



SASBi NEWSLETTER

Volume 2 | Issue 1 | April 2020

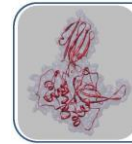


Research Unit in Bioinformatics

(RUBi) is a dynamic, fast growing and enthusiastic Research Unit, open to new ideas and challenges.

Issue contains:

-
- RUBi 10th anniversary
 - Bioinformatics @ Rhodes University
 - Researchers @ RUBI
 - Covid-19 virus precautions
 - SASBi upcoming events
 - SASBi-SC events



*Looking back with
a grateful heart as we
celebrate our*

10th

Anniversary

Happy Anniversary

RUBi

Ooh,

*what a journey it has been, looking
forward to more blessed years.*

Bioinformatics @Rhodes University

Prof. Özlem Tastan Bishop



Prof. Özlem Tastan Bishop is the founder and the director of Research Unit in Bioinformatics (RUBi) at Rhodes University. She is a professor in the Department of Biochemistry and Microbiology. She received her BSc degree in Physics and MSc in Genomics and Molecular Biology from Bogazici University, Turkey, and the PhD degree from Max Planck Institute and Free University, Berlin, Germany. Her research interest is in structural bioinformatics and its applications to diseases relevant to Africa. More specifically, her recent research focuses to understand the missense mutation effects on proteins for precision medicine, and to identify drug resistance mechanisms in molecular level to design better inhibitors. Prof. Tastan Bishop published over 50 articles in peer-reviewed international journals. She has graduated 10 PhD and over 30 MSc students in the last 10 years.

Dr. Vuyani Moses

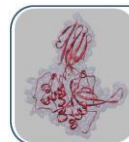


Dr. Vuyani Moses is a lecturer at the Department of Biochemistry and Microbiology at Rhodes University in Grahamstown. His research interest is primarily focused on the study of metal coordinating enzymes involved in various biological processes such as drug discovery to biofuel production. His work involves the application of Quantum Mechanics and Molecular Mechanics for the study of the structure and dynamics of metal coordinating enzymes.

Prof. Kevin Lobb



Prof. Lobb teaches NMR and computational chemistry at both the undergraduate and postgraduate levels. As a core member of RUBi he also teaches computational chemistry within the context of the coursework bioinformatics MSc programme. His interests include reaction kinetics and the determination of organic reaction mechanisms (with particular



emphasis on carbocations and carbocation rearrangements), and aspects of cheminformatics such as virtual chemical library generation and high throughput virtual screening in the context of drug discovery.

Researchers @ RUBi



Afrah Khairallah (PhD): Current project? My study involves the application of computational tools and high-performance computing for the discovery of novel anti-malarial drug candidates and metabolic targets. It covers sequence analysis, high throughput virtual screening and all-atom molecular dynamic simulations. **Favourite computer language?** R and Python. **What would you change in the world?** I would eliminate human greed. **What motivates you?** Targets and goals. **Any life advice?** Stay true to yourself.

Allan Sanyanga (PhD): Current project? Understanding of the effect of single nucleotide variations on the structure and function of the carbonic anhydrase enzymes through the use of *in-silico* approaches. **Favourite computer language?** Python. **What would you change in the world?** Probably the rate of climate change. Adverse floods and droughts are now evident globally due to this effect and is having an impact on the well-being of people.

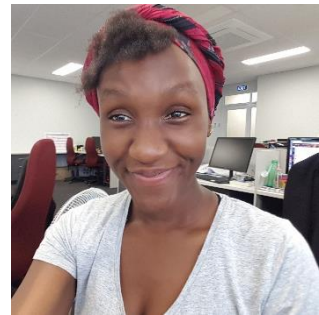
What motivates you? Challenging myself to see how far I can go. **What supernatural powers would you choose?** Cloning myself to maximize my rate of learning and optimum division of labour to complete tasks.



