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## Part I Conference Schedule

**TUESDAY, OCTOBER 22, 2019**

*2<sup>nd</sup> Floor, Lobby of Koreana Hotel*

09:00-18:00

Conference Registration

Note: Please take Name Tag for the venue and Visit Card for the field visit.

**WEDNESDAY MORNING, OCTOBER 23, 2019**

*7<sup>th</sup> Floor, Gloria Hall*

08:30-08:35	<b>Opening Ceremony</b> ( <i>chaired by</i> ) <i>Prof. Lung-Kwang Pan, Central Taiwan University of Science and Technology</i>
08:35-08:40	<b>Welcome Speech 1</b> <i>Prof. Yongmin Chang, Conference General Chair, Kyungpook National University</i>
08:40-08:45	<b>Welcome Speech 2</b> <i>Prof. Yi Peng, Chinese Academy of Medical Sciences &amp; Peking Union Medical College</i>
08:45-09:25	<b>Keynote Speech 1: What is Important in Medical Engineering?</b> <i>Prof. Alan Murray, Newcastle University</i>
09:25-10:05	<b>Keynote Speech 2: Exploring Non-coding RNA Regulators of Acetylcholine Functioning</b> <i>Prof. Hermona Soreq, Hebrew University</i>
10:05-10:20	Coffee Break
10:20-10:30	Group Photograph
10:30-11:10	<b>Keynote Speech 3: Optical Coherence Tomography: A New Reliable Assistant to Dental and Sub-Branch Practitioners</b> <i>Prof. Jeehyun Kim, Kyungpook National University</i>
11:10-12:30	<b>Poster Presentations</b>

## WEDNESDAY AFTERNOON, OCTOBER 23, 2019

12:30-13:00 **Lunchbox**  
*2<sup>nd</sup> Floor, Danube Restaurant*

14:00-17:20 **Oral Session 1: China Physiological Signal Challenge & Biomedical Signal Processing**  
*7<sup>th</sup> Floor, State Room*

**Oral Session 2: Biomechanics & Biomedical Modeling**  
*7<sup>th</sup> Floor, Royal Room*

17:30-19:00 **Buffet Dinner**  
*2<sup>nd</sup> Floor, Danube Restaurant*

## THURSDAY, OCTOBER 24, 2019

08:30-12:25 **Oral Session 3: Cell Biology, Biopharmacy & Biomaterials (I)**  
*7<sup>th</sup> Floor, State Room*

**Oral Session 4: Medical Imaging Technology and Application**  
*7<sup>th</sup> Floor, Royal Room*

12:30-13:00 **Lunchbox**  
*2<sup>nd</sup> Floor, Danube Restaurant*

14:00-17:55 **Oral Session 5: Cell Biology, Biopharmacy & Biomaterials (II)**  
*7<sup>th</sup> Floor, State Room*

**Oral Session 6: Biomedical Engineering**  
*7<sup>th</sup> Floor, Royal Room*

**Closing Ceremony (chaired by)**  
*Prof. Chengyu Liu, Technical Program Committee Co-Chair, Southeast University*  
*2<sup>nd</sup> Floor, Diamond Hall*

18:30-20:00 **Closing Speech 1**  
*Prof. Qun Wei, Keimyung University*

**Closing Speech 2**  
*Prof. Jun Wang, Southeast University*

**Conference Awarding Banquet**  
*CPSC Awards, Best Paper Awards, Best Oral Awards, Best Poster Awards*

## FRIDAY, OCTOBER 25, 2019

08:55-09:00 **Gathering at The Hotel Lobby (2<sup>nd</sup> Floor)**

09:00-17:00 **Field Visit- Gyeongbokgung Palace & Namsan Mountain**

## Part II Keynote Speeches

### Keynote Speech 1: What is Important in Medical Engineering?



*Prof. Alan Murray, Newcastle University*

Alan Murray is Professor of Cardiovascular Physics and Strategic Research Advisor in the Medical Faculty and Professor in the School of Engineering, both at Newcastle University in the UK. Before moving to Newcastle he studied and trained in Glasgow and Edinburgh. Alan is active in Translational Research bringing together Engineering and Medicine.

He has published over 300 research papers, including in *Nature* and *Lancet*, with co-author researchers in 19 countries worldwide. His primary areas of research are in the development of devices and measurement techniques of

clinical value in cardiovascular medicine and surgery.

He has been Editor of *Clinical Physics & Physiological Measurement*, Editor in Chief of *Medical & Biological Engineering & Computing*, and for 29 years Editor of *Computing in Cardiology*, published as a free-access publication and also by the IEEE. Currently he is a Fellow of the Institution of Engineering and Technology, Fellow of the Institute of Physics and Engineering in Medicine, Chartered Engineer, Chartered Scientist, Registered Clinical Scientist, and Honorary Life Member of the International Federation of Medical and Biological Engineering.

Alan's research into medical devices, including their engineering design and safe clinical use led to the publication of the book he co-authored on "Medical Devices: Use and Safety", which has been separately published in India, and in 2017 published in Mandarin Chinese by China Science and Technology Press.

**ABSTRACT.** Medical engineers have good skills. They can write software, develop microprocessor solutions, build electronic and mechanical prototypes, and create final clinical devices. There is much that they do that is creative, and for which they are rightly proud.

There are, however, other questions to be asked. Where are the problems that need a solution? Researchers, especially students, are often young and healthy, and may never have experienced hospitals. This is where medical and clinical problems are experienced every day. Hospital managers are not good at talking about problems as they want to show that their hospital is best. So how do you find worthwhile research projects? Early student projects are primarily training projects, but should create opportunities for discussing wider issues, and preparing for the bigger creative research.

This lecture will review how some medical engineering devices were created-how the medical need was discovered, and how this progressed to a solution. This will include heart pacemakers, defibrillators, oximeters and dialysis equipment. This will encourage us all to ask questions and talk to clinicians more than we do. Many unsolved problems still exist.

## Keynote Speech 2: Exploring Non-coding RNA Regulators of Acetylcholine Functioning



*Prof. Hermona Soreq, Hebrew University*

Hermona Soreq is the Charlotte Slesinger Professor of Molecular Biology at the Hebrew University's Alexander Silberman Institute of Life Sciences and the Edmond and Lily Safra Center for Brain Sciences. A leader in the field of cholinesterase activities and their functions in the brain and periphery, Soreq won honorary PhD degrees from Stockholm (1996), Erlangen-Nuremberg (2007) and Beer-Sheva (2007) as well as an Israeli Ministry of Health Prize (2000), Landau Prize for Biomedical Research (2005), Teva Prize for Molecular Medicine (2006), the Rappaport Prize for Biomedical Research (2014), the Katzir Prize for Life Sciences (2017), the Lise Meitner Alexander Humboldt Research Prize (2009), an advanced ERC award and two proof-of-concept ERC awards (2013-2018) and a Neuroinflammation award (2016). A council member of the International Society of Neurochemistry (2017-2019), Soreq is the president of the International Organization for Cholinergic Mechanisms (2010-). She is the author of over 275 publications, including 54 published in Science, Nature, PNAS and other high-impact journals, with H-index of 82.

