



## 2021 Virtual Masamu Advanced Study Institute (MASI)

Friday, November 19 – Sunday, November 28

## and 2021 Virtual SAMSA Conference

Monday, November 22 – Wednesday, November 24

### Program Schedule

All times Central Africa Time (CAT) (GMT+2)



AUBURN  
UNIVERSITY

SPECIAL PROJECTS  
& INITIATIVES

<b>Friday, November 19</b>	
<a href="#">Registration and Opening Session</a>	16:00 – 17:00
<a href="#">Research Group Planning Meetings</a>	17:00 – 19:00
<b>Saturday, November 20</b>	
<a href="#">Institute</a>	16:00 – 20:00
<b>Sunday, November 21</b>	
<a href="#">Institute</a>	16:00 – 20:00
<b>Monday, November 22</b>	
<a href="#">SAMSA Conference</a>	15:00 – 18:40
<a href="#">Institute</a>	Flexible
<b>Tuesday, November 23</b>	
<a href="#">SAMSA Conference</a>	15:00 – 18:40
<a href="#">Institute</a>	Flexible
<b>Wednesday, November 24</b>	
<a href="#">SAMSA Conference</a>	15:00 – 18:40
<a href="#">Institute</a>	Flexible
<b>Thursday, November 25</b>	
<a href="#">Thanksgiving Holiday (Institute)</a>	Flexible
<b>Friday, November 26</b>	
<a href="#">Institute</a>	16:00 – 20:00
<b>Saturday, November 27</b>	
<a href="#">Research Workshop</a>	16:00 – 20:00
<b>Sunday, November 28</b>	
<a href="#">Institute Planning Workshop and Closing Session</a>	16:00 – 20:00

#### Please Note:

1. All sessions are virtual via Zoom. You must have registered in order to attend the SAMSA Conference.
2. For U.S. participants, 16:00 CAT is 6:00 a.m. Pacific, 8:00 a.m. Central, and 9:00 a.m. Eastern.
3. The SAMSA Conference starts at an earlier time on Monday, November 22 – Wednesday, November 24.

#### Meeting Links (also linked in above schedule):

Masamu Program: <https://auburn.zoom.us/j/87254946290>

SAMSA Conference: <https://auburn.zoom.us/j/81372551192>

Gather Town: <https://gather.town/app/QnB9WqpRtxvPS6w2/masamu2020>

For more information, please contact [masamu@auburn.edu](mailto:masamu@auburn.edu) or visit <https://masamu.auburn.edu>.

**2021 Masamu Research Workshop, Institute Planning and Closing Session  
Saturday, November 27 – Sunday, November 28**

**Agenda**

Saturday, November 27

- 17:00 – 17:10 Mathematical Biology: Crime
- 17:10 – 17:20 Algebra
- 17:25 – 17:35 Biostatistics
- 17:40 – 18:10 Finance
- 18:15 – 19:35 Mathematical Biology
  - 18:15 Stigma
  - 18:30 Paternity
  - 18:40 DNA with 2 talks
  - 19:00 Wash and Dave group, disease detection
  - 19:15 Covid with 3 talks: Gauteng model, ABM community, Optimal Control

Sunday, November 28

- 17:00 – 17:25 Analysis
- 17:30 – 18:00 Graph Theory
- 18:05 – 19:00 2022 Institute Planning
- 19:05 – 19:35 Closing Session

## 2021 Masamu Program Participants by Research Group

### **ALGEBRA**

Jean Baptiste Gatsinzi	Faculty	Botswana International University of Science and Technology	Botswana
Meschack Ndllovu	Graduate Student	Botswana International University of Science and Technology	Botswana
Oteng Maphane	Graduate Student	Botswana International University of Science and Technology	Botswana
Overtoun Jenda	Faculty	Auburn University	United States
Robert Dixon	Graduate Student	Auburn University	United States
Smegnsh Demelash	Graduate Student	Kotebe Metropolitan University	Ethiopia

