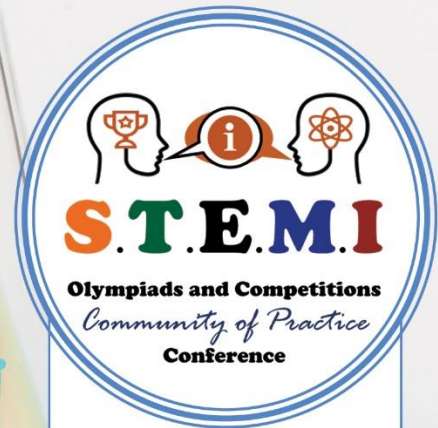


# 2023 STEMI Community of Practice Conference

## THEME:

*“Preparing learners from disadvantaged communities for the future of work through STEMI Olympiads and competitions.”*



## CALL FOR PAPERS



science & innovation  
Department  
Science and Innovation  
REPUBLIC OF SOUTH AFRICA



SAASTA  
South African Agency for Science  
and Technology Advancement

## CALL FOR PAPERS

### 2023 STEMI COMMUNITY OF PRACTICE (CoP) CONFERENCE

July 2023

HOSTED BY

DEPARTMENT OF SCIENCE AND INNOVATION

in collaboration with

SOUTH AFRICAN AGENCY FOR SCIENCE AND TECHNOLOGY ADVANCEMENT

South Africa

### CONFERENCE SCOPE

The **STEMI Community of Practice Conference** is a biennial conference that is dedicated to the advancement of science, technology, engineering, mathematics, and innovation (STEMI), and related arts, Olympiads and competitions in South Africa, by creating a community of practice where best practices are identified, benchmarked and shared. This is achieved by bringing Olympiad and competition organisers and other industry stakeholders together to present academic research and academic non-research, demonstration workshops and poster sessions to facilitate a platform for engagement between parties.

**Objectives** of the conference are:

- To positively contribute towards a STEMI-driven culture.
- To create a platform for collaborative problem solving.
- To act as a catalyst between people and organisations.
- To facilitate the development of tools to improve the connection between science and society.
- To assist in transforming innovative ideas and actions into benchmarked practices.

### WHO SHOULD ATTEND THE CONFERENCE?

The audience for the conference comprises of STEMI Olympiads and competitions organisers and all stakeholders that have either a direct or an indirect impact on this niche, such as **educators, academics, researchers, science centres, government departments, science agencies, and professional bodies**. However, anyone involved or interested in science engagement is warmly welcomed to attend.



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ASTEMI

SCIENCE TECHNOLOGY ENGINEERING  
MATHEMATICS INNOVATION

OLYMPIADS & COMPETITIONS



SAASTA

South African Agency for Science  
and Technology Advancement

## 2023 CONFERENCE THEME

### ***“Preparing learners from disadvantaged communities for the future of work through STEMI Olympiads and competitions”***

With the aim of advancing STEMI, and related arts, in South Africa, we invite authors to submit research papers or talks on the following sub-themes:

#### **1. Transforming the landscape through partnerships and collaborations**

How can we use partnerships and collaborations to reach disadvantaged communities so that they benefit and are prepared for STEMI related future of work?

#### **2. Skills for the future of work**

Technology advances at a very rapid rate. How could the 21<sup>st</sup> century skills be used, developed or advanced to support participants? How can Olympiads and competitions equip disadvantaged communities with 21<sup>st</sup> century skills for the future of work?

#### **3. Bridging the digital divide towards *Education without Boundaries***

How can we use STEMI Olympiads and related competitions to narrow the digital divide experienced by learners from disadvantaged communities so they are supported to perform optimally, in synergy with new technologies?

#### **4. Volunteerism – a vehicle for sustainable growth**

Working towards self-sustainable initiatives. How can volunteerism from community members, alumni of Olympiads and related competitions, and STEM professionals, provide continuous support in the form of coaching, mentoring, and any other form of human or material support?

## CONFERENCE OVERVIEW

The conference is a three-day event that will include the following sessions:

- **Plenary Sessions**

These will address current research or experience on topics that have bearing on STEMI Olympiads and competitions, science education, and the broader teaching and learning environment.

- **Panel Discussion Sessions**

These will provide delegates with the opportunity to engage speakers on selected topics.

- **Parallel Sessions**

These concurrent sessions will include discussions on current topics, and demonstration workshops on best practices for skills transfer.

- **Poster Presentations**

A poster presentation is a way to communicate research or facilitate understanding of a topic using a short and concise format. It usually includes two elements - a poster or a few posters about the same research and brief explanations where required.

## PRESENTATION CATEGORIES AND SUBMISSION REQUIREMENTS

Authors are limited to two papers. The submissions that will be accepted for review should be in one of the following formats:

- CATEGORY 1: ACADEMIC PAPER

**Definition:** An academic paper presents original research that may or may not extend existing research in a discipline. A paper will usually include the following elements: a title page, Abstract, Introduction, Results, Discussion, Conclusion, and References. It will also include at least (1) the formulation of objectives; (2) data collection; (3) discussion of findings; and (4) recommendations – including any advancement of knowledge. Basically, it is a paper intended for publication in a scientific or scholarly journal, contributing new knowledge to the discipline.

