Smart Quality Control in Precision Cancer Screening

15TH IACCS

International Asian Cancer and Chronic Disease Screening Network

December 5-7, 2024
Goyang, South Korea

Brochure Dec 5

https://www.iaccs.asia

Dec 5 (Thursday)

Time: 13:30-17:40

Venue: Room 401, Korea International Exhibition Center 2, KINTEX No. 2

Time	Topic	Speaker	Moderator
13:00-13:30	**Registration**		
13:30-13:40	**Opening Remark**		Yeol Kim Shi-Lun Wei Chen-Yang Hsu
13:40-14:30	Artificial Intelligence for Breast Cancer Screening	Laszlo Tabar	Jung-Chen Chang Chang Kyun Choi
14:30-14:50	AI-empowered Breast Cancer Screening in the Metaverse	Amy Ming-Fang Yen	
14:50-15:20	Precision Screening for Lung Cancer with Risk-based Approach	Tony Hsiu-Hsi Chen	
15:20-15:40	Economic Evaluation of Precision Screening for Lung Cancer-Bayesian Network with Machine Learning Algorithms	Chen-Yang Hsu	
15:40-16:00	**Coffee Break**		
16:00-16:30	The Intelligent Use of f-Hb (FIT) to Support Early Diagnosis of CRC	Sally C. Benton	Sam Li-Sheng Chen Chao-Chih Lai
16:30-16:50	Metaverse-based Approach to Personalized Prevention of Colorectal Cancer	Abbie Ting-Yu Lin	
	Metaverse Healthcare Website		
16:50-17:10	Artificial Intelligence in Personalized Risk Assessment of Breast Cancer	Wenly Chiu-Wen Su	
17:10-17:30	Metaverse in Precision Prevention of Breast Cancer	Abbie Ting-Yu Lin	
17:30-17:40	**Closing Remark**		Yeol Kim Chen-Yang Hsu Tony Hsiu-Hsi Chen

13:30-13:40 Opening Remark

Prof. Yeol Kim

Congress Chair, IACCS 2024

- Professor in Cancer Control and Policy at the Graduate School of Cancer Science and Policy
- Head of the Center for Quality Control of Korean National Lung Cancer Screening Program, the Center for Tobacco Control, and the Division of Public Health and Social Support at the National Cancer Center; Family Physician at the Center for Cancer Prevention & Detection.

Dr. Chen-Yang Hsu

President, TAMS

- Daichung Hospital, Miaoli, Taiwan
- Master of Public Health, National Taiwan University
- Taiwan Association of Medical Screening

13:40-15:40 Machine Learning in Cancer Screening

- President, Taiwan Association of Clinical Research Nurses
- Associate professor, National Taiwan University
- Broad member, Taiwan Association of Medical Screening (TAMS)

Dr. Jung-Chen Chang

Moderator

- Research associate at Division of Cancer Early Detection, National Cancer Control Institute, National Cancer Center, Korea

Prof. Chang Kyun Choi

Moderator

13:40-15:40 Machine Learning in Cancer Screening

Prof. László Tabár

Speaker

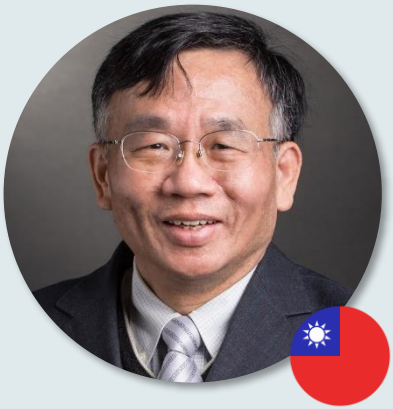
- Professor of Radiology at the University of Uppsala School of Medicine, Sweden
- Medical Director emeritus at the Department of Mammography, Falun Central Hospital, Sweden
- Project Leader at Randomized Controlled Breast Cancer Screening Project in Kopparberg County, Sweden
- Consultant radiologist for numerous comprehensive breast centers in the United States of America

