NEWS:

SACEMA PhD student presides over launch of Rwandan Association for Women in Sciences and Engineering (RAWISE)

On March 23rd, SACEMA PhD student Eva Ujeneza presided over the official launch of the Rwandan Association for Women in Sciences and Engineering (RAWISE) as the master of ceremonies. The launch event was held during a dinner, at the Lemigo Hotel in Kigali. Over 150 guests from various international and national organisations and governments attended. Guest speakers included: Prof Jennifer Thomson, OWSD President; Karen Craggs, AIMS-NEI global group director for gender equality, inclusion & business development; Prof Eliane Ubalijoro, member of the advisory board of the president of Rwanda and professor at McGill University; Ylann Schemm, Director of Elsevier Foundation (OWSD-EF Awards) and Dr Christine Gasingirwa, Director of Science and Technology in Rwanda. Ms Alice Ikuzw, RAWISE chairperson, spoke about the mission and goals of the association, and presented its current projects (which can be found at: [http://rawise.org.rw/projects/](http://rawise.org.rw/projects/)). The ceremony ended with the cutting of a science-based cake.
SACEMA participates in “Science in Context” programme

SACEMA PhD student, Elisha Are together with his promotor, Prof John Hargrove and SACEMA postdoc fellow, Joseph Sempa participated in the first ever “Science in Context” programme, initiated by the Faculty of Science at Stellenbosch University. The programme is designed to give first-year students exposure to contemporary issues in science that require interdisciplinary perspectives. Twenty-five students chose SACEMA’s proposed topic: “To date, we have only managed to eradicate two infectious diseases – one in humans (smallpox) and one that affected livestock (rinderpest). Discuss the major barriers to eradication of an infectious disease. Which disease is likely to be the next one eradicated, and why?” This has been more shortly titled: “Eradication of infectious diseases”. The students selected Malaria, Polio, Measles and Guinea-worm disease as the most likely diseases to be eradicated. At the end of the programme students will submit an essay and give a final project presentation.
**Graduations 2018**

**Zinhle Mthombothi** and **James Azam** graduated with an MSc in Mathematics, in the Faculty of Science at Stellenbosch University. Zinhle’s thesis, entitled “Studying the effects of temperature change on the dynamics of tsetse flies and trypanosomiasis disease transmission”, was supervised by Prof John Hargrove and Dr Rachid Ouifki. James’ thesis, entitled “Assessment of a measles outbreak response vaccination campaign, and two measles parameter estimation methods”, was supervised by Prof Juliet Pulliam.

![Zinhle Mthombothi (left) and James Azam (right)](image)

**Frieda Geldenhuys** graduated with an MSc in Mathematics, in the Faculty of Science at Stellenbosch University. Her thesis, entitled “Using species distribution models for spatial conservation planning of African penguins”, was supervised by Prof Cang Hui.

![Frieda Geldenhuys (right) with Graham Morrison (left)](image)
Sumanth Karamchand graduated with distinction at the University of Cape Town, with a Master of Science in Medicine (Clinical Pharmacology). His dissertation, entitled "Morbidity from Antiretroviral Metabolic effects in Africa: The MAMA study", was supervised by Prof Gary Maartens and Dr Karen Cohen.

Ishmael Mbuso Mntambo graduated with a PhD in Public Health, in the Faculty of Community and Health Sciences at the University of the Western Cape. His thesis, entitled "Development of the Public Health Model of Community Participation in the KwaZulu-Natal Primary Health Care System", was supervised by Prof Thandi Puoane and Prof Steve Reid.

Coceka Mnyani graduated with a PhD in Public Health at the University of the Witwatersrand. Her thesis, entitled "Assessing progress and barriers to elimination of mother-to-child transmission and decreasing HIV-related maternal deaths in the Johannesburg Health District", was supervised by Prof Eckhart Buchmann and Prof Matthew Chersich.
Former SACEMA researcher and now SACEMA Research Associate, **Roxanne Beauclair** graduated with a PhD in Health Sciences at Ghent University. Her thesis entitled “Age Differences in Sexual Relationships and HIV Transmission: Statistical Analyses of Bio-Behavioural Survey Data from Southern Africa”, was supervised by Professors Wim Delva, Niel Hens and Marleen Temmerman.

