

WISA 2020 DRAFT PROGRAMME

SUNDAY 6 December 2020

12:00 - 18h00 Registration and bag collection in the Registration Foyer

17:30 - 20:00 Welcome Function in (TBC)

MONDAY 7 December 2020

07:00 - 17:00 Registration Level 0 foyer

**08:00 - 10:45 WISA 2020 PLENARY SESSION**  
**Welcome by Dr Shafick Adams - Chairperson of WISA Organising Committee**  
**Opening by Honourable Minister of the Department of Water & Sanitation**

**Keynote by Daniele Silke - Director Political Futures - Title to be confirmed**  
 Leading analyst and commentator on the South African, African and global political and economic landscapes and future trends.  
 Introduced by Prof Mike Muller

**PANEL: CALL TO ACTION FOR ALL-HANDS-ON-DECK - WHAT ARE THE KEY PRIORITIES TO BE ACTIONED IN SOUTH AFRICA? - Prof Mike Muller, Mbulelo Tshangana, Desighen Naidoo, Dr Neil McLeod/ Dr Allyson Lawless (tbc)**  
 WISA Technical Chair, DG Dept. Water & Sanitation; CEO Water Research Commission; Former President of SAICE

**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 Siquabala  
 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

Introduced

<p><b>Topic: Govern and regulate the sector</b>                  Session 1: Alternative governance approaches                  Chair: Leonardo Manus - Dept. Water &amp; Sanitation</p>	<p><b>Topic: Reduce water demand and increase supply</b>                  Session 2: Smart solutions                  Chair: Diksha Somai - EXXARO</p>	<p><b>Topic: Manage the resource for a capable ecology</b>                  Session 3: Water Sources                  Chair: Dr John Dini - Water Research Commission</p>	<p><b>Topic: Develop skills and technology innovations and disruptors</b>                  Session 4: Building resilience                  Chair: Dr Nonhlanhla Kalebaila - Water Research Commission</p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b>                  Session 5: Investment and business models                  Chair: Dr Johan Lubbe - WRC</p>	<p><b>Topic: Improve raw water quality and management</b>                  Session 6: Pollutants of emerging concern                  Chair: Mr Erin Parenzee - Rand Water</p>	<p><b>Workshop Session 7</b>                  Chair: Dr Nezar Eldidy</p>	<p><b>Workshop Session 8</b>                  Chair: Michelle Hestermann</p>	<p><b>Workshop Session 9</b>                  Chair: Dr Esper Jacob Ncube</p>	<p><b>Workshop Session 10</b>                  Chair: Clara Bochio - Winrock</p>
<p>11:15-12:05 Sustainable Development Goal 6 – Optimizing Operations To Deliver Excellence towards 2030                  Goal in SA                  Mark Bannister - Dept. of Water &amp; Sanitation</p>	<p>11:15-12:05 Energy recovery taking the pressure off municipal water supply networks                  Mr Gideon Bonthuys, Marko Van Dijk - Golder Associates Africa</p>	<p>11:15-12:05 Leveraging on technological innovation and fusion to foster effective water resource monitoring in South Africa                  Dr Simphiwe Chabalala, Prof Danny Simatele, Dept. Water &amp; Sanitation, Univ. of Witwatersrand, Rusangu Univ.</p>	<p>11:15-12:05 Challenges facing schools to provide effective water services and promoting water conservation                  Willem Wegelin - WRP Engineering</p>	<p>11:15-12:05 Unlocking investment opportunities in water sector for economic growth, drought resilience and environmental health                  Ashton Mpofo, Baldo Kruger - Green Cape</p>	<p>11:15-12:05 Evaluation of South Africa's water quality and establishment of primary areas of risk                  Dr Anja Du Plessis - Unisa</p>	<p>11:15-13:00 Governance and Sector Restructuring for Efficiency                  Dr Nezar Eldidy                  WISA Management and Institutional Affairs Division</p>	<p>11:15-13:00 Unlocking investment in ecological infrastructure for water security                  Michelle Hestermann, Alex McNamar, Julie Clarke, Jenifer Zungu, Hessiva Cockburn, Christin Colvin                  Water Research Commission, SANBI, DBSA</p>	<p>11:15-13:00 Water Reuse in Southern Africa: Strategic Areas                  Dr Esper Jacob Ncube, Johann L Übbe, Dr Lakesh Maharaj, Benoit Le Roy, Dr Nonhlanhla Kalebaila, Carl Davis, Chris Swartz                  WISA Water Reuse Division, DBSA, Ungeni Water, SA Water Chamber, Drakenstein Municipality, Chris Swartz Consulting Engineers, and various partners from industry, private sector and government.</p>	<p>11:15-13:00 1. How can Big Data Analytics improve governance and decision-making for transboundary aquifers in Southern Africa?                  Clara Bochio                  Big Data Analytics and Transboundary Water Collaboraation for Southern Africa, USAID, WRC, Department of Science and Innovation, SADC Ground water Management Institute, US Geological Survey, Winrock International &amp; Tetratich</p>
<p>12:05-12:25 Effective management and governance: the critical challenge for a sustainable water business                  Mr Fred van Zyl - Independent</p>	<p>12:05-12:25 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</p>	<p>12:05-12:25 Doing things differently - TMG Aquifer Story                  Stephan Kleyhans, David Allpass, Mazunda Halwindi, Jeanne-Louise Wiese - City of Cape Town, Aurecon</p>	<p>12:05-12:25 Integrated biogas systems as rural sanitation solutions: Reflections from five institutional interventions in Ndwedwe, KZN                  Jonathan Qqwanq, Dr Marc Kalina, Dr Noredine Mahdjoub, Prof Cristina Trois - Univ. of KZN</p>	<p>12:05-12:25 Considerations of budgeting to sustain service delivery infrastructure                  Prof Kevin Wall, Univ. of Pretoria</p>	<p>11:15-12:05 Chemicals of emerging concern as indicators of de facto (unintentional) reuse                  Cordi Laurens - Chris Swartz Water Utilization Engineers, Edward Archer-Stellenbosch University</p>				
<p>12:25-12:45 Can private public partnerships (PPP) rescue South Africa's water infrastructure                  Dr Nezar Eldidy - Sobek</p>	<p>12:25-12:45 Towards leakage characterisation of water distribution pipes with a novel pipe condition assessment device                  Mr Craig Tanyanyiwa, Prof Cobus Van Zyl - Univ. of Cape Town</p>	<p>12:25-12:45 Keeping up with the ever increasing resource demand - the Vaalkop Dam case study                  Buks Strydom, Leandre Roux, Deon Cloete - Magalies Water</p>	<p>12:05-12:25 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</p>	<p>12:25-12:45 The Witwatersrand Acid Mine Drainage (AMD) project: an update based on recent findings                  Bashan Govender - Dept Water and Sanitation</p>	<p>11:15-12:05 Quantification and mass loading for contaminants of emerging concern from Western Cape wastewater treatment plants                  Dr Edward Archer - Stellenbosch Univ.</p>				
<p>12:45-13:05 Growing momentum for social franchising partnerships                  Prof Kevin Wall, Jayant Bhagwan, Oliver Iwe - Univ. of Pretoria, Water Research Commission</p>	<p>12:45-13:05 Using litres per capita per day as performance indicator to assess water use efficiency                  Mr Willem Wegelin - WRP Consulting Engineers</p>	<p>12:45 - 13:05 Securing water security in South Africa                  Richard Holden - Trans-Caledon Tunnel Authority</p>	<p>12:45 - 13:05 Bridging-The-Water: Co-Creation Learn &amp; Experience An Orange Knowledge Project                  Agnes Maenhout - World Water Academy, Netherlands -</p>	<p>12:45-13:05 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</p>	<p>12:45-13:05 Rand Water's approach to managing emerging organic contaminants in drinking water                  Siphwe Sithole - Rand Water</p>				
<p>13:05-13:20 Questions &amp; Answers</p>	<p>13:05-13:20 Questions &amp; Answers</p>	<p>13:05-13:20 Questions &amp; Answers</p>	<p>13:05-13:20 Questions &amp; Answers</p>	<p>13:05-13:20 Questions &amp; Answers</p>	<p>13:05-13:20 Questions &amp; Answers</p>				