Prof. Ming-Fang Yen

Speaker

- School of Oral Hygiene, College of Oral Medicine, Taipei Medical University

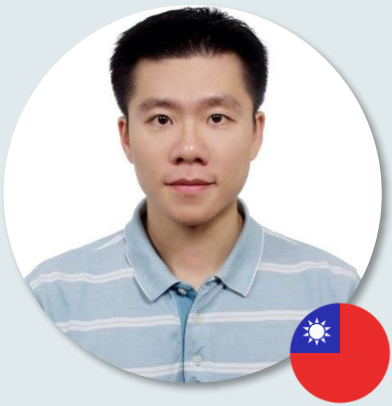
13:40-15:40 Machine Learning in Cancer Screening



Prof. Hsiu-Hsi Chen

Speaker

- Institute of Epidemiology and Preventive Medicine, National Taiwan University
- Institute of Health Data Analytics and Statistics, College of Public Health, National Taiwan University



Dr. Chen-Yang Hsu

Speaker

- Daichung Hospital, Miaoli, Taiwan
- Master of Public Health, National Taiwan University
- Taiwan Association of Medical Screening

16:00-17:30 Machine Learning in Cancer Screening

Prof. Li-Sheng Chen

Moderator

- Professor at Taipei Medical University
- Associate Dean at College of Oral Medicine, Taipei Medical University
- Director at School of Oral Hygiene, College of Oral Medicine, Taipei Medical University
- Executive Member at Taiwan Association of Medical Screening

Dr. Chao-Chih Lai

Moderator

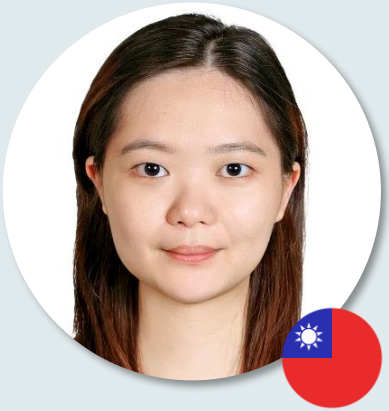
- Chief, Division of Emergency Medicine, Taipei City Hospital, Taiwan
- Adjunct Assistant Professor, Master of Public Health Program (MPH), National Taiwan University
- A member of the Taiwan Association of Medical Screening

16:00-17:30 Machine Learning in Cancer Screening

Prof. Sally C. Benton

Speaker

- Clinical Lead for Routine Biochemistry Services and Consultant Clinical Scientist in Biochemistry, Berkshire and Surrey Pathology Services, Royal Surrey County Hospital, Guildford, England
- Director, NHS Bowel Cancer Screening Hub for the South of England, Guildford, England
- R&D Lead, Berkshire and Surrey Pathology Services
- External Clinical Biochemistry Advisor, Colon Cancer Check, Ontario Health



Dr. Ting-Yu Lin

Speaker

- Post-Doctoral research fellow/ Institute of Epidemiology and Preventive Medicine, College of Public Health, National Taiwan University

The Intelligent Use of f-Hb (FIT) to Support Early Diagnosis of CRC

Prof. Sally C. Benton

The faecal immunochemical test for haemoglobin (FIT) is well established as a triage test for colorectal cancer (CRC) screening programmes around the world. FIT is also being increasingly used to triage patients for colonoscopy who present with symptoms suggestive of CRC.

At a low threshold (10 µg/g) FIT has a very high sensitivity for CRC (>90%) but a relatively low specificity (<84%) so a number of patients who undergo colonoscopy or other invasive investigations will have no serious underlying pathology.

