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International Research Institute of Disaster Science

IRIDeS NEWSLETTER

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Special Issue

15 Years After the Great East Japan Earthquake — Research and Reflections

Special Issue

15 Years After the Great East Japan Earthquake

Research and Reflections

March 11, 2026 commemorates the 15th anniversary of the Great East Japan Earthquake. The IRIDeS Public Relations Office conducted a survey of faculty and staff to document how the Great East Japan Earthquake has impacted IRIDeS' research and operations. Respondents were asked about their experiences on the day of the earthquake, how their work has changed since the disaster, and their current research goals and future outlook.

The results suggest that the disaster has significantly influenced the research themes and directions of many respondents. Participation in the survey was voluntary, and it was conducted in October 2025.

Greeting

15 years after the earthquake: We are addressing new challenges

For the past 15 years, those of us who have lived in the areas affected by the Great East Japan Earthquake have witnessed their transformation while supporting the recovery efforts. The physical infrastructure, including housing and seawalls, has been largely rebuilt, and at first glance, the disaster-stricken areas may appear to have completed their recovery. However, issues such as vacant lots and empty houses, along with other challenges stemming from population decline and aging, are becoming increasingly significant. Challenges requiring close attention remain, including community maintenance and physical and mental health. Fukushima Prefecture faces distinct recovery challenges compared with Iwate and Miyagi Prefectures. IRIDeS will continue to dedicate itself to Tohoku recovery while contributing to disaster risk reduction (DRR) nationwide and globally.

To prepare for the next disaster, we must recognize that current science cannot predict earthquakes with specific dates, locations, or magnitudes. When any official advisory, warning, or information is issued, including the Nankai Trough Earthquake Extra Information, even if the actual probability of occurrence is not high, we should take appropriate action to prepare for the worst-case scenario. Preparing each time may seem burdensome and costly. However, the cost of these preparations will be much lower than the total damage incurred if a disaster strikes while we are unprepared.

To advance disaster science, IRIDeS experts are dedicating their full efforts, yet such uncertainty inevitably accompanies disaster science. Thus, communication between experts and citizens is indispensable for DRR. Furthermore, inclusive DRR that encompasses people with special needs and international residents is becoming increasingly important. We hope that the IRIDeS Newsletter will serve as a bridge connecting IRIDeS experts with all of you.

KURIYAMA Shinichi
Director
IRIDeS, Tohoku University

Survey Questions

01 Where were you, what were you doing, and what were your thoughts on the day of the Great East Japan Earthquake?
02 How has your research or your research field changed before and after the disaster? (Or, how do you think the Great East Japan Earthquake has influenced your research field?)
03 Please share your current research goals, progress, and future outlook.

Risk Evaluation and Disaster Mitigation Research Division

● Subduction Earthquake Lab

KIDO Motoyuki

Professor

01 When the main shock struck, I was in the university warehouse preparing for an emergency research cruise on the foreshock that had occurred two days prior. At first, I thought it was an aftershock, but when the shaking lasted about 3 minutes, I realized an extraordinary earthquake had occurred. I was stunned by the damage reports pouring in by the minute and felt anxious because I could not reach my family, yet I thought I had no choice but to remain calm and do what a researcher should do. We were originally planning to depart from Shiogama port the next day. While I thought that, had the main shock occurred just one day later, we might have been caught in the tsunami at the port, conflicting thoughts also arose: if we had departed before the main shock, we might have been able to conduct crucial observations immediately after the earthquake. In reality, securing a vessel and unfavorable sea conditions meant that our first observations weren't possible until a whole month after the earthquake.

02 My stand point as a scientist studying earthquakes remains unchanged. However, the occurrence of a magnitude-9-class earthquake in a sea with a dense observation network like Japan's is highly exceptional. I have come to realize that observing as many post-earthquake 10-year trends as possible with high precision would constitute an irreplaceable asset for global earthquake research, and I have therefore focused more intensely on observation since then. In fact, the earthquake served as a catalyst for establishing an extensive seafloor observation network, yielding numerous significant results.

03 Advances in observation technology have enabled the collection of vast amounts of data, leading to significant progress in our understanding of earthquakes, particularly after they occur. However, accurately predicting future earthquake occurrences remains impossible, necessitating the reliance on statistical estimates based on historical earthquake records. On the other hand immediate prediction of shaking and tsunamis after an earthquake strikes, as well as the issuance of early warnings, can benefit proportionally from improvements in observation technology. To enhance evacuation awareness when warnings are issued, we aim to support observations that lead to more accurate, real-time predictions.

● Inland Earthquake and Volcano Lab

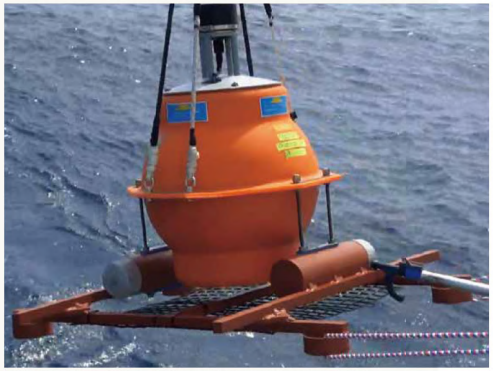
TODA Shinji

Professor

01 I was in Christchurch, New Zealand, to survey the Christchurch earthquake that had occurred the previous month, in February. While there, I learned about the M7.3 earthquake on March 9, but I never imagined an M9 earthquake would strike just two days later. That day, I wrapped up my survey early and returned to the motel. Because my room likely did not have cable television, I watched tsunami footage on CNN and other channels at the owner's home. The on-screen caption read "M8.9". I optimistically assumed it was a typo made by an amateur in program production. However, seeing the tsunami reach as far as the Eastern Motorway left me stunned. Being in New Zealand, it felt like news from some other Asian country, and I remember finding it hard to believe that it was happening in my home country, Japan.

02 While there were no significant changes fundamentally, the Great East Japan Earthquake prompted me to seriously address the impact of trench-type mega-earthquakes on inland seismic activity. Subsequently, I also became interested in the seismic cycle of the Nankai Trough mega-earthquake and seismic activity in the southwest Japanese inland region. Furthermore, after being appointed to the IRIDeS a year and a half post- earthquake, I also began researching long-term crustal deformation related to trench-type earthquakes.

03 Whether research results directly contribute to DRR is of secondary importance to me. My primary goal is to uncover the mechanisms underlying earthquake occurrence. While social contributions and applied DRR studies are undoubtedly critical, refining my research within my own interests and areas of expertise, geology and geophysics, must come first. Without that foundation, the work won't endure. In that sense, I will continue exploring fundamental questions: how active faults generate inland crustal earthquakes, what the long-term behavior of active faults entails, and how seismic activity chains together.



Deploying equipment for observing crustal movements onto the seafloor, June 2025

Keep Exploring Questions

Advancing Interdisciplinary Research

● Inland Earthquake and Volcano Lab

FUKUSHIMA Yo

Associate Professor

01 I was inside the Disaster Prevention Research Institute (DPRI) building at Kyoto University, where I worked. A very slow but prolonged shaking continued for what felt like a long time. As I inferred that a massive earthquake had occurred at a distant location, I immediately went to a room with a television to gather information from the news. I attempted to contact my grandmother and sister's family living in Sendai, and spoke with various people, including colleagues at DPRI and my parents.

02 Between 2011 and 2013, I conducted research using triangulation and trilateration data accumulated since the Meiji era, together with more recent GPS data. This research aimed to evaluate deformation rates and temporal changes in plate coupling along the plate boundary of northeastern Japan over the past 120 years, as well as to assess the potential for future large-scale aftershocks along the plate boundary off the Pacific coast of Tohoku. While it is difficult to quantify the exact influence of the Great East Japan Earthquake on my research, my focus has gradually shifted since joining IRIDeS in September 2016. While maintaining my longstanding research themes, I have placed increasing emphasis on research that contributes to building a disaster-resilient society.

03 I aim to redefine research on disasters and DRR as a field oriented toward the realization of individual well-being. My goal is to contribute to the development of an academic framework for this redefinition through cumulative research, and to enhance well-being through its social implementation. In particular, I seek to realize a society where DRR is firmly embedded, mainstreamed, institutionally developed, and supported by a cultivated DRR culture across all sectors.

● Inland Earthquake and Volcano Lab

ISHIZAWA Takashi

Assistant Professor

01 I was an undergraduate student at Shinshu University and was in Matsumoto City, Nagano Prefecture, where the campus is located. I had been visiting my hometown Sendai until two days before the earthquake and thus was deeply shocked by the disaster that struck and that I had just been there the day before yesterday. Having experienced the 2005 Miyagi Offshore Earthquake and the 2008 Iwate-Miyagi Inland Earthquake within the prefecture, I was aware that a massive earthquake could strike there. However, when I saw footage of the 2011 tsunami surging far inland, I was stunned, thinking, "Could something like this really happen?" I remember feeling immense anxiety as news reports continuously updated the extent of the damage from the tsunami and earthquake, while I struggled to contact family and relatives living in Sendai.

02 Following the disaster, significant attention was drawn to the fact that approximately 1,000 years ago, the Jōgan earthquake and tsunami occurred with a magnitude nearly the same as that of the 2011 earthquake and tsunami, and that scientists had already uncovered evidence of this event in tsunami deposits—the geological traces of tsunamis—prior to the 2011 disaster. As a geology major, I became interested in tsunami deposits and entered Tohoku University as a master's student to pursue research on them. I continue to study tsunami deposits, particularly in the Sendai Plain and Sanriku Coast—my hometown region—to this day. Recently, I have also participated in an international project investigating traces of mega earthquakes preserved in the hadal zone of the Japan Trench. This is broadening my research scope toward elucidating the history of mega earthquakes and tsunamis by integrating land and marine records.

03 Following the earthquake, vigorous surveys of tsunami deposits have been conducted across Japan, steadily accumulating tsunami deposit data. I have also acquired extensive data from the Sendai Plain to the Sanriku Coast, advancing the clarification and publication of ancient tsunami histories. However, the information gleaned from tsunami deposits inherently carries uncertainty. Therefore, the extent to which the original tsunami characteristics can be reconstructed from these deposits, and the degree to which this information can contribute to DRR, remains a work in progress. Therefore it is necessary to continue advancing interdisciplinary research through collaboration with related fields.

● Inland Earthquake and Volcano Lab

TAKAHASHI Takayuki

Assistant Professor

01 I was an undergraduate student at a university and was attending a student club activity on the campus outside Tokyo's 23 wards. We were in a slightly older student club building when we felt a prolonged, intense shaking unlike any earthquake we had experienced before. When the earthquake occurred, dozens of students were inside the building, including members of other clubs. We felt nervous, so our club decided, based on a senior member's judgment, that we should all go home for the time being. After returning to my home near campus and turning on the TV, I was shocked to see live footage on NHK of a black tsunami engulfing the Sendai Plain. Shortly thereafter, reports began to emerge about the dire situation at the nuclear power plant, making me consider deeply about what information could be trusted. Until then, my student life had been optimistic, focused only on immediate concerns; I had been content with the information and things provided to me. But this event prompted me to reflect on what mindset I should have and how I should live my life. I remember my inner self had been completely changed by the disaster.

02 I began serious research activities and conference participation immediately after the earthquake. I remember that every conference at the time featured presentations related solely to the disaster. While I assume that some research findings were revealed for the first time because of the disaster, I had previously vaguely aspired to study pure geomorphology and physical geography and felt that research fields "unrelated to disasters" were being pushed to the margins of academia. I also suspect that, personally, I did not want to be seen as working in a "trendy" field. In graduate school, I deliberately chose a research topic on river morphology that had no direct connection to the 3.11 disaster. Fifteen years have passed since then, and while I now find myself working on research related to hazards, I believe that choosing an unrelated topic back then contributed to broadening my perspective and fostering a habit of thinking about the essence of phenomena.

03 I aim to reveal how sediment transport in rivers from mountains to the sea has changed and how various landforms have been created as seamlessly as possible across various timescales from tens of thousands of years ago to the present. The concept of "disaster" emerged only in recent millennia along with human intervention in nature. Within this framework, I want to reexamine the question "What is a disaster?" from a geological timescale perspective. To achieve this, it is necessary to conduct research not only within geomorphology, geography, and geology, but also in collaboration with civil engineering, archaeology, and history.

● Inland Earthquake and Volcano Lab

NORIMATSU Kimie

Specially Appointed Research Fellow

01 I was a graduate student in Kyoto. The swaying felt woozy and nauseating—at first, I couldn't tell if I was shaking or the ground was. Many others seemed to feel the same. After a while, everyone realized it was abnormal. We gathered in the professor's room to watch the TV, speechless at the scenes unfolding. It was undeniably real, yet the atmosphere felt like our emotions couldn't keep up. After that, everyone—professors, technical staff, and students alike—took turns gathering media information and preparing for field surveys. I was mainly responsible for collecting media information during the late-night hours.

02 During my master's and doctoral studies, I researched the mechanisms of earthquake triggering on the subduction zone like the "earthquake doublet". Currently, I am researching prediction models for active fault earthquakes. Regarding the 2011 earthquake, I was interested in why it couldn't be predicted and what differed from the models and existing knowledge that had been anticipated beforehand. While I believe the fundamental challenges are similar for active fault earthquakes, I also consider them to involve distinct complexities, as they lead to related disasters such as strong motion damage and landslides.

Takayuki Takahashi explains the landform development of Sendai at the Katahira Matsuri (Festival), a public event run by Tohoku University, October 2025

03 I aim to reduce underestimation in predictions by refining strong motion prediction models. Furthermore, by enhancing prediction accuracy, I seek to contribute to DRR efforts, such as damage predictions. One necessary step toward this is addressing the challenge of how to consider the uncertainty and diversity inherent in predictions. While still modest, we are beginning to see results in this area. While we still need to accumulate many more cases and there are numerous considerations ahead, I believe that by updating current standard methods and aiming for the societal implementation of new approaches, future earthquake DRR can advance beyond that of today. I hope this will lead to disaster mitigation and, in turn, reduce the number of people suffering.