![Dr Roxanne Beauclair (far right) with Prof Wim Delva](image)

We congratulate the 2017/2018 graduates and wish them all the very best for the future!

**Arrivals & Departures**

In April, SACEMA said goodbye to **Trust Chibawara**. Trust joined SACEMA as a Researcher in 2015 and moved to a part-time programmer position in 2017 whilst pursuing a PhD. He will continue pursuing a PhD under the supervision of Prof Peter Nyasulu from the University of Stellenbosch at the Division of Epidemiology and Biostatistics, Faculty of Medicine and Health Sciences. We wish him all the best for the future.

![Masimba Paradza](image)

**Masimba Paradza** was appointed at the end of May as the new Training Coordinator, working alongside Dr Gavin Hitchcock who retires at the end of 2018. Prior to joining SACEMA, Masimba spent more than six years as a Lecturer and postgraduate programme coordinator at the University of the Western Cape. He has a keen interest in numerical computing and developing simulations for teaching purposes, and is currently at the end stages of a PhD in Physics, focusing on the applications of non-extensive statistics to high energy physics.
Perceval Maturure joined SACEMA in June as a Technical Officer. Prior to joining SACEMA, he served in several roles in his career, including Systems Administration, Tutor in Programming and Mathematics, IT Management, SQL Database Administration and Website development in industry. His passion lies in the use of Software and Database Technologies for scientific research.

Olugbenga Oluwagbemi is a DST-NRF innovation postdoctoral research fellow, working on the application of Agent-based models towards the control of HIV, under the supervision of Prof Cang Hui of the Department of Mathematical Sciences and Prof Wim Delva of SACEMA. Olugbenga completed his undergraduate and postgraduate studies in Nigeria and holds a PhD in Computer Science from Covenant University in Nigeria. He conducted his PhD research at the Johns Hopkins Bloomberg School of Public Health, USA, under the sponsorship of the Fulbright Scholarship Foundation. His PhD research, entitled “AnoSpEx: A Spatially-Explicit Computational Model for the Metapopulation Dynamics of Anopheles mosquitoes”, was supervised by Prof Jason Rasgon. After completing his PhD, Olugbenga worked as a Senior Lecturer in the Department of Computer and Information Sciences, at Covenant University in Nigeria, and is currently a Senior Lecturer in the Department of Computer Science at Federal University Lokoja in Nigeria. His research interests centre around software engineering, informatics in health, expert systems, bioinformatics, computational modelling and simulation, application of computational methods to solving problem caused by infectious and communicable diseases.

Marijn Hazelbag was appointed as a postdoctoral research fellow at SACEMA. He has a background in statistics and obtained a PhD in Epidemiology at Utrecht University in the Netherlands. His research in Utrecht mainly considered methods for causal inference. After finishing his PhD he spent two years teaching introductory statistics courses. He is currently working with Prof Wim Delva on two projects: the first is a review looking at current practice in calibration of individual based models data, and the second is a comparison of methods for approximate Bayesian computation. In addition, Marijn is the new coordinator for the Biomathematics Honours Programme at Stellenbosch University.
Elisha Are joined SACEMA at the end of February as a PhD student, working under the supervision of Prof John Hargrove. His PhD project involves estimating the probability of extinction of tsetse fly populations (Glossina spp) in field situations where meteorological conditions vary continuously with time. Elisha completed his previous studies in Nigeria, having obtained a BSc and MSc degree in Mathematics at the University of Ilorin.

