



Making a difference - One drop at a time.

Research on Tap “Flood Studies” Seminar and CWRR start-of-2019 Welcome function

Thursday 7 March 2019

On the afternoon of Friday 22 Feb most of the CWRR members, including staff and students, convened for the first CWRR Research on Tap seminar for 2019. This year we will host a number of monthly seminars with the purpose of providing an extensive overview of all the themes and projects we are involved in at the CWRR. Researchers and students will present their work under various themes, and provide an opportunity for everyone to engage with colleagues working outside of their own immediate topics and projects. First out was the theme “Flood Studies”, where Prof. Jeff Smithers presented an overview of the National Flood Studies Programme, and Katelyn Johnson, Thomas Rowe, Nkululeko Mabila, Keanu Singh, Nkosinathi Dlamini, Ryshan Ramlall, and Udhav Maharaj presented updates on their respective research projects. A short Q&A session followed, and the seminar ended with a start-of-2019 Welcome function with snacks and drinks and an engaging “CWRR member bingo” game.

The upcoming Research on Tap seminars are being planned, and will cover various Hydrology and Water Resources research themes such as Land use, Climate Change, Modelling, Water resources management and governance, Process studies and others. More information will follow.

SEBEI: Site scoping within the uMngeni Catchment

CWRR postdoc researcher Dr. Shaeden Gokool, and postdoc researcher Dr. Alanna Rebelo, Stellenbosch University, undertook a series of site scoping visits 6-8 Feb, for the DANIDA funded Socio-Economic Benefits of Investing in Ecological Infrastructure (SEBEI) project. The purpose of these visits was to identify suitable sites within the uMngeni catchment to use as case studies for the development of an investment case to demonstrate the socio-economic and hydrological benefits of investing in ecological infrastructure (EI). During these visits, Gokool and Rebelo were able to engage with various stakeholders to establish the nature of EI interventions that have been or are being implemented. Overall, the site visits and stakeholder engagement proved to be quite fruitful with several sites in the uMngeni possessing the qualities required to fulfil the objectives outlined in the SEBEI project. The selection of sites for the project will be finalized in the coming weeks, when the greater project team gathers again at their 2nd Interdisciplinary Research Team meeting on 19 March at the University of Cape Town. *By Shaeden Gokool*

CWRR new Student Club “The Hydrators”

A new water-centric, post-graduate student club has been formed within the CWRR. On 6 March, the first official meeting to kick-start this new adventure took place. The participants of the meeting included the many enthusiastic CWRR postgraduates (Honours, Masters, PhD and Post-docs). This club aims to facilitate student involvement and promote student interaction in order to create awareness and provide solutions to water-related challenges. The Hydrators have envisioned an array of activities to launch the club including a World Water Day Awareness event, a River Clean Up, as well as an Industry Day for students to network with potential employers. Some CWRR students plan to participate in the upcoming Msunduzi River Walk 3-5 April. *By Jade Govender*

The CWRR Newsletter

You are now reading the second issue of the CWRR Newsletter, with news and updates of the achievements and endeavors of CWRR’s members, staff, associates and students.



Your contributions are always welcome! Please send stories and photos of your field trips, project updates, interesting courses, links to publications, and more, to MalingaR@ukzn.ac.za

The Newsletter is also available online at CWRR.ukzn.ac.za

Msunduzi River Walk

The Msunduzi Catchment Management Forum, with support from DUCT, CWRR, KZN EdTEA, and IAIAsa, aims to engage high-profile stakeholders within the Msunduzi Catchment through a River Walk at 3 locations of the river (Henley Dam, Ashdown/Caluza, and Sobantu) across 3 days (approx. 5km per day) on 3, 4 and 5 April (starting time 9am). A summary report of the walk will include hotspot mapping of problem areas, a water quality update (determined through a miniSASS study with water sample analysis), and a river centred stakeholder map highlighting projects.