HARA Yuki

IRIDeS Research Associate until October 2025

01 I was getting ready to go home with my classmates in a classroom at a junior high school in Tokyo. I sensed that this earthquake was different from any I had experienced before, and everyone immediately took shelter under desks. Looking back, we acted naturally, which made me realize the importance of the regular evacuation drills we had had. We later gathered in the schoolyard. Aftershocks continued, causing power lines to sway intensely. I remember feeling anxious because many students were crying. Luckily, my parents were home on a day off, so I was able to check on my family's situation right away. I remember seeing footage of the tsunami on TV, but I don't think I fully understood what was happening at the time.

02 While my primary focus is on inland earthquakes, I also examine how to evaluate their maximum magnitude to avoid unforeseen scenarios. In particular, for critical infrastructures, maximum scale assumptions serve as an evaluation criterion for seismic and DRR countermeasures. Thus, various evaluation methods, such as paleoseismic events, fault geometry, and physics-based simulations, are being considered. Furthermore, the occurrence of induced inland earthquakes—such as the April 2011 Fukushima earthquake, considered to have been triggered by the 2011 Tohoku earthquake, advance our understanding of fault interaction and correlation between paleoseismic events.

03 I am exploring methods to assess how large an earthquake could occur and the frequency (probability) with which it occurs. This will provide fundamental information on the source fault used for strong ground motion prediction, surface deformation modeling, and economic damage estimation, contributing to more sophisticated forecasting and diversity (uncertainty) assessment, thereby advancing DRR and appropriate preparation. Furthermore, it is particularly difficult to unify intuitive perceptions of numerical results in discussions of probability. I also want to consider how science communication should be conducted among the public, government agencies, and researchers.

Contributing to DRR Through Science

Toward "Usable Technology"

● Earthquake Engineering Lab

OHNO Susumu

Associate Professor

01 I was in my office on the 11th floor of the Engineering Laboratory Complex Building. When the earthquake struck, I just clung to my desk. At the time, there were concerns about a recurrence of the Miyagi Offshore Earthquake, and at first, I remember thinking that it had come, but then realizing it was lasting far too long for that to be true.

02 The importance of continuous seismic monitoring of ground and structures has long been recognized in earthquake engineering, and the Great East Japan Earthquake reaffirmed the necessity. A key change is the increased emphasis on monitoring for immediate response, including real-time data utilization, rather than on post-event verification.

03 Since I don't have much time left before retirement, I want to compile and pass on the data I have accumulated thus far so that it will be useful for future generations.

● Earthquake Engineering Lab

ENOKIDA Ryuta

Associate Professor

01 I was in my second year of a doctoral course at the Disaster Prevention Research Institute at Kyoto University when the Great East Japan Earthquake (GEJE) occurred. While working at my desk, I felt an unusually slow, swaying vibration. Glancing at a nearby potted plant, I saw it swaying slowly, too, and realized it was long-period seismic motion. I thought that a major earthquake must have occurred somewhere. Watching the news on TV, I learned that a massive earthquake had struck the Tohoku region. After a while, images of the tsunami and nuclear accident began to emerge, alongside reports of power and food shortages. As a person involved in earthquake engineering research, I remember feeling that it was an unprecedented disaster and being overwhelmed by a profound sense of helplessness.

02 Before the 2011 GEJE, I conducted my research primarily in pursuit of my doctoral degree. I believed that it would have value as research and that this would suffice. However, after the disaster, I became more focused on the necessity of usable technology, and on examining its practicality for implementation, even when its usability is uncertain.

03 One of our current research projects involves developing a free-standing structure that cost-effectively provides seismic isolation effects. We are conducting this research in collaboration with private companies, and experiments thus far have demonstrated the structure's high performance and effectiveness. Over the next 10 to 15 years, our goal is to bring this structure to the stage of practical application both domestically and internationally. Additionally, we are developing nonlinear control technology related to vibration control and promoting its applications.

Ryuta Enokida (center) conducting experiments with students on a free-standing structure, February 2025

● Computational Safety Engineering Lab

MORIGUCHI Shuji

Professor

01 I was at Gifu University. Since it was far from the epicenter, only the long-period components propagated, and I remember feeling a slow shaking motion. Immediately after the earthquake, I couldn't grasp the situation clearly, but once television began showing the tsunami run-up, I understood that something terrible was happening. I also recall feeling that accurate information about the situation of the affected area was slow to emerge.

02 Since damage to houses due to liquefaction and collapses at developed residential sites due to the seismic force were particularly prevalent, research on their preliminary assessments and technologies for their countermeasures have developed in my field of expertise. Technologies and legal frameworks for utilizing tsunami deposits and debris as construction materials have also advanced. During the Great East Japan Earthquake, I organized a team for the first time and led a field survey. After that, I started working at IRIDeS and have conducted numerous field surveys since. Looking back, the 2011 disaster became the catalyst that positioned disaster research as a crucial component within my research. Also, because the affected areas were extremely widespread, I began to consider what is necessary to minimize the damage causec by a potential disaster occurring across such a large area.

03 I aim to evaluate slope disasters caused by heavy rain and earthquakes through mechanics-based simulations, transforming this into actionable information for actual disaster mitigation. Currently, simulation methodologies are relatively well-developed, but the most significant bottleneck is the lack of input data, such as geological information. We have long used the excuse that "We can't make something out of nothing," but now we need to push beyond that. We must explore how to create what is missing and what we can achieve even with limited data. Ultimately, our goal is to develop tools that can produce information capable of saving lives.

Through Both Academic Research and Practical Application

● Computational Safety Engineering Lab

NOMURA Reika

Assistant Professor

01 It was a few days after I had received my acceptance notice from Tohoku University after completion of its entrance exam. That afternoon, during spring break, I was relaxing at home and had planned to head to Sendai the next day, March 12, to look for lodging starting that spring, when I felt a long tremor. I turned on the TV to find out the seismic intensity and epicenter information. I remember seeing live helicopter footage showing the tsunami rapidly approaching the coastline and Sendai Airport, where I was supposed to go, already flooded. I felt a sense of detachment, as if it were not real, as well as my body shaking and goosebumps rising. My cell phone stopped going through; the reported numbers of victims and missing persons gradually grew larger. When I opened Twitter, for which I had just created my account, I saw a tweet, "That was a big one" and then it suddenly stopped updating. I felt something terrible had happened; it was no longer just about my university entrance.

02 I work on research advancement whilst balancing a practical perspective and the attitudes that contribute to DRR, and a mindset that pursues academic novelty to generate breakthroughs. During my doctoral studies, my experience volunteering in coastal areas led me to wrestle with whether I should prioritize "academic interest and novelty" or the practical, applied nature of engineering (civil engineering) and its pursuit of "serving people (being practical and hands-on)." Once, I even lost confidence in building a career in academia, thinking that joining a company might be the only path to pursue engineering and practical impacts.

03 There is a concept that disaster risk is determined by multiplying "hazard" and "vulnerability." My field of computational mechanics and applied mechanics can contribute to both "developing mathematical models that enable a better understanding of phenomena (hazard understanding)" and "numerical simulation-based prediction (minimizing vulnerability)," bridging the two, which is a great advantage. My current goal is to acquire various computational techniques and knowledge of mechanics to understand a wide range of natural hazards and collaborate with people from different fields, rather than focusing on a single hazard. Recently, in addition to my ongoing research on tsunamis, I have expanded my focus to include landslides, with input from an expert in applied mathematics from overseas.

● Tsunami Engineering Lab

SUGAWARA Daisuke

Associate Professor

01 I was working at the Tsunami Engineering Lab on the 11th floor of the Engineering Laboratory Complex Building. Based on the shaking pattern and the real-time tsunami observations, I assumed that it was the magnitude 8-class giant earthquake I had been working on. I was surprised to learn later that its magnitude was 9. That day, all I could do was pray that the people living in coastal areas including the ones who had helped us with field work would evacuate safely.

02 Before the disaster, my decade-long research goal had been "to reconstruct a real picture of the AD 869 Jōgan earthquake from tsunami deposits and contribute to future disaster mitigation." Since the disaster occurred before scientific findings could be applied to practices, I decided to pursue initiatives that would promote the utilization of tsunami deposits. Among these, sophistication of numerical simulations of tsunami deposits has been a particular focus of my research. Over the past 15 years, increasing numbers of researchers, both in Japan and overseas, have been working on the theme, leading to its development.

03 I aim to contribute to society by providing quantitative information from a geological perspective, thereby preventing and mitigating so-called "unexpected" events caused by infrequent large-scale hazards. It is also essential how research findings are communicated and reflected in policies and society, therefore I also want to consider such challenges in science communication.

Daisuke Sugawara (center) surveys tsunami deposits on Sabusawa Island, Shiogama City, Miyagi, August 2025

International Expansion of Knowledge and Technology

● Tsunami Engineering Lab

SUPPASRI Anawat

Associate Professor

01 While working as a research fellow in the Engineering Laboratory Complex Building, an Earthquake Early Warning sounded. Within seconds, the shaking became extremely violent, causing bookshelves to topple over and slightly injuring my finger. After the shaking subsided, we all evacuated to the parking lot. We watched the tsunami footage from Arahama on the car's navigation system, and I recalled the 2004 Indian Ocean tsunami. After that, we dispersed to go home. I worried about the safety of the other Thai students, but since my cell phone signal wasn't working, I spent the night alone with people I didn't know at a community center. The next day, we gathered at a Thai restaurant and, working in coordination with the Royal Thai Embassy, we were able to support those who wished to return to Thailand temporarily.

02 While my research theme, tsunami risk assessment, remains unchanged, the focus shifted from Thailand (my home country) before the disaster to include Japan immediately after the disaster. Japan possesses abundant data, enabling us to conduct diverse research beyond tsunami studies, foster domestic and international collaboration, and contribute to society—all more extensively than before the disaster. Furthermore, I have conductec interdisciplinary research that bridges the arts and sciences, not just from an engineering perspective. For the sake of those affected by the disaster, as well as for those who may be affected in the future, both in Japan and abroad, I would like to contribute in various ways—not only through research but by cooperating as much as possible.

03 Fifteen years after the earthquake, I became the leader of several research projects and assumed the role of nurturing the next generation of researchers. My research findings have been applied both domestically and internationally and have received recognition. However, each disaster, I believe, always provides new insights and issues to be addressed, and should be taken into account to advance tsunami disaster mitigation research. While maintaining our world-leading tsunami engineering research, we aim for zero casualties from giant tsunamis and a resilient society.

● Disaster Geo-informatics Lab

KOSHIMURA Shunichi

Professor

01 I was on a Shinkansen just about to depart from Tokyo Station when the earthquake occurred. I immediately rented a car at the Yaesu exit of the station and drove toward Sendai, eventually arriving the next morning. Along the way I encountered many people who were struggling to return home, relying solely on radio broadcasts for information amid road closures and power outages. It was not until much later that I learned of the safety of my family, colleagues, and close friends in Sendai, and until then I had remained deeply anxious. At the same time, part of me was calmly attempting to grasp and understand the evolving tsunami situation. During the 16-hour journey, with only fragmented information available, I repeatedly reflected on my past research, my responsibilities as a researcher, my future direction, and what actions I should take.

02 Regarding tsunami research, my focus shifted after the disaster from theoretical studies on the physics of tsunamis to more direct and practical research aimed at social implementation. Our inability to accurately understand the situation immediately after the disaster became a central issue for me, prompting a transition toward real-time disaster forecast, wide-area damage recognition by remote sensing, and spatial information analysis (geo-informatics). At the time of the establishment of IRIDeS, I named this research field (also our lab name) "Remote Sensing and Geo-informatics for Disaster Management." Subsequently, many colleagues joined, the research scope expanded, and the group evolved into the present Disaster Geo-informatics Lab.

03 Throughout my career as a researcher, I aspire to contribute directly to "Disaster Resilience", reducing losses and recovering quickly from disaster. The 2011 Tohoku tsunami disaster strengthened my belief that the greatest significance of disaster research lies in its practical application in our society. I therefore decided not only to conduct research and development but also to pursue social implementation, which led to the launch of "RTi-cast," a university-based startup offering real-time, impact-based tsunami forecasts. Through the dissemination of our research outcomes as services, I have found satisfaction in strengthening our connection with society and in receiving positive feedback from users.

● Disaster Geo-informatics Lab

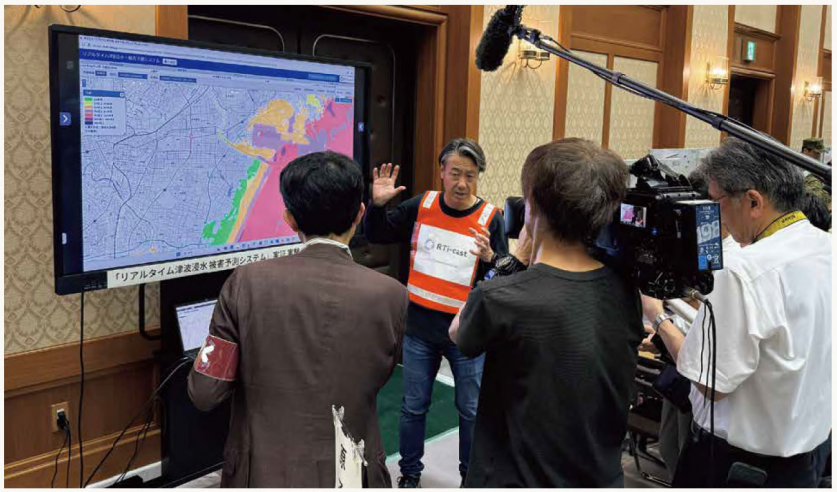
MAS Erick

Associate Professor

01 On March 11, 2011, I was on a field trip to the Great Buddha of Kamakura with colleagues from Japan, Peru, and Chile. I had checked out of my hotel that morning and planned to return to Sendai in the evening, but the earthquake left me stranded. While my group returned to their hotel, I spent the night at the Washington Hotel lobby near Akihabara. The following day, I met some friends in Ueno and later traveled to Tsukuba, where I stayed at a friend's house for about ten days before finally returning to Sendai. Since I was unharmed, my main concern was getting back to Sendai to assist with tsunami research and response efforts.

