

## WISA 2020 DIVISIONAL PRE-CONFERENCE WORKSHOPS

**FRIDAY 4 DECEMBER**

**09:00 - 09:15 WORKSHOP WELCOME SESSION AND INTRODUCTION**

09:15 - 11:15	<b>Water Governance</b> <i>Chair: Dr Nezar Eldidy</i>	<b>Water reuse</b> <i>Dr Esper Jacobeth Ncube</i>	<i>Chair: Dewald van Staden - WISA Process Controller Division</i>	<b>Innovative projects - Dragons Den</b> <i>Chair: Karessa Pilly - WISA Innovation for Water &amp; Sanitation Division</i>
	<b>Governance and Sector Restructuring for Efficiency</b> <i>Dr Nezar Eldidy</i> <i>WISA Management and Institutional Affairs Division</i>	<b>Water Reuse in Southern Africa: Strategic Areas</b> <i>Dr Esper Jacobeth Ncube, Johann L übbe, Dr Lakesh Maharaj, Benoit Le Roy, Dr Nonhlanhla Kalebaila, Carell Davids, Chris Swartz</i> <i>WISA Water Reuse Division, DBSA, Ugeni Water, SA Water Chamber, Drakenstein Municipality, Chris Swarz Consulting Engineers, and various partners from industry, private sector and government.</i>	<b>Water Services Process Controllers - Current and Future Outlook:</b>  <b>Occupational Certificate: status and the way forward</b> <i>Dewald van Staden</i> <i>WISA Process Controller Division</i>	<b>Dragons Den to showcase innovative projects in water and sanitation, currently at TRL 1 - 4</b> <i>Karessa Pilly, Manjusha Sunil, Vishnu Mabeer, Mthokozisi Ncube, Simon Pitts</i> <i>WISA Innovation for Water &amp; Sanitation Division, Water Research Commission, DBSA, eThekweni Metro Rand Water, Du Point Chemicals, Umgeni Water</i>

**11:15 - 13:55 INTERACTIVE TRADE SESSIONS / LUNCH BREAK**

14:00 - 16:00	<b>Measurement and monitoring</b> <i>Chair: Sarlet Barnard - YWP</i>	<b>Industrial effluent</b> <i>Chair: Dr Christina Trois - University of KZN</i>	<i>Chair: Dewald van Staden - WISA Process Controller Division</i>	<b>Dragons Den: Chair: Karessa Pilly - WISA Innovation for Water &amp; Sanitation Division</b>
	<b>To measure is to know: Water use measurement and monitoring for improved water resource management, efficient use and regulation</b> <i>Sarlet Barnard, S Pezulu, Dr Eldidy, A Nefale, S Mkhalihi, I van der Stoep, T Dormehl</i> <i>Young Water Professionals, WISA Water Distribution, WISA Management and Institutional Affairs Division, Innovation for Water &amp; Sanitation</i>	<b>Considerations of water related aspects in mine closure</b> <i>Richard Garner, Gerardo Pretorius, Prof Solomon - WISA Mine Water Division, Univ. of Cape Town, Dept. of Water &amp; Sanitation, Sibanye, Anglo American, The MSA Group</i>	<b>The Future of Process Controllers: A look into how Process Controllers can prepare themselves for the Water Services Works of the future.</b> <i>Fezeka Sotywambe</i> <i>WISA Process Controller Division</i>	