**ABSTRACT.** The parasympathetic system coordinates multiple body functions by maintaining efficient and rapidly adjustable surveillance over acetylcholine (ACh) hydrolysis rates, but the molecular regulators of its brain-to-body messages are incompletely understood. Our studies are focused on the regulation of ACh functioning by non-coding RNAs, especially MicroRNAs (miRs), which have rapidly emerged as global controllers of gene expression. We investigate ACh-related miR functions in the healthy and diseased brain by combining advanced RNA-sequencing technologies with computational neuroscience and transgenic engineering tools and with the *in vivo* administration of synthetic oligonucleotide suppressors of our miR candidates. Using these approaches, we discovered "CholinomiR" silencers of multiple cholinergic brain-to-body communication-related genes, which compete with each other on suppressing anxiety, epilepsy, mental disease and metabolic targets. To test CholinomiR-based intervention with diseases involving impaired ACh signalling, we engineered mice over-expressing the soluble stress-induced acetylcholinesterase splice variant AChE-R but depleted the miR-reacting domain from this transgene. This mouse model demonstrated elevated CholinomiR levels such as the AChE mRNA-targeting miR-132 accompanied by stress, inflammation and metabolic symptoms, whereas the inverse approach of injecting diet-fed fattened mice with antisense oligonucleotide suppressors of miR-132 reduced hepatic fat accumulation rapidly and reproducibly. Moreover, human volunteers carrying single nucleotide polymorphisms which interfere with the AChE-targeting primate-specific miR-608 show elevated trait anxiety, blood pressure and inflammation. In contrast, Alzheimer's brains show massive miR-132 decline, accompanying modifications in alternative splicing and transcript processing; together highlighting the relevance of these studies for personalized medicine. Non-coding RNA regulators of parasympathetic functioning thus deserve special attention.

**Keywords:** Acetylcholine, anxiety, non-coding RNA, microRNA, mouse engineering, synthetic oligonucleotides

## Keynote Speech 3: Optical Coherence Tomography: A New Reliable Assistant to Dental and Sub-Branch Practitioners



*Prof. Jeehyun Kim, Kyungpook National University*

Jeehyun Kim is currently professor in the School of Electronics and director of BioPhotonics Laboratory at Kyungpook National University. He received Ph.D. study at University of Texas at Austin and served as Postdoctoral Researcher in Beckman Laser Institute at University of California. He has published over 110 research papers in SCI journals, and his research mainly focuses on Biomedical Imaging and Sensing-Optical Coherence Tomography, Neuroscience-Multiphoton Microscopy, Optostimulation, Photo-Acoustic Imaging, and Sensors- Brillouin OTDR, FBG interrogator.

**ABSTRACT.** The evidence of dentistry in ancient practice can be dated back to Indus valley civilization. Centuries of modernization and new implementation methods have substantially improved its treatment efficacy. When it comes to medical practice, early and accurate diagnosis of a medical condition becomes a key factor for an effective and rapid treatment protocol. When it comes to dentistry and other branches of oral health treatments, conventional and newly implemented diagnostic techniques like visual inspection, cephalometric radiographs, cone-beam computed tomography, and magnetic resonance imaging, has been widely relied on by medical practitioners to determine a treatment plan. These techniques though offer a high-level depth imaging capability, yet the imaging resolution is limited to few hundred micrometers to few millimeters. This, in turn, makes it difficult to accurately diagnose the disease progression. Furthermore, most of these techniques subject the patients to low-level ionizing radiation. A non-destructive, non-ionizing, and real-time imaging technique which can offer high-resolution micrometer-scale resolved cross-sectional and volumetric images like optical coherence tomography (OCT) can aid dental practitioners to accurately diagnose the disease progression and to accordingly make treatment planning. Since its first introduction in 1991, OCT has seen substantial growth in medical research and in clinical implementations like in ophthalmology, dermatology, angiographic and in endoscopy fields. In recent years, research groups from around the globe are exploring the futuristic capabilities of using OCT in dentistry and its sub-branches. In this topic we will be seeing the possible applications of using OCT for dental and orthodontic diagnosis and treatment planning.

**Keywords:** Biomedical imaging, dentistry, optical coherence tomography, orthodontics

## Part III Poster Presentations

### Poster Guidelines

#### Materials Provided by the Conference Organizer:

- X Racks & Base Fabric Canvases
- Adhesive Tapes or Clamps

#### Materials Provided by the Presenters:

- Home-Made Posters
- Posters Printed by Conference

#### Requirement for the Posters:

- Material: not limited
- Size: 160cm (height) ×60cm (width)



X-Rack

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### Best Poster Selection Guidelines

#### Selection Criteria:

- Research Quality
- Presentation Skill
- Design



Stickers

#### Selection Procedure:

- The Technical Program Committee (TPC) Co-Chair will invite 15 volunteers from invited speakers, professors and experienced researchers to serve as the judges to review the posters (Note: A judge would not have a poster or know the participant exhibiting a poster);
- 2 red stickers and 2 green stickers will be provided to the judges. The red sticker stands for “Research Quality” with a value of 2 points; the green sticker stands for “Presentation Skill and Design” with a value of 1 point;
- Each judge will go around the poster session and give the stickers to the poster which he/she thinks is high quality or well design and good presentation, please be noticed that the judge cannot give 2 red or 2 green stickers to the same poster (one red and one green stickers are acceptable);
- After the poster session, the Chair will count the points from each poster and select **FOUR** best poster presentation with more points. If there is a tie, the one with more red (Research Quality) stickers wins; if there is still a tie, the Chair will make the final decision.

#### Nature of the Award

- This award consists of free accommodation to the next conference and a certificate;
- The awards will be given during the Closing Ceremony on October 24.

## List of Posters

**Time:** October 23, 11:10-12:30

**Location:** 7<sup>th</sup> Floor, Gloria Hall

### Poster Presentations-Part A

BEB5146	Analysis of the time-velocity curve in phase-contrast magnetic resonance imaging: Phantom study <i>Ms. Jieun Park, Kyungpook National University</i>
BEB5147	Development of a visual information to auditory information transformation system for ambulation assistance <i>Prof. Jongmin Lee, Kyungpook National University</i>
BEB5210	Health management monitoring system for use in classifying lower extremity movements of the elderly <i>Dr. Kyong Kim, Chungbuk Provincial University</i>
BEB5423	Effect of sensory electrical stimulation on resting tremors in patients with Parkinson's disease and SWEDDs <i>Mr. Heo JaeHoon, Konkuk University</i>
BEB5481	The role of PET-CT in the treatment of abdominal malignant tumor by radioactive iodine-125 seed implantation <i>Ms. Yun Liang, Japan Union Hospital of Jilin University</i>
BEB5484	The application of ultrasound as a guidance in the treatment of pancreatic cancer by radioactive iodine-125 seed implantation <i>Dr. Qingchun Li, Japan Union Hospital of Jilin University</i>
BEB5485	Analysis of the safety of kanglaite combined with radioactive iodine-125 seed implantation in the treatment of abdominal malignant tumor <i>Dr. Qingchun Li, Japan Union Hospital of Jilin University</i>
BEB5499	The reduction effect of body temperature through cooling of partial body in a hot environment <i>Prof. Junghun Kim, Kyunpook National University</i>
BEB5507	Ankle joint moments in different foot strike methods during stair descent <i>Dr. Hyeong-min Jeon, Konkuk University</i>
BEB5510	Gender difference of knee joint torque during maximal voluntary contraction in the elderly <i>Dr. Yoon-Hyeok Choi, Konkuk University</i>
BEB5514	3D printing of HBC/PLGA nanofibrous hydrogel composites with suitable internal architecture for cartilage tissue engineering <i>Ms. Xiaoyun Liu, Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences</i>
BEB5519	Comparison of ankle joint load in different foot strike strategies during stair ascent <i>Mr. Eui-bum Choi, Konkuk University</i>