**Description:** This category is reserved for relevant research-based work.

**Allotted Timeslot:** A 30-minute independent presentation slot and a 10-minute 'question and answer' session.

**Submission Requirements:**

	<b>SUBMISSION</b>	<b>DEADLINE DATE</b>
<b>1</b>	<p><b><u>Proposal:</u></b> The research proposal should provide a summary of the proposed paper. It may be up to eight (8) pages long. The proposal should have the following headings:</p> <ul style="list-style-type: none"> <li>• Title - maximum 25 words</li> <li>• Abstract</li> <li>• Introduction</li> <li>• Research Question</li> <li>• Methodology</li> <li>• Conclusion / Recommendations</li> <li>• Important references from the article</li> </ul> <p>The abstract should be a maximum of 250 words, followed by the headings, which should be short and to the point. The proposal should include four to six keywords.</p> <p><u>If selected to be presented at the conference, steps 2 and 3 are applicable:</u></p>	30 September 2022
<b>2</b>	<p><b><u>PowerPoint Presentation:</u></b> The presentation should provide key points and infographics only, based on the academic paper.</p>	28 April 2023
<b>3</b>	<p><b><u>Full Academic Paper:</u></b> The full paper should include findings and be in line with the format provided.</p>	04 August 2023

- CATEGORY 2: ACADEMIC NON-RESEARCH PAPER

**Definition:** Scientific correlations (e.g. a statistical comparison of success rates of students from Centre X and Centre Y with explanations)

**Commentaries:** these are assessments of, or reflections on existing research; or draw together (and comment on) patterns from existing research (e.g. research that carries recommendations for the improvement of learning strategies). They do require/depend on academic effort and endeavour but they may not be novel or original research *per se*. Hence, they are academic but not new research.

**Description:** This category is reserved for non-academic papers or essays that focus on experience and independent views on relevant topics, including but not limited to case studies and best practice presentations.

**Allotted Timeslot:** A 20-minute independent presentation slot and a 10-minute 'questions and answer' session.

**Submission Requirements:**

<b>SUBMISSION</b>	<b>DEADLINE DATE</b>
<p><b><u>1 Proposal:</u></b> A one-page long proposal should provide a summary of the non-academic paper or essay. The proposal should include four to six keywords.</p> <p><u>If selected to be presented at the conference, step 2 is applicable:</u></p>	30 September 2022
<p><b><u>2 PowerPoint Presentation:</u></b> The presentation should provide key points and infographics only, based on the non-academic paper or essay.</p>	28 April 2023

- CATEGORY 3: DEMONSTRATION WORKSHOP

**Definition:** In such submissions, participants are given the opportunity to demonstrate most recent progress or developments, and interact with the conference attendees in an informal way, such as a practical demonstration, frequently involving relevant equipment or a mock-up.

**Description:** This category is reserved for demonstrations (show-and-tell) on best practices in STEMI and related arts including learning and skills support development.

**Allotted Timeslot:** A 45-minute long demonstration slot during parallel sessions. This session will include interactions between the facilitator and attending delegates.



Submission  
Requirements:

	<b>SUBMISSION</b>	<b>DEADLINE DATE</b>
<b>1</b>	<p><b><u>Proposal:</u></b> A one-page long proposal on what will be presented and the skills transfer that the workshop(s) will facilitate. The proposal should include four to six keywords.</p> <p><u>If selected to be presented at the conference, step 2 is applicable:</u></p>	30 September 2022
<b>2</b>	<p><b><u>Workshop:</u></b> This should be a document, which could include a PowerPoint presentation, describing the following:</p> <ul style="list-style-type: none"> <li>• Topic</li> <li>• Presentation method</li> <li>• Skills transfer details</li> <li>• Interactive components (if applicable)</li> <li>• Resources for distribution (if applicable)</li> </ul>	28 April 2023

- **CATEGORY 4: POSTER PRESENTATION**

**Definition:** A **POSTER** is a detailed visual presentation of an academic paper. In other words, a poster presentation is a way to communicate the presenter's research or understanding of a topic in a short and concise format. It usually includes two elements - a poster or a few posters, and a brief (usually no more than two minutes) explanation.

