Trust Miyagi Trust Success

Ideal Environment for Business & Research

Contact us

International Business Promotion Division Miyagi Prefectural Government

・Matching support with universities and research institutions

・Introduction of subsidy programs

・Introducing office, co-working office spaces, and other properties

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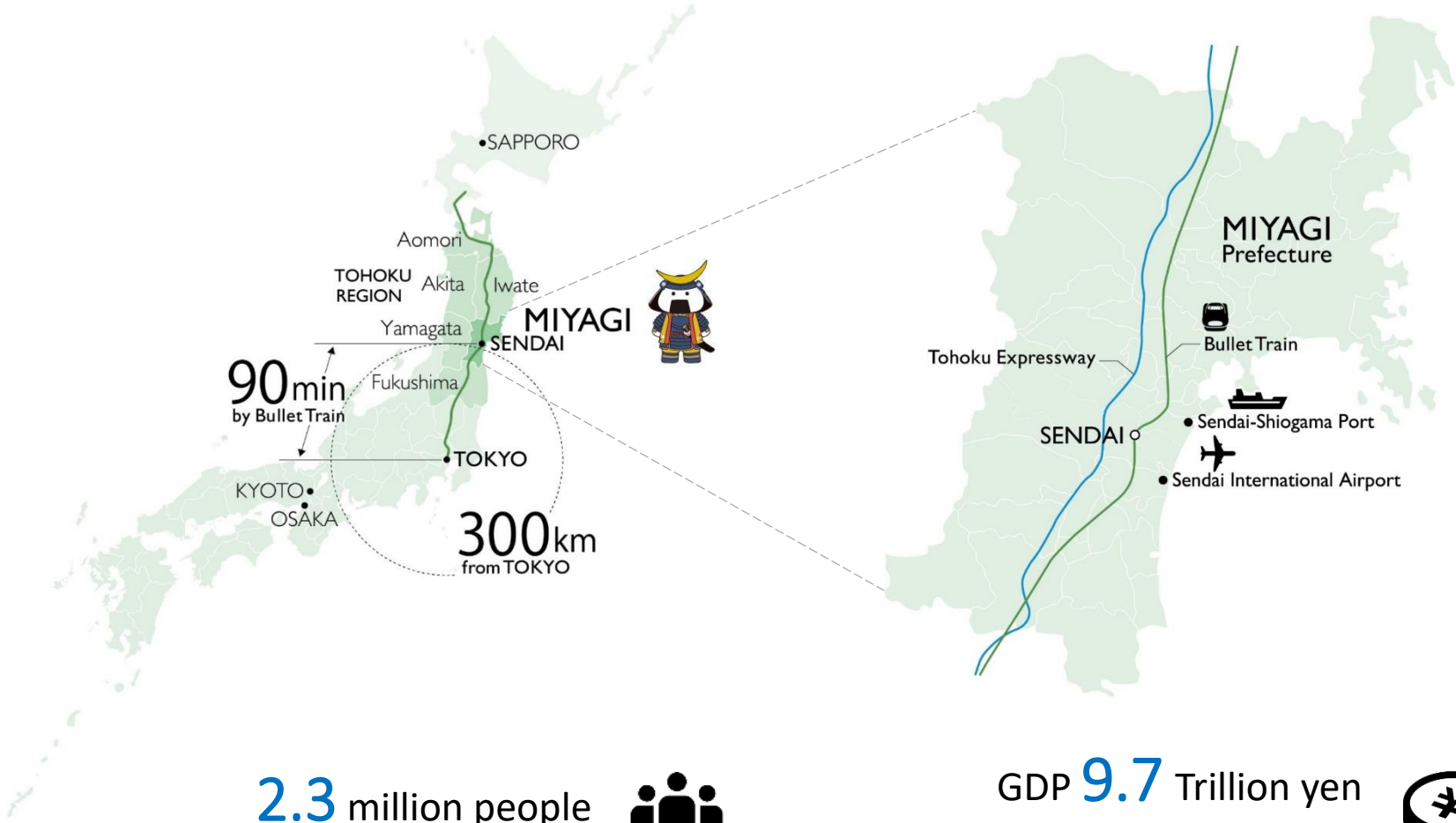
General Information about Miyagi



