ICBEB 2025

The 14th International Conference on Biomedical Engineering and Biotechnology

November 4-7, 2025 | Matsue, Japan

Conference Program

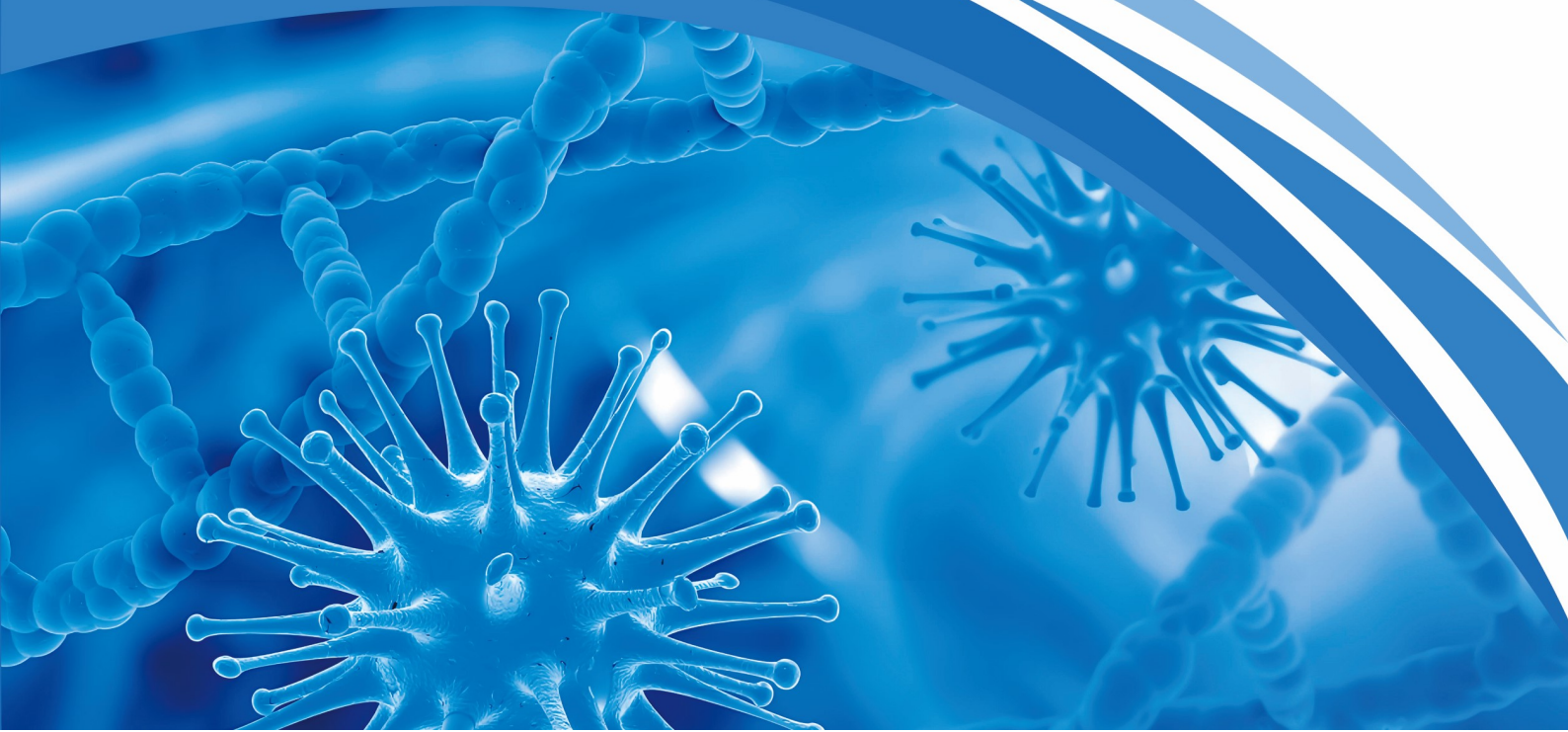


Table of Contents

Part I Conference Schedule Summary 1

Part II Keynote Speeches 3

Keynote Speech 1: Towards an HIV Cure Based on CRISPR-Cas Technology 3

Keynote Speech 2: Virtual Human Hand Simulation 4

Keynote Speech 3: Chemical Tracking of Individual DNA Methylomes During Cell State Transitions 5

Keynote Speech 4: The Emerging Role of Noncoding RNAs as Biomarkers in Human Diseases and Cancer 7

Part III Oral Presentations 8

General Guidelines 8

Invited & Oral Session 1: Smart Healthcare, Advanced Diagnostics and Neuroengineering 10

Invited & Oral Session 2: Cellular Signaling, Mechanisms and Therapeutic Discovery 12

Invited & Oral Session 3: Computational Models, Medical Devices and Biomaterials 14

Part IV Poster Presentations 15

Poster Presentation Guidelines 15

List of Poster Presentations 16

Part V Conference Venue 19

Part VI Acknowledgements 21

Part I Conference Schedule Summary

Tuesday, November 4th, 2025 / Japan Standard Time (UTC+9)

Location: In front of Meeting Room 501, Kunibiki Messe

14:00-18:00	On-site Registration

Notes for registration:

* Please show us your paper number such as BEB1234 for registration.
* Please pick up all the conference materials at the registration desk (Name Card, Conference Program, Lunch & Dinner Tickets, Tour ticket etc.).

