

ISSUE

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## About MSA

[Metabolomics South Africa](#) (MSA) is an independent, non-profit organization, governed by the committee of directors (CoD) and committees. MSA was formed in 2018, and as of July 2018, MSA is an International Affiliate of the [International Metabolomics Society](#), with shared goals and mission in advancing the field of metabolomics.

Metabolomics is considered a multidisciplinary omics science that aims to define the entire complement of metabolites within a biological system of interest. The momentum and maturation of metabolomics is undeniably evident, positively disruptive, and the field has visibly revolutionized the life sciences, both in fundamental and translational work.

The metabolomics community in South Africa comprises growing world-class research groups and facilities that are diverse in their research focus.

Special thanks to Chanel Pretorius (UJ) and Elmarie Davoren (NWU) for putting this *Newsletter* together.



This month in MSA News  
March 2025  
Issue 5

MSA News is a newsletter distributed to the Metabolomics community of South Africa and Africa.

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Join here

To become an MSA member, click on the icon or visit our website [Metabolomics South Africa](https://www.metabolomics-sa.co.za) (<https://www.metabolomics-sa.co.za/new-members>) to register.

# MSA Spotlight

## Spotlight and Congratulations to our MSA members



We are excited to announce that **Dr. Mokgadi Hlongwane**, Lecturer and Work Integrated Learning Coordinator in the Department of Chemistry at Tshwane University of Technology (TUT), is a recipient of the *Elsevier Foundation Chemistry for Climate Action Challenge award*. Her innovative project, *Development of Lessertia frutescens nodulating rhizobia as a bioinoculant to alleviate climate change effects in medicinal plants and crops*, was selected as one of the two winning projects for 2025. The announcement was made at the *9th Green and Sustainable Chemistry Conference* in Pune, India, in March 2025. Dr. Hlongwane's project aims to create a bioinoculant that enhances the resilience of medicinal plants and crops against climate change—an essential concern for communities in the Global South. The *Elsevier Foundation Chemistry for Climate Action Challenge* seeks to identify scalable solutions for climate-related challenges, especially in developing regions. As a winner, Dr. Hlongwane will receive a €25,000 grant to support her groundbreaking work, contributing to *Climate Action (SDG 13)* and *Gender Equity (SDG 5)*. We celebrate Dr. Hlongwane's achievement and look forward to the lasting impact of her work.



**Dr. Fidele Tugizimana** (University of Johannesburg) has been recognised among the world's **top 2%** of scientists, as per Stanford University's comprehensive global rankings across all disciplines. This remarkable honour reflects his outstanding contributions to the field of metabolomics and systems biology, locally and internationally. To further add to his impressive list of accolades, Dr. Tugizimana has also been appointed as a **Visiting Professor** at the University of Messina in Italy, where he will continue to expand his research and collaborate with international experts. We are incredibly proud of Dr. Tugizimana's accomplishments and look forward to his continued success.



Congratulations to **Abisola Regina Isaiah** (Doctoral student at the North-West University and VUMC) for winning the **Best Poster** award at the **2025 Ubuntu Proteomics Summer School!** This prestigious recognition highlights her exceptional research in the field of proteomics. The annual summer school brings together global experts and researchers to discuss the latest advancements in proteomics, bioinformatics, and systems biology. Abisola's award-winning poster stood out for its clarity, creativity, and scientific rigor, showcasing her dedication to advancing our understanding of complex biological systems. We are incredibly proud of her achievement and look forward to her continued success in the field!

# MSA Spotlight cont.



In a remarkable achievement, **Miss Kgalaletso Othibeng** (Biochemistry Department University of Johannesburg), a PhD candidate under Fidele Tugizimana in the [Tugizimana Lab](#), has been honoured with the *L'Oréal-UNESCO For Women in Science Award*. This prestigious award recognizes exceptional women scientists for their groundbreaking research and leadership in advancing science. Each year, it celebrates five outstanding women from around the world who have made significant contributions to science, particularly in the fields of life sciences, chemistry, physics, and mathematics. Miss Othibeng's award highlights her innovative work and her dedication to inspiring future generations of female scientists. We are thrilled to see her hard work and passion being globally recognized.



Finally, as we mentioned in the previous issue, **Prof. Aurelia Williams** (North-West University) has been elected to the Board of Directors of the International Metabolomics Society (IMS). This prestigious role allows Prof. Williams to contribute to the advancement of the metabolomics community through leadership and collaboration. As a director, she will serve an initial two-year term, with the potential for extension, dedicating approximately two hours per week to board activities, including bimonthly meetings and leading special projects such as organizing the annual meeting. Her involvement has already resulted in the onboarding of five MSA members to serve on respective committees of the international Society. This involvement will increase the visibility of MSA at the international level and fostering collaborations. We're proud to see Prof Williams take on this important leadership position.