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<p><b>Workshop Session 11</b>                  Chair: Cathy Eales - Independent                  14:15-16:00 Dutch - South Africa building capacity together</p> <p>1. An entrepreneurial approach for government, industry and research to close the water gap together: experiences from NL &amp; SA                  Stephanie de Beer</p> <p>2. Finals Wetskills Water Challenge - South Africa 2020                  Johan Oost                  Embassy of the Netherlands, Dept of Water &amp; Sanitation, Wetskills Foundation</p>	<p><b>Topic: Reduce water demand and increase supply</b>                  Session 12: Drought Management                  14:15-14:35 City of Cape Town's accelerated water demand management measures in response to drought conditions                  Colin Mubadiro, Linda Siyengo, Pierre Maritz, Mark Shepherd, Lyle Goldman - City of Cape Town</p> <p>14:35-14:55 Drought planning and operational management: Lessons from Cape Town                  Dr Lloyd Fisher-Jeffes, Michael Killick, Andriette Combrink, Barry Wood, Mazunda Halwindi, Dr James Cullis - Aurecon</p> <p>14:55 - 15:15 Assessment of Cape Town's spring water quality to augment the City's drinking water supply                  Mercia Volschenk - City of Cape Town</p>	<p><b>Topic: Manage the resource for a capable ecology</b>                  Session 13: Urban Water Management                  14:00-14:35 Pathways to water resilient South African cities - mapping urban water management governance processes                  Dr Kirsty Cardin, Dr Patience Mguni - Univ. of Cape Town (Future Water Inst), Univ. of Copenhagen</p> <p>14:35-14:55 The assessment and control of polluted stormwater inflow entering the Ashmead channel, Knysna Estuary                  Calvin van der Merwe, Prof Neil Armitage - Univ. of Cape Town</p> <p>14:00-14:35 Impact of landuse changes on Glendower catchment                  Tshilidzi Netshitangani, Jayce Mahatle - SRK Consulting</p>	<p><b>Topic: Develop skills and technology innovations and disruptors</b>                  Session 14: Digital technology                  14:00-14:35 The global opportunities for water technology innovation                  Dr Jo Burgess, Caitlin Roger, Fiona Griffith - Isle Utilities Ltd</p> <p>14:35-14:55 The Fourth Industrial Revolution in the water sector: Harnessing the Internet of Things for monitoring                  Jessica Fell - Univ. of Cape Town</p> <p>14:00-14:35 The Big Data and Transboundary Water Management Collaboration for Southern Africa: A new partnership model                  Clara Bocchino - Winrock International</p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b>                  14:00-14:35 Disrupting the sanitation and water landscape - Reinventing the toilet                  Jayant Bhagwan - Water Research Commission</p> <p>14:35-14:55</p> <p>14:00-14:35 Life-cycle cost comparison between pour-flush and VIP toilets                  Siphmandla Majazi - Partners in Development</p>	<p><b>Topic: Improve raw water quality and management</b>                  Session 16: Pollutants of emerging concern                  14:15-14:35 Microplastics in the source and drinking water of South Africa's largest bulk drinking water supplier                  Yvonne Liee, Dr Annelie Swanepeel - Rand Water</p> <p>14:35-14:55 Case studies on the regulation and management of radioactivity in drinking water sources                  Thato Molokwe, Margaret Mkhosi, Ian Korir - National Nuclear Regulator</p> <p>14:55 - 15:15 Polyfluoroalkyl Substances (PFAS) an Emerging Micro-Pollutant – A Comparison of Removal Techniques                  Jennifer Falconer, Ed Hardwich - Cwenga</p>	<p><b>Workshop Session 17</b>                  Chair: Dr Barbara van Koppen - IWM                  14:15-16:00 Hybrid water law in South Africa: a realistic option for the future of water governance or a piped dream?                  Dr Barbara van Koppen, Dr John Dini                  International Water Management Institute, Water Research Commission</p>	<p><b>Workshop Session 18</b>                  Chair: Chantal Ramcharan-Kotze - Water Research                  14:15-16:00 Alternate implementation models for improved water supply and sanitation in South Africa                  Chantal Ramcharan-Kotze, Jørgen Erk Larsen, Noniface Aleabua, Virginia Malose, Johann Lubbe                  Water Research Commission, Development Bank of Southern Africa, Embassy of Denmark, AFDB</p>	<p><b>Workshop Session 19</b>                  Chair: Gary Brown - Future Water Research                  14:15-16:00 Beneficiation and Utilisation of Anaerobic Sludge Processes                  Gary Brown, Dr Heidi Snyman, Andrea Gysin, Paul Fountain, Karl Juncker, F Burger, A R Lancaster, Annelize Theron                  Thames Water, Umgeni Water, Innovation Norway</p>	<p><b>Workshop Session 20</b>                  Chair: Dr Kirsty Cardin - Future Water Research                  14:15-16:00 Expanding and embedding the Water Sensitive Design Community of Practice (WSD CoP) in South Africa                  Dr Kirsty Cardin, Shanna Nienaber                  Future Water Research Institute, Univ. of Cape Town, Water Research Commission, Dept of Science &amp; Innovation</p>
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15:15-15:35 The response of different residential suburbs to water restrictions during CT's drought (2016 - 2018): Spatio temporal analysis <i>Birgitt Ouweneel - Univ. of Cape Town</i>	15:15-15:35 Indigenous South African plant species for the phytoremediation of polluted rooftop runoff <i>Dylan Jacklin, Dr Isobel Brink - Univ. Stellenbosch</i>	15:15-15:35 Digital Water – What are potential benefits for South African municipal wastewater treatment plants <i>Zandile Matutu, Zainab Binaquest, Werner Rossie, Kevin Samson - City of Cape Town</i>	15:15-15:35 Uptake and acceptance of pour flush toilets in South Africa, from 2010-2019 <i>Jeanette Neethling, Nakuthula Kubheka, David Still, Siphamandla Majazi - Partners in Development</i>	15:15-15:35 A multi-matrix bio-prospection approach of bacterial species for application in bioremediation of estrogen in wastewater <i>Phumudzo Budeli - Tshwane Univ. of Technology</i>
15:35 - 16:00 Questions & Answers	15:35 - 16:00 Questions & Answers	15:35 - 16:00 Questions & Answers	15:35 - 16:00 Questions & Answers	15:35 - 16:00 Questions & Answers

