



2nd Africa Young Academies Regional Conference
"Empowering the Next Generation of Scientists in Africa"

24-26 October 2016, Voila Hotel - Bagatelle, Mauritius



BIENNIAL MEETING REPORT 2016

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Robert Bosch Stiftung

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List of Acronyms and Abbreviations

AAS	African Academy of Sciences
AfeSUS	Africa e-Supervision System
AIMS	African Institute for Mathematical Sciences
ASLP	Africa Science Leadership Program
ASRT	Academy of Scientific Research and Technology of Egypt
AYARC	Africa Young Academies Regional Conference
ECR	Early Career Researchers
EtYAS	Ethiopian Young Academy of Science
EYAS	Egyptian Young Academy of Sciences
GloSYS	Global State of Young Scientists
GYA	Global Young Academy
IAP	InterAcademy Partnership
KNYAS	Kenya National Young Academy of Sciences
LOC	Local Organising Committee
MAST	Mauritius Academy of Science and Technology
MOU	Memorandum of Understanding
NASAC	Network of African Science Academies
NEF	Next Einstein Forum
NSTDA	National Science and Technology Development Agency
NYA	National Young Academy
SADC	Southern Africa Development Community
SAYAS	South African Young Academy of Science
SDG	Strategic Development Goal
STEM	Science, Technology, Engineering and Mathematics
STI	Science, Technology and Innovation
TWAS	World Academy of Sciences
UoM	University of Mauritius
WWM	Worldwide Meeting



The 2nd Africa Young Academies Regional Conference under the theme “*Empowering the Next Generation of Scientists in Africa*” turned out to be a “real” dynamic platform where committed young and senior academies from across the African continent convened. The conference was held in Bagatelle, Mauritius, from 24-26 October 2016 with full support from the Robert Bosch Foundation. The conference allowed the meeting participants to share their experiences, challenges, opportunities, and most importantly, ways forward. This gave the Global Young Academy (GYA) an opportunity to learn further and better how it can facilitate support for the African young academies to meet their needs and goals in the future.

Key issues such as women in science from African perspectives, reconnecting the diaspora in Africa, and African National Young Academies (NYA) movements were broadly discussed. A couple of young academics have expressed their interest to form NYAs in their own countries. This created a momentum of strengthening the linkage and synergies among the participants. Finally, the discussion resulted in a new champion, the National Young Academy of Egypt, who volunteered to host the 3rd Africa Young Academies Regional Conference in 2018. The GYA is already looking forward to following up on the outcome activities of the 2016 meeting and facilitating the hosting of the next meeting!

Mari-Vaughn Johnson (USA) and Orakanoke Phanraksa (Thailand)

GYA Co-Chairs

Acknowledgements



The 2nd Africa Young Academies Regional Conference organised this year between 24 and 26 October in Bagatelle, Mauritius, was a successful meeting. The discernible success of the event would not have been possible had it not been thanks to the collaboration of the University of Mauritius and the Mauritius Academy of Science and Technology as well as the kind support from the Robert Bosch Foundation.

Likewise, thanks to the commitments and devoted time of a number of individuals -including GYA members, GYA staff members, and local as well as off-site organising committee members, the planning, coordination, and implementation of the conference were not simply made possible but also efficient.

The GYA is fully appreciative of the support and assistance it received from the aforementioned organisations and individuals. The participants played a key role in making the conference rigorous and successful. The commitment and contribution of the facilitators and speakers were outstanding and are equally appreciated and acknowledged.



Since its establishment in 2010, the Global Young Academy (GYA) has put the mission of empowering Africa's young scientists among the top priorities of its agenda. To pursue this goal, the GYA launched an inaugural Africa Young Academies Regional Conference in Kenya in 2014. Themed "*Accelerating science for development in Africa by increasing the momentum and impact of National Young Academies*", the conference was motivated by two objectives.

On the one hand, being the voice of young scientists, the GYA sought to create a platform wherein the voices of Africa's young brains could be heard by providing them the opportunity to engage with senior scientists from across the continent in order to address the challenges that impede scientific development towards a sustainable future.

