				
C-10	Chuan-Yu Chang Distinguished Professor	Department of Computer Science and Information Engineering, National Yunlin University of Science and Technology	"Zero Contact" Detection-Facial Stroke, Heart Rate and Breath Detection Technology	This technology is the world's first "zero- contact " detection technology, which can estimate the risk of facial stroke and measure heart rate and breathing rate at the same time. This technology has obtained six patents (three US patents, three ROC patents). The technology can overcome the influence of ambient light and accurately detect heart rate and respiration rate. This technology can be integrated into systems or devices such as physiological signal measurement systems, baby monitors, and magic mirrors, and is used in hospital negative pressure isolation wards, postpartum confinement centers, and homes. To achieve the goal: 「Contactless and Considerate」, reduce infection risks during people.	

Transportation :

Transportation Info: Please take MRT : "Wenhu Line(BR)" or "Bannan Line(BL)" and get off at "Nangang Exhibition Center Station".

★ Welcome to the ATLife 2021 Taiwan Assistive Technology for Life Exhibition

<https://www.chanchao.com.tw/ATLife/en/>