16:00– 16:30 Tea break in the exhibition hall

16:00– 16:30 Poster session

<b>Workshop Session 21</b> <i>Chair: Kathy Eales - Independent</i>	<b>Topic: Reduce water demand and increase supply</b> <b>Session 22: Drought response</b> <i>Chair: Snehlanhla Ndlela</i>	<b>Topic: Manage the resource for a capable ecology</b> <b>Session 23: Ecology</b> <i>Chair: Dr Kirsty Carden - Future Water Research Institute, UCT</i>	<b>Topic: Develop skills and technology innovations and disruptors</b> <b>Session 24: Wastewater treatment</b> <i>Chair: Dr Jennifer Balatedi</i>	<b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b> <b>Session 25: Incident management</b> <i>Chair: Dr Ilunga Kamika - UNISA</i>	<b>Topic: Improve raw water quality and management</b> <b>Session 26: Raw water quality</b> <i>Chair: Dr Ilunga Kamika - UNISA</i>	<b>Workshop Session 27</b> <i>Chair: Andy Sambo - Dept. Water &amp; Sanitation</i>	<b>Workshop Session 28</b> <i>Chair: Sarlet Barnard - YWP</i>	<b>Workshop Session 29</b> <i>Chair: Mlu Mnguni - Water Research Commission</i>	<b>Workshop Session 30</b> <i>Chair: Rita Brokstad - Regional Director of Innovation Norway</i>
<b>16:30-18:00</b> <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>	<b>16:30-16:50</b> Stormwater harvesting to increase water supply for cities: Case of Cape Town South Africa <i>Dr John Okeke - Univ. of Cape Town</i>	<b>16:30-16:50</b> Impacts of climate change in determining the ecological reserve <i>Dr Jane Tanner, Dr Sukhmani Mantel, Dr Neil Griffin, Dr Andre Slaughter, Prof Dennis Hughes - Rhodes Univ.</i>	<b>16:30-16:50</b> 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>	<b>16:30-16:50</b> The development of stormwater maintenance plans for the City of Cape Town <i>Andrew McDonald, Candice Bouldan, Graham English, Linda Rassouw, Simamkele Ntsengwane, Kirsten Jones - Aurecon, City of Cape Town Metropolitan Municipality, Independent Consultant</i>	<b>16:30-16:50</b> Effect of poor water quality in a harbour on the operation of reverse osmosis <i>Nico-Ben Janse Van Rensburg - Quality Filtration Systems</i>	<b>16:30-18:00</b> Using the National Integrated Water Information System (NIWIS) to support integrated water resource management <i>Andy Sambo, Magda Smidt, Jason Hollowes, Mxolisi Mukhawana Dept. Water &amp; Sanitation, EkoSource Insight</i>	<b>16:30-18:00</b> To measure is to know: Water use measurement and monitoring for improved water resource management, efficient use and regulation <i>Sarlet Barnard, S Pezulu, Dr Eldidy, A Nefale, S Mkhali, I van der Stoep, T Dormehl Young Water Professionals, WISA Water Distribution, WISA Management and Institutional Affairs Division, Innovation for Water &amp; Sanitation</i>	<b>16:30-18:00</b> Requirements of a comprehensive resource efficient wastewater treatment plant (WRC Project K5/2807) <i>Mlu Mnguni, Gary Brown, Megan Schalkwyk, Dr Bernelle Verster, Dr Lakesh Maharaj Umgeni Water, Water Research Commission, Dikubu</i>	<b>16:30-18:00</b> An innovation Norway programme promoting Norwegian solutions to address water scarcity, sludge management and sustainability <i>Rita Brokstad, Roger Blekkan, Trude Margel, Anders Øfsti, Gary Brown, Ilija Radeljic, Kristine Bangstad Fredriksen Innovation Norway, Inrigo, Cinderella Eco, Hias How20, Cambi &amp; Environor, Pipelife Norge, Ocean Oasis AS</i>
	<b>16:50-17:10</b> Fog harvesting: Table Mountain area <i>Fatunade Magaane, Siphesihle Magqazolo, Mercia Volschenk - City of Cape Town</i>	<b>16:50-17:10</b> The development of a preliminary approach to sediment sampling, site evaluation and associated risk <i>Dr Bridget Shaddock, Dr Khume Mtshweni - Golder Associates, Univ. of Johannesburg</i>	<b>16:50-17:10</b> Treatment of leachate with ROC process for the recovery of drinking water and saleable products <i>Nhama Chaukura, Tumelo Monty Mogashane - Univ. of Limpopo, University of South Africa</i>	<b>16:50-17:10</b> 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 Surujal-Naicker - City of Cape Town Metropolitan Municipality</i>	<b>16:50-17:10</b> Nutrient recovery from wastewater using microalgae <i>Dr Nirmal Renuka, Pfano Musetsho, Abhishek Gulde, Ismail Rawat, Faizal Bux - Institute for Water &amp; Wastewater Technology, Durban Univ. of Technology</i>				
	<b>17:10-17:30</b> Borehole decentralisation: Application at the University of the Western Cape <i>Annejan Visser - Quality Filtration Systems</i>	<b>17:10-17:30</b> 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 Univ.</i>	<b>17:10-17:30</b> CASE & SOLUTION: A low-cost ceramic filter for removal of methyl orange, Cr(VI), and Escherichia coli from water <i>Gerald Katengeza, Nhama Chaukura - Bindura Univ. of Science Education</i>	<b>17:10-17:30</b> Optimisation of Rand Water's Water Safety Plan to address climate change challenges <i>Lelethu Bungu, F van Wyk, K Naidoo - Rand Water</i>	<b>17:10-17:30</b> 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 Vhahangwele Masindi - Magalies Water</i>				
	<b>17:30-18:00</b> Questions & Answers	<b>17:30-18:00</b> Questions & Answers	<b>17:30-18:00</b> Questions & Answers	<b>17:30-18:00</b> Questions & Answers	<b>17:15-18:00</b> Questions & Answers				

TUESDAY 8 December 2020

07:30 - 17:00 Registration  
Level 0 foyer

08:30 - 9:15

Plenary keynote by Prof Stefan Uhlenbrook - Title to be confirmed

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  
Introduction by Dr Shafick Adams - Chairperson of WISA Organising Committee

9:15 - 10:00

PANEL: KEY ISSUES TO SUSTAIN WATER RESOURCES IN SOUTH AFRICA

Dr Shafick Adams, Dr Kevin Winter, Dr Karen Surridge, Dr Harrison Pienaar (to be confirmed)

