

SAMSA e-bulletin

Your newsletter promoting research and mentoring of academics in Southern Africa



In this Issue...

Message from the President (1)

Message from the Editorial Desk (1)

Meet SAMSA new executive team (1)

Report on 2016 SAMSA conference (1)

Students' presentation awards (1)

Kovalevskaja Research Grant Awards (2)

SAMSA-Masamu STEM Workshop (2)

SAMSA 2017, University of Dar es Salaam (3)

SAMSA 2018 (Botswana International University of Science and Technology) (3)

New Books on the Market (3)

Message from the President

Dear SAMSA Member

Happy new year. Compliments of the new season. I am delighted to welcome you all to our first news letter of 2017, thanks to the hard work of the new editor, Dr Notice Ringa. Let me begin by thanking the membership for the confidence they had in the previous SAMSA executive and re-electing some of them. This has certainly helped in the continuity of SAMSA and its programmes. The new SAMSA executive is introduced to you in this news letter and we look forward to working for the good of SAMSA, thank you.



Message from the Editorial desk - by Dr Notice Ringa

Dear readers,

Welcome to our first issue of SAMSA Newsletter in 2017. As usual the mandate of this newsletter is to provide updates on endeavors conducted by SAMSA, achievements attained thus far, as well as announcements of upcoming activities. A pivotal objective of SAMSA is to conduct annual conferences within the Southern African region in order to provide a platform for sharing and exchanging of ideas, and initiation of collaborative teams in research areas of pure and applied mathematics, among scholars in the region and the rest of the world. SAMSA has seen a significant growth in membership size over the years, thanks to organisers, members and well-wishers of the association. This current Newsletter reports mostly on the activities of the 35th annual SAMSA conference that was held on 21 - 24 November 2016 at the University of Pretoria, South Africa. In addition to deliberations on high-quality research topics by many participants, some of the highlights of the 2016 SAMSA conference include election of the new SAMSA executive committee; awards for best student presenters; research grant awards for outstanding female researchers; introduction of a platform for sharing ideas among scholars in Africa, USA and elsewhere, on promotion of STEM (Science, Technology, Engineering and Mathematics) subjects. The next annual SAMSA conference will be hosted by the University of Dar es Salaam, Tanzania in November 2017. Updates about this conference, as well as any other news will be communicated via the SAMSA website <http://samsa-math.org> and the association's Facebook page. We encourage members of SAMSA to support development of future Newsletters by contributing articles and news items through the said social media platform or write to the editorial team at: ringan@gmail.com

Meet the new SAMSA executive committee 2016-2018

SAMSA conducts elections for its executive committee members every two years. Below are profiles of members of the new executive committee members that were elected at the 35th annual SAMSA conference at the University of Pretoria, South Africa in November



President:
Prof. Farai Nyabadza
Department of Mathematical Sciences
Stellenbosch University
Private Bag X1
Matieland, 7602
South Africa
Email: f.nyaba@gmail.com



Vice President:
Prof. Sandile Motsa
Department of Mathematics
University of Swaziland
Private Bag 4
Kwaluseni, Mzoni
Swaziland
Email: sandilemotsa@gmail.com



Secretary:
Dr. Theresia Marjani
Mathematics Department
University of Dar es Salaam
P.O. Box 35062
Dar es Salaam
Tanzania
Email: tmarijani@gmail.com



Treasurer:
Dr. Faraimunashe Chirove
School of Mathematics, Statistics & Computer Science
University of KwaZulu-Natal
Pietermaritzburg Campus
Private Bag X01
Scottsville, 3209
South Africa
Email: chirovef@ukzn.ac.za



Committee Member:
Dr. Winifred Mutuku
Department of Mathematics,
Kenyatta University,
P. O. Box 43844-00100
Nairobi
Kenya.
Email: mutukuwinnie@gmail.com



Committee Member:
Dr. Notice Ringa
Department of Mathematics and Statistical Sciences
Botswana International University of Science and Technology,
Private Bag 16, Palapye, Botswana
Email: ringan@biust.ac.bw



Committee Member:
Dr. Joseph Malinzi
Department of Mathematics and Applied Mathematics
University of Pretoria
Private Bag X 20
Hatfield
0028 Pretoria,
South Africa
Email: josephmalinzi@aims.ac.za

REPORT ON SAMSA 2016 CONFERENCE

The SAMSA 2016 conference was epic and our sincere gratitude to the University of Pretoria for delivering a well attended conference, with over 170 delegates having participated. As an executive we are delighted by such numbers and we continue to encourage all the members to come for these conferences. There was an introduction of presentation prizes for our students and this was innovative indeed from the LOC.

