

## FACILITATORS

**Professor Willi H. Hager** is a hydraulic engineer supervising hydraulic research at the Laboratory of Hydraulics, Hydrology and Glaciology (VAW), ETH Zurich. He has authored more than 500 scientific papers with over 220 in peer-reviewed journals, and published books in Dam Hydraulics, Wastewater Hydraulics, Energy Dissipation, Environmental Engineering, History of Hydraulics, and Retention Basins. He holds memberships in the International Association for Environment Engineering and Research (IAHR); the Swiss Association for Wastewater Engineering (VSA); was Editor of the Journal of Hydraulic Research (2006-2011); Associate Editor of the Journal of Hydraulic Engineering (JHE, ASCE) and is a Fellow of the American Society of Civil Engineers (ASCE).

**Professor Gyan Shrivastava** is a hydraulic engineer and lecturer of Hydraulic Engineering at UWI. He received his education at the Indian Institute of Technology in New Delhi, Imperial College in London and at UWI, St. Augustine. He has worked for many years in the Commonwealth Caribbean in the design and construction of hydraulic structures. He is a Chartered Civil Engineer and a Member of the Institution of Civil Engineers, London and a Registered Engineer in Trinidad and Tobago, .

**Dr. Pramenath Narinesingh** has been lecturing in the Dept. of Civil and Environmental Engineering at the UWI, St. Augustine Campus since August 2010. He holds a BSc in Civil Engineering (UWI), an MSc in Hydraulic Engineering (UNESCO-IHE), and a Ph.D in Fluvial Geomorphology (UD, USA). Dr. Narinesingh's MSc. thesis entitled Nature Restoration and Floodplain Sedimentation is referenced in the ASCE Manual of Sedimentation Engineering (2010). He is also a registered engineer in Trinidad and Tobago.

**Professor Rajendra Ramlogan** has lectured in the Department of Management Studies at the St. Augustine Campus UWI since 2001. Prof. Ramlogan is a graduate of Cambridge University where he obtained his PhD in International Environmental Law. Prof. Ramlogan's research interests are focused on International Law and the legal issues surrounding the environment and sustainable development. During his academic career, he has published six books on Caribbean Law, seven referred journal articles and presented numerous conference papers.

**Dr Mary Alkins-Koo** is a senior lecturer in the Department of Life Sciences, Faculty of Science and Technology at the UWI. She holds a BSc (UWI), an MSc in Conservation from University College London and a PhD in Zoology from UWI, St Augustine. She teaches freshwater biology and ecology, human ecology and environmental issues. Her research interests are in freshwater invertebrates, river ecology, bio-monitoring and assessment. She was co-author of the EMA 2004 State of Environment Report 'Report of an Assessment of the Northern Range of Trinidad, Trinidad and Tobago'.

To register and for further information please go to: [engineering.institute@sta.edu](mailto:engineering.institute@sta.edu)

### Or contact:

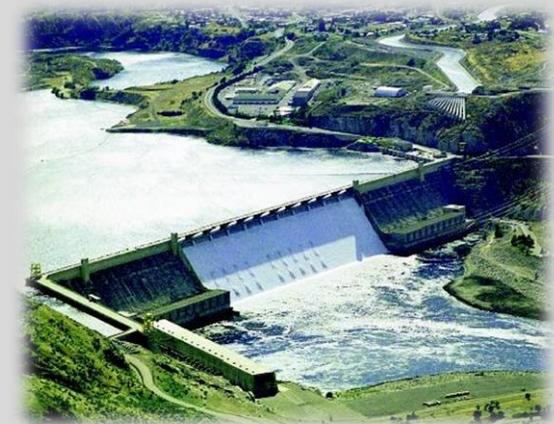
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**Engineering Institute**  
in collaboration with  
**Department of Civil and  
Environmental Engineering**  
Faculty of Engineering  
The University of the West Indies  
St. Augustine, Trinidad

January 14<sup>th</sup> & 15<sup>th</sup>, 2015

**DAM HYDRAULICS**



## THE SEMINAR

Welcome to the second meeting in the series on Water, Rivers, and the Environment by the Department of Civil and Environmental Engineering and the Engineering Institute. Our theme – **Dam Hydraulics** - focuses on the hydrology and hydraulics of dams, the threats of dam failure, loss of storage and useful life due to sedimentation, the potential impact on the riverine ecology, and the role of stake holders in protecting the environment and the public interests.

Dams create reservoirs of water that serve a variety of purposes including providing water for homes and industry, irrigation for farming, sports and recreation, hydro power, pollution control and even flood management. There are common design considerations in Detention and Retention Basins as in the design of Dams such as hydrological and hydraulic considerations since they all impound sediment and water. Their designs are equally challenging given the highly variable nature of storm events both in intensity and duration.

The construction of dams has paved the way for the development of our present society, however, at an unknown cost to the environment including reduction of migratory fish population, changes in riverbed morphology, loss of floodplain ecology and fertility, changes in wetland hydrology and habitat, loss of coastlines and reduction of many stakeholders assets such as fisheries, and wetland expansion. Since Dams are usually expensive state-funded projects that have high impact on the land and the environment, the spotlight will be on the public and stakeholders participation.

The ecological system and its sensitivity to environmental changes will also be examined as reservoirs and detention systems usually lie in the flow path of channels.

## TARGET AUDIENCE

The seminar is geared towards engaging engineering practitioners and technicians in:

- ✓ Civil, Agricultural and Environmental Engineering and management.
- ✓ Water Resources Agency, Departments of Drainage Division and Highways Division, and Regional Corporations.
- ✓ Designs of embankments, retention and detention structures, flood management and water management.
- ✓ Land developers
- ✓ Students and lecturers in the fields of water resources management and flood control will also find the topics enlightening.

## SEMINAR DETAILS

<b>Wednesday 14<sup>th</sup> January 2015</b>
Dams in Context
Environmental Democracy
<i>Visit to the Hollis Dam &amp; Reservoir ½ day</i>
<b>Thursday 15<sup>th</sup> January 2015</b>
Hydrodynamics of Dam-Break Waves
Fresh water Ecology of the Northern Range
Sediment Dynamics of Dams



**Optional Field Trip** – 13<sup>th</sup> January, 2015  
Exploring the Northern Range fluvial geomorphology, hydraulic structures and sedimentation.

## PRESENTERS' SUMMARY

- 1) Professor of Hydraulics  
**Dr. Willi H. Hager**, ETH, Zurich, Switzerland.
- 2) Professor of Hydraulic Engineering  
**Dr. Gyan Shrivastava** of UWI.
- 3) Professor on Environmental Law  
**Dr. Rajendra Ramlogan** of UWI.
- 4) Senior Lecturer in Ecology  
**Dr. Mary Alkins-Koo** of UWI.
- 5) Researcher in sedimentation  
**Dr. Pramenath Narinesingh** of UWI.

**January 14 &15, 2015**

**Venue: Faculty of Engineering**

**Fee: \$ 2,200.00**

**Students: \$600.00**

**January 13, 2015**

**Optional Field Trip: Fluvial  
Geomorphology & Sedimentation**

**Fee: \$500.00      Students \$250.00**

***Includes Course Materials, lunch  
and refreshments on all days.***