Jeremy Luke Bingham is an MSc student. With a background in physics, online marketing and biological mathematics, Jeremy has recently moved into the world of blood transfusion safety. His master’s research focuses on the widespread practice of risk over-estimation. Supervised by Dr Eduard Grebe and Prof Alex Welte, Jeremy is developing theoretical improvements to residual risk models while helping to build decision-making tools for policy makers.

Wynand-Junior van Staden is also an MSc student. He has a background in Biomathematics and is working with Dr Eduard Grebe and Prof Alex Welte on modelling a within-host drug-resistant mycobacterium tuberculosis infection.

**STUDENT SCIENTIFIC ACTIVITIES:**

**SACEMA PhD students participate in Next Einstein Forum in Rwanda**

SACEMA PhD students, Eva Ujeneza and David Niyukuri participated in the second Next Einstein Forum (NEF) global gathering, held in Kigali, Rwanda, from 26-28 March 2018. The NEF global gathering was preceded by several pre-events that included the second African Gender Summit (14th worldwide) and the official Launch of the Rwandan Association for Women in Science and Engineering (RAWISE) for which Eva is a founding member and the Vice-President. One particular aspect of NEF is that it is a cross-disciplinary platform where around 50% of the participants are under 42 years, and of these at least 40% are women.
The NEF 2018 was attended by 1600 delegates from Africa, Europe, Asia, and America, and it was one of the major scientific conferences in Africa. The main theme “Connecting Science to Humanity”, was addressed through different plenary sessions and side events. Amongst the highlights of the event were the launch of “Scientific African” a new open-access science journal owned by the Next Einstein Forum, and a presidential panel on “Laying the groundwork for knowledge-led economies: Policy and practice”. The panel was composed of a number of dignitaries, including President Macky Sall of Senegal, President Paul Kagame of Rwanda, Mmamoloko Kubayi-Ngubane (South Africa’s Minister of Science and Technology), Theresia Bauer (German Minister of Science, Research and the Arts, Baden-Württemberg State) and Thierry Zomahoun (CEO and President of AIMS).

The upcoming Next Einstein Forum (NEF) global gathering will be held in Nairobi in 2020, under the patronage of Kenya’s President Uhuru Kenyatta.

SACEMA PhD student attends 68th Lindau Nobel Laureates Meeting

David Niyukuri, a SACEMA PhD student was nominated by the African Academy of Sciences to attend the 68th Lindau Nobel Laureate meeting in Germany from 23–29 June 2018. This high level meeting enables cross-generational and cultural dialogue between young scientists and Nobel Laureates. David reports: “This year, the meeting was dedicated to Medicine and Physiology, and it was a great occasion to hear about great discoveries in Medicine or Physiology, Physics, and Chemistry which have led to spectacular improvement in the lives of billions of people around the world. Discussions on current health threats like antimicrobial drug resistance, the future of precision medicine and gene editing, and all the ethical questions that arise, were included in the agenda.
Besides discussions on pressing questions which need to be solved by scientists for a better future for humankind, young scientists were given an opportunity to receive advice from Nobel Laureates about their career in Science and how to do meaningful science. Young scientists were advised to be focused when applying for research positions or graduate studies, accept the pressure from their peers, and always be open to comments and criticisms. Seniors scientists and PI’s were encouraged to challenge young scientists to be independent early in their career. The issue of impact factor, publication of negative results, Open Science and Open Access, were hot topics during a heated debate on scientific publication. Senior scientists were urged to focus, during their recruitment process for research positions, on single-paragraph narratives summarising the importance of candidates’ newest results in their respective fields. Seniors scientists agreed to take the lead in making changes in publication processes and scholarly measurement. The scientific community cannot allow the publishing process to become a surrogate for measuring scholarly value. The change of the publication process has to be driven by the scientific community. It was argued that public-funded research has to be open access; universities cannot pay twice: for publishing and for having access to articles”.

