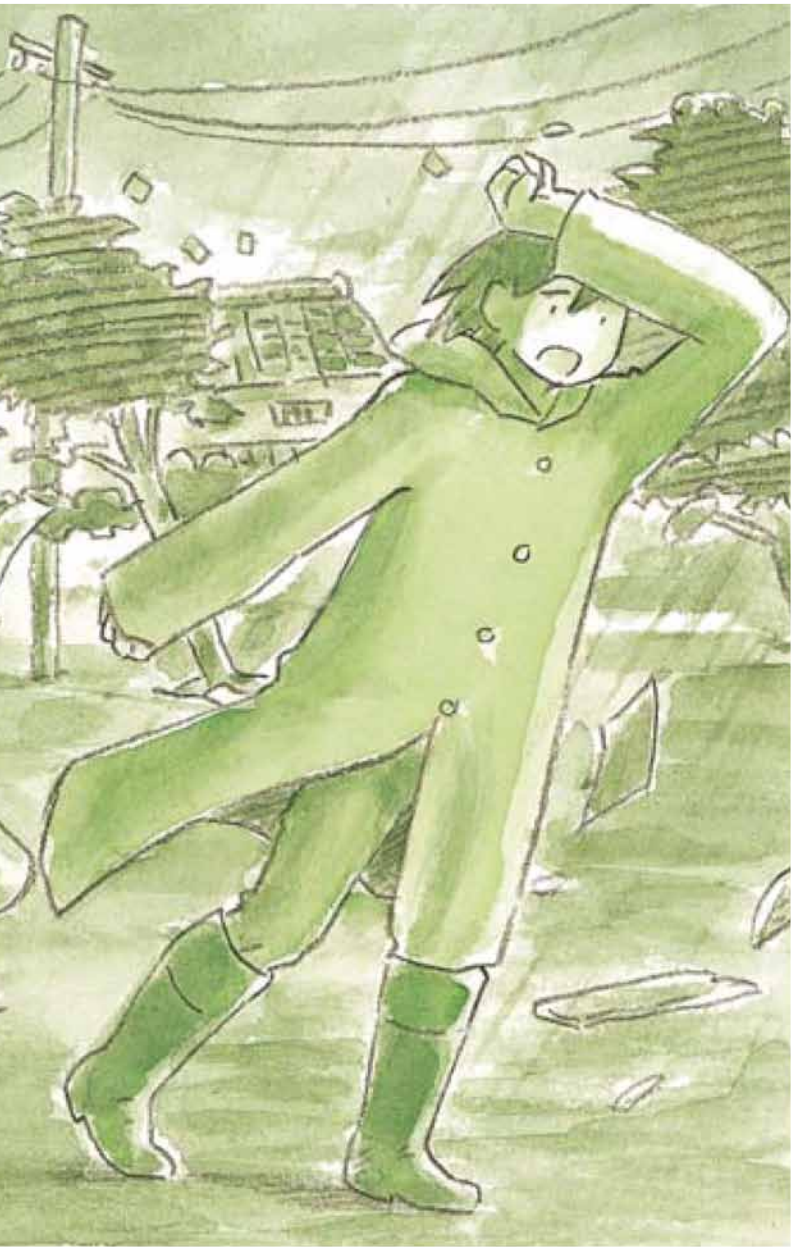
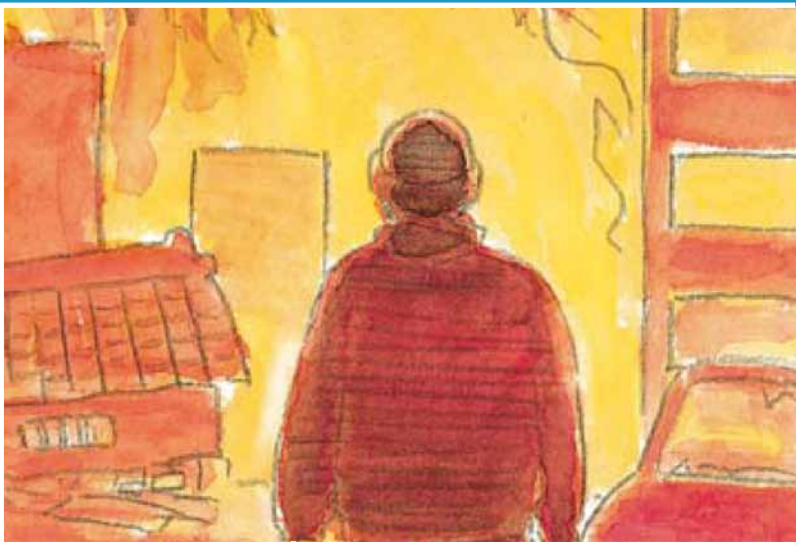
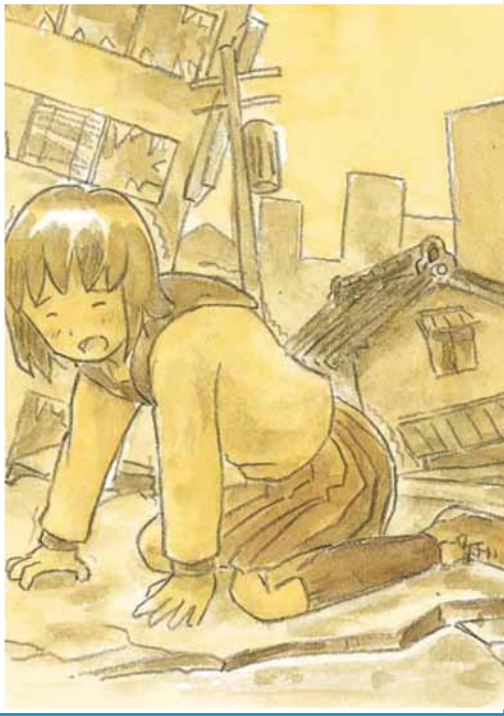
Osaka City University
Center of Education and Research for Disaster Management







