

Allyson Lawless

SAICE Professional Development and Projects

Dr Allyson Lawless holds a Master's in Structural Engineering from Imperial College, London. In the year 2000, she became the first female president of the South African Institution of Civil Engineering (SAICE). She is managing director of SAICE Professional Developments and Projects, (trading as Civils Masakheni), which is a non-profit company set up by SAICE to address civil engineering skills development.



Since April 2003, she has been involved in capacity research. In 2005, she published the book *Numbers and Needs* and, in 2007, the sequel, *Numbers and Needs in Local Government*, which warned of the urgent need to rebuild civil engineering capacity in local government. Allyson has won numerous awards. In 2009, she was awarded an honorary doctorate by Stellenbosch University for her research work and contribution to civil engineering. In November 2012, she was made an International Fellow of the Royal Academy of Engineering in London.

Allyson serves on the Human Resource Development Council of South Africa, chaired by the deputy president, and acts as an advisor to the Special Projects Unit of the Department of Higher Education and Training, which was formed to develop the skills plan associated with the delivery of the Strategic Infrastructure Projects.

Grant Mackintosh

Emanti Management

Grant Mackintosh is an experienced water utilisation engineer with particular interest in water services, water quality management, water treatment, capacity development, regulatory governance and cooperative government. He has strong skills in project conceptualisation, development and design, using participatory methodologies, as well as feasibility study production and monitoring, and evaluation work.



Grant has played a leading role in a number of South African water services sector initiatives, including:

- The research, development and national roll-out of the electronic Water Quality Management System, eWQMS, forerunner to the Blue Drop and Green Drop systems, which received both national and international recognition.
- The development and national roll-out for the Department of Water Affairs of the Municipal Strategic Self-Assessment, or MuSSA, methodology for driving water utility business health improvement.

Grant is also passionate about performance-improvement-oriented benchmarking, and is the project team leader for the national SALGA/WRC Municipal Benchmarking Initiative for Water Services. Grant has a BSc Civil Engineering, an MSc Engineering in Water and Wastewater treatment, and an MBA (cum laude). Grant is a member of IMESA, a Member of the International Water Association, and a Fellow of WISA.

Stephan Jooste

Aurecon

Dr Stephan Jooste is a specialist in the advisory field, and has a wealth of experience in public-private partnerships and project finance transactions. He has been involved in a number of transactions in South Africa, Nigeria, the DRC, Canada, and Portugal, spanning various infrastructure sectors. Recent projects include leading the lenders' technical advisory team for the Lagos Cableway Project (Nigeria), and acting as procurement specialist for the Mauritius Light Rail Project (Mauritius).



He also acted on behalf of the Development Bank of Southern Africa on a project where a bankable investment document was developed for investment into port and railway infrastructure in the DRC. Stephan also has significant toll road experience, having been involved in transactions in Canada, Portugal and Nigeria. He has been involved in a number of business planning and financial feasibility studies.

Stephan completed his PhD in Civil Engineering at Stanford University in the USA, where his research focused on infrastructure public-private partnerships. He also holds BEng (Civil Engineering) and an MEng (Technology Management) degrees, both from the University of Pretoria. He is certified as a registered professional engineer with the Engineering Council of South Africa.

Darren Keep

Mabey Bridge

Based in the UK, Darren Keep holds a first-class civil engineering degree and has over 25 years' experience in bridging and infrastructure, covering Africa, the Americas, Asia and Australia. His experience covers the delivery of engineering and project services, including bridge surveys, design, and remedial works, through to materials and seismic design and testing.



Darren's early career was engineering-focused and included temporary works design, façade retention schemes in London and form-/false-work projects. He has also worked in a business development role, developing financed solutions for major projects and taking prototype systems to market. Mid-career, he spent much of his time overseas developing financed bridge projects in Sri Lanka and the Philippines.

More recently, Darren has focused on East Africa in a sales role, targeting urban traffic alleviation projects, rural infrastructure development and opportunities in the extractive sector. Recent projects have included the provision of vital infrastructure in remote locations in Tanzania, Kenya, South Sudan and Ethiopia.