Our membership base has been growing and all those that attended the 2016 conference have a complimentary membership for 2017 and those who want to be members can get in touch with Dr Faraimunashe Chirove. We will do our best this year to continue looking for sponsorship to get many of the student members to be part of our conference in Tanzania in 2017. The MASAMU programme (<https://masamu.auburn.edu/>) continues to yield interesting and fruitful collaborations between SAMSA members and US mathematicians. I encourage all to apply to participate in this initiative. This year sees us signing an MOU with the center of excellence in mathematics and teaching (CoeMas) at University of Witwatersrand for further engagements in mutual mathematics endeavours.

I wish you all a year full of success and joy. Let us keep doing research, collaborating with one another and uplifting our institutions. Long live SAMSA

SAMSA President

Best students' presentation awards at SAMSA 2016

The record attendance at the 2016 SAMSA conference hosted by the University of Pretoria resulted in an unprecedented number of students' oral and poster presentations. Over 60 students had the opportunity to practice their presentation skills and share their research findings. During the conference dinner, seven awards were presented to students in recognition of their contribution to knowledge, quality of presentation and mastery of their subject area of research. The following students were recognised for their outstanding performance in scientific research and presentations.

Best PhD student presenters

1. Kondwani Magamba- Malawi University of Science and Technology
2. Chibueze Okeke-University of KwaZulu-Natal
3. Hagos Gidey- University of Pretoria
4. Fadekemi Janet Adewusi - University of Johannesburg



Best PhD presenters

1. Adam LaClair - University of Tennessee , USA.
2. Irene Kyomugisha- University of Stellenbosch



Best poster presenters

1. Gersham Buri (AIMS-SA-SACEMA, South Africa).



All the MSc and PhD presentation awards were presented by **Prof Roumen Anguelov (L)** - Co-Chair of SAMSAs 2016 Local Organising Committee , and **Prof Sandile Motsa (R)** -SAMSAs Vice President.

Kovalevskaia Research Grant Award winners for 2016

The Kovalevskaia Research Grant Awards are an initiative of the Kovalevskaia Fund (<http://kovfund.org/>) and SAMSAs, within the MASAMU Program (<https://masamu.auburn.edu>), aiming at encouraging upcoming female mathematicians from the sub-Saharan Africa. The grant is awarded to female candidates from the region who have demonstrated outstanding work with respect to research and publications in Pure or Applied Mathematics. Two grants, valued at US\$2,500.00 each, shall be awarded every two years – one in Pure, and another in Applied Mathematics, for the duration of up to two years. In the year 2016, Dr Winifred Mutuku was awarded the Kovalevskaia Research Grant for her outstanding research work in the area of Applied Mathematics. Dr Mutuku was also recognised for her work on promoting the interest in Mathematics among young women and for being a good role model and ambassador for Mathematics Research in Sub-Saharan Africa.

Kovalevskaia Research Grant Award winners



The recipient of the Kovalevskaia Research Grant in the Pure Mathematics category was Dr Sameerah Jamal who was recognised for her outstanding research in the area of Pure Mathematics. Dr Jamal has consistently published her research findings in high impact peer-reviewed international journals. The profiles for Dr Mutuku and Dr Jamal are given below.

DR WINIFRED NDUKU MUTUKU (APPLIED MATHEMATICS)

Dr Mutuku is a lecturer at the Department of Mathematics, Kenyatta University, Kenya. She graduated, in the year 2014, with a PhD in Applied Mathematics from Cape Peninsula University of Technology, in Cape Town, South Africa. Dr Mutuku is the founder member and current Vice-President of the Kenya Women in Mathematical Sciences Association (KWIMSA). She is also the Vice-Secretary of the African Women in Mathematical Association (AWMA). Furthermore, she is a member, in good standing, of the Southern Africa Mathematical Sciences Association (SAMSA) and has given talks in the last two SAMSA conferences. In the previous five years, Dr Mutuku has participated in at least a dozen International Mathematics Conferences and Workshops and has published ten articles in peer-reviewed international journals. She has successfully supervised 13 MSc students to completion and continues to supervise a further 6 MSc and 4 PhD students. This continued participation in research activities and consistent publication rate is ample evidence that Dr Mutuku is committed to Mathematics research and in promoting interest in Mathematics among girls and women in sub-Saharan Africa. She is currently collaborating with researchers from University of Strathclyde, Scotland, United Kingdom. Winifred has the following message to the sponsors of the Kovalevskaia award: "I am extremely honored to be receiving the Kovalevskaia award. I am earnestly grateful for the recognition I have received for my work, because I am very sure that every other nominee for this award was as capable if not more, of receiving this award. My special gratitude goes to Prof Neal Koblitz, SAMSA and the MASAMU program. The award does not only appreciate and encourage upcoming female Mathematicians; it provides them with a means to continue carrying out research in their respective fields." Winifred is particularly grateful to her mentors whose advice has propelled her to where she is today. "Receiving this award would not have been possible without the inspiration I have received from my seniors, for instance, Prof. Dorothy Musekwa, whose words of wisdom have seen me this far, and my colleagues, for whom I have the deepest respect, and from whom I have derived the strength to challenge myself and perform better at each stage." Winifred said. She is also grateful to the SAMSA fraternity for helping her reach a stage where she can "proudly hold up this award as a mark of remarkable achievements". Her message to young women is: "I also promise to only get better at my work so that those who are younger than me can look upon me as a model and inspiration like I have always looked upon Prof. Dorothy Musekwa and Dr Eunice Mureithi."