MONDAY 7 December 2020 - DAY 1

07:45 - 08:00							ATTENDEE LOGIN											
08:00 - 09:30							<p><b>WISA 2020 PLENARY SESSION</b>                  Welcome by Dr Shafick Adams - Chairperson of WISA Organising Committee                  Opening by Honourable Minister of Human Settlements, Water and Sanitation: Lindiwe Silulu</p> <p>Keynote by Daniele Silke - Director of the Political Futures Consultancy - "South Africa and The World: Navigating the Post-Covid Future"                  Leading analyst and commentator on the South African, African and global political and economic landscapes and future trends.                  Introduced by Prof Mike Muller</p>											
09:30 - 09:45							PAUSE BREAK			INTERACTIVE TRADE SESSIONS								
09:45 - 10:45							<p><b>PANEL: CALL TO ACTION FOR ALL-HANDS-ON-DECK - WHAT ARE THE KEY PRIORITIES TO BE ACTIONED IN SOUTH AFRICA?</b>                  Prof Mike Muller (facilitate), Mbulelo Tshangana, Desighen Naidoo, Dr Allyson Lawless                  WISA Technical Chair, DG Dept. Water &amp; Sanitation; CEO Water Research Commission; Former President of SAICE</p> <p>WISA 2020 Overview by WISA Technical Committee                  Topic 1: Govern and Regulate the sector - Dr Inga Jacobs-Mata                  Topic 2: Reduce water demand and increase supply - Zama Siqalaba                  Topic 3: Manage the resource for a capable ecology - Chris Swartz                  Topic 4: Develop skills and technology innovations - Prof Evans Chirwa                  Topic 5: Manage and monitor effective water and sanitation services - Dr Marlene vd Merwe-Botha                  Topic 6: Improve raw water quality and management - Dr Michele Kruger</p>											
10:45 - 11:00							PAUSE BREAK			INTERACTIVE TRADE SESSIONS								
20 minute presentations							Topic: Govern and regulate the sector Session 1: Alternative governance approaches Chair: Leonardo Manus - Dept. Water & Sanitation		Topic: Reduce water demand and increase supply Session 2: Smart solutions Chair: Diksha Somai - Anglo American plc		Topic: Manage the resource for a capable ecology Session 3: Water Sources Chair: John Dini - Water Research Commission		Topic: Develop skills and technology innovations and disruptors Session 4: Building resilience Chair: Dr Nonhlanhla Kalebaila - Water Research Commission		Topic: Manage and monitor effective water and sanitation services and infrastructure Session 5: Investment and business models Chair: Dr Johan Lubbe - DBSA		Topic: Improve raw water quality and management Session 6: Pollutants of emerging concern Chair: Erin Parenzee - Rand Water	
11:00 - 11:20							Sustainable Development Goal 6 – Optimizing Operations To Deliver Excellence towards 2030 Goal in SA Mark Bannister - Dept. of Water & Sanitation		Energy recovery taking the pressure off municipal water supply networks Gideon Bonthuys, Marko Van Dijk - Golder Associates Africa		Leveraging on technological innovation and fusion to foster effective water resource monitoring in South Africa Dr Simphiwe Chabalala, Prof Danny Simatele, Dept. Water & Sanitation, University of Witwatersrand, Rusangu University		Challenges facing schools to provide effective water services and promoting water conservation Willem Wegelin - WRP Engineering		Unlocking investment opportunities in water sector for economic growth, drought resilience and improved environmental health Ashton Mpofo, Raldo Kruger - Green Cape		Chemicals of emerging concern as indicators of de facto (unintentional) reuse Cordi Lourens - Chris Swartz Water Utilization Engineers, Edward Archer - Stellenbosch University	
11:20 - 11:40							Effective management and governance: the critical challenge for a sustainable water business Mr Fred van Zyl - Independent		Solar irrigation: a smart/risky solution to addressing Africa's water and energy crisis Dr Inga Jacobs-Mata, Dr Manuel Magombeyi, Dr Petra Schmitter - International Water Management Institute		Doing things differently - TMG Aquifer Story Stephan Klevnhans, David Allpass, Mazunda Halwiindi, Jeanne-Louise Wiese - City of Cape Town, Aurecon		Integrated biogas systems as rural sanitation solutions: Reflections from five institutional interventions in Ndwedwe, KZN Jonathan Ogwang, Dr Marc Kalina, Dr Noredine Mahdjoub, Prof Cristina Trois - University of KZN		Considerations of budgeting to sustain service delivery infrastructure Prof Kevin Wall, University of Pretoria		Quantification and mass loading for contaminants of emerging concern from Western Cape wastewater treatment plants Dr. Edward Archer - Stellenbosch University	
11:40 - 12:00							Can private public partnerships (PPP) rescue South Africa's water infrastructure Dr Nezar Eldidy - Sobek		Towards leakage characterisation of water distribution pipes with a novel pipe condition assessment device Craig Tanyanywa, Prof Cobus Van Zyl - University of Cape Town		Keeping up with the ever increasing resource demand - the Vaalkop Dam case study Buks Strydom, Leandre Roux, Deon Cloete - Magalies Water		Building a resilient city – the City of Cape Town's groundwater abstraction and MAR scheme Kornelius Riemann, David Allpass, Elizabeth Hay, Rui Hugman, Chris Hartnady, Kobus Botha, Luke Towers, Boris Vassilev, Adrian Coetzee, David McGibbon - iX Engineers		The Witwatersrand Acid Mine Drainage (AMD) project: an update based on recent findings Bashan Govender - Dept Water and Sanitation		Rand Water's approach to managing emerging organic contaminants in drinking water Siphwe Sithole - Rand Water	
12:00 - 12:20							Growing momentum for social franchising partnerships Prof Kevin Wall, Jayant Bhaqwan, Oliver Iwe - Univ. of Pretoria, Water Research Commission		Using litres per capita per day as performance indicator to assess water use efficiency Willem Wegelin - WRP Consulting Engineers		Securing water security in South Africa Richard Holden - Trans-Caledon Tunnel Authority		Bridging-The-Water: Co-Creato To Learn & Experience An Orange Knowledge Project Agnes Maenhout - World Water Academy, Netherlands		Community-driven water services for multiple uses as alternative service delivery model. Evidence from South Africa Dr. Barbara Van Koppen, Dr Inga Jacobs-Mata, Dr M Magombeyi, Virginia Malose - International Water Management Institute, Water Research Commission		Facilitated discussion	
12:20 - 12:35							Questions & Answers		Questions & Answers		Questions & Answers		Questions & Answers		Questions & Answers			
12:35 - 13:35							PAUSE BREAK			INTERACTIVE TRADE SESSIONS								
20 minute presentations							Topic: Govern and regulate the sector Session 7: Covid-19 and South Africa's response Chair: Achim Wurster		Topic: Reduce water demand and increase supply Session 8: Drought management Chair: Chris Swartz - CSWUE		Topic: Manage the resource for a capable ecology Session 9: Urban Water Management Chair: Bonani Madikizela - Water Research Commission		Topic: Develop skills and technology innovations and disruptors Session 10: Digital technology Chair: Dr Hendrik Brink - Univ. of Pretoria		Topic: Manage and monitor effective water and sanitation services and infrastructure Session 11: Sanitation technology Chair: William Moraka - SALGA		Topic: Improve raw water quality and management Session 12: Pollutants of emerging concern Chair: Dr Esper Ncube - Rand Water	
13:35 - 13:55							Water service providers' resilience and recovery to emergencies Peter Macy - RockBlue		Drought planning and operational management: Lessons from Cape Town Dr Lloyd Fisher-Jeffes, Michael Killick, Andriette Combrink, Barry Wood, Mazunda Halwiindi, Dr James Cullis - Aurecon		Pathways to water resilient South African cities - mapping urban water management governance processes Dr Kirsty Carden, Dr Patience Mguni - Univ. of Cape Town (Future Water Inst), University of Copenhagen		The global opportunities for water technology innovation Dr Jo Burgess, Caitlin Roger, Fiona Griffith - Isle Utilities Ltd		Disrupting the sanitation and water landscape - Reinventing the toilet Jayant Bhaqwan - Water Research Commission		Microplastics in the source and drinking water of South Africa's largest bulk drinking water supplier Yvonne Liee, Rand Water	
13:35 - 13:55							Topic: TBC Renee Street, Angie Mathee, Johan Louw		The response of different residential suburbs to water restrictions during CT's drought (2016 - 2018): Spatio temporal analysis Biraitt Ouweneel - University of Cape Town		The assessment and control of polluted stormwater inflow entering the Ashmead channel, Knysna Estuary Calvin van der Merwe, Prof Neil Armitage - University of Cape Town		The Big Data and Transboundary Water Management Collaboration for Southern Africa: A new partnership model Clara Bocchino - Winrock International		Uptake and acceptance of pour flush toilets in South Africa, from 2010-2019 Jeanette Neethling, Nokuthula Kubheka, David Still, Siphamandla Majazi - Partners in Development		Case studies on the regulation and management of radioactivity in drinking water sources Thato Molokwe, Margaret Mkhosi, Ian Korir - National Nuclear Regulator	
13:55 - 14:15							Topic: TBC Dr Eunice Ubomba-Jaswa, Water Research Commission		Stormwater harvesting to increase water supply for cities: Case of Cape Town South Africa Dr John Okedi - Univ. of Cape Town		Impact of landuse changes on Glendower catchment Tshilidzi Netshitanqani, Joyce Mahotle - SRK Consulting		Digital Water – What are potential benefits for South African municipal wastewater treatment plants Zainab Rinqest, Werner Rossie, Kevin Samson - City of Cape Town		Opportunities and hurdles that impact on the adoption of water efficient toilets in South Africa Gary Quilling, Akin Akinsete, Marlene van der Merwe-Botha - WaterGroup, Water Research Commission		Polyfluoroalkyl Substances (PFAS) an Emerging Micro-Pollutant – A Comparison of Removal Techniques Jennifer Falconer, Ed Hardwich - Cwenga	
14:35 - 14:55							2020 was not a routine year: The effect of COVID-19 on ERWAT operations Dr Kevin Wall, Fortune Mabunda - University of Pretoria, ERWAT		Fog harvesting: Table mountain area Fortunate Moagane, Siphesihle Magqazolo, City of Cape Town		Indigenous South African plant species for the phytoremediation of polluted rooftop runoff Dylan Jacklin, Dr Isobel Brink - University of Stellenbosch		Virtual audit of wastewater treatment facilities - a case study Ayesha Laher, Shawn Mooraas, Fortune Mabunda, Marlene van der Merwe-Botha - AHL Water, Emanti, ERWAT, WaterGroup		Flushing less: Low water-use toilet pedestals and their impact in South Africa Rebecca Sindall, Preyan Arumugam, Tapuwa Sakhondo, Barbara Brouckaert, Chris Buckley - Pollution Research Group, University of KZN		A multi-matrix bio-prospection approach of bacterial species for application in bioremediation of estrogen in wastewater Phumudzo Budeli - Tshwane University of Technology	