SPEAKER PROFILES

Lucas-Jan Ebels

UWP Consulting

Dr Lucas-Jan Ebels is a professional engineer with more than 15 years' experience. He has a Master's in Civil Engineering from the University of Delft, the Netherlands, and a PhD in pavement engineering from the University of Stellenbosch for research work carried out for the characterisation of bitumen-stabilised mixtures



Since 1999, Lucas has been working for UWP Consulting – first in Mthatha in the Eastern Cape, on rural road and development projects, and later in the Western Cape, where he developed into a specialist design engineer in the field of pavement design and materials on numerous national, provincial and municipal road projects, as well as airport pavement.

He has written and presented many peer-reviewed papers on topics in the field of pavement engineering at local, regional and international conferences. Lucas is currently the head of UWP's Transportation Division, based in Johannesburg. He is also the current president of the Society for Asphalt Technology.

Alaster Goyns

Pipeline Installation and Professional Engineering Services (PIPES)

For over 40 years, Alaster Goyns has been involved with stormwater design, river hydraulics and many of the major outfall sewers in South Africa, initially as an employee at Hawkins, Hawkins and Osborn, then at Rocla and, subsequently, as an independent specialist consultant providing a service to consultants, contractors and pipe suppliers. His experience has covered the development and launching of lining systems for sewer pipes and the introduction of large (24 m) concrete poles as aerial support structures to the South African market.



He is currently managing the Virginia Sewer Experiment that was commissioned in 1989 and is a founding member of the study group formed in 1987. Various pipe materials are being monitored and evaluated under extremely aggressive conditions. He has written several papers on the subject and has presented these both locally and internationally.

He is one of the original board members of the Southern African Society for Trenchless Technology and has served as president of the association and represented them internationally. He was project leader and main author of the WRC report No KV 133/01: A Framework for Establishing Appropriate Trenchless Technology Guidelines and Standards in Southern Africa. In 1999, he started Pipeline Installation & Professional Engineering Services, a specialist consultant on gravity pipelines, trenchless technology and condition assessment. He is a registered Pr Eng, with a BSc Civil Engineering from Wits and an MBL from Unisa.

Daniel Petrie

Aurecon

Daniel Petrie is employed as a chemical engineer in Aurecon's Cape Town office, where he has been working in the Water Unit for the past five years as a process engineer in water and wastewater treatment and bioenergy. He is currently based in Durban, working out of Aurecon's eThekweni office.



Prior to working at Aurecon, Daniel worked as a research engineer in bio-energy and carbon storage technologies with the University of Sydney in Australia, as well as the Stellenbosch University in South Africa. In these positions, he specialised in steady-state process modelling, stochastic economic models and life-cycle assessments.

He has completed numerous planning and feasibility studies for water and wastewater treatment plants, pulp mill bio-refineries, carbon storage technologies and numerous bioenergy and waste-to-energy processes.

While working in the water sector, Daniel has developed skills and experience in industrial effluent management, biological oxidation of ground-water minerals, rapid gravity sand filtration, as well as anaerobic digestion and activated sludge process design.

Daniel is currently undertaking a Master's in Water Quality Engineering at the University of Cape Town (UCT) and completed a BSc in Chemical Engineering at UCT in 2007.

He is passionate about finding integrated solutions to complex problems, particularly in the development sphere, where technical, economic, environmental and social issues come together.

Carl October

Western Cape Department of Transport and Public Works

Carl October is a professional civil engineer with a Master's in Urban Management from UCT. Since 2008, he has held the position of Director: Road Planning at the Western Cape Department of Transport and Public Works.



He started his career as an engineer-in-training in the Highways and Transport Division of Aurecon (then Ninham Shand) in 1987, where he was involved in numerous traffic and geometric designs. Here, he was also responsible for writing an Excel-based decision-support program for determining the economic viability for upgrading gravel roads in the Western Cape.