David Niyukuri (left) with Peter Agre (Nobel Laureate) and Simon Kimuda, PhD Research Fellow at the MRC/UVRI Uganda Research Unit on AIDS, Uganda [ASS nominee]

**SACEMA master’s student presents at Biomath 2018**

Master’s student, Khotso Matlou attended the Annual International conference on Mathematical Methods and Models in Biosciences (Biomath) which took place 24 – 29 June 2018 at the Institute of Mechanics of the Bulgarian Academy of Sciences in Sofia, Bulgaria. It was part of the Year of Mathematical Biology - a joint venture of the European Mathematical Society (EMS) and the European Society for Mathematical and Theoretical Biology (ESMTB). This conference is devoted to recent research in life sciences based on applications of mathematics as well as mathematics applied to or motivated by biological studies. It is a multidisciplinary meeting forum for researchers who develop and apply mathematical and computational tools to the study of phenomena in the broad fields of biology, ecology, medicine, biotechnology, bioengineering, environmental science, etc.
The conference kicked off with the Roumen Tsanev Lecture, presented by Nevena Ilieva from the Institute of Information and Communication Technologies, Bulgarian Academy of Sciences. "It was an amazing opportunity to network with keynote speakers such as: Raluca Eftimie, Marie Doumic, Wolfgang Pauli, Miroslaw Lachowicz, Nikolaos Sfakianakis and Gail Wolkowicz", says Khotso. The conference socials gave participants a dive into Bulgarian art, culture and history. Khotso's presentation was entitled "Assessing risks and benefits of Indoor Residual Spraying for malaria control in Limpopo: A mathematical modelling approach". Khotso also participated in the School for Young Scientists. The school consists of plenary lectures and sessions of an introductory nature, giving foundations and insight into the respective topic, rather than focusing on new results, and these are presented by some of the keynote speakers of the conference.

Delegates of the Biomath conference in Bulgaria

5th South African TB Conference

PhD students, Zoe Gill and Mmamapudi Kubjane attended the 5th South African TB conference, held in Durban from 12-15 June. Zoe was joined by her two co-supervisors Dr Hlumani Ndlovu and Dr Mohlopheni Jackson Marakalala. One of the highlights of the conference was a smaller SAMRC funded mini-conference from 12-14 June. The focus of the mini conference was on "cutting edge" technologies for TB diagnosis, paired with the current state of TB bio-marker discovery. Zoe reports: "Mmamapudi Kubjane gave a great talk on her MSc work involving TB and Diabetes entitled 'Tuberculosis and Associated Transient Hyperglycaemia in Peri-Urban South Africa: Implications for Diabetes Screening in High Tuberculosis/HIV-1 Burden Settings', under the theme: Impact of biological factors on the care cascade".
**INTERNATIONAL MEETINGS:**

SACEMA’s director presents at meetings in the US

In February, SACEMA’s director, Prof Juliet Pulliam, attended two workshops in the United States. The first, entitled “Ecological knowledge and predictions: integrating across networks and national observatories,” brought together an international group of researchers who work in diverse fields within the broader discipline of ecology to discuss the state of the art of ecological forecasting. The workshop was held 19-21 February at the University of Arizona and was sponsored by the US National Science Foundation. Prof Pulliam gave a talk on epidemiological forecasting and a lightning presentation on the International Clinics on Infectious Disease Dynamics and Data (ICI3D) programme. The second workshop, entitled “Integrative approaches to understanding and predicting pathogen spill over,” focused on synthesizing data and theory to quantify the pathways that allow pathogen transmission from one species to another. The workshop was organized by researchers at Montana State University and sponsored by the Defense Advanced Research Projects Agency. Prof Pulliam presented on capacity building for epidemiological modelling. Workshop participants also worked on a number of papers that will be incorporated into an upcoming issue of Philosophical Transactions of the Royal Society, which Prof Pulliam will co-edit.
SACEMA delegation attends Monitoring & Evaluation meeting in Geneva