### **ANALYSIS**

Arshad Ali Khan	Graduate Student	University of Management and Technology	Pakistan
Basit Ali	Faculty	University of Management and Technology	Pakistan
Faiza Tariq	Graduate Student	University of Management and Technology	Pakistan
Hafiza Aqsa Butt	Graduate Student	Sahara College	Pakistan
Mahreen Akhtar	Graduate Student	University of Management and Technology	Pakistan
Misha Mohsin	Graduate Student	University of Management and Technology	Pakistan
Mokhwetha Mabula	Faculty	University of Pretoria	South Africa
Ntombifuthi Khoza	Graduate Student	University of Pretoria	South Africa
Sello Mbambo	Faculty	University of the Free State	South Africa
Zechariah Mushaandja	Faculty	Botswana International University of Science and Technology	Botswana

### **BIOSTATISTICS**

Bernard Omolo	Faculty	University of South Carolina Upstate	United States
Geofrey Chiuzga	Graduate Student	University of Malawi	Malawi
Halima Twabi	Graduate Student	University of Malawi	Malawi
Innocent Maposa	Faculty	University of Witwatersrand	South Africa
Jesca Batidzirai	Graduate Student	University of KwaZulu-Natal	South Africa
Kabelo Kgarosi	Faculty	University of Pretoria	South Africa
Mohanad Mohammed	Graduate Student	University of KwaZulu-Natal	South Africa
Nobuhle Mchunu	Researcher	South African Medical Research Council	South Africa
Portia Nevhungoni	Researcher	South African Medical Research Council	South Africa
Samuel Manda	Researcher	South African Medical Research Council	South Africa
Tefo Baraki	Graduate Student	Botswana International University of Science and Technology	Botswana
Theodora Ijeoma	Graduate Student	North-West University	South Africa
Zvifadzo Matsena Zingoni	Graduate Student	University of Witwatersrand	South Africa

### **GRAPH THEORY**

Adam Blumenthal	Faculty	Westminster College	United States
Alex Alochukwu	Graduate Student	University of Johannesburg	South Africa
Amelia Shapiro	Undergraduate Student	Brown University	United States
Bradley Fain	Faculty	Colorado State University	United States
Cadavious Jones	Faculty	Alabama State University	United States
Calum Buchanan	Graduate Student	University of Vermont	United States
Emily Rivett-Carnac	Graduate Student	University of Johannesburg	South Africa
Fadekemi Janet Osaye	Faculty	Alabama State University	United States
Katherine Perry	Faculty	Soka University	United States
Parik Chalise	Undergraduate Student	Soka University	United States
Paul Horn	Faculty	University of Denver	United States
Peter Dankelmann	Faculty	University of Johannesburg	South Africa
Peter Johnson	Faculty	Auburn University	United States
Puck Rombach	Faculty	University of Vermont	United States
Sheng Bau	Faculty	University of KwaZulu Natal	South Africa
Simon Mukwembi	Faculty	University of Witwatersrand	South Africa
Sonwabile Mafunda	Graduate Student	University of Johannesburg	South Africa
Stacie Baumann	Graduate Student	Auburn University	United States

### **MATH BIO**

AJ Meir	Faculty	Southern Methodist University	United States
Anotida Madzvamuse	Faculty	University of Sussex	United Kingdom
Ash Abebe	Faculty	Auburn University	United States
Benjamin Levy	Faculty	Fitchburg State University	United States
Christna Edholm	Faculty	Scripps College	United States
David Goldsman	Faculty	Georgia Tech	United States
Eduard Campillo-Funollet	Faculty	University of Kent	United Kingdom
Edward Lungu	Faculty	Botswana International University of Science and Technology	Botswana