02 At the time, I was pursuing my PhD, focusing on evacuation behavior in areas affected by the tsunami. The disaster strengthened my motivation to deepen this research and improve evacuation practices. Beyond the engineering aspects, I became increasingly interested in understanding why people chose not to evacuate or evacuated the way they did, despite lessons from previous events. This experience reinforced my sense of responsibility to contribute to reducing future losses through better understanding and preparedness.

03 My current research continues to focus on tsunami evacuation—both for planning and for understanding human behavior—to develop practical tools that enhance response effectiveness. My goal is to support local governments with easy-to-use simulation and analysis tools that help them identify potential bottlenecks and improve community preparedness. I pursue this through academic research, collaboration with industry, and partnerships with organizations such as RTi-cast and Nippon Koei. Looking ahead, I aim to extend these efforts internationally with the support of IOC-UNESCO, promoting broader knowledge exchange and capacity-building beyond Japan.



Shunichi Koshimura introduces a real-time tsunami inundation damage forecast system at a Miyagi Prefecture training session, receiving media interviews, June 2025

● Disaster Geo-informatics Lab

ADRIANO Bruno

Associate Professor

01 A few days before March 11, I was attending an international conference in Tokyo from March 8 to 9. Afterward, I returned to my home country, Peru, and upon arrival, I learned of the Great East Japan Earthquake. Several people along the way from the airport to my home asked about the situation in Japan; however, I could not answer them because the earthquake and tsunami occurred while I was traveling. I quickly checked the news to find out about the situation and tried to reach my friends and colleagues in Japan. I also found out that the tsunami reached the coast of Peru; fortunately, it did not cause significant damage there.

02 I was already involved in tsunami research before the 2011 event, focusing on tsunami modeling. I also gained firsthand experience observing tsunami damage in my country during the 2007 Peru tsunami. However, after watching news coverage of the destruction caused by the Tohoku event, I realized I needed to broaden my research to quickly understand damage on a larger scale remotely, since, in the 2011 event, I couldn't physically support field survey efforts as I did in my earlier experiences.

03 As a researcher, my main goal is to enable rapid assessment of disaster impacts immediately after an event, providing vital insights that support timely emergency response and recovery efforts—while also identifying and analyzing the current vulnerabilities of urban environments before a catastrophe occurs. This understanding helps improve preparedness, guide urban planning, and inform risk reduction strategies. Ultimately, my work aims to reduce societal exposure to hazards, build resilience, and promote safer, more sustainable communities that can adapt to future disasters.

● Disaster Robotics Lab

TADOKORO Satoshi

Specially Appointed Professor (IRIDeS concurrent)

01 I was conducting field tests of disaster response robots at Disaster City, Texas, USA. While rushing back to Japan, footage of the tsunami surging in was being broadcast at the airport, making me very anxious. I was able to get in touch with my family and felt relieved. At the same time, I assumed that many people had been affected and there were likely numerous collapsed buildings. I considered how the robots under development could be used. I also emailed my contacts in the U.S. rescue community, asking them to respond to the emergency.

02 Although responding to the nuclear accident was outside my area of expertise, I felt compelled to launch an accident response project out of a sense of crisis that, if I did not act, Sendai might become a death zone. Fortunately, after overcoming various obstacles, I could be of some help. This event served as a significant catalyst for raising awareness of these types of robots and related technologies, thereby enhancing resilience.

03 Drones, robots, Internet of Things (IoT), and AI technologies must be deployed on-site to be effective during emergencies. Before the disaster, my goal was to ensure these tools were used effectively. Since the disaster, I hope they will be deployed on-site and help enhance resilience.

For Implementation in the Field

Survey Questions

01 Where were you, what were you doing, and what were your thoughts on the day of the Great East Japan Earthquake?

02 How has your research or your research field changed before and after the disaster? (Or, how do you think the Great East Japan Earthquake has influenced your research field?)

03 Please share your current research goals, progress, and future outlook.

Disaster Humanities and Social Science Division

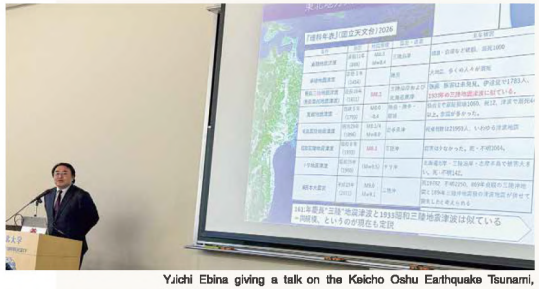
● Disaster Culture and Archive Studies

EBINA Yuichi

Associate Professor

01 I was in a research building on the Kawauchi North Campus as an educational and research support staff member. As the shaking intensified, books fell from shelves and a laser printer toppled over. After the shaking subsided, I went outside while calling out to those photographing historical documents in another room and to the international students in the hallway to evacuate. I was checking the news on my cell phone. Its primary focus was Tokyo, and I remember being unsure at first whether it was an earthquake in Tohoku. With electricity and water shut off at home, I packed daily necessities into my car and spent the night in the university parking lot. Late at night, thinking about my family in my hometown and acquaintances in the disaster-stricken areas, I recalled the stories of historical tsunamis I had heard during previous archival research in Ofunato City and Iwanuma City.

02 Before the disaster, I mainly participated in local historical preservation activities, where I encountered historical documents related to disasters such as earthquakes and tsunamis and heard oral lore about them. However, I viewed disaster research as a scientific field and was not particularly enthusiastic about it. Having experienced the earthquake disaster, I deeply regret not having sincerely engaged with the experiences and lessons of our predecessors from historical records and have since begun reexamining historical records concerning past earthquakes, starting with the 1611 Keicho Oshu Earthquake and Tsunami. Furthermore, given the limited involvement of historians in disaster research until then, I am undertaking research as a historian engaged in disaster studies. By actively collaborating with scientists, I am working to establish an interdisciplinary approach to disaster research that bridges the humanities and the sciences.



Yuichi Ebina giving a talk on the Keicho Oshu Earthquake Tsunami, December 2025

03 Until now, historians' participation in disaster research has been limited. Therefore, historical disaster research contains no small number of shortcomings in its analysis of historical documents. Meanwhile, collaboration with scientists enables us to uncover the history of disasters that cannot be revealed solely through historical records. My current primary goal is to pursue the potential for new interdisciplinary research that transcends conventional approaches by continuing my work in disaster science, integrating the humanities and sciences.

● Disaster Culture and Archive Studies

MORRIS John

Visiting Professor

01 I was in a municipal facility in Tagajo City, deciphering local historical documents entrusted to me by the City's Cultural Properties Division. After the earthquake occurred, I was told to evacuate the building and went back to my apartment. The neighborhood association instructed residents to evacuate to the neighbourhood park (the designated disaster assembly point). Soon after, a tsunami evacuation order was issued by the city. I carried a disabled person on my back and evacuated with other residents to the nearest high ground. The tsunami did not reach where we lived, and after we returned home in the evening, there was a group of tsunami evacuees who could not get into the nearest public shelter. I took seven of them into my home. Together we spent an anxious night with no other source of information than a little battery-powered radio. The next morning, my guests moved to the city's evacuation center. I began participating in my local neighborhood association's survival activities, such as gathering fuel for the soup kitchen and identifying residents in need of assistance.

02 My academic specialty is early modern Japanese history. Following the 2003 Northern Miyagi Earthquakes, I participated in founding the Miyagi Historical Materials Preservation Network to protect historical materials at risk after disasters. Since then, I repeatedly participated in historical materials rescue activities after the subsequent earthquakes recurring within the prefecture. However, after the 3.11 disaster, although the damage I myself experienced was minor, I found myself to be a resident of the disaster-affected area. Through assisting international experts who entered the disaster-stricken areas to provide psychosocial support, I earned the cutting-edge theories and practices at the time. As a result, I learned the need to apply both the theory and practice of psychosocial support not only to the document rescue efforts I was already involved in, but also to the support work for foreign nationals in which I became involved as a direct stakeholder. Since the disaster, I have recognized the broader social significance of my work within the context of people-centered theories and practices in disaster risk reduction.

03 In people-centered disaster prevention, I strongly feel the need to look beyond the perspectives of any single academic field and to pay to attention to broader factors, particularly social relationships.

Interdisciplinary Research for New Insights

Volunteers engaged in historical materials preservation activities, May 2024

● Preservation of Historical and Cultural Heritage Lab

SATO Daisuke

Associate Professor

01 Around 2:40 PM. On my way from the Northeast Asian Research Center to Daruma Pharmacy in Kawauchi to buy hay fever medicine. Although I was walking, I felt like I was skipping, thought it was strange, but it was an earthquake. I remember a roaring sound, and it seemed to quiet down once, but then roared again, this time more intensely than before. I froze in place, clinging to a nearby tree, and saw the high-rise apartment buildings in Kawauchi swaying violently. "If these collapse, I'll die," I thought, but my body did not move. The building did not collapse. When the shaking finally subsided, I returned to the center building, and someone called out, "It's dangerous!" I ignored it, went inside, and found it was dusty somehow. Then I noticed cracks in the walls and hurriedly went back outside. The atmosphere at the Kawauchi North Campus was rowdy. Cars such as taxis that had happened to be there had their car radios blaring, so the news was clearly audible. About an hour later, Professor Arata Hirakawa instructed the assistant professors and the historical document photography part-timers to go home for the time being, so I walked back to my home in Mukaiyama 1-chome. I had a digital camera for photographing historical documents with me (someone had handed it to me, but I do not remember who), and I took pictures along the way back. Traffic congested as snow began to fall. Returning to Mukaiyama 1-chome via Kyogamine Park, I saw that the glass at a nearby chiropractic clinic was severely damaged.

When I headed toward Lawson convenience store, I saw that a landslide had buried the Shishiochi Inn, and Shishiochi Pass was closed to traffic. It was the next day that I noticed a streetlight at Hyōjo Riverbank Bridge had fallen. I had planned to go shopping after finishing work that day, so when I got home, there was no food at all. My cell phone was almost out of battery, but I could not charge it. To protect archival books, I relied mainly on electric heaters, but they failed during the power outage. Since aftershocks continued, I spent that night huddled under a blanket under a desk. It was just so cold and scary. I wanted to know what was happening, so I connected to the One Seg broadcast using what little battery I had left and saw Professor Fumihiko Imamura on "Hodo Station." Ah, someone I know is on TV, I thought, feeling a little relieved.

02 1) Around May 2011, while repeatedly reporting on the fieldwork of historical document rescue, I presented at a symposium at Kobe University in January 2012. This led to a connection with clinical psychologist Dr. Machiko Kamiyama, which continues to this day. Through research positioning the rescue of historical documents as a collaborative effort with clinical psychology for interpersonal and community support, I gained perspective on disaster research and disaster support.

2) Regarding how Japanese historical studies have changed: Individual research projects and studies that consciously examine unique natural phenomena as one aspect of the environment surrounding human society, along with their impact on society, are beginning to emerge, though this may be a temporary trend.

3) As someone who became an "expert," by chance, I am interested not only in disaster relief but fundamentally in discovering historical materials. However, based on the sparse attendance I've seen at sessions related to historical materials rescue at relevant academic conferences, I am keenly aware that digging up new materials while engaging with local communities and disasters, and forging connections through them, remains a minor issue and concern.

03 1) The movement among specialists to salvage historical materials from disasters in real society and to connect with local communities through this work appears likely to diminish in the near future. This is due to the aging and generational transition of researchers currently engaged in this field, including myself, the expansion of digital research infrastructure, and the contraction of the public sector involved in preserving Japan's cultural properties and archival materials. That said, numerous historical materials lie dormant in local communities, and I worry about their fate.

2) I have been involved with the areas affected by the Great East Japan Earthquake for over a quarter-century, spanning the disaster itself. This forms the foundation of who I am as a researcher. While "applying lessons learned to the next disaster" is essential, I also believe it is vital to maintain ongoing engagement with the affected regions and contribute based on my expertise.

3) As a researcher who rescued these historical materials 15 years ago, I bear the responsibility of securing a permanent home for them. I want to make progress on this while I still have the physical stamina to pursue it actively.

4) Given the circumstances described in Question 02, I hope that by preserving my own records, the historical document rescue efforts in the areas affected by the Great East Japan Earthquake will not be forgotten, leaving clues for future generations to understand the existence of this activity and to learn about the earthquake through it.

Supporting People and Communities

Harnessing the Power of People and Regions

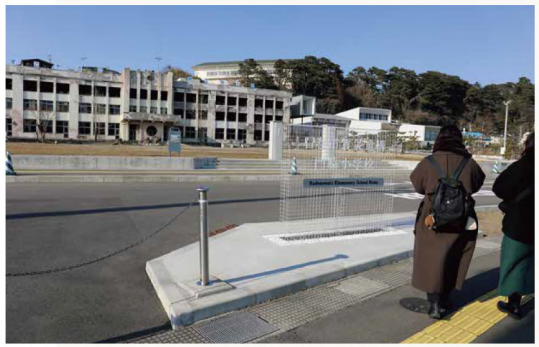
● Cognitive Sciences Lab

SUGIURA Motoaki

Professor (Cross-Appointed)

01 I was working as usual at my workplace (SA Building 3F, Institute of Development, Aging and Cancer), facing my computer. A massive vertical jolt hit, making me think, "Whoa!" Then a considerable horizontal sway came, and I thought, "The off Miyagi earthquake has come!" while watching books fall from the bookshelf. Looking back now, it was fortunate that the bookshelf was fixed to the wall. I remember cheerfully chatting with my colleagues in the room, saying, "It sure is long, isn't it?" There probably was a power outage. Finally, the shaking subsided, and the lab members formed a crowd in the plaza in front of the Center for Basic Aging Research. We conducted a roll call but could not confirm the presence of some people. I think we were saying things like, "Were they conducting experiments somewhere?" I was relieved to confirm that an MRI experiment had not been conducted at the time of the quake. I remember seeing someone watching a video on their phone, and I heard bits about the tsunami. I was not really paying attention because I was preoccupied with figuring out how to check on my family back home. After that, I drove home in my car. On the way, I remember seeing gas station attendants voluntarily directing traffic on the North Ring Road, where the traffic lights had stopped, and a massive traffic jam had formed. I was so touched that tears came to my eyes.