He then worked at the Department of Housing and Local Government in the Western Cape for 12 years becoming Deputy Chief Engineer: Engineering Infrastructure Delivery. This was preceded by secondments to Bergstan and Bouwer Viljoen Consulting to gain design office experience in roads, stormwater and structures. He has subsequently held the post of senior lecturer at CPUT in Cape Town, where he lectured in civil engineering for six years.

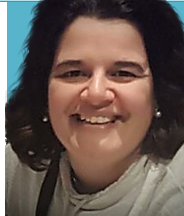
Carl holds a Postgraduate Diploma in Higher Education from the same institute. He has also completed a Diploma in Public Administration and Leadership at North-West University and currently sits on various liaison

committees with SANRAL, TCT and SAFCEC. He was the previous chair of ProvTech WCG and has held seats on the Concrete Society Committee of SA. He is a member of IMESA, SAICE and ECSA.

Chantal Rudman

Stellenbosch University

Chantal Rudman has been a civil engineer for eight years, including five years in research and lecturing pavement engineering at Stellenbosch University.



In her capacity as researcher, she has been involved in industry-related projects with SANRAL. Her current field of specialisation includes the analysis and performance of recycled materials and sustainable road construction through life-cycle analysis in the road sector.

Chantal graduated at Stellenbosch University with an MSc in Civil Engineering and is currently in the process of finalising her PhD on "Self-cementing of construction demolition waste in road building applications".

Geoff Tooley

eThekweni Municipality

Geoff Tooley is a professional engineer with more than 25 years experience in the civil engineering field. He holds a BSc Civil Engineering degree from the University of Natal. He has experience in project management, asset management, and design and construction experience in the fields of storm-water and river training works.



He started work at the Durban Corporation (now eThekweni Municipality) in 1990 and currently holds the position of Senior Manager: Catchment Management within the Engineering Unit for the eThekweni Municipality. Geoff is part of the team that has developed the Water Sector Municipal Adaptation Plan for climate change for the eThekweni Municipality.

He on the IMESA EXCO as Operations Director: Bursaries and CPD. He has also sat on numerous Water Research Commission reference groups related to stormwater issues, over the past nine years.

Yeshveer Balaram

VNA Consulting

Yeshveer Balaram is a Civil Engineering Technologist at VNA Consulting. He is experienced in pavement rehabilitation design and construction, and has been involved in network-level pavement condition assessments for various provincial and municipal roads authorities over the past six years.



His interests lie in asset management, pavement design and project management.

Nick Alcock

Khanyisa Projects

Nick Alcock is a professional civil engineer with a Master's in Urban Infrastructure Design and Management who has been working in the water and sanitation sector for the past 20 years. He is currently a managing member of Khanyisa Projects, a developmental organisation based in eThekweni Municipality, South Africa, focusing on water, sanitation, biogas and other sustainable solutions.



Recent projects include:

- management and roll-out of 26 rural biogas digesters on behalf of SANEDI and the Department of Energy, in Ndwedwe, KwaZulu-Natal
- project management of the Cato Manor Green Street Retrofit on behalf of the Green Building Council of South Africa and eThekweni Municipality
- management of the urine diversion waste removal contract on behalf of eThekweni Municipality
- development of a black soldier fly plant for processing UD faecal waste, using public-private principles, on behalf of the Bill and Melinda Gates Foundation and eThekweni Municipality.

Trevor Bowman

HATCH

Trevor is a professional civil engineer, with 19 years of experience, specialising in engineering management, design, documentation and contract administration. He has undertaken work in South Africa, Botswana, the DRC and Liberia.



The majority of his experience is in the design, documentation and construction monitoring of roads projects, as well as the engineering management of civil infrastructure projects.

Roy van Ballegooyen

WSP | PB Ports and Coastal Engineering Africa

Roy van Ballegooyen (MSc Physical Oceanography, UCT) is a registered professional natural scientist with over 33 years' experience in the maritime research sector gained while working in both academic and applied research environments. He has extensive experience in numerical modelling of hydrodynamics, water quality and sediment processes in coastal and estuarine environments, with a particular interest in linking coastal process models with environmental risk assessment, decision support systems and ocean governance.