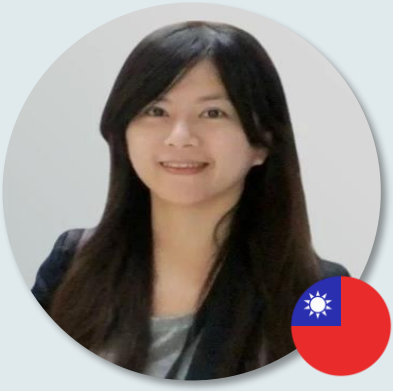
With limited colonoscopy resource and the inherent clinical risks associated with colonoscopy we aim to refine the use of FIT to improve the specificity of the test whilst maintaining sensitivity. On-going work across England in both the screening and symptomatic pathways is evaluating different strategies to improve the specificity of the faecal haemoglobin (f-Hb) result.

A model incorporating age, sex, f-Hb and blood results in patients presenting with symptoms suggestive of CRC has been implemented in a single Hospital Trust in England. This model yields similar numbers of cancers detected and missed cancers but requires around 20% fewer investigations than a f-Hb >10 µg/g. External validation of this model is being carried out in other centres across England and Scotland.

Similarly in United Kingdom screening programmes where the threshold for colonoscopy is set very high (80 - 120 µg/g), work is underway to evaluate mechanisms to increase both the sensitivity and specificity of FIT to improve the early detection of CRC and pre-cancerous lesions within the colonoscopy capacity constraints of the countries. The approaches include different screening intervals dependent on f-Hb concentration, the use of multiple FIT tests and consideration of risk algorithms using age, sex and f-Hb.

The solutions described are managed as algorithms written into Pathology and Health Service IT systems

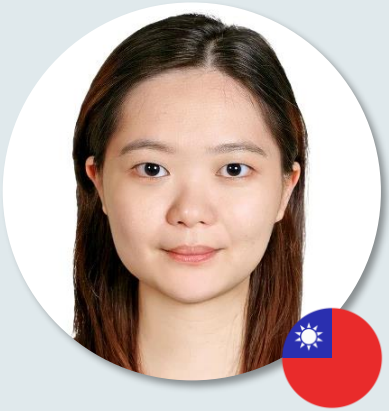
16:00-17:30 Machine Learning in Cancer Screening



Dr. Chiu-Wen Su

Speaker

- Post-Doctoral research fellow of Department of Internal Medicine, National Taiwan University Hospital



Dr. Ting-Yu Lin

Speaker

- Post-Doctoral research fellow/ Institute of Epidemiology and Preventive Medicine, College of Public Health, National Taiwan University

17:30-17:40 Closing Remark

Prof. Yeol Kim

Congress Chair, IACCS 2024

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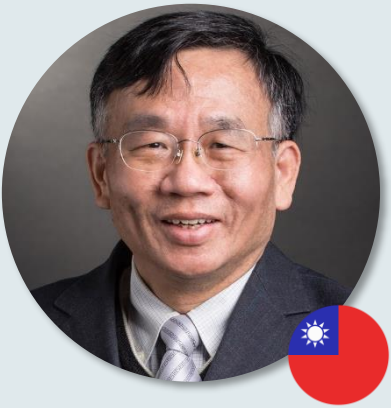
Dr. Chen-Yang Hsu

President, TAMS

- Daichung Hospital, Miaoli, Taiwan
- Master of Public Health, National Taiwan University
- Taiwan Association of Medical Screening

17:30-17:40 Closing Remark



Prof. Hsiu-Hsi Chen

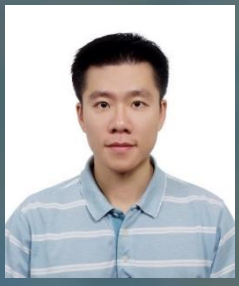
President, IACCS

- Institute of Epidemiology and Preventive Medicine, National Taiwan University
- Institute of Health Data Analytics and Statistics, College of Public Health, National Taiwan University

Yeol Kim

National Cancer Center, Korea

- Professor in Cancer Control and Policy at the Graduate School of Cancer Science and Policy (GCSP); Head of the Center for Quality Control of Korean National Lung Cancer Screening Program, the Center for Tobacco Control, and the Division of Public Health and Social Support at the National Cancer Center; Family Physician at the Center for Cancer Prevention & Detection.
- Lung cancer screening, cancer prevention, cancer screening guideline development, and smoking cessation.
- Principal Investigator of the Korean Lung Cancer Screening Project (K-LUCAS) and developer of national cancer screening guidelines in Korea.
- Implementation of population-based lung cancer screening using LDCT and advanced technologies for high-risk smokers.