02 Before the 2011 earthquake, I had been invited by Professors Arata Hirakawa and Fumihiko Imamura to join a multidisciplinary disaster research group, and I contemplated how my expertise in cognitive neuroscience could contribute to disaster research for about one to two years. At the time, I may have thought that my brain research could contribute to understanding how people perceive disaster information. My perspective changed after the disaster. While making repeated trips to secure food and supplies for my family, conserving car fuel as much as possible, I truly felt that it is during disasters that a person's "power to live" is tested. I felt my energy was surging through every limb and extremity of my body at that moment. It was truly eye-opening to learn about the kind of environment in which humans evolved.



Kadonowaki Elementary School Ruins, photographed during an excursion of the World Bosai Forum 2025, March 2025

03 Elucidating the neural basis of the eight factors of "power to live" is a clear goal, and I am accumulating fMRI studies toward that end, but progress is not proceeding at the pace I had hoped. I do not have dedicated human resources or a budget for the research, so I have steadily accumulated results by incorporating questionnaires into various experiments. Beyond that, since the IRIDeS's founding, we have recognized that disasters present a treasure trove of research themes concerning the brain basis of human psychology and behavior across diverse phases from onset to recovery. Yet, we have struggled to attract sufficient human resources interested in this field, whether from a basic or an applied research perspective. The challenge lies in generating a flow of people (capacity-building for researchers) within the rich vein that lies between disaster research and broad-based psychological research.

● International Strategy for Disaster Mitigation Lab

MURAO Osamu

Professor

01 On March 11, 2011, while working at the University of Tsukuba, I was suddenly caught in a massive tremor in my seventh-floor laboratory of a twelve-story building. The shaking lasted six or seven minutes, after which I confirmed there was no damage inside the room and that the students were safe, then hurried outside the building. I remember catching a city bus that was still running and heading home, relieved to find my family safe.

02 My entry into the world of urban DRR began with the 1995 Great Hanshin-Awaji Earthquake. Since then, I had been involved in various recovery research projects, including the 1999 Chi-Chi Earthquake in Taiwan, the 1999 Kocaeli Earthquake in Turkey, and the 2004 Indian Ocean Tsunami. In that sense, the Great East Japan Earthquake would hold special significance for me. Rather than focusing on individual disasters, it is necessary to adopt a comprehensive perspective that views this unprecedented disaster and its recovery within the context of Japan's society transitioning from the 20th to the 21st century. Consequently, I joined IRIDeS in 2013. Since then, I have been fortunate to have had various opportunities to realize my vision, including the *IRIDeS HFA Review Report* (2014) and the *Great East Japan Earthquake Joint Survey Report (Urban Planning Edition, AIJ)* (2019), both of which provide a comprehensive overview of the disaster.

03 Through my ongoing research on the Great East Japan Earthquake, I have accumulated a considerable body of work. As an IRIDeS member, I have been deeply involved with the Sendai Framework for Disaster Risk Reduction, expanding my international network. However, the 2011 disaster and its reconstruction cannot be reduced to a single expression. New challenges constantly emerge in recovery areas, such as aging populations and depopulation. In other words, there is no definitive goal; I feel as if I am continually running. Yet unless I draw a line somewhere, the next challenges will remain vague. We are soon approaching the 15th anniversary of the disaster, and the Great East Japan Earthquake Memorial Symposium held this March represents one such milestone for me. In 2027, the Asia-Pacific Ministerial Conference on Disaster Risk Reduction will be held in Sendai. Preparations to reflect on the Great East Japan Earthquake are now beginning in anticipation of that event.

● Regional Resilience Planning Lab

IUCHI Kanako

Associate Professor

01 On March 11 at around 2 a.m. Eastern Time, I was about to go to bed after a long day, planning to rest up for the next day. Suddenly, I received a message from a friend in Japan, saying that the Tohoku region was experiencing an earthquake and tsunami. I could not realistically grasp the seriousness of the situation with only that information, so I turned on the TV and tuned in to NHK World. Initially, I saw a live stream of the tsunami waters flowing up the Natori River. The water topped the river dikes, flooding the surrounding rice paddies and farmlands. I felt as if the event were happening in a distant world with which I had no connection. It took me a while to realistically comprehend the scale of the tsunami and that the fear people there were experiencing. I could not sleep that night, endlessly pondering how I could help distant Japan, especially the Tohoku region.

02 Before the Great East Japan Earthquake (GEJE), my research focused on post-disaster community resettlement. After the earthquake, I relocated to Tohoku and continued my intensive field research on recovery, which led me to further recognize the complexity and time-consuming nature of the rebuilding process. Building on this experience, I have deepened my understanding of the multifaceted aspects of recovery, including how local communities make recovery decisions, how different governance functions advance rebuilding efforts, how the implementation of hazard-sensitive land use affects residents' ability to rebuild their lives, and how social vulnerability is reproduced over time. I have also been actively working on international collaborative research projects and partnering with international organizations to share the experiences and lessons learned from the GEJE.

03 I hope to alleviate the additional suffering of disaster survivors in the short term and improve their well-being in the long term. To this end, I believe it is crucial to examine the impact of implemented policies and plans implemented during the rebuilding process in order to better manage future recovery efforts. Currently, reconstruction approaches are limited – some countries have no reconstruction framework, while others have only the simple policies and planning approaches that overlook societal dimensions. For instance, planning often fails to consider the social vulnerabilities created by land use enforcement and the resulting spatial patterns during the rebuilding process. Although there is significant worldwide interest in learning from Japan's experience, advancing human-centered recovery research globally, remains critical.

● Regional Resilience Planning Lab

HORIAI Shin-ya

Assistant Professor

01 I am from Yamada Town, Iwate Prefecture. It happened at the end of the second-year junior high school term, during homeroom, before going home. The shaking was unlike anything I had ever experienced before, so for the first time, I actually took the action of ducking under my desk and waited for the earthquake to subside. The shaking did not subside for a long time. Witnessing the balcony and ground shift out of alignment, images of collapsed buildings and fires from the Great Hanshin-Awaji Earthquake and footage of the Indian Ocean tsunami flashed through my mind. I felt this town would become another such tragedy. We then gathered in the schoolyard and moved as a whole school to the gymnasium. Here, amid repeated aftershocks, the arrival of soaking-wet people, and the onset of snowfall, I endured the cold and fear with no information whatsoever.

02 After the earthquake, I spent days visiting temporary morgues. As I viewed photographs of thousands of bodies, from infants to the elderly, from Iwate to Fukushima Prefectures, I began to wonder: Why couldn't these people survive? Furthermore, I had anticipated a massive tsunami at the time, yet when I returned to the evacuation center, adults could be heard saying, "We never imagined such a huge tsunami would come." What accounted for this difference? I thought I might investigate it someday, even if only as an independent research project. I forgot about that thought for a while, but when I entered university to study civil engineering, and it came time to choose a research topic for my lab, it suddenly came back to me. What began as a graduation research project, not an independent research project, has led to my current research.

03 Through my research, I hope to provide residents with an opportunity to reconsider their approach to evacuation, even if only slightly. Within a community, residents possess different characteristics, and their actions and perspectives differ too. I aim to advance research that enables swift, reliable evacuation of diverse individuals to safe locations, effectively utilizing limited road networks and available vehicles.

● Spatial Design Strategies Lab

UBAURA Michio

Professor

01 I arrived in Paris on a business trip that evening. When I checked my email the next morning, I found a message from my family saying, "There was a big earthquake, but everyone is safe." Thinking they were exaggerating, I turned on the hotel TV just as they were broadcasting live footage of the tsunami surging up in Natori. I went through with the research interview scheduled for that day until around noon, but then decided I had to go home. I canceled all my subsequent plans and headed to the airport, unsure if I could even change my ticket. On the flight, sitting next to a cheerful non-Japanese couple, I could not relax at all, consumed by worry about my family's safety after the tsunami. This was probably my first and last three-day, two-night trip to Europe. I felt something terrible had happened, but the word "reconstruction" had not yet crossed my mind.

02 Before the earthquake, my research focused on normal (peacetime) urban planning and community development. After the disaster, I became involved in formulating recovery plans and community development for many municipalities. Consequently, I expanded my field of research to include examining the effectiveness of those recovery plans, the regulations and projects implemented to realize them—in other words, research on recovery-focused urban planning and community development. Previously, urban planning for reconstruction was perceived as research conducted by DRR specialists. However, as I advanced my research, I came to realize that reconstruction urban planning and peacetime urban planning are two sides of the same coin. Around this time, I also noticed that other general urban planning specialists began expanding their research scope to include disaster and reconstruction-related studies.

Recovery Research Still Has a Long Way to Go

03 The ultimate goal, albeit one that may never be fully attained, is to clarify what should be done and how to proceed—both in terms of planning theory, including implementation methods, and procedural theory, including organizational structures—to achieve better reconstruction from a spatial planning perspective. However, rather than following a grand overarching vision, I have advanced my research based on subjective judgments of importance, essentially, picking and choosing based on personal interests. Currently, I engage in recovery efforts following the Noto Peninsula Earthquake and intend to treat this practical work as a valuable field of application. As this gradually transitions into a more normal phase, I plan to advance research evaluating the outcomes of this recovery effort and prepare for the next potential disaster recovery.

Kawamachi Terrace Yuriage, a commercial facility in Natori, Miyagi Prefecture. In the Yuriage district, the "Earthquake Recovery Land Readjustment Project" and the "Natori River Improvement Project" were advanced simultaneously for recovery from the 2011 disaster. Led by Katsuya Hirano and other stakeholders, it received the 2024 Japan Society of Civil Engineers Design Award Encouragement Prize, photographed in December 2025

● Spatial Design Strategies Lab

HIRANO Katsuya

Associate Professor

01 The earthquake struck just before Professor Hiroshi Naito's final lecture at the University of Tokyo began, while I was in the laboratory of a close colleague. Fortunately, I was able to quickly get in touch with my family, but of course, I could not go home. I spent the night in Hongo with my research colleagues. I remember being utterly stunned as the immense scale of the damage became clear with each passing moment. The focus of recovery from a typical large-scale earthquake disaster used to be primarily on restoring physical infrastructure, leaving little room for infrastructural planning. However, I was discussing with fellow research colleagues, urging the necessity of the entire field of civil engineering, including not only infrastructural planning but also our specialty, visual quality and aesthetic design, in the recovery efforts from a tsunami disaster, where rebuilding entire towns was anticipated.

02 Despite the catastrophic damage inflicted by the disaster, I witnessed communities across the region that were striving to rebuild. This recovery involves rebuilding infrastructure from the ground up. My specialty is "creating attractive cities" in civil engineering. Being in Sendai in 2011, and knowing I was the only expert in Tohoku specializing in visual quality and aesthetic design through civil engineering, I realized supporting the reconstruction of these devastated cities into places with even a little charm was my "destiny." I resolved, "At the very least, I will give it everything," and committed myself to practical reconstruction support.

03 With Japan's demographic decline, knowledge of contemporary urban development to create attractive and sustainable cities is far more important than knowledge of recovery itself. This is something I deeply realized through my continued involvement in post-disaster reconstruction efforts. We must deepen this knowledge of contemporary urban and town design. On the other hand, in an era of increasingly severe disasters, I believe it is crucial—both for DRR and for landscape preservation—to elucidate the principles and appeal of distinctive landscapes historically shaped by the accommodation of disasters, with examples including the landscapes of scattered villages, formed through the balance between livelihoods and flood hazards.

SHIMADA Akio

Senior Researcher

01 I was creating a PowerPoint presentation in the Tohoku University Graduate School of Law Building. At first, I thought the Off the Coast of Miyagi Prefecture Earthquake had finally occurred. I logged off my computer and immediately went out into the hallway. The violent side-to-side shaking made it difficult to stand, so I grabbed the door handle and crouched down. After the shaking subsided, I returned to the lab, but all the books on the shelves had fallen, and the lockers had toppled over. I went downstairs to the first floor, immediately sent an email to my family to let them know I was safe, and headed to the Hagi Hall parking lot. There, I learned about the tsunami over 10 meters high and realized this was a much larger earthquake than the one off the coast of Miyagi Prefecture. I drove back home, but my room was in disarray. Due to the power outage, I could not watch TV, so I tried to grasp the extent of the damage using the car radio.

02 After taking up my post at Tohoku University in August 2010, I was scheduled to lead a workshop at the Graduate School of Public Policy in the 2011 academic year (a year-long collaborative research project involving faculty and 7 or 8 students). Initially, I was preparing to conduct research on landscape planning, focusing on Matsushima Town and other areas. On the day of the earthquake, I was actually creating a PowerPoint presentation to explain this to the students. In response to the disaster, I felt that it was not the time to be focusing on landscapes. Drawing on my prior experience as a Disaster Prevention Planning Officer at the former Ministry of Land, Infrastructure and Transport and the Cabinet Office, I abruptly changed the theme to "Disaster Prevention Law." Subsequently, I joined a research group led by Professor Fumihiko Imamura and participated in preparatory work to establish IRIDeS. During the workshop, we took students to conduct hearings with national agencies such as the Cabinet Office, Ministry of Land, Infrastructure, Transport and Tourism, Self-Defense Forces, and Japan Coast Guard, as well as affected local governments, including Miyagi and Iwate Prefectures and Sendai City. We identified problems within the disaster countermeasure legal framework and compiled a report proposing necessary amendments.

03 Because of the Great East Japan Earthquake, most of the policy proposals related to the Basic Act on Disaster Management were subsequently realized through amendments to that law. However, no significant amendments have been made to the Disaster Relief Act. I intend to continue proposing revisions, including the "principle of in-kind benefits," through academic papers and other channels. Furthermore, regarding temporary housing and public disaster housing, I plan to assess the realities following subsequent disasters such as the Kumamoto Earthquake, the Western Japan Heavy Rain, the Eastern Iburi Earthquake, and the Noto Peninsula Earthquake, and make proposals through avenues including academic papers.

Considering Recovery in a Declining Population Society

Survey Questions

01 Where were you, what were you doing, and what were your thoughts on the day of the Great East Japan Earthquake?

02 How has your research or your research field changed before and after the disaster? (Or, how do you think the Great East Japan Earthquake has influenced your research field?)