BEB5526	Comparison of arcus plantaris index, calcaneal pitch angle (CP) and tallo-horizontal angle (TH) in elementary school children with flat foot compared to those with normal foot at SD 5 sumerta, denpasar <i>Dr. Komang Trisna Sumadewi, Warmadewa University</i>
BEB5715	Polyp size measurement system and algorithm during colonoscopy <i>Dr. Chanil Kim, Keimyung University</i>
BEB5536	New collagen foam with nanotechnological modification as bi-layer dermal substitute: Influence of stable FGF2 on capillary density in different animal models <i>Dr. Bretislav Lipovy, University Hospital Brno</i>
BEB5538	Entropy analysis of heart rate variability and its application to recognize major depressive disorder: A pilot study <i>Prof. Sangwon Byun, Incheon National University</i>
BEB5551	Sensitivity of serum monocyte chemoattractant protein-1 (MCP-1) for diagnosis diabetic nephropathy <i>Dr. Asri Lestarini, Warmadewa University</i>
BEB5555	A study on cognitive response tendency and damage threshold of absorbing medium by laser-induced indirect stimulation <i>Prof. Jae-Hoon Jun, Konkuk University</i>
BEB5565	A resonance frequency analysis model of a curved beam diaphragm for the efficient improvement of bone conduction hearing aids <i>Assoc. Prof. Sungdae Na, Kyungpook National University</i>
BEB5577	The effect of exercise load deviations in whole body vibration on improving muscle strength imbalance in the lower limb <i>Dr. Seung-Rok Kang, Chonbuk National University</i>
BEB5581	Simvastatin reduce creatinine serum, urea and bun levels in ischemic reperfusion injury <i>Dr. Putu Nita Cahyawati, Warmadewa University</i>
BEB5596	Design of a dual-coil type electromagnetic actuator for implantable bone conduction hearing devices <i>Mr. Dong Ho Shin, Kyungpook National University</i>
BEB5606	Study on an actuation system development using temperature control of metal hydrides <i>Prof. Chang Ho Yu, Chonbuk National University</i>
BEB5611	Extraction of cognitive characteristic functions according to various parameter changes of vibratory stimulation <i>Assoc. Prof. Mi-Hyun Choi, Konkuk University</i>
BEB5613	Dynamic PET brain image analysis for anatomical segmentation based on non-negative matrix factorization <i>Prof. Young-Jin Jung, Dongseo University</i>
BEB5616	The effect of patient-specific non-newtonian blood viscosity on arterial hemodynamics predictions <i>Dr. Sang Hyuk Lee, Korea Institute of Machinery &amp; Materials</i>
BEB5622	A transfer learning approach to detect paroxysmal atrial fibrillation automatically based on ballistocardiogram signal <i>Dr. Fangfang Jiang, Northeastern University</i>

BEB5623	Biokinetic model of Tc-99m MIBI for eight patients undergone myocardial perfusion examination via Gamma camera and MATLAB program: An in-vivo study <i>Prof. Lung-Kwang Pan, Central Taiwan University of Science and Technology</i>
BEB5628	Development of a transcranial direct current stimulation device based on current limiter for simultaneous measurement of electroencephalography: A feasibility study <i>Mr. Yun-Sung Lee, Kumoh National Institute of Technology</i>
BEB5629	Eigenspace-based minimum variance beamformer for short-lag spatial coherence medical ultrasound imaging <i>Mr. Yimeng Wang, Fudan University</i>
BEB5640	Structural analysis of carbon composite frame for foldable electric wheelchair development <i>Ms. Mi Yeon Shin, Chonbuk National University</i>
BEB5642	Upper body axial rotations in different age-groups during level walking <i>Dr. Hyeong-min Jeon, Konkuk University</i>
BEB5650	Dipeptidyl peptidase-4 inhibitor treatment decreases allograft vasculopathy in normoglycemic rats <i>Prof. Feng-Yen Lin, Taipei Medical University</i>
BEB5672	Classification of spinal postures during cross-legged sitting on the floor <i>Ms. Yuri Kwon, BK21 Plus Research Institute of Biomedical Engineering, Konkuk University</i>
BEB5673	Antibiofilm and antimicrobial activity of essential oils on <i>Salmonella Enteritidis</i> and <i>Pseudomonas aeruginosa</i> <i>Ms. Lady Caterine Martinez Alvarez, Universidad Industrial de Santander</i>

## Poster Presentations-Part B

BEB5679	An algorithm of detecting lesion on the airway of COPD via DNN visualization <i>Mr. Jiayi Han, Fudan University</i>
BEB5690	An effective algorithm for beat-to-beat heart rate monitoring from ballistocardiograms <i>Dr. Jingxian Liang, South China Normal University</i>
BEB5697	Finite element modelling of the human lower limb bone <i>Prof. Bo Wun Huang, Cheng Shiu University</i>
BEB5700	The optimization of the human implantable wireless electrocardiography (ECG) sensors to maximize the power transfer efficiency <i>Dr. Seyed Jamaledin Mostafavi Yazdi, Keimyung University</i>
BEB5714	Dynamic patterns of center of pressure during walking in different foot types <i>Mr. Heo JaeHoon, Konkuk University</i>
BEB5716	Near-infrared hyper-spectral imaging system for lung tissue malignancy quantization <i>Dr. Chanil Kim, Keimyung University</i>
BEB5718	The degradation, biodegradability and toxicity evaluation of sulfamethazine antibiotics by gamma radiation <i>Ms. Yuankun Liu, Beijing University of Technology</i>
BEB5719	Continuous-time image reconstruction based on hellinger distance minimization for medical X-ray CT imaging <i>Dr. Yusaku Yamaguchi, National Hospital Organization</i>

BEB5722	Hybrid of ML-EM and MART algorithms for X-ray CT image reconstruction <i>Mr. Ryosuke Kasai, Tokushima University</i>
BEB5723	A modified CNN for resting-state EEG-based schizophrenia classification with weighted electrodes <i>Ms. Danyang Ma, Shanghai Jiaotong University</i>
BEB5730	Clinical evaluation of the effectiveness of a new orthotic device for the non-operative treatment of scoliosis <i>Dr. Seung-Rok Kang, Chonbuk National University</i>
BEB5733	Immunohistochemical analysis of helicobacter pylori infection in children <i>Dr. Cui Xu, Zibo First Hospital</i>
BEB5743	Construction and In Vitro Evaluation of a tumour targeting dual drugs delivery system based on MSN@GO <i>Assoc. Prof. Kai Dong, Northwestern Polytechnical University</i>
BEB5744	Fabrication of dual-diameter TiO <sub>2</sub> nanotube films on porous Ti for controlled release of antimicrobial peptide and osteogenesis <i>Dr. Yanni Zhang, Northwestern Polytechnical University</i>
BEB5752	Study on vision-based multidirectional posture and motion analysis system development <i>Ms. Mi Yeon Shin, Chonbuk National University</i>
BEB5756	Effect of motor imagery training in combination with electromyography-triggered electrical stimulation in stroke with hemiplegia patients: A randomized controlled study <i>Assoc. Prof. Ji-Su Park, Dongseo University</i>
BEB5757	Development of a transcranial direct current stimulation (tDCS) device based on polarity interchangeable electrodes <i>Dr. Gihyoun Lee, Samsung Medical Center</i>
BEB5758	The alternative splicing of DVL2 induced by SF3B1 mutations <i>Prof. Youzhong Wan, Jilin University</i>
BEB5759	R251Q mutation of LSD1 lead to derepression of breast cancer oncogene TRIM37 and invasiveness of MCF7 cells <i>Prof. Xin Hu, Jilin University</i>
BEB5767	The influence of titanium surfaces treated by sodium bicarbonate on bone marrow derived mesenchymal stem cells (MSCs) proliferation and differentiation in vitro <i>Dr. Chen-Xi Wang, Peking University</i>
BEB5769	A study on age- and gender-dependent differences in distance and angle between the internal carotid artery and basilar artery <i>Prof. Soon-Cheol Chung, Konkuk University</i>
BEB5770	A simple method for removing initial irregularity of an electrocardiogram during a transient state of a power supply in defibrillator <i>Assoc. Prof. Hyung-Sik Kim, Konkuk University</i>
BEB5783	A case of LRBA gene compound heterozygous mutation leading to diffuse interstitial lung disease in children <i>Dr. Junjie Ning, First People's Hospital of Zigong City</i>
BEB5823	Measurement system for delay-time of gait event due to a dual-task during walking <i>Assoc. Prof. Jinseung Choi, Konkuk University</i>

