

A better future for all

As a Designated National University, the University of Tokyo will become **A GLOBAL BASE FOR KNOWLEDGE COLLABORATION** by supporting sustainable development, enabling healthy living in a super-ageing society and deepening fundamental research

The University of Tokyo (UTokyo) is keen to use its selection as a Designated National University to benefit a much wider community than those directly connected with the university. It aims to create a better future for all.

The university's president, Makoto Gonokami, explains the goal. "Societies around the world share huge challenges, including environmental degradation, financial uncertainty, rising inequality and religious conflict. As a result of globalization, these issues are now too big for any one country to resolve alone."

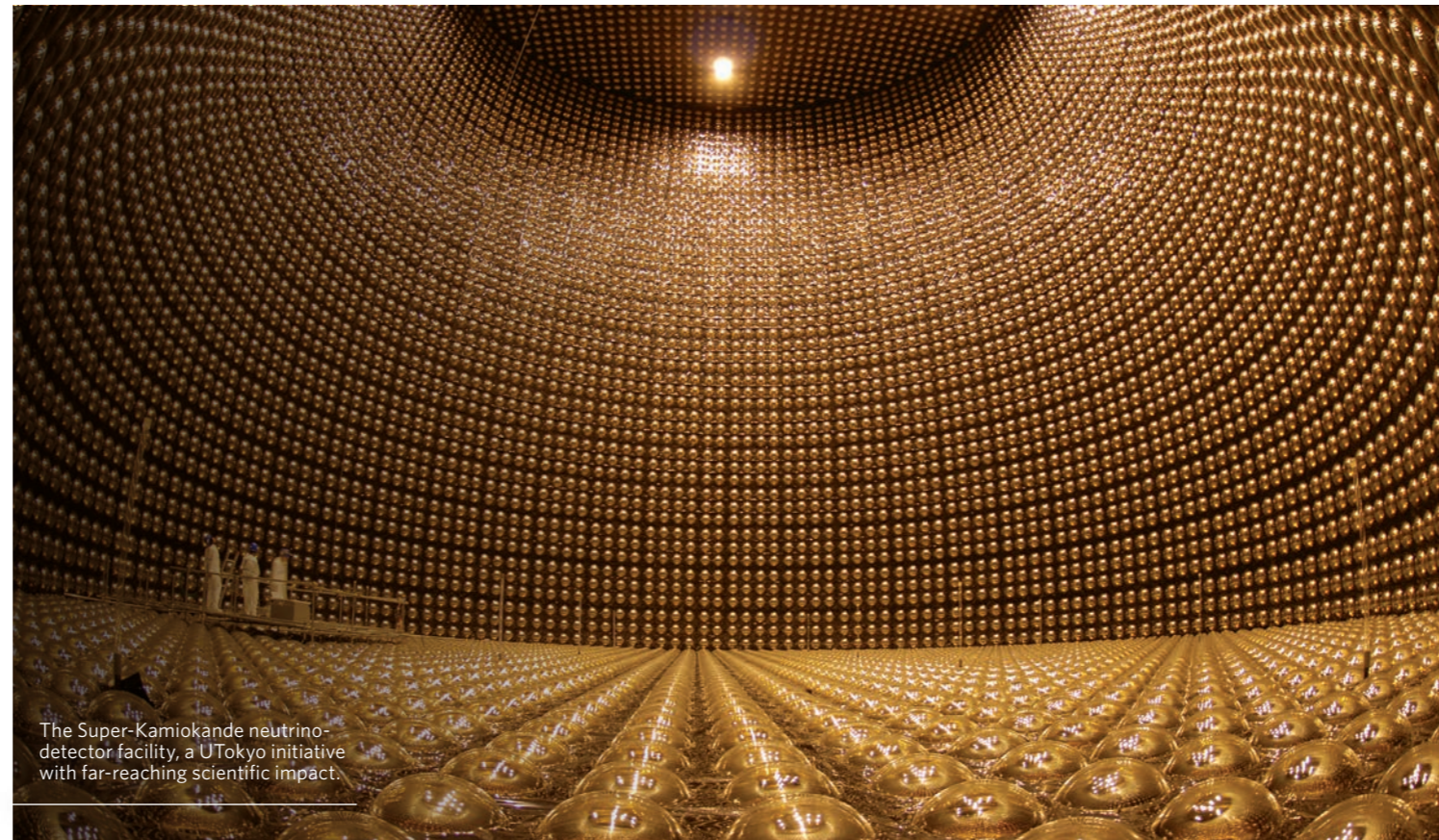
UTOKYO RESEARCHERS HAVE A PROVEN TRACK RECORD OF IMPLEMENTING INNOVATIONS.

As a Designated National University, UTokyo has greater freedom to chart its own course as it searches for solutions to these challenges. "Today, the digital revolution is affecting all aspects of our lives. We are experiencing a paradigm shift to a knowledge-intensive society, which presents both the risk of

further disruption and the tools to overcome our current challenges," says Gonokami. "UTokyo, the hub of so many research and institutional networks, is uniquely positioned to bring together the diverse people and ideas necessary to develop the new societal models we need. But we also need a common framework to coordinate our action."

That framework, he suggests, can be found in the United Nations Sustainable Development Goals (SDGs), which include eradicating poverty and alleviating environmental damage. "There are moves to align business strategies with the SDGs," explains Gonokami. "With academia, industry and society working together, we can create inclusive, long-term solutions to the challenges they set."