Water Research Commission, Univ. Cape Town, SANEDI; CSIR

10:00-10:30 - Refreshment Break in exhibition Hall

<p><b>Topic: Govern and regulate the sector</b> <b>Session 31: The role of cities in water resource governance</b> Chair: Mr Dumisani Gubuzo - City of Tshwane</p>	<p><b>Topic: Reduce water demand and increase supply</b> <b>Session 32: Water reuse and recovery</b> Chair: Mr Nandha Govender - ESKOM</p>	<p><b>Topic: Manage the resource for a capable ecology</b> <b>Session 33: Wastewater and Waste Pollution</b> Chair: Dr Henry Roman - Dept. Science and Innovation</p>	<p><b>Topic: Develop skills and technology innovations and disruptors</b> <b>Session 34: Resource measurement and machine learning</b> Chair: Dr Trudi Joubert, Microelectronics - Univ. of Pretoria</p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b> <b>Session 35: Design and modelling</b> Chair: Dr Werner Rössle - City of Cape Town</p>	<p><b>Topic: Improve raw water quality and management</b> <b>Session 36: Modelling and analytics</b> Chair: Dr Michele Kruger, Dept. of Water &amp; Sanitation</p>	<p><b>Workshop Session 37</b> Chair: Jens Hilbig - IEEM gGmbH</p>	<p><b>Workshop Session 38</b> Chair: Dr John Zvimba - Water Research Commission</p>	<p><b>Workshop Session 39</b> Chair: Prof Tally Palmer - Rhodes Univ.</p>	<p><b>Workshop Session 40</b> Chair: Shanna Nienaber - Water Research Commission</p>
<p>10:30-10:50 <b>Water Resource Management Requires an all hands on deck approach! Case study of Boksburg Lake</b> Ndumape Masawi, Manda Hirsch - SRK Consulting (Pty) Ltd</p>	<p>10:30-10:50 <b>Towards a new water reuse normal: A water reclamation and reuse guide for South Africa</b> Chris Swartz - Chris Swartz Water Utilisation Engineers</p>	<p>10:30-10:50 <b>A water footprint for plastic recycling in South Africa</b> Tahira Goga, Prof Harro von Blottnitz, Prof Kevin Harding Univ. of Witwatersrand, Univ. of Cape Town</p>	<p>10:30-10:50 <b>Assessment of Machine Learning Approaches for Information Management of a Transboundary Aquifer</b> Ebrahim Abrahams, Tyrel Flügel, Rui Hugman, Andrew Gemmel, Claudia Ruz Vargas - Umvat, Stellenbosch University, International Groundwater Resources Assessment Centre (IGRAC)</p>	<p>10:30-10:50 <b>Biological Nutrient Removal Design Implications for Membrane Bioreactor Application</b> Dr Gideon de Villiers, Marco Slabbert - Bigen Africa</p>	<p>10:30-10:50 <b>Big data analytics and citizen science for extracting value from datasets for the Ramotswa Aquifer</b> Prof Hlanganani Tutu, Yannick Nuapia, Lindelwa Ndlhovu, Anita Etale, Lungisa Ngundu, Phumlani Khoza, Ewa Cukrowska - Univ. of Witwatersrand</p>	<p>10:30-12:15 <b>Incentive mechanisms in the context of water governance</b> Jens Hilbig, Dr John Dini, Prof K-U Rudolph IEEM gGmbH, Water Research Commission</p>	<p>10:30-12:15 <b>Sustainable Integrated Wastewater Future Strategy</b> Dr John Zvimba Water Research Commission</p>	<p>10:30-12:15 <b>Transgressive Water Resources Management (t-WRM) - a resilient pathway into a water-scarce, polluted, climate-changed future</b> Prof Tally Palmer, Dr Sharon Pollard, Dr Nelson Odume, Dr Natiswa Libala, Dr Matthew Weaver, Dr Nezar Eldidy Institute for Water Research, Rhodes Univ.</p>	<p>10:30-12:15 <b>Securing Skills to Embed Innovation in the Water Sector: Mapping, Synergising &amp; Scaling Skills Initiatives</b> Shanna Nienaber, Manual Jackson, Dr Valerie Naidoo, Dr Henry Roman, Manjusha Sunil, Dr John Dini Water Research Commission, Stellenbosch Univ., Hitachi, Dept. Science &amp; Technology, Dept of Water &amp; Sanitation, EWSETA</p>
<p>10:50-11:10 <b>Role of county government in water resources management in Nairobi City County</b> Maureen Milga - Nairobi City Water &amp; Sewerage Company</p>	<p>10:50-11:10 <b>Conversion of stabilisation ponds into reuse-water plants with micro-sieve and bio-percolation filter including a professional O&amp;M concept</b> Prof Karl Ulrich Rudolph, Stephanie Kirstgen, Faruq Shalizi, Birte Boysen, Aydin Parsa - IEEM gGmbH - Institute of Environmental Engineers</p>	<p>10:50-11:10 <b>Endocrine Disrupting Compounds removal from municipal wastewater sludge by an Innovative Enhanced Hydrothermal Polymerisation Technology</b> Dr Eustina Musvoto, Nomvuselele Mqwenya, Dr Caitlin Swiegelaar, Dr Maria Fernandes-Whaley - Truesense and NMISA</p>	<p>10:50-11:10 <b>Using Satellite Observation to Determine Water Resource Availability in Catchments</b> James Hollowes - Ekosource</p>	<p>10:50-11:10 <b>Autotrophic Bacterial Growth and Process Performance in Three Systems Mediated by Anaerobic Ammonium Oxidation</b> Kiprotich Kosogay, Dr Awolusi Oluwemi, Durban Univ. of Technology, Sequencing Core Facility, National Health Laboratory Service, Columbia Univ.</p>	<p>10:50-11:10 <b>Development of a water quality model for the Vaal dam reservoir &amp; the contributing catchment</b> Francois Van Wyk - Rand Water</p>				
<p>11:10-11:30 <b>City of Johannesburg Stormwater Manual</b> Prof Anne Fitchett - Univ. of Witwatersrand</p>	<p>11:10-11:30 <b>Cape Flats managed aquifer recharge advanced water treatment plant using treated effluent</b> Francois Smuts, Pierre Marais - Water &amp; Wastewater Engineering</p>	<p>11:10-11:30 <b>Organo modified layered double hydroxide clay for phenol removal from wastewater</b> Lehlaganolo Tabana, Prof Johan Labuschagne, Dr Shepherd Tichapondwa - Univ. of Pretoria</p>	<p>11:10-11:30 <b>Hippo - Hydro-morphological investigation of Riverbed particle performance on-site: An innovative underwater measurement system</b> Tim Kerlin, Mark Musall, Peter Oberle, Franz Nestmann - Karlsruhe Institute of Technology, Baden-Württemberg, Germany</p>	<p>11:10-11:30 <b>Primary settling tank model development and calibration to resemble reality</b> Joshua Mateson, Christian Polorini, Dr David Nkumi - Univ. of Cape Town</p>	<p>11:10-11:30 <b>Source Treatment Optimisation and Water Resource Management- Conceptual Decision Support Tool for River Pollution Problems</b> Christopher Mahlathi, Melise Steyn, Josefina Wilms, Farisha Panday - Council for Scientific and Industrial Research (CSIR), Deltares</p>				
<p>11:30-11:50 <b>Infrastructure solutions to enhance communities and the environment</b> Namrata Jugwanth - Aecom</p>	<p>11:30-11:50 <b>Wastewater biorefinery: Valorisation of water - borne waste fibres for platform chemical production with concomitant water recovery</b> Charlotte Wessels, Dr A Katsiopolous, Prof STL Harrison - Univ. of Cape Town</p>	<p>11:30-11:50 <b>Toxicity evaluation of the effluent discharged into the Blesbokspuit using Zebrafish (Danio rerio) embryo assay</b> Khuliso Maphakela, WA Augustyn, S Combrinck, R McCrindle - Tshwane Univ. of Technology</p>	<p>11:30-11:50 <b>Machine Learning Techniques for the Prediction of Groundwater Levels</b> Helen Seyler, Kai Witthueser - Delta-h Water Systems Modelling, Delta-h Groundwater Systems</p>	<p>11:30-11:50 <b>A probabilistic approach to scum particle size distribution test in modelling of micro-screen</b> Dr Surabhi Srivastava, Prof C Trois, Prof Chris Buckley - Univ. of KZN, School of Engineering</p>	<p>11:30-11:50 <b>Combining on-line and laboratory generated data in forecasting models for cyanobacteria and cyanotoxins</b> Dr Annelie Swanepoel, Hein du Preez - Rand Water</p>				
<p>11:50-12:15 <b>Questions &amp; Answers</b></p>	<p>11:50-12:15 <b>Questions &amp; Answers</b></p>	<p>11:50-12:15 <b>Questions &amp; Answers</b></p>	<p>11:50-12:15 <b>Questions &amp; Answers</b></p>	<p>11:50-12:15 <b>Questions &amp; Answers</b></p>	<p>11:50-12:15 <b>Questions &amp; Answers</b></p>				

