



# GP-RSS Seminar



University of  
Nottingham  
UK | CHINA | MALAYSIA

International Joint Graduate Program  
in Resilience and Safety Studies (GP-RSS), Tohoku University



**FEBRUARY 19, 2024 (14:00 – 17:30)**

**Main conference room, 3rd floor, GSES main building  
AOBAYAMA CAMPUS TOHOKU UNIVERSITY**

**<https://maps.app.goo.gl/XAN1NGyKv4Tccaqf8>**

**Invited Speech Session (14:00 – 15:30)**

## **River Ecology and Physical Geography**

- **Increasing river resilience by reconnecting channels and floodplains at low flow**  
Dr. Matthew Johnson (Associate Professor, University of Nottingham, United Kingdom)
- **How have rivers changed under the long-term climate changes?**  
Dr. Takayuki Takahashi (Assistant Professor, International Research Institute of Disaster Science, Tohoku University)
- **Developing functional flow recommendations to guide operation of a large tropical hydropower dam**  
Dr. Chris Gibbins (Professor, University of Nottingham, Malaysia)
- **Monitoring biodiversity of freshwater macroinvertebrates in polluted rivers by eDNA**  
Dr. Noriko Uchida (Assistant Professor, International Research Institute of Disaster Science, Tohoku University)

**Invited Speech Session (15:40 – 17:30)**

## **Urban Planning and Human Geography**

- **Flood adaptation and mitigation in Japan under climate change**  
Dr. So Kazama (Professor, Graduate School of Engineering, Tohoku University)
- **Sponge Cities in China – Progress, challenges and the way forward**  
Dr. Faith Chan (Associate Professor, University of Nottingham, China)
- **Opportunities and limitations of disaster reduction efforts in rebuilding**  
Dr. Kanako Iuchi (Associate Professor, International Research Institute of Disaster Science, Tohoku University)
- **The loc-in dynamics hindering adaptation action**  
Dr. Meghan Alexander (Assistant Professor, University of Nottingham, United Kingdom)
- **Utilizing Spatial Big Data for Human Geography Research**  
Dr. Shohei Nagata (Assistant Professor, International Research Institute of Disaster Science, Tohoku University)

### **Commentators:**

- Dr. Sabine Loos (Assistant Professor, University of Michigan, United States)
- Dr. Kozo Nagami (Professor, Green Goals Initiative, Tohoku University)
- Dr. Sediqi Mohammad Naser (Post-doctoral research fellow, Green Goals Initiative, Tohoku University)

*Invited Speech Session (14:00 – 15:40)*  
***River Ecology and Physical Geography***

***Opening address & Chair: Professor Daisuke Komori (Green Goals Initiative, Tohoku University)***



**Matthew Johnson, Ph.D.**

*Associate Professor, School of Geography, University of Nottingham, UK*

**Title: “Increasing river resilience by reconnecting channels and floodplains at low flow”**

Past river management has left many river systems vulnerable to ongoing climate change as channel systems cannot adjust to changing drivers. I will talk about the benefits of reconnecting river channels to floodplain valleys to increase resilience to extreme flows and temperatures, and increase freshwater biodiversity.



**Chris Gibbins, Ph.D.**

*Professor, School of Environmental and Geographical Sciences, University of Nottingham, Malaysia*

**Title: “Developing functional flow recommendations to guide operation of a large tropical hydropower dam”**

Environmental flow regimes are typically designed to protect important species, but in many tropical rivers we know very little about what species are present, let alone what flows they need. In this talk I will outline some alternative approaches to providing flow recommendations, using a case study of a Bornean River that will soon be dammed.

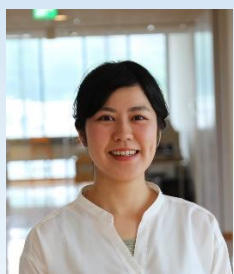


**Takayuki Takahashi, Ph.D.**

*Assistant Professor, International Research Institute of Disaster Science, Tohoku University*

**Title: “How have rivers changed under the long-term climate changes?”**

Fluvial terraces formed due to the climate and sea-level changes in long term can be regarded as “fossils” of rivers and are also the basis of our society activities frequently. I will introduce the latest research topics of fluvial geomorphology and Quaternary geoscience.



**Noriko Uchida, Ph.D.**

*Assistant Professor, International Research Institute of Disaster Science, Tohoku University*

**Title: “Monitoring biodiversity of freshwater macroinvertebrates in polluted rivers by eDNA”**

Environmental DNA (eDNA) is an increasingly essential tool for understanding the ecological impacts of anthropogenic activities. This talk will compare insect collection and eDNA methods and present the response of macroinvertebrates to heavy metal pollution.

***Commentators:***

**Sabine Loos, Ph.D.**

*Assistant Professor, Civil & Environmental Engineering, University of Michigan*



**Kozo Nagami, Ph.D.**

*Professor, Green Goals Initiative, Tohoku University*

**Sedigi Mohammad Naser, Ph.D.**

*Post-doctoral research fellow, Green Goals Initiative, Tohoku University*



*Invited Speech Session (15:40 – 17:30)*

## *Urban Planning and Human Geography*

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### **Faith Chan, Ph.D.**

*Associate Professor, School of Geography, University of Nottingham, China*

**Title: “Sponge Cities in China – Progress, challenges and the way forward”**

‘Sponge City’ is the term used to describe the Chinese government’s approach to urban surface water management. While ambitious and far-reaching in its aim (of reducing national flood risk, increasing water supply and improving water quality), In this session, we will discuss the interpretation, progress, challenges and the way forward in urban future.

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### **Meghan Alexander, Ph.D.**

*Assistant Professor, School of Geography, University of Nottingham, UK*

**Title: “The lock-in dynamics hindering adaptation action”**

There is a growing Adaptation Gap, which means adaptation action is failing to keep pace with the worsening impacts of climate change. I will explore how the concept of ‘lock-in dynamics’ can shed new light on the reasons behind the Adaptation Gap and how this could be used to help inform ‘unlocking’ strategies to accelerate adaptation action.

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### **So Kazama, Ph.D.**

*Professor, Graduate School of Engineering, Tohoku University*

**Title: “Flood adaptation and mitigation in Japan under climate change”**

A flood simulation is applied to whole Japan to evaluate impacts in the future and adaptation options. 2D non-uniform flow is modeled to obtain the inundation depth and duration, which are used for calculation of flood damage in each land use according to the economic manual for flood protection.

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### **Kanako Iuchi, Ph.D.**

*Associate Professor, International Research Institute of Disaster Science, Tohoku University*

**Title: “Opportunities and limitations of disaster reduction efforts in rebuilding”**

Using the case of the 2018 Central Sulawesi earthquake five years after, this talk showcases government efforts to reduce hazards in rebuilding and the complications of achieving its goal of resilience in practice.

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### **Shohei Nagata, Ph.D.**

*Assistant Professor, International Research Institute of Disaster Science, Tohoku University*

**Title: “Utilizing Spatial Big Data for Human Geography Research”**

Spatial big data acquired from cell phones and various sensors enable dynamic observation of people's activities and urban environments. This presentation will introduce the use of spatial big data in human geography research, particularly health geography research.

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