03 Please share your current research goals, progress, and future outlook.

Disaster Medical Science Division

● International Cooperation for Disaster Medicine Lab

EGAWA Shinichi

Professor

01 I was in my lab after finishing outpatient duties on Friday morning. When the first tremor hit, I thought the Off the Coast of Miyagi Prefecture Earthquake—predicted to strike within 30 years with 99.9% certainty—had finally come. But just as I thought the books on the shelves had not fallen and we had avoided a blackout, a strong jolt sent books tumbling from the shelves and knocked over various objects. Strangely calm, I felt protected in this small room enclosed on three sides by walls. While thinking that if the floor or ceiling collapsed, I would die, I protected my laptop computer, thinking it would be essential if I survived. As soon as the shaking stopped, everyone evacuated outside the building. After confirming the safety of everyone in the department and their families, I immediately joined the activities of the disaster response headquarters. As part of our hospital's response, we considered countermeasures for the nuclear power plant accident and prayed for the safety of the greater Tokyo area, which would be crucial for providing support.

02 Had it not been for the Great East Japan Earthquake, I would not have become involved in disaster research.

03 The Japanese term "bosai" corresponds to "disaster risk reduction" in English. Disaster risk is composed of three factors: hazard (type, intensity, exposure level), vulnerability, and lack of response capacity. I aim to explore how altering these three factors scientifically can reduce disaster risk, and how enhanced resilience—the ability to recover quickly and flexibly from damage—can be achieved through proactive DRR and improved recovery efforts. I believe it is crucial for disaster science to avoid the terms "natural disasters" and "lessons learned," and instead use "natural hazards" and "knowledge." However, recognizing that zero risk is impossible and that humans inevitably face death, I aim to enhance people's health—that is, their physical, mental, and socioeconomic well-being.

● Radiological Disasters and Medical Science Lab

CHIDA Koichi

Professor

01 I was driving my car back to Tohoku University after returning from a business trip and was passing through the intersection near the prefectural and city government offices, when the FM radio signal suddenly cut out. Upon arriving at the university, I confirmed people's safety, gathered information, and confirmed the status of the radioactive isotopes and radiation equipment under my management.

02 For approximately one month immediately following the Fukushima nuclear accident, I provided various forms of assistance, including expert advice on radiation, at the "Nuclear Accident Consultation Desk" within the Miyagi Prefectural Government offices. This experience made me keenly aware that citizens harbor many misconceptions about radiation, and that disseminating accurate information about radiation is a critical task to prevent unfounded rumors. Consequently, I began focusing my research efforts on radiation education and related topics to mitigate the damage caused by radiation-related rumors.

03 One of our goals is to prevent reputational damage caused by misconceptions of radiation. We have been leading research teams from the Nuclear Regulation Authority and the Ministry of Health, Labour and Welfare to advance related studies. We intend to continue and further develop research on radiation education, low-dose exposure impact assessment, and radiation protection, including capacity building.

Participants in the Disaster Resilience Co-creation Center session at the World Bosai Forum 2025.
From left: Shinichi Kuriyama, Shinichi Egawa, Makoto Okumura, and Shunichi Koshimura, March 2025

Toward a Resilient Society

Disaster and Human Beings: A Turning Point in Research

● Radiological Disasters and Medical Science Lab

SUZUKI Masatoshi

Specially Appointed Lecturer

01 I was a faculty member at Nagasaki University. My family home is in Kamaishi, and I still remember colleagues who had let me know about the earthquake upon seeing the Yahoo news, while I was in the middle of an experiment. Even while I was living in my hometown, I received tsunami warnings several times, but I had never actually experienced one, so at first, I did not worry much about it. I could not have imagined the urgent situation that unfolded later or that it would escalate into such a serious situation that triggered a nuclear accident. I felt a sense of helplessness, being so far away and knowing that the basic radiation research at the time would be of little use as knowledge for the Fukushima Dai-ichi nuclear power plant (FNPP) accident.

02 Before the disaster, I worked on a project focusing on the effects of high dose exposure over short periods, such as radiation therapy. After the FNPP accident, my research shifted toward studying the effects of sustained exposure to low-dose, low-dose-rate radiation—a major turning point from the previous focus. However, even though these studies involve lower doses and dose rates than before, our research is still at higher exposure levels than in nuclear disaster-affected areas due to limitations of research equipment. I moved to Tohoku University in July 2012 and joined the research project elucidating radiation effects on disaster-affected animals due to the FNPP accident. I continue this project with a focus on non-human primates, Japanese macaques, which are closely related to humans. This marked a significant shift in my research focus, moving from laboratory-only activities to spending considerable time in the field.

03 Past radiation disaster cases indicate that decades of follow-up studies after an accident are necessary to clarify the effects of exposure. The view that the risk of radiation effects arising from the FNPP accident is low is accepted internationally, corresponding with research results on affected animals. On the other hand, there is a concern among the public due to the absence of sufficient data to validate the risk estimation. The ultimate goal is to contribute to human and environmental radiation protection during nuclear disasters and to foster a sense of security for returnees after the disaster by accumulating evidence on the presence or absence of radiation effects from the results of disaster-affected animals currently being studied.

Yasuto Kunii, who served as a DPAT (Disaster Psychiatric Assistance Team) member during the 2024 Noto Peninsula Earthquake, February 2024

● Disaster Psychiatry Lab

KUNII Yasuto

Associate Professor

01 I was doing desk work in the university hospital's medical department. Startled by the sudden violent shaking, I stood up and braced the bookshelf on my desk to prevent it from collapsing. As the shaking intensified, I rushed outside the building with my colleagues. After the main shock finally subsided, I scrambled to confirm the safety of staff and hospitalized patients. I was swamped with tasks: responding to nursing staff experiencing acute stress reactions or panic attacks, assessing damage at affiliated hospitals within the prefecture, and revising future work schedules. Late at night, amid continuing aftershocks, I finally returned home briefly. Yet, I could not sleep, pondering what I should do as a medical professional and what I could offer as a psychiatrist in the face of this unprecedented, complex disaster with no clear end in sight.

02 The Great East Japan Earthquake fundamentally changed my research direction. Previously, I had primarily focused on investigating the biological pathophysiology of psychiatric disorders. However, after experiencing the disaster, I became deeply interested in the "vulnerability and resilience of the mind" under the extreme conditions of a catastrophe. Through long-term mental health support and research activities in the disaster-affected areas, I became acutely aware of the need to scientifically elucidate the impact of traumatic experiences on survivors and the risks associated with disaster-related suicide. This became a significant catalyst for my engagement with the emerging field of disaster psychiatry. Since then, I have been exploring ways to advance interdisciplinary research bridging biological and social psychiatry.

03 My research is structured around two axes aimed at both understanding and supporting disaster-related psychiatric disorders. The first is molecular and cellular research based on postmortem brain banks, clarifying the neural basis of stress vulnerability and resilience. The second is the practice and social implementation of mental health support in disaster-affected areas, building mechanisms to implement scientific insights into field support. By integrating these approaches, I aim to establish science that provides long-term support for the "disaster-affected mind" and develop disaster psychiatry into an international body of knowledge.

● Disaster Psychiatry Lab

HAMAIE Yumiko

Assistant Professor

01 I was cleaning up after group therapy in the psychiatric ward. I quickly guided patients under the cafeteria tables, checked each room for anyone left behind, and once the shaking stopped, led everyone to the courtyard. I noticed snow had started to fall. During that time, I did not perceive how strong the shaking was or how long it lasted. After dark, I returned home, saw my family briefly, then evacuated alone to a nearby elementary school with a blanket. While I spent the night there amid aftershocks, I heard about the tsunami damage on the radio. That was my day. The radio reports felt completely surreal; I only grasped the magnitude of what had happened

Making DRR a Common Language

the next day and beyond. I spent those days repeatedly thinking, "What can I do as a clinician?" only to confront my own powerlessness.

02 Before the earthquake, I was engaged in psychiatric clinical practice while conducting research on the early detection and intervention of psychotic disorders (mental illnesses characterized by hallucinations and delusions, with schizophrenia as a prototypical example). My primary focus was on examining the effects of psychotherapy and adjustments to living environments in alleviating symptoms and promoting recovery. Following the disaster, I began addressing the psychological wounds and trauma experienced by disaster survivors. Through post-disaster support efforts, my research interests expanded to include preventing and mitigating various mental health issues caused by stress and psychological trauma.

03 My commitment to prioritizing prevention and early support remains unchanged. Whether during disasters or in everyday life, minimizing psychological distress and delivering appropriate support to those who need it as quickly as possible—this approach is one of my core values. Much remains unknown about mental health during disasters. It may take time, but I intend to listen carefully to voices from the field, collaborate with local support providers and experts, and explore forms of care that foster peace of mind. In research, I also hope to accumulate data to support such practices and clarify more effective approaches to support them.

● Disaster Psychiatry Lab

HINO Mizuki

Specially Appointed Assistant Professor

01 I was working at Gunma University. The damage was limited to one reagent bottle breaking during an experiment. However, since I was going to begin working at Fukushima Medical University starting that April, I was very concerned about the Fukushima Nuclear Power Plant accident. At the time, I was engaged in radiation biology research, so I remained quite calm regarding the effects of radiation.

02 Following my workplace transfer, my research theme underwent a significant shift in direction. Since my new base of operations was in Fukushima Prefecture, I naturally could not avoid engaging with the theme of "disaster." The very starting point of my research was rooted in its connection to disaster.

03 Disasters profoundly affect people not only through the damage they cause, but also through the fear of an uncertain future. The uncertainty surrounding factors such as the timing, scale, nature, and duration of the disaster, as well as the effectiveness of countermeasures, places a heavy psychological burden on people. I consider that a crucial mission of IRIDeS is to mitigate this fear of the unknown by providing clear outlooks for each of these uncertainties, based on scientific knowledge from various fields. While my current research focuses on the brain's response to psychological stress after a disaster, I hope to explore how precise scientific knowledge can contribute to addressing the vague anxiety and fear that arise even before a disaster strikes.

● Disaster Public Health Lab

KURIYAMA Shinichi

Professor

01 On March 11, 2011, I was at Tokyo Station, about to board the Shinkansen departing at 2:56 PM. The moment I stepped onto the escalator leading to the platform, I was hit by violent shaking. Screams filled the air around me, and I scrambled up the escalator to the platform. The Shinkansen train was swaying wildly, and sparks were flying from the overhead wires. After descending to the Yaesu Exit, I watched the tsunami damage footage on TV and was speechless. Was the epicenter in Tohoku? If Tokyo shook this hard, what must the situation be like in Tohoku? Those thoughts raced through my mind. After spending the night in the Yaesu Underground Shopping Arcade, I returned to Sendai by rental car. During the 12-hour drive north, I watched the scenery gradually change as I progressed, thinking only of reaching Sendai as quickly as possible to do whatever I could.

02 After the earthquake, we began research to clarify the relationship between disasters and health, scientifically. We started a large-scale cohort study tracking people's health over the long term and became acutely aware that the health, living conditions, and psychological issues of disaster victims persist. I also realized that the insights and lessons from the 2011 disaster were not being fully utilized in preparing for anticipated future disasters, such as the Nankai Trough megaquake or a major earthquake beneath Tokyo. Therefore, aiming to establish "Disaster Public Health" and "Communication Science for Disaster Risk Reduction," which integrate public health methodologies into DRR, I call on "Life-Saving Disaster Preparedness: There Are Things We Can Do Now." Through those efforts, I am working to achieve behavioral change among the public.

03 Through Communication Science for Disaster Risk Reduction, we aim to realize "DRR that scientifically supports behavioral change in people and society." Our goal is to create mechanisms enabling individuals, communities, governments, and businesses to learn and act together not only during disasters but also in peacetime. By integrating public health with DRR, we will clarify the factors that enable people to evacuate and prepare, and develop optimal communication methods and models to promote self-help and mutual aid. Furthermore, we plan to advance collaborations among education, art, and media to embed DRR as a cultural norm, ultimately realizing a future in which DRR becomes a common language in society.

A public event, Katahira Matsuri, featured a quiz introducing mental health during disasters, October 2025

Reducing Disaster Fatalities

● Disaster Public Health Lab

ORUI Masatsugu

Associate Professor

01 I remember it was when I was working at a psychiatric hospital in Tsuruoka City, Yamagata Prefecture. I felt a powerful tremor and immediately realized, "This is a major earthquake." I turned on the TV in the office right away and watched the unfolding disaster as there was no power outage, and the infrastructure remained intact. Witnessing the immense tsunami damage, I felt compelled to act immediately, yet I was at a loss, unable to do anything right away. However, I remember that early the following week, a request for a mental health care team came from the Ministry of Health, Labour and Welfare through the Yamagata prefecture. I immediately volunteered and began organizing the team from scratch.

02 To identify the health challenges, particularly mental health issues, emerging in the disaster-affected areas, we initiated the monitoring of suicide cases in these regions. We believe these findings not only raised awareness among support providers but also contributed significantly to the decision to extend mental health care activities for an additional 5 years. Furthermore, in the medium- to long-term, as both affected residents due to the disaster, and support workers began showing noticeable signs of fatigue and survey fatigue, we shifted our focus from "exploring health risks" to "examining factors contributing to improved health" (i.e., evaluating the health activities implemented after the disaster). I recall support workers expressing gratitude, saying, "What we did had meaning." This shift towards focusing on "positive factors" was significantly influenced by the Great East Japan Earthquake.

03 Unfortunately, large-scale disasters have historically led to periods where suicide rates rise above normal levels. Therefore, my goal is to create a society where suicide rates remain stable regardless of disasters. To achieve this, we aim to establish a system that seamlessly implements efficient screening, counseling, and continuous support while advancing digital transformation. Additionally, to significantly reduce the number of lives lost in disasters, we plan to advance public health-based social interventions focused on preemptive DRR: seismic retrofitting of houses, preventing furniture and appliance tip-overs, installing earthquake-sensitive circuit breakers, and promoting voluntary and rapid evacuation.

