

Science In The Savannah 2026

US - Africa Conference Series

"Empowering Innovation and Collaboration in

Nanoscience & Sustainability" April 13 - 16, 2026



Title Science in the Savannah Conference: *Date: April 13 - 16, 2026*

Monday Apr 13, 2026 - 1:30 pm EAT – Fedora 5&6, 2nd Floor

Session Chairs: Johan Foster and Martin Thuo

1:00 pm - Registration

1:30 pm - Welcome and Introduction - Prof. Johan Foster and Prof. Martin Thuo

1:45 pm - Keynote: Prof. Jackson Muthengia- *Cementitious Materials*

2:05 pm - Plenary Lecture: Archana Luximon - *Building Sustainable Infrastructure and Nanoscience in Africa*

2:45 pm - Keynote: Prof. Michael Bortner - *Advanced Manufacturing with Cellulosics*

3:15 pm - Prof. Justus Ndukaife

3:40 pm - Dr. Marie Andrea Laetitia - *Agricultural Waste-based Multifunctional Patch on Janus Textile Support for Cutaneous Leishmaniasis Wounds*

4:00 pm - Alana Jones - *Stoichiometry-Driven Magnetic Frustration in Triangular Lattice Complexes*

4:20 pm - Bill Adamowski - *The 'third way': Teaching Research and Entrepreneurship*

4:45 pm - *Panel Discussion*

Tuesday Apr 14, 2026

Session Chairs: Benjamin Kwasa and Dennis Karanja

8:00 am - Keynote: Yahya Choonara

8:30 am - Keynote: Dr. Desmond Klenam - *Ultralow Friction in Structural Alloys Enabled by Novel/Frugal Biowaste-Derived Graphene Nanocomposite Films*

9:00 am - Plenary - Prof. Christoph Weder - *Polymers*

9:50 am - Prof. Martin Seifrid - *Toward Generalizable, Data-Efficient Self-Driving Laboratories for Organic Materials*

10:15 am - Naji Majoud - *Dynamic Separation of Water-oil Emulsion via Phase Inversion using Super-hydrophobic Cellulose Paper Surface Treated with Octadecyltrichlorosilane*



10:35 - Break

Session Chairs: Marie Laetitia and Dorah Muthee

Sessions on Complex Particle Systems:

10:45 am - Dr. Elena della Valle (COMPASS Managing Director) - *COMPASS Center Overview & Collaborative Initiatives* - 20 min + Q&A

11:10 am - Keynote: Jason Green - *Assembling Dissipative Materials by Amplifying Fluctuations*

11:40 am - Dr. Bridgit Mutuma - *Impact of Relative Humidity on the Response of Hollow Tin Dioxide Microsphere-Based Impedimetric Sensors*

12:05 - Prof. Jackson Muthengia - *A Review of MICP-Based Self-Healing Concrete: Quantitative Durability Gains and Implementation Challenges*

12:35 - Kody Whisnant - *Structural Complexity Quantification of Network Materials Using a Graph Theoretical Approach*

12:55 - Lunch Break (Hang Posters)

Session Chairs: Martin Thuo and Alana Jones

2:00 pm - 5 pm - Session on Complex Particle Systems

2:00 pm - Plenary Lecture - Prof. Nicholas Kotov – *Nanoscale Networks and their Design using Graph Theory*

2:50 pm - Keynote: Prof. Paul Bogdan - *AI/ML and Graph Theory*

3:20 pm - Keynote: Prof. Orlin Velev - *Soft magnetically responsive microbeads, nanoassemblies and active microstructures*

3:50 pm - Prof. Johan Foster - *Production and Application of Nanocellulose*

4:15 pm - Dr. Devesh Bekah - *Engineered Nanomaterials for Enhanced Crop Nutrition and Pathogen Suppression*

4:40 pm - Panel Discussion / Audience Q&A / Wrap-Up - All speakers from the Complex Particle Session - Moderated by Martin Thuo.