CERD Efforts and Activities

Research

We have the goal of building community disaster management system that places the highest priority on saving lives. In preparation for complex, high-consequence disasters, it combines features of advanced disaster science, information technology, and citizen science.
To protect residents from natural disasters, residents themselves must gain accurate knowledge of the risks that exist in their particular living environment and develop preparedness measures to apply in their day-to-day lives.

Education

We offer the Community and Disaster Management General Education Program to both OCU students and members of the community. All these offerings are organized mainly by members of CERD, a cross-sectoral organization, in order to provide both theoretical and practical training. One feature of our various programs is the active learning style of education which enables all to learn practical disaster management in a real community and not simply the knowledge required for community disaster management.

Social Cooperation

We conduct community contribution activities in various ways so that knowledge on disasters and disaster prevention can be used for the disaster prevention activities in communities. The achievements record and information shared through this program will be reported in the Community Disaster Management Forum, a presentation of the results. These activities will encourage an exchange of opinion regarding future challenges. Researchers as lecturers are delivering classes to elementary and junior high schools, etc., and lectures at various places are also carried out.

CERD Members

Director Muneki MITAMURA

Deputy Director Takaaki SHIGEMATSU / Daisuke SAEKI / Eisuke IKUTA

[Unit I]
Disaster Risk

Leader Nagahiro YOSHIDA
Graduate School of Engineering
Infrastructure Planning and Transportation Engineering

His research topic covers safety, environment, and health issues in traffic engineering and transportation planning especially for people with mobility impairments. In terms of disaster management, a cross-sectoral and multi-dimensional approach to improve resilience is tried to introduce in local activities both pre- and post-disasters.
mobility impairments, walking and cycling for transport, cross-sectoral approach

Toru ENDO
Graduate School of Engineering
Aquatic Environmental Engineering

His study is environmental dynamics analysis in urban estuarine and coastal seas. He researches the effect of disturbance phenomenon such as flood or tsunami on aquatic environment and ecosystem function of river in this project.
Yamato river, flood, environmental assessment, ecosystem function

Akihiko OSHIMA
Graduate School of Engineering
Geotechnical Engineering

Study of consolidation, compaction and strength for soil, 250m square mesh ground model based on geo-informatics database, Prediction of ground settlement and liquefaction countermeasure due to groundwater Lowering, Construction of site amplification map on earthquake, Development of housing ground investigation for liquefaction judgment
Liquefaction, Settlement prediction, Groundwater, Geo-informatics database, Ground investigation