Farai Nyabadza	Faculty	University of Johannesburg	South Africa
Faraimunashe Chirove	Faculty	University of Johannesburg	South Africa
Folashade Agosto	Faculty	University of Kansas	United States
Gift Muchatibaya	Faculty	University of Zimbabwe	Zimbabwe
H. John B. Njagarah	Faculty	Botswana International University of Science and Technology	Botswana
Hannah Correia	Postdoctoral Fellow	Harvard University	United States
Harold Nikoue	Graduate Student	Georgia Tech	United States
Hazel Sekgothe	Graduate Student	University of Limpopo	South Africa
Inger Fabris-Rotelli	Faculty	University of Pretoria	South Africa
Ioannis (John) Sgouralis	Faculty	University of Tennessee	United States
Jane Pagangam	Graduate Student	University of Zimbabwe	Zimbabwe
Jane White	Faculty	University of Bath	United Kingdom
Javier Arsuaga	Faculty	University of California, Davis	United States
John-Paul Clarke	Faculty	University of Texas	United States
Kudzanayi Mapfumo	Graduate Student	University of Zimbabwe	Zimbabwe
Lazarus Rundora	Faculty	University of Limpopo	South Africa
M. Hellen Machingauta	Graduate Student	Botswana International University of Science and Technology	Botswana
Marilyn Ronoh	Faculty	University of Nairobi	Kenya
Maruf Lawal	Graduate Student	University of Tennessee	United States
Michael Washington	Faculty	US Centers for Disease Control and Prevention	United States
Moathodi (Archie) Kgosimore	Faculty	Botswana University of Agriculture and Natural Resources	Botswana
Motshidisi Sebogodi	Graduate Student	University of Johannesburg	South Africa
Phillip Andreae	Faculty	Meredith College	United States
Richard Mahlakwana	Graduate Student	University of Limpopo	South Africa
Siphokazi Princess Gatyeni	Graduate Student	University of Johannesburg	South Africa
Skylar Grey	Faculty	University of Wisconsin-Madison	United States
Sofia Jakovcevic	Undergraduate Student	University of California, Davis	United States
Steve Dobson	Faculty	Auburn University	United States
Suzanne Lenhart	Faculty	University of Tennessee	United States
Tianna Burke	Graduate Student	Auburn University	United States
Tichaona Chikore	Graduate Student	University of Johannesburg	South Africa
Victor Juma	Postdoctoral Fellow	University of Zaragoza	Spain
Vincent Nandwa	Graduate Student	University of Nairobi	Kenya
Williams Chukwu	Faculty	University of Johannesburg	South Africa

## **MATH FINANCE**

Calisto Guambe	Faculty	University of Pretoria	South Africa
Clift Kudzai Hlahla	Faculty	National University of Science and Technology	Zimbabwe
Darlington Hove	Graduate Student	Mangosuthu University of Technology	South Africa
Elias Peter Mwakilama	Graduate Student	Jomo Kenyatta University of Agriculture and Technology	Kenya
Eryoti Chikodza	Faculty	Great Zimbabwe University	Zimbabwe
Farai Julius Mhlanga	Faculty	University of Limpopo	South Africa
Hans Werner Van Wyk	Faculty	Auburn University	United States
Jezeper Chidzvete	Graduate Student	Great Zimbabwe University	Zimbabwe
Lesiba Charles Galane	Faculty	University of Limpopo	South Africa
Lungelo Mamba	Graduate Student	University of Eswatini	Eswatini
Magadi Mabe	Graduate Student	University of Johannesburg	South Africa
Masimba Mutakaya	Graduate Student	Midlands State University	Zimbabwe
Memory Mandiudza	Graduate Student	Great Zimbabwe University	Zimbabwe
Nicholas Mwareya	Faculty	Great Zimbabwe University	Zimbabwe
Paul Kundai Ziwakaya	Graduate Student	Botswana International University of Science and Technology	Botswana
Peace Sibanda	Graduate Student	Great Zimbabwe University	Zimbabwe
Phumani L. Zondi	Graduate Student	University of Zululand	South Africa
Queensley Chukwudum	Faculty	University of Uyo	Nigeria
Rodwell Kufakunesu	Faculty	University of Pretoria	South Africa
Siboniso C. Nkosi	Faculty	University of Limpopo	South Africa
Siphelele Lushaba	Graduate Student	University of Eswatini	Eswatini
Thabo Malatji	Graduate Student	University of Limpopo	South Africa
Tlou Lazarus Kubjana	Graduate Student	University of Venda	South Africa