BEB5824	Effects of mindful breathing on rapid hypoxia preacclimatization training <i>Dr. Yong Xue, Peking University</i>
BEB5842	A simple segmentation and quantification method for numerical quantitative analysis of cells and tissues <i>Assoc. Prof. Hyung-Sik Kim, Konkuk University</i>
BEB5851	Ultrasound speckle tracking with deep convolutional neural network <i>Dr. Hongjie Wang, Weihai Maternal and Child Health Hospital</i>
BEB5866	Response of chlorella sp. to repeated exposure to glufosinate ammonium: Growth, pigmentation and oxidative stress response <i>Dr. Wong Chiew Yen, International Medical University</i>
BEB5871	Establishment of a high-throughput fluorescence-based assay for in vitro catalytic activity of cytochrome P450 2D6 <i>Dr. Boon Hooi Tan, International Medical University</i>
BEB5894	Isolation and identification of the characteristics of human rotavirus CY2017 isolate <i>Prof. Yan Song, Chuiyangliu Hospital Affiliated to Tsinghua University</i>
BEB5920	Study on injection molding analysis of glasses-type wearable device for facial skin care <i>Dr. Kyong Kim, Chonbuk National University</i>
BEB5962	A basic study of examining advertising effectiveness during variety sporting events through monitoring bio-signals of viewers <i>Ms. Man-Hsu Lin, Keimyung University</i>
BEB5967	Study of using peltier element to develop a mini dehumidifier for surgical instruments storage <i>Prof. Jeonghun Ku, Keimyung University</i>
BEB5968	A deep learning approach to rare electrocardiograph event detection <i>Mr. Tsai-Min Chen AI Academy; Academia Sinica</i>
BEB5972	Using FEA simulation to design a capacitive Sensors for measuring blood pressure of artery <i>Prof. Qun Wei, Keimyung University</i>
BEB5967	Study of using peltier element to develop a mini dehumidifier for surgical instruments storage <i>Prof. Jeonghun Ku, Keimyung University</i>
BEB5976	The design of lumped parameter model considering stimulus path of round window <i>Mr. Min Gyu Park, Kyungpook National University</i>
BEB5977	Implementation of 3D position detection system for medical simulator <i>Mr. Sang Kwang Bang, Kyungpook National University</i>
BEB5978	Implementation of fully implantable middle-ear hearing device chip <i>Prof. Jyung Hyun Lee, Kyungpook National University</i>

# Part IV Oral Presentations

## Oral Presentation Guidelines

### Devices Provided by the Conference Organizer:

- Laptops (with MS-Office & Adobe Reader)
- Projectors & Screen
- Laser Sticks
- Microphones

### Materials Provided by the Oral Presenters:

- PowerPoint or PDF file

For presenters who don't send the PowerPoint to the Conference Secretary, please have your presentation ready in a memory stick, and save it in the laptop of your corresponding session about **15 minutes** before the start time. You also need to tell the Session Chair (before the start of your session) that you are going to present your talk.

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## Best Oral Presentations Selection Guidelines

### Selection Criteria:

ONE best presentation will be selected from EACH session based on the following items:

- Research Quality
- Presentation Performance
- Presentation Language
- Interaction with Listeners
- PowerPoint Design

### Selection Procedure:

- An assessment sheet will be delivered to listeners before the session;
- When the session is finished, each listener is required to fill the sheet (he/she can vote for two excellent presentations) and give it to the Session Chair after the session;
- The Session Chair will count the votes from each presentation and select one best oral presentation with more votes. If there is a tie, the Session Chair will make the final decision.

### Nature of the Award

- This award consists of free registration to the next conference and a certificate;
- The awards will be given during the Closing Ceremony on October 24.

#### ICBEB 2019 Oral Presentation Assessment

Dear participant,

After carefully listening to the presentations of this session, please kindly recommend two excellent Oral Presentations with refer to the following evaluation criteria (please see the Table below).

The session Chair will count the notes from each presentation and select ONE Best Oral Presentation with more votes in this session. If there is a tie, the Session Chair will make the final decision.

The results will be released in the Awarding banquet on October 24.

You can refer to the evaluation criteria:

Items	Assessment
Content	Right, Logical, Original, Well-Structured
Language	Standard, Clear, Fluent, Natural
Performance	Spontaneous Appearance, Dress Appropriately, Behaves Naturally
PowerPoint	Layout, Structure, Typeset, Animation, Multimedia
Reaction	Build a Good Atmosphere, Speech Time Control Properly

Please write down the paper ID and give reasons for your recommendation:

Paper ID	Reasons

Evaluated by \_\_\_\_\_ (Paper ID: \_\_\_\_\_)

Note: When the session is finished, please fill it out and give it to the Session Chair, so that the Best Oral Presentation in this session could be selected.

### Assessment Sheet

## Oral Session 1: China Physiological Signal Challenge & Biomedical Signal Processing

**Session Chair:** Prof. Chengyu Liu, Southeast University

**Time:** 14:00-17:20, Wednesday Afternoon, October 23

**Location:** 7<sup>th</sup> Floor, State Room

14:00-14:20	Invited Talk	CPSC2019: Challenging QRS detection and heart rate estimation from single-lead ECG recordings <i>Prof. Chengyu Liu, Southeast University</i>
14:20-14:40	BEB5891 (Invited Talk)	QRS complexes detection using deep learning <i>Assoc. Prof. Wenjie Cai, University of Shanghai for Science and Technology</i>
14:40-14:45	BEB5901	Semantic segmentation of QRS complex in single channel ECG with bidirectional LSTM networks <i>Assoc. Prof. Lingfeng Liu, East China Jiaotong University</i>
14:45-15:00	BEB5940	QRS detection based on improved 1D U-net <i>Mr. Lishen Qiu, Soochow University</i>
15:00-15:15	BEB5961	QRS complex detection from two-channel using U-Net and LSTM <i>Mr. Yang Liu, Harbin Institute of Technology</i>
15:15-15:30	BEB5579	ECG characteristic wave detection based on deep recursive LSTM <i>Assoc. Prof. Jin Qi, University of Electronic Science and Technology of China</i>
15:30-15:50	COFFEE BREAK	
15:50-16:05	BEB5561	Optimized convolutional neural network by genetic algorithm for the classification of complex arrhythmia <i>Mr. Li Qian, Fudan University</i>
16:05-16:20	BEB5566	On noninvasive vital signs monitoring for sleep apnea syndrome detection <i>Prof. Han Zhang, South China Normal University</i>
16:20-16:35	BEB5583	A cross-session feature calibration algorithm for EEG-based motor imagery classification <i>Mr. Yong Liang, Fudan University</i>
16:35-16:50	BEB5836	A novel PCA-based filtering method for signal processing in fMRI to improve diagnosis of neurodegenerative diseases <i>Mr. Nikhil Boddu, Washington University in St. Louis</i>
16:50-17:05	BEB5849	Heart sound signal quality assessment based on multi-domain features <i>Ms. Yu Jiao, Shandong University</i>
17:05-17:20	BEB5897	sEMG-based arm action classification using time domain features and machine learning techniques <i>Mr. Jegadeesan Sudharsanan, Sri Sairam Engineering College</i>