2.3 million people

14th in Japan, 1st in the Tohoku Region

GDP **9.7** Trillion yen

14th in Japan, 1st in the Tohoku Region
(34 trillion yen for the entire Tohoku region)

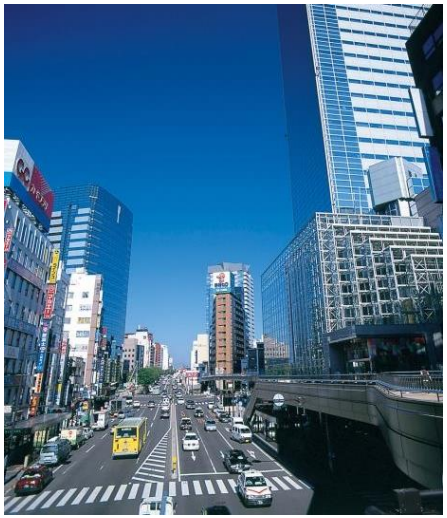
+400 companies establishment

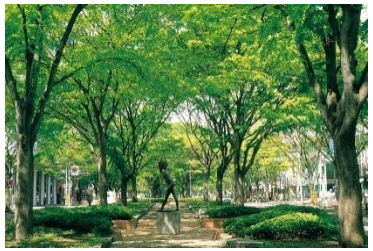
From 2006 to 2018

+10 % growth in GDP

From 2006 to 2016; 2nd highest in Japan

A Region with High Potential



Over 100 Institutions of Higher Education
Number of univ-students：about 50,000
Number of exchange students：about 3,000

Population of foreign ：over 22,000
Capital City：Ranked 2nd for comfortable living in Japan

Miyagi's capital city designated as a "Startup Ecosystem Promotion City" (8 locations in Japan)

Office rent cost：1/2 of Tokyo
Industrial Land Cost ：1/16 of Tokyo

10 domestic flights to 10 cities
5 international flights to 6 cities
24-hour operating airport
※Currently reduced

Foreigners who wish to open a startup company in Miyagi's capital can receive special visa status in the initial stage

Miyagi's Advantage: R&D Environment

Tohoku University (Designated National University (2017))

- Ranked 1st in Japan Japan University Rankings 2022, Times Higher Education (UK)
- Ranked 3rd in Japan for the number of joint research with private companies
  Industry-university Collaborative Research in University and Other Institutions, Ministry of Education, Culture, Sports, Science and Technology, 2020
- In collaboration with 251 the world leading institutions in 37 countries and regions

Industry-Academia Collaboration Environment

- 135 fields of study seeds at life science
- Japan's first next-generation synchrotron radiation facility 'Nano Terasu' underconstruction which will be operational in 2023
- Japan's first JETRO(※) Innovation Desk inside the university established at Tohoku University to promote active collaboration between researchers and companies in 2020. (※)Japan External Trade Organization