## SAMSA 2021: VIRTUAL CONFERENCE PROGRAMME SCHEDULE

**MONDAY, NOVEMBER 22, 2021**

Time slot	STREAM ONE	STREAM TWO	STREAM THREE	STREAM FOUR	STREAM FOUR
<b>CHAIRPERSON</b>	<b>Dr Farai Chirove</b>				
15:00-15:05	Opening Message by the SAMSA President <b>Prof. Sandile Motsa</b>				
15:05-15:45	Plenary talk by <b>Prof Rafal Lochowski</b>				
CATEGORY	<b>Analysis</b>	<b>Biomathematics</b>	<b>Mathematics of Finance</b>	<b>Applied Mathematics</b>	<b>Data Science / Statistics</b>
<b>CHAIRPERSON</b>	<b>Dr Timilehin O. Alakoya</b>	<b>Dr Joseph Malinzi</b>	<b>Dr Peter Mhone</b>	<b>Prof. Fred. Vermolen</b>	<b>Dr Alphonse Bere</b>
16:00-16:20	Prof. Benard Okelo	Dr Ali Khalouta	Dr Calisto Guambe	Dr Julius S. Maremwa	Ms Filister Chinake
16:20-16:40	Mr Anas Yusuf	Mr C. Matete	Prof. Bernt Øksendal	Mrs Anila Mehmood	Dr Innocent Maposa
16:40-17:00	Ms Aoudj Manal	Mr Emmanuel A. Bakare	Mr Confess Matete	Ms Douaa Hamri	Dr Louhab hayat
17:00-17:20	Dr Godwin Chidi Ugwunnadi	Dr Vusi Magagula	Dr Calisto Guambe	Mr Kentse Maefo	Prof. Ismail A Mageed
17:20-17:40	Mr Sorowen Ben	Dr Eduard Campillo-Funollet	Ms Sipehelele Lushaba	Prof. Chaudry Masood Khalique	Dr Rahmouna Mecene
17:40-18:00	Dr Soumia Saidi	Mr L. Dlamini	Mr Lungelo Mamba	Ms Ahlem Merah	Mr K. F. Muchie
18:00-18:20	Ms Halima Yusuf	Mr Kazeem A Tijani	Prof. Carlos Escudero	Dr Sunday FADUGBA	Dr B. R. Sreedhar
18:20 -18:40	Dr Abdelkrim Salim	Prof. Javier Arsuaga	Mr Clift K. Hlahla	Dr Ihaddadene Lila	Dr Souilah Fairouz