Wednesday, November 5th, 2025 / Japan Standard Time (UTC+9)

Location: Meeting Room 501, Kunibiki Messe

Welcome Speech and Keynote Speeches Chaired by:

Prof. Esteban Peña Pitarch, *Universitat Politècnica de Catalunya (UPC), Spain*

09:00-09:05	**WELCOME SPEECH** ***Prof. Kazuhiro Oda,*** *Oita University, Japan*
09:05-09:45	**Keynote Speech 1: Towards an HIV Cure Based on CRISPR-Cas Technology** ***Prof. Dr. Ben Berkhout,*** *Amsterdam University Medical Centers, The Netherlands*
09:45-10:25	**Keynote Speech 2: Virtual Human Hand Simulation** ***Prof. Esteban Peña Pitarch,*** *Universitat Politècnica de Catalunya (UPC), Spain*
10:25-11:00	**GROUP PHOTO** Location: By the Ground Entrance, Kunibiki Messe **COFFEE BREAK** Location: In front of Meeting Room 501, Kunibiki Messe
11:00-11:40	**Keynote Speech 3: Chemical Tracking of Individual DNA Methylomes During Cell State Transitions** ***Prof. Saulius Klimašauskas,*** *Vilnius University, Lithuania*
11:40-12:20	**Keynote Speech 4: The Emerging Role of Noncoding RNAs as Biomarkers in Human Diseases and Cancer** ***Prof. Damjan Glavač,*** *University of Maribor, Slovenia*
12:30-14:00	**LUNCH BREAK**
14:00-17:20	**Invited & Oral Session 1:** Smart Healthcare, Advanced Diagnostics and Neuroengineering

Thursday, November 6th, 2025 / Japan Standard Time (UTC+9) **Location: Meeting Room 501, Kunibiki Messe**	
09:00-12:25	**Invited & Oral Session 2:** Cellular Signaling, Mechanisms and Therapeutic Discovery
12:30-14:00	**LUNCH BREAK**
14:00-16:15	**Invited & Oral Session 3:** Computational Models, Medical Devices and Biomaterials
16:15-17:10	**Poster Presentations**

Thursday Evening, November 6th, 2025 / Japan Standard Time (UTC+9) **Awarding Banquet** **Location: YUUSHIEN Garden in Daikonshima**	
17:30	**Gathering** at the entrance of Kunibiki Messe
17:40	**Departure from** the entrance of Kunibiki Messe by bus
18:15-18:45	**Classical Garden Exploring**
18:45-19:00	**Awarding Ceremony**
19:00-20:30	**Japanese Traditional Performances & Cuisine**

Friday, November 7th, 2025 / Japan Standard Time (UTC+9) **Location: Matsue**	
09:10	**Departure from Kunibiki Messe** (Please gather at the entrance of Kunibiki Messe)
09:30-10:30	**Visit Matsue Castle**
10:40-11:40	**Horikawa Sightseeing Boat Ride**
11:50-12:40	**Lunch Break**
13:00-15:00	**Matsue Vogel Park**
15:45	**Arrival at JR Matsue Station at 15:45** (Subject to no traffic delays)

Note: Please note that the itinerary, including the schedule and duration of each activity, is subject to change depending on actual circumstances.

Part II Keynote Speeches

Keynote Speech 1: Towards an HIV Cure Based on CRISPR-Cas Technology

Prof. Dr. Ben Berkhout

Laboratory of Experimental Virology, Department of Medical Microbiology, Amsterdam University Medical Centers
Professor of Human Retrovirology, University of Amsterdam, The Netherlands

Biography: Prof. Ben Berkhout studied molecular biology at Leiden University and obtained his PhD in 1986 on translational control by means of RNA structure in bacteriophages. He performed postdoctoral research at the Dana Farber Cancer Institute (Harvard Medical School) and the National Institutes of Health (USA). He became Head of the Laboratory of Experimental Virology and was appointed Professor of Human Retrovirology the University of Amsterdam in 2002. He supervised 55 PhD students and published over 600 manuscripts on HIV-1 replication, virus evolution, virus discovery and new antiviral therapeutic strategies. BB sits on many international science panels (e.g. ERC, RGC Hong Kong, NMRC Singapore), and is editor-in-chief of Virus Research and editor for several journals (e.g. Retrovirology).

Abstract. The human immunodeficiency virus (HIV) integrates its genome into that of the human host to cause a persistent infection that can be controlled by antiviral drugs, but that cannot be cured. CRISPR-Cas endonucleases can be instructed to cleave and inactivate the integrated proviral DNA genome. We observed many surprise findings along this route. For instance, it turned out that HIV escape is promoted by the cellular DNA repair machinery, which introduces small indels at the target site that trigger subsequent viral escape. When two HIV targets are attacked to realize excision of a large HIV segment, we observed instead that a regular indel is introduced at both targets. To explain this, we reasoned that the two cuts are not present simultaneously because of fast DNA repair. Novel kinetic experiments support this idea. Another surprise finding is that we can score a fair number of very large genome deletions that extend beyond the integrated HIV genome and that are potentially dangerous because of oncogene activation. Most studies will miss such products because of the used PCR-based detection methods. We will also discuss some technological developments, e.g. the development of novel expression cassettes for guide RNAs, Pol-III driven transcription units and novel lentivirus vector designs.

Keywords: HIV, CRISPR-Cas, Cure

Keynote Speech 2: Virtual Human Hand Simulation

Prof. Esteban Peña Pitarch

Universitat Politècnica de Catalunya (UPC), Spain

Biography: Prof. Esteban Peña Pitarch holds a doctorate in the UPC. He has carried out his teaching work at the Technical College of Manresa (EPSEM), since 1988 and belongs to the department of mechanical engineering. He collaborates with the Institute of Industrial and Control Engineering (IOC), UPC, since 2008, in the robotics division. His research is focused on rehabilitation and simulation of stroke survivors, the creation of medical devices and the application of kinematics and dynamics to the human body by way of mathematical tools used in robotics. He manages a group with doctors specialized in physical medicine, rehabilitation, and engineers from a number of different fields. This group has published articles in magazines and congresses and owns two patents relating to medical apparatus. Esteban Peña Pitarch belongs to the Service and Industrial Robotics (SIR) research team and is currently working on two competitive projects as the main researcher of one and collaborating in the other. He is a professor and ex-dean of college Escola Politècnica Superior d'Enginyeria de Manresa (EPSEM) at the Universitat Politècnica de Catalunya (UPC). His teaching expertise is in Kinematics and Dynamics, and Machinery Design for Undergraduate and Graduate degrees for more than 30 years. He has two patents and more than 100 papers on international journals and conferences. Research interests are in Virtual Human Modeling, Rehabilitation, and Human Exoskeleton Construction.

Abstract. Currently, there are numerous systems and models for the upper human body that aim, in some cases, to enhance object grasping and, in others, to perform repetitive grasping in manufacturing operations or loading and unloading processes within the industrial sector. On the other hand, there is the sophistication of robotic hands (a term used here to generalize the concept), which feature varying numbers of degrees of freedom and control systems of differing complexity for these degrees of freedom. But what happens when a hand disability arises, such as one caused by a stroke or paraplegia? In these instances, replacing the hand is unnecessary; instead, the priority is the restoration of hand functionality, with the goal of enabling the affected individual to carry out daily life activities as normally as possible.