On the other hand, the conference aimed at bringing together future African leaders of scientific research and innovation to devise ways and means for the development of strong networks of collaboration and cooperation. The inaugural conference was a success and became a biennial event; because not simply did it meet its highlighted objectives, it also provided the GYA with a model for future regional conferences to be duplicated in other regions, not just in Africa.

Following the first meeting, the GYA held the 2nd Africa Young Academies Regional Conference under the theme: "*Empowering the next Generation of Scientists in Africa*", in Mauritius, in October 2016. The conference was organised by the GYA with kind support from the University of Mauritius (UoM) and the Mauritius Academy of Science and Technology (MAST) and was funded by the Robert Bosch Foundation.

The main objective of this meeting was to explore new ways to continue empowering African young scientists by pushing forward the agenda for establishing more National Young Academies (NYAs) in African countries over the coming years, and facilitating synergies between these and Senior Academies, in addition to discussing the effective contribution of NYAs to African development.

The timing of this second biennial meeting was very significant and came to accelerate the momentum that took place during the past two years, making important steps towards closing the gap between developing and developed countries in terms of career support and development opportunities. 2015 and 2016 have seen the birth of a



number of initiatives: the continent witnessed the Africa Science Leadership Program (ASLP), the Alliance for Accelerating Excellence in Science in Africa, the Next Einstein Forum (NEF), and the young academy movement, mostly conceived to grow Africa's capacity for developing world class science leaders.

The three-day intensive event brought together over 40 young and senior scientists, presidents and representatives from all existing NYAs from 17 countries in Africa, as well as NYA Initiatives and young scientists from other countries in the Network of African Science Academies (NASAC), together with the NASAC member academies and scientific organisations from all around Africa and beyond to the beautiful city of Bagatelle in Mauritius from 24 to 26 October 2016.

The gathering featured four main science panels and two breakout sessions all of which uncovered various pressing and crosscutting issues such as Women in Science; African Scientists in Diaspora; Bridging Senior & Young Academies; Funding of Research; Capacity Building of Young Researchers; Climate Change and Energy; and Communicable Diseases, among others.

The conference was concluded by declaring a set of programmatic recommendations in response to the array of issues discussed throughout the three days. Most of the recommendations were incorporated in the GYA Conference Statement (Annex), which was later disseminated among the GYA community and partners. Additionally, the participating members proposed two concrete initiatives.

The conference agreed to convene the 3rd Africa Young Academies Regional Conference in October 2018 in Cairo, Egypt, which will be jointly organised by the GYA, the Egyptian Young Academy of Sciences (EYAS), and the Academy of Scientific Research and Technology of Egypt (ASRT).



The 2nd Africa Young Academies Regional Conference (AYARC), organised by the Global Young Academy (GYA) with the support from the University of Mauritius (UoM), the Mauritius Academy of Science and Technology (MAST), and the Robert Bosch Foundation, from 24-26 October 2016 in Bagatelle, Mauritius, came as a follow-up to the 1st AYARC held in Kenya, in 2014. The meeting convened over 40 young and senior scientists and representatives from all existing National Young Academies (NYAs) as well as NYA Initiatives and young scientists from other countries in the Network of African Science Academies (NASAC) together with the NASAC member academies and scientific organisations from 17 countries from Africa and beyond. Themed, “*Empowering the next generation of Scientists in Africa*,” the conference had three highlighted points on its agenda:

- I. To explore ways for strengthening the NYAs as promoters of science in Africa by facilitating interaction and cooperation between NYAs/Young Scientists and relevant governmental and non-governmental organisations;
- II. To discuss the possibilities for creating a “give-back” platform and mechanism for harnessing the support of distinguished African scientists in the diaspora towards the advancement of Young Scientists on the African continent;
- III. To discuss and propose ways for optimising NYAs’ contribution to mentorship for younger scientists in Africa and to facilitate the sharing of research resources and the building of indigenous research excellence.

The objective that guided these points was to accelerate the necessary momentum and networks in order to stimulate the formation of more NYAs in Africa over the next years; in addition to discussing the effective contribution of NYAs to engage and empower excellent young researchers who will drive the scientific development towards a sustainable future for the continent.