**We look forward to following the continued success and impact of our outstanding team members!**

Would you like to nominate a candidate to feature on MSA interview in one of our upcoming newsletters? Fill out the survey by clicking on the icon below or by following the link (<https://docs.google.com/forms/d/1qe4fF0gJt5VVKZ3Kzt5kdao3poiF8kiGQ8fYyy3xv9w/edit>).

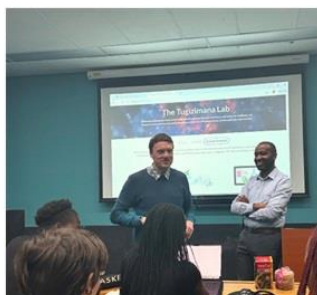
[CLICK HERE](#)

# International Collaboration

## International Collaboration at [the Tugizimana Lab](#): A Visit from Prof. Justin van der Hooft

**The Tugizimana Lab** at the University of Johannesburg recently had the honor of hosting Professor Justin van der Hooft, one of the international collaborators with the Tugizimana Lab in the Department of Biochemistry, in the Faculty of Science, University of Johannesburg (UJ). Prof. van der Hooft, who is also the Distinguished Visiting Professor (DVP) at the Faculty of Science (UJ), is internationally recognized for his pioneering work in the field of computational metabolomics and natural products research. Prof van der Hooft is one of the developers of computational metabolomics strategies and tools, and his visit was a significant milestone in reinforcing the ongoing collaboration between the Tugizimana Lab and his research group.

During his time in South Africa, Prof. van der Hooft delivered an insightful and engaging seminars and workshops on the latest advancements in metabolomics, with a special focus on emerging computational tools, which are helping in mining and interpreting metabolomics (spectral) data, in various applications. Furthermore, Prof van der Hooft delivered a public lecture that captivated the audience as he detailed cutting-edge technologies that enhance scientists' ability to analyse and interpret complex metabolic profiles with unprecedented precision.



# International Collaboration cont.

In workshop sessions, Prof. van der Hooft discussed various computational approaches and software tools that are revolutionizing the way researchers study natural products, from identifying bioactive compounds to understanding the metabolic pathways involved. His work underscores the critical role of integrating metabolomics with advanced data analysis techniques, enabling the discovery of novel compounds with therapeutic potential.



The visit provided an invaluable opportunity for members of the **Tugizimana Lab** to engage with Prof van der Hooft, exchange ideas, and explore future collaborations. The discussions were highly productive, highlighting the critical role of international partnerships in advancing scientific innovation and natural products research. This visit highlights the strong and ongoing relationship between the Tugizimana Lab and Prof van der Hooft, paving the way for even more exciting research opportunities. By fostering knowledge exchange and collaboration, these interactions continue to drive innovation and strengthen the global scientific community.



# MSA Society News



## Journal Club

The MSA Journal Club (JC) continues to thrive as a platform for students and professionals in the metabolomics field across South Africa. Taking place on Thursdays at 11 am, the JC has been a vibrant space where research is shared, discussions are sparked, and feedback from both peers and professionals is encouraged. This is an invaluable opportunity for students to gain exposure to presenting in front of a diverse audience and receive insights from experts in the field.

Since 2024, the MSA JC has expanded its scope to include industries, offering virtual demonstrations of innovative technologies. This year, we had the privilege of hosting **Jana Theron**, who shared her fascinating research on "Investigating ubiquinone-cycle fuels as a therapeutic intervention for NDUFS4 deficiency." We have also been fortunate to welcome world-renowned experts such as **Prof. Dr. Justin J.J. van der Hooft**, Assistant Professor in Computational Metabolomics at Wageningen University & Research in the Netherlands. With over 100 peer-reviewed articles to his name, Prof. van der Hooft shared his passion for the ingenious chemical structures created by nature, and his talk on "Computational Data Analysis Strategies in Metabolomics Studies" was a true highlight.

Stay tuned for our flyer with the Zoom link to join these exciting sessions. We invite all members, whether from academia or industry, to consider presenting on developments in the metabolomics field. Companies are also encouraged to reach out if they would like to give a demonstration or talk on new technologies or equipment that can advance metabolomics research. Did you miss any of our recent sessions? Or are you a new member of MSA? Don't worry – you can catch up on all the past presentations on our YouTube channel: [MSA Journal Club YouTube Channel](#).

We look forward to your participation and continued contributions to the growing metabolomics community!