● Infectious Diseases Lab

KODAMA Eiichi

Professor

01 I was at my desk in the laboratory, engaged in routine administrative and research work. The shaking on the fifth floor of the Medical School Building 1 was unlike anything I had ever experienced before, and I remember thinking that this might be the end. In retrospect, it was the right decision to stop people who were about to head down the stairs after the initial tremor, as a much larger main shock followed shortly thereafter.

02 After the disaster, infection control in disaster-affected areas began to receive greater attention. I became more actively involved in Japan International Cooperation Agency (JICA)-supported projects than before, and I was also appointed as a member of the Disaster Infection Control Committee initiated by the Japanese Society for Infection Prevention and Control.

Masatsugu Orui giving a lecture on disaster public health to high school students, October 2025

03 My research goal is to contribute to the development of therapeutics that can suppress future pandemics. At present, one drug candidate that I was involved in developing has been licensed to a U.S. pharmaceutical company and is now under review by the Food and Drug Administration (FDA). If approved, this would represent my second experience contributing to the development of a drug that reaches the regulatory approval stage.

● Infectious Diseases Lab

HAYASHI Hironori

Assistant Professor

01 At that time, I was a PhD student and was conducting experiments at Kumamoto University. I first learned about the Great East Japan Earthquake through the television news. I still vividly remember the shock of watching the footage of the tsunami swallowing entire towns and the reports on the critical situation at the nuclear power plant in Fukushima; it was hard to believe that such a catastrophe was unfolding right here in Japan. As I watched the death toll and the number of missing persons rise with each report, my mind went back to my childhood and the memories of the Great Hanshin-Awaji Earthquake.

02 My core research theme and focus on drug discovery remained consistent; however, the explicit connection to "disaster" only emerged after I joined IRIDeS. I came to realize that, much like preparing for earthquakes and tsunamis, mitigating the impact of infectious diseases requires preemptive preparation and accelerated development cycles. This realization prompted a strategic shift in my focus from applied research to more fundamental methodology. Instead of targeting specific pathogens like HIV infectious disease, I am now dedicated to developing a versatile drug discovery platform capable of addressing a wide range of emerging infectious disease threats.

03 My pharmaceutical research focuses on two disaster-related objectives: (1) addressing infectious disease outbreaks in disaster-affected areas, and (2) preventing and accelerating the resolution of infectious disease disasters, such as the COVID-19 pandemic. Regarding the former, we are developing countermeasures not only for respiratory and bacterial infections—including influenza and coronaviruses—but also for non-enveloped viruses like Norovirus and Adenovirus, which cannot be inactivated by alcohol. For the latter, we aim to shorten the fundamental drug development period by creating medicinal countermeasures (MCMs) and applying artificial intelligence. Recognizing that drug discovery is a multidisciplinary field, we are advancing diverse research themes and expanding our collaborative network to bring these goals to fruition.

Survey Questions

01 Where were you, what were you doing, and what were your thoughts on the day of the Great East Japan Earthquake?

02 How has your research or your research field changed before and after the disaster? (Or, how do you think the Great East Japan Earthquake has influenced your research field?)

03 Please share your current research goals, progress, and future outlook.

Practical Research and Collaboration Division

● Disaster Education Research and Implementation Lab

SATO Takeshi

Professor

01 I experienced the earthquake shaking outdoors, on the ground, right after stepping out from the entrance of the Civil Engineering and Architecture Education and Research Building onto the sidewalk along the bus route. The seismic motion felt like an attack in waves, so I thought the anticipated off Miyagi earthquake (continuous model, M8.0) had occurred. We confirmed people's safety in the parking lot, which served as the emergency evacuation site for the Engineering Laboratory Complex Building. After receiving permission to go home, I tried to leave by car but encountered traffic congestion at Kawauchi Campus. I turned back to Aobayama Campus and walked home. We needed to confirm the safety of the students in my lab. A list of unconfirmed students was distributed to each advisor via the safety registration system then in use, and we were asked to verify their status. However, communication methods were limited. Although the earthquake damage estimation survey included the continuous M8.0 scenario, the magnitude of the M9.0 earthquake and the accident at the Fukushima Daiichi Nuclear Power Plant were events beyond what had been anticipated.

02 The focus has shifted from practical research on community DRR to practical research on school-based DRR. However, I recognize that these are not independent entities; rather, collaboration and integration between community and school DRR represent a fundamental direction that Japan should pursue in the post-3.11 era, both in research and in societal implementation.

03 My current research and development is aimed at the societal implementation of highly effective school DRR manuals under school management: establishing highly effective evacuation plans and implementing corresponding evacuation drills through a Plan-Do-Check-Act (PDCA) cycle. As schools alone have limitations in their responses, collaboration and cooperation with parents and community stakeholders are essential, and consensus-building is necessary. Yet many parents and residents still believe schools should handle these matters themselves. Although children are under school management as students, they are, first and foremost members of the community. Therefore, parents and community stakeholders must participate in developing and revising highly effective school DRR manuals to protect children's lives under school management. However, in practice, this is rarely achieved. Crisis management departments primarily target local communities such as administrative districts, neighborhood associations, and voluntary DRR organizations, to promote community DRR. Most local governments do not actively consider collaborating with schools.

● Disaster Resilient Society Promotion Lab

YOSHIDA Hiroshi

Professor (IRIDeS concurrent)

01 At the time, I was living in Taiwan with my family for long-term overseas research. Amidst limited access to information, the declaration of a radiation emergency made me anxious that I might not be able to return to Japan. I went back to Japan temporarily that March, but transportation to Sendai had not yet been restored, so I extended my stay in Taiwan by six months.

02 My research has focused on how disasters affect daily life, particularly mental health, from the perspective of elderly welfare.

03 I was able to publish several book chapters related to the disaster, marking a personal milestone. In the future, I would like to focus on what Tohoku can do in preparation for the Tokai-Nankai earthquake, by sharing ideas for building systems to mitigate damage and enable early recovery.

Takeshi Sato introduces equipment stored in a DRR equipment warehouse during the BOSAI Treasure Hunt, a disaster preparedness walking tour for international residents, June 2025

What Tohoku Can Do for the Next Disaster

"Passing Down" as Sharing Experience

● Disaster Resilient Society Promotion Lab

SATO Shosuke

Associate Professor

01 I was still a graduate student at Kyoto University's Disaster Prevention Research Institute. Since the epicenter was near Miyagi and Kyoto was shaking slowly, I remember thinking, "Is this one of those periodic off Miyagi earthquakes?" I'm embarrassed by that now. While feeling the tremor, I checked my computer and saw an email from my supervisor at the time, Professor Haruo Hayashi (former President of the National Research Institute for Earth Science and Disaster Resilience), sent one minute after the quake struck: "You must go to Sendai immediately." I was scheduled to start working at Tohoku University in April 2011, but given the situation, I headed to Sendai by car right away. Taking turns driving with an assistant professor from Miyagi, we traveled via the Sea of Japan coast and arrived at dawn the next day on March 12, 2011. I have been working at Tohoku University ever since.

02 A central theme was "added": Shortly after taking up my post at Tohoku University, I had the opportunity to visit many impacted sites and learned that Tohoku had repeatedly experienced numerous tsunamis in the past, and that efforts to pass down disaster lore had been underway even before the earthquake. At the same time, I began to harbor a significant doubt: "Did such efforts actually reduce the damage?" I realized that the question had never been quantitatively or scientifically verified. Furthermore, around that time, Dr. Nobuo Shuto, who happened to be at the desk next to mine, began passing me relevant literature quite frequently. Encouraged by this, I decided to establish disaster transmission (disaster lore) as one pillar of my research. My research on evacuation and reconstruction continues since before the disaster.

03 I am conducting research aimed at the day when disasters cease to be disasters. Given Japan's natural environment, we cannot sever our ties with the natural phenomena that cause disasters. Yet our ancestors loved this land, overcame various hardships, and sustained life here. Within this history, I believe there exists a "mindset and wisdom for coexisting with natural hazards." A new approach is also necessary. When external natural forces exceed our capacity for damage-mitigation, we must develop new concepts and build social systems that enable us to coexist effectively under such conditions in the future. To explore this starting point, I am researching disaster transmission– the sharing of disaster experiences across society. In that sense, I am still at the beginning.

● Disaster Memory Studies Lab

GERSTER Julia

Associate Professor

01 I was a BA (undergraduate) exchange student at Chuo University in Tokyo at the time. Because it was spring break, my friends and I, along with my then boyfriend (now husband!), who was visiting at the time, had gone out for all-night karaoke and just returned home in the morning of March 11. It was the only day during my year abroad that I was at home in the afternoon.

02 Before 3.11 I had planned to change my major from East Asian Studies to documentary filming after finishing my year abroad. Because of the earthquake I became interested in DRR and the history of disasters and recovery in Japan, so I pursued an MA in Japanese Studies with a second exchange stay at Sophia University, where I joined a disaster archive project to travel to Tohoku. This project led me to write a PhD thesis on local culture and community recovery. While doing so, I also worked for a few media outlets, which led me to realize that while working in academia, I can still work with the media, but with more freedom. The GEJE had a huge impact on Japanese studies in Europe and the US. While there were only a few scholars working on disasters and DRR in Japan, now it is seen as an important topic and often part of BA and MA curricula.

03 Recently, research on disasters is picking up in area studies as well as memory studies. I hope to increase Asian perspectives in general and Japanese insights in particular, as Japan has such a long history in disaster mitigation which is rarely discussed in memory studies outside of Asia. Further, the demand for resilience and disaster mitigation research is increasing in Europe due to climate change and geopolitical developments. I believe that insights from IRIDeS and international exchange and discussions can improve disaster mitigation across the globe.

Participants in the DRR Treasure Hunt for international residents. IRIDeS faculty members Takeshi Sato, Julia Gerster, Elizabeth Maly, and Ryo Saito, helped with the event, June 2025

Turning Evidence into Policy

● International Research Collaboration Office

MALY Elizabeth

Associate Professor

01 I was a PhD student at Kobe University, in China as part of my professor's survey of disaster recovery after the 2008 Sichuan Earthquake, and on the way back to Japan. We found out about the tsunami in the Shanghai airport, and were able to fly back to the Kansai airport in Osaka. I had already been studying post-disaster housing recovery in Japan, but I did not fully understand the impact of the disaster at that time.

02 After the GEJE, I changed my PhD theme to focus on People-Centered Housing Recovery, specifically examples of ways that temporary housing can be expanded or converted to support the life recovery of disaster survivors.

03 My focus on People-Centered Housing Recovery has continued until now, including the evaluation of programs and policy, and roles on non-government and government actors in post-disaster recovery. My research on community-based recovery has expanded to be more holistic, focusing on green placemaking, or the role of plants and natural spaces for building community and resilience, as well as the way that disaster narratives are recorded and passed on to future generations.

● 2030 Global DRR Agenda Office

ONO Yuichi

Professor

01 Stationed in Bangkok, I was responsible for DRR policies across 62 countries in the Asia-Pacific region as the Disaster Risk Reduction Section Chief at the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). On March 11th, I returned to Bangkok from Nagoya in the evening. The Great East Japan Earthquake and Tsunami occurred while I was flying over the Pacific Ocean. There was no announcement during the flight. Upon arriving at Bangkok Airport, I found numerous calls, emails, and text messages waiting for me. Colleagues were concerned about my safety after learning of the catastrophic disaster in Japan. Overseas reports seemed to suggest the entire country was engulfed in disaster. Returning to my apartment in Bangkok, I immediately watched NHK news broadcasts. They reported a few hundred bodies washed ashore by the tsunami in Arahama beach, Sendai. However, as there were no accompanying images, I remained skeptical. I remember being glued to the television news. After the 2004 Indian Ocean tsunami off Sumatra, I worked almost nonstop with the UN to establish the Indian Ocean Tsunami Warning System, so I felt I had to gather information. I knew Japan's Sanriku region was prone to tsunamis and believed its tsunami disaster measures were robust, so that night, I did not think that it would become that catastrophic.

02 As a UN staff member (United Nations International Strategy for Disaster Reduction) working alongside government officials from various countries, I was involved in developing the Indian Ocean Tsunami Warning System for two to three years starting in 2004. Japan's tsunami warning system is highly advanced, so I collaborated with the Japan Meteorological Agency and the U.S. National Oceanic and Atmospheric Administration (NOAA) to invite government officials from Indian Ocean countries for training in Japan and Hawaii. I also traveled around the Indian Ocean region to assess each country's needs and capabilities. Working with UNESCO's Intergovernmental Oceanographic Commission (IOC) and the World Meteorological Organization (WMO), I helped organize coordination meetings to develop the warning system. Having no prior experience working for DRR in Japan, I witnessed the devastation firsthand when visiting the disaster-stricken area as part of a UN inspection team in late April 2011. I then took leave in July-August to volunteer for the Rikuzentakata City Office, interviewing over 200 people from 39 households about their evacuation actions and submitting a report. After that, I constantly pondered what I could do for the disaster-affected areas in Tohoku. I remember revisiting Rikuzentakata in the fall of 2011 and seeing many salmon swimming upstream, even in narrow places like irrigation ditches, despite the damage. That sight made me think about recovery.

Yuichi Ono served as chairperson at the World Bosai Forum 2025, March 2025

03 Establishing disaster statistics is the absolute foundation for formulating evidence-based DRR policies worldwide, yet efforts to develop them have only just begun. Activities at the Global Centre for Disaster Statistics, which collaborates with the United Nations Development Programme (UNDP), have stalled due to insufficient resources. However, compiling data on disaster damage, which is intensifying due to climate change, will inevitably be prioritized. Therefore, even if it does not receive attention now, I intend to pursue this with a long-term strategy persistently. Furthermore, the World Bosai Forum, a platform for sharing DRR solutions among industry, government, academia, and the public, has grown in both recognition and importance over its four sessions. However, it faces chronic funding challenges. We are currently developing new strategies to address this, looking ahead to 2027 and 2030.