## SAMSA 2021: VIRTUAL CONFERENCE PROGRAMME SCHEDULE

**Tuesday, NOVEMBER 23, 2021**

Time slot					
	<b>STREAM ONE</b>	<b>STREAM TWO</b>	<b>STREAM THREE</b>	<b>STREAM FOUR</b>	<b>STREAM FIVE</b>
<b>CHAIRPERSON</b>	<b>Dr Precious Mdlongwa</b>				
15:00-15:45	Plenary talk by <b>Prof. Inger Fabris-Rotelli</b>				
<b>CATEGORY</b>	<b>Analysis</b>	<b>UK-APASI Presentations</b>	<b>Mathematics of Finance</b>	<b>Graph Theory</b>	<b>Data Science/ Statistics</b>
<b>CHAIRPERSON</b>	<b>Dr Godwin Chidi Ugwunnadi</b>	<b>Dr Vusi Magagula</b>	<b>Prof. Carlos Escudero</b>	<b>Dr Sonwabile Mafunda</b>	<b>Dr Innocent Maposa</b>
16:00-16:20	Dr Timilehin O. Alakoya	W. Nyirenda	Mr Jezepher Chidzvete	Prof. Sheng Bau	Dr Babagana Modu
16:20-16:40	Mr Tshikhudo Lukoto	Mr. E Mwakilama	Ms Thandwa Mamba	Mr Tallman Nkgau	Mr Salvatory Kessy
16:40-17:00	Mr Victor A. Uzor	Dr J. Malinzi	Mrs Memory Mandiudza	Prof. P. Dankelmann	Dr Alphonse Bere
17:00-17:20	Mr Sabasi Omaoro	Prof. Fred. Vermolen	Dr Mesias Alfeus	Mr Faraji Tiraga	Dr Linda Chaba
17:20-17:40	Prof. Kwara Nantomah	Mr Rasika. O. Olanrewaju	Mr Mfundo Mhlongo	Dr George Anderson	Dr Bernédy. N. M Kodia Banzouzi
17:40-18:00	Mrs Maryma Alka	Mr K. Mapfumo	Mr Mark Opondo	Dr Soumia Saidi	Mr C. Natuhamya
18:00-18:20	Prof. Oluwatosin T. Mewomo	Dr Sunday E. Fadugba	Dr Peter Mhone	Prof. Peter D. Johnson Jr	Dr Claude. M Ndimba
18:20 -18:40	Dr Olubunmi Fadipe-Joseph	Ms Halima Yusuf	Dr Justin Chirima	Dr Nour El Houda Djaa	Mr Emmanuel G. Ehnon

## SAMSA 2021: VIRTUAL CONFERENCE PROGRAMME SCHEDULE

**Wednesday, NOVEMBER 24, 2021**

Time slot					
	<b>STREAM ONE</b>	<b>STREAM TWO</b>	<b>STREAM THREE</b>	<b>STREAM FOUR</b>	<b>STREAM FIVE</b>
<b>CHAIRPERSON</b>	<b>Mr Kondwani Magamba</b>				
15:00-15:45	Plenary talk by <b>Prof. Fortune Masamba</b>				
CATEGORY	<b>Analysis</b>	<b>Applied/Industrial</b>	<b>Mathematics of Finance</b>	<b>Algebra/Combinatorics</b>	<b>Data Science/ Statistics</b>
<b>CHAIRPERSON</b>	<b>Prof. Kwara Nantomah</b>	<b>Dr Ihaddadene Lila</b>	<b>Dr Justin Chirima</b>	<b>Prof Jean Baptiste Gatsinzi</b>	<b>Dr Babagana Modu</b>
16:00-16:20	Dr HELAL Mohamed	Dr Fatih Say	Mr Ndava Constantine Mupondo	Dr. Srinivasarao Thota	Prof. Samuel Manda
16:20-16:40	Dr Mezghiche Lynda	Ms Ilhem Kadri	Mr Nicholas Mwareya	Mr Oteng Maphane	Ms Michela Borghesi
16:40-17:00	Prof. Nouressadat Touafek	Dr MALTI Ahmed Ilyes Nedjib	Mr Mauricio Elizalde	Prof. Igor Ciganović	Ms Souddi Youssef
17:00-17:20		Dr Abdellatif Boutiara		Dr Mehsin Jabel Atteya	Prof. Wahiba Bouabsa
17:20-17:40		Dr Süleyman Cengizci		Mr Zriaa Said	Mrs Victoria Adah
17:40-18:00		Ms Ilhem Kadri		Dr Mohammed Abdelmalek	Mr Hudson Mumbole
18:00-18:20		Dr Musawenkhosi Mkhatshwa		Mr Travis Pence	Mr J. A. Akan- nyaatemi
18:20 -18:40				Dr Abdelkrim Salim	Prof. Bo Cai