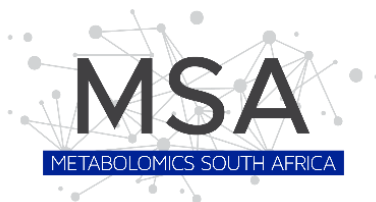
## MSA website and communications

The MSA communications committee has updated and revamped our website and social media platforms. Keep an eye out for updates about our upcoming events and useful links to past events and communications. If you are not a member yet, visit our website and become a member today. Keep up to date with all the MSA news and events by following us on social media (click on one of the respective icons to find MSA or alternatively search for us by typing 'Metabolomics South Africa' into the search bar of the respective platforms).



## Early Career Metabolomics South Africa

The Early Careers committee has made significant strides, hosting webinars on the Metabolomics workflow and organizing a successful career night at the Metabolomics Symposium held in September 2024 at UNISA. Moving forward, the committee aims to enhance its visibility, hosting career and metabolomics-related webinars, and recruiting new members to strengthen the community. In the mid-term, the focus will shift to developing an Early Career charter and standard operating procedures. The committee's long-term goals include offering training, networking opportunities, and mentorship to early-career researchers, as well as fostering industry collaboration and innovation. Key initiatives include increasing engagement through webinars, strengthening international collaborations, and promoting science communication. The committee aims to measure success through various KPIs, such as training sessions, mentorships, and funding secured for members.



### Recommended Articles:

- Adu-Amankwaah, F., Hussan, A., Amenuvor, G., Mavumengwana, V. and Sitole, L., 2025. Metabolic reprogramming in malignant A375 cells treated with a ruthenium (II) complex: insights from GCxGC-TOF/MS metabolomics. *Metabolomics*, 21(1), p.18.
- Isaiah, A.R., Luies, L., Williams, A.A., Vlok, M., Chegou, N.N., van Furth, M.T., van der Kuip, M. and Mason, S., 2024. Protocol for unified metabolomics and proteomics analysis of formalin-fixed paraffin-embedded tissue. *STAR protocols*, 5(4), p.103442.
- Makhubu, F.N., Mutanda, M., Madala, N.E. and Figlan, S., 2024. Metabolite profiling in ten bread wheat (*Triticum aestivum* L.) genotypes in response to drought stress. *Plant Stress*, 14, p.100680.
- Mildau, K., Ehlers, H., Meisenburg, M., Del Pup, E., Koetsier, R.A., Ortega, L.R.T., de Jonge, N.F., Singh, K.S., Ferreira, D., Othibeng, K. and Tugizimana, F., 2025. Effective data visualization strategies in untargeted metabolomics. *Natural Product Reports*.
- Mmotta, K., Sibanyoni, N.R., Allie, F., Sitole, L., Mafuna, T., Mashabela, M.D. and Mhlongo, M.I., 2025. Exploring the intricacies of plant growth promoting rhizobacteria interactions: an omics review. *Annals of Microbiology*, 75(1), p.5.
- Moyo, B., Mhlongo, M. and Sitole, L., 2024. Cytotoxic activity of *Ocimum tenuiflorum* crude extracts against an A375 malignant melanoma cell line. *South African Journal of Botany*, 175, pp.514-522.
- Mutanda, M., Shimelis, H., Chaplot, V., Madala, N.E. and Figlan, S., 2025. Association between agronomic traits and metabolite profiles on yield response and water use efficiency in newly developed wheat populations under drought stressed conditions. *Acta Agriculturae Scandinavica, Section B—Soil & Plant Science*, 75(1), p.2454389.
- Muvenda, T., Williams, A.A. and Williams, M.E., 2024. Transactivator of Transcription (Tat)-Induced Neuroinflammation as a key pathway in neuronal dysfunction: a scoping review. *Molecular Neurobiology*, 61(11), pp.9320-9346.
- Oyaluna, Z.E., Abolaji, A.O., Bodede, O., Olanlokun, J.O., Prinsloo, G., Steenkamp, P. and Babalola, C.P., 2024. Chemical analysis of Alliin-Rich *Allium sativum* (Garlic) extract and its safety evaluation in *Drosophila melanogaster*. *Toxicology Reports*, 13, p.101760.
- Zdouc, M.M., Blin, K., Louwen, N.L., Navarro, J., Loureiro, C., Bader, C.D., Bailey, C.B., Barra, L., Booth, T.J., Bozhüyük, K.A., Cediél-Becerra, J.D., (...), Tugizimana, F., (...), and Medema, M.H. 2025. MIBiG 4.0: advancing biosynthetic gene cluster curation through global collaboration. *Nucleic acids research*, 53(D1), pp.D678-D690.

## Missions

### Website and communications:

Run MSA's online platforms, retrieves and shares news from different MSA research groups and centers. Handles all communication.

### Training and conferences:

Responsible for training and conference activities of MSA. The committee enhances the availability and quality of training in metabolomics, identifies the training needs of the MSA growing community, and designs workshops to address such needs (both theory and hands-on sessions).