DR SAMEERAH JAMAL (PURE MATHEMATICS) Dr Sameerah Jamal has been a lecturer at the University of Witwatersrand (South Africa) since 2013. She graduated with distinction in both her BSc Honours and MSc degree in Pure Mathematics in the years 2010 and 2011, respectively. She did her PhD in Pure Mathematics at the University of Witwatersrand between 2011 and April 2013. Her research interests are in Differential equations, Lie Group Theory and Relativity. She has published nine articles in peer-reviewed international journals. She is a member of the American Mathematical Society (AMS) and South African Mathematical Society (SAMS), and has participated in several South African conferences and notable international conferences. Dr Jamal has supervised three honours projects and is supervising one MSc student who registered in 2016. In her young academic career, Dr Jamal has managed to form research collaborations with researchers from her country, South Africa, and scientists from other countries including Chile, Pakistan, Saudi Arabia and Turkey. For Sameerah, being awarded the Kovalevskaia research grant demonstrates recognition of her research efforts. Her message to the sponsors of the award is: "I am greatly humbled and honoured to be the recipient of this very important Kovalevskaia award. I would like to offer my deepest gratitude to the sponsors of the fund, Professors' Neal and Ann Koblitz. A very special thank you to the SAMSA panel who selected me to receive this prize. Words cannot describe what this award means to me. It is an invaluable contribution to my research career; primarily supporting my research visit to foster collaboration at an international institute and enable the purchase of specialist software to facilitate my research". Sameerah has the following message for up-and-coming women scientists: "As an encouragement to other young women scientists, I would like to share a recipe from an inspirational woman in my life, my mother. To realise your dreams, write down a set of goals (ranging from achievable ones to those seemingly unachievable), then design a plan of action to reach those goals. In this journey towards your objectives, a winning mathematical formula consists of having 1/3 willpower to achieve your objectives, 1/3 good time management and a 1/3 desire to seek knowledge along the way."

SAMSAs-Masamu STEM Workshop

Prof Overtoun Jenda



The 2016 SAMSAs conference at the University of Pretoria in South Africa featured the SAMSAs-MASAMU STEM workshop, which was meant for examination and discussion of current evidence-based models, best practices, and strategies for increasing the quantity and quality of undergraduate and graduate degrees for students in Science, Technology, Engineering and Mathematics (STEM) disciplines. This workshop was held on November 22, 2016. Prof

Prof Suzanne Lenhart



Overtoun Jenda (Auburn University, USA) chaired this workshop. The panel speakers, who presented ideas and experiences on implementing strategies for promotion of STEM subjects in their respective institutions or countries, were (i) Prof Senelani Dorothy Hove-Musekwa (National University of Science and Technology, Zimbabwe); (ii) Prof Suzanne Lenhart (University of Tennessee, USA); (iii) Dr Faraimunash Chirove (University of Kwazulu Natal, South Africa); (iv) Prof Abdul-Aziz Yakubu (Howard University, USA); (v) Prof Eunice W. Mureithi (University of Dar es Salaam, Tanzania). A detailed report on this workshop that presents contributions from each of the panel speakers will be uploaded into SAMSA website <http://samsa-math.org> and Facebook page.

Prof. Senelani Dorothy Hove-Musekwa



Prof Abdul-Aziz Yakubu



It was acknowledged that lack of students, and hence lack of professionals, in STEM disciplines is a result of inadequate preparation of students, at various levels of education, in STEM subjects. Some of the ideas for promotion of STEM subjects that were put forward and discussed include implementation of STEM-oriented strategies from elementary school through to tertiary education levels; creation of regional STEM centres across a region or country to cater for many learners and to train teachers on how to employ learner-based approaches that promote interest in STEM; running of active mathematics and science clubs in schools and research labs in tertiary institutions; peer instruction programs; active undergraduate research; undergraduate conferences and publications; mentorship programs; funding for STEM-related courses; outreach STEM campaigns.