Welcoming Remarks



GYA members Dr. Vidushi Neergheen-Bhujun, Chair of the conference's Local Organising Committee (LOC) and master of ceremony, and Dr. Abidemi J. Akindele, Co-Chair of the LOC, kicked off the event with a warm welcome to the guests and participants, acknowledging the time and efforts invested by the LOC, the GYA, and the partners in bringing together all the conferees to such a promising scientific appointment. Dr. Neergheen-Bhujun anticipated the meeting would help foster synergies between African scientists via the national senior and young academies, for it was consistent with the objectives of all the parties involved.



In the same vein, Dr. Akindele challenged the conferees to devise fruitful resolutions, action plans and implementation strategies, with the involvement of all stakeholders present, that would enhance the collective engagements and research relevance of Young African Scientists to solve their communities' societal needs. Before leaving the floor to the plenary guests of the ceremony, both speakers invited the audience to proactively engage in the conference's diverse panels addressing the challenges that impede scientific development for a sustainable future for the region.



Opening Addresses



The GYA Managing Director, Dr. Beate Wagner, and the GYA Co-Chair, Dr. Orakanoke Phanraksa, joined the LOC co-chairs in welcoming the participants and wishing them a productive meeting. The inauguration ceremony of the 2nd AYARC was highlighted by the opening addresses by a pool of distinguished guest speakers among whom was H.E. Mrs. Leela Devi Dookun-Luchoomun, Minister of Education and Human Resources, Tertiary Education and Scientific Research of Mauritius. Besides, there were also Dr. Jean Claude Autrey, Chancellor of the University of Mauritius and President of the Mauritius Academy of Science and Technology; Prof. Romeela Mohee, Vice Chancellor of the University of Mauritius; Prof. Anwar Hussein Subratty, Pro-Vice Chancellor of Research at the University of Mauritius; Associate Professor Thanika Juwaheer, Pro-Vice Chancellor of Planning and Resources at University of Mauritius; Prof. Theeshan Bahorun, National Research Chair; Prof. Aderemi Kuku, President of the African Academy of Sciences; Ms. Jacqueline O'Lang, Executive Director of NASAC; and Ms. Johanna Rapp, Project Manager at the Robert Bosch Foundation.

Dr. Jean Claude Autrey warmly welcomed the participants and wished them a pleasant and productive stay in Mauritius on behalf of the Mauritius Academy of Science and Technology, the University of Mauritius and the World Academy of Sciences (TWAS). He presented a rundown of TWAS opportunities for young scientists in developing countries ranging from support of their research to fostering collaborations and providing specific training.

With its mission to promote scientific excellence and capacity in the South for science-based sustainable development, *"TWAS carries out 8 major programmes many of which are dedicated to assisting young talented scientists at the start of their careers in developing countries,"* said Dr. Autrey. He reminded the audience that without the insights

provided by scientists with their rational perspective and quantitative analyses, younger and older generations alike cannot fully appreciate the implication of the challenges faced by young scientists.

His remarks were concluded by a discernible emphasis on education, especially in the context of the Sustainability Development Goals (SDGs). He argued that the fourth of the new SDGs published in the UN 2030 Agenda places scientific considerations and education at the basis of political decisions: *"Education is the basis for understanding, and thus for change. Only through education we can hope that our societies will start to move in better directions."*



“As the volume and quality of African research grows, more attention is being paid to how it is being used, and what structures exist to bring evidence and expertise into decision making.”

Prof. Romeela Mohee, Vice Chancellor of the University of Mauritius

Prof. Romeela Mohee, Vice Chancellor of the University of Mauritius (UoM), amplified the fact that optimism about science in Africa is more than ever present, despite the huge challenges of deep inequalities, under-investment, weak infrastructure and brain drain. *“As the volume and quality of African research grows, more attention is being paid to how it is being used, and what structures exist to bring evidence and expertise into decision making,”* attested Prof. Mohee.

She reminded the audience of how the March 2016 Next Einstein Forum in Senegal had exposed some of the brightest talents and most exciting advances in Africa, and that it concluded with an upbeat declaration of commitment to Africa’s role in world-leading, locally-relevant science. In the same vein, she spoke about the University of Mauritius’ recent Strategic Plan 2015-2020 that aims at raising the overall quality of research, steer the University of Mauritius into the arena of academic excellence, and foster a vibrant, successful and interactive research community.