Contributing to Emerging Countries

● 2030 Global DRR Agenda Office

NAGAMI Kozo

Specially Appointed Professor (IRIDeS concurrent)

01 I was in a meeting at my organization's Tokyo office at the time. The city experienced significant shaking and subsequent confusion. News outlets repeatedly showed tsunami waves surging along the Tohoku coastline, and I could not believe such catastrophic damage—like the Indian Ocean tsunami I had worked on recovery cooperation for—was happening in Japan. My commute was a 60-minute train ride, but with the trains not running there was no way home, so I waited near the office. Subway and private railway services resumed after midnight, and I recall finally getting home around 3:00 AM. Fortunately, my home suffered no significant damage. However, planned power outages due to the nuclear accident began a few days later. While I felt that the minor inconveniences were nothing compared to the suffering in the disaster-stricken areas of Tohoku, I remember living in a state of restless frustration, constantly wondering what I could do and what I should do.

02 One month after the earthquake, I was transferred to the Sendai branch, where I gained the opportunity to plan and implement projects contributing to the disaster-stricken areas. While I had previously taken pride and confidence in the achievements during the Indian Ocean tsunami recovery, I realized clearly, while working directly with residents, local government officials, elementary and junior high school teachers, and journalists in the Great East Japan Earthquake disaster zone, that my position a: the time had been that of a complete outsider. I realized that my position as an outsider had distanced me from the desperate efforts to reduce disaster risks for future generations. In particular, I felt intense regret over having agreed to relax resettlement restrictions in tsunami-affected coastal areas of the Indian Ocean in response to strong government opposition. Twenty years later, the reconstruction sites along the coast there are now home to many low-income residents, including those who moved in from outside the area. This has led to a transfer of risk onto vulnerable groups. Even if it was impossible to foresee this outcome, I should have confronted the government more earnestly and treated the situation as my own at that time.

03 The Great East Japan Earthquake prompted me to reflect deeply on my past attitudes and way of thinking, and to consider how I could truly contribute to global disaster risk reduction and recovery from a Japanese perspective. When I was transferred from the Sendai branch to the Nepal earthquake recovery site, I resolved never to repeat the same mistakes. Based on this series of experiences and reflections, I feel I must dedicate myself to research and education pursuing more compelling scientific evidence and policy decision-making support tools.

● 2030 Global DRR Agenda Office

KOMORI Daisuke

Specially Appointed Professor (IRIDeS concurrent)

01 I was at the Institute of Industrial Science at the University of Tokyo, where I was employed. After confirming the safety of the students in our lab, we all began cleaning up books scattered by the earthquake while trying to get detailed information by turning on the TV. Just then, live footage showed the tsunami surging inland. We stopped cleaning, and all watched the TV. Watching the tsunami surge reach the Sendai Eastern Expressway, we prayed for the safety of those affected, our friends, and research colleagues. We then continued discussing in the lab what we as researchers must do in the face of such an unforeseen disaster. Right after I returned home the next day, when train service resumed, I volunteered with others to conduct damage assessments in the eastern shore of the Boso Peninsula.

02 I have been influenced not only by the Great East Japan Earthquake but also by the 2011 Thailand floods—the world's fifth-costliest disaster at that time—and by my involvement in disaster response with Thailand's emergency committee through Japan International Cooperation Agency (JICA). In particular, I began researching how to rapidly clarify disaster mechanisms using scientific evidence from limited observational data, support emergency countermeasures during disasters, and quick recovery planning, in rising and developing nations with insufficient observation systems. Furthermore, while researching water disasters in monsoon Asia—a region characterized by high rainfall and orogenic belts, including Japan—I became interested in the differences in DRR actions among local communities. This led me to also engage in research on the dynamics between hazards and human society (sociohydrology).

03 Emerging and developing countries that prioritize economic benefits often insufficiently consider the negative aspects of disaster risk. Infrastructure development and residential expansion continue even in high-hazard areas, increasing disaster risk. While there are many studies on disaster risk assessment and reduction based on past maximum events, climate change impacts, and worst-case scenarios, there is little research that visualizes the progression of disaster risk as proposed in the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR). Therefore, I am developing a methodology to visualize past and present development and DRR efforts, using only open data, targeting rising and developing countries where disaster risk observation remains insufficient. Our goal is to contribute to "achieving disaster risk reduction through the activation of pre-disaster investment," one of the priority actions of the SFDRR.

Daisuke Komori (second from right) participating in the UN Global Platform for Disaster Risk Reduction (GPDRR 2025) held in Geneva, Switzerland, June 2025

● 2030 Global DRR Agenda Office

HARA Yuta

Assistant Professor

01 I was visiting my family home in Nara Prefecture during spring break, just before finishing my first year of university. I did not immediately know that a massive earthquake and tsunami had struck a wide area of eastern Japan. My father, who happened to be on a business trip to Tokyo that day, sent me word that a major earthquake near Tokyo Station had hit. I then turned on the TV and learned about the disaster. It was a shock similar to the 9/11 terrorist attacks in the US. I briefly summarized the news reports for my father, but he seemed to feel that perhaps an earthquake directly beneath the capital had struck. Since he had managed to return to Osaka on the Tokaido Shinkansen, which resumed service that night, I brought him a change of clothes to his hotel in Osaka. I also recall seeing many people sitting in the hotel lobby then.

02 At the time of the earthquake, I was an undergraduate first year student. I had entered university because I was interested in global environmental issues and the complex social problems associated with them, so I did not immediately shift my focus to earthquake-related topics. However, I participated in student volunteer activities on campus and visited Rikuzentakata City in Iwate Prefecture a few times. It was my first time in Tohoku. I think many students around Japan back then were wondering, "Is there something we can do for afflicted people?" One day, after playing with children in temporary housing and becoming friends, one child personally confided in me, saying, "It's hard because we're scattered to different places and my friends aren't nearby anymore." Hearing that small voice—which you would not hear unless you truly listened—made me strongly want to be someone sensitive to and close to the voices from the affected areas. This perspective has also become my research stance when confronting social issues.

03 Initially, I was interested in the complex issues surrounding desertification and pursued research spanning geography, folkloristics, and agricultural science, focusing on modern society in harmony with humanity and nature. After joining IRIDeS, this evolved into research on disaster vulnerability and slow-onset disasters, with the number of collaborating countries and fields expanding. The mainstream of disaster science will continue to focus on floods, earthquakes, tsunamis, and so on. However, numerous other issues—such as mega-solar development, wildlife nuisance, famine, and sea-level rise—require essential dialogue and co-creation between DRR and other fields. Through my role in these "peripheral" areas, I aim not only to reduce direct human and economic losses from disasters but also to explore the ideal of a truly prosperous, resilient human society coexisting with nature, and aspire to contribute to the social practices necessary to achieve this vision.

● 2030 Global DRR Agenda Office

KUBOTA Chie

Administrative Assistant

01 While working in Osaka, the ground suddenly shook. I thought, "Ah, an earthquake." The shaking lasted so long that my supervisor sensed something was seriously wrong. He turned on the TV and learned of the extensive damage. Since I was in Osaka, I turned off the TV after a while, returned to work, and carried out my duties. I had absolutely no sense of personal involvement; I felt like I was observing it as if it were an event happening in some distant foreign country.

Yuta Hara presenting at GPDDR 2025, June 2025

● Resilient EICT Research Promotion Office

IWATSUKI Katsumi

Specially Appointed Professor

01 I was in the lounge at Los Angeles Airport on my way back from an international conference during my previous job. I learned from a colleague's email that a major earthquake had struck Japan. Narita and Haneda airports were temporarily closed, but fortunately, my flight proceeded as scheduled, and I arrived at Haneda Airport the next morning. I remember Haneda Airport was crowded with people who had spent the night there, and the train back to my home in Yokohama was packed with stranded commuters. After getting home, I saw the extent of the Great East Japan Earthquake on TV.

02 Even before the 2011 disaster, I was conducting joint research with Kyoto University's Disaster Prevention Research Institute on the role of Information and Communication Technologies (ICT) in disaster mitigation, leveraging knowledge gained from research and development in my specialized field of information and communications networks. I transitioned to the newly established Research Organization of Electrical Communication (ROEC) at Tohoku University after the Great East Japan Earthquake. There, I became involved with many researchers in planning and executing research and development projects focused on disaster-resistant ICT. Starting from information and communication networks, we were able to take a step forward into a new field of research and development, named R-EICT (Resilient Energy ICT). This field aims to embed resilience into social infrastructure, using "autonomous, distributed coordination" as a key concept, including renewable energy.

03 We aim to establish R-EICT as a recognized field of research by continuing research and development (R&D) in collaboration with many relevant professors through industry-academia-government partnerships, striving to pioneer the field of Resilient ICT Engineering.

Industry-Government-Academia-Community Co-Creation

Survey Questions

01 Where were you, what were you doing, and what were your thoughts on the day of the Great East Japan Earthquake?
02 How has your research or your research field changed before and after the disaster? (Or, how do you think the Great East Japan Earthquake has influenced your research field?)
03 Please share your current research goals, progress, and future outlook.

Endowed Research Division, Joint Research Division, and Administration Office

Passing History and Experience to the Next Generation

● Earthquake Induced Tsunami Risk Evaluation Lab (Tokio Marine and Nichido Fire Insurance)

KAMATA Kenichi

Specially Appointed Professor

01 I was doing desk work in Otemachi, Tokyo, stationed in the operating company of a call center for overseas travel insurance policyholders. After a long tremor, I felt a firm shake and immediately sensed that an unbelievably massive earthquake had struck far away. I soon learned the epicenter was in Tohoku. I was relieved to find out my mother, who usually lives alone in Sendai, was actually staying in Yokohama at the time. The anticipated surge in inquiries from worried policyholders was limited, partly due to communication disruptions. However, despite the nature of our workplace requiring 24-hour operation and business continuity, employees struggled to get to work or return home. I was constantly overwhelmed with handling the situation, leaving no room to think about anything else.

02 While it is only natural for an insurance company to use the Great East Japan Earthquake as a model for disaster damage projections, it also served as a profound reminder that our very existence is for "that moment" and that contributing to society is the core of our business. The disaster prompted us to reexamine the significance of each employee carrying this mission in their hearts as they approach their daily work. It is the responsibility of both the company and its employees never to forget that moment, to pass down records and memories, and to persistently pursue efforts that apply the lessons learned to future generations.

Atsushi Kawauchi presenting on Japanese students' thank-you letters to the U.S. for its support during the 1923 Great Kanto Earthquake, during the World Bosai Forum 2025, March 2025

03 The present day demands an expansion of insurance companies' roles. It is a time when we should take on a more proactive role, going beyond basic functions such as insurance design, underwriting, and claims payment, to include damage mitigation, post-disaster recovery support, and initiatives that encourage preparedness. While earthquake insurance penetration increased after the disaster, it has plateaued in recent years. As a result, the protection gap remains significant, and a critical mission entrusted to insurance companies is to steadily narrow it.

● Uehiro Disaster Risk Reduction Research Division

KAWAUCHI Atsushi

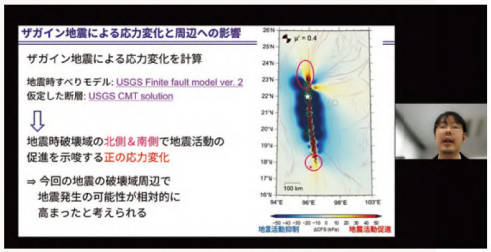
Associate Professor

01 I was working part-time organizing historical documents at the Kobe City Archives. I did not feel the tremors, but my social media timeline (Twitter) was flooded with tweets about the major earthquake, and that was where I learned also about the issued major tsunami warning. I was able to contact acquaintances in the disaster area via social media immediately after the earthquake, but I lost contact after a while. Later, through NHK's live news broadcasts circulating online, I learned about the massive tsunami hitting the Pacific coast and realized it had become an unprecedented disaster. At the time, I was working for the secretariat for the disaster-affected historical materials preservation organization (Historical Materials Network), headquartered at Kobe University. I immediately contacted the representative and decided to convene an emergency steering committee meeting that evening. I headed to Kobe University in the evening. At the committee meeting, we were unable to contact organizations in disaster areas, including Miyagi, and had almost no information about the situation there. However, we confirmed that nationwide relief efforts for damaged historical materials would likely be necessary in the future. We agreed to promote information sharing with all relevant parties through every possible method and to advance a cooperative framework for the national cultural property rescue project, which was likely to be launched soon. I recall continuing to gather information and contacting relevant parties late into the night that day.

02 At the time, with the deadline for submitting my doctoral dissertation approaching, I was conducting research on the "Tohoku Development Project" of the 1930s. The project, launched in the early 1930s following a devastating crop failure in Tohoku under the banner of "development and relief," transformed as the wartime regime progressed. I observed that process, overlapping with the actual recovery and reconstruction efforts for the Great East Japan Earthquake. Furthermore, while advancing my dissertation, contemplating how people were "living" in the disaster-stricken areas made me keenly aware of the importance of the perspective I had previously focused on: the "history of survival." This led me to pursue a historical vision centered on how people "live" within history. This remains the foundation of my own historical understanding to this day. While writing my dissertation, I also engaged in activities to rescue historical materials from disaster-affected areas. The organization, the management of which I worked for at the time, served as a core group within Japan's network for the preservation of historical materials. Our primary task was to establish backup systems for activities in Miyagi and Fukushima. To achieve this, I worked to build collaborative frameworks with national historical societies, national cultural property officials, and related institutions. Through this process, I began to deeply contemplate: What kind of mechanisms and society are needed to protect and transmit regional historical materials in an era of frequent large-scale disasters? What meaning do history and historical materials hold for people under unprecedented disaster conditions? I became conscious of these questions as the backbone of my own historical research.

Advancing Research and Observation

03 Regarding the concept of the "history of survival" in modern Tohoku social history research, proposed by Dr. Masakatsu Ookado (Professor Emeritus, Yokohama National University) and others, I have developed a form of "historical practice" by holding forums in disaster-affected areas. We have deepened our exploration of the interrelationship of how history relates to the fact that people "lived" within it and to the fact that people "are living" it now. Furthermore, following the Great East Japan Earthquake, while advancing a nationwide, wide-area coalition system for disaster-affected materials rescue activities, we aimed to build visible relationships among stakeholders across regions. To this end, we planned and held the "National Historical Materials Network Research Exchange Meeting" in Kobe City in 2015, which we believe marked a significant step toward establishing this nationwide, wide-area coalition system (this meeting will reach its 12th iteration in January 2026). Currently, my research is advancing toward theorizing the question, which was deeply felt during the disaster, "What meaning do history and materials hold for people?" drawing on insights gained from materials preservation practices and historical practices informed by the "history of survival."



