



Associate Professor,  
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**Research interests**

Physical geography, tectonic geomorphology,  
disaster reduction education



A scene from Prof. Kumahara's survey on active faults in Bhutan: he is pointing at a fault that has appeared on an outcrop (cliff).

## Rediscovering disaster, geography, and history through fieldwork as personally relevant issues

Since my student days up until now, I have been studying active faults in the Himalayas stretching from Nepal to India to Bhutan, determining when and where major earthquakes of what magnitude occurred in the region based on geomorphological and geological observations. In Bhutan, I also assist the production of active fault maps as a short-term Japan International Cooperation Agency (JICA) expert. In Japan, I conduct surveys with researchers from other universities on active faults across the country, including the Futagawa fault, which caused the 2016 Kumamoto Earthquake. In the major floods of July 2018 in Western Japan, debris flows occurred at various locations, including the area around Hiroshima University. Some HU researchers, students, and I immediately identified their starting points based on geomorphological interpretation using aerial photos and publishing our findings. We had already been conducting research with a focus on monuments to flood victims in Hiroshima Prefecture, which can convey precious information on past natural disasters to later generations. The 2018 floods attracted attention to our study, leading to the

adoption of a new map symbol for past natural disaster monuments by the Geospatial Information Authority of Japan (GSI). We received an award from the GSI for this.

Students who enter the social studies course of the School of Education, to which I belong, are mainly those who wish to be social studies teachers in junior high school or geography, history, and civic study teachers in senior high school. This year (AY 2022), general geography has become a compulsory subject in senior high school, and the main features of this subject are disaster reduction and fieldwork. In disaster reduction, it is essential to think of a disaster as something that is personally relevant to you. It is also important to accurately anticipate disasters that can happen in your areas, and the key to this is understanding past disasters. In my unit, we carry out research in a comprehensive manner covering everything from how to investigate disaster-related geographical features on-site to how to handle findings in actual classes. We try particularly consciously to link our research with actual educational application, participating in the production of videos for community-oriented disaster reduction education (a joint project between HU's Resilience Research Center and the Board of Education of Higashi-Hiroshima City) and supporting disaster reduction education in Municipal Kumano Elementary School in Fukuyama City.

I have also conducted fieldwork with my students about the geography and history of the area around the university campus. We published the results of this research in book form under the title *Saijo Chireki Wōku* (Geographical and historical walks in Saijo). For



A scene from a session of disaster reduction education with Kumano Elementary School pupils in Fukuyama City (with a monument to flood victims in the foreground). The research focusing on flood monuments by Prof. Kumahara's team began with a graduation research project by students interested in stone monuments. The GSI maps indicate a total of 1345 monuments commemorating past natural disasters in 399 municipalities across Japan (as of March 2022).

the students, seeing this tangible fruit of their hard work appearing in bookshops in town was a wonderful reward, a source of confidence, and an intellectual asset. I hope to continue training future teachers and researchers who can lead younger generations to make new discoveries about disasters, geography, and history through fieldwork and effectively communicate them and their significance.



*Saijo Chireki Wōku*, the book published by Prof. Kumahara and his students, and a video for disaster reduction education in Higashi-Hiroshima City. Learning local topography and disaster history strengthens disaster preparedness.



This is the tip of a plate boundary in the southeastern part of Nepal. With an active fault in the middle, the river strata do not meet. The Eurasian Plate is on the left, and the Indian Plate is on the right. The photo shows how the originally horizontal river strata were largely deformed.

### Network-type Research Center

#### Network for Education and Research on Peace and Sustainability (NERPS)

The Network for Education and Research on Peace and Sustainability (NERPS) is a network hub widely open to the world and not exclusively linked to Hiroshima University. NERPS aspires to be an education and research center characterized as follows:

1. A research hub focusing on peace, the global environment, and the Sustainable Development Goals (SDGs) backed by research capabilities of international standards
2. A problem-solving-oriented education and research hub in which researchers in the humanities and social sciences can also participate
3. An education and research hub enabling collaboration by diverse actors, including individuals, NGOs, private businesses, governmental entities, and international organizations



## Creating World Top-level



The logo symbolizes NERPS's priority focus on SDG 4 "Quality education" and SDG 16 "Peace, justice and strong institutions," while contributing to all of the 17 SDGs.