He has managed/contributed (i.e. field measurement programmes and three-dimensional modelling assessments) to a number of strategic environmental assessments, high-level environmental screening studies and environmental impact assessments, many related to marine outfalls. He also provided design inputs into both environmental and engineering design studies of port developments and outfalls, as well as infrastructure associated with offshore oil and gas and mining industries. He has involved himself in a number of operational oceanography initiatives focused on providing decision support in the marine environment.

SPEAKER PROFILES

Roy has been registered as a professional natural scientist with the South African Council of Natural Scientists since 2004 and has served on a number of NRF review panels and Water Research Commission steering committees. He has been a member of the South African Data Centre Steering Committee since 2000, serving as its Chairman (2010–2012) and ultimately as its Manager (2012–2015). He has been a guest lecturer on marine modelling and ocean governance for Unesco-IOC, the Civil Engineering Faculty of the University of Stellenbosch and the International Ocean Institute, South Africa.

Ronnie Mckenzie

WRP

Ronnie Mckenzie is a specialist in water demand management, hydrology, water resource planning, management and operation, with more than 25 years of experience in these fields. He has been involved in the analysis of many water resource systems in South Africa and elsewhere in Southern Africa.



Since 1994, Ronnie has helped to introduce the Burst and Background Estimate (BABE) procedures to South Africa. He developed and introduced new leakage benchmarking software that is now used throughout South Africa and has been modified for use in many other countries, including Thailand, India, Australia and New Zealand. He has developed many new models through the Water Research Commission to assist water suppliers in managing their leakage and has pioneered the use of advanced pressure control throughout South Africa and several other countries.

Ronnie initiated and helped to manage the Khayelitsha Pressure Management installation in Cape Town, as well as the Sebokeng/Evaton public-private partnership, both of which won several national awards (SAICE, IMESA and SAACE) for technical excellence and are two of the largest advanced pressure control installations in the world.

He has organised and/or presented at more than 100 workshops on pressure management and WDM in many countries, including South Africa, the USA, Ethiopia, New Zealand, Australia and the UK. He currently provides specialist WDM support to various organisations including the World Bank, the EU, UN and the MWA of Thailand, and is the current chairman of the International Water Association's Water Loss Specialist Group.

Ross Mahaffey

Aurecon

Ross Mahaffey is a registered professional engineer with seven years' experience in bulk water transmission and network system design, construction and condition assessment, and has work experience in South Africa, Mozambique and Swaziland. He graduated in 2008 with a BEng Civil Engineering degree (first class) at the University of Pretoria. He was awarded departmental prizes for the best hydraulics and geo-technical engineering student in 2007.



He then continued to complete his BEng Honours in Water Resources Engineering (with distinction) and his MEng in Water Resources Engineering (with distinction), both also at UP, while working full time. Ross has a keen interest in the optimisation of bulk water supply systems as

well as the life-cycle design, condition assessment and rehabilitation of pipelines.

His recently concluded master's research consisted of the review and optimisation of pump suction end reducers utilising computational fluid dynamics, for which he was awarded the SAICE Best Water Engineering Journal Paper for 2013–2014. His professional interests also extend to the field of cathodic protection, where he is a certified NACE cathodic protection technologist. He has presented both locally and internationally on steel pipeline construction, condition assessment and pipeline refurbishment.

Ross is a member of SAICE and is an Elected Council Member of the Corrosion Institute of South Africa.

David Drummond

eThekweni Municipality

David Drummond is a Senior Professional Technologist with eThekweni Water and Sanitation. He currently works for the Customer Services Technical Division.



He received an NDip in 2003 and a BTech Civil Engineering (cum laude) from Durban University of Technology in 2005. He became professionally registered with ECSA as a professional technologist in 2010.

He spent three years with NET projects working on low-cost housing projects, before joining SSI Engineers and Environmental Consultants (now known as Royal HaskoningDHV), where he worked for the Bulk Water section. He has over 10 years' water engineering experience in design and project management, including bulk water distribution infrastructure, wastewater reticulation, water treatment works and RAMP projects.