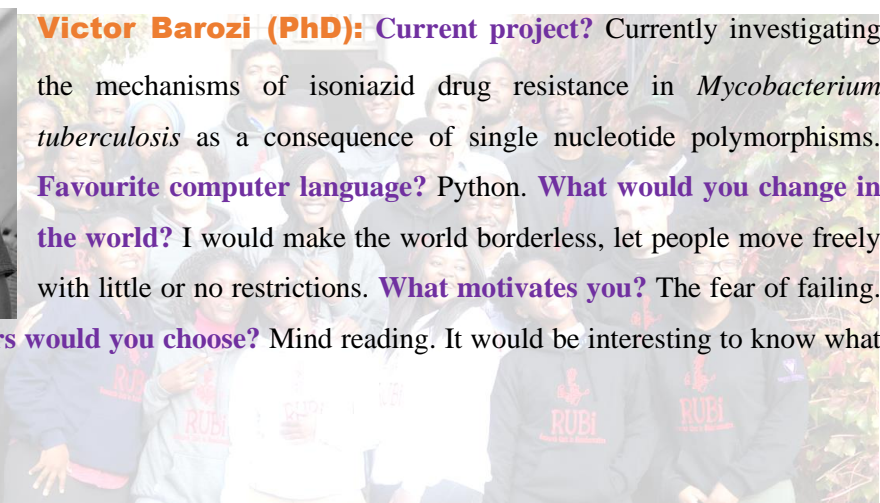
Lorna Jemisop (PhD): Current project? Structure based identification of novel inhibitors against *Plasmodium falciparum* cytochrome bc₁ complex: An *in-silico* approach. **Favourite computer language?** Python. **What would you change in the world?** People's perception of nutrition, food and diet. I draw my inspiration from Blue Zones where ~70% of their diet is plant based. **What motivates you?** I have learnt that the more you fail and recover and improve, the better you are as a person. Even GROMACS reminds you: "Science, my lad, is made up of mistakes, but they are mistakes which it is useful to make, because they lead little by little to the truth". **Any life advice?** Diet: Be mindful of the quote 'we eat to live and not live to eat'. Master your appetite before it masters you.



Tendai Muronzi (PhD): Current project? Virtual screening of compounds for Human African Trypanosomiasis (HAT) drug repurposing-based drug discovery. **Favourite computer language?** R. **What would you change in the world?** Apathy. Obliterating it if possible. The way I see it, the root of all that is wrong with the world right now is an indifference to the plight of fellow humans. **What motivates you?** Setting an example for younger women and girls in my community. **What supernatural powers would you choose?** Teleportation, obviously.



Victor Barozi (PhD): Current project? Currently investigating the mechanisms of isoniazid drug resistance in *Mycobacterium tuberculosis* as a consequence of single nucleotide polymorphisms. **Favourite computer language?** Python. **What would you change in the world?** I would make the world borderless, let people move freely with little or no restrictions. **What motivates you?** The fear of failing. **What supernatural powers would you choose?** Mind reading. It would be interesting to know what goes on in people's minds.



RUBi Members

Support staff

Glenister Michael (Software developer & system admin)
Crocker Stacey (Lab manager)

Post-doctoral Fellows

Dr. Musyoka Thommas Mutemi
Dr. Sheik Amamuddy Olivier

Masters Students

Damji Amira
Dudha Nabeelah
Gowo Prudence
Kemyon Thomas
Mbunge Mihlali
Zabo Sophakama

Honours Student

Makeleni Vuyelwa

Intern

Kamangu Samuel Maeti

PhD Students

Amusengeri Arnold
Bantar Rolland
Baye Bertha
Barozi Victor
Bebey Reine
Boateng Rita Afriyie
Chamboko Chiratidzo
Jemosop Lorna
Khairalla Afrah
Manyumwa Varaidzo Colleen
Mbaisi Lillian
Monama Mokgerwa
Muronzi Tendai
N'tji Diallo Bakary
Nabatanzi Margaret
Okeke Chiamaka Jessica
Sanyanga Allan

Covid-19 virus Precautions

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a **pandemic that has so swiftly hit the world**. The disease was first identified in 2019 in Wuhan, China, and has since spread globally, resulting in the 2019-20 coronavirus pandemic. **Common symptoms include fever, cough, and shortness of breath. Muscle pain, sputum production and sore throat are less common.** While the majority of cases result in mild symptoms, some progress to severe pneumonia and multi-organ failure. The rate of deaths per number of diagnosed cases is on average 3.4%, ranging from 0.2% in those under 20, to approximately 15% in those over 80 years old.

Every storm passes
and we will conquer
this... 😊

The infection is typically spread from one person to another via respiratory droplets produced during coughing and sneezing. Time from exposure to onset of symptoms is generally between two and 14 days, with an average of five days. The standard method of diagnosis is by reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab. Recommended measures to prevent infection include **frequent hand washing, maintaining distance from others, and not touching one's face**. The use of masks is recommended for those who suspect they have the virus and their caregivers, but not the general public. **There is no vaccine or specific antiviral treatment for COVID-19.** Management involves treatment of symptoms, supportive care, isolation, and experimental measures.