5:00 pm - Poster Session

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6:00 pm - Conference Dinner

Wednesday, Apr 15, 2026

Session Chairs: Michael Bortner and Edwin Fohtung

8:00 am - Keynote: Christian Nijhuis - *Towards Upscaling Brain-Inspired Information Processing with Molecular Switches and Thin Organic Films*

8:30 am - Keynote: Shelley Claridge - *Precision Polymer Sheets for Nanostructured Soft Matter*

9:00 am - Plenary - Paul S. Weiss

9:50 am - Prof. Samendra Sherchan - *Molecular Detection of Human Immunodeficiency Virus RNA in Maryland Wastewater.*

10:20 am - Student Flash Talk: Theoneste Muyizere - *Enzyme-Activated DNA Nanocircuit for Tumor Cell-Selective, Multiplexed Molecular Imaging*

10:35 am - Break

Session Chairs: Alana Jones and Abdoulaye Ndao

10:45 - Keynote: Prof. Edwin Fohtung - *Operando Coherent X-ray Imaging of Defect-driven Phase Transitions and Strain Dynamics in Photocatalytic Bi_2WO_6 Nanoflakes*

11:10 - Keynote: Prof. Nicholas Musyoka - *Synthesis of zeolite-templated Carbons using Unconventional Carbon Precursors and Waste-derived Zeolite Feedstocks*

11:35 - Prof. Sho Fuji - *Chemistry of Photothermal Microbubbles on Stainless Steel Surfaces and Their Potential Application to Laser Processing*

12:00 - Dr. Manza Atkinson - *Accessible Strategies for Structure Determination: Cocrystallization of Elusive Organic Molecules*

12:25 - Dr. Mark Njogu Kimani - *Kenya's Fungi as a Source of Drug Leads*

12:50 - Lunch Break

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Session Chairs: Sho Fujii and Bridgit Mutuma

2:00 pm - Keynote: **Bill Adamowski** - *ATLAS Institute and Global Academic Entrepreneur*

2:30 pm - Keynote: Christian Dimkpa - *Do Material Properties Play a Role in Agricultural and Environmental Outcomes?*

3:00 pm - Keynote: Dr. Joseph Mwititi - *Bridging Theory and Practice in Cement Science*

3:25 pm - Dr. Cynthia Mwendu - *Harnessing AI for Personalized and Multi-vocational Skills Learning and Improved Employability among Marginalized Youth*

3:50 pm - Dr. Mouhamad Diallo - *Mitigating Battery Cell Failure: Role of Ag-Nanoparticle Fillers in Solid Electrolyte Dendrite Suppression*

4:15 pm - Dr. Victor Odari

4:40 pm - Dr. Ravaka Andriatsitohana - *Optimizing Biochar Application to Enhance Water Retention and Reduce Runoff and Erosion in Tropical Ferralitic Soils under Simulated Rainfall*

5:00 pm - Poster Session

Thursday Apr 16, 2026

Session Chairs: Victor Odari and Yahya Choonara

8:00 am - Keynote: Dr. Samuel Chigome

8:30 am - Keynote: Abdoulaye Ndao - Optics

9:00 am - Keynote: Michael Schulz - *Unravelling Metal-Polymer Binding Thermodynamics to Advance Critical Mineral Production*

9:30 am - Dr. Dorah Muthee - *Multi Technique Characterization of Quarry Waste for Sustainable Industrial Utilization*

9:55 am - Prof. Wendy Maxakato - *Electrocatalyst for Fuel Cell Technology*

10:20 am - Richard Damoah - *Effect of Biomass Burning Emissions to Air Quality in Africa*

10.45 am Break

Session Chairs: Archana Bhaw-Luximon and Michael Schulz

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11:00 am - Prof. Benjamin Kwasa - *Systems View to Recycling and Health care*

11:20 am - Dr. Moses Thiga - *AI in Higher Education and Africa*

11:45 am - Daisy Kiptoo - *Timed Physical Keys for Secure Supply Chain*

12:05 pm - Martin Thuo - *Convergence of Cognitive Diversity and Thermodynamics of the Mind*

12:15 pm -Closing ceremony: Jackson Muthengia, Martin Thuo, Elena Della Valle and Johan Foster

12:45 pm - END

Parallel - Complex Particles and Graph Theory Workshop - Dickson & Daisy

Parallel - Building a science enterprise - Bill Adamowski.