Yoshinori KANJO
Graduate School of Engineering
Water and Wastewater Engineering

・Water supply demand balance in the post-quake period in Osaka City
・Relationship between the distributions of shelters, population and estimated earthquake intensity in Osaka City during the Uemachi fault earthquake
Uemachi fault earthquake, water supply demand balance, shelter, earthquake intensity, fire-fighting water

Hiroaki KITO
Graduate School of Engineering
Hybrid Structure

Elucidation of mechanical properties of steel-concrete hybrid members and structures, Development of rational design method of steel-concrete hybrid structures, Repairing and reinforcing existing structures and their application for longer life
durability, repair, reinforcement, seismic

Yoshinari KIMURA
Graduate School of Literature and Human Sciences
Geographic Information Science.

Assessment of the accessibility of the emergency medical service and disaster medical care system using GIS.
GIS, Accessibility, Emergency medical service, Disaster medicine

Takaaki SHIGEMATSU
Graduate School of Engineering
River and Coastal Engineering

Development of tsunami evacuation shelter and researches on inundation by river water, inundation inside levee, and inundation propagation characteristics in the underground space.
Evacuation shelter from tsunami, Combined water disasters, Evacuation

Hideya TAKAHASHI
Graduate School of Engineering
Information System Engineering

Research on mobile information display effective for rescue / evacuation.
head-mounted display, retinal projection display

Tomohito TAKUBO
Graduate School of Engineering
Robotics

Development of legged robot for inspection of structural object and autonomous wheeled mobile robot for mapping. Research on searching for particular people by autonomous mobile robot using mounted cameras and 3D-Lider.
Autonomous mobile robot, Mapping

Atsushi TAKIZAWA
Graduate School of Human Life Science
Architectural Informatics

He researches wide-area evacuation and walking home simulation, the fastest evacuation planning by discrete algorithm, and allocation of evacuation centers.
Evacuation planning, evacuation simulation, multi-agent, mathematical programming, fastest flow model

Yoshiya TANIGUCHI
Graduate School of Engineering
Structural Engineering for Architecture

Research on structural properties to present an estimation method of ultimate seismic resistant capacity for spatial structures.
Spatial structures, Bearable PGA, Structural property

Hisao TSUNOKAKE
Graduate School of Engineering
Concrete Structure

He is aiming for longer life and seismic resistance centering on concrete infrastructure structures. He conducts research to maintain existing structures by verifying durability and repairing and reinforcing existing concrete structures.
durability, repair, reinforcement, seismic

Sota NAKAJO
Graduate School of Engineering
Coastal engineering, Hydraulics

1) Estimation of meteorological and oceanographic disaster, worst-case scenario and its frequency,
2) Appropriate presentation method of disaster risk information,
3) Assessment of climate change effect.
storm surge, anomaly tide, tropical cyclone, disaster prevention planning, risk communication

Minako NABESHIMA
Graduate School of Engineering
Ph.D., thermal energy utilization and facilities

She is interested in energy-saving facilities for hot water supply and air conditioning of buildings from the viewpoint of BCP and LCP.
Hot water supply, Air conditioning, Energy-saving, Sustainability

Tatsuya NEMOTO
Graduate School of Science
Geoinformatics

Three-dimensional geologic modeling and visualization methodology. Development of a web-based system for sharing geological data.
Three-dimensional geologic model, Visualization, Web-GIS, Spatial database

Tsuyoshi HARAGUCHI
Graduate School of Science
Engineering Geology

Research on disasters such as earthquake, tsunami, slope collapse. Study on rise and fall of ancient civilization and environmental change.
earthquake, tsunami, slope, ancient civilization, environmental change

Shinji MASUMOTO
Graduate School of Science
Geoinformatics

Development of three-dimensional geological modeling system based on the logical model of geologic structure and its application using geographic information system.
3D geological model, geographic information system

Satoshi MIZUTANI
Graduate School of Engineering
Waste management

He studies disaster waste management.
* Estimation of demolition waste generation amount based on building stock in city and seismic intensity prediction.
* Prediction of generation and distribution of chemical-polluted/hazardous waste at disaster by using chemicals management system such as PRTR.
Disaster waste, demolition waste, chemicals management, PRTR, GIS