She explained how the overarching strategic direction *“Excellence in Research and Innovation”* places a lot of emphasis on innovative and interdisciplinary exploration to achieve excellence in research and innovation. She closed her address with a call for a more comprehensive and continuous collaboration with the GYA, NASAC and other institutions at the regional and continental levels.

Prof. Aderemi Kuku, President of the African Academy of Sciences (AAS), started his remarks by emphasising the point that the theme of the conference -*“Empowering the next Generation of Scientists in Africa”*- could not have been more appropriate and timely, especially at a time when most of the developing countries were addressing a lot of issues pertinent to their national development. He then inspired the attending young scientists by relating the story of his own eventful start as a young scientist; and how he, more than three decades ago, was supported and encouraged by the Pakistani Nobel laureate and founder of TWAS, Prof. Abdus Salam.





“In the aftermath of HABITAT III and the minor role scientists have played in Quito, scientists must have a say in the future of cities and, much beyond, in shaping a sustainable future.”

Ms. Johanna Rapp, Robert Bosch Foundation

Prof. Kuku laid down the various activities and programmes the AAS implements in partnership with pan-African and international organisations. Among the highlighted endeavours of the AAS were its focus on capacity building and nurturing of scientific talents in various areas of Science, Technology and Innovation (STI) research needed for the sustainable development of the African continent; activation of sub-regional activities and kick-starting the AAS Affiliate Membership Programme; strengthening existing partnerships and generating new ones; and increasing the visibility of the AAS and popularising Science all over the continent through the creation of four AAS commissions. Prof. Kuku ended his note with a challenge, calling on Africa’s young scientists, through their National Young Academies, to work harder and more optimistically in collaboration with existing science councils, senior academies and AAS to bridge the gap among these science establishments, as well as between research and implementation, if countries were to benefit from their human capital.

Notably, as was the case with the first meeting, this second meeting would not have been possible without the support of the Robert Bosch Foundation. In this regard, Ms. Johanna Rapp, the representative of the Robert Bosch Foundation at the meeting, emphasised that *“in the aftermath of HABITAT III and the minor role scientists have played in Quito, scientists must have a say in the future of cities and, much beyond, in shaping a sustainable future.”* She could not stress more the need for the Foundation to foster dialogue between scientists and policy-makers in order to learn, complement, and jointly tackle the challenges future generations are facing. Among other things, Ms. Rapp highlighted the Foundation’s partnership with the African Institute for Mathematical Sciences (AIMS) during the Next Einstein Forum to connect emerging African researchers with the global science community; and with the University of Pretoria and the GYA to strengthen the leadership skills of young researchers through the Africa Science Leadership Program (ASLP).





“Young Scientists need to refurbish and firm up communication skills, thereby promoting the concepts of science communication; and it would be highly salutary for them to engage in some monitoring and science-supporting acts as well.”

H.E. Minister L. D. Dookun-Luchoomun

Before declaring the conference officially open, H.E. (Mrs.) L. D. Dookun-Luchoomun, Minister of Education and Human Resources, Tertiary Education and Scientific Research in Mauritius, congratulated the GYA along with its partners and the organising committee for choosing Mauritius to be the host of such an important meeting. H.E. the Minister also acknowledged the GYA's continuous efforts to give Science and young scientists their rightful place in the scheme of innovation and development especially in the African context.



Furthermore, she expressed her appreciation for the fact that Mauritian young scientists, three of whom are currently GYA members, are actively working on the setting up of a National Young Academy in Mauritius. This initiative, said the Minister, *“will certainly support the local chapter of the Senior Academy – very much as it has done for Egypt, the Philippines, Japan, Zimbabwe, South Africa, Nigeria, Israel, and Kenya.”*



Using the example of this ambitious initiative, H.E. Mrs. Luchoomun underlined the conditionality young scientists have to keep in mind while setting up a young national academy. She said that setting up a young academy in itself demands the necessity to be guided by fundamental norms of science, one of which is the creation and maintainability of both awareness and understanding of highly technical scientific undertakings.

Her Excellency urged Africa's young scientists to tailor their teaching and research assignments to outreach activities: *“You have to refurbish and firm up your communication skills, thereby promoting the concepts of science communication; and it would be highly salutary for you to engage in some monitoring and science-supporting acts as well.”* On this note, she jovially declared the Global Young Academy's 2nd Africa Young Academies Regional Conference open.