Indeed, for all these scenarios, the most thorough understanding possible of the human hand is essential. To this end, academic literature already includes several proposals for virtual models of the human hand. What is presented here is the outcome of several years of research on this topic: a proposed virtual model of the human hand featuring 29 degrees of freedom for the hand itself, plus an additional 9 degrees of freedom for the wrist.

Through the simulation of the human hand, the aim is twofold: on one hand, to provide tools for physicians and physiotherapists, enabling them to design personalized rehabilitation systems; on the other hand, to develop more accurate robotic hand models.

Keynote Speech 3: Chemical Tracking of Individual DNA Methylomes During Cell State Transitions

Prof. Saulius Klimašauskas

Institute of Biotechnology, Life Sciences Center, Vilnius University, Lithuania

Biography: Prof. Saulius Klimašauskas graduated Organic Chemistry at Vilnius University and then worked on first characterization of bacterial DNA cytosine-N4 methyltransferases with Prof. Arvydas Janulaitis at the Institute of Applied Enzymology Fermentas in Vilnius, Lithuania to receive his Ph.D. in Bioorganic Chemistry in 1987. He was a postdoctoral scientist in structural and molecular biology of DNA cytosine-5 methyltransferases with Dr. Sir Richard J. Roberts (NL, FRS) at Cold Spring Harbor Laboratory, where he was a major contributor to the discovery of a novel type of DNA-protein interaction – DNA base flipping. After starting his own group in 1995 at the Institute of Biotechnology in Vilnius, Lithuania he grew through the ranks of Head of Laboratory, Head of Department to become a Distinguished Research Professor at the Institute of Biotechnology, Life Sciences Center, Vilnius University in 2017. Dr. Klimašauskas was a repeat HHMI International Research Scholar (1995–2005), a JSPS invited professor at Osaka University (2002) and a recipient of a prestigious ERC advanced grant (2016-2023). He was elected and a full member of the Lithuanian Academy of Sciences, a Fellow of the Royal Society of Chemistry and an EMBO member. His long-standing research interests span mechanistic studies and molecular engineering of AdoMet-dependent methyltransferases and epigenetic mechanisms involving biological modification of DNA and RNA. He co-authored over 100 research and review articles in high impact journals and obtained over 10 international patentsand commercial licences on novel technologies for DNA/RNA labeling and epigenome analysis.

Abstract. Targeted enzymatic modification of DNA, RNA and proteins by addition of a methyl group is the prevalent epigenetic regulatory mechanism in higher eukaryotes. Methylation has been linked to a variety of biological processes including regulation of gene expression and cell identity. In DNA, three methyltransferases - DNMT1, DNMT3A, and DNMT3B - facilitate the transfer of a methyl group to the fifth carbon of a cytosine residue in CpG dinucleotides generating 5-methylcytosine. Aberrant genomic methylation profiles are associated with and serve as diagnostic markers for numerous human diseases. DNA methyltransferases are attractive therapeutic targets for drug design, however, the interplay and exact roles of the three DNMT enzymes in different biological contexts remain understudied. To achieve selective catalytic tracking of each individual Dnmt enzyme, we engineered the catalytic centre of mouse Dnmt1 or Dnmt3A for preferential transfer of chemical moieties containing functional azide groups from synthetic AdoMet cofactor analogs. We derived a series of mouse and human cell lineages by installing the derived codons in one or both alleles of the Dnmt1 or Dnmt3A gene using precise genome editing. To enable selective catalysis-dependent azide-tagging of the DNMT-specific targets in vivo, we elaborated an electroporation-based procedure for pulse-internalization of an azide cofactor analog into the engineered cells or, most recently, its metabolic in-cell production from a corresponding synthetic analogue of methionine using a genome-engineered methionine-adenosyl transferase. The deposited azide groups were exploited as ‘click’ handles for

precise mapping of the tagged methylation sites in the genome using TOP-seq profiling or for direct nanopore sequencing. Pilot studies of mouse ESCs and 3T3-L1 fibroblasts unveil detailed roles of the individual DNMTs during cell state transitions. Altogether, we present a new experimental platform for high-resolution genome-wide tracking of individual epigenetic writers in live cells providing unprecedented inroads into deciphering and altering mammalian epigenetic mechanisms, and paving new ways for developing next-generation diagnostic and therapeutic approaches.

Related references:

Staševskij et al. Mol Cell, 2017, 65: 554–64.
Stankevičius et al. Mol Cell, 2022, 82:1053–65.
Vilkaitis et al. Acc Chem Res, 2023, 56: 3188-97.
Gasiulė et al. J Amer Chem Soc, 2024, 146: 18722–29.

Keywords: Epigenetic Mechanisms, DNA Methylation, Biomolecular Engineering, Epigenomic Technologies

Keynote Speech 4: The Emerging Role of Noncoding RNAs as Biomarkers in Human Diseases and Cancer

Prof. Damjan Glavač, M.Sci., Ph.D.

Professor of Human Genetics

Center for Human Genetics & Pharmacogenomics,

Faculty of Medicine, University of Maribor, Slovenia

Biography: Dr. Damjan Glavač earned his PhD from the University of Ljubljana, Slovenia, where he currently serves as Head of the Department of Molecular Genetics at the Faculty of Medicine and Professor of Human Genetics.

His research focuses on the genetic analysis of disease-associated genes involved in hereditary disorders and cancer. Dr. Glavač has authored over 190 peer-reviewed scientific publications, in addition to 15 invited articles, 2 invited editorials, 12 book chapters, more than 50 contributions to international conferences, and over 30 invited lectures.

A key aspect of his work includes the translation of research findings and emerging technologies into clinical practice. This has led to improvements in risk prediction, targeted screening, prevention, and treatment strategies for several hereditary diseases, including multiple endocrine neoplasia type 2, Lynch syndrome, and Alport syndrome, Amyotrophic lateral sclerosis (ALS), Spinal Muscular Atrophy (SMA) and many others.

Dr. Glavač is the founder and president of the Slovenian Society of Human Genetics (since 2005) and a founding member of the Human Genome Variation Society.

