

# Greater Sendai Area

Providing prevention and health care services based on advanced sensing technology and network security technology

## Cluster Vision

We aim to help realize a society in which everyone leads a wholesome life through research on preventive aftercare as a result of industry-university-municipality cooperation. We also seek to concentrate companies and researchers involved in developing health care services and devices.

## Project Overview

In order to realize the "Sendai Advanced Preventive Health Care Services Cluster," we aim to establish approaches to advanced prevention and health maintenance. Then, we promote R&D, human resources development and establishment of demonstration field as follows.

### 【R&D】

We promote roughly classified four research; biomedical sensor technology, secure communications technology, biomedical data analysis algorithms, and guidance programs based on monitored biomedical data.

### 【Human resources development】

We nurture talented persons to achieve development of services and items that are needed on-site by training them in fundamental knowledge of and ability to manage health care, medical care, and welfare.

### 【Establishment of a demonstration field】

We accelerate practical research by feedback from a demonstration field incorporating innovative technology.

Project Director  
Hisakazu IIZUKA



Formerly a Manager at the Toshiba Corp. Display Device Engineering Laboratory, Mr. Iizuka has successively held important posts in support of commercialization in the Miyagi Prefectural Government and JST (Japan Science and Technology Agency)

## Building a health care cluster based on advanced prevention technology

With the recent progress of the aging of society, health maintenance has become a major problem for citizens especially in the Tohoku district. Fortunately, leading-edge research facilities have concentrated in Sendai. Utilizing these resources, we research hardware and software technology for advanced measuring systems to enable every resident to individually keep tabs on their health. Through the Knowledge Cluster Initiative, we promote QOL improvement and keep medical costs under control. We also promote concentration of industries such as device companies and health care service companies.

## Cluster Headquarters

President.....Katsuhiko UMEHARA (Mayor of the City of Sendai)  
Vice President.....Emiko IWASAKI (Deputy Mayor of the City of Sendai)  
Project Director.....Hisakazu IIZUKA  
Chief Scientist.....Shin-ichi NITTA (Professor of Institute of Development, Aging and Cancer, Tohoku University)  
SCIENCE and Technology Coordinator... Makoto YAMADA

## Core Organization

Intelligent Cosmos Research Institute Co., Ltd.

## Participating Research Organizations (Bold: Core Research Organization)

Industry...NTT DoCoMo Tohoku, Inc., Cyber Solutions Inc., SHARP Corporation, DENSO Corporation, Nippon Telegraph and Telephone East Corporation, Fukuda Denshi Co., Ltd, FUDOKI Co., Ltd., MIYAGIKEN-SEIJINBYOU-YOBOU-KYOKUAI, MEMSAS, Inc., YOU-STAFF Inc., RENAISSANCE Inc., Let's Sports Inc.  
Academia...**TOHOKU University**, Tohoku Fukushi University  
Government...Industrial Technology Institute, Miyagi Prefectural Government  
Sendai City Industrial Promotion Organization

## Main themes

- 1. Technologies for early detection of diseases by ultrahigh-sensitivity nanosensing (Wellness Sensing)**  
The objectives of this group are research and development of elemental technologies of highly sensitive sensors for very early detection of life-style diseases such as cancer, cardiac infarction, and cerebrovascular accident.
- 2. Detection and database technology for indices of biological reactions at ascertain health (Wellness Algorithm)**  
We research technologies for wireless in vivo sensors, intelligent databases of biological reactions, noninvasive healthcare examination systems based on distributed sensors, and agent-oriented communication interfaces.
- 3. Utilization of health-medical information for health enhancement and activities support technology (Wellness Application)**  
We identify life patterns related to health and develop service systems, proposing meal programs and sports programs that help to enhance health.
- 4. Medical information transmission technology and diagnosis support technology to overcome health disparities (Wellness Connection)**  
In order to overcome health disparities that are conspicuous in the Tohoku region, we research network security and privacy protection technologies such as access control. We also research mobile network technologies to access appropriate medical information during a disaster or while moving.

