

## Generative Genomics Workshop

We cordially invite your participation and welcome submissions of full papers, work-in-progress papers, extended abstracts, panel proposals, tutorial proposals, and open-format contributions for sharing research questions and early-stage ideas. This workshop will facilitate the collaborative development of key research topics and foster connections among international researchers interested in this pioneering field. To this end, we welcome proposals for organizing sessions and expressions of interest in joining the program committee.

### PROGRAM COMMITTEE

- **Chair: Jae Kyu Lee** (Chair Professor, Xi'an Jiaotong University; Professor Emeritus, Korea Advanced Institute of Science and Technology; President, Generative Genomics Research Council)
- **Dae Kyun Chung** (Professor, Kyung Hee University; Director, Skin Bioengineering Center)
- **Ah-Ram Kim** (Professor, Handong Global University, School of Life Science)
- **Wooju Kim** (Professor, Yonsei University; Director, Yonsei AI Technology Research Center)
- **Kyong-Tai Kim** (Chair Professor and Director of Generative Genomics Lab, Handong Global University; Professor Emeritus, POSTECH)
- **Gyoo Gun Lim** (Professor and Dean of School of Business, Hanyang University)
- **Taesung Park** (Professor, Seoul National University; Director Bioinformatics and Biostatistics Lab)
- **Chuck Yoo** (Professor, Korea University; Former Vice President of Research, Korea University)
- **Yungang Xu** (Professor, Xi'an Jiaotong University)

### Related Topics (but not limited to) :

#### 1) Origins of Orphan Genes and Generative Genes

- Standard procedures of identifying orphan genes: Sensitivity of e-values and interspecies comparison
- Distinction between evolutionary and non-evolutionary orphan genes (i.e., generative genes)
- Necessary and sufficient conditions for validating the emergence of de novo genes and transformed genes: sequence similarity, regulatory elements, mutational path simulation, and functional integration
- Identification of orphan genes and generative genes across various species

#### 2) Generative Genomics as Comparative Genomics 2.0

- Conceptual distinction between Comparative Genomics 1.0 and 2.0
- Development of automated platforms for identification of generative genes, built upon BLAST, DIAMOND and related tools
- Design of annotation methods for generative genes by mapping them to multi-layered species-specific and taxon-specific phenotypic traits
- Integration of existing annotation databases with a newly annotation database for generative genes

#### 3) Generative Origins of All Organisms in the Generative Tree of Life

- Association of generative genes and generative origins with the phylogenetic Tree of Life, leading to the construction of the Generative Tree of Life
- Clarification of the ambiguous concept of ancestors by distinguishing taxa from reproducible organisms
- Identification of the boundary between inherited evolutionary origins and generative origins
- Identification of the network structure of inherited origins in the Generative Tree of Life

#### 4) Generative AI for Generative and Synthetic Genomics

- LLM-based generative AI for the association of multi-omics databases
- LLM-based GenAI models that simulate the new proteins and possibility/impossibility of orphan genes
- Performance comparison of encoder and decoder models in associating generative genes with species-specific phenotypes
- Understanding body growth scheduling under the decentralized cell division mechanism

#### 5) Generative Genomics in Disease Pathway Analysis

- Generative genomics AI model for molecular pathway analysis of diseases
- Discovery of species-specific diseases in humans and other species
- Distinction between treatment methods for diseases originating from common genes and those from generative genes
- Pathological studies using generative genes of *C. elegans*, fruit flies, and other organisms

Any creative topics aligned with the objectives of Generative Genomics

CALL FOR PAPERS

### IMPORTANT DATES

- Intention to Submit Notification August 31, 2025
- Submission Deadline Oct. 30, 2025
- Notification of Acceptance Nov. 20, 2025
- Camera-Ready Submission Dec. 10, 2025
- Registration Deadline Dec. 10, 2025
- Workshop Dates Mar. 27-28, 2026

### SUBMISSION

- All papers must be written in English.
- Regular papers should be 4-5 pages in length, following the ICBCB-2026 paper template. Extra fees apply to pages beyond the 5-page limit.
- Extended abstract for presentation only should be limited to 2 pages.
- Submission method: Upload your paper through the **Electronic Submission System** of ICBCB 2026, and send a notification email to [jklee@kaist.aac.kr](mailto:jklee@kaist.aac.kr).
- Presentation: Accepted papers are expected to be presented on site; however, exceptions may be granted for virtual presentation via Zoom.

### Submission Method and Listener Registration

Electronic Submission System: <http://confsys.iconf.org/submission/icbcb2026>  
 conference email box: [icbcb\\_contact@163.com](mailto:icbcb_contact@163.com)  
 Listener Registration: <http://confsys.iconf.org/register/icbcb2026>

### PUBLICATION

All accepted papers of ICBCB 2026 with proper registration and presentation, will be published in ICBCB 2026 Conference Proceedings, indexed by **Ei Compindex** and **Scopus**.

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