POSTER PRESENTATION SESSION

14:55 - 15:10	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers
15:10 - 15:25	PAUSE BREAK			INTERACTIVE TRADE SESSIONS		
20 minute presentations	<p>Topic: Govern and regulate the sector  <b>Session 13: Covid-19 and South Africa's response</b>  <i>Chair: Dr Nonhlanhla Kalebaila</i></p>		<p>Topic: Manage the resource for a capable ecology  <b>Session 14: Ecology</b>  <i>Chair: Dr Kirsty Carden - Future Water Research Institute, UCT</i></p>	<p>Topic: Develop skills and technology innovations and disruptors  <b>Session 15: Wastewater treatment</b>  <i>Chair: Dr Jennifer Balatedi Molwantwa - Commissioner, Office of the President</i></p>	<p>Topic: Manage and monitor effective water and sanitation services and infrastructure  <b>Session 16: Incident management</b>  <i>Chair: Mariette Swart - Rand Water</i></p>	<p>Topic: Improve raw water quality and management  <b>Session 17: Raw water quality</b>  <i>Chair: Dr Ilunga Kamika -UNISA</i></p>
15:25 - 15:45	<p>The role of wastewater-based epidemiology in understanding Covid-19 outbreaks in communities: A South African Study  <i>Dr Sheena Kumari, Prof Fazial Bux - DUT</i></p>		<p>The development of a preliminary approach to sediment sampling, site evaluation and associated risk  <i>Dr Bridget Shaddock, Dr Khume Mtshweni - Golder Associates, University of Johannesburg</i></p>	<p>Pre-treatment of coal dump leachate with MgO for pigment recovery  <i>Sepobe Letjiane, Johannes Maree, Maurice Onyango, Amos Adeniyi, Lizzy Mpenyana-Monyatsi - Tshwane Univ. of Technology, Univ. of Limpopo</i></p>	<p>The development of stormwater maintenance plans for the City of Cape Town  <i>Andrew McDonald, Candice Bouland, Graham English, Linda Rossouw, Simamkele Ntsengwane, Kirsten Jones - Aurecon, City of Cape Town Metropolitan Municipality, Independent Consultant</i></p>	<p>Effect of poor water quality in a harbour on the operation of reverse osmosis  <i>Nico-Ben Janse Van Rensburg - Quality Filtration Systems</i></p>
15:45 - 16:05	<p>The use of wastewater-based epidemiology to establish the spread of SARS-CoV-2 in South African communities  <i>Dr Gina Pocock, Leanne Coetzee, Bettina Genthe - Waterlab, Univ of Pretoria, Csir and Water Research Commission.</i></p>		<p>Assessment and prioritisation of ecological infrastructure for water security: Cacadu Catchment in Eastern Cape  <i>Sinetemba Xoxo, Dr Sukhmani Mantel, Dr Jan Tanner, Alta de Vos - Rhodes University</i></p>	<p>Treatment of leachate with ROC process for the recovery of drinking water and saleable products  <i>Nhamo Chaukura, Tumelo Monty Mogashane - University of Limpopo, University of South Africa</i></p>	<p>Application of incident management protocol in the City of Cape Town following Blue Drop Principles  <i>Melissa de Sousa Alves, Michael Killick, Hennie Kotze, Swastika Surujlal-Naicker - City of Cape Town Metropolitan Municipality</i></p>	<p>Nutrient recovery from wastewater using microalga <i>acutodesmus obliquus</i> for biofuels and fertilizer production  <i>Dr Nirmal Renuka, Pfono Musetsho, Abhishek Guldhe, Ismail Rawat, Faizal Bux - Institute for Water &amp; Wastewater Technology, Durban Univ. of Technology</i></p>
16:05 - 16:25	To be announced		<p>Borehole decentralisation: Application at the University of the Western Cape  <i>Annejan Visser - Quality Filtration Systems</i></p>	<p>CASE &amp; SOLUTION: A low-cost ceramic filter for removal of methyl orange, Cr(VI), and <i>Escherichia coli</i> from water  <i>Gerald Katengeza, Nhamo Chaukura - Bindura University of Science Education</i></p>	<p>Optimisation of Rand Water's Water Safety Plan to address climate change challenges  <i>Lelethu Bunqu, F van Wyk, K Naidoo - Rand Water</i></p>	<p>Wastewater reuse decentralisation: The answer to SA's water shortages  <i>Herman Smit - Water Quality Filtration Systems</i>  <b>VIDEO (5 min): An innovative approach for the removal of ammonia and other contaminants from raw water</b>  <i>Dr Vhahanqwele Masindi - Magalies Water</i></p>
16:25 - 16:40	Questions & Answers		Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers
16:40 - 18:00	HAPPY HOUR / ON A LIGHTER NOTE					