12:15- 13:15 Lunch Break in the exhibition hall

<p><b>A QUIZ WORKSHOP Session 41</b> Chair: Leonardo Manus - Dept. Water &amp; Sanitation</p>	<p><b>Topic: Reduce water demand and increase supply</b> <b>Session 42: Wastewater and soil remediation</b> Chair: Mr Themba Nkhuna - Rand Water</p>	<p><b>Topic: Manage the resource for a capable ecology</b> <b>Session 43: Design and Treatment</b> Chair: Dr Ralph Heath - Galder Accorintec Africa</p>	<p><b>Topic: Develop skills and technology innovations and disruptors</b> <b>Session 44: Water Conservation and Leak Detection</b> 13:15-13:35 Piloting of drone technology application in Rand Water's area of service Danny Kuya, Mogan Padayachee - Rand Water</p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b> <b>Session 45: Energy and sludge management</b> 13:15-13:35 <b>New Faecal Sludge Management Facility at Borcherds Quarry Wastewater Treatment Plant</b> Akanyang Hattie, John Clayton, Dr Johan Kotze, Dr Werner Rossle, Kevin Samson - Project Assignments SA, City of Cape Town</p>	<p><b>Topic: Improve raw water quality and management</b> <b>Session 46: Basin and drainage management</b> Chair: Dr Lizzy Manyatsi - Technical Univ. of Tshwane 13:15-13:35 <b>Guidance for attaining regulatory approval of irrigation as a large scale, sustainable use of mine water</b> Dr Gina Pocock, Leanne Coetzee - Waterlab</p>	<p><b>Workshop Session 47</b> Chair: Dr S Pillay - Water Research Commission</p>	<p><b>Workshop Session 48</b> Chair: Dr John Zvimba - Water Research Commission</p>	<p><b>Workshop Session 49</b> Chair: Prof Evans Chirwa - Univ Pretoria</p>	<p><b>Workshop Session 50</b> Chair: Karesssa Pilly - WISA Innovation for Water &amp; Sanitation Division</p>
<p>13:15-15:00 <b>REVIVING ENERGY FOR THE DROPS - A QUIZ</b> ... CALL TO ACTION BY MUNICIPALITIES ... Dept. Water &amp; Sanitation, National Development Initiative</p>	<p>13:15-13:35 <b>Bioremediation of toxic hydrocarbons from contaminated trade effluent and soil</b> Prisha Mandree, Rajesh Laloo, Wendy Masika, Dr Santosh Ramchuran - CSIR</p>	<p>13:15-13:35 <b>The link between PICP design and nutrient removal</b> Bodi Liu, Prof Neil Armitage - Univ. of Cape Town</p>	<p>13:15-13:35 <b>Looking in from space to detect leaks on drinking water pipelines using satellite technology</b> Mogan Padayachee - Rand Water</p>	<p>13:15-13:35 <b>Performance of the largest Hybrid Activated Sludge (HYBACS) plant in Southern Africa</b> Nyiko Khosa, Karaba Nthete, Marangrang Khomela - ERWAT</p>	<p>13:15-13:35 <b>Sustainable Drainage in Gauteng: Possibilities and Barriers for Implementation</b> Stuart Dunsmore, Marieke de Groen, Jody Paterson, Nisa Mammon, Brad Graves, Douglas MacFarlan, Aa'isha Dollie, Ntseketsi Leratholi, Nggie 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</p>	<p>13:15-15:00 <b>Sanitation Disruption: Creating a new Sanitation Paradigm based on Circular Economy Principles</b> Dr Sudhir Pillay, A Akinsete, Charmaine Twala, Lungi Zuma, Dr Valerie Naidoo Water Research Commission, eThekweni Metro</p>	<p>13:15-15:00 <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, Umgeni Water, TruSense, eThekweni Metro, Univ. of Pretoria</p>	<p>13:15-15:00 <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 and Plant Pathology</p>	<p>13:15-15:00 <b>Dragons Den to showcase innovative projects in water and sanitation</b> Karessa Pilly, Manjusha Sunil, Vishnu Mabeer, Mthokozisi Ncube, Simon Pitts WISA Innovation for Water &amp; Sanitation Division, Water Research Commission, DBSA, eThekweni Metro Rand Water, Du Point Chemicals, Umgeni Water</p>
	<p>13:35-13:55 <b>Assessment of land degradation in the Tsitsa catchment for prioritising rehabilitation</b> Bawinile Mahlaba, Sukhmani Mantel, Jane Tanner - Rhodes Univ.</p>	<p>13:35-13:55 <b>Processing of Na<sub>2</sub>SO<sub>4</sub> for the formation of Na<sub>2</sub>CO<sub>3</sub> and sulphur</b> Lehlaganolo Mashigwana, Mauric Onyango, Prof Jannie Maree, Lizzy Manyatsi - ROC Water Technologies, Tshwane Univ. of Technology, Univ. of Limpopo</p>	<p>13:35-13:55 <b>Leak detection, pressure management and metering training rig for institutional training and efficiency improvements</b> Thulisile Mwelase, Noel Nyawade - Ugu District Municipality, JOAT Consulting Pty Ltd</p>	<p>13:35-13:55 <b>Energy savings and lessons learnt from the design and installation of new FBDA networks</b> Shanen Jelliman, Mark Marais, Michael Toll, Kevin Sampson - City of Cape Town</p>	<p>13:35-13:55 <b>A refined understanding of contaminated surface water drainage from an informal settlement in South Africa</b> Jessica Fell, Kevin Winter - Univ. of Cape Town</p>				
	<p>13:55-14:15 <b>The removal of pollutants from laundry wastewater using NF/RO membranes</b> Bradley Morris, Mujahid Aziz - Cape Peninsula Univ. of Technology</p>	<p>13:55-14:15 <b>Frothing properties of recirculated water as a diagnostic tool for water quality effects during flotation</b> Dr Malibongwe Manana - Univ. of Cape Town</p>							

14:15-14:35 The treatment of carwash wastewater for the removal of pollutants using chemical coagulation and adsorption <i>Fabian Roman</i> , <i>Mujahid Aziz</i> - Cape Peninsula Univ. of Technology	14:15-14:35 CASE & SOLUTION: MINTEK'S closure™ process for the treatment of acid mine drainage <i>Kerri du Preez</i> - Mintek	14:15-14:35 GIS-Based risk mapping of illegal discharges into stormwater drainage systems in Cape Town <i>Alex Kuhludzai</i> - Cape Peninsula Univ. of Technology	14:15-14:35 Energy optimisation within the South African Municipal Wastewater sector: Building towards self-sustainability <i>Roda Lidzhade</i> - ERWAT	14:15-14:35 Developing early warning system support for the Lower Olifants River Sub-basin using a 1D-hydrodynamic model <i>Justin Wiggatt</i> , <i>Christain Jolk</i> - Ruhr-Univ. Bochum
14:35-15:00 Questions & Answers	14:35-15:00 Questions & Answers	14:35-15:00 Questions & Answers	14:35-15:00 Questions & Answers	14:35-15:00 Questions & Answers