Chen-Yang Hsu

Daichung Hospital, Miaoli, Taiwan
National Taiwan University

- Biostatistician with expertise in assessing population-based intervention programs, particularly screening initiatives, utilizing stochastic methodologies
- Holds a Ph.D. and M.Sc. in Biostatistics, both awarded by the Institute of Epidemiology and Preventive Medicine, School of Public Health, National Taiwan University
- Completed postdoctoral research fellowship training focused on evaluating processes and outcomes within population-based cancer screening programs
- Actively involved in academic research with a primary focus on applying stochastic processes to understand complex disease progression, including colorectal cancer, breast cancer, oral cancer, and emerging infectious diseases, within the College of Public Health at National Taiwan University
- Currently engaged in the practical application of disease prevention methods, including the design and implementation of screening initiatives in clinical practice and community-based services
- Currently holds the position of Chairman at the Taiwan Association of Medical Screening

Jung-Chen Chang
National Taiwan University

- Board member of the Taiwan Association of Medical Screening (TAMS)
- Leads research on substance abuse screening and safe use of sedatives and hypnotics
- Developed programs to improve school nurses' management of infectious diseases as deputy director of the Nursing Department
- Secured over $20 million NT in research funding and published more than 60 papers
- President of the Taiwan Association of Clinical Research Nurses
- Honored as a Fellow of the American Academy of Nursing (FAAN)

Chang Kyun Choi
National Cancer Center, Korea

- Research associate at Division of Cancer Early Detection, National Cancer Control Institute, National Cancer Center, Korea (Sep. 2023 ~ Present)
- Researcher at Division of Cancer Registration and Surveillance, National Cancer Control Institute, National Cancer Center, Korea (Jan. 2023 ~ Aug. 2023) / Technical Research Personnel
- Researcher at Institute of Biomedical Science, Chonnam National Unviersity Hwasun Hospital, Korea (Jul. 2021 ~ Jan. 2023) / Technical Research Personnel
- Researcher at Department of Preventive Medicine, Chonnam National University Medical School, Korea (Mar. 2020 ~ Jul. 2021)
- Resident at Department of Preventive Medicine, Chonnam National University Medical School, Korea (Mar. 2017 ~ Feb. 2020)
- Medical Intern at Chonnam National University Hospital, Korea (Mar. 2016 ~ Feb. 2017)

- Professor of Radiology at the University of Uppsala School of Medicine, Sweden
- Medical Director emeritus at the Department of Mammography, Falun Central Hospital, Sweden
- Project Leader at Randomized Controled Breast Cancer Screening Project in Kopparberg County, Sweden
- Consultant radiologist for numerous comprenhensive breast centers in the United States of America

László Tabár
Falun Central Hospital, Sweden

- Professor at Taipei Medical University
- Obtained PhD in statistics from University College London
- Specialized in cancer screening evaluation using stochastic processes
- Key contributor to population-based screening programs for oral, breast, and colorectal cancer
- Continues research in the evaluation of cancer screening and community-based intervention program

Amy Ming-Fang Yen
Taipei Medical University

Tony Hsiu-Hsi Chen
National Taiwan University

- Prof. Hsiu-Hsi Chen specializes in designing and evaluating population-based intervention programs with new methodology and perspectives
- By marrying statistical methods such as stochastic processes with machine learning algorithms, he developed a series of novel approaches, applied the digital twins, to facilitate precision cancer prevention and smart health
- Prof. Chen has been the President of the International Asian Cancer and Chronic Disease Screening (IACCS) Network to foster cancer screening in Asian countries
- He has a longstanding research collaboration with institutions in Sweden, the USA, the UK, and Finland, including receiving the Finland Distinguished Professor (FIDIPRO) award from the Academy of Finland between 2007 and 2009