TUESDAY 8 December 2020 - DAY 2

08:00 - 08:30							ATTENDEES LOGIN						
08:30 - 09:15		<p><b>Plenary keynote by Prof Stefan Uhlenbrook - Manage the Water We Eat – Sustainable Management of Resources in a Changing Climate</b>                      Leading hydrologist and award-winning academic on river basin modelling, and global changes on water cycle dynamics in Africa, with insight to various international initiatives such as UNESCO-IHP, IAHS-PUB and HELP  <i>Introduction by Dr Shafick Adams - Chairperson of WISA Organising Committee</i></p>											
09:15 - 10:15		<p><b>PANEL: KEY ISSUES TO SUSTAIN WATER RESOURCES IN SOUTH AFRICA</b>                      Dr Shafick Adams (faciliate), Dr Esper Ncobe, Dr Kevin Winter, Dr Karen Surridge, Dr Harrison Pienaar  <i>Water Research Commission, Rand Water, University Cape Town, SANEDI; CSIR</i></p>											
10:15 - 10:30		PAUSE BREAK			INTERACTIVE TRADE SESSIONS								
20 minute presentations		<p><b>Topic: Govern and regulate the sector</b>                      Session 18: The role of cities in water resource governance  <i>Chair: Dumisani Gubuza - City of Tshwane</i></p>	<p><b>Topic: Reduce water demand and increase supply</b>                      Session 19: Water reuse and recovery  <i>Chair: Nandha Govender - ESKOM</i></p>	<p><b>Topic: Manage the resource for a capable ecology</b>                      Session 20: Wastewater and Waste Pollution  <i>Chair: Dr Henry Roman - Dept. Science and Innovation</i></p>	<p><b>Topic: Develop skills and technology innovations and disruptors</b>                      Session 21: Resource measurement and machine learning  <i>Chair: Dr Trudi Joubert, Microelectronics - University of Pretoria</i></p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b>                      Session 22: Design and modelling  <i>Chair: Dr Werner Rössle - City of Cape Town</i></p>	<p><b>Topic: Improve raw water quality and management</b>                      Session 23: Modelling and analytics  <i>Chair: Dr Michele Kruger, Dept. of Water &amp; Sanitation</i></p>						
10:30 - 10:50		<p><b>Water Resource Management Requires an all hands on deck approach! Case study of Boksburg Lake</b>  <i>Ndamupei Masawi, Manda Hinsch - SRK Consulting (Pty) Ltd</i></p>	<p><b>Towards a new water reuse normal: A water reclamation and reuse guide for South Africa</b>  <i>Chris Swartz - Chris Swartz Water Utilisation Engineers</i></p>	<p><b>A water footprint for plastic recycling in South Africa</b>  <i>Tahira Goga, Prof Harro von Blottnitz, Prof Kevin Harding - University of Witwatersrand, University of Cape Town</i></p>	<p><b>Assessment of Machine Learning Approaches for Information Management of a Transboundary Aquifer</b>  <i>Andrew Gemmel, Ebrahim Abrahams, Tyrel Flügel, Rui Hugman, Claudia Ruz Vargas - Umvat, Stellenbosch University, International Groundwater Resources Assessment Centre (IGRAC)</i></p>	<p><b>Biological Nutrient Removal Design Implications for Membrane Bioreactor Application</b>  <i>Dr Gideon de Villiers, Marco Slabbert - Bigen Africa</i></p>	<p><b>Big data analytics and citizen science for extracting value from datasets for the Ramotswa Aquifer</b>  <i>Prof Hlanganani Tutu, Yannick Nuapia, Lindelwa Ndlhovu, Anita Etale, Lungisa Ngundu, Phumlani Khoza, Ewa Cukrowska - University of Witwatersrand</i></p>						
10:50 - 11:10		<p><b>Role of county government in water resources management in Nairobi City County</b>  <i>Maureen Milgo - Nairobi City Water &amp; Sewerage Company</i></p>	<p><b>Conversion of stabilisation ponds into reuse-water plants with micro-sieve and bio-percolation filter including a professional O&amp;M concept</b>  <i>Prof Karl Ulrich Rudolph, Stephanie Kirstgen, Faruq Shalizi, Birte Boysen, Aydin Parsa - IEEM gGmbH - Institute of Environmental Engineers</i></p>	<p><b>Endocrine Disrupting Compounds removal from municipal wastewater sludge by an Innovative Enhanced Hydrothermal Polymerisation Technology</b>  <i>Dr Eustina Musvoto, Nomvuselelo Mgwenya, Dr Caitlin Swiegelaar, Dr Maria Fernandes-Whaley - Truesense and NMISA</i></p>	<p><b>Using Satellite Observation to Determine Water Resource Availability in Catchments</b>  <i>James Hallowes - Ekosource</i></p>	<p><b>Autotrophic Bacterial Growth and Process Performance in Three Systems Mediated by Anaerobic Ammonium Oxidation</b>  <i>Kiprotich Kosgey, Dr Awolusi Oluwemi, Durban University of Technology, Sequencing Core Facility, National Health Laboratory Service, Columbia University.</i></p>	<p><b>Development of a water quality model for the Vaal dam reservoir &amp; the contributing catchment</b>  <i>Francois Van Wyk - Rand Water</i></p>						
11:10 - 11:30		<p><b>City of Johannesburg Stormwater Manual</b>  <i>Prof Anne Fitchett - University of Witwatersrand</i></p>	<p><b>Cape Flats managed aquifer recharge advanced water treatment plant using treated effluent</b>  <i>Francois Smuts, Pierre Marais - Water &amp; Wastewater Engineering</i></p>	<p><b>Toxicity evaluation of the effluent discharged into the Blesbokspruit using Zebrafish (Danio rerio) embryo assay</b>  <i>Khuliso Maphakela, WA Augustyn, S Combrinck, R McCrindle - Tshwane University of Technology</i></p>	<p><b>Hippo - Hydro-morphological investigation of Riverbed particle performance on-site: An innovative underwater measurement system</b>  <i>Tim Kerlin, Mark Musall, Peter Oberle, Franz Nestmann - Karlsruhe Institute of Technology, Baden-Wurttemberg, Germany</i></p>	<p><b>Primary settling tank model development and calibration to resemble reality</b>  <i>Joshua Matesun, Christian Polarigni, Dr David Nkumi - University of Cape Town</i></p>	<p><b>Source Treatment Optimisation and Water Resource Management- Conceptual Decision Support Tool for River Pollution Problems</b>  <i>Christopher Mahlathi, Melise Steyn, Josefina Wilms, Farisha Panday - Council for Scientific and Industrial Research (CSIR), Deltares</i></p>						
11:30 - 11:50		<p><b>Infrastructure solutions to enhance communities and the environment</b>  <i>Namrata Juqwanth - Aecom</i></p>	<p><b>Wastewater biorefinery: Valorisation of water - borne waste fibres for platform chemical production with concomitant water recovery</b>  <i>Charlotte Wessels, Dr A Kotsiopolous, Prof STL Harrison - University of Cape Town</i></p>	<p><b>Bioremediation of toxic hydrocarbons from contaminated trade effluent and soil</b>  <i>Prisha Mandree, Rajesh Laloo, Wendy Masika, Dr Santosh Ramchuran - CSIR</i></p>	<p><b>Machine Learning Techniques for the Prediction of Groundwater Levels</b>  <i>Helen Seyler, Kai Witthueser-Delta-h Water Systems Modelling, Delta-h Groundwater Systems</i></p>	<p><b>A probabilistic approach to scum particle size distribution test in modelling of micro-screen</b>  <i>Dr Surabhi Srivastava, Prof C Trois, Prof Chris Buckley - University of KZN, School of Engineering</i></p>	<p><b>Facilitated discussion</b></p>						
11:50 - 12:05		Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers						
12:05 - 12:50		LUNCH BREAK			POSTER VIEWING SESSION		INTERACTIVE TRADE SESSIONS						
20 minute presentations				<p><b>Topic: Manage the resource for a capable ecology</b>                      Session 24: Design and Treatment  <i>Chair: Dr Ralph Heath - Golder Associates Africa</i></p>	<p><b>Topic: Develop skills and technology innovations and disruptors</b>                      Session 25: Water Conservation and Leak Detection  <i>Chair: Vanessa Weber - WISA Young Water Professionals</i></p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b>                      Session 26: Energy and sludge management  <i>Chair: Jayant Bhagwan - Water Research Commission</i></p>	<p><b>Topic: Improve raw water quality and management</b>                      Session 27: Basin and drainage management  <i>Chair: Dr Lizzy Monyatsi - Technical University of Tshwane</i></p>						
12:50 - 13:10				<p><b>Processing of Na2SO4 for the formation of Na2CO3 and sulphur</b>  <i>Lehlagonola Mashiwana, Mauric Onyango, Prof Jannie Maree, Lizzy Monyatsi - ROC Water Technologies, Tshwane University of Technology, University of Limpopo</i></p>	<p><b>Piloting of drone technology application in Rand Water's area of service</b>  <i>Danny Kuya, Mogan Padayachee - Rand Water</i></p>	<p><b>New Faecal Sludge Management Facility at Borchers Quarry Wastewater Treatment Plant</b>  <i>Akanyang Hottle, John Clayton, Dr Johan Kotze, Dr Werner Rossle, Kevin Samson - Project Assignments SA, City of Cape Town</i></p>	<p><b>Guidance for attaining regulatory approval of irrigation as a large scale, sustainable use of mine water</b>  <i>Dr Gina Pocock, Leanne Coetzee - Waterlab</i></p>						
13:10 - 13:30				<p><b>Frothing properties of recirculated water as a diagnostic tool for water quality effects during flotation</b>  <i>Dr Malibonqwe Manono - University of Cape Town</i></p>	<p><b>Looking in from space to detect leaks on drinking water pipelines using satellite technology</b>  <i>Mogan Padayachee - Rand Water</i></p>	<p><b>Performance of the largest Hybrid Activated Sludge (HYBACS) plant in Southern Africa</b>  <i>Nyiko Khosa, Karabo Nthethe, Marangrang Khomela - ERWAT</i></p>	<p><b>Sustainable Drainage in Gauteng: Possibilities and Barriers for Implementation</b>  <i>Stuart Dunsmore, Marieke de Groen, Jody Paterson, Nisa Mammou, Brad Graves, Douglas MacFarlan, Aa'isha Dollie, Ntseketsi Lerotholi, Nегgie Bakwunye, Ndivhudza Nengovhela, Rina Taviv - Fourth Element, NMA, Greenvision Consulting, Gauteng Dept. Agriculture &amp; Rural Development, Resilience Consulting Engineers, Eco-Pulse, AquaLinks Research and Implementation</i></p>						
13:30 - 13:50				<p><b>CASE &amp; SOLUTION: MINTEK'S closure™ process for the treatment of acid mine drainage</b>  <i>Kerri du Preez - Mintek</i></p>	<p><b>Leak detection, pressure management and metering training rig for institutional training and efficiency improvements</b>  <i>Thulisile Mwelase, Noel Nyawade - Ugu District Municipality, JOAT Consulting Pty Ltd</i></p>	<p><b>Energy savings and lessons learnt from the design and installation of new FBDA networks</b>  <i>Shanen Jelliman, Mark Marais, Michael Tall, Kevin Sampson - City of Cape Town</i></p>	<p><b>Developing early warning system support for the Lower Olifants River Sub-basin using a 1D-hydrodynamic model</b>  <i>Justin Wiaggett, Christain Jalk - Ruhr-University Bochum</i></p>						