Panel Session:

Women in Science- An African Perspective



The three-day agenda was full of activities, science panels, and breakout sessions that stimulated rich and pertinent discussion and recommendations. The themes ranged from Women in Science to Bridging Senior & Young Academies; and from Reconnecting Diaspora in Africa to Strengthening African Academies, as well as Science Leadership in Africa. The breakout sessions covered crosscutting issues such as Science Education; Funding of Research and Capacity Building of Young Scientists in Africa; Climate Change and Energy; and Communicable Diseases and Sanitation/Waste Management.

These sessions were followed by a report on survey-findings from African NYAs, which was developed before the meeting by the GYA members. Geared toward generating tangible outcomes, the gathering called upon the participants to indulge in developing concrete deliverables for some of the most pressing issues discussed therein.

By the end of the meeting, the conferees a) presented an updated guideline for an effective establishment of future NYAs; b) developed a harmonised template of a Memorandum of Understanding (MOU) between NYAs and Senior Academies; c) outlined a tentative Africa-wide research project for development and funding; d) submitted an initiative on launching an Africa e-Supervision System (AfeSuS) Platform for Excellence in the Knowledge Society; e) proposed a conceptual sketch of a booklet project; and f) submitted a preliminary plan for the 3rd Africa Young Academies Regional Conference in 2018.

The first panel was devoted to Women in Science from an African perspective. Chaired by Prof. Esther Mwaikambo, Tanzania Academy of Sciences, the panel hosted Dr. Isabel Pilirani Kazanga (Malawi), Dr. Karen Cloete, Co-Chair of the South African Young Academy of Science (SAYAS), and GYA member Dr. Abdeslam Badre (Morocco).

While each of the panellists described and accounted for the state of Women in Science in Africa from different and overlapping perspectives, they all agreed on two main presumptions. The first is that the gender gap in education has narrowed, and in many African countries female participation in tertiary education overall has increased and currently in some countries surpasses male participation. These are some of the results of Africa's bidding on the human capital and gender parity as an essential drive for the knowledge-based economy as emphasised in the African Union's 2063 Agenda for continental development.

Conversely, the second idea was that the pace of gender-parity transformation remains slow and uneven across regions as well as within and among countries. "According to the UNESCO's Institute for Statistics, women's share of total research positions compared to men in 2011 was 40% in Northern Africa and 30% in Sub-Saharan Africa," quoted Dr. Kazanga.



“Patriarchal culture still impinges not only society but even political as well as academic institutions against recognising and crediting women’s full and equitable rights to access and influence scientific landscapes of Africa”.

Dr. Karen Cloete, Co-Chair of SAYAS

The speakers listed a number of pending challenges that hinder African women’s rightful visibility in science, which could be clustered into three categories. At one level, *“patriarchal culture still impinges not only society but even political as well as academic institutions against recognising and crediting women’s full and equitable rights to access and influence scientific landscapes of Africa,”* attested Dr. Kazanga.

At another level, poor governance remains a major obstacle embodied in the inequitable allocation of professionally high-ranked decision-making positions for women, unbalanced distribution of funding invested to empowering women’s skills, especially in Science, Technology, Engineering and Mathematics (STEM), as well as the lack of mentorship and role models, which are the keys in inspiring future female scientists.

Finally, according to Dr. Badre, *“the role of the private sector is not fully leveraged on the basis of a win-win partnership: unfortunately, businesses often fail to consider working on gender issues in science as a collaborative partnership; rather, they tend to look at it as part of their philanthropic activities”.*

The panellists proposed concrete recommendations, which if taken into action might balance the scales of gender in Science. On the one hand, there is a need for cultivating a transformational gendered-free culture and environments that celebrate the presence, contributions, and roles of women in science.

This culture can only be possible if governance models in Africa are reinvented to accommodate more women in decision-making positions within universities, national research councils, and science academies, to name a few. On the other hand, it is high time for triangular win-win sustainable synergies between governmental bodies, private sectors, and civil societies forged and implemented through collective actions.





“Gender discrimination in science is scientifically unscientific, morally unethical, politically unacceptable, socially unfair, and religiously sinful!”