Life Science R&D Environment at Tohoku University

Motto: "Under One Roof" Cooperative Research Base

Smart Aging International Research Center

Institute of Development, Aging and Cancer

Japan's only national university-affiliated aging research center

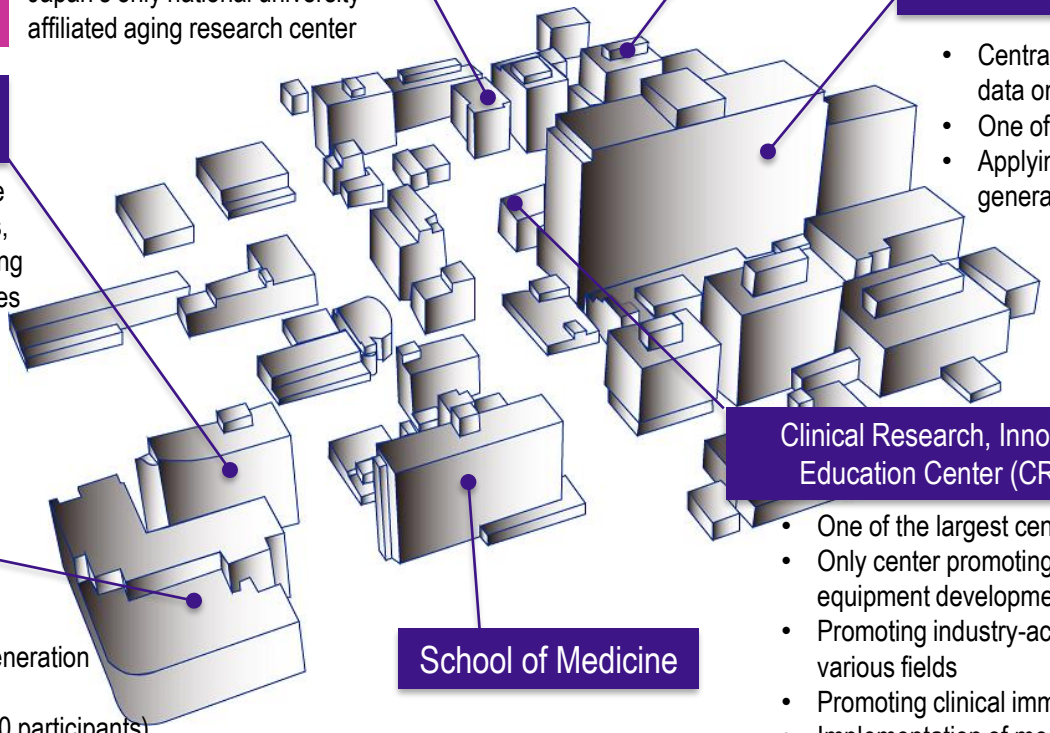
Graduate School of Dentistry

Tohoku University Hospital

- Central hospital for clinical research with data on 800,000 patients
- One of Japan's largest university hospitals
- Applying medical care for the next generation

United Centers for Advanced Research & Translational Medicine

- Satellite laboratories of the Graduate Schools of Pharmaceutical Sciences, Biomedical Engineering & Engineering
- Attracting R&D from various industries



Tohoku Medical Megabank Organization

- World's first comprehensive three-generation cohort study (70,000 participants)
- Japan's largest cohort study (150,000 participants)
- Leading composite biobank
- Developing medical care for the next generation

School of Medicine

Clinical Research, Innovation & Education Center (CRIETO)

- One of the largest centers for translational research
- Only center promoting open innovation of medical equipment development
- Promoting industry-academia cooperation for R&D in various fields
- Promoting clinical immersion
- Implementation of medical care for the next generation

Example of a Foreign-affiliated Company in Miyagi

Philips Japan

- As Tohoku Region has the one of the fastest aging population in all of Japan, Miyagi was the ideal location for Philips Japan to be exposed early on to the current challenges and to carry out innovative R&D and testing and to develop its technology for other regions of the country.

■ Concluded comprehensive partnership agreement with Tohoku University

■ Philips Co-Creation Center, opened on May 28, 2019

※Company's first innovation center in Japan

Business Opportunities in Miyagi (1)

Tohoku University-affiliated Institutions

Institution	Research Summary	Collaboration Opportunities
Tohoku Medical Megabank Organization (ToMMo)	● World's largest comprehensive biobank ● World's first three-generation cohort study (more than 70,000 participants)	● Development of personalized medicine using extensive genetic information
Tohoku University Smart-Aging Research Center & Institute of Development Aging and Cancer (IDAC)	● Japan's only institute specializing in aging medicine research	● Development of anti-aging technology
Tohoku University Hospital OPEN BED Lab	● Japan's first open bed lab, turning old hospital beds into a field for companies to carry out R&D verification ● Joint R&D can also be implemented at the OPEN BED Lab, incorporating views of	● Possible to verify and test medical devices and prototypes at the conceptual stage for nursing care and health fields
Tohoku University Graduate School of Biomedical Engineering	● Japan's first institution for the development of basic medical device technology through the integration of biomedicine and engineering	● Development of new medical devices through the integration of biomedicine and engineering
Tohoku University Hospital AI Lab	● Providing support for AI development aimed to resolve everyday issues in the medical field by intervening on the problem setting and design process	● Supporting AI development to resolve everyday issues in the medical field
Academic Science Unit	● Companies can directly access the medical field to observe and search for the needs of the field ● Program to use design thinking to narrow down needs found on site and to discover solutions to the issues	● Seeking companies that aim to commercialize medical devices, systems and services based on the needs of the medical field