POSTER VIEWING SESSION

13:50 - 14:10			The role of mining as responsible stewards of water resources in the modern environment <i>Gerardo Pretorius - Sibanye-Stillwater</i>	GIS-Based risk mapping of illegal discharges into stormwater drainage systems in Cape Town <i>Alex Kuhudzai - Cape Peninsula University of Technology</i>	Energy optimisation within the South African Municipal Wastewater sector: Building towards self-sustainability <i>Roda Lidzhade - ERWAT</i>	Facilitated discussion
14:10 - 14:25			Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers
14:25 - 15:10	PAUSE BREAK			INTERACTIVE TRADE SESSIONS		
20 minute presentations		Topic: Improve raw water quality and management Session 28: Raw water quality <i>Chair: Ayesha Laher - AHL Water</i>	Topic: Manage the resource for a capable ecology Session 29: Models and technology in agriculture and irrigation <i>Chair: Bashan Govender - Dept Water &amp; Sanitation</i>	Topic: Develop skills and technology innovations and disruptors Session 30: Water and wastewater treatment <i>Chair: Teboho Mafokeng - Rand Water</i>	Topic: Manage and monitor effective water and sanitation services and infrastructure Session 31: Analytical science <i>Chair: Dr Heidi Snyman - Golder Associates Africa</i>	Topic: Improve raw water quality and management Session 32: Microbial remediation applications <i>Chair: Prof Memory Tekere - UNISA</i>
15:10 - 15:30		Challenges to Implementing an Environmental Flow Regime in the Luvuvhu River Catchment, South Africa <i>Pfananani Ramulifha - University of Venda</i>	Integrated hydrological modelling for ground water drought in South Africa <i>Phatsimo Ramatsabana, Jane Tanner, Sukhmani Mantel - Rhodes University</i>	Assessing the effectiveness of clarification for the removal of viruses during conventional drinking water treatment <i>Khomotso Setlhare, Veronna Marie, Dr Annelie Swanepoel, Rand Water</i>	Multilocus-based phylogenetic analysis of ESBL E. coli O157 uncovers related strains between agriculture and waterbodies <i>Cecilia Raseala - Tshwane University of Technology</i>	A Controlled strategy to stimulate indigenous microbial communities to effectively remediate mine drainage - pilot study <i>Prof Esta van Heerden, Gerhard Potgieter, Mosidi Mojaki, Christovan Vuuren, Lesley Mukwada, Elizabeth Baloyi - iWater (Pty) LTD</i>
15:30 - 15:50		Water quality of the Bloemspruit stream in the outskirts of Bloemfontein, Free State <i>Mahlape Letsoela - Central University of Technology, Free State</i>	Growth Based Irrigation (GBI) Technology improves water use efficiency in agriculture <i>Jannie Willemse, AG Levin - Improchem, Nulandis, Supplant LTD</i>	Performance evaluation of forward osmosis (FO) process for tannery wastewater treatment <i>Dr Amos Adeniyi - Tshwane University of Technology</i>	Establishing phylogenetic association of Enteropathogenic bacteria of household stored water and diarrhoeal stool <i>Colette Khabo-Mmekoa, Prof Maggie Momba - Tshwane University of Technology</i>	Kinetic modelling of microbial Pb(II) removal <i>Carla Horstmann, Deon Brink, Evans Chirwa - University of Pretoria</i>
15:50 - 16:10		Contamination of surface water by potentially harmful elements in Matjhabeng mining area, South Africa <i>Gladys Belle - Central University of Technology</i>	Water harvesting in Saudi Arabia for sustainable agricultural development <i>Jonathan Schroder, Timothy Hotchkiss 0-AECOM</i>	Fabrication of a colorimetric paper-based microfluidic sensor for residual poly-dadmac detection in water treatment <i>Dr Phumlani Mdluli - Richards Bay</i>	Lateral flow immunoassay for rapid identification of selected enteric bacterial from water <i>Dr Sumayya Mieta, TG Barnard - University of Johannesburg</i>	Assessing the potential accumulation of chromium(cr) and manganese(mn) in wastewater sludge in a WWTW <i>Leleotle Motaung, Machawe Motsa, Taile Leswifi, Thabo Nkambule - ERWAT, UNISA</i>
16:10 - 16:30		VIDEO (6min): The Sydney 905 Water Filter: A Global Environment and Community Betterment Initiative - <i>Justin Sadler, Sydney 905 Water Filters.</i>  VIDEO (6min) Mzansi Amanzi - monitoring of surface waters - <i>Mark Thompson, Elsie Zwennis - Geoterrimage</i>	Facilitated discussion	Evaluation of Dextrin as a Coagulant in Removing Turbidity at Various pH Conditions <i>Crispen Mtsvangwa - Cape Peninsula University of Technology</i>	CASE & SOLUTION: GenoTrack, a webtool to geospatially link bacterial genomes from water, food and clinical environments <i>Mutshiene Deogratias Ekwanzala - Tshwane University of Technology</i>	Adsorption properties of exfoliated graphite on Cr (VI) and phenol <i>Siyabulela Tshemese, Shepherd Tichapondwa - University of Pretoria</i>
16:30 - 16:45		Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers

Wednesday 9 December 2020 - DAY 3

08:00 - 08:30	ATTENDEES LOGIN					
08:30 - 09:15	Plenary Keynote by Sivuyile Pezulu: Young professionals in the water sector and entrepreneurship. Topic: An Uncomfortable Disruption: How To Build An Inclusive Water Sector A compelling talk with fresh perspectives on the development of young professionals and entrepreneurs in the South African water sector Introduction by Suvritha Ramphal, WISA Young Water Professionals South Africa.					
09:15 - 10:15	PANEL: THE VALUE PROPOSITION OF YOUNG PROFESSIONALS IN SOUTH AFRICA Suvritha Ramphal (facilitator), Janavi Jardine, Lucky Litelu, Dr Henry Roman Young Water Professionals South Africa, Green Matter, ICRD, DSI					
10:15 - 10:30	PAUSE BREAK			INTERACTIVE TRADE SESSIONS		
20 minute presentations	Topic: Govern and regulate the sector Session 33: Transboundary water management Chair: Dr Inga Jacobs-Mata - IWMI	Topic: Reduce water demand and increase supply Session 34: Cost and investment Chair: Takalani Mamphitha, WRP Consulting Engineers	Topic: Manage and monitor effective water and sanitation services and infrastructure Session 35: Microbial Resistance, Gene Dynamics and Antibiotics in Water and Effluent Chair: Prof TG Barnard - University of Johannesburg	Topic: Develop skills and technology innovations and disruptors Session 36: Mine water treatment Chair: Prof Craig Sheridan - University of Witwatersrand	Topic: Manage and monitor effective water and sanitation services and infrastructure Session 37: Process optimisation Chair: Prof Jannie Maree - Technical University of Tshwane	Topic: Improve raw water quality and management Session 38: Advanced analytical methods Chair: Dr Collette Khabo-Mmekoa - Technical University of Tshwane
10:30 - 10:50	Trends in transboundary water management Dr Jonathan Lautze - International Water Management Institute	NRW reduction programmes funded by the private sector to solve under staffing at KZN's municipalities Vishal Poona - Joat Consulting	Quantification of antibiotics and antibiotic resistance genes within WWTP effluent Peter Coetzee, Prof Carlos Bezuidenhout - North West University	A mineralogical investigation of brine and ash encapsulation Shameer Hareeparsad, Corne Pretorius, Kirk Ellison - Golder (RSA, Canada, USA)	CASE & SOLUTION: Impacts of process selection and process train in design of water treatment plants in RSA Sandile Nqobu, Dr Hendrik Brink - Magalies Water	Improved optical property of conjugated-polymer modified TiO2 for photocatalytic-degradation of acetaminophen in water under visible-light Olayinka Awofiranye - Vaal University of Technology
10:50 - 11:10	WEFE Nexus in the Zambezi Watercourse: A Proposed Governance Implementation Framework Ashwin Seetal - CSIR	The business case of investing in water resilience Bridget Fundikwa - Greencape	Systematic review in South Africa reveals antibiotic resistance genes shared between clinical and environmental settings Prof Maqae Momba, Mutshiene Ekwanzala, Prof John Barr, Dr Ilunga Kamika, - University of South Africa and Tshwane University of Technology	Processing of gypsum sludge for the recovery of CaCO3 and sulphur via Ca(HS)2 formation Dr Nsaka Mtumba, Jannie Maree, Mahigwana Lehagonolo, Munyaradzi Mujuru, Lizy Manyatsi - Roc Water Technologies, Tshwane University of Technology, University of Limpopo	The use of process capability indices to measure water treatment process performance Given Skosana, S. Arendse, J.Z. Nonyana, M.S. Sibiya, - Rand Water	Prevalence and genetic characterization of Cryptosporidium spp. isolated from surface waters and riverbed sediments. Muofhe Grace Mphophu - Tshwane University of Technology
11:10 - 11:30	SWOT analysis of Water Resource Management of the Limpopo River Basin Dr Joshua Edokpayi - University of Venda	Re-defining water policies in Kenya to achieve optimal delivery of water and sewerage services Hamred Chungani - Nairobi City Water & Sewerage Company Limited	Prevalence of carbapenemase-encoding genes in E. coli in wastewater treatment plants Winile Dladla, Prof Isaac Dennis, Dr Sheena Kumari, Prof Thor Stenström - Durban University of Technology	VIDEO (5min): Assessment of physicochemical and microbial quality of groundwater of some primary schools in Vhembe District Ntwanano Mutileni, David Khaler, Kevin Rose, Joshua Edokpayi - Rensselaer Polytechnic Institut, Duquesne University of the Holy Spirit, University of Venda VIDEO (5 min): Wet skills movie Johan Oost - Wetskills Foundation	On-line monitoring as a process monitoring tool and early warning sensor for microbial water quality Manique Grundlingh, Hein du Preez - Rand Water	Effects of Nonylphenol and Dibutyl phthalate on isolation and growth response of bacterial and protozoan Vision Netsianda - Tshwane University of Technology
11:30 - 11:50	Facilitated discussion: IUCMA operationalisation of the DWS masterplan in a transboundary context Jonathan Lautze, Dr Inga Jacobs-Mata - International Water Management Institute	The true cost of water - An industrial perspective on water sustainability versus profitability Kirshen Naidoo - Royal Haskoning DHV	Molecular detection of antibiotic resistant genes in Mycobacterium tuberculosis from wastewater Hlenaiwe Mtetwa, Dr Isaac Amoah, Dr Sheena Kuttan Pillai, Prof Faizal Buz, Prof Poovendhree Reddy - Durban University of Technology	Facilitated discussion	Optimization of the membrane fouling of the ultrafiltration system using the factorial design of experiments Simon Muzi Sibiya, Lingum Pillay - Rand Water, Stellenbosch University	Facilitated discussion
11:50 - 12:10	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers
12:10 - 13:10	LUNCH BREAK			INTERACTIVE TRADE SESSIONS		
20 minute presentations	Topic: Develop skills and technology innovation Session 40: Effluent treatment & disinfection Chair: Dr Gina Pocock - Waterlab	Topic: Reduce water demand and increase supply Session 41: Assessment and optimisation of water use Chair: Monako Dibetle	Topic: Manage and monitor effective water and sanitation services and infrastructure Session 42: Microbial Resistance, Gene Dynamics and Antibiotics in Water and Effluent Chair: Dr Hamanth-Kasan - Rand Water	Topic: Develop skills and technology innovation Session 43: Treatment and energy technology Chair: Fortune Mabunda - ERWAT	Topic: Manage and monitor effective water and sanitation services and infrastructure Session 44: Data and statistics in water quality control Chair: Jayant Bhagwan - Water Research Commission	
13:10 - 13:30	How a water study could potentially save your plant money Melani Loram, Ferdi Hartzenberg, Thabiso Mvuyana - Improchem	Calibrating the Australian Water Balance Model - A case study Gideon Bonthuy, Priyal Dama-Fakir - Golder Associates Africa	Genomic and transcriptomic analysis of antibiotic resistance genes in biological wastewater treatment in Durban, South Africa Thabela Conco, Dr Sheena Kumari, Dr Mahmoud Nasr, Dr Arshad Ismail, Prof Thor Stenström, Prof Faizal Buz - Durban University of Technology	Evaluation of Compact Low Energy Submersible Mixers for Sludge Applications. Thandeka Maphumulo, Kerisha Noyager, Naheen Toolsee, Lakesh Maharaj - Umgeni Water	Maximizing use of water quality data using R and R markdown: a wastewater case study Leanne Coetzee - Waterlab	
13:30 - 13:50	Use of ozone for cooling towers Brendan van Wyk - Xylem Water Solutions SA	Water Conservation/Water Demand Management self-assessment reporting tool for the mining sector Givarn Singh, William Pulles - Golder Associates Africa	Assessing the presence of antibiotic-resistant Enterobacteriaceae in Edendale Hospital and Darvill Wastewater Treatment Plant Siyabonga Thwala, Prof Stefan Schmidt - Umgeni Water and University of KZN	Investigating Sludge Compaction on a Pilot Sludge Hopper System Nkaniso Shabalala - Umgeni Water	Descriptive statistics in water quality reporting John Moatshe, Zandile Nonyana, Mighty Mohotsi - Rand Water	
13:50 - 14:10	Forward Osmosis to concentrate brine streams Tabani Mtombeni, Jannie Maree, Maurice Onyango, Amos Adeniyi - Tshwane University of Technology, University of Limpopo, ROC Water Technologies	Rethinking desalination: The value proposition of water as an infinitely scalable, renewable economic commodity David Bosman - TCTA	Facilitated discussion	Energy utilization in Freeze desalination Phalokwane Ramothale, Johannes Maree, Maurice Onyango, Amos Adeniyi - Tshwane University of Technology, University of Limpopo, ROC Water Technologies	The management of data quality relative to the exploitation of legacy water quality results Tim White - Marquis & Lord	
14:10 - 14:30	Video (5 min) - Introducing the disruptor filter technology: The science and its application in the South African context Grant Naser, Ettienné van der Merwe - Jojo Tanks	Maximising the yield from a local water source through short-term yield prediction using AI Christo Potgieter, Pieter Cilliers, Koki Mokhoabane, Mlondolozu Ndlovu - Bigen	Facilitated discussion	Facilitated discussion	Development of quality control system for polymeric coagulants used for potable water treatment Nothando Munqwe, Dr Sigudu Makhosazane, Dr Esper Ncube - Rand Water	
14:30 - 14:45	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers	Questions & Answers
14:45 - 15:00	PAUSE BREAK	POSTER VIEWING SESSION		INTERACTIVE TRADE SESSIONS		

