

The background of the entire page is a dynamic water splash. At the top, a large, clear water droplet is in mid-air, with several smaller droplets trailing behind it. Below this, a horizontal band of light blue contains a large, translucent bubble. The bottom half of the page is dominated by a large, intricate splash of water, with many smaller droplets and bubbles scattered throughout. The overall color palette is various shades of blue, from deep navy to light cyan.

4th International Symposium “Water, Feedbacks, and Complexity”

March 24-25, 2016

**Purdue University
Room G212, Hampton Hall
Lyles School of Civil Engineering**

Organizers:

Kyungrock Paik

Curtis Visiting Professor
Lyles School of Civil Engineering &
Korea University, Seoul, South Korea

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Purdue University

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PURDUE
UNIVERSITY

Welcome

Welcome to 4th International Symposium on Water, Feedbacks, and Complexity! This annual symposium began in 2013 at Korea University. While it was a small event, its spirit was not trivial. The symposium was planned to provide an excellent opportunity to introduce various aspects of hydrology and land-surface processes to people in different disciplines. Following that endeavor, 2nd symposium was held at University of Western Australia, Perth in 2014. We had 3rd symposium in 2015, back at Korea University with grown number of participants and speakers.

We are continuing this tradition, this time at Purdue campus, US. This year's symposium is composed of two parts: a keynote lecture followed by a series of PhD student presentations [24th (Thursday) afternoon] summarizing their synthesis work on natural and engineered networks; and a series of oral presentations on 25th (Friday) morning, focusing on hydrology of intensively managed landscapes. Three key words [water, feedbacks, and complexity] best words describe highly interdisciplinary nature of topics covered in this symposium. We believe this year's symposium will once again be a great place to exchange exciting intellectual ideas, as in previous gatherings.

For KP, organization of this symposium is a part of activity as the 2015-2016 Curtis Visiting Professor at Purdue. We thank Purdue University for the opportunity to work at Purdue interacting with faculty and students. Dr. McGrath's stay at Purdue this semester is supported by The Curtis Professorship funds and the Lee A. Rieth Endowment funds. We highly appreciate all of the speakers who took time from their busy schedules to participate in this symposium. We also thank all of the participants who attended and shared ideas.

Kyungrock Paik
P. Suresh C. Rao
Gavan McGrath

12:30 – 13:00

Registration

13:00 – 13:30

Opening Announcement & Keynote

Dr. Georg Teutsch, Director

Helmholtz Center for Environmental Research;
Leipzig, Germany

13:45 – 17:00

Synthesis: Engineered & Natural Networks

(each talk: 12 min + 5 min Q/A)

Elisabeth Krueger, Purdue & UFZ Leipzig

Chris Klinkhamer, Purdue

Jonatan Zischg, Innsbruck (via Skype)

Thomas Kaeseburg, TU-Dresden

Xianyuan Zhan, Purdue

Yu Fang, Florida

Katja Westphal, UFZ -Magdeburg

Soohyun Yang, Purdue

Kathryn McCurley, Florida

Thomas Grau, UFZ-Magdeburg

17:00 – 17:15

Closing Remarks

Hydrology of Intensely Managed Landscapes

Session I

8:30 – 8:35

Moderator: Gavan McGrath (UWA)

Opening Announcement (Paik)

8:35 – 9:00

“Urban Hydro-Climatology and Future Cities”

Dev Niyogi, Purdue University

9:00 – 9:25

*“Similarity, Self- Similarity, and Scaling:
Examples & Questions”*

Dennis Lyn, Purdue University

9:25 – 9:50

*“Wave-induced Near-shore Complexity and Related
Modeling Efforts ”*

Sangyoung Son, Korea University

9:50 – 10:15

*“Risk Assessment of Extreme Event Loadings from
Sewer Networks to Rivers”*

Peter Krebs, Technical University of Dresden

Session II

Moderator: Kyungrock Paik (Purdue/KU)

10:15 – 10:40

*“Maintaining Aquatic Biodiversity & Resilience:
Role of First-Order Streams ”*

Dietrich Borchardt, UFZ Helmholtz Center-Magdeburg

10:40 – 11:05

*“Mitigation of Water Quality Impacts in Streams
in Intensively Managed Landscapes”*

Sarah McMillan, Purdue University

11:05 – 11:45

*“Optimal Selection & Placement of BMP & LID
Practices at the Watershed Scale”*

Yaoze Liu & Bernie Engel, Purdue University

11:45 – 12:10

*“A Conceptual Socio-Hydrological Model of
Community Resilience to Flooding”*

David Yu & Kyungmin Sung, Purdue University

12:10 – 12:15

Closing Remarks

❖ *Each timeslot includes 5 min for discussions.*