## Oral Session 2: Biomechanics & Biomedical Modeling

**Session Chair:** Prof. Ikuo Yamamoto, Nagasaki University

**Time:** 14:00-16:50, Wednesday Afternoon, October 23

**Location:** 7<sup>th</sup> Floor, Royal Room

14:00-14:20	BEB5738 (Invited Talk)	Pneumatic cell sheet delivery system for laparoscopic surgery and its application <i>Prof. Ikuo Yamamoto, Nagasaki University</i>
14:20-14:35	BEB5254	A three-dimensional finite element analysis of the effect of archwire characteristics on the self-ligating orthodontic tooth movement of the canine <i>Ms. Yongqing Cai, Hainan University</i>
14:35-14:50	BEB5545	Comparison of individual fingertip forces between healthy people and spinal cord injury patients <i>Ms. Jisun Hwang, Graduate School of Hoseo University</i>
14:50-15:05	BEB5553	Effect of ankle joint proprioception level on the balance ability <i>Mr. Jaesun Ree, Graduate School of Hoseo University</i>
15:05-15:20	BEB5600	The impact of modified Pilates program on body balance in partially hearing people <i>Dr. Jagoda Walowska, RB dr Jagoda Walowska Wroclaw</i>
15:20-15:35	BEB5644	Effects of single crouch walking gaits on fatigue damages of lower extremity main muscles <i>Dr. Yanlin Wang, Harbin Engineering University</i>
15:35-15:50	<b>COFFEE BREAK</b>	
15:50-16:05	BEB5852	A sensitivity analysis of the aortic dissection in a closed circulatory loop using a multi-dimensional approach <i>Mr. Hamed Keramati, National University of Singapore</i>
16:05-16:20	BEB5886	Surface tension effects on pulmonary acinus mechanics in idiopathic pulmonary fibrosis patients <i>Dr. Long Chen, Nanjing University of Aeronautics and Astronautics</i>
16:20-16:35	BEB5930	Calculate the length of driving cables in a spatial multi-section continuum robot <i>Dr. Duong Xuan Bien, Le Quy Don Technical University</i>
16:35-16:50	BEB5584	Particle Image Velocimetry analysis of blood flow in idealised cerebral aneurysm using refractive index matched 3D printed flow phantoms <i>Mr. Ilunga Jeanmark, University of South Africa</i>

## Oral Session 3: Cell Biology, Biopharmacy & Biomaterials (I)

**Session Chair:** Dr. William CS CHO, Queen Elizabeth Hospital

**Time:** 08:30-12:25, Thursday Morning, October 24

**Location:** 7<sup>th</sup> Floor, State Room

08:30-8:50	BEB5501 (Invited Talk)	Modulators of alternative splicing as novel therapeutics in cancer <i>Dr. Sebastian Oltean, University of Exeter</i>
08:50-9:10	BEB5587 (Invited Talk)	Polymer nanotherapeutics for advanced treatment of neoplastic and inflammatory diseases <i>Prof. Tomas Etrych, Institute of Macromolecular Chemistry CAS</i>
09:10-9:30	BEB5881 (Invited Talk)	Repurposing enzymatic methyltransferase reactions for targeted functionalization and analysis of DNA and RNA <i>Prof. Saulius Klimašauskas, Vilnius University</i>
09:30-9:45	BEB5799	GMT8 aptamer conjugated PEGylated Ag@Au core-shell nanoparticles as a potential radiosensitizer for targeted glioma radiotherapy <i>Dr. Dongdong Li, Southeast University</i>
9:45-10:00	BEB5791	Murine retinal transduction using novel exosome-associated AAV2 gene therapy modalities <i>Mr. Michael Whitehead, University of Cambridge</i>
10:00-10:15	BEB5850	Advanced whole genome sequencing using a complete PCR-free next generation sequencing workflow <i>Ms. Xia Zhao, MGI Tech Co., Ltd</i>
10:15-10:30	<b>COFFEE BREAK</b>	
10:30-10:50	BEB5958 (Invited Talk)	Toward developing an optical platform for the early detection of colorectal cancer: Quo vadis? <i>Dr. Sourav Bhattacharjee, University College Dublin</i>
10:50-11:10	BEB5916 (Invited Talk)	Therapeutic resistance and recurrence of non-small cell lung cancer <i>Dr. William CS CHO, Queen Elizabeth Hospital</i>
11:10-11:25	BEB5649	Allogeneic transplantation of mesenchymal stem cells co-cultured with chondroncytes: A first-in-man trial for one-step cartilage repair <i>Prof. Zhongwen Zhang, The Third Medical Center of PLA General Hospital</i>
11:25-11:40	BEB5755	Mannosylated solid lipid nanoparticles for lung targeted delivery of paclitaxel <i>Prof. Ashish Kumar Jain, ADINA Institute of Pharmaceutical Sciences</i>
11:40-11:55	BEB5768	Regulation of histone H2B deubiquitylation by OTUD7A induces growth arrest in hepatocellular carcinoma <i>Dr. Fangzhou Li, Peking University Health Science Center</i>
11:55-12:10	BEB5888	Co-exposure of melamine and phthalate on markers of early renal damage in Shanghai adults <i>Ms. Jingsi Chen, Fudan University</i>
12:10-12:25	BEB5804	Controlling the orientation of protein on nanoparticles improves targeting efficiency <i>Mr. Ken Yong, Monash University</i>