15:00– 15:30 Tea break in the exhibition hall

15:00– 15:30 Poster session

Topic: Session 51 <i>Chair: Dewald van Staden - WISA Process Controller Division</i>	Topic: Improve raw water quality and management Session 56: Raw water quality Session 52 <i>Chair: Aysha Laher - AHL Water</i>	Topic: Manage the resource for a capable ecology Session 53: Models and technology in agriculture and irrigation <i>Chair: Basha Govender - Dept Water &amp; Sanitation</i>	Topic: Develop skills and technology innovations and disruptors Session 54: Water and wastewater treatment <i>Chair: Teboho Mafokeng - Rand Water</i>	Topic: Manage and monitor effective water and sanitation services and infrastructure Session 55: Analytical science <i>Chair: Dr Heidi Snyman - Golder Associates Africa</i>	Topic: Improve raw water quality and management Session 56: Microbial remediation applications <i>Chair: Prof Memory Tekere - UNISA</i>	Workshop Session 57 <i>Chair: Dr Nelson Odume - Rhodes Univ.</i>	Workshop Session 58 <i>Chair: Dr John Zvimba - Water Research Commission</i>	Workshop Session 59 <i>Chair: Jørgen Erik - Danish Royal Embassy</i>	Workshop Session 60 <i>Chair: Agnes Maenhout - World Water Academy</i>
15:30-17:15 Water Services Process Controllers - Current and Future Outlook:  1. Occupational Certificate: status and the way forward <i>Dewald van Staden</i>  2. The Future Process Controller: A look into how Process Controllers can prepare themselves for the Water Services Works of the future <i>Fezeka Sotywambe</i> <i>WISA Process Controller Division</i>	15:30-15:50 Challenges to Implementing an Environmental Flow Regime in the Luvuvhu River Catchment, South Africa <i>Pfananani Ramulifho</i> - Univ. Of Venda	15:30-15:50 Integrated hydrological modelling for ground water drought in South Africa <i>Phatsimo Ramatsabana</i> , <i>Jane Tanner</i> , <i>Sukhmani Mantel</i> - Rhodes University	15:30-15:50 Assessing the effectiveness of clarification for the removal of viruses during conventional drinking water treatment <i>Khamatso Sethare</i> , <i>Veronna Marie</i> , <i>Dr Annelie Swanepoel</i> , <i>Rand Water</i>	15:30-15:50 Multilocus-based phylogenetic analysis of ESBL E. coli O157 uncovers related strains between agriculture and waterbodies <i>Cecilia Raseala</i> - Tshwane Univ. of Technology	15:30-15:50 A Controlled strategy to stimulate indigenous microbial communities to effectively remediate mine drainage - pilot study <i>Prof Esta van Heerden</i> , <i>Gerhard Potgieter</i> , <i>Mosidi Mojaki</i> , <i>Christo van Vuuren</i> , <i>Lesley Mkwada</i> , <i>Elizabeth Baloyi</i> - iWater (Ltd) (Pty)	15:30-17:15 Tackling Key Vaal River Challenges <i>Dr Nelson Odume</i> , <i>Prof Tally Palmer</i> , <i>Dr Chika Nnadozie</i> , <i>Dr Neil Griffin</i> , <i>Ms Khaya Mgaba</i> <i>Institute for Water Research, Rhodes Univ.</i>	15:30-17:15 Sustainable Mine Closure <i>Dr John Zvimba</i> <i>Water Research Commission</i>	15:30-17:15 Water Utility Adoption of New Knowledge and Best Available Technology: Drivers, Incentives and Solutions? <i>Jørgen Erik</i> <i>Larsen</i> , <i>Mogan Paydashee</i> , <i>Hamanth Kasan</i> , <i>Dan Naidoo</i> , <i>Peter Thompson</i> , <i>Wensy Tshawe</i> , <i>Shiram Misra</i> , <i>Petrus van heerden</i> , <i>Claus Homann</i> <i>Royal Danish Embassy, Rand Water, Umgeni Water, Mbombela Municipality, AA Water Works, Aarhus WAtter Utility</i>	15:30-17:15 Generation Z is coming: go with their flow to get #allhandsondeck <i>Agnes Maenhout</i> <i>World Water Academy, Aquadactics</i>
15:50-16:10 Water quality of the Bloemspruit stream in the outskirts of Bloemfontein, Free State <i>Mahlape Letsoela</i> - Central Univ. of Technology, Free State	15:50-16:10 Growth Based Irrigation (GBI) Technology improves water use efficiency in agriculture <i>Jannie Willemse</i> , <i>AG Levin</i> - Improchem, Nulandis, Supplant LTD	15:50-16:10 Performance evaluation of forward osmosis (FO) process for tannery wastewater treatment <i>Dr Amos Adeniyi</i> - Tshwane Univ. of Technology	15:50-16:10 Establishing phylogenetic association of Enteropathogenic bacteria of household stored water and diarrhoeal stool <i>Colette Khobo-Mmekoa</i> , <i>Prof Maggie Momba</i> - Tshwane Univ. of Technology	15:50-16:10 Kinetic modelling of microbial Pb(II) removal <i>Carla Horstmann</i> , <i>Dean Brink</i> , <i>Evans Chirwa</i> - Univ. of Pretoria	16:30-16:50 Contamination of surface water by potentially harmful elements in Matjhabeng mining area, South Africa <i>Gladys Belle</i> - Central University of Technology	16:30-16:50 Water harvesting in Saudi Arabia for sustainable agricultural development <i>Jonathan Schroder</i> , <i>Timothy Hotchkiss</i> O-AECOM	16:30-16:50 Fabrication of a colorimetric paper-based microfluidic sensor for residual poly-dadmac detection in water treatment <i>Dr Phumlani Mdluli</i> - Richards Bay	16:30-16:50 Selective extraction of abacavir from aqueous samples using a molecularly imprinted polymer <i>Lawrence Madikizela</i> , <i>Sharlott Qwane</i> - Durban Univ. of Technology	16:50-17:10 Assessing the potential accumulation of chromium(cr) and manganese(mn) in wastewater sludge in a WWTW <i>Leentle Motaung</i> , <i>Machawe Motsa</i> , <i>Taile Leswiji</i> , <i>Thabo Nkambule</i> - ERWAT, UNISA
16:30-16:40 VIDEO (6min): The Sydney 905 Water Filter: A Global Environment and Community Betterment Initiative - <i>Justin Sadler</i> , <i>Sydney 905 Water Filters</i> . VIDEO (6min) Mzansi Amanzi - monitoring of surface waters - <i>Mark Thompson</i> , <i>Elsie Zwennis</i> - Geoterrimage	16:30-16:50 The role of mining as responsible stewards of water resources in the modern environment <i>Gerardo Pretorius</i> - Sibanye-Stillwater - <i>Moved from poster to oral, have you let him know?</i>	16:30-16:50 Evaluation of Dextrin as a Coagulant in Removing Turbidity at Various pH Conditions <i>Crispen Mtswangwa</i> - Cape Peninsula Univ. of Technology - <i>Have you let him know he has been moved from poster to oral?</i>	16:30-16:50 Lateral flow immunoassay for rapid identification of selected enteric bacterial from water <i>Mieta Sumayya</i> , <i>TG Barnard</i> - Univ. of Johannesburg	17:10-17:30 Adsorption properties of exfoliated graphite on Cr (VI) and phenol <i>Siyabulela Tshemese</i> , <i>Shepherd Tichapondwa</i> - Univ. of Pretoria	16:40-17:15 Questions & Answers	16:50-17:15 Questions & Answers	16:50-17:15 Questions & Answers	16:50-17:15 Questions & Answers	16:50-17:15 Questions & Answers

19:00- WISA GALA DINNER

**08:30 - 9:15**  
**Plenary Keynote by Sivuyile Pezulu: Young professionals in the water sector and entrepreneurship.**  
 A compelling talk with fresh perspectives on the development of young professionals and entrepreneurs in the South African water sector  
*Introduction by Suvritha Ramphal, National Lead: WISA Young Water Professionals South Africa.*

**9:15-10:00**  
**PANEL: THE VALUE PROPOSITION OF YOUNG PROFESSIONALS IN SOUTH AFRICA**  
 Suvritha Ramphal (YWP-SA), Janavi Jardine (Green Matter), Lucky Litelu (ICRD), Dr Henry Roman (DSI)  
 YWP-SA, Green Matter, ICRD, DSI