David started working for eThekweni Water and Sanitation in 2013. His team installs and maintains bulk reservoir and zone meters within the municipality, as well as custody transfer point meters and manages meter regularisation projects in rural and urban areas of eThekweni.

In 2015, David was selected to take part in the Hitachi/Department of Science and Technology scholarship, where he spent two months in Japan learning about their water supply and distribution systems.

Nkosinathi Buthelezi

eThekweni Municipality

Nkosinathi Buthelezi is a chemical engineer with eThekweni Water and Sanitation (EWS).



He graduated from the University of KwaZulu-Natal with a BSc in Chemical Engineering in 2011 and is currently studying towards a Masters of Commerce in Leadership Studies through the same.

He began working for EWS as a Graduate Engineer in 2012, where he was part of the R&D team, providing technical support in the operations of 27 wastewater treatment works through process troubleshooting, optimisation and commissioning.

He is currently working as a Plant Engineer, managing about 50 employees working in a wastewater treatment works.

In 2015, Nkosinathi was selected to take part in the Hitachi/Department of Science and Technology scholarship, where he spent two months in Japan learning about their water supply and distribution systems.

Jessica Dunstan

City of Cape Town

Jessica Dunstan is a Professional Officer (Engineer) at the City of Cape Town and works in the Bulk Water Branch of the Water and Sanitation Department.

She obtained a BSc in Engineering (Civil Engineering) summa cum laude from the University of Cape Town in 2010. She also holds a BSc in Physics and Applied Mathematics, which she obtained from the University of KZN in 2003.

After graduating in 2010, she began working for the Provincial Department of Human Settlements. She was responsible for the project management of low-income housing developments that formed a part of the N2 Gateway Housing Project. In 2012, she moved to the City of Cape Town, where she is still currently working. At the City of Cape Town, she is responsible for the design of bulk water infrastructure as well as the project management of infrastructure implementation in the branch.

In 2015, she was awarded a scholarship from the Department of Science and Technology and Hitachi Ltd, which allowed her to spend two months in Japan learning about the water and sanitation practices there.



Presantha Maduray

Umgeni Water

Presantha Maduray is a Process Technologist with Umgeni Water.

She graduated from the University of KwaZulu-Natal with a BSc in Chemical Engineering in 2009 and completed the UKZN Emerging Managers programme, in 2014, at the top of her class. She is currently studying towards a BEng (Hons) in Water Utilisation through the University of Pretoria.

She began working for Umgeni Water as a Graduate Engineer in 2011, where she was responsible for lab work, pilot plant operation and the auditing of waterworks.

In 2013, she moved into her current position of Process Technologist, where she conducts process design, troubleshooting and manages the technicians and graduate engineers.

In 2015, Presantha was selected to take part in the Hitachi/Department of Science and Technology scholarship, where she spent two months in Japan learning about their water supply and distribution systems.



Zabathwa Mzamane

eThekweni Municipality

Zabathwa Mzamane is a Senior Technician with eThekweni Water and Sanitation, Planning Branch.

She graduated from the Durban University of Technology with an NDip in Civil Engineering in 2009 and is currently studying towards a BTech in Civil Engineering, specialising in water.



Zabathwa has over six years of working experience in the water engineering field. She started work as a student trainee with Stemele Bosch Africa, now known as Bosch Holdings, for a period of three years, and then moved to BMK Consulting Engineers. Her experience is mainly in the design of water and wastewater networks, stormwater management plans and the design of stormwater networks.

Zabathwa joined eThekweni Municipality in 2012, as a Civil Engineering Technician, where she is responsible for solving hydraulic engineering problems that relate to the planning, design, construction and operational issues of the municipality's water supply system. In 2015, she progressed to her current position of Senior Technician.

In 2015, Zabathwa was selected to take part in the Hitachi/Department of Science and Technology scholarship, where she spent two months in Japan learning about their water supply and distribution systems.