Abstract. The noncoding portion of the human genome has gained increasing attention due to its critical role in the pathogenesis of various genetic disorders, including cancer and neurodegenerative diseases. This noncoding component includes not only intronic regions but also a diverse array of noncoding RNAs (ncRNAs), such as microRNAs (miRNAs), long noncoding RNAs (lncRNAs), PIWI-interacting RNAs (piRNAs), circular RNAs (circRNAs), and Y RNAs (YRNAs).

In this study, we investigated the roles of different ncRNAs using microarray analysis, next-generation sequencing (NGS), and quantitative PCR (qPCR). Bioinformatics approaches were also employed to identify the most promising ncRNA structures implicated in human diseases and cancer. We present three illustrative examples: (1) the involvement of miRNAs in cardiovascular diseases, (2) the roles of miRNAs and lncRNAs in cancer, and (3) the participation of miRNAs and circRNAs in neurodegenerative disorders, particularly amyotrophic lateral sclerosis (ALS).

Additionally, we explore interactions along the transcriptional axis involving mRNA, miRNA, ncRNA, and circRNA, and discuss potential therapeutic strategies based on miRNA modulation. Our findings highlight the complexity of ncRNA-mediated regulation and its potential as a target for disease intervention.

Part III Oral Presentations

General Guidelines

- **All presentation times are shown in Japan Standard Time (UTC+9).**
- Duration for Invited Oral Presentation: 20 Minutes, including 2-3 Minutes of Q&A.
- Duration for Regular Oral Presentation: 15 Minutes, including 2-3 Minutes of Q&A.
- All presenters are requested to reach the Session Room prior to the schedule and complete their presentation on time.
- Presenters are required to prepare PowerPoint or PDF Files for Presentation with Paper ID (**BEB******) marked on the first/last page.
- A signed and stamped presentation certificate will be awarded at the conclusion of the session.

Oral Presentation Guidelines

Devices Provided by the Conference Organizer:

- Laptops (with MS-Office & Adobe Reader) & Projectors & Screen
- Laser Sticks
- Microphones
- Please send us your presentation file in advance and keep a backup copy on a USB drive. For presenters who have not submitted the file beforehand, please save it on the session laptop at least 15 minutes prior to the session and personally inform the Session Chair of their presence before it begins.

Best Oral Presentations Selection Guidelines

Selection Criteria:

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

- ✓ Research Quality
- ✓ Presentation Performance
- ✓ Presentation Language
- ✓ PowerPoint Design
- ✓ Effective Communications

Selection Procedure:

- ✓ An assessment sheet (see the picture) will be delivered to the audience before the session starts.
- ✓ When the session finishes, each audience member is required to fill out the sheet (he/she can vote for two excellent presentations) and give it to the Session Chair.
- ✓ The Session Chair will count the votes and select the best oral presentation with the most votes. In the event of a tie, the Session Chair will make the final decision.
- ✓ Invited presentations do not participate in the best oral presentation selection.

Best Oral Presentations Award

The Best Oral Presenter from each session will be awarded an **official certificate** at the Awarding Banquet and a **complimentary registration** to the ICBEB 2026.

Sample of Assessment Sheet

Oral Presentation Assessment

Dear participants,

Thanks for your support. Kindly read the instructions below for the best oral presentation selection:

- You could select the two best oral presentations with this form, and kindly fill in the form when all the speakers finish the presentations.
- To ensure the fairness of the selection, one person could fill in only one form, kindly fill in the form by yourself and fill in your paper/abstract ID.
- The Session Chair will count the votes from each presentation and select **ONE** Best Oral Presentation in this session. If there is a tie, the Session Chair will make the final decision.
- The winner will be announced at the official website after the conference.

You can refer to the following Criteria for best oral selection:

Items	Assessment
Content	Right, Logical, Original, Well-Structured
Language	Standard, Clear, Fluent, Natural
Performance	Spirited Appearance, Dress Appropriately, Behaves Naturally
PowerPoint	Layout, Structure, Typeset, Animation, Multimedia
Interaction	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: Please fill it out and give it to the Session Chair or conference secretary so that the Best Oral Presentation in this session can be selected.

Invited & Oral Session 1: Smart Healthcare, Advanced Diagnostics and Neuroengineering

Time: 14:00-17:20 Wednesday, November 5th, 2025

Location: Meeting Room 501, Kunibiki Messe

Session Chairs:

Prof. Mihaela Gheorghiu, International Centre of Biodynamics & University of Bucharest, Romania

Prof. Eugen Gheorghiu, International Centre of Biodynamics & University of Bucharest, Romania

14:00-14:30	BEB7842 (Invited)	Rapid Phenotypic Antimicrobial Susceptibility Testing by Gauging Cellular Response at Population Level via Magnetophoretically Assisted Electrical Impedance Spectroscopy Assay, in Comparison to Analysis of (Single) Cells Dynamics Using Electrically Modulated Optical Microscopy *Prof. Eugen Gheorghiu, International Centre of Biodynamics & University of Bucharest, Romania*
14:30-14:45	BEB7939	Study on Smart Maintenance of Multi-Branded Infusion Pumps in Hong Kong Public Healthcare Facilities Through Strategic Life Cycle Management *Mr. Lok Him Tse & Mr. Cheuk Hin Rico Man, Electrical and Mechanical Services Department, HKSAR, China*
14:45-15:00	BEB7980	Integrated Random Forest Model for Detecting Mild Cognitive Impairment Through Finger Tapping Analysis *Dr. Yuko Sano, Hitachi, Ltd., Japan*
15:00-15:15	BEB7952	Development and Validation of the Multidimensional Machine Learning Model for Preoperative Risk Stratification in Papillary Thyroid Carcinoma: A Multicenter, Retrospective Cohort Study *Dr. Jia-Wei Feng, Changzhou First People's Hospital, China*
15:15-15:30	BEB8011	Laser-Induced Shockwave Triggers Variable GFAP Expression: Insights into Neural Stress Response *Ms. Angela Shen & Ms. Kate Zhao, University of California, San Diego, USA*
15:30-15:45	BEB8039	Supramolecular Assembly-Enabled Cancer Theranostics Through Concurrent Ferroptosis-Apoptosis *Ms. Mengying Wei, Northwestern Polytechnical University, China*
15:45-16:00		**Coffee Break**
16:00-16:20	BEB7843 (Invited)	Advanced Cellular Platform for Cytotoxicity Testing Based on High Content Label-Free Assessment of Cellular Dynamics Provided by Electro-Optical Assays *Prof. Mihaela Gheorghiu, International Centre of Biodynamics & University of Bucharest, Romania*

