



Scholars  
Program



**AIMS**

African Institute for  
Mathematical Sciences  
NEXT EINSTEIN INITIATIVE

## **Terms of Reference - Midterm Evaluation**

**The Mastercard Foundation Scholars program  
at the African Institute for Mathematical Sciences**

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# 1. Background

## 1.1. African Institute for Mathematical Sciences (AIMS)

Established in 2003 in Cape Town, South Africa, AIMS is a pan-African network of centres of excellence offering postgraduate education, research, and public engagement for the development of Science, Technology, Engineering and Mathematics (STEM) in Africa. AIMS recruits Africa's most talented university graduates to pursue a one-year fully funded Master's in Mathematical Sciences in a highly interactive and culturally diverse learning environment. AIMS attracts world-class lecturers and research fellows on a volunteer basis to further improve the learning experience for students.

Building on the success of its first centre in South Africa, AIMS launched the Next Einstein Initiative (NEI) in 2008 to scale up and roll out the AIMS model across the continent. Five additional centres were established in Senegal (2011), Ghana (2012), Cameroon (2013), Tanzania (2014), and Rwanda (2016).

## 1.2. The Mastercard Foundation Scholars Program at the African Institute of Mathematical Sciences

Launched in 2015, the Mastercard Foundation Scholars program at AIMS is a five-year, \$25 million initiative that provides postgraduate training in mathematical sciences to economically disadvantaged but academically talented young people in Africa who demonstrate a commitment to give back to their communities. The program is multi-country program being implemented by a network organization. Within the programme are two pilots: the cooperative education programme and the Cameroon teacher-training programme. Overall, the programme focuses on the following three inter-related areas:

### Program Area 1: Advanced training for employment

The Mastercard Foundation Scholars Program at AIMS provides fully funded bursaries for eligible African youth to pursue a one-year Master's in Mathematical Sciences at any of the six AIMS centres or the 18-month Co-op Master's in Mathematical Sciences at AIMS Senegal, Cameroon or Rwanda. Mastercard Foundation Scholars at AIMS represent a cross section of African youth including women (at least 30%) and men from rural and urban areas and various socio-economic, cultural and religious backgrounds. This program area seeks to:

- a) Provide a bridge to support the transition of graduates to careers in STEM through the cooperative education pilot programme;
- b) Increase the human capital in STEM in Africa; and
- c) Build a network of trained and motivated graduates with technical expertise in mathematical sciences and leadership skills, ready to join the workforce and tackle the development challenges of Africa.

## **Program Area 2: Improved quality of mathematics education**

The program is piloting a teacher training initiative in Cameroon in partnership with three Higher Teacher Training Colleges and the Government of Cameroon. Using a “train-the-trainer” model, the teacher training initiative seeks to improve the teaching and learning of mathematics in secondary schools across Cameroon. Through this model, 89 master trainers will be provided with the relevant skills and knowledge to train 3,120 mathematics teachers (1,920 in-service and 1,200 pre-service) responsible for 1.7 million students<sup>1</sup>. As a result, the teacher training initiative aims to increase the transition rates of students choosing to pursue post-secondary education in STEM, with a particular focus on girls, thereby building a pipeline of potential scholars’ for programme area 1.

## **Program Area 3: Global coordination and advancement of STEM for development**

The Mastercard Foundation Scholars Program at AIMS also provides institutional support to the AIMS network more broadly, namely in the development of communications, public engagement, partnership building, gender mainstreaming, and monitoring & evaluation strategies to facilitate policy dialogue for increased investment in STEM education.

## **2. Purpose of the Evaluation**

This midterm evaluation seeks to take stock of the Mastercard Foundation Scholars program at AIMS from its inception to date, with the aim to:

- 1) Evaluate the progress made towards achieving planned outcomes in each program area and identify any early impacts;
- 2) Assess the relevance of the program design, including the theory of change; and
- 3) Provide recommendations for program implementation going forward to ensure greater impact and the achievement of planned results.

## **3. Scope of the Evaluation and Key Evaluation Questions**

### **3.1. Scope**

The midterm evaluation will focus exclusively on the Mastercard Foundation Scholars Program at AIMS and its three program areas from inception in 2015 to present within the context of the broader AIMS network. The evaluation will be formative in nature and apply the OECD DAC criteria for evaluating development assistance (i.e. relevance, effectiveness, efficiency, impact and sustainability) to assess the Mastercard Foundation Scholars Program at AIMS. The following evaluation questions have been

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<sup>1</sup> AIMS strives to target 30% women for both master trainers and participating teachers in the training program.

proposed to help guide the selected evaluators. However, AIMS recognises that these might spur additional questions that the evaluators may wish to explore further.

### 3.2. Key evaluation questions

The table below presents the key evaluation questions.