**Description:** This category is reserved for poster submissions.

**Allotted Timeslot:** A 10-minute long poster presentation. **This session will include interactions between the facilitator and attending delegates.**

Submission  
Requirements:

	<b>SUBMISSION</b>	<b>DEADLINE DATE</b>
<b>1</b>	<p><b><u>Proposal:</u></b> A poster on what will be presented. The poster should include the following:</p> <ul style="list-style-type: none"> <li>• Aim and objectives/research question</li> <li>• Literature review (very brief)</li> <li>• Methodology</li> <li>• Significant findings (if applicable)</li> </ul> <p><u>If selected to be presented at the conference, step 2 is applicable:</u></p>	30 September 2022

## **2 Poster Presentation:**

The presentation should provide key points and infographics only, based on the academic paper to which the presenter speaks. 28 April 2023

### SUBMISSION FORMAT REQUIREMENTS (Pre-set templates are available for convenience)

<b>Proposals</b>	<b>Identifier:</b>	Title of Academic Paper / Academic Non-Research Paper / Workshop / e-Poster Author's particulars (including contact details) Selected conference sub-theme Authors are encouraged to include their ORCID identifier number (if available)
	<b>Formatting:</b>	A4 page (Academic Paper / Academic Non-Research Paper / Workshop) Poster to fit onto a PC Screen or 65 cm x 90 cm board Arial Narrow Font, Point 11 1.5 Line spacing Avoid the use of footnotes
	<b>Length of Proposal:</b>	Maximum of 8 pages (Academic Paper) 1 full page (Academic Non Research Paper / Workshop/ Poster)
	<b>Reference Style:</b>	Harvard (standard)
<b>Presentations</b>	<b>Software:</b>	MS PowerPoint
	<b>Number of slides:</b>	At author's discretion (must keep within the allotted timeslot)
	<b>Formatting:</b>	Arial, Point 24 or larger 1.5 Line Spacing
	<b>Layout per slide:</b>	(Suggested for readability) <b>Text:</b> 33 words per slide at no more than 10 to 12 per line. <b>Infographics:</b> At author's discretion

### SUBMISSION PLATFORMS

<b>Proposal</b>	<b>Online:</b>	Automated template available on the NRF SAASTA website: <a href="http://www.saasta.ac.za/conferences/stemi-conference/">http://www.saasta.ac.za/conferences/stemi-conference/</a>
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Submission requirements for the presentations will be communicated to the speakers.

## REVIEW PROCESS

The 2023 STEMI CoP Conference organising committee welcomes submissions on any of the sub-themes and presentation categories as listed above. The proposal will be reviewed by the appointed representatives to determine their suitability for presentation at the conference.

The proposals will be reviewed through the following steps:

- a. Pre-selection conducted by the editorial team (review 1)
- b. Associate Editor selection and reports
- c. Associate Editor review of re-submissions and reports (review 2)
- d. Editorial team makes decisions based on reports (at c) and contacts applicants (acceptance, acceptance with corrections, and rejections) (review 3)
- e. **Repeat a and b ONLY for publication (only instance of review 4)**
- f. Copy-editing of presentations and publications

NB: No marketing submissions will be accepted. Authors are allowed to mention names of organisations, projects, campaigns, products and etc. with the purpose of addressing/highlighting key issues/aspects relating to the main conference theme and/or subthemes. In cases where marketing is identified by the editorial team the authors will be encouraged to resubmit a revised proposal.

Potential speakers will be advised of the outcome by 03 February 2023. Once a proposal has been accepted, the author will be required to compose a presentation for the conference, as well as their full paper in the case of academic paper presentations, by the deadline dates stipulated above.

Successful full-length scientific papers may be recommended for submission to the South African Journal of Science and/or other relevant journals approved by the DHET

## SPEAKER TRAVEL ARRANGEMENTS (provided the conference is a physical or hybrid conference)

### National:

The conference organising committee will provide all selected South Africa based speakers with accommodation, as well as flights, where required. Accommodation includes daily breakfast and dinner. Lunch will be provided at the conference.

### International:

All international speakers will be provided with accommodation. Delegates will however have to make their own flight arrangements. Shuttles and transport arrangements within South Africa will be provided.



## CONTACT INFORMATION

For any enquiries related to the **paper submissions**, please contact:

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For any enquiries related to the **conference**, please contact:

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## EDITORIAL BOARD

### CHIEF EDITOR

Dr John Butler-Adam

After graduating from the (then) University of Natal in 1972, Butler-Adam was awarded a scholarship to study for a PhD at the Pennsylvania State University. He completed his doctoral thesis in Geography/Environmental studies in 1976,

In 1979, he was appointed as Senior Lecturer in the Institute for Social and Economic Research at the University of Durban Westville. He became the Deputy Director, the Acting Director and then the substantive Director and University Research Professor. In these positions, he oversaw the growth of the Institute from a research staff of four people to a total of 20 researchers. While in the Institute, he authored or co-authored some 50 refereed publications, more than half of which were research-based monographs

In 1991, he was appointed Vice Principal (Academic and Research) for the university and, in 1993, Deputy Vice-Chancellor in addition to his Vice Principalship.

The Ford Foundation appointed Butler-Adam as Programme Officer for Post-School and Higher Education, where he served with responsibilities for Southern Africa from 2005 to 2012, He was then selected as Editor-in-Chief of the *South African Journal of Science* and was concurrently advisor for the Vice Principal (Research and Postgraduate Students) in the University of Pretoria.

He subsequently worked for the Kresge Foundation as a researcher, writer and editor, and for two years Chaired the ASSAF-DHET review of Education journals published in South Africa.

### ASSOCIATE EDITORS

Associate editors will be appointed in all STEMI categories, including the related arts.