16:20-16:35	BEB8006	Path-length-Dependent Switching Between Routing and Diffusion Communication in Human Brain Networks *Dr. Yufei Yuan, Harbin Institute of Technology, China*
16:35-16:50	BEB7941	Smart Technologies for Healthcare Optimization: A&E Journey Monitoring, Intelligent Tourniquet Management and AR Cognitive Assessment in Hong Kong *Ms. Hiu Ching Poon, Electrical and Mechanical Services Department, HKSAR, China*
16:50-17:05	BEB8015	Investigating Mice Cortical Neuron Dynamics Following Laser-Induced Shockwave and Carbenoxolone Treatment *Mr. Jason Kai & Ms. Alexis Kukkonen, University of California, San Diego, USA*
17:05-17:20	BEB8060	Analysis of the Competitive Situation of Global Brain-Computer Interface Standards *Dr. Dongzi Xu, Chinese Academy of Medical Sciences & Peking Union Medical College, China*
Video	BEB8040	Low-Cost Prosthetic Control via Sparse EMG Gesture Classification *Mr. Rishab Ray, Foothill High School, USA*

Invited & Oral Session 2: Cellular Signaling, Mechanisms and Therapeutic Discovery

Time: 09:00-12:25 Thursday, November 6th, 2025
Location: Meeting Room 501, Kunibiki Messe

Session Chairs:

Dr. Linda Shi, University of California, San Diego, USA

Prof. Jim Jinn-Chyuan Sheu, National Sun Yatsen University

09:00-09:20	BEB8035 (Invited)	The Impacts of Genetic Alterations in Cytoskeleton-Related Genes on Cell Fate Determination and Cancer Development *Prof. Jim Jinn-Chyuan Sheu, National Sun Yatsen University*
09:20-09:35	BEB7981	Arterial-Lymphatic-Like Endothelial Cells Appear in Hereditary Hemorrhagic Telangiectasia 2 and Contribute to Vascular Leakage and Arteriovenous Malformations *Dr. Yang Yang, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China*
09:35-09:50	BEB8012	Investigating the Effects of Saccharin on Calcium Signaling in HUVECs *Mr. Tad Jimenez, University of California, San Diego, USA*
09:50-10:05	BEB8017	Pre-treatment with Non-Opioid Pain Medication to Modulate Calcium Signaling in Mice Dorsal Root Ganglion Neurons *Ms. Wendy Jiang & Ms. Sheccid Barranco & Mr. Shibo Zhu, University of California, San Diego, USA*
10:05-10:20	BEB8025	CRP-Mediated Incoherent FFL Synchronizes Maltose Metabolism in E. *coli* *Ms. Ting-Syuan Lin, The Chinese University of Hong Kong, China*
10:20-10:35		**Coffee Break**
10:35-10:50	BEB7929	Disruption of Calcium Signaling in Mouse Cortical Cells by Yellow 5 and Methyl Yellow *Dr. Linda Shi, University of California, San Diego, USA*
10:50-11:05	BEB7946	Chinese Olive Extracts as Potential Therapeutic Agents Against Colorectal Cancer *Prof. Shu-Chen Hsieh, National Taiwan University*
11:05-11:25	BEB8091 (Invited)	When Words Heal: AI, Expressive Writing, and the Power of Diverse Voices *Prof. Qian Lu, The University of Texas MD Anderson Cancer Center, USA*
11:25-11:40	BEB8018	Investigating the Neurotoxicity of Perfluorooctanoic Acid (PFOA) on Rat Pheochromocytoma (PC12) Cells *Mr. Micah Tang & Ms. Ruoxi Chen, University of California, San Diego, USA*

11:40-11:55	BEB8005	Naturally Occurring Pentacyclic Triterpenes Self-Assemble into Advanced Bioactive Delivery Vehicles for Therapeutic Application *Dr. Shiqi Liu, China Agricultural University, China*
11:55-12:10	BEB7871	Intestinal Organoids as a Model for Small Intestinal Epithelium Alterations in Alcohol Use Disorder (AUD) *Ms. Ami Gloria Toulehohoun, Gastroenterology laboratory (GAEN), UCLouvain/IREC, Belgium*
Video	BEB8102	Zero Contamination, Maximum Reliability: Establishing Doxorubicin-Resistant MDA-MB-231 Cells Through Aseptic Cell Culture Practices *Ms. Aml Mohamed, Egypt-Japan University of Science and Technology (E-JUST), Egypt*
Video	BEB8103	Genomic Plasticity and Antimicrobial Resistance Landscape of Egyptian Pseudomonas aeruginosa Clinical Strains *Mr. Mohamed Ashraf, Egypt-Japan University of Science and Technology (E-JUST), Egypt*

Invited & Oral Session 3: Computational Models, Medical Devices and Biomaterials

Time: 14:00-16:15 Thursday, November 6th, 2025

Location: Meeting Room 501, Kunibiki Messe

Session Chairs:

Dr. Veronica Gomez-Godinez, University of California, San Diego, USA

Dr. Yang Yang, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China

14:00-14:15	BEB7935	Numerical Verification of Simplification of Modeling of Cardiac Systolic Hemodynamics Through the Example of Mitral Paravalvular Leak *Mr. Krzysztof Truchel, Warsaw University of Technology, Poland*
14:15-14:30	BEB7926	ADP-cycleGAN: Ensuring Anatomical and Detail Accuracy in MR-to-CT Translation *Dr. Yifang Li, Fudan University, China*
14:30-14:45	BEB8016	Observing the Effect of DNA Rods Following DNA Damage *Ms. Naomi Lee, University of California, San Diego, USA*
14:45-15:00	BEB8071	Molecular Dynamics Insights into Adenosine A1 Receptor Allosteric Modulation: A Coarse-Grained Simulation Approach *Mr. Tianchen Yang, Shenzhen MSU-BIT University, China*
15:00-15:15		**Coffee Break**
15:15-15:30	BEB7890	Digital Human Modeling (DHM): Applications, Challenges, and Future Directions *Assoc. Prof. Abdulelah Ali, Jazan University, Saudi Arabia*
15:30-15:45	BEB8074	Lipids Modulate the Dynamics of Pulmonary Surfactant: An Approach of Coarse-Grained Simulations *Ms. Anqi Yang, Shenzhen MSU-BIT University, China*
15:45-16:00	BEB8079	Research on Adolescent Scoliosis Orthosis with Maintainable and Monitorable Corrective Force *Mr. Xuan Yang, Beihang University, China*
16:00-16:15	BEB8020	Evidence Assessment on Synthesis Research of Compound Danshen Dripping Pill for Angina Pectoris *Dr. Yongliang Jia, Zhengzhou University, China*