Moves to help realize the SDGs are underway at UTokyo under the Future Society Initiative. "The Future Society Initiative (FSI) is a university-wide framework to catalyze collaboration across disciplinary boundaries," explains Executive Director Hiroaki Aihara. "By also strengthening collaboration with other organizations, we



The Super-Kamiokande neutrino-detector facility, a UTokyo initiative with far-reaching scientific impact.

hope to deploy our efforts related to the SDGs within society."

A sustainable global society
UTokyo researchers have a proven track record of implementing innovations. WASSHA, a startup that spun off from technology developed at UTokyo, is bringing electricity to off-grid areas in Tanzania. Many of the 630 million people without electricity in Africa use kerosene lamps, which pose a respiratory health hazard. WASSHA distributes portable LED lights that can be charged by solar panels that WASSHA installs at local shops. Electricity is paid for with mobile money, a popular transaction method in Tanzania.

WASSHA emerged from the concept of a Digital

Grid™, a next-generation electricity distribution system developed at the Department of Technology Management for Innovation. Just as the internet transmits information, the Digital Grid™ routes energy and gives consumers greater control over where and when they buy electricity. The system could facilitate consumers' transition to renewable energy.

By 2017, WASSHA was bringing electricity to more than 1,000 sites with potential provision for 1.8 million people, creating new opportunities for local education and economic benefits.

Pushing the limits of health and physical ability

In Japan, a vastly different social issue calls for urgent

attention: the country's population will be classified a super-ageing society by 2030 and other Asian countries are set to follow.

The University of Tokyo Sports Science Initiative (UTSSI) is preparing for this challenge. Researchers are collaborating across disciplinary boundaries to discover how to extend a healthy life span, particularly through promoting active lifestyles and maintaining mental health. Other research priorities include promoting barrier-free design and improving the quality of life of the elderly and disabled.

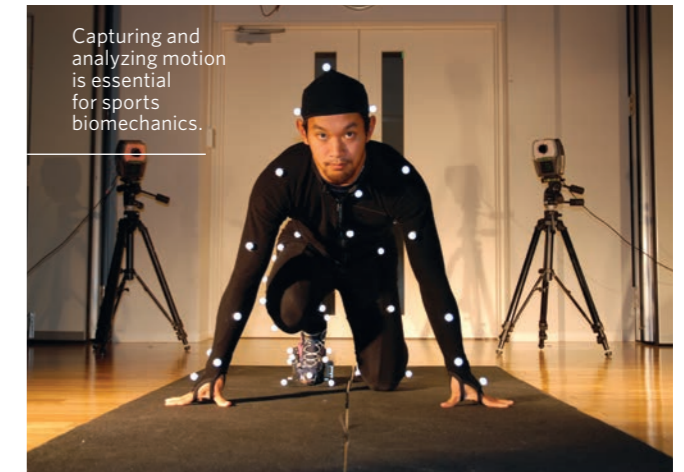
UTSSI researchers are also aiming to extend the limits of human physical ability. For example, UTSSI scientists in the MIAMI project are designing prosthetics with custom three-

dimensional printing for runners with disabilities.

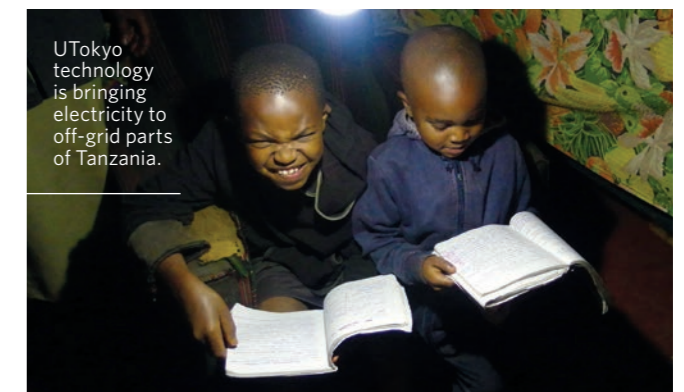
The project brings together laboratories in precision engineering and design, as well as industry experts in three-dimensional printing and manufacturing. The result is a prosthetic leg tailored for each athlete's anatomy, made with materials engineered to allow them to run faster than ever.

Research as an investment in the future

Aihara says that the driving force behind innovation at UTokyo is the university's solid research base. "Since the day our university was founded, we have been building strong academic foundations based on the free thinking of many talented researchers," explains Aihara. "This has allowed us to



Capturing and analyzing motion is essential for sports biomechanics.



UTokyo technology is bringing electricity to off-grid parts of Tanzania.

continue to attract the world's best minds and break new ground. Prime examples are the Kamiokande and Super-Kamiokande neutrino-detector facilities, which have resulted in two Nobel prizes."

Aihara's point is affirmed by the university's two World Premier International Research Center Initiatives (WPI). WPI centres are selected by the Ministry of Education, Culture, Sports, Science and Technology to foster world-class research hubs that break convention.

"In addition to the Kavli

Institute for the Physics and Mathematics of the Universe, the International Research Center for Neurointelligence was selected in 2017 as our second WPI centre," says Aihara. "We are the first university to have multiple WPI centres."

"The shift to a knowledge-intensive economy is gathering speed," Gonokami adds. "As a base for knowledge collaboration, we must make the most of the freedom our new status allows us. Together we will work to create a better and sustainable future for all." ■



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