Muneki MITAMURA
Graduate School of Science
Urban Geology

Disaster characteristics of the Holocene strata.
Relation between earthquake damages and artificial valley fills.
Holocene sediments, Alluvial Plain, Artificial strata, Geohazards

Daisuke YOSHIDA
Graduate School of Engineering
Geoinformatics

Satellite positioning systems and geographical information systems (GIS), and the applications for disaster reduction research and urban infrastructure maintenance.
Global Navigation Satellite System (GNSS), Geographical Information Systems (GIS), Augmented Reality (AR), Unmanned Aerial Vehicle (UAV)

Susumu YOSHINAKA
Graduate School of Engineering
Structural Engineering for Architecture

He mainly studies on vibration response control for large span structures. And he develops novel ceiling suspended by diagonal cables for prevention of fall of ceiling in large scale facilities.
Large span structure, Vibration control, Suspended ceiling

Takashi YAMAGUCHI
Graduate School of Engineering
Bridge Engineering, Steel Structure

Development of an emergency temporary bridge
Re-use, Rapid construction, Temporary bridge

Suguru YAMADA
Graduate School of Engineering
Geotechnical Engineering

Laboratory and Insitu experiments aiming to develop reasonable liquefaction countermeasures and assessment. Cyclic triaxial test, Bender element test, Soil improvement, New Geomaterials for soil improvement.
Liquefaction, Soil Improvement, Ground Investigation, Laboratory Testing

Go YONEZAWA
Graduate School of Engineering
Area Informatics

Research on spatiotemporal analysis using urban geospatial data of Vietnam for disaster management
Vietnam, GIS, 3-D geological model, DEM, Spatiotemporal analysis

Venkatesh RAGHAVAN
Graduate School of Engineering
Geoinformatics and Remote Sensing

Research on GIS and Remote Sensing technologies for spatial data acquisition, visualization, analysis and sharing and their applications for sustainable urban development
GIS, Remote Sensing, Spatial Analysis, Image Processing, Open Source Software

Tsugumichi WATANABE
Graduate School of Human Life Science
Civil Engineering

Durability Mechanics
Concrete Structure

Research Fellow

Takuya SATO	Atmospheric Science
Toshikazu SETO	Social Geography, Geographic Information Science
Akimasa TAKENAKA	Information education/ geographical information systems (GIS) / Unmanned Aerial Vehicle (UAV)
Koichi NAKAGAWA	Engineering Geology, Geophysics

[Unit Ⅱ]
Disaster Preparation

Leader Hitoshi WATANABE
Research Center for Urban Health and Sports
Health and sports science

Improvement of resilience on self-help and community-cooperation in disasters. Development of guidelines on health and physical fitness for vulnerable people in the evacuation from disasters.
Evacuation, Physical fitness, Health, Resilience, vulnerable people in disaster

Eisuke IKUTA
Graduate School of Human Life Science
Environmental Safety Engineering

Mechanism of Human Casualty due to Disaster
Plan and Practice for Community based Disaster Management
Assistance for Vulnerable Populations
Consciousness of Disaster Risk and Risk Communication
Human casualty, Community based Disaster Management, Disaster Education, Risk Communication

Daiki IMAI
Research Center for Urban Health and Sports
Environmental physiology for exercise

Improvement of self-help and community cooperation resilience for disaster. Development of the indicators of health and physical fitness required while evacuation for vulnerable people in disaster.
Evacuation, Physical fitness, Health, Resilience, vulnerable people in disaster

Kazunobu OKAZAKI
Research Center for Urban Health and Sports
Health and sports science

Improvement of resilience on self-help and community-cooperation in disasters. Development of guidelines on health and physical fitness for vulnerable people in the evacuation from disasters.
Evacuation, Physical fitness, Health, Resilience, vulnerable people in disaster

Akira OGITA
Research Center for Urban Health and Sports
Health Biosciences

Improvement of resilience on self-help and community-cooperation in disasters. Development of guidelines on health and physical fitness for vulnerable people in the evacuation from disasters.
Evacuation, Physical fitness, Health, Resilience, vulnerable people in disaster