Prof Eunice W. Mureithi



SAMSA 2016 membership group photo



SAMSA 2017, University of Dar es Salaam

The Department of Mathematics at the University of Dar es Salaam (UDSM), Tanzania, will host the 2017 annual SAMSA conference from 20th to 23rd November 2017 in Arusha, Tanzania. Information about logistics involving, but not limited to, registration, transport, visa requirements, accommodation, updates, important dates and deadlines for submission of abstracts, will be available at UDSM website <http://www.maths.udsm.ac.tz/samsa2017/> and at SAMSA website <http://samsa-math.org>. The department will also host the seventh annual SAMSA Masamu Advanced Study Institute (MASI) and Workshops program which will be held November 17-26, 2017. For more information about MASI and Workshops please visit SAMSA website or <https://masamu.auburn.edu/pm/masamu2017>.

UDSM is the oldest and largest public university in Tanzania. It is situated along the coast, in the city of Dar es Salaam. The Department of Mathematics is under the College of Natural and Applied Sciences (CoNAS). The mission of department of mathematics is to transmit mathematics knowledge and application from one generation to another, conduct scientific research and provide teaching to public service and make mathematics more marketable.

The Department of Mathematics at UDSM is honoured to host the 2017 Annual SAMSA conference. The conference will bring together researchers in mathematics and allied subjects with a view to share knowledge and enhance networking in teaching and research in mathematics and mathematical science among members and non-members.

The theme for the SAMSA 2017 conference is Mathematics for Industrial Development.

Mount Kilimanjaro, Tanzania



The United Republic of Tanzania is located on the Eastern side of Africa, on the coast of the Indian Ocean. Tanzania has many great lakes such as Lake Victoria (the second largest fresh water lake in the world by area); Lake Tanganyika (the world's second largest fresh water lake by volume and depth) etc. Tanzania also has a very long coastline (approximately 800 km) along the Indian Ocean. Tanzania hosts the highest mountain in Africa, Mount Kilimanjaro, and has many historical sites (such as the stone

town of Zanzibar, Olduvai George), game reserves (such Serengeti, Ngorongoro, Tarangire, Selous); white sandy beaches of Kigamboni and Zanzibar; rich culture (the Maasai, the Swahili, etc).

SAMSA 2018, Botswana International University of Science and Technology

The Department of Mathematics and Statistical Sciences at the Botswana International University of Science and Technology (BIUST), will host the 2018 annual SAMSA conference in November 2018. Updates regarding issues such as registration, submissions, etc. will be uploaded on the SAMSA website <http://samsa-math.org> and Facebook page, in due course.

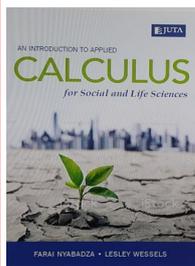
The Botswana International University of Science and Technology is a Government of Botswana supported institution, whose mandate is to produce high quality research output in the fields of Engineering, Science and Technology. The institution is relatively new and it will hold a graduation ceremony and award its first batch of graduates from undergraduate programmes, including BSc Mathematics and BSc Applied Mathematics in February 2017.

BIUST is located on an expansive and ecologically diverse 2,500 hectare site south east of Palapye, a small town in the east of Botswana.

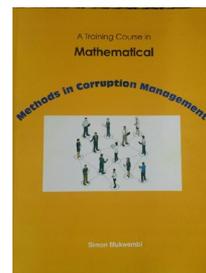
More information about BIUST, Botswana and the 2018 SAMSA conference will be communicated in due course via the other issues of the SAMSA Newsletter and the SAMSA website.

NEW BOOKS ON THE MARKET

We are happy to announce two books, one advertised during the SAMSA conference by the author Prof Simon Mukwembi (University of Zimbabwe) and one by Prof Farai Nyabadza (University of Stellenbosch). We congratulate the two authors together with the co-authors.



On the left is an undergraduate text on Calculus for social and life sciences. The book is available both online at www.juta.co.za and on the right is a training manual on Mathematical methods in corruption management, available from the author.



SAMSA ARCHIVES

Can anyone recall the year and place where the photos below were taken. It should not be a surprise that the guy belonging to the 'intersection' was and is still the SAMSA photographer, Dr Winter Sinkala.