## Oral Session 4: Medical Imaging Technology and Application

### Session Chairs:

**Prof. Lung-Kwang Pan, Central Taiwan University of Science and Technology**

**Prof. Meng Yang, Chinese Academy of Medical Sciences & Peking Union Medical College Hospital**

**Time:** 08:30-12:20, Thursday Morning, October 24

**Location:** 7<sup>th</sup> Floor, Royal Room

08:30-8:45	BEB5533	Objective quantitative analysis realized by three-dimensional photoacoustic/ultrasound dual imaging shows great potential for early detection of human breast cancer <i>Prof. Meng Yang, Chinese Academy of Medical Sciences &amp; Peking Union Medical College Hospital</i>
08:45-9:00	BEB5493	Automatic segmentation of arterial tree from 3D computed tomographic pulmonary angiography (CTPA) scans <i>Dr. Chi Zhang, Beihang University</i>
09:00-09:15	BEB5515	CT/MR dual modal imaging tracking of human mesenchymal stem cells labelled with Au/GdNC@SiO <sub>2</sub> nanocomposites in pulmonary fibrosis therapy <i>Dr. Jie Huang, Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences</i>
09:15-09:30	BEB5608	Taguchi method-based optimization of the minimum detectable difference of a cardiac X-ray imaging system using a precise line pair gauge <i>Dr. Ke-Lin Chen, Central Taiwan University of Science and Technology</i>
09:30-09:45	BEB5639	TLD environmental radiation of the new scanner facilities of the nuclear medicine department of medical university <i>Ms. Yingyi Le, Chung Shan Medical University</i>
09:45-10:00	BEB5664	Optimizing the minimum detectable difference of computed tomography scanned images via the Taguchi analysis: A feasibility study with an indigenous hepatic phantom and a line group gauge <i>Dr. Bing-Ru Peng, Central Taiwan University of Science and Technology</i>
10:00-10:15	BEB5707	Assessment of effective blood concentration readings from clinical data on patients with heart failure diseases after digoxin intake: A projection based on the inverse problem algorithm <i>Dr. Ya-Hui Lin, Central Taiwan University of Science and Technology</i>
10:15-10:30		COFFEE BREAK
10:30-10:45	BEB5491	Array smoothing coherence factor in the plane-wave ultrasound imaging <i>Mr. Yimeng Wang, Fudan University</i>
10:45-11:00	BEB5547	Combining a fully convolutional network and an active contour model for automatic 2D breast tumor segmentation from ultrasound images <i>Mr. Zhou Fang, Fudan University</i>
11:00-11:15	BEB5532	Feasibility of a dual-modal photoacoustic/ultrasound imaging system in

		<p>evaluating synovitis of rheumatoid arthritis: A preliminary clinical study  <i>Dr. Chenyang Zhao, Chinese Academy of Medical Sciences &amp; Peking Union Medical College Hospital</i></p>
11:15-11:35	BEB5947 (Invited Talk)	<p>A comparison of hysterosalpingo-foam sonography and hysterosalpingography for assessment of the efficacy of Essure hysteroscopic sterilization  <i>Dr. Maja Rosič, General Hospital Ptuj</i></p>
11:35-11:50	BEB5534	<p>Quantitative evaluation of healthy breast in different age groups using 3D photoacoustic/ultrasound dual imaging  <i>Dr. Tianhong Tang, Chinese Academy of Medical Sciences &amp; Peking Union Medical College Hospital</i></p>
11:50-12:05	BEB5720	<p>Preliminary research on depression treatment: Combination of transcranial magnetic stimulation and MRI-guided low-intensity focused ultrasound pulsation  <i>Dr. Xu Li, Zhongnan Hospital of Wuhan University</i></p>
12:05-12:20	BEB5508	<p>Segmentation of media and lumen in intravascular ultrasound image using guided multiscale normalized cut  <i>Mr. Yi Huang, Fudan University</i></p>

## Oral Session 5: Cell Biology, Biopharmacy & Biomaterials (II)

### Session Chairs:

**Prof. Josef Jampilek, Comenius University in Bratislava**

**Prof. Han Kiat Ho, National University of Singapore**

**Time:** 14:00-17:35, Thursday Afternoon, October 24

**Location:** 7<sup>th</sup> Floor, State Room

14:00-14:20	BEB5459 (Invited Talk)	Investigation on the pharmacological efficacy of endemic mushrooms and underlying mechanisms in changbai mountain area <i>Prof. Di Wang, Jilin University</i>
14:20-14:40	BEB5884 (Invited Talk)	Enzyme replacement treatment in Morquio IV A children <i>Prof. Zoran Gucev, Medical Faculty Skopje</i>
14:40-15:00	BEB5601 (Invited Talk)	Exploring the therapeutic properties of inorganic nanoparticles in liver fibrosis <i>Prof. Han Kiat Ho, National University of Singapore</i>
15:00-15:15	BEB5634	Uterine development and levels of ER $\beta$ and FSHR response to FSH receptor binding inhibitor in vivo administration in mice <i>Prof. Suocheng Wei, Northwest Minzu University</i>
15:15-15:30	BEB5705	Chemical synthesis and bioactivity of some 2-formylpyrrole natural products <i>Dr. Yueqing Li, Dalian University of Technology</i>
15:30-15:45	BEB5724	Biocompatible gold nanoparticles - chitosan composite films for medical implantation applications <i>Dr. Ana Cazacu, "Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine</i>
15:45-16:00	<b>COFFEE BREAK</b>	
16:00-16:15	BEB5750	The effect of Juniperus Communis extract against release of pro-inflammatory mediators in obese mice and a possible role of MAPK/ERK activation in 3T3L1 mouse adipocytes <i>Assoc. Prof. Souravh Bais, ADINA Institute of Pharmaceutical Sciences</i>
16:15-16:35	BEB5612 (Invited Talk)	Biological effects of compounds based on cinnamic acid scaffold <i>Prof. Josef Jampilek, Comenius University in Bratislava</i>
16:35-16:50	BEB5798	Antifungal activity and anti-biofilm effect of four essential oils against candida spp <i>Ms. Jennifer Ruiz, Universidad Industrial de Santander</i>
16:50-17:05	BEB5805	Subcloning and heterologous expression of thermostable lipases itb1.1 and lk3 from local isolate bacteria through pichia pastoris and its lipolytic activity <i>Mr. Dimas Frananta Simatupang, Bandung Institute of Technology</i>
17:05-17:20	BEB5935	Nanostructured tri-dimensional alginate biodegradable film functionalized with Cat's claw (Uncaria tomentosa) extract and aloe vera <i>Ms. Mariela Elgegren, Pontificia Universidad Católica del Perú</i>
17:20-17:35	BEB5974	The application of nasal photography scopy in taiyang bing discriminate symptom of shanghan za bing lun and medication <i>Prof. Ho-Chien Sung, Global Sun Simiao Medical Research Institute</i>