Yukiko KANAYA
Graduate School of Nursing
Community Health Nursing

Research on Disaster Risk Reduction Training to Community Volunteers.
disaster, risk reduction, cooperation community, community volunteers, risk reduction

Tadao KAWAI
Graduate School of Engineering
Diagnosis Engineering

Using image processing or vibration analysis, diagnosis and evaluation techniques to detect damage in a machine or infrastructure are developed. These work lead to the CIM (Construction Information Modeling) in the field of maintenance.
Damage,Evaluation,Diagnosis,Image Processing, Vibration Analysis

Megumi KAWAHARA
Graduate School of Nursing
Cancer / Acute Nursing Science

Disaster Nursing
disaster, survivor, education, self-care

Hiromi SAKUDA
Graduate School of Nursing
Cancer / Acute Nursing Science

Disaster Nursing
disaster, survivor, education, self-care

Hong Gyu JEON
Urban Research Plaza
Asian Urban Studies

He conducts comparative research on housing welfare in Asian cities. From the perspective of disaster prevention I analyze practices that involve the empowerment of people vulnerable to disasters, like elderly and disabled members of discriminated communities or foreign residents.
Housing welfare, Disaster vulnerable people, Discrimination areas, Foreign residents, Empowerment

Yuta SUZUKI
Research Center for Urban Health and Sports
Biomechanics

Improvement of resilience on self-help and community-cooperation in disasters. Development of guidelines on health and physical fitness for vulnerable people in the evacuation from disasters.
Evacuation, Physical fitness, Health, Resilience, vulnerable people in disaster

Yogo TAKADA
Graduate School of Engineering
Robotics

Study on small size robots that can enter various irregular areas and can be carried by users. In the project, I am considering portable robots that will help the victims evacuate to a place of refuge with their own efforts.
Moving robot, Portable size, Irregular area

Tetsuo TSUJIOKA
Graduate School of Engineering
Communication Engineering

His research interests include positioning and tracking technique of human with low cost and reliable performance in disaster environment. To be more useful in disasters, to be indispensable in ordinary situation is important.
Communication Systems, Web Database Systems, Sensing

Shigeyoshi NAKAJIMA
Graduate School of Engineering
Information Processing

Tracing a human using surveillance camera in disaster scene by human identification. Finding cracks in buildings by image processing for safety in disaster.
surveillance camera, human identification, human tracking, image processing and cracks in buildings

Yasuyo NOMURA
Graduate School of Human Life Science
Social welfare

A study on strengthen local ability of disaster prevention by the relationships.
relationship, local ability of disaster prevention, locals

Yuko HIRATANI
Graduate School of Nursing
Child Health Care Nursing, Family Health Care Nursing

Research on child health care nursing and family health care nursing
Child, Child with disease, Child with disabilities

Daisuke MIYAZAKI
Graduate School of Engineering
Information Optics

Information Acquisition, processing, and display technologies based on optical engineering are investigated. These researches can be applied to the inspection of construction using optical measurement technique, the effective visualization of complicated structure using three-dimensional display technique.
Optical measurement, profilometry, three-dimensional display, image processing

Michio MIYANO
Graduate School of Human Life Science
Safety Engineering of Housing, Regional Disaster Prevention

He conducts research on natural disasters such as earthquakes and wind and flood damage and daily accidents occurring inside and outside the house, aiming to formulate a safe and comfortable living environment. Specifically, he is conducting research on evacuation behaviors in case of disasters and mechanisms of human casualty.
Human casualty, Evacuation behavior, Living reconstruction, Accident in daily life

Yukari MURAKAWA
Graduate School of Nursing
Cancer / Acute Nursing Science

Disaster Nursing
disaster, survivor, education, self-care

Hiromasa YAMAMOTO
Graduate School of Medicine
Emergency and Disaster Medicine

Assessment of the manageability of the disaster medical care system using GIS.
Development of IoT system to support Hospital Emergency Management Headquarter.
Development of educational contents for hospital response to major incidents.
Community education of disaster medicine
Disaster medicine, GIS, Hospital Emergency Management Headquarter, Community education