**10:00-10:30 - Refreshment Break in exhibition Hall**

<p><b>Topic: Govern and regulate the sector</b>  <b>Session 61: Transboundary water management</b>  <i>Chair: Dr Inga Jacobs-Mata - IWMI</i></p>	<p><b>Topic: Reduce water demand and increase supply</b>  <b>Session 62: Cost and investment</b>  <i>Chair: Mr Takalani Mamphitha</i></p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b>  <b>Session 63: Microbial Resistance, Gene Dynamics and Antibiotics in Water and Effluent</b>  <i>Chair: Prof TG Barnard - Univ of Johannesburg</i></p>	<p><b>Topic: Develop skills and technology innovations and disruptors</b>  <b>Session 64: Mine water treatment</b>  <i>Chair: Prof Craig Shelidan - Univ. of Witwatersrand</i></p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b>  <b>Session 65: Process optimisation</b>  <i>Chair: Prof Jannie Maree - Technical Univ. of Tshwane</i></p>	<p><b>Topic: Improve raw water quality and management</b>  <b>Session 66: Advanced analytical methods</b>  <i>Chair: Dr Collette Khabo-Mmekoa - Technical Univ. of Tshwane</i></p>	<p><b>Workshop - Session 67</b>  <i>Chair: Dr Marlene vd Merwe-Botha - WaterGroup</i></p>	<p><b>Workshop - Industrial effluent</b>  <b>Session 68</b>  <i>Chair: Dr Christina Trois - Univ. KZN</i></p>	<p><b>Workshop - Risk management</b>  <b>Session 69</b>  <i>Chair: Priya Moodley - Golder Associates Africa</i></p>	<p><b>Workshop - YWP forum</b>  <b>Session 70</b>  <i>Chair: Dr Lloyd Fisher-Jeffes - YWP</i></p>
<p><b>10:30-10:50</b>  <b>Trends in transboundary water management</b>  <i>Dr Jonathan Lautze - International Water Management Institute</i></p>	<p><b>10:30-10:50</b> NRW  <b>reduction programmes funded by the private sector to solve under staffing at KZN's municipalities</b>  <i>Vishal Poona - Joat Consulting</i></p>	<p><b>10:30-10:50</b>  <b>Quantification of antibiotics and antibiotic resistance genes within WWTP effluent</b>  <i>Peter Coetzee, Prof Carlos Bezuidenhout - North West Univ</i></p>	<p><b>10:30-10:50</b>  <b>Ammonia and nitrate from mine-impacted water using a bench-scale moving bed bioreactor</b>  <i>Jivesh Naidu, Sebastian Franzen, Ricky Bonner, Charne Germishuizen, Kevin Harding, Karl Rumbold - Miwater, Univ. of Witwatersrand</i></p>	<p><b>10:30-10:50</b>  <b>CASE &amp; SOLUTION: Impacts of process selection and process train in design of water treatment plants in RSA</b>  <i>Sandile Ngcobo, Dr Hendrik Brink - Magalies Water</i></p>	<p><b>10:30-10:50</b>  <b>Improved optical property of conjugated-polymer modified TiO<sub>2</sub> for photocatalytic-degradation of acetaminophen in water under visible-light</b>  <i>Olayinka Awofiranje - Vaal Univ. of Technology</i></p>	<p><b>10:30-12:15</b>  <b>NATSURVS: National Surveys of Water and Effluent Management in the Pelagic Fishing, Fruit and Vegetable Processing and Power Generating Industries</b>  <i>Dr Gina Peacock, Dr Marlene van der Merwe-Botha, Chris Swartz, Peter Wille, Bertie Steytler</i>  <i>Water Research Commission, WaterGroup, Waterlab, Chris Swartz Water Utilization Engineers, Prodramos Technologies UK Ltd</i></p>	<p><b>10:30-12:30</b>  <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></p>	<p><b>10:30-12:30</b>  <b>A Risk based Philosophy and Approach to Water Quality Guidelines</b>  <i>Priya Moodley, Lee Boyd, Dr J Meyer</i>  <i>Golder Associates Africa</i></p>	<p><b>10:30-12:30</b>  <b>SA Young Water Professionals Forum 2020 - Session 1</b>  <i>Dr Lloyd Fisher-Jeffes, Suvritha Ramphal and YWP Rapporteurs</i>  <i>Young Water Professionals National Committee and Empowerment Platform</i></p>
<p><b>10:50-11:10</b>  <b>WEFE Nexus in the Zambezi Watercourse: A Proposed Governance Implementation Framework</b>  <i>Mr Ashwin Seetal - CSIR</i></p>	<p><b>10:50-11:10</b>  <b>The business case of investing in water resilience</b>  <i>Bridget Fundikwa - Greencape</i></p>	<p><b>10:50-11:10</b>  <b>Systematic review in South Africa reveals antibiotic resistance genes shared between clinical and environmental settings</b>  <i>Prof Maggie Momba, Mutshiene Ekwanzala, Prof John Barr, Dr Ilunga Kamika, - Univ. of South Africa and Tshwane Univ. of Technology</i></p>	<p><b>10:50-11:10</b>  <b>A mineralogical investigation of brine and ash encapsulation</b>  <i>Shameer Hareersad, Corne Pretorius, Kirk Ellison - Nanyana, Simon Muzi Sibiya - Rand Water</i></p>	<p><b>10:50-11:10</b>  <b>The use of process capability indices to measure water treatment process performance</b>  <i>Shakera Arendze, Zandile Nanyana, Simon Muzi Sibiya - Rand Water</i></p>	<p><b>10:50-11:10</b>  <b>Prevalence and genetic characterization of <i>Cryptosporidium</i> spp. isolated from surface waters and riverbed sediments.</b>  <i>Muofhe Grace Mphhephu Tshwane - Univ. of Technology</i></p>				
<p><b>11:10-11:30</b>  <b>SWOT analysis of Water Resource Management of the Limpopo River Basin</b>  <i>Dr Joshua Edokpayi, - Univ. of Venda</i></p>	<p><b>11:10-11:30</b>  <b>Re-defining water policies in Kenya to achieve optimal delivery of water and sewerage services</b>  <i>Hammed Chungani - Nairobi City Water &amp; Sewerage Company Limited</i></p>	<p><b>11:10-11:30</b>  <b>Prevalence of carbapenemase-encoding genes in E. coli in wastewater treatment plants</b>  <i>Winile Dladla, Prof Isaac Dennis, Dr Sheena Kumari, Prof Thor Stenström - Durban Univ. of Technology</i></p>	<p><b>11:10-11:30</b>  <b>Processing of gypsum sludge for the recovery of CaCO<sub>3</sub> and sulphur via Ca(HS)<sub>2</sub> formation</b>  <i>Dr Nsaka Mtumba, Janne Maree, Mahigwana Lehlogonolo, Munyaradzi Mujuru, Lizy Manyatsi - Roc Water Technologies, Tshwane University of Technology, University of Limpopo</i></p>	<p><b>11:10-11:30</b>  <b>On-line monitoring as a process monitoring tool and early warning sensor for microbial water quality</b>  <i>Monique Grundlingh, Heindrick du Preez - Rand Water</i></p>	<p><b>11:10-11:30</b>  <b>Effects of Nonylphenol and Dibutyl phthalate on isolation and growth response of bacterial and protozoan</b>  <i>Vision Netsianda - Tshwane Univ. of Technology</i></p>				
<p><b>11:30-11:50</b>  <b>Facilitated discussion: IUCMA operationalisation of the DWS masterplan in a transboundary context</b>  <i>Jonathan Lautze, Dr Inga Jacobs-Mata - International Water Management Institute</i></p>	<p><b>11:30-11:50</b>  <b>The true cost of water - An industrial perspective on water sustainability versus profitability</b>  <i>Kirshen Naidoo - Royal Haskoning DHV</i></p>	<p><b>11:30-11:50</b>  <b>Molecular detection of antibiotic resistant genes in Mycobacterium tuberculosis from wastewater</b>  <i>Hlengiwe Mtetwa, Dr Isaac Amoah, Dr Sheena Kuttan Pillai, Prof Faizal Buz. Prof Poovendhree Reddy - Durban Univ. of Technology</i></p>	<p><b>11:30-11:50</b>  <b>VIDEO (5min): Assessment of physicochemical and microbial quality of groundwater of some primary schools in Vhembe District - Ntwanano Mutileni, David Khaleh, Kevin Rose, Joshua Edokpayi - 3Rensselaer Polytechnic Institut, Duquesne University of the Holy Spirit, University of Venda</b>  <b>VIDEO (5 min): Wet skills movie</b>  <i>Johan Oost - Wetskills Foundation</i></p>	<p><b>11:30-11:50</b>  <b>Optimization of the membrane fouling of the ultrafiltration system using the factorial design of experiments</b>  <i>Simon Muzi Sibiya, Lingum Pillay - Rand Water, Stellenbosch University</i></p>	<p><b>11:30-11:50</b></p>				
<p><b>11:50-12:15</b>  <b>Questions &amp; Answers</b></p>	<p><b>11:50-12:15</b>  <b>Questions &amp; Answers</b></p>	<p><b>11:50-12:15</b>  <b>Questions &amp; Answers</b></p>	<p><b>11:50-12:15</b>  <b>Questions &amp; Answers</b></p>	<p><b>11:50-12:15</b>  <b>Questions &amp; Answers</b></p>	<p><b>11:50-12:15</b>  <b>Questions &amp; Answers</b></p>				