Participation is limited to reduce environmental impact, but support for the event is welcome. Contact susanlrisko@gmail.com for more info. *By Susan Risko*

CWRR student proceeds with career in the UK



Since leaving Pietermaritzburg in Sep 2018, to take a full time role as a Water Resources Modeller at the Centre for Ecology and Hydrology in Wallingford, UK, it has been a very busy few months for the current CWRR MSc student Robyn Horan. Apart from continuing with her MSc, Horan is currently working on several multi-national projects. One of the projects has been the development of the groundwater and small-scale surface intervention modules of the Global Water Availability Assessment (GWAVA) model which is a large scale water assessment model. Secondly, Horan is involved as a hydrological modeller on the UPSCAPE project which is based in Peninsula India. Horan and her team are attempting to model the human impact on the hydrological system over an 82 000 km² basin, using the GWAVA model. Through this project she will be travelling to Bangalore in March. A third project Horan is involved in is the “End-to-end Demonstrator for improved decision-making in the water sector in Europe” (EDgE) project in which they are developing an interface that allows users to explore a complex multi-model hydrological forecast. *By Robin Horan*

CWRR in Water Governance event for future planning

Umgeni Water and Overberg Water Board hosted a water governance event in Umhlanga, 31 Jan. Thami Hlongwa, CEO Umgeni Water, opened the event followed by a study overview by Phakamani Buthelezi, CEO Overberg Water, on “South African Public Entity Performance: A System Thinking Based Analysis and Strategy for the SA Water Boards”. Performance is currently measured based on organizational mandates, versus upholding the constitution through equitable water provision. Future projections indicate potential water shortages in the Umgeni Catchment water sector where roughly 482 entities operate. Therefore there is need to reconsider current governance possibly through streamlining. During interactive sessions, facilitated by Dr. Sabine Stuart-Hill of CWRR, working groups found there is potential misalignment of national mandates for water provision and implementation at the local level. Water boards and municipal water service providers do not have clearly defined roles causing strained relationships. Service provision using current infrastructure is not always feasible particularly in remote areas. Contingency plans for unexpected events should be prioritized. Social partners can assist with inclusivity of end users. Gaps between water provision and waste management for example, should be closed through a circular economy approach relying on partnerships where performance can be improved through integrated planning and improved feedback. Ms. Manisha Maharaj from DWS closed the talk with a report how, although KZN survived the recent drought, climate change impacts coupled with population growth and water demand requires the water sector to plan and act promptly to prepare for the changes ahead. *By Susan Risko and Kudzanai Rosebud Marembo*

Latest publications

- ◆ Design norms for soil and water conservation structures in the sugar industry of South Africa. [Water SA 2019](#). Daniel Otim, Jeff Smithers, Aidan Senzanje and Rianto van Antwerpen.
- ◆ Grasslands - more important for ecosystem services than you might think. [Ecosphere 2019](#). Jan Bengtsson, James Bullock, Benis Egoh, Colin Everson, Terry Everson, Tim O'Connor, Patrick O'Farrell, Henrik Smith and Regina Lindborg.
- ◆ The Development of the Water-Energy-Food Nexus as a Framework for Achieving Resource Security: A Review. [Frontiers in Environmental Science 2019](#). Gareth Simpson and Graham Jewitt.
- ◆ Selection of wheat genotypes for biomass allocation to improve drought tolerance and carbon sequestration into soils. [Journal of Agronomy and Crop Science 2019](#). Isack Mathew, Hussein Shimelis, Macdex Mutema, Alistair Clulow, Rebecca Zengeni, Nozibusiso Mbava and Vincent Chaplot.
- ◆ Hydraulic and clogging characteristics of Moistube irrigation as influenced by water quality. [Journal of Water Supply: Research & Technology – AQUA 2018](#). Edwin Kanda, Tafadzwanashe Mabhaudhi and Aidan Senzanje.
- ◆ Using network analysis to analyse the complex interaction of factors causing the failure of small-scale water infrastructure (SWI) in the rural areas of South Africa. [Water SA 2018](#). Calvin Sambo, Aidan Senzanje and Khumbulani Dhavu.
- ◆ Assessing the Functional and Operational Relationships between the Water Control Infrastructure and Water Governance: A case of Tugela Ferry Irrigation Scheme and Mooi River Irrigation Scheme in KwaZulu-Natal, South Africa. [Journal of Physics and Chemistry of the Earth 2018](#). Tinashe L Dirwai, Aidan Senzanje and Maxwell Mudhara.