## Oral Session 6: Biomedical Engineering

### Session Chairs:

**Prof. Ebenezer Priya, Sri Sairam Engineering College**

**Prof. Tao Gong, Donghua University**

**Time:** 14:00-17:55, Thursday Afternoon, October 24

**Location:** 7<sup>th</sup> Floor, Royal Room

14:00-14:20	BEB5462 (Invited Talk)	Intelligent modeling and visual simulations of immune systems against diseases <i>Prof. Tao Gong, Donghua University</i>
14:20-14:40	BEB5518 (Invited Talk)	Bioengineered insulin delivery to the brain for treatment of Alzheimer's disease <i>Assoc. Prof. Konstantin Bloch, Tel Aviv University</i>
14:40-15:00	BEB5592 (Invited Talk)	Establishment of national standard and specification for Japanese Encephalitis vaccine quality control <i>Dr. Sunmi Lee, Ministry of Food and Drug Safety</i>
15:00-15:15	BEB5070	A novel log penalty in a path seeking scheme for biomarker selection <i>Dr. Sai Wang, Macau University of Science and Technology</i>
15:15-15:30	BEB5556	Accurate glucose-level sensing by a self-referenced, optical rotation polarimeter, using curve-fitting <i>Dr. Zeev Weissman, Shenkar College of Engineering &amp; Design</i>
15:30-15:45	BEB5578	A novel highly sensitive fluorescence based cartridge reader for rapid detection of malaria parasites <i>Mr. Allan Poghisyio Lemtudo, United States Army Medical Research Directorate</i>
<b>15:45-16:00 COFFEE BREAK</b>		
16:00-16:15	BEB5788	Significance of vascular endothelium growth factor testing in exhaled breath condensate of patients with acute respiratory distress syndrome <i>Prof. Jinliang Chen, Second Affiliated Hospital of Nantong University</i>
16:15-16:35	BEB5883 (Invited Talk)	An automated approach for the identification and classification of sputum smear tuberculosis images <i>Prof. Ebenezer Priya, Sri Sairam Engineering College</i>
16:35-16:55	BEB5889 (Invited Talk)	Promoting public health and sustainability by Rayo 3DToothFill <i>Dr. Pirkko-Liisa Tarvonen, University of Eastern Finland</i>
16:55-17:10	BEB5810	Texture analysis as an enabling tool in diagnosis of colon cancer <i>Mr. Óisín Owens, Technological University Dublin</i>
17:10-17:25	BEB5899	Millimeter wave absorption spectroscopy for non-invasive glucose measurement <i>Mr. Lee Tzu-Fan, National Taiwan University of Science and Technology</i>
17:25-17:40	BEB5637	The manufacturing procedure of 3D printed models for endoscopic endonasal transsphenoidal pituitary surgery <i>Assoc. Prof. Zhen Shen, Institute of Automation, Chinese Academy of Sciences</i>
17:40-17:55	BEB5809	Reading fluency and pitch discrimination abilities in children with learning disabilities <i>Dr. Haidan Lu, East China Normal University</i>

# Part V Conference Awarding Banquet

## CPSC Awards

The 2<sup>nd</sup> China Physiological Signal Challenge (CPSC 2019) will be held during the 8th International Conference on Biomedical Engineering and Biotechnology (ICBEB 2019) in Seoul. The CPSC aims to encourage the development of algorithms for challenging QRS detection and heart rate (HR) estimation from short-term single-lead ECG recordings usually with low signal quality and/or abnormal rhythm waveforms.


The CPSC 2019 provides a new ECG database containing noisy ECG episodes and/or signals with different arrhythmia patterns, encouraging participants to develop more efficient and robust algorithms QRS detection and HR estimation.

### Awards and Rules

The winner will be selected on the basis of the obtained final  $QRS_{acc}$  and  $HR_{acc}$  on the hidden test data. The first three for each Event challenging will receive certificates and generous bonuses:

- First prize: Certificate plus bonus of RMB 15,000
- Second prize: Certificate plus bonus of RMB 10,000
- Third prize: Certificate plus bonus of RMB 5,000

### Awards sponsored by:

Lenovo Group 

### Awards presented by:

Prof. Yi Peng, Chinese Academy of Medical Sciences & Peking Union Medical College  
Prof. Jun Wang, Southeast University

### Challenge Chair:

Chengyu Liu, Southeast University

### Challenge Committee:

Hongxiang Gao, Southeast University  
Xingyao Wang, Southeast University  
Feifei Liu, Southeast University  
Lina Zhao, Southeast University & Shandong University  
Xiaoling Wu, Nanjing Medical University

### International Advisory Chair:

Gari D. Clifford, Emory University & Georgia Institute of Technology

### International Advisory Co-chairs:

Aiguo Song, Southeast University  
Jianqing Li, Nanjing Medical University

Zuhong Lu, Southeast University  
Ye Li, SIAT of Chinese Academy of Sciences  
Yingjia Yao, Lenovo Group

**International Advisory Committee:**

Eddie Ng Yin Kwee, Nanyang Technological University  
Amit Shah, Emory University  
Yi Peng, Peking Union Medical College  
Shoushui Wei, Shandong University  
Zhengtao Cao, Aviation Medicine Institute  
Hongxing Liu, Nanjing University  
Fengfeng Zhou, Jilin University  
Alistair Johnson, MIT

**Hosted by:**

School of Instrument Science and Engineering, Southeast University  
The State Key Laboratory of Bioelectronics, Southeast University  
School of Biomedical Engineering and Information, Nanjing Medical University

**Supported by:**

Health Engineering Branch of Chinese Society of Biomedical Engineering  
ICBEB Organizing Committee

## **Best Paper Awards**

ICBEB has developed rapidly along with an annual increase of submissions and continuous improvement of manuscript quality. To attract more scholars to deliver the latest research findings and encourage more presentations and exchanges at the conference, the Best Paper Awards is set up for excellent contributors.

**The Selection Process and Awards**

- A. Peer review by Technical Program Committee (TPC).
- B. Based on peer review comments, Organizing Committee selects the top 15 papers with Straight-A in novelty, structure, significance and language etc.
- C. Award Committee selects and ranks the best 5 papers from the top 15.

The top 5 will be released certificates and with free registration to the next conference.

**Awards Presented by:**

Prof. Alan Murray, Newcastle University

## **Best Oral Awards**

Best Oral Awards, as important honors in the conference since 2012, aim to encourage speakers to promote and share their research results in a better way. Well-known professors and conference authors are invited to participate in the conference and vote for the Best Oral Presentation in each session.

The session chairs usually distribute vote forms to the participants before the opening and collect at the end of all oral presentations. Participants can score for each presentation and mark the highest one or two presentations before the submission.

Winners of the Best Oral Presentations will be awarded with a free ticket to the next conference.

### **Awards Presented by:**

Prof. Hermona Soreq, Hebrew University

## **Best Poster Awards**

The TPC Co-Chair will invite 15 volunteers from invited speakers, professors and experienced researchers to serve as the judges to review the posters.

The posters with high research quality, elaborate design and excellent presentation skill will be selected as Best Posters.

Winners of the Best Poster Presentations will be awarded with free accommodation to the next conference.

### **Awards Presented by:**

Prof. Qun Wei, Keimyung University

## Part VI Conference Venue

### Koreana Hotel

**Address:** 135, Sejongdae-ro (Taepyeong-ro 1st street), Jung-gu, Seoul

**Tel:** 82-2-2171-7882/7803/7825

**Website:** <https://www.koreanahotel.com>

**E-mail:** reservation@koreanahotel.com

### Access to the Venue

#### How to come from Incheon International Airport

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**Bus**

##### I. Boarding location of Kal Limousine Bus 6701

Passenger Terminal 1 (BUS STOP 3B/4A)

Passenger Terminal 2 (BUS STOP 17,18,19) Service No. 6701(towards City Hall)

##### Route

Incheon Airport → Hotel: Passenger Terminal 1 → Passenger Terminal 2 → Hotel

##### Timetable

Incheon Airport → Hotel (first bust: 04:53 / last bus: 22:50/ time required: 80 minutes)

Hotel → Incheon Airport (first bus: 05:07 / last bus: 18:52/ time required: 80 minutes)

Fare: about KRW 16,000 (roughly USD 13.5)

##### II. Boarding location of Bus 6005

Express city bus stop before Gwanghwamun Building

Incheon Airport → Hotel (first bus: 04:35 / interval: 30~40 minutes / last bus: 23:00 / time required: 80~90 minutes)

Hotel → Incheon Airport (first bus: 04:35 / interval: 30 minutes / last bus: 20:45 / time required: 80~90 minutes)

Fare: about KRW 15,000 (roughly USD 13)

#### **NOTE:**

The bus stop and departure time mentioned above are for reference only, may change subject to actual conditions.