**12:15– 13:15 Lunch Break in the exhibition hall**

<p><b>Topic: Develop skills and technology innovation</b>  <b>Session 74: Effluent treatment &amp; disinfection</b>  <i>Chair: Dr Gina Pocock - Waterlab</i>  <b>13:15-13:35</b>  <b>How a water study could potentially save your plant money</b>  <i>Melani Loram, Ferdi Hartzenberg, Thabiso Mvuyana - Improchem</i></p>	<p><b>Topic: Reduce water demand and increase supply</b>  <b>Session 72: Assessment and optimisation of water use</b>  <i>Chair: Mr Monako Dibetle</i>  <b>13:15-13:35</b>  <b>Calibrating the Australian Water Balance Model - A case study</b>  <i>Gideon Bonthuy s, Priyal Dama-Fakir - Golder Associates Africa</i></p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b>  <b>Session 73: Microbial Resistance, Gene Dynamics</b>  <b>13:15-13:35</b>  <b>Genomic and transcriptomic analysis of antibiotic resistance genes in biological wastewater treatment in Durban, South Africa</b>  <i>Thobela Conco, Dr Sheena Kumari, Dr Mahmoud Nasr, Dr Arshad Ismail, Prof Thor Stenström, Prof Faizal Bux - Durban Univ. of Technology</i></p>	<p><b>Topic: Develop skills and technology innovation</b>  <b>Session 74: Treatment and energy technology</b>  <i>Chair: Fortune Mabunda - ERWAT</i>  <b>13:15-13:35</b>  <b>Evaluation of Compact Low Energy Submersible Mixers for Sludge Applications.</b>  <i>Thandeka Maphumulo, Kerisha Nayager, Naheen Toolsee, Lakesh Maharaj - Umgeni Water</i></p>	<p><b>Topic: Manage and monitor effective water and sanitation services and infrastructure</b>  <b>Session 75: Data and statistics in water quality</b>  <b>13:15-13:35</b>  <b>Maximizing use of water quality data using R and R markdown: a wastewater case study</b>  <i>Leanne Coetzee - Waterlab</i></p>	<p><b>Workshop - Public education for water re-use</b>  <b>Session 76:</b>  <i>Chair: Dr Sarah Slabbert (BHI32) and Dr Nonhlanhla Kalebaila (WRC)</i>  <b>13:15-15:00</b>  <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></p>	<p><b>Workshop - MBR design and reuse</b>  <b>Session 77</b>  <i>Chair: Taf Mukwena - Bigen Africa</i>  <b>13:15-15:00</b>  <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</i>  <i>Bigen Africa, Suez, Tecrover, Evoqua/Memcor, WSSA, City of Cape Town,</i></p>	<p><b>Workshop - Water loss management in the mining industry</b>  <b>Session 78</b>  <i>Chair: Nivi Juggath - Golder Associates Africa</i>  <b>13:30-15:00</b>  <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</i>  <i>Golder Associates Africa, Tomra AS, Enprotech, Dept. Water &amp; Sanitation.</i></p>	<p><b>Workshop - Gaming technology</b>  <b>Session 79</b>  <i>Chair: Jason Hallowes - EkoSource</i>  <b>13:30-15:30</b>  <b>Using Serious Gaming Technology to explore the Water, Energy, Food and Environmental Nexus</b>  <i>Jason Hallowes, Bruce Eady</i>  <i>EkoSource</i>  <b>Prize Giving:</b>  <i>AquaRepublican</i></p>	<p><b>Workshop - YWP forum</b>  <b>Session 80 (Continue...)</b>  <i>Chair: Dr Lloyd Fisher-Jeffes</i>  <b>13:30-15h30</b>  <b>SA Young Water Professionals Forum 2020 - Session 2</b>  <i>Dr Lloyd Fisher-Jeffes, Suvritha Ramphal and YWP Rapporteurs</i>  <i>Young Water Professionals National Committee and Empowerment Platform</i></p>
<p><b>13:35-13:55</b>  <b>Use of ozone for cooling towers</b>  <i>Brendan van Wyk - Xylem Water Solutions SA</i></p>	<p><b>13:35-13:55</b>  <b>Water Conservation/Water Demand Management self-assessment reporting tool for the mining sector</b>  <i>Givarn Singh, William Pulles - Golder Associates Africa</i></p>	<p><b>13:35-13:55</b></p>	<p><b>13:35-13:55</b>  <b>Investigating Sludge Compaction on a Pilot Sludge Hopper System</b>  <i>Nkanyiso Shabalala - Umgeni Water</i></p>	<p><b>13:35-13:55</b>  <b>Descriptive statistics in water quality reporting</b>  <i>John Moatshe, Zandile Nonyana, Mighty Mahotsi - Rand Water</i></p>					
<p><b>13:55-14:15</b>  <b>Forward Osmosis to concentrate brine streams</b>  <i>Tabani Mtombeni, Jannie Maree, Maurice Onyango, Amos Adeniyi - Tshwane Univ. of Technology, University of Limpopo, ROC Water Technologies</i></p>	<p><b>13:55-14:15</b>  <b>Rethinking desalination: The value proposition of water as an infinitely scaleable, renewable economic commodity</b>  <i>David Bosman - TCTA</i></p>	<p><b>13:55-14:15</b>  <b>Assessing the presence of antibiotic-resistant Enterobacteriaceae in Edendale Hospital and Darvill Wastewater Treatment Plant</b>  <i>Siyabonga Thwala, Prof Stefan Schmidt - Umgeni Water and Univ of KZN</i></p>	<p><b>13:55-14:15</b>  <b>Energy utilization in Freeze desalination</b>  <i>Phalokwane Ramothole, Johannes Maree, Maurice Onyango, Amos Adeniyi - Tshwane Univ. of Technology, University of Limpopo, ROC Water Technologies</i></p>	<p><b>13:15-13:35</b>  <b>The management of data quality relative to the exploitation of legacy water quality results</b>  <i>Tim White - Marquis &amp; Lord</i></p>					
<p><b>14:15-14:35</b>  <b>Video (5 min) - Introducing the disruptor filter technology: The science and its application in the South African context</b>  <i>Grant Naser, Ettienne van der Merwe - Joja Tanks</i></p>	<p><b>14:15-14:35</b>  <b>Maximising the yield from a local water source through short-term yield prediction using AI</b>  <i>Christo Potgieter, Pieter Cilliers, Koki Mokhoabane, Mlandolazi Ndlovu - Bigen</i></p>	<p><b>14:15-14:35</b>  <b>CASE &amp; SOLUTION: GenoTrack, a webtool to geospatially link bacterial genomes from water, food and clinical environments</b>  <i>Mutshiene Deogratias, Ekwanzala - Tshwane Univ. of Technology</i></p>	<p><b>14:15-14:35</b>  <b>Development of quality control system for polymeric coagulants used for potable water treatment</b>  <i>Nothando Munqwe, Dr Sigudu Makhosazane, Dr Esper Ncube - Rand Water</i></p>						

14:35-15:00  
Questions & Answers

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15:00-15:30 Break

WISA 2020 Closing Address  
15:30-16:30  
Reflection on WISA2020 by  
Suvritha Ramphal, Dr Lloyd  
Fisher Jeffes and YWP  
Rapporteurs - WISA  
Young Water Professionals  
16:30-17:00  
Prize Ceremony by Dr Sarah  
Slabbert and Dr Lester  
Goldman

17:00-18:00 Farewell Cocktails in the exhibition hall

THURSDAY 10 December 2020

10-Dec 08:00 - 16:00 Technical Tours