Posters Presentations:

1. Abhishek Bathina	9. Faith Messo	17. Run Pan
2. Alex Gatiba	10. George Simba Nyamato	18. Sangwok Bae
3. Anthony Kinyua	11. Genson Muriithi	19. Sean George
4. Atte Kadoma	12. Giulio Diracca	20. Serah Wanjiku Njoroge
5. Beatrice Mwangi	13. Haley Bortner	21. Tshepiso Moremedi
6. Ephraim Muriithi Kiarri	14. Harrison Shagwira	22. Veronica W. Wayayi
7. Faith Messo	15. Lianett Pineda	23. Winfred Mutwiri
8. George Simba Nyamato	16. Melissa Deinys	

Beatrice Mwangi

Anthony Kinyua

Nancy Mweni

Genson Muriithi



Titles:

1. Topological Data Analysis of Self-Organized Soft Matter Networks
2. Nickel-supported on Molybdenum-based MXenes for plastics upcycling to fuel and lubricants
3. Homefront Factors (HFF) in the Building Bridges of Global Nanoscience Research Utilizing Initiatives that Support Strategic Training of Adaptable and Integrated Nuclear Workforce (SUSTAIN) Development for Sustainable Energy, Environment, Climate Change and Health for Institutional Growth and Global Context
4. Hydrolytic crack growth and embrittlement in poly(ethylene terephthalate)
5. *Bacillus* spp. in Blended Cement Systems: Self-Healing Potential and Durability Challenges. A Review.
6. Shotgun metagenomic insights into antimicrobial resistance attenuation during black soldier fly larvae treatment of dropper sheep manure
7. A systems engineering framework for quantification of recovery of REEs from e-waste
8. Transfer hydrogenation of ketones catalysed by (phenoxy)imino/amino nickel(II) complexes
9. Microbial-Induced Degradation of Blended Cements systems: A review on Durability Trends for Low-Carbon Infrastructure
10. GRAS Nano-Enabled Delivery of Phytohormones to Enhance Plant Root Growth for Sustainable Agriculture
11. Investigation of the effect of soft segment concentration on acrylated polyurethanes for vat photopolymerization
12. Multi-Objective Optimisation of WAAM Process Parameters for SS316L Using Finite Element Analysis and Artificial Neural Networks
13. Influence of Fiber Structure on Inverted Thermal Degradation (iTd)
14. Sustainable management of pathogenic fungal threats in mangrove ecosystems: feasibility of MgSUN nanoparticles
15. Mechanistic Synergy in Low-Clinker Ternary Cement Systems: Integrating Limestone Filler, Natural Pozzolan Reaction, and Stone-Cutting Dust for Strength Efficiency and Carbon Reduction
16. The effect of casting methods on the development of low-density stainless steels for biomedical implants

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17. Engineering Nanostructured Bimetallic Core-Shell Catalysts to Enable Durable and Clean Natural Gas Vehicle Exhaust Aftertreatment
18. Luminescence of Aramid Nanofibers
19. Process window for LPBF to facilitate fabrication of unsupported overhanging features and channels
20. A Cost-Effective Electrochemical Strategy for Multi-Detection of Small Drugs and Emerging Pollutants in Water Samples
21. Sustainable Water Treatment Using Thyme-Extract Synthesized Copper Nanoparticles for Efficient Adsorption of heavy metals
22. Assessment of a Fish Kill in Lake Jipe and Implications for Fisheries and Wildlife in Tsavo West National Park
23. Insecticide resistance profiles of *Anopheles Arabiensis* and Relationship with Microsporidia MB Infection in Two Rice Agroecosystems in Kenya.