Hisayo YOKOYAMA
Research Center for Urban Health and Sports
Endocrinology and metabolism, Exercise therapy

Improvement of resilience on self-help and community-cooperation in disasters. Development of guidelines on health and physical fitness for vulnerable people in the evacuation from disasters.
Evacuation, Physical fitness, Health, Resilience, vulnerable people in disaster

Yoshie YOKOYAMA
Graduate School of Nursing
Public Health Nursing

Research on public health activities and health status after the disaster. Study on disaster prevention for mothers and children.
maternal and child health, public health,public health nurses

Research Fellow

Tadayoshi UEDA	A study on assistive technology and environment improvement for people with disabilities and elderlypeople
Masahiro OKAMOTO	Home-Visit Rehabilitation
Kazuya KOJIMA	Disaster Management for Community
Hisanori KOJIMA	Health Sciences
Tomoko SHIGAKI	Community dwellings, Earthquake-related Health Consequences
Masaaki SUGIYAMA	Neighbourhood environmental attributes conducive to active living
Naoshige HATA	Ph.D in Medicine

[Unit Ⅲ]
Social Implementation Management

Leader Yoshiyuki FUKUSHIMA
Graduate School of Literature and Human Sciences
Communication and Interaction, Interaction analysis

From the point of view of interactionism, he studies the mechanism of human interactions, lessons / learning and inter-zones. In CERD, he seeks to demonstrate the effectiveness of theater for disaster management.
Disaster management theatre, Interactionism, Social resilience, Interactionist ability, Thought of "Weak Robot"

Kazuyuki KONAGAYA
Graduate School of Urban Management
Town Management, Regional Regeneration, Urban Economics

Economic and Management Analysis on Urban Planning, Town Management Problems
Town Management, Regional Regeneration, Disaster mitigation, Marketing, Behavioral Economics

Daisuke SAEKI
Graduate School of Literature and Human Sciences
Behavior Analysis

Evaluation of effects of disaster education, Development of educational program of disaster reduction for community residents.
Learning, operant conditioning, choice, disaster education, disaster training

Shigeki SAKAGAMI
Graduate School of Economics
History of industrial technology

History of power technology (Internal combustion engine, Steam engine, Steam turbine, Gas turbine)
Technical history of accidents
Internal combustion engine, Diesel engine, Automobile, Steam engine, Steam turbine

Haruo SOEDA
Graduate School of Literature and Human Sciences
Education

Disaster reduction learning in extracurricular activities imbedded in formal school curriculum.
disaster reduction learning, extracurricular activities, schools

Kazuhiko MORI
Graduate School of Human Life Science
Architectural Planning, Well-being Environment Design

Research on Community Planning with Disaster Education – Community Place and Social Capital Recovery.
Disaster Prevention Culture, Education for Disaster prevention, Community Activity, Social Capital

Hisayoshi MORI
Graduate School of Literature and Human Sciences
Education

He specializes Curriculum and Instruction. His research theme is to study educational practices especially in schools from historical and contemporary viewpoints. He is also interested in school management intending a relation with communities.
Curriculum, Teacher Education

CERD Organization

Director：Muneki MITAMURA

Education for Communities' Disaster Management
[Leader]
Daisuke SAEKI
[Sub Leader]
Sota NAKAJO
Tetsuo TSUJIOKA

Urban Disaster Management Research
[Leader]
Takaaki SHIGEMATSU
[Sub Leader]
Nagahiro YOSHIDA
Daiki IMAI
Hisayoshi MORI

Social Cooperation
[Leader]
Eisuke IKUTA
[Sub Leader]
Daisuke YOSHIDA
Yoshiyuki FUKUSHIMA

Museum of Disaster
[Leader]
Muneki MITAMURA

[Unit Ⅰ] Disaster Risk

Unit Leader：Nagahiro YOSHIDA

Regional information and Risk Management

Unit Sub Leader：Daisuke YOSHIDA

Venkatesh RAGHAVAN, Daisuke YOSHIDA, Go YONEZAWA, Yoshinari KIMURA, Toshikazu SETO, Akimasa TAKENAKA, Takuya SATO, Akihiko OSHIMA, Suguru YAMADA, Muneki MITAMURA, Shinji MASUMOTO, Tsuyoshi HARAGUCHI, Tatsuya NEMOTO, Koichi NAKAGAWA