In alignment to the International Metabolomics Community, and in collaboration with various partners, this committee guides the implementation of pedagogical best practice in training initiatives, and coordinates all formal meetings of the MSA community.

### Early Careers:

Provides a forum for ECs of the MSA community. Aspirations include but are not limited to strengthen communication and collaboration, encourage opportunities and invention, support developmental learning, and enjoy professional growth.

### Industry engagement and partnerships:

Engage corporations and industry that market to the metabolomics community. Identify potential partners from industry, corporations, government institutions and other SA scientific societies.

### Treasury/ Finance:

Handles all finances and expenses of the MSA activities.

# MSA Committees

In 2023 communication was sent out to the MSA community to recruit volunteers to serve in our committees. The committees are steered by Convenors (voted in by members of the respective committees). As of 2024; there is a total of 5 committees.

## Website and communications committee

Ms Derylize Beukes (Convenor)

[Derelize.Beukes@nwu.ac.za](mailto:Derelize.Beukes@nwu.ac.za)

Members:

Molati Nonyane (ACGT), Anza-Tshilidzi Ramabulana (UNIVEN), Laneke Luies (NWU), Elmarie Davoren (NWU), Akhona Myoli (UJ), Claude Yasmine Hamany-Djande (UJ).

## Early Careers committee

Dr Msizi Mhlongo; [msizi.mhlongo17@gmail.com](mailto:msizi.mhlongo17@gmail.com) and

Dr Daniel Mutithu; [MTTDAN008@myuct.ac.za](mailto:MTTDAN008@myuct.ac.za)

(Convenors)

Members:

Bamise Adeosun (NWU), Teboho Tsotetsi (UJ), Motseoa Lephatsi (UJ), Mhlonipheni Msomi (UNISA), Lerato Nephali (UJ/Omnia), Lavhelesani Rodney Managa, Yasmine Hamany (UJ), Iliya Dauda Kwoji, Taiwo Obademi (University of Ibadan, Nigeria), Robert Koech (UP), Edwin Hlangwani (UJ), Laneke Luies (NWU).

## Treasury/Finance committee

Dr. Lungile Sitole (UJ, Convenor): [lungile.sitole@uj.ac.za](mailto:lungile.sitole@uj.ac.za)

Members: Dr Mokgadi Hlongwane (TUT)

## Training and conferences committee

Prof Aurelia Williams (Convenor)

[aurelia.williams@nwu.ac.za](mailto:aurelia.williams@nwu.ac.za)

Members:

Lungile Sitole (UJ), Edwin Madala (UNIVEN), Gerhard Prinsloo (UNISA), Shayne Mason (NWU), Fidele Tugizimana (UJ/Omnia), Tracy Snyman (Wits), Ilse du Preez (NWU), Saheed Sabiu (DUT), Lungile Khambule (WITS), Chinedu Anokwuru (BABCOCK University, Nigeria), Omotola Dada (Elizade University, Nigeria), Michael Rabela (UCT), Taiwo Crossby (Elizade University, Nigeria), Abisola Shoyele (NWU), Kgalaletso Othibeng (UJ), Barbara Moyo (UNIVEN)

## Industry engagement and partnerships committee

Prof Du Toit Loots; [Dutoit.Loots@nwu.ac.za](mailto:Dutoit.Loots@nwu.ac.za) and Dr John Becker; [john.becker@up.ac.za](mailto:john.becker@up.ac.za) (Convenors)

Members:

Jitcy Joseph (UNISA), Grace Ijoma (UNISA), Ntsako Mongwe (Wits), Roan Louw (NWU), Gabriel Mashabela (SU), Zander Lindeque (NWU), Francis Maimba (Finlays), Palesa Seele (Mintek), Nkobole, Nolitha (UNISA), Ntshembo Chris Macheke (UJ), Mcebisi Mabuza (UP), Maria Mashigo (TUT), Mohammed Balogun (CSIR).

Want to get involved?

If you would like to actively participate in growing the MSA community, please do not hesitate to reach out to one of the Convenors.





## We want to hear from you.

Thank you for being a part of MSA! Your feedback is extremely valuable to us, and we welcome feedback and suggestions.

Your input is vital, so please take the time to share your thoughts with us. Should you have any questions or would like to get involved, do not hesitate to contact us:

[metabolomicssouthafrica@gmail.com](mailto:metabolomicssouthafrica@gmail.com)

# Upcoming Events - 2025

## Upcoming Events & Training Opportunities:

**April/July 2025**

*Train the Trainer – Data Analysis*

*Pre-Analytical Workshop*

**June 2025**

*Metabolomics 2025 International Conference*

**September 2025**

*Preconference Workshop/Conference/AGM*

**Keep an eye out for communications regarding upcoming events for 2025!**

TO OUR SPONSORS,  
*Thank You!*