POSTER VIEWING SESSION

15:00 - 16:45	<b>WISA 2020 Closing Address</b> Reflection on WISA2020, by Suvritha Ramphal, Dr Lloyd Fisher Jeffes and YWP Rapporteurs - WISA Young Water Professionals  <b>Prize Ceremony</b> by Dr Sarah Slabbert and Dr Lester Goldman	
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17:00 - 19:00 "KOM ONS BRAAI"

**WISA 2020 PRE-CONFERENCE WORKSHOPS**

**POST CONFERENCE WORKSHOP - THURSDAY 10 DECEMBER**

**09:00 - 09:15 WORKSHOP WELCOME SESSION AND INTRODUCTION**

09:15 - 11:15	<b>Wastewater resource efficiency</b> Chair: Mluleki Mnguni - Water Research Commission	<b>Sanitation in the circular economy</b> Chair: Dr S Pillay - Water Research Commission	<b>Water governance incentives</b> Chair: Jens Hilbig - IEEM gGmbH	<b>Investment</b> Chair: Michelle Hiestermann	<b>Models for water supply</b> Chair: Chantal Ramcharan-Kotze - Water Research Commission	<b>Water sensitive design</b> Chair: Dr Kirsty Carden - Future Water Research Institute	<b>Catchment management in the 4th IR</b> Chair: Prof Evans Chirwa - Univ Pretoria
	<b>Requirements of a comprehensive resource efficient wastewater treatment plant (WRC Project K5/2807)</b> Mluleki Mnguni, Gary Brown, Megan Schalkwyk, Dr Bernelle Verster, Dr Lakesh Maharaj Umgeni Water, University of Cape Town, Water Research Commission, Dikubu,	<b>Sanitation Disruption: Creating a new Sanitation Paradigm based on Circular Economy Principles</b> Dr Sudhir Pillay, Akin Akinsete, Charmaine Twala, Lungi Zuma, Dr Valerie Naidoo Water Research Commission, eThekweni Metro	<b>Incentive mechanisms in the context of water governance</b> Jens Hilbig, John Dini, Dr Lisette Andrae, Prof K-Ulrich Rudolph, Justin Wigget IEEM gGmbH, Water Research Commission, German Embassy Pretoria, Ruhr-University Bochum	<b>Unlocking investment in ecological infrastructure for water security</b> Michelle Hiestermann, Julie Clarke, Ndileka Mohapi, Caroline Gelderblom, Dr Pearl Gola, Alex McNamara Water Research Commission, DBSA, Dept of Water and Sanitation, WWF-SA, National Business Initiative	<b>Alternate implementation models for improved water supply and sanitation in South Africa</b> Chantal Ramcharan-Kotze, Jørgen Erk Larsen, Boniface Aleobua, Virginia Malose, Johann Lubbe Water Research Commission, Development Bank of Southern Africa, Embassy of Denmark, AFDB	<b>Expanding and embedding the Water Sensitive Design Community of Practice (WSD CoP) in South Africa</b> Dr Kirsty Carden, Shanna Nienaber Future Water Research Institute, Univ. of Cape Town, Water Research Commission, Dept of Science & Innovation	<b>Advances in Catchment Level Management, Water Quality Monitoring and Pollution Prevention with an Eye towards the Fourth Industrial Revolution and Big Data Management and Analysis:</b> Prof Evans Chirwa, Prof Fanus Venter, Dr Trudi Joubert, Dr Deon Brink, and Dr Shepherd Tichapondwa, Marco van Dijk University of Pretoria Water Institute (UPWI), Department of Chemical Engineering, Department of Electrical and Electronics Engineering, Department of Civil Engineering, and Department of Microbiology