Risk of Urban Infrastructure Management

Unit Sub Leader：Susumu YOSHINAKA

Yoshiya TANIGUCHI, Hiroaki KITOH, Takashi YAMAGUCHI, Hisao TSUNOKAKE, Tomohito TAKUBO, Susumu YOSHINAKA, Tsugumichi WATANABE, Yoshinori KANJO, Satoshi MIZUTANI, Minako NABESHIMA, Toru ENDO

Evacuation behavior Management

Unit Sub Leader：Sota NAKAJO

Hideya TAKAHASHI, Atsushi TAKIZAWA, Nakajo SOTA, Nagahiro YOSHIDA, Takaaki SHIGEMATSU

[Unit Ⅱ] Disaster Preparation

Unit Leader：Hitoshi WATANABE

Promotion of Medical treatment in Disaster

Unit Sub Leader：Hiromasa YAMAMOTO

Hiromasa YAMAMOTO

Acute Nursing in Disaster

Unit Sub Leader：Yukari MURAKAWA

Hiromi SAKUDA, Yukari MURAKAWA, Yukiko KANAYA, Megumi KAWAHARA

Physical fitness and Evacuation support

Unit Sub Leader：Daiki IMAI

Hitoshi WATANABE, Akira OGITA, Kazunobu OKAZAKI, Hisayo YOKOYAMA, Daiki IMAI, Yuta SUZUKI, Michio MIYANO, Eisuke IKUTA, Yoshie YOKOYAMA, Yuko HIRATANI, Hisanori KOJIMA, Tomoko SHIGAKI, Tadayoshi UEDA, Masahiro OKAMOTO, Kazuya KOJIMA, Masaaki SUGIYAMA

Welfare assistance in Disaster

Unit Sub Leader：Yasuyo NOMURA

Yasuyo NOMURA, Hong Gyu JEON

Disaster engineering

Unit Sub Leader：Tetsuo TSUJIOKA

Shigeyoshi NAKAJIMA, Yogo TAKADA, Daisuke MIYAZAKI, Tetsuo TSUJIOKA, Tadao KAWAI, Naoshige HATA

[Unit Ⅲ] Social Implementation Management

Unit Leader：Yoshiyuki FUKUSHIMA

Unit Sub Leader：Hisayoshi MORI

Yoshiyuki FUKUSHIMA, Daisuke SAEKI, Hisayoshi MORI, Kazuyuki KONAGAYA, Shigeki SAKAGAMI, Kazuhiko MORI, Haruo SOEDA

[Unit Ⅰ] Disaster Risk

[Research Theme] Promotion of understanding of natural phenomena and Utilization for disaster management, Technical development on disaster management
[Key Words] Risk, Spatiotemporal analysis, Innovation
[Research Project] "Study on coastal water hazard", "Research on ensuring safety of buildings", "Study on earthquake motions and liquefaction of ground", "Study on spatiotemporal analysis for efficient evacuation", "Research on evacuation support technology"

[Unit Ⅱ] Disaster Preparation

[Research Theme] To improve disaster management capabilities through self-help and mutual aid
[Key Words] Safety and Relief, Health and Physical fitness, Usual and Daily life
[Research Project] "The medical care in a disaster and health issues at shelters", "The skills and the physical strengths required in an evacuation", "The shelters giving welfare consideration", "Use of information and telecommunications technologies in a disaster"

[Unit Ⅲ] Social Implementation Management

[Research Theme] The Social Implementation of Disaster Management Education, To improve the comprehensive disaster management capabilities of the local community
[Key Words] Reality, Persistence, Collaboration
[Research Project] "Coordination for improvement on the disaster management capabilities of the community through good relations with one's neighbors in normal times", "The activity of the Sumiyoshi Act Company, a community theater group in collaboration with local residents"

Contact us CERD office

http://www.cerd.osaka-cu.ac.jp office@cerd.osaka-cu.ac.jp

For inquiries about research or joint-research possibilities, please contact the GLOBAL EXCHANGE OFFICE
kokusai@ado.osaka-cu.ac.jp

CERD
Center of Education and Research for Disaster Management