Dr. Abdeslam Badre, GYA Member

The private sector should consider women’s promotion in science as a solid business case and not a mere form of corporate social responsibility practice. Finally, scientists need to work with governments and private sectors on collecting aggregated data on the current situation of women in STEM in Africa. *“Gender discrimination,”* concluded Dr. Badre, *“in science is scientifically unscientific, morally unethical, politically unacceptable, socially unfair, and religiously sinful!”* The three presented papers stimulated productive discussions among the panelists and the audience under the moderation of Prof. Mwaikambo whose role was highly appreciated.

NYA Movement and Synergies with Senior Academies

To meet one of the conference’s objectives – *strengthening synergies between Young and Senior African Academies*- it was necessary to draw a road map for the next two years based on what has been achieved from the objectives set during the Kenya inaugural meeting in 2014. Hence, during one of the scheduled panels, chaired by Prof. Paul Baki Olande, Kenya National Academy of Sciences, Dr. Beate Wagner, GYA Managing Director, and Dr. Orakanoke Phanraksa, GYA Co-Chair, spoke about the role of the GYA as a facilitator for the establishment of NYAs for global and regional advancement.

Notably, the idea for an Africa regional conference was the fruit of a vision conceived at the GYA Annual General Meeting held in South Africa in 2012, which was again discussed by a formed working group at the GYA Annual General Meeting held in Halle, Germany, in 2013. Based on this background, in 2014 the GYA organised an inaugural three-day meeting in Nairobi, Kenya.

Back then, the conference sought to build momentum and networks necessary to stimulate the formation of NYAs. The intended conference outcomes were: (a) to support the establishment of NYAs in Kenya and other African countries, (b) to identify challenges and seek possible solutions facing the establishment of NYAs on the African continent, (c) to provide a set of guidelines and a roadmap for establishing further African NYAs, (d) to establish forms of networking between African NYAs, and (e) to motivate African countries to participate in the Global State of Young Scientists (GloSYS) Africa Project- among others.

In addition, it was a welcome opportunity to showcase the GYA and a boost to the newly launched Kenya National Academy of Sciences (KNYAS). At the end of the meeting, the convened participants agreed that African NYAs are a symbol of scientific excellence by bringing together young scientists and researchers in the region to champion innovation and excellence in home countries, and an effective link between the GYA and young scientists in the region.



“NASAC and a number of individual African Science Academies have since 2011 forged an ever-closer working relationship; focused on positioning the Academies as independent providers of science-based advice to policy-makers and society.”

Prof. Jutta Schnitzer-Ungefug, Secretary General - Leopoldina

The GYA does not work in isolation. Rather, it operates within its regional and global contexts and values its partnerships and collaborators. The German National Academy of Sciences Leopoldina is one of the partners that have supported and collaborated with the GYA on various initiatives. Representing Leopoldina in her capacity as the Secretary General, Prof. Jutta Schnitzer-Ungefug's presentation at the 2nd Conference focused on the three areas of cooperation between NASAC and Leopoldina since 2011.

There is 1) the Science-Policy-Dialogue in Africa; 2) the Science-Policy-Society-Dialogue in Africa; and 3) the Science-Business-Dialogue in the Southern Africa Development Community (SADC). Prof. Schnitzer-Ungefug reiterated her organisation's valorisation of its partnership with NASAC. *“NASAC and a number of individual African Science Academies have since 2011 forged an ever closer working relationship; focused on positioning the Academies as independent providers of science-based advice to policy-makers and society. This relationship is characterised by its inclusive and synergistic nature, trying to build a broader network of all those wanting to strengthen Science in Africa,”* said the Secretary General.

Moving forward, GYA members Dr. Abidemi Akindele and Dr. Samuel Sojinu gave an account of the current situations of NYAs in Africa, along with the outcomes, implementation, opportunities and challenges faced on the basis of a survey study (see Annex) done by the GYA in preparation for the meeting. Their contribution offered an insightful retrospective assessment of the 1st Regional Conference, and gave an overview of the current state and workings of existing NYAs in Africa. This facilitated the envisioning of a clear future agenda. The panellists called for an official communication channel and engagement with Senior Academies of the African countries that still do not possess an NYA; and for the formation of a working group to adapt the GYA blueprint for the establishment of NYAs to the African context.