A delegation comprising Dr Brian Williams; Ms Faikah Bruce, Prof John Hargrove and Dr Joseph Sempa attended a Monitoring and Evaluation meeting of the first group of Technical Support Consultants (TSCs) with the Global Fund (TGF), the United States Agency for International Development (USAID) and the World Health Organization (WHO) in Geneva. The objectives of this workshop were to ensure that all technical support consultants were familiar with the internationally approved guidelines and tools in the technical areas to enhance the harmonization of procedures across the different regions, and to promote networking. The aims of the workshop were to ensure that TSCs were orientated and aware of the relevant WHO and partner guidelines, understood Global Fund mechanisms, completed the registration process by orientation to the various tools, and were ready for future deployment. TSCs were classified into six working groups, namely, HIV, TB, Malaria, Health Facility Assessment, Adolescent Girls and Young Women, and Community Health Information System. The four SACEMA consultants were placed in the HIV working group and will be consulted on health sector and programmatic reviews. This being the first group of TSCs, there were administrative challenges that needed to be addressed before the first deployment, but all organizations were interested in empowering TSCs to start their work. Joseph states, “It was good experience to visit WHO and USAID head offices, given their successful track record in the fight against diseases, especially HIV".
SACEMA’s director attends Wellcome Trust consultation

In May, SACEMA’s director, Prof Juliet Pulliam, attended a 2-day consultation on “epidemiology and modelling for epidemic preparedness and response” at the Wellcome Trust headquarters in London. Discussion focused on the role of modelling and analysis in the evidence to decision-making pathway and approaches to strengthening risk assessment, preparedness, and response, with a particular focus on public health emergencies of international concern.

CANSA Research in Action Conference 2018

SACEMA researcher Cari van Schalkwyk attended the CANSA Research in Action Conference from 3 to 5 July 2018 in Pretoria. CANSA currently supports ~25 projects at universities and research organisations across South Africa and brings together these researchers every three years to present their work. Projects include a wide variety of cancer related topics, such as epidemiology, clinical diagnosis and treatment, behavioural risk reduction and research relating to cancer genetics, biology, microbiology and biochemistry. Cari and Alex Welte are the recipients of one of these research grants with the topic “Modelling the impact of cervical cancer prevention strategies in South Africa”. Cari presented the first of her research questions under this grant, titled “Are the associations between HIV and HPV transmission due to biological effects or behavioural confounding?”

Events:

Being a Scientist

SACEMA’s weekly professional development series, “Being a Scientist”, provides a forum for junior researchers and senior staff to explore together the many different aspects of being a scientist – from doing our best possible scientific work, to grappling with the broader meaning of our contributions, to engaging with the larger scientific community and the public, to understanding local and global issues related to scientific funding and the structure of higher education. Topics covered so far in 2018 include: rules for successful scientists, what is science?, simple and creative solutions to tough modelling problems, everyday problem-solving, statistical simulation studies, scientific thesis writing, academia and mental health, reading with science-tinted glasses, criteria for authorship, good practices in scientific computing, and creativity, and creative problem solving.
Clinic on Meaningful Modelling of Epidemiological Data

The MMED is a 2-week modelling clinic that emphasizes the use of data in understanding infectious disease dynamics. This year SACEMA hosted the ninth annual MMED at the African Institute for Mathematical Sciences in Muizenberg, South Africa. The clinic targeted quantitative scientists, including mathematicians, statisticians, computer scientists, and infectious disease epidemiologists with strong quantitative backgrounds. The 35 student participants included junior researchers based at institutions in the US, Canada, Africa and India. There were 9 faculty, from North America and Africa, and four mentors selected from clinic alumni. During the second week of the clinic, participants were ready to engage, in small, multidisciplinary groups, with meaningful open questions about infectious disease dynamics, applying what they had learnt in the first week about integrating mathematical models with epidemiological data. The groups worked variously on Dynamics of Malaria Immunity, Tsetse fly population dynamics, Trauma Care Trial Design, Rabies Elimination in Kenya, and Dynamical Fever. They continued collaborating on these projects after the clinic, and submitted reports on 1 August for review.