Part IV Poster Presentations

Poster Presentation Guidelines

Materials Provided by the Conference Organizer:

- Poster Board
- Adhesive Tapes or Clamps

Materials Provided by the Presenters:

- Home-Made Posters
- Posters Printed by Conference

Requirement for the Posters:

- Material: not limited

  Size: W120*H210 (cm)

Poster Board

****

Best Poster Presentation Selection Procedure

Selection Criteria:

- Research Quality
- Presentation Skill
- Design

Samples of Stickers

Selection Procedure:

- 6-8 volunteers will be invited from the participants to serve as the judges to review the posters (Note: judges have no conflict of interest with the presenters).
- 2 red stickers and 2 green stickers will be provided for each judge. 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 of high quality or well designed and well presented. Please note that one judge cannot give 2 red or 2 green stickers to the same poster (one red and one green sticker are acceptable).
- After the poster session, the conference secretary will count the points from each poster, and THREE best poster presentations with more points will be selected. 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.

- **Note:** Presenters are solely responsible for removing their posters at the end of the session. The Secretariat will not assume any liability for posters left behind thereafter.

Nature of the Award

- This award consists of free registration to the ICBEB 2026 and a certificate.
- THREE outstanding poster presenters will be selected and honored with certificates during the Awarding Ceremony. The winners will be announced at the banquet and featured on the ICBEB 2026 official website.

List of Poster Presentations

Time: 16:15-17:10 Thursday, November 6th, 2025
Location: Meeting Room 501, Kunibiki Messe

BEB7706	Quantitative Analysis of Extraterritorial Motor Function in Patients with Carpal Tunnel Syndrome *Prof. Ji-Won Kim, Konkuk University, South Korea*
BEB7707	Effects of Freezing of Gait on Static Balance in Parkinson's Disease Patients with and without a History of Falls *Dr. Yu-Ri Kwon, Konkuk University, South Korea*
BEB7827	Comparative Effects of Virtual Reality Walking-in-Place and Seated Cycling on Muscle Strength and Sit-to-Stand Performance in Dementia Patients *Prof. Seong-Gil Kim, Korea National University of Transportation, South Korea*
BEB7844	Toxicological Evaluation of Tithonia Diversifolia Methanolic Extract Using Magnetic Resonance Spectroscopy *Mr. Chuan-Yi Lin, National Institutes of Applied Research*
BEB7845	Design of a Multifunctional BSSO Fixation Plate Integrating Topology and Parametric Optimization: Optimized Design and Biomechanical Analysis *Dr. Chun-Ming Chang, National Institutes of Applied Research*
BEB7925	Ion-Gated DNA Hydrogel Platform for Label-Free Profiling of Tumor-Derived Exosomal tsRNAs *Dr. Xintong Bian, The First Affiliated Hospital of Chongqing Medical University, China*
BEB7933	PICH Analysis in Genomically Stable PTK2 Paired with Cell Cycle Characterization *Mr. Dakshin Rengaraj, University of California, San Diego, USA*
BEB7934	A High-Thoughput ARE-Luciferase Cellular Platform for Antioxidant Screening with Memory Effect *Dr. Chun-Ju Sung, National Taiwan University*
BEB7936	Effects of Glucose Levels on Short and Long-Term Cell Survival Following Laser-Induced Shockwave *Dr. Veronica Gomez-Godinez & Mr. Shibo Zhu, University of California, San Diego, USA*
BEB7984	Onsite Rapid Measurement System for Airborne Infectious Viruses and Bacteria *Dr. Hyeong Rae Kim, Korea Research Institute of Standards and Science, South Korea*
BEB7989	Associations of Cervical, Scapular, and Pelvic Alignment Parameters in Adults with Forward Head Posture *Prof. Seong-Gil Kim, Korea National University of Transportation, South Korea*

BEB8001	A Study on Percutaneous Thrombin Injection Outcomes in Femoral Artery Pseudoaneurysms of Complex Pseudoaneurysm Models Using In vitro Experiment *Prof. Young Ho Choi, Seoul National University College of Medicine, South Korea & Assoc. Prof. Hyoung-Ho Kim, Gyeongsang National University, South Korea*
BEB8003	Copper Nanoparticle-Modified PLA Nanofibers via Sputtering: Antibacterial Performance and Surface Characteristics *Dr. Chun-Ming Chang, National Institutes of Applied Research*
BEB8004	Comprehensive Study of Oxygen Plasma-Induced Modifications in Nanomechanical Properties, Microstructural Features, and Surface Morphology of Electrospun PVA/β-Cyclodextrin Nanofibers *Mr. An-Shun Liu, National Institutes of Applied Research*
BEB8007	Consistency of a Wearable Belt-Mounted IMU for Postural Sway Assessment *Prof. Seong-Gil Kim, Korea National University of Transportation, South Korea*
BEB8008	Development of an Augmented Reality Surgical Navigation System Based on Multiple ArUco Markers *Mr. David Liu & Mr. Aarav Patel, University of California, San Diego, USA*
BEB8009	Effects of Bleomycin-Induced DNA Damage on Calcium Signaling in Lung Fibroblasts with varying expression levels of $p16^{INK4a+}$ *Mr. Johnny Zhu & Ms. Yun (Angel) Lai, University of California, San Diego, USA*
BEB8010	Automated Visualization of Environmental and Genomic Data to Track Antibiotic Resistance in a Lysimeter System *Mr. Brady Wu & Mr. Adit Gownipalli, University of California, San Diego, USA*
BEB8013	Identification of Microplastics in Aquatic Environments Using Oxidative Treatment and Automated Image Analysis *Ms. Xiwen (Martina) Li, University of California, San Diego, USA*
BEB8014	Laser Induced DNA Damage to Study Cell Senescence *Ms. Prisha Malhotra & Mr. Kelson Jin, University of California, San Diego, USA*
BEB8019	The Effects of Artificial Food Dye (Yellow 5) on Mouse Cortical Neurons' Calcium Levels in the Presence of Laser Induced Shockwaves *Mr. Rishan Aaytee, University of California, San Diego, USA*
BEB8032	AI-Driven Multi-Scenario Visualization of Metabolic Pathways Using a Backbone–Module Architecture *Dr. Minho Son, Podo Bio Institution, South Korea*
BEB8034	Evaluation of 3D-Printed Double-Helical Biodegradable Suture Anchors in a Rabbit Rotator Cuff Tear Model *Dr. Pei-I Tsai, Industrial Technology Research Institute*