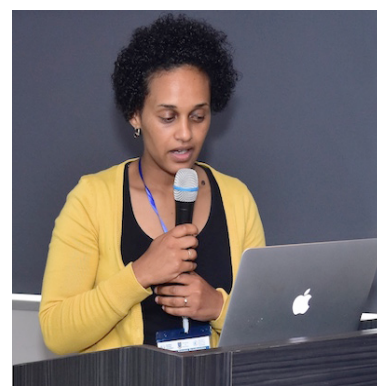


To map the past performances, current state, and future directions of the existing NYAs in Africa, and to explore the mechanisms for enforcing sustainable intra-regional engagements with senior academies, a series of presentations were moderated by Prof. Bahaa El-Dien M. El-Gendy, Co-Chair of EYAS; Dr. Emmanuel E.O. Odjadjare, the President of the Nigerian Young Academy; Dr. Liya Wassie, Ethiopian Young Academy of Sciences (EtYAS); Dr. Karen Cloete, Co-Chair of SAYAS; and Dr. Adalbert Aine-Omucunguzi, Uganda National Young Academy.

The detailed account that each of these NYA representatives gave about the current state and future plan for their academies unveiled two points. On the one hand, it confirmed that the NYAs are dynamic and align with the aspiration of Africa's younger generation of researchers. On the other hand, it depicted a better picture to the GYA as well as other attending partners on the remaining challenges.

Capacity building and personal development of young scientists dwell at the heart of the organisation's mission; and thus, ought to be the mission of every science establishment. This is why both GYA Managing Director, Dr. Wagner, and GYA Co-Chair, Dr. Phanraksa, stressed the idea that advocacy for academies and using the platform of excellence of academies should be served to tap on external funding from both governments and industry.

Designing and offering regular leadership skill development trainings and workshops, capitalising on mentorship networks, and establishing a bank of collected data about the needs and strengths in science and science development were considered among the priorities for the coming years' agenda. The proposed agenda was accompanied by 6 concrete action plans to be taken during the next two years in order to strengthen and accelerate synergies between Young and Senior National Academies:



Panel Session:

Reconnecting Diaspora in Africa



1. Streamlining the establishment of NYAs on the African continent and their functioning with the intent to set up updated guidelines for establishing effective NYAs;
2. Accelerating the establishment of further young academies and fast-track their operationalisation across the African continent;
3. Identifying novel and priority areas of collaboration between the existing NYAs and propose at least one Africa-wide research project, aimed at stimulating science for development;
4. Promoting cooperation and unity of purpose between young and senior academies on the continent;
5. Facilitating interaction and professional engagements between Young Scientists and distinguished African Scientists in the diaspora and from other regions of the world through the Young Academies Network;
6. Appraising existing efforts and exploring involvement in on-going initiatives for improving the state of Young Scientists and science in Africa.

Furthermore, the post-2nd AYARC agenda envisages the establishment of young academies in Mauritius, Cameroon, Morocco, and Burundi among all the other NASAC-affiliated countries. Key to reaching this goal is investing more efforts and logistics in order to overcome the currently remaining challenges represented in the lack of fundraising mechanisms; poor, and at times inexistent, coordination with senior academies and bureaucracy; and the lack of administrative support.

Reconnecting Diaspora in Africa

Reconnecting Diaspora in Africa was one of the major subthemes of the conference, featuring two panels chaired by Prof. Patrick Rubaihayo, Uganda National Academy of Sciences. The panels included Prof. Aderemi Kuku, President of AAS; Prof. Himla Soodyall, Academy of Science of South Africa; Dr. Isabel Pilirani Kazanga (Malawi) and Dr. Bahaa Eddine Sarroukh (Morocco), who shared their stories and experiences as diasporatic researchers within Africa.

The panelists presented an account of the current situation in Africa, stating that between 1980-2010 the number of African migrants more than doubled, reaching 30.6 million, which is 3% of the population in Africa or 17% of the total population of migrants from the developing world (World Bank 2014). Countries such as Egypt (12.4%), Morocco (10.5%), Burkino-Faso (4.8%), Algeria (4.2%), and Zimbabwe (3.9%) are top on the list.