Business Opportunities in Miyagi (2)

Tohoku University Researchers

Researchers	Research Summary	Collaboration Opportunities
Professor A	● Using AI analysis of brain MRI data to evaluate the impact lifestyle and other factors on the brain's health ● Consulting service for neurodevelopment and mental health; possible to evaluate dementia prevention by brain imaging analysis	● Research on brain development and aging using brain MRI database ● Seeking to collaborate with companies developing lifestyle products
Professor B	● Application of mathematical modeling and machine learning to analyze medical imagine ● Application of forensic imaging to investigate cause of death (mammography analysis, AI)	● Joint research with medical device companies
Professor C	● Development of blood vessel and bone models with realistic physical features and mechanical properties ● Medical device optimal design research using optimization methods advances the development of stents and catheters necessary for cerebral aneurysm treatment	● Possible to collaborate with medical device companies ● Technology is expected to be applied in various fields including medical imaging equipment, application development using MEMS and medical training
Assistant Professor D	● Development of AI software for Intensity Modulated Radiation Therapy (IMRT) ● Solving issues by applying AI technology to design and verify appropriate treatment plans for IMRT	● Seeking to collaborate with companies developing radiation treatment planning devices and radiation treatment devices
Professor E	● Simple and inexpensive PCR testing technology for fields including research, health management, food testing and medical diagnosis	● Seeking to collaborate mainly with companies developing medical diagnostic and testing kits in developing countries

Business Opportunities in Miyagi (3)

Examples of Startup Companies in Miyagi

Company Name	Characteristics/Services	Areas for Possible Collaboration
Company A	● Development of rare metal-free high-quality electrode catalyst first discovered as a result of research conducted at the Advanced Institute for Materials Research, Tohoku University	● Applying technology in metal air batteries (hearing aids, wearable medical devices, healthcare IoT)
Company B	● Currently developing a sensor that can measure the concentration of organic compounds at the 1PPM level	● Development of sensors for virus detection, etc.
Company C	● Development of a next-generation human model that is very close to a real human being (not only organs and blood vessels but a model that can also sense feelings)	● Treatment simulation and training ● Providing a test platform for products that pursue precision in medical device development
Company D	● Development of a new conductive fiber using natural silk with conductivity in the fiber itself	● Vital sensing that reduces risks including discomfort and measurement failure due to inflammation or heat
Company E	● Developed the world's first concept of a machine learning algorithm that achieves a "reference system" and that can learn from human intentions and correlation	● Possible to evaluate in actual time, and to carry out high-precision feature extraction from noisy time series data (biological data etc.)
Company F	● Providing genetic testing simultaneously without special equipment or training	● Simple genetic testing service
Company G	● Developed world's first supercritical synthesis and organic synthesis technology	● Development of hybrid materials using supercritical water (developing products that can be applied to various medical needs)
Company H	● Institute of Development Aging and Cancer, Tohoku University spin-out company ● R&D related to brain function, dementia risk early detection, research on dementia prevention	● Data science business based on neuroscience and medical evidence
Company I	● Developing an endoscopic anchor tool for acute cholecystitis while using the knowledge of Tohoku University's School of Engineering	● Development of a groundbreaking treatment for acute cholecystitis that is safe with minimal pain

Miyagi's Advantages for the RBC Program

Region's Advantages

☐Creating innovative AI solutions for medical issues

☐Japan's only aging research institution to respond to the rapid aging society

☐Developed the world's largest comprehensive biobank; world's first three-generation cohort study conducted here with participation from 70,000 people

☐Numerous start-up companies using Tohoku University's world-class research sources (ranking 6th in Japan for number of start-up companies)

Target companies

☐interested in providing AI medical services

☐interested in personalized medicine, development of anti-aging technology, development of new medical devices through the collaboration with medical engineering

☐developing medical devices and services based on the needs of the medical field

☐seeking ultra-precision parts for medical devices, electronic parts production, processing technology