Individual-based Modelling in Epidemiology: A Practical Introduction, 12-18 May 2018

Prof Wim Delva (SACEMA, Ghent University, and Hasselt University) and Dr Lander Willem (University of Antwerp) presented this third edition of their innovative five-day course, following a successful pilot course in 2017, and a second edition mounted in Belgium. The course was held at STIAS (adjacent to SACEMA) in Stellenbosch, with 15 participants from SACEMA and six other institutions. The aim of the course was to focus on the principles of conceptualising a model world, coding the model, analysing its behaviour, fitting it to data and communicating its results, with practical model examples in the epidemiology of HIV, Influenza, Malaria and Diabetes. Zinhle Mthombothi and Emanuel Dominic of SACEMA did a great job as tutors. From feedback: “Clear presentation of the benefits of IBM, and when to use these models; … great balance between theory and practise, providing enough information to allow us to explore different ways to answer a question, and not to force us to use one specific way; …the mini-projects were my favourite part; …a great strength of the course is the coding knowledge gained; …shows
how to develop a model from scratch using NetLogo Software, NetLogo programming and RStudio to analyse the output of the NetLogo Model; ...the course is very hands-on; ... the use of real examples in the tutorials and the programming practicals.

Introduction to R: Management, Exploration, and Communication of data, 2-6 July 2018

The second edition of this intensive five-day course was presented by Roxanne Beauclair of Data Yarn at the Stellenbosch Institute for Advanced Study (StIAS). The class of 21 included 5 participants from SACEMA, 8 from the Western Cape, 6 from Gauteng and 2 from the United Kingdom. Tutors for the course were Zinhle Mthombothi and James Azam. From feedback: “The tutors did a really great job!” The lectures were interwoven with practical exercises and participants were encouraged to follow along with exercises and programming on their own laptops. The course was designed to suit graduate students or professionals familiar with statistical analysis, who had some experience with programming, and have managed or interacted with datasets using other software platforms. There was naturally diversity of background among participants, but most found the content and pace appropriate. Extracts from feedback: “Good introduction to R, with nice balance of lectures and tutorials; ... Coherent and consistence build-up of fundamentals; ... Presenter used language that is easily understood by people who do not have a degree in stats; ... Very practical, hands on experience; ... Starts at an appropriate level for a beginner, and walks through. Handy to have the teaching notes to look back on; ... The course notes were very clearly laid out, making them easy to follow; ... The structure was very helpful, of having a lecture, followed by examples, and then practice.”
Advanced Epidemiological Methods Seminar, 30 July – 2 August 2018

Dr Matthew Fox of the Department of Epidemiology and the Center for Global Health and Development at Boston University presented this acclaimed course, organised for the sixth time by SACEMA. The course was held over four days at the Africa Centre for HIV/AIDS Management, Stellenbosch University. The class of 17 included 6 participants from SACEMA, 6 from the University of Cape Town and 5 from Gauteng. The course was aimed at exploring the basic statistics used in epidemiological research and to correct misunderstandings about what these statistics can tell us. Participants gained skills that every doctoral level epidemiologist should have, skills that are both practical and marketable.
Introduction to Epidemiology and Research Methodology (February-August 2018)

This Stellenbosch University Short Course, presented annually at SACEMA by Dr Jo Barnes, was taught in thirteen weekly sessions on various Tuesday mornings, attracting external participants from a number of departments as well as SACEMA students. Sessions covered: Introduction, basic tools; Demographic aspects; Cross-sectional designs; Construction of questionnaires; Case-control studies; Cohort designs, randomised controlled trials; Sampling; Screening and surveillance; Bias in design; Causation; Disease clusters, outbreaks; Hints on writing a research proposal; Hints on writing research papers and constructing conference presentations. The finale of the course was an open lecture, masterly and sobering, on the realities of the water crisis in the Cape and elsewhere.

