

Welcome to the

1st Global Flood Crosscutting Project Workshop

Needs, Priorities, and Partnerships to Advance Flood Research and Impacts


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About

GEWEX is interested in establishing a new project as a **Global Flood Crosscutting Initiative** that crosses several activities within the GEWEX Hydroclimatology Panel (GHP) and link with other GEWEX panels.


Objectives



Address the World Climate Research Program (WCRP) Grand Challenges regarding global flood processes and impacts (Integrate with Lighthouse Activities).



Overcome barriers in flood processes and observational architectures and study the impacts of climate change and land use change on flood risk across current and future periods.



Allow the GEWEX GHP to propagate flood processes and research knowledge from one region to the other and synthesize results at a global scale.



WCRP Lighthouse Activities

Article in GEWEX Quarterly

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Opinion: The Role of GEWEX in Moving the Needle on the Resiliency of Society to Flooding

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https://www.gewex.org/gewex-content/files_mf/1640101560Q42021.pdf

Survey of Experts

Survey sent to a compiled list of experts (65) and to the GEWEX mailing list. There were 51 unique responses to the survey.

Organization

Please select the organizational structure that you think would be best for addressing the key science questions for the GEWEX Flooding Initiative.

- Small cohort of experts (5-10) who work together to secure funding and lead the GEWEX Global Flood Crosscutting initiative through regular (Monthly) meetings.
- Large group of experts (20-50) lead by a few individuals (2-3) with the large group meeting a couple of times a year to organize collaboration on existing projects that address the goals of the GEWEX Global Flood Crosscutting initiative.
- A combination of a small cohort of experts that aim to secure funding and organize collaboration among a large group of experts with existing projects.
- Other, please specify.

Current Projects

Please select the option that best describes the connection between your current projects and the GEWEX Global Flood Crosscutting initiative.

- I currently have one or more projects that could potentially complement and contribute to the GEWEX Global Flood Crosscutting Initiative.
- I currently do not have any projects but am working on securing funding for a project that could potentially complement and contribute to the GEWEX Global Flood Crosscutting Initiative.
- I currently do not have any projects related to the GEWEX Global Flood Crosscutting Initiative but I am interested in working on securing funding for a new project that would complement and contribute to the GEWEX Global Flood Crosscutting Initiative.
- I currently do not have any projects, nor am I interested in working on projects that complement and contribute to the GEWEX Global Flood Crosscutting Initiative.

Kick-off (plenary)

Time (UTC)	Agenda Item	Presenter/moderator
08:30	Welcome	GEWEX Flood CC team
08:40	Introduction to the GEWEX	Peter Van Oevelen
08:50	Vision and Goals of the Flood Crosscutting Project and the workshop structure	GEWEX Flood CC team

Breakout Session 1: Hydrologic Factors for Flood Generation

Science Question:

What physical and hydrological factors dominate flood generation mechanisms across scales? And how these might be different in the combined flood generation mechanisms across the coastal, urban, and rural settings?

Time (UTC)	Agenda Item	Presenter/moderator
09:00	Flood generation in a changing world and its uncertainty	Thorsten Wagener (lead)
09:15	Study on the Flood Forecasting for Medium and Small River Watersheds Based on Multi-source Information Fusion	Ke Zhang
09:30	Introducing the Flashiness-Intensity-Duration-Frequency (F-IDE) Curve	Jonathan Gourley
09:45	TBD	TBD
10:00	Discussion and Create Summary Slide	Presenters and Participants
10:45	<i>Break</i>	

Workshop's Agenda-continued

Breakout Session 2: Spatiotemporal Variability of Flooding

Science Question:

What changes in atmospheric and landscape systems control spatiotemporal variability of flooding?

Time (UTC)	Agenda Item	Presenter/moderator
09:00	Compounding extreme rainfall and heatwaves: how important are large scale dynamics in generating extreme floods?	Hayley Fowler (lead)
09:15	The Spacetime Variability of Flood Frequency in a Warming Climate	Daniel Wright
09:30	Flood risk prediction under climate change from global to local scales	Huan Wu
09:45	Variability in the magnitude and timing of flooding with climate change	Conrad Wasko
10:00	Discussion and Create Summary Slide	Presenters and Participants
10:45	<i>Break</i>	

Breakout Session 3: Interplay with Climate and Land Use

Science Question:

What is the likely interplay of climate and catchment physical changes (indicators of abrupt system shifts) on flood occurrence and predictability? How do changes in climate systems and land systems (e.g., dam-induced land use changes, etc.) co-evolve and cascade from the atmosphere to the land surface and affect catchment susceptibility to flooding? How do the sensitivity and uncertainty of flood simulations increase under non-stationarity? landscape systems control spatiotemporal variability of flooding?

Time (UTC)	Agenda Item	Presenter/moderator
09:00	Achieving Urban Flood Resilience in an uncertain urbanising world	Jessica Lamond (Lead)
09:30	Assessment of climate impact on meso-scale catchment hydrology considering land use projections	Ioana Popescu
09:45	Climate and reservoir management effects on floods	Manuela Brunner
10:00	Discussion and Create Summary Slide	Presenters and Participants
10:45	<i>Break</i>	

Workshop's Agenda-continued

Wrap Up (plenary)

Time (UTC)	Agenda Item	Presenter/moderator
11:00	Session 1 Report/Discussion	Thorsten Wagener
11:15	Session 2 Report/Discussion	Hayley Fowler
11:30	Session 3 Report/Discussion	Jessica Lamond
11:45	Next Steps and Future Meeting	GEWEX Flood CC team
12:30	Adjourn	

Workshop Sep 22, 2023

1. Execute successful workshop.
2. The key challenges and outcomes of the workshop will be summarized as a White Paper and/or a Commentary paper that will guide Flood CC proposal development.
3. Encourage follow-up meeting as dictated by the community.

Cross-cut Proposal (Spring 2024)

1. Leverage the Workshop results to develop Cross-cut proposal for GHP approval.
2. Identify other GHP/ Global Land-Atmosphere System Studies (GLASS) initiatives (such as the Asian Precipitation Experiment; AsiaPEX) and work on integration .

Post-workshop Evaluation Form, Please!

- Your input is critical to move this Global Flood Crosscutting Initiative forward
 - Things you'd like to hear more-or less!- about
 - Strategies to develop a proposal/plan
- THANK YOU! for participating today!