Yutaro Okada, presenting at a briefing session on the earthquake that struck central Myanmar on March 28, 2025, photographed in April 2025

● Uehiro Disaster Risk Reduction Research Division

OKADA Yutaro

Assistant Professor

01 I was living in Okayama Prefecture and was in my second year of junior high school. On March 11, I attended my school's graduation ceremony and participated in club activities on the sports field in the afternoon. It was not until I returned home in the evening that I first learned about the massive earthquake that had struck Tohoku and the giant tsunami that followed. Since I lived far away, I did not suffer any direct damage. However, I remember thinking, "This is no ordinary event," because all TV stations simultaneously switched to disaster coverage and replaced commercials with public service announcements.

02 I lived in western Japan until recently, so megathrust earthquakes along the Nankai Trough sparked my interest in seismology, or more broadly, earth sciences. I chose slow slip as my research topic (Note: While active slow slip occurs frequently in western Japan, it is rarely reported in eastern Japan). During my graduate and postdoctoral years, I pursued slow slip research out of pure curiosity. It was not until I joined IRIDeS that I began considering what my research could contribute to disaster mitigation. Currently, I am working on two themes: "accumulating case studies through analysis of occurred earthquakes" and "developing detection methods for tiny crustal deformation events that may precede large earthquakes."

03 The primary goal of my research is to "realize short-term earthquake prediction within 1,000 years." To achieve this, I aim to "unravel the diversity of fault slip and its governing mechanisms." To perform such analyses, advanced noise reduction techniques for data are essential. Currently, as preparatory work toward this overarching goal, I am focusing on enhancing noise reduction methods for satellite data. Concurrently, I am also working on analyzing crustal deformation associated with earthquake swarms. Looking ahead, effectively utilizing the geodetic data, which will likely increase dramatically, and the increasingly sophisticated analytical methods, especially AI, will be crucial for achieving this primary goal.

● Uehiro Disaster Risk Reduction Research Division

IGARI Nobuko

Research Associate

01 I was working in a management building at Tohoku University's Faculty of Engineering that looked like it could collapse at any moment. We all ducked under our desks. The sound of dishes falling and shattering from the cupboard in the room still echoes in my ears. On the way home, I rode with a colleague heading the same direction, but just descending the Ogizaka slope took over three hours. During that time, I had no grasp of the city's situation. I remember it took a while to process the reality of what was happening in eastern Sendai and the coastal areas, which I learned about through news reports.

02 I feel that research has expanded beyond studying mechanisms such as earthquake occurrence to include more practical studies and research that encourages action among the public.

03 While we cannot eliminate hazards, I strive to help minimize their impact. I also aim to disseminate researchers' findings so that more people can benefit from them.

Elementary school children learning DRR in a fun way at the Bosai Treasure Hunt event held at the public event Katahira Matsuri, October 2025

Aiming to Systematize DRR Education

● Uehiro Disaster Risk Reduction Research Division

SAITO Yumiko

Research Associate

01 I was a sixth-grade homeroom teacher at the Sendai Aramachi Primary School. The disaster struck us during a graduation ceremony practice in our new gymnasium that was in its first year of operation. Upon request, we handed over schoolchildren to their parents without receiving disaster information. I heard about the disaster situation from parents who had come to school to pick up their children. The schoolyard was unusable due to construction work at the time. Adequate evacuation plans were not provided for faculty and staff, making the response difficult. Subsequently, over 700 stranded evacuees flooded into Aramachi Primary School. There were many international students from nearby universities. Following government instructions, we did the first distribution of instant rice around 10:00 PM. The principal permitted us to go home near midnight. Due to the construction, staff had been commuting by public transport and had no means to return home. During the food distribution, we learned via radio about the tsunami in Arahama and the nuclear power plant crisis. The safety of family and friends remained unknown until the following day.

02 I lost my students and those who had helped me. Many people lost their houses and belongings. Many children had to drastically alter their life plans, such as reconsidering their educational or career paths. This experience made me realize that school education must prioritize DRR to protect lives from disasters and enable a swift return to everyday life. At that time, and still today, DRR education largely depended on teachers' discretion and lacked a systematic framework. Practical, effective research is needed to prevent the same issues from recurring in future disasters.

03 Immediately after the earthquake, the Board of Education prioritized DRR education. However, with other educational issues now piling up, it tends to be put on the back burner in actual schools. Meanwhile, disasters linked to climate change are on the rise. Schools should establish their own DRR education plans, considering risks specific to their unique topography and anticipated disruptions based on local conditions. Yet, even 15 years later, these plans remain unfinished. There is a tendency in educational settings to consider issues once addressed as complete, leading to their being overlooked. I aim to conduct research and development that provide guidelines for creating DRR education plans and concrete learning plans to support schools.

● Uehiro Disaster Risk Reduction Research Division

TAKAHASHI Rieko

Research Associate

02 During the Great East Japan Earthquake and its aftermath, while having lost my relative and loved ones, I engaged in post-disaster care at my workplace as a clinical psychologist. Within that experience, the aspect that has most profoundly influenced my research field is likely the realization that we must never "simplify" anything. Among the individuals I met as a clinician, many chose not to speak about the disaster. Among them were also those who carried profound suffering related to the very act of "speaking." Moreover, on a daily basis, I sensed the distress of those for whom speaking was painful, due to the social climate that increasingly encouraged "speaking". Before asserting the "right to speak," we should also consider the "right not to listen," in situations where people are forced to hear things they do not wish to hear. Through this realization, I came to understand the importance of approaching others and communicating with imagination and respect. Because of this, I have come to recognize the importance of careful observation that does not overlook underlying "complexity," as well as the dangers and unresolved questions surrounding "simple" "generalizations." Even so, I still have a long way to go.

03 Although I have just begun my career as a researcher, I intend to pursue research on disaster preparedness and psychological impacts within my specialized fields of perinatal, maternal, and child health and pediatric disabilities. My goal is for there to be a world in which everyone can evacuate with peace of mind, respecting and helping one another.

● Uehiro Disaster Risk Reduction Research Division

YAGI Mika

Administrative Assistant

01 I was driving home after picking up my 4-year-old son from kindergarten with my 1-year-old daughter in the car. Houses directly ahead of us swayed violently from side to side. Thinking I was feeling unwell, I pulled over to the shoulder. Then, a jolting, upward-thrusting tremor shook the car violently, and I realized a major earthquake had struck. I remember being paralyzed with fear that the vehicle might roll over. All rational thought stopped, and I could not make an immediate decision: should I drive home or stay put in the car?

A Future Built Through Collaboration

● AEON Disaster-Resilient and Environmentally-Friendly City Creation Joint Research Lab

MARUYA Hiroaki

Specially Appointed Professor

01 I was working at the Research Institute of Construction and Economy, affiliated with the Ministry of Land, Infrastructure, Transport and Tourism. My office was on the 8th floor of a building in Minato Ward, Tokyo. It shook violently, and the building creaked loudly. I braced myself against a cabinet behind me that was about to fall over, waiting for the shaking to stop. The TV immediately showed images of the damage, and I was deeply shocked by footage of the massive tsunami. I did not evacuate outside because I knew it was dangerous, but many of my colleagues evacuated to a nearby park. Also, since train service stopped that night, I spent the night at the office. However, more than half of my colleagues walked home and had difficulty.

02 In the days following the earthquake, I worked with disaster volunteer leaders I had met while working at the Disaster Management Department of Cabinet Office to create an instructional video for disaster volunteers traveling by bus to the disaster-stricken area. Because my institute's role was to research the construction industry, we began surveying construction industry activities in response to the disaster. We conducted field surveys of construction industry operations. Furthermore, since I had been researching business continuity plans (BCPs) even before the disaster, I also began studying the business continuity efforts of affected companies. These experiences were the specific motivations that led me to aspire to work at IRIDeS.

03 The goal of my research is to mitigate damage to businesses and organizations during future major disasters, such as Tokyo Inland Earthquakes or Nankai Trough earthquakes. While I have strived to achieve this, progress has been slow—for example, the rate of BCP formulation and their effectiveness have not improved significantly, and I am still amid this effort. Having been permitted to continue my research and activities at IRIDeS beyond retirement age, I intend to sustain this work for as long as possible, including through my involvement with the Non-Profit Organization (NPO) Business Continuity Advancement Organization.

● AEON Disaster-Resilient and Environmentally-Friendly City Creation Joint Research Lab

SHINKA Anna

Assistant Professor

01 March 11 was the day of my junior high school graduation ceremony. When the earthquake struck, I was at a shopping mall in my hometown of Iwaki City, Fukushima Prefecture, with my mother, buying stationery I had planned to use in high school. We immediately moved to a wide aisle, crouched down, and protected our heads. It was chaotic—mannequins nearby toppled toward us, fire alarms blared, and people rushed toward the exits. I distinctly remember feeling strangely detached from reality, as if watching a reenactment on TV. Once the shaking stopped, I became worried about my younger brother, who was in elementary school at the time, and decided to return to our home near the coast. I understood the possibility of a tsunami, but we resolved to get as far as we could. We drove home, keeping a watchful eye on our surroundings.

02 Even before the Great East Japan Earthquake struck, I had been interested in disasters, but at that time, I wanted to pursue a completely different career. The disaster literally became the catalyst for my research. My hometown was devastated, and I met many people who had endured tremendous hardship. Through these encounters, I became determined to reduce the number of people suffering such profound loss, even by just one person. This led me to engage in research and inquiry as part of my high school club. Through this research, I learned about Tohoku University's disaster research, which prompted me to change my choice of university to attend. The experiences and messages I received from disaster victims in my hometown during my high school research activities continue to drive my ongoing research.

03 I want to reduce the number of lives lost in disasters, even by one person. Currently, focusing on tsunamis, I am analyzing the initiation and progression of evacuation behavior using survivor interview data to design effective DRR education. In the future, I plan to expand my analysis of evacuation behavior from tsunamis to include heavy rainfall disasters. We also intend to systematize practical education conducted in collaboration with local communities, presenting a framework to support residents' decision-making and evacuation actions.

AEON Mall Sendai Kamisugi, Sendai, where the AEON Disaster-Resilient and Environmentally-Friendly City Creation Joint Research Lab helped develop its resilience planning, has a sign with the IRIDeS name, photographed in December 2025

● Administration Office

OTSUKI Shinya

Accounting Section Chief

01 While in a meeting at the Graduate School of Economics Administrative Director's Office, I initially thought a fairly large earthquake had struck and began moving toward the administrative office. I did not think it was that major of an earthquake, but the shaking felt very long. By the time I returned to the office, the areas around my desk and the entire office were already in complete disarray. The entrance exams were scheduled for the following day, and we had already completed their preparation in the morning, but I anticipated that the earthquake would impact the exams. Subsequently, due to the power outage, I learned about the tsunami via a mobile TV broadcast on my phone. As significant damage was confirmed both inside and outside the research buildings, we began checking each room one by one to ensure no graduate students or faculty/staff were trapped inside.

Note: Tohoku University ended up cancelling its second-term entrance exams that year, instead determining admissions based on National Center Test scores and high school grades and records.

Notice

IRIDeS Support Fund

Giving to IRIDeS

Your donation to the IRIDeS Support Fund will help advance our activities in the research on disasters, disaster risk reduction and its social implementation. Please access the following website for details.

https://irides.tohoku.ac.jp/eng/outline/irides_donation.html

Organization

Organization of IRIDeS

※As of March 2026

IRIDeS

The logo of IRIDeS is the kanji 災 (disaster) turned upside down, showing our determination to "turn disaster into good fortune."

■ **Interdisciplinarity with researchers from engineering, science, humanities and social sciences, medicine, and disaster risk reduction specialists collaborating to pursue world-leading research.**

■ **Practicality that directly aims at building a resilient society and helping those affected by disasters**

Risk Evaluation and Disaster Mitigation Research Division

- Subduction Earthquake Lab
- Inland Earthquake and Volcano Lab
- Earthquake Engineering Lab
- Computational Safety Engineering Lab
- Tsunami Engineering Lab
- Disaster Geo-informatics Lab
- Oceanic, Atmospheric and Outer Space Disaster Lab
- Disaster Robotics Lab

Disaster Humanities and Social Science Division

- Disaster Culture and Archive Studies
- Preservation of Historical and Cultural Heritage Lab
- Cognitive Sciences Lab
- International Strategy for Disaster Mitigation Lab
- Regional Resilience Planning Lab
- Spatial Design Strategies Lab
- International Environment and Disaster Management Research Lab

Disaster Medical Science Division

- International Cooperation for Disaster Medicine Lab
- Disaster Medical Informatics Lab
- Radiological Disasters and Medical Science Lab
- Disaster Psychiatry Lab
- Disaster Obstetrics and Gynecology Lab
- Disaster Public Health Lab
- Infectious Diseases Lab
- Oral Health and Disaster Medicine Lab
- Global Health Policy Lab

Practical Research and Collaboration Division

- Disaster Education Research and Implementation Lab
- Disaster Resilient Society Promotion Lab
- Communication Science for Disaster Risk Reduction Lab
- Inclusive Disaster Risk Reduction Lab
- Climate Change Adaptation and Disaster Risk Reduction Lab
- Disaster Memory Studies Lab
- International Research Collaboration Office
- 2030 Global DRR Agenda Office
- Resilient EICT Research Promotion Office

Endowed Research Division

- Earthquake Induced Tsunami Risk Evaluation Lab (Tokio Marine and Nichido Fire Insurance)
- Uehiro Disaster Risk Reduction Research Division

Joint Research Division

- AEON Disaster-Resilient and Environmentally-Friendly City Creation Joint Research Lab
- Nippon Koei Resilient City with Digital Twin Technologies Joint Research Lab

Co-creation Center for Disaster Resilience

Global Centre for Disaster Statistics

Kesennuma Satellite Office

Public Relations Office

Strategic Research Promotion Office

Administration Office

Inquiry

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