SACEMA Seminars

The following seminars were held between January and August:

02/02/2018: James Mba Azam (PhD student, SACEMA, Stellenbosch University): Assessment of a measles outbreak response vaccination campaign, and two measles parameter estimation methods.

07/02/2018: Prof Matthew Ferrari (Center for Infectious Disease Dynamics, Pennsylvania State University): Better with age: insights on measles persistence and control.


23/02/2018: Prof Maia Lesosky (Division of Epidemiology and Biostatistics, School of Public Health and Family Medicine, University of Cape Town [UCT]): Simulating individual HIV viral load trajectories with partial antiretroviral therapy adherence.

09/03/2018: Dr Sue-Ann Meehan (Desmond Tutu TB Centre [DTTC], Stellenbosch University): Community-based HTS: Using a case study from Cape Town to provide evidence-based lessons learnt for program implementation.

16/03/2018: Dr Nkengafac Villyen Motaze (Centre for Vaccines and Immunology [CVI], National Institute for Communicable Diseases [NICD]): Rubella vaccine introduction in the South African public health sector: mathematical modelling for decision making.

23/03/2018: John Grewar (Veterinary Services, Western Cape Department of Agriculture, Elsenburg): Quantitative Risk Assessment for African Horse Sickness in Live Horses Exported from South Africa.
04/04/2018: Frederik Verelst (Centre for Health Economics Research and Modelling Infectious diseases [CHERMID], University of Antwerp): Vaccine decision making in South Africa: A discrete choice experiment.

06/04/2018: Prof Mark Roberts (University of Surrey) and Dr Patricia Lund (Coventry University): Epidemiology of albinism and population genetics.

11/04/2018: Jenna Patterson (PhD student, University of Cape Town): Evidence-Based Medicine in Vaccinology: A Study of Hepatitis A in South Africa.

12/04/2018: Elise Kuylen (PhD candidate, University of Antwerp): Possible implications of a correlation between sexual risk behaviour and treatment status.

13/04/2018: Prof Kesh Govinder (School of Mathematics, Statistics and Computer Science, University of KwaZulu-Natal): Applications of group theory in Mathematical Biology.

18/04/2018: Venetia Karamitsou (PhD student, Disease Dynamics group, University of Cambridge): Modelling the evolution of influenza across scales.

20/04/2018: Dr Benjamin Kagina (Vaccines for Africa Initiative [VACFA], UCT): Strategies to Strengthen Immunization Programs in Africa and Opportunities for Modelling.

02/05/2018: Dr Larisse Bolton (SACEMA Postdoctoral candidate): The significance of mathematical models in oncology: Describing the dynamics of cancer progression and treatment.

09/05/2018: Zenabu Suboi (Master’s student, AIMS-SA): Comparing Methods for Approximate Bayesian Computation.

23/05/2018: Rita Sianga (Master’s student, University of Cape Town): Introducing non-reversible nucleotide substitution models in HIV phylogenetic inference.

25/05/2018: Dr Leigh Johnson (Centre for Infectious Disease Epidemiology and Research [CIDER], UCT): Optimal HIV testing strategies to increase HIV diagnosis in South Africa.

10/08/2015: Dr Rhoda Hawkins (University of Scheffield, UK): Biophysical approaches to host-pathogen cellular interactions.

17/08/2018: Prof Juliet Pulliam (SACEMA): Challenges and Opportunities in Epidemiological Forecasting.

**UPCOMING EVENTS:**

SACEMA Research Days

SACEMA’s annual Research Days meeting, will be held over four full days, 10-13 September 2018 at the Protea Hotel, Techno Park in Stellenbosch. All SACEMA funded students and their supervisors are invited, together with SACEMA research fellows and associates. The meeting provides a forum for evaluation and constructive feedback for recipients of SACEMA bursaries or Emerging Researcher funding, and is also designed to create a friendly mentoring environment for professional development. There will be four training workshops for students, held over the first two days, followed by keynote talks, formal research talks and poster presentations, student and supervisor forums, a debate, and social events.