Aim and scope of the BMIRC at Kyutech

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In the 21st century, next-generation sequencers enabled the human genome to be decoded at a surprisingly high speed. Furthermore, the production of biological and medical data has become more rapid owing to the development of systemic high-throughput technology. Bioinformatics and systems biology have emerged, facilitating interdisciplinary research and development among medicine, informatics, and engineering. A worldwide science and technology policy would accelerate the extensive application of basic sciences to medical and health innovation.

For over 20 years, we have been extensively applying bioinformatics, systems biology, and bioengineering to medical research and development at the School of Computer Science and Systems Engineering, first founded in Japan. To accelerate our research and develop it sustainably, we established the Biomedical Informatics R&D Center (BMIRC) in 2012. This center is concerned with development in the interdisciplinary areas of medicine, informatics, and engineering through the collaboration of medical schools, hospitals, companies, and the government, and promotes the transaction between education and research among Asian countries. We highly appreciate your help and cooperation.

We aim to achieve information technology- and systems engineering- based medical advancement by training global engineers that are responsible for this innovation and by promoting industry–academia–government collaborations. We have 2 major objectives. First, we aim to develop a long-term project to create a computer model for the human physiology (Virtual Physiological Human). It will provide an intelligence infrastructure for medical research and the "seeds" required for medical development. Second, we should conduct problem-based research to match our "seeds" to the "needs" of medical schools, companies, and hospitals. This research creates computer-aided systems for drug design/development; disease diagnosis, prevention, and treatment; and patient care/welfare.