Sam Li-Sheng Chen
Taipei Medical University

- Professor at Taipei Medical University
- Associate Dean at College of Oral Medicine, Taipei Medical University
- Director at School of Oral Hygiene, College of Oral Medicine, Taipei Medical University
- Co-Principal investigator of the Taiwanese Nationwide Breast Cancer/Oral Cancer/Colorectal Cancer Screening Program
- Executive Member at Taiwan Association of Medical Screening

Chao-Chih Lai

Taipei City Hospital, Taiwan

- Ph.D. in public health from National Taiwan University
- Chief, Division of Emergency Medicine, Taipei City Hospital, Taiwan
- Adjunct Assistant Professor, Master of Public Health Program (MPH), National Taiwan University
- A member of the Taiwan Association of Medical Screening
- His research focuses primarily on infectious disease and hospice needs screening, in which he has made significant contributions.
- Dr. Lai's work has been recognized internationally, with numerous publications in prestigious academic journals.

Sally C. Benton

Berkshire and Surrey Pathology Services
Royal Surrey NHS Foundation Trust

- Consultant Clinical Biochemist and Clinical Lead for Clinical and Specialist Biochemistry Services, Berkshire and Surrey Pathology Services, based at the Royal Surrey Foundation Hospital, Guildford.
- Director, Bowel Cancer Screening Hub for the South of England.
- Consultant Biochemist, Barts Health NHS Trust.
- Trained and worked in Liverpool and Manchester hospitals (2000–2008).
- Leads research on faecal immunochemical testing (FIT) and biomarkers for early colorectal cancer diagnosis.
- Co-chairs the World Endoscopy Organisation expert group on FIT and chairs the IFCC working group on FIT standardisation.
- Publishes extensively on FIT and colorectal cancer, collaborating globally.

Abbie Ting-Yu Lin
National Taiwan University

- Post-Doctoral research fellow at the Institute of Epidemiology and Preventive Medicine, College of Public Health, National Taiwan University.
- Specialized in biostatistics and machine learning approaches for the evaluation of cancer screening.
- Research contributions spanning from Non-communicable NCD surveillance to addressing the multifaceted challenges of COVID-19.

Chiu-Wen Su
National Taiwan University Hospital

- Ph.D. in biostatistics from the Institute of Epidemiology and Preventive Medicine at the College of Public Health, National Taiwan University
- Currently serves as a post-doctoral research fellow at National Taiwan University, focusing on data evaluation for the nationwide cancer screening programs
- Work involves breast cancer, colorectal cancer, and oral cancer screening programs, all of which are subsidized by the Health Promotion Administration

OC-FCa Reagent

For
OC-SENSOR PLEDIA
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MEASUREMENT OF
FAECAL CALPROTECTIN

OC-FCa Control LV1
OC-FCa Control LV2
OC-FCa Control LV3

OC-FCa Calibrator

OC-FCa Reagent

OC-FCa Reagent FEATURES

- The same OC-Auto Sampling Bottle 3 and OC-SENSOR series can be used as for the Faecal Immunochemical Test (FIT).
- Wide measurement range up to 2,720 µg/g
- OC-Auto Sampling Bottle 3 can be stored at 1 - 30°C before specimen collection.

WHAT IS FAECAL CALPROTECTIN?