OECD DAC Evaluation Criteria	Key Questions
Relevance	<ul style="list-style-type: none"> <li>- To what extent is the Mastercard Foundation Scholars Program at AIMS relevant to the development priorities of Africa, specifically in terms of higher education and STEM and the advancement of women and girls in STEM?</li> <li>- To what extent are the objectives of the program still valid?</li> <li>- Are the activities to date and the outputs achieved thus far for each program area consistent with and how are they contributing to the program’s overall goal, intended impacts, and attainment of its objectives? What signs indicate this?</li> <li>- In hindsight, how would program personnel have altered the design or implementation of the Scholars Program at their institution and as a whole?</li> <li>- If AIMS was to have an opportunity to extend the partnership with the Foundation, what would that ideally look like?</li> </ul>
Effectiveness	<ul style="list-style-type: none"> <li>- Have program activities been implemented as planned? Have the targets been met? Describe variances.</li> <li>- What is the status of target outputs – is their implementation on track? Have they/are they being rolled out successfully and as intended? How are the key program components being operationalized, implemented, and monitored?</li> <li>- To what extent are the stated objectives in each program area likely to be achieved?</li> <li>- How appropriate are the implementation modalities?</li> <li>- How effectively is the program managed? What are the challenges, opportunities, benefits, costs or successes? How have these been managed or leveraged? What challenges remain?</li> <li>- How adequate are the Monitoring &amp; Evaluation mechanisms? Are they sufficient for monitoring the gender equality and inclusion elements of the program?</li> <li>- How is the program nurturing scholars and their desire to give back? Are there any noted differences between girls and boys?</li> <li>- What types of partnerships should AIMS be considering to enter with other institutions in the future that would strengthen the Scholars Program as a whole?</li> </ul>
Efficiency	<ul style="list-style-type: none"> <li>- Were activities undertaken to date conducted in the most cost-effective and timely manner? Looking forward to a hypothetical new phase of the Program, are there recommendations to improve cost-effectiveness?</li> <li>- How well has the program used its resources to deliver the target outputs? Has the program identified any savings or efficiencies, whether realized or potential? Describe these.</li> <li>- How adequate are the program resources available (human, financial etc.) relative to the target outputs?</li> </ul>

OECD DAC Evaluation Criteria	Key Questions
	<ul style="list-style-type: none"> <li>- Is the current budget adequate for addressing the gender equality and inclusion needs of the program?</li> </ul>
Impact	<ul style="list-style-type: none"> <li>- What are the early signs of impact, if any? How do the results achieved for women and girls compare to those achieved for men and boys? Are there any observed differences based on the socio-economic background of scholars?</li> <li>- What is the overall impact of the program on:               <ul style="list-style-type: none"> <li>o AIMS Alumni;</li> <li>o Higher education in Science Technology Engineering and Mathematics (STEM) in Africa, including the advancement of women and girls; and</li> <li>o AIMS as an organization</li> </ul> </li> </ul>
Sustainability	<ul style="list-style-type: none"> <li>- To what extent has AIMS received commitment from African Governments to support its programs?</li> <li>- Have any policy changes been observed in the STEM education sector of AIMS host countries as a result of this grant?</li> <li>- To what extent are any early results observed in gender equality and inclusion likely to endure following this grant?</li> </ul>

#### 4. Audience of the Evaluation Findings

The primary audience for the midterm evaluation findings is AIMS. The findings will assist AIMS in improving the implementation of the program going forward to ensure greater impact and sustainable results. The findings will also contribute to Mastercard Foundation’s learning in its Scholar Program and Teacher Training Initiative. Secondary audience will include other local and international Mastercard Foundation Scholars program partners and stakeholders who will benefit from lessons learnt and good practices emerging from the midterm evaluation.

Findings from the midterm evaluation will be shared with partners and stakeholders through a learning workshop and a final report.

#### 5. Evaluation Approach and Methodology

The midterm evaluation will require a variety of data collection and analysis methods for both qualitative and quantitative data to ensure a comprehensive evaluation exercise. The evaluators will be expected to triangulate the information collected to ensure accuracy. A gender equality and inclusion lens should be applied to all analysis. The evaluation envisages a combination of desk research, site visits to selected AIMS centres, key informant interviews and focus group discussions:

- a) **Desk research** to help the evaluators understand and contextualize the Mastercard Foundation program at AIMS. Sources of information will include the program proposal, theory of change, baseline studies, scholars’ databases, partnership agreements, performance measurement framework, program reports, and annual work plans etc.

- b) **Site Visits** to AIMS Senegal, Cameroon and Rwanda and to the Global Secretariat in Kigali, Rwanda.
- c) **Key informants interviews** with selected individuals (partners, host country governments, AIMS staff, Mastercard foundation staff, etc.) who have firsthand information about the program.
- d) **Focus groups discussions** with AIMS lecturers, tutors, students, and alumni, as well as teachers and students participating in the Teacher Training Program in Cameroon<sup>2</sup>.

AIMS invites interested evaluators to define a more detailed methodology in line with the stated objectives and drawing on their own expertise and experience.