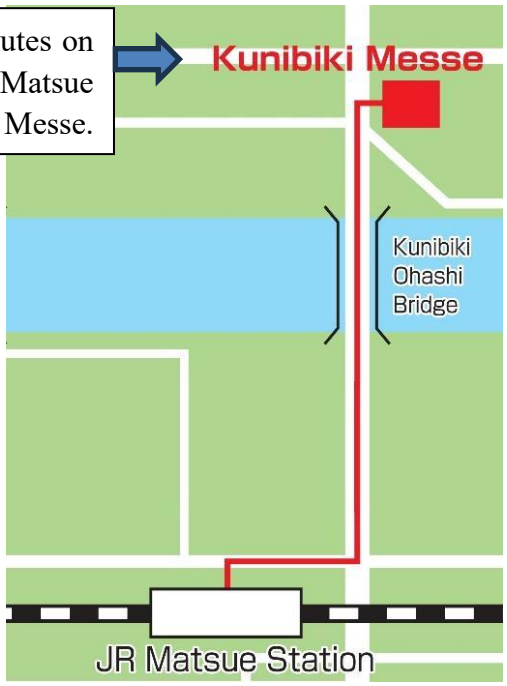
BEB8067	Bioinformatics-Enabled Risk Stratification of S. pyogenes Strains for Biodefense Applications: Integrating Genomic Analysis with Policy Implementation Frameworks *Mr. Diego Salas, Universidad de Ingenierías y Tecnología (UTEC), Peru*
BEB8072	Comparative Effects of Epidermal Growth Factor and Oligopeptide-215 on Calcium Signaling in PC12 Cells *Ms. Yining (Winkey) Ding, University of California, San Diego, USA*
BEB8073	Impacts of Assistive Devices on Improving Quality of Life of Motor Neuron Disease Patients *Mr. Sparsh Malhotra, Joseph A. Gregori, USA*
BEB8076	Integrating Human Auditory Models into Speech Enhancement Networks for Hearing Loss Compensation *Mr. Hyeong il Koh, Kyungpook National University, South Korea*
BEB8090	Impact of Smartphone Use and Obstacle Negotiation on Gait Dynamics and Visual Recognition in Young Adults *Prof. Seong-Gil Kim, Korea National University of Transportation, South Korea*
BEB8094	An Intelligent Cloud-Based Assessment System for Poor Posture Integrating DorsiX-GAN and BioPose Analyzer *Dr. Suli Yu, Beihang University, China*
BEB8096	Quantitative Assessment of Upper Limb Motor Function: A Simplified Approach Based on Muscle Synergy Analysis *Ms. Jia Guo, Beihang University, China*
BEB7930	*In-vivo* Evaluation of *Setaria digitata* ARV1 Protein as an Anthelmintic Drug Target Using RNAi *Dr. Palliya Guruge Thilini Sithara Wickramatunga, University of Colombo, Sri Lanka*

Part V Conference Venue

Kunibiki Messe
(Shimane Prefectural Convention Center)

The biggest convention center in Shimane prefecture, Kunibiki Messe, is located in the center of Matsue City. There are Exhibition Hall (4,018 sqm), Multipurpose Hall (686 sqm), International Conference Hall (510 sheets), and 19 meeting rooms.
Free Wi-Fi is available in building.

It takes only 7 minutes on foot from JR Matsue Station to Kunibiki Messe.



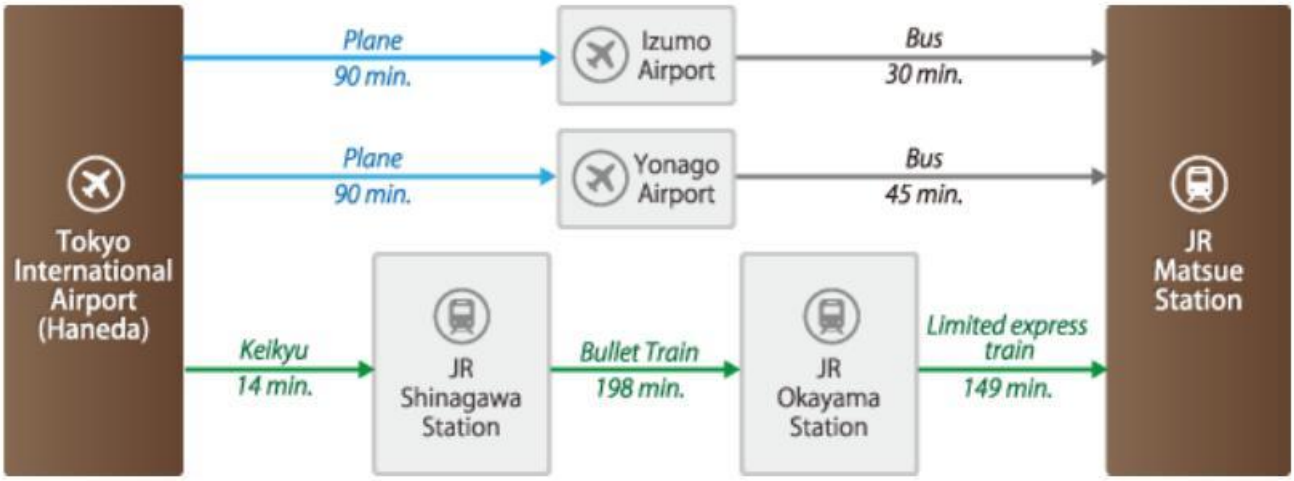
Kunibiki Messe
Address: 1-2-1 Gakuen Minami Matsue City, Shimane, JAPAN 690-0826
Tel: +81+852-24-1111
Fax: +81+852-22-9219
E-mail: kunibiki@kunibikimesse.jp

Access to JR Matsue Station:

Train Bus Plane

1. From Narita International Airport

2. From Tokyo International Airport



3. From Kansai International Airport

Part VI Acknowledgements

On behalf of the ICBEB 2025 Organizing Committee, we would like to take this opportunity to express our sincere gratitude to our participants. Without their support and contributions, we would not be able to hold the conference successfully. We also would like to express our acknowledgements to the Technical Program Committee members who have given their professional guidance and valuable advice as reviewers. For those who contribute to the success of the conference organization without listing the name below, we would love to say thanks as well.