Calprotectin is an inflammatory protein abundantly present in neutrophils. [1] The amount of calprotectin in faeces increases accompanied with intestinal mucosal inflammation. [2]

OC-Auto Sampling Bottle 3

USE OF CALPROTECTIN

Measuring the amount of calprotectin in faeces can be used for disease monitoring of inflammatory bowel disease (IBD; e.g. ulcerative colitis, Crohn's disease) patients and distinguishing IBD from functional intestinal disorders (e.g. Irritable bowel syndrome). [3-5]

PRINCIPLE

Latex agglutination immunoturbidimetry

MEASUREMENT RANGE

Up to 2,720 µg/g

■ OC-SENSOR PLEDIA
Limit of Detection (LOD): 9 µg/g
Limit of quantification (LOQ): 23 µg/g

■ OC-SENSOR Ceres
Limit of Detection (LOD): 5 µg/g
Limit of quantification (LOQ): 22 µg/g

ANALYSERS

OC-SENSOR PLEDIA (Left)
OC-SENSOR Ceres (Right)

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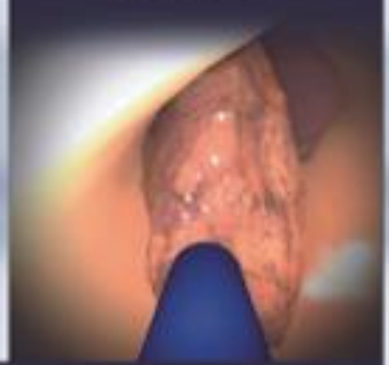
It's 6 o'clock
Working channel



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(T80/A10기준)

- Telmisartan / Amlodipine 40/5mg, 40/10mg, 80/5mg, 80/10mg 다양한 조합[2]이 있어 용량 선택의 폭이 넓습니다.
- 흡습성에 우수한 Mannitol을 부형제로 사용했습니다.[3]

투탑스정
(Telmisartan / Amlodipine)

보건의료전문가용

1. Joel M, et al, J Clin Hypertens. 2012 Apr;14(4):206-15. 2. 식약처 허가사항 (2024.04 기준)
3. Hleonhard Ohrem, et al, Pharm Dev Technol. 2014 May;19(3):257-62.

본사 : 서울특별시 서초구 바우뫼로27길 2 (전화) 02-526-3114 공장 : 경기도 안성시 공단1로 25 소비자상담실 : (전화) 080-022-1010 (수신자부담)
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당뇨병 안전성 프로파일을 확보한 콜레스테롤 흡수 저해제

피타바스타틴 + 에제티미브

당신의 혈관을 YOUNG하게!

NODM, New-onset diabetes mellitus

TRUBUDDY
Dapagliflozin+Pioglitazone

(주)보령이 개발한

세계최초

SGLT-2억제제와 TZD복합제

23년 4월 급여확대를 통해

2형 당뇨병 환자 치료를 위한 새로운 조합,

트루버디를 급여로 선택할 수 있습니다.[1,2]

Met+트루버디(Dapagliflozin+Pioglitazone)

(주)보령이 개발한 **세계 최초**
SGLT-2 억제제와 TZD 복합제 **트루버디**
Dapagliflozin+Pioglitazone

SGLT-2, sodium-glucose cotransporter 2; TZD, thiazolidinedione.

References. 1. 트루버디정 허가사항; 식품의약품안전처, 의약품안전나라. Accessed on 2023.09.26. 2. 보건복지부 고시 제2023-68호. 요양급여의 적용기준 및 방법에 관한 세부사항.

보령제약(주) 서울시 종로구 창경궁로 136 보령빌딩 Tel) 080-708-8088 http://www.boryung.co.kr

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다양한 진단키트 등 새로운 미래의학의 세상으로
나가겠습니다.

EONE Laboratories

https://www.iaccs.asia

Dec. 5
Machine Learning in Cancer Screening
Room 401, Korea International Exhibition Center 2, KINTEX No. 2

Dec. 6
IACCS Program
International Conference Hall, 8th Floor, National Cancer Center Korea, KNCC

Dec. 7
IACCS Program
Rooms 401 and 402, Korea International Exhibition Center 2, KINTEX No. 2

Goyang, South Korea, 2024