**11:15 - 13:55 INTERACTIVE TRADE SESSIONS /LUNCH BREAK**

14:00 - 16:00	<b>Norwegian solutions</b> Chair: Rita Brokstad - Regional Director of Innovation Norway	<b>Resource recovery and reuse</b> Chair: Dr John Zvimba - Water Research Commission	<b>Water law</b> Chair: Dr Barbara van Koppen - IWMI	<b>Anaerobic sludge processes</b> Chair: Gary Brown - Dikubu	<b>Industrial effluent</b> Chair: Dr Marlene vd Merwe-Botha - WaterGroup	<b>Skills and innovation</b> Chair: Shanna Nienaber - Water Research Commission	<b>Green / Blue / No Drops</b> Chair: Trevor Balzer, Human Settlements, Water & Sanitation
	<b>An innovation Norway programme promoting Norwegian solutions to address water scarcity, sludge management and sustainability</b> Rita Brokstad, Roger Blekkan, Trude Marge, Anders Øfsti, Gary Brown, Ilija Radeljic, Kristine Bangstad Fredriksen Innovation Norway, Inrigo, Cinderella Eco, Hias How2O, Cambi & Environor, Pipelife Norge, Ocean Oasis AS	<b>Sustainable Wastewater Resource Recovery and Reuse</b> Dr John Zvimba, David Ikumi, Prof Eyob Tesfamariam, Dr Eustina Musvoto, Megan Schalkwyk, Lalitha, Moodley Water Research Commission, University of Cape Town, University of Pretoria, TruSense Consulting, Umgeni Water, eThekweni Metro	<b>Hybrid water law in South Africa: a realistic option for the future of water governance or a piped dream?</b> Dr Barbara van Koppen, John Dini International Water Management Institute, Water Research Commission	<b>Beneficiation and Utilisation of Anaerobic Sludge Processes</b> Gary Brown, Dr Heidi Snyman, Andrea Gysin, Paul Fountain, Karl Juncker, F Burger, A R Lancaster, Annelize Theron Thames Water, Umgeni Water, Innovation Norway	<b>NATSURVS: National Surveys of Water and Effluent Management in the Pelagic Fishing, Fruit and Vegetable Processing and Power Generating Industries</b> Dr Gina Pocock, Dr Marlene van der Merwe-Botha, Chris Swartz, Peter Wille, Bertie Steytler Water Research Commission, WaterGroup, Waterlab, Chris Swartz Water Utilization Engineers, Prodrimos Technologies UK Ltd	<b>Skills to Embed Research and Innovation in the Water Sector: Mapping, Synergising &amp; Scaling Skills Initiatives</b> Shanna Nienaber, Nora Hande-louw, Manuel Jackson, Dr Valerie Naidoo, Dr Henry Roman, Yazeed van Wyk, John Dini Water Research Commission, Stellenbosch Univ., Dept. Science & Technology, Dept of Water & Sanitation, EWSETA	<b>REVIVING ENERGY FOR THE DROPS - Building momentum and plan for the next generation audits</b> ... CALL TO ACTION BY MUNICIPALITIES, PUBLIC WORKS, PRIVATES AND WATER BOARDS ... Anil Singh - Dept. Human Settlements, Water & Sanitation, National Development Initiative



**WISA 2020 PRE-CONFERENCE WORKSHOPS**

**POST CONFERENCE WORKSHOP - FRIDAY 11 DECEMBER**

**09:00 - 09:15 WORKSHOP WELCOME SESSION AND INTRODUCTION**

09:15 - 11:15	<b>Mine closure</b> <i>Chair: Dr John Zvimba - Water Research Commission</i>	<b>Knowledge and technology</b> <i>Chair: Jørgen Erik - Danish Royal Embassy</i>	<b>Big data</b> <i>Chair: Clara Bocchino - Winrock International</i>	<b>Water loss management in the mining industry</b> <i>Chair: Nivi Juggath - Golder Associates Africa</i>	<b>Generation Z</b> <i>Chair: Agnes Maenhout - World Water Academy</i>	<b>Dutch-South African initiatives</b> <i>Chair: Cathy Eales - Independent</i>
	<b>Sustainable Mine Closure</b> <i>Dr John Zvimba, David Love, Andrew Johnstone, John Annandale Water Research Commission, GCS, University of Pretoria</i>	<b>Water Utility Adoption of New Knowledge and Best Available Technology: Drivers, Incentives and Solutions?</b> <i>Jørgen Erik Larsen, Mogan Paydashee, Hamanth Kasan, Dan Naidoo, Peter Thompson, Wensy Tshawe, Shiram Misra, Petrus van Heerden, Claus Homann Royal Danish Embassy, Rand Water, Umgeni Water, Mbombela Municipality, AA Water Works, Aarhus Water Utility</i>	<b>How can Big Data Analytics improve governance and decision-making for transboundary aquifers in Southern Africa?</b> <i>Clara Bocchino Big Data Analytics and Transboundary Water Collaboration for Southern Africa, USAID, WRC, Department of Science and Innovation, SADC Ground water Management Institute, US Geological Survey, Winrock International &amp; Tetrattech</i>	<b>Best practices of Water Conservation / Water Demand Management in the SA mining industry</b> <i>Nivi Juggath, Youlita Vemblanathan, Helga van Lochem, Jayson Jacobs Golder Associates Africa, Tomra AS, Enprotech, Dept. Water &amp; Sanitation</i>	<b>Generation Z is coming: go with their flow to get #allhandsondeck</b> <i>Agnes Maenhout World Water Academy, Aquadactics</i>	<b>Dutch - South Africa building capacity together</b>  <b>1. An entrepreneurial approach for government, industry and research to close the water gap together: experiences from NL &amp; SA</b> <i>Stephanie de Beer</i>  <b>2. Finals Wetskills Water Challenge - South Africa 2020</b> <i>Johan Oost Embassy of the Netherlands, Dept of Water &amp; Sanitation, Wetskills Foundation</i>

**11:15 - 13:55 INTERACTIVE TRADE SESSION / LUNCH BREAK**

14:00 - 16:00	<b>Vaal river challenges</b> <i>Chair: Dr Nelson Odume - Rhodes University</i>	<b>Risk management</b> <i>Chair: Priya Moodley - Golder Associates Africa</i>	<b>Gaming technology</b> <i>Chair: Jason Hallows - EkoSource</i>	<b>Public education for water re-use</b> <i>Chair: Dr Sarah Slabbert (BHI32) and Dr Nonhlanhla Kalebaila (WRC)</i>	<b>MBR design and reuse</b> <i>Chair: Taf Mukwena - Bigen Africa</i>	<b>Dutch-South Africa initiatives</b> <i>Chair: Kathy Eales - Independent</i>
	<b>Tackling Key Vaal River Challenges</b> <i>Dr Nelson Odume, Dr Chika Nnadozie, Dr Neil Griffin, Ms Khaya Mgaba Institute for Water Research, Rhodes University</i>	<b>A Risk based Philosophy and Approach to Water Quality Guidelines</b> <i>Priya Moodley, Lee Boyd, Dr J Meyer Golder Associates Africa</i>	<b>Using Serious Gaming Technology to explore the Water, Energy, Food and Environmental Nexus</b> <i>Jason Hallows, Bruce Eady EkoSource Prize Giving: Aqua Republican</i>	<b>A public education programme for water re-use: let's get all hands on deck</b> <i>Dr Nonhlanhla Kalebaila, William Moraka, Grant Pearson, Nadja Green - Water Research Commission, BHI32, SALGA, Water Wise (Rand Water)</i>	<b>Technology overview and key aspects in MBR design, implementation and reuse in RSA</b> <i>Dr Gideon de Villiers, Roy Arviv, Rob Holmes, Marco Slabbert, Zandile Matutu, Dr Mias van der Walt, Gerin James Bigen Africa, Suez, Tecrover, Evoqua/Memcor, WSSA, City of Cape Town</i>	<b>Dutch - South Africa building capacity together</b> <b>Blue Deal in Southern Africa</b> <i>Mmatlala Malatjie Department of Water &amp; Sanitation, Dutch Water Authorities</i>