MAIN REFERENCES FOR MEDICAL INFO :

1. "How to Avoid the Coronavirus? Wash Your Hands", by Elizabeth Rosenthal, in *The New York Times, Opinion* (Jan 28, 2020)
 2. "The Wuhan Virus: How to stay Safe", by Laurie Garrett, in *Foreign Policy, Report* (Jan 25, 2020)
 3. "This animation shows how far your sneeze can actually travel." by Chiao-Yi Hou and Andrea Schmitz, in *Business Insider* (Jan 21, 2020)
- Read the articles for more tips! ↪ ↪

SASBi upcoming events

Event: Conference – Antimicrobial Resistance Genomes, Big data and Emerging Technologies

Date: 04 - 06 May 2020

Venue: Wellcome Genome Campus, UK

Info: <https://coursesandconferences.wellcomegenomecampus.org/event-type/conferences/>

Event: Conference - Genome Informatics

Date: 14 - 17 September 2020

Venue: Wellcome Genome Campus, UK

Info: <https://coursesandconferences.wellcomegenomecampus.org/event-type/conferences/>

Event: Conference - SASBi/SAGS

Date: Postponed till 2021

Event: Conference - EMBL Course: Single-Cell Omics

Date: 15 -21 November 2020

Venue: Heidelberg, Germany

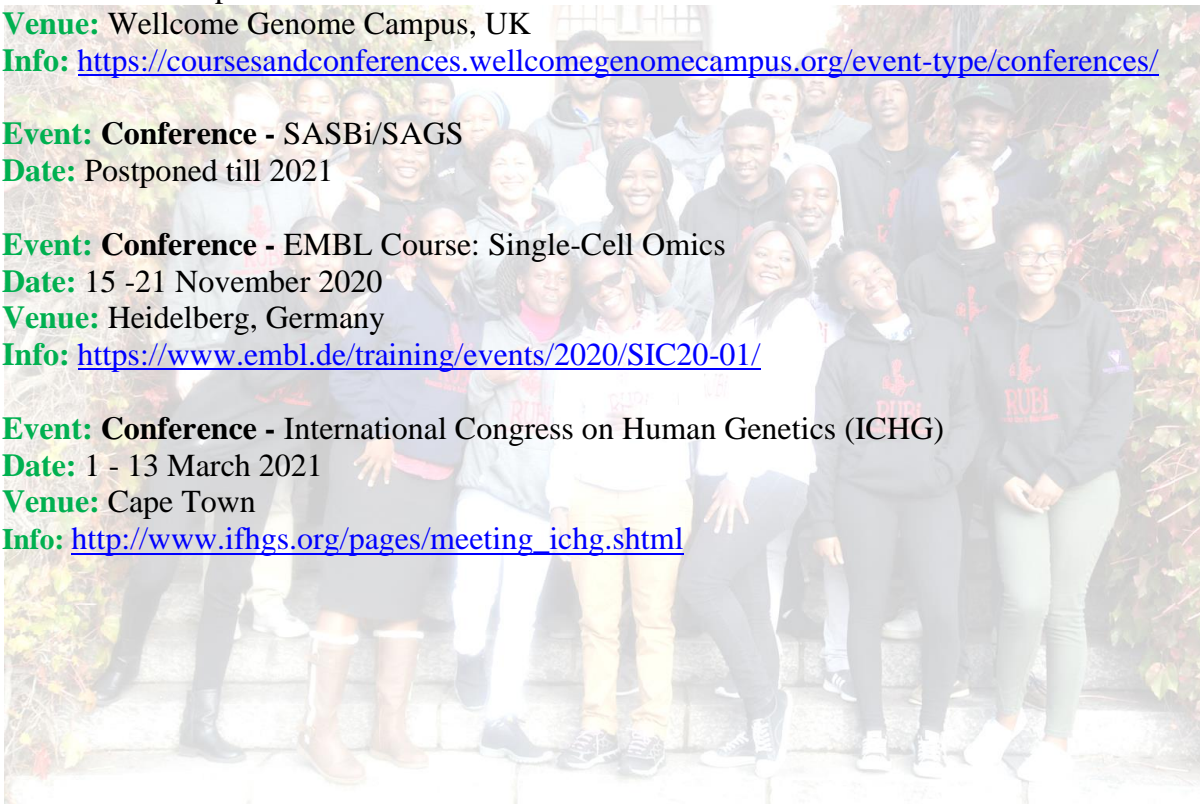
Info: <https://www.embl.de/training/events/2020/SIC20-01/>

Event: Conference - International Congress on Human Genetics (ICHG)

Date: 1 - 13 March 2021

Venue: Cape Town

Info: http://www.ifhgs.org/pages/meeting_ichg.shtml





SASBi-SC events

SASBi-SC will be participating in the 24th National science festival Sci-fest taking place from 09-15 September 2020 in Makhanda (Grahamstown, Eastern Cape) under the theme: “Take root...nurture!”. There will be a **SASBi-SC symposium** a day before the SASBi/SAGS conference commences in 2021!!

The SASBi-SC team 😊



Editorial Team

This issue was brought to you by...



Ms. Bertha Baye (PhD candidate)



Mr. Kamangu S. Maeti (Intern)

Contact details:

Department of Biochemistry and Microbiology

P. O. Box 94

Rhodes University

Grahamstown

6140

Tel (office): +27 (0) 46 603 8072

Website: <https://www.rubi.ru.ac.za>