Technical Program Committee

Conference General Chairs

Prof. Kazuhiro Oda, Division of Mechanical Engineering, Department of Innovative Engineering, Faculty of Science and Technology, Oita University, Japan
Prof. Eddie Yin-Kwee NG, Ph.D., FNAT [USA], AEUAS & AEASA [EU], FAIMBE & FASME [USA], FAIIA, FIETI & FAPTSA [HK], DFIDSAI [CN], FIET [UK], Nanyang Technological University, Singapore

Technical Program Committee Chairs

Prof. Nao-Aki Noda, Department of Mechanical Engineering, Kyushu Institute of Technology, Kitakyushu, Japan
Prof. Chengyu Liu, School of Instrument Science and Engineering, Southeast University, China

Technical Program Committee Co-Chairs

Dr. William Cho, Queen Elizabeth Hospital, Hong Kong SAR, China
Prof. Simon James Fong, Data Analytics and Collaborative Computing Laboratory, University of Macau, Macau SAR, China
Prof. Qun Wei, Department of Biomedical Engineering, School of Medicine, Keimyung University, Republic of Korea

Technical Program Committee

Prof. António Miguel Morgado, Department of Physics, University of Coimbra, Portugal
Dr. Andrea Scribante, Section of Dentistry, Department of Clinical, Surgical, Diagnostic and Paediatric Sciences, University of Pavia, Italy
Dr. Bruno Rizzuti, Institute of Nanotechnology, National Research Council, Italy
Assoc. Prof. Changsheng Li, School of Mechatronical Engineering, Beijing Institute of Technology, China
Assoc. Prof. Chao Ma, School of Mechanical Engineering, University of Science and Technology Beijing, China
Dr. Chelli Devi, School of Electronics Engineering, VIT University, India
Dr. Ching Yee Yong, University College of Technology Sarawak, Malaysia
Prof. Damjan Glavač, Center for Human Genetics & Pharmacogenomics, Faculty of Medicine, University of Maribor, Slovenia
Assoc. Prof. Dongwei Chen, Science and Technology Development Department, Zhuhai People's Hospital, China
Prof. Esteban Peña Pitarch, Department of Mechanical Engineering, Universitat Politècnica de Catalunya, Spain
Prof. E. Priya, Department of ECE, Sri Sairam Engineering College, India
Assoc. Prof. Evgin Goceri, Biomedical Engineering Department, Akdeniz University, Turkey
Prof. Essam Rashed, Graduate School of Information Science, University of Hyogo, Japan

Prof. Fengfeng Zhou, BioKnow Health Informatics Lab, College of Computer Science and Technology, Jilin University, China
Dr. Fernanda Coutinho, Coimbra Polytechnic – ISEC, Portugal
Prof. Franz E. Weber, Oral Biotechnology & Bioengineering, Center for Dental Medicine, University of Zurich, Switzerland
Dr. Fuming Yang, Department of neurosurgery, Shanghai General Hospital, Shanghai Jiao Tong University, School of medicine, Shanghai, China.
Asst. Prof. Ghazwa Faisal Abd, Mustansiriyah University, Iraq
Prof. Jing-Huei Lee, Department of Biomedical Engineering, College of Engineering and Applied Science, University of Cincinnati, USA
Assoc. Prof. Jie Li, School of Computer Science and Technology, Harbin Institute of Technology, China
Assoc. Prof. Kangning Ren, Department of Chemistry, Hong Kong Baptist University, China
Dr. Kwok Tai Chui, Department of Technology, School of Science and Technology, The Open University of Hong Kong, China
Assoc. Prof. Larbi Boubchir, University of Paris 8, France
Assoc. Prof. Luis Gómez, University of Las Palmas de Gran Canaria, Spain
Dr. MohammadAli Ahmadipour, Deakin University, Australia
Dr. Mengcun Chen, Center for Translational Medicine at Thomas Jefferson University, USA, and the Department of Orthopedics at Wuhan Union Hospital, China
Prof. Maria Prados-Privado, Department of Continuum Mechanics and Structural Analysis, Universidad Carlos III de Madrid, Spain
Assoc. Prof. Manjunath K N, Manipal Institute of Technology, India
Dr. Monjoy Saha, School of Medicine, Emory University, USA
Prof. Paula Alexandra Martins De Olive, Department of Veterinary Sciences, University of Trás-os-Montes and Alto Douro, Portugal
Dr. Ponnurengam Malliappan Sivakumar, Sabanci University Nanotechnology Research and Application Center, Turkey
Dr. Ruzhang Zhao, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, USA
Dr. Selim Bozkurt, Institute of Cardiovascular Science, University College London, UK
Dr. Shili Li, Department of Molecular Genetics, UT Southwestern Medical Center, USA
Dr. Shuyuan Zhang, Research Assistant, The University of Alabama, USA
Assoc. Prof. Wendong Wang, School of Mechanical Engineering, Northwestern Polytechnical University, China
Prof. Xufeng Yao, Shanghai University of Medicine and Health Sciences, China
Prof. Yudong Zhang, Department of Informatics, University of Leicester, UK
Assoc. Prof. Zohreh Mashak, Department of Food Hygiene and Quality Control, Karaj Branch, Islamic Azad University, Iran

The Technical Program Committee list above is in alphabetical order.

Website

Wechat

Contact Us

www.icbeb.org

icbeb@icbeb.org / icbeb@academicconf.com

Ms. Linda Li, Ms. Cassie Cheng