## 6. Deliverables

The selected evaluators will be expected to produce the following:

- a) **Inception report** – Detailing the evaluator’s proposed approach to the midterm evaluation. The inception report will demonstrate the evaluator’s interpretation of the midterm evaluation objectives and scope and will include a detailed work plan, proposed methodology, and draft outline for the final report, for review by AIMS.
- b) **Site visit reports** – Brief reports detailing initial findings from site visits to AIMS centres and the Secretariat. This provides AIMS an opportunity to quickly fact check prior to drafting the final report.
- c) **Draft evaluation report** – This will include all analysis, findings, conclusions, recommendations, and lessons learned as defined by the outline presented in the inception report.
- d) **Learning workshop** - the evaluators will present their findings and recommendations to AIMS and Mastercard Foundation staff to provide an opportunity to discuss and provide feedback.
- e) **Final report** – This will incorporate feedback from the learning workshop. This report will include practical and feasible recommendations for improving program delivery and its impact as well as an executive summary of no more than three pages.

All findings, conclusions, and recommendations should reflect a gender equality and inclusion analysis. Data collection and face-to-face interactions at some centres will require fluency in French. All deliverables must be submitted in English.

## 7. Midterm evaluation phases and timelines

The midterm evaluation will take place over a period of 9 weeks beginning in February 2018. Data collection will start in March 2018 and the final report submitted by 30 June 2018.

Phase	Activities	Timeframe
Inception	- Review background documents: program proposal, theory of change, baseline studies, scholars’ databases, partnership	2 weeks

<sup>2</sup> All focus groups must provide for the equitable participation of men and women.

Phase	Activities	Timeframe
	<ul style="list-style-type: none"> <li>agreements, performance measurement framework, program reports, and annual plans etc.</li> <li>- Prepare draft inception report, including the proposed approach, methodology, work plan, evaluation matrix, and outline for final report</li> <li>- Hold an inception meeting with AIMS staff to discuss the draft inception report and gather feedback</li> <li>- Prepare final inception report</li> </ul>	
Data collection	<ul style="list-style-type: none"> <li>- Site visits to AIMS Senegal, Cameroon, and Rwanda as well as the AIMS Secretariat in Kigali, Rwanda.</li> <li>- Interviews and focus group sessions with staff, partners (Government, industry, civil society), students, lecturers, tutors, and alumni</li> <li>- Debrief with each center and the Secretariat</li> <li>- Submission of site visit reports (4)</li> </ul>	3 weeks
Analysis and Reporting	<ul style="list-style-type: none"> <li>- Synthesis and analysis of findings</li> <li>- Follow-up interviews where necessary</li> <li>- Preparation of draft report</li> </ul>	3 weeks
Learning workshop	<ul style="list-style-type: none"> <li>- Presentation of findings, recommendations and lessons learned to AIMS, Mastercard Foundation and partners</li> <li>- Support AIMS in developing action plans to implement recommendations going forward in the Mastercard Foundation Scholars program at AIMS</li> <li>- Incorporation of feedback from AIMS, Mastercard Foundation and other stakeholders on the draft report</li> <li>- Submit final report</li> </ul>	1 week

## 8. Evaluator's profile and selection criteria

Applications are invited from teams of at least three consultants with an appropriate balance of expertise, experience, and gender. The team must demonstrate strong analytical, team management, and communication skills. Team members must be fluent in both English and French. The team must demonstrate experience in conducting evaluations for complex pan-African programs, as well as specific experience in conducting evaluations for academic, teacher training, and work integrated learning programs. Applicants must also demonstrate their expertise in gender equality and inclusion and their experience in designing evaluations in ways that reflect an attention to gender-related issues ( i.e. gender-sensitive indicators, gender analysis, and use of participatory methods etc.)

Applications will be evaluated based on the following criteria:

- a) Demonstrated experience conducting evaluations of complex multifaceted programs as evidenced by curricula vitae of the team leader and key team members and three recent professional references - 25 %
- b) Strength of the proposed methodology and understanding of the evaluation scope and objectives as presented in the technical proposal – 35%
- c) Financial proposal including a detailed breakdown of costs - 15 %
- d) Two samples of relevant evaluation reports recently completed - 15 %
- e) Demonstrated expertise and experience in gender equality and inclusion and proven ability to integrate gender-related concerns into the evaluation’s approach and methodology, findings, conclusions, and recommendations – 10%

## 9. Submission of Expression of Interest

- a) Potential evaluators meeting the above criteria are invited to submit an Expression of Interest (EOI) to: [mel@nexteinstein.org](mailto:mel@nexteinstein.org) with the subject “Mastercard Foundation Scholars Program at AIMS - Midterm Evaluation”
- b) The EOI should include:
  - i. Technical proposal
  - ii. Financial proposal
  - iii. CVs for all proposed team members
  - iv. Sample reports of recently completed evaluations done by the proposed members of the evaluation team or at least by the team leader
  - v. List of three referees who can attest to the firm/evaluator’s experience and expertise as related to this assignment.
- c) Applications are due by **23 February 2018**

## 10. Annexes

Annex 1: Mastercard Foundation Research and Evaluation policy

Annex 2: Mastercard Foundation Scholar Program at AIMS Logical Framework