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**Taxi**

##### • General taxi

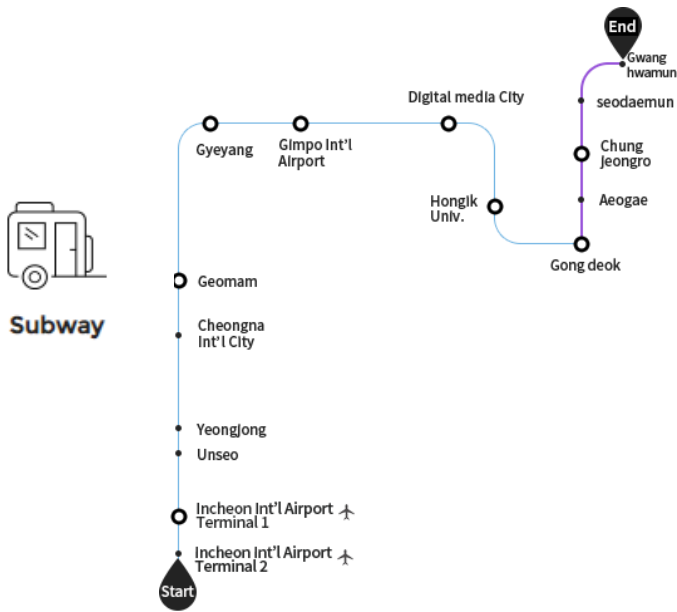
Fare: KRW 60,000, highway toll: KRW 7,400, sum: KRW 67,400 (about USD 56 totally)

##### • Deluxe taxi

Fare: KRW 90,000, highway toll: KRW 7,400, sum: KRW 97,400 (about USD 82 totally)

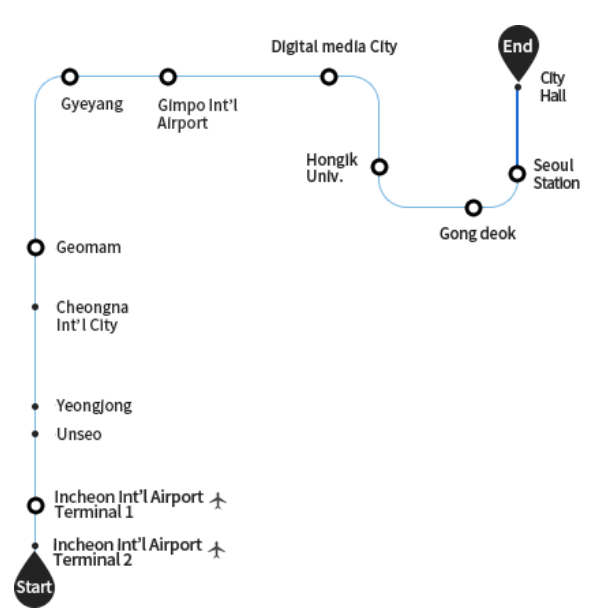
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**Subway Gwanghwamun Station Exit 6**

Take A'REX (Airport Road) to Gongdeok Station, transfer to Subway Line 5 (towards Gwanghwamun), and get off at Exit 6 of Gwanghwamun Station.  
 TIME: 1 hour and 8 minutes; 14 stops; Transfer once



**Subway City Hall Station Exit 3**

Take A'REX (Airport Road) to Seoul Station, transfer to Subway Line 1 (towards City Hall), and get off at Exit 3 of City Hall Station.  
 TIME: 1 hour and 11 minutes; 12 stops; Transfer once

**How to come from Kimpo Airport**



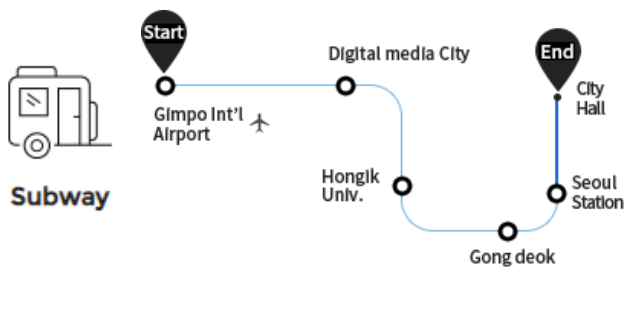
**Bus 601 toward City Hall**



**Taxi**

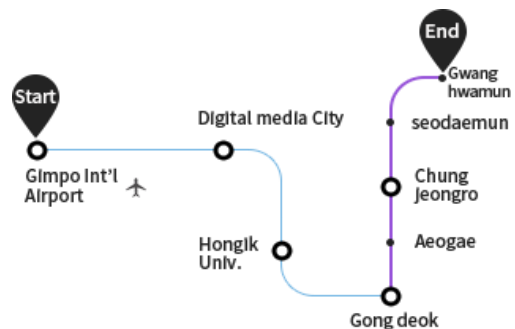
**General taxi**

Taxi fare: about KRW 20,000 (about USD 17)



**Subway Gwanghwamun Station Exit 6**

Take A'REX (Airport Road) to Gongdeok Station, transfer to Subway Line 5 (towards Gwanghwamun), and get off at Exit 6 of Gwanghwamun Station.  
 TIME: 30 minutes; 7 stops; Transfer once



**Subway City Hall Station Exit 3**

Take A'REX (Airport Road) to Seoul Station, transfer to Subway Line 1 (towards City Hall), and get off at Exit 3 of City Hall Station.  
 TIME: 32 minutes; 5 stops; Transfer once

## Part VII Field Visit

### Schedule

09:00	Depart from Koreana Hotel
09:30-12:30	Visit Gyeongbokgung Palace
12:30-13:30	Lunch at Lotte World
14:00-16:30	Explore Namsan Mountain
16:30-17:00	Back to Koreana Hotel

### Gyeongbokgung Palace- The first royal palace built during the Joseon dynasty

The Palace was named Gyeongbokgung Palace, the "Palace Greatly Blessed by Heaven" in 1395, three years after the Joseon Dynasty was founded by King Taejo (Yi Seong-gye), when the construction of the main royal Palace was completed after the capital of the newly founded dynasty moved from Gaeseong to Seoul (then known as Hanyang). With Mount Bugaksan to its rear and Mount Namsan in the foreground, the site of Gyeongbokgung Palace was at the heart of Seoul and, indeed, deemed auspicious according to the traditional practice of geomancy. In front of Gwanghwamun Gate, the main entrance to the Palace, ran Yukjo-geori (Street of Six Ministries, today's Sejongno), home to major government offices. Along the central axis upon which Gwanghwamun Gate stood was the nucleus of the Palace, including the throne hall, council hall and king's residence. The government ministry district and main buildings of Gyeongbokgung Palace formed the heart of the capital city of Seoul and represented the sovereignty of the Joseon Dynasty.

### Namsan Mountain- One of the most popular ways to see Seoul's skyline

Nam Mountain (pleonastically Namsan Mountain or Mount Namsan) is a peak, 262 metres (860 ft) high, in the Jung-gu district of south-central Seoul. Although known as Mongmyeoksan, in the past, it is now commonly referred to as Mt. Namsan. It offers some hiking, picnic areas and views of downtown Seoul's skyline. The N Seoul Tower is located on top of Mt. Namsan. The mountain and its surrounding area is Namsan Park, a public park maintained by the city government, which has panoramic views of Seoul. The N Seoul Tower, officially the YTN Seoul Tower and commonly known as the Namsan Tower or Seoul Tower, is a communication and observation tower located on Namsan Mountain in central Seoul, South Korea. At 236 metres (774 ft), it marks the second highest point in Seoul.