Prof. Soodyall attributed the ongoing increase of African immigration to Europe, the USA and the Middle East to the existing challenges within the continent: a) poor infrastructure; b) lack/shortage of resources (research); c) lack of financial incentives to return; and d) a scarcity of better opportunities for their families. “However,” asked Dr. Soodyall “does that mean that the host countries in Europe and America do not pose any challenges to the African scientists?”



In an answer to this question, Dr. Kazanga and Dr. Sarroukh listed various challenges faced in the host countries. These include lack of administrative and financial support, ranking and gender imbalances; negative attitudes and obstacles against African migrants; and the questions of citizenship, which hinders integration and access to many services.

To reconnect African young scientists in Diaspora, the panellists proposed three measures. First, teaching models in Africa need to accommodate various programmes such as student exchange programmes, summer classes, short courses, curriculum development, and postgraduate trainings that would enable African students to appreciate more their local educational systems. Second, there is a need for devising more and innovative scholarship schemes that would include joint research grants, publishing of manuscripts grants, and donation of books and equipment. Third and finally, service quality has to be improved to better answer the needs and expectations of Africa's young researchers and scientists.

The meeting agreed that the diaspora engagement is crucial to Africa. There is still a huge African brain-drain movement due to different reasons. Nonetheless, young scientists should try to learn to work with the diaspora. Prof. Soodyall proposed a list of modalities of engagement, which includes the organisation of laboratory visits, e-supervision systems, conferences, and sabbatical leaves, faculty appointments, online and virtual connections, electronic media, and relationship building with others in the diaspora.



Panel Session:

Science Leadership in Africa



The conference devoted a whole afternoon discussing the movement of science leadership in Africa in order to reflect on the unprecedented science initiatives and programmes that have been launched on the continent during the past two years. For instance, between 2015 and 2016, the continent witnessed the inauguration of the Africa Science Leadership Program (ASLP), the Alliance for Accelerating Excellence in Science in Africa, the Next Einstein Forum (NEF) and young academy movement, and the GloSYS Africa Project, mostly conceived to grow Africa's capacity for developing world class science leaders.

Dr. Vidushi Neergheen-Bhujun, the Chair of the conference LOC, gave a presentation about the NEF, an initiative of AIMS in partnership with the Robert Bosch Foundation, which was launched in 2013. Unique in its scope and format, the NEF initiative is a platform that connects science, society and policy in Africa and the rest of the world. With the goal to leverage science for human development globally, NEF places at the centre of its efforts young people as the driving force for Africa's scientific renaissance.

The speaker also informed the audience about the NEF inaugural Biennial Global Gatherings, which had been hosted by H.E. Macky Sall, President of Senegal, in Dakar in March 2016. It gathered over 1.400 politicians, decision makers, scientists, industry leaders, media agencies from the four corners of the globe in order to discuss the future leadership of young scientists and women in Africa.

Dr. Neergheen-Bhujun concluded by encouraging the audience to disseminate the call for application for the second round of NEF membership, reminding them of the next NEF Global Gathering which would be held in Kigali, Rwanda, in March 2018 under the patronage of H.E. Paul Kagame, President of the Republic of Rwanda.

Joining the audience over SKYPE, from South Africa, was Prof. Bernard Slippers, a GYA founding member, a former GYA Co-Chair, and the project manager of ASLP in order to give his account of the ASLP. The latter is an initiative of the University of Pretoria in partnership with the GYA, funded by the Robert Bosch Foundation. Launched in 2014, it serves early- to mid-career researchers in basic and applied sciences, engineering, social sciences, arts and the humanities. The programme aims to train mid-career African academics in the areas of thought leadership, team development, engagement and collaboration, with the intention of enabling them to solve the complex issues that face both Africa and the global community.

"The programme," attested Prof. Slippers "uses a highly interactive approach to training. The participants are challenged to work collaboratively to design initiatives that advance a new paradigm for African science." The ASLP has become a purely Africa science product-brand in the field of capacity building and leadership skills development, aiming at being franchised in each and every African country, and beyond; for example, it has been duplicated in the ASEAN region.



The GloSYS Projects

In the same line, GYA Co-Chair Dr. Phanraksa presented the ASEAN Science Leadership Program. Inspired by the ASLP in 2015 and 2016 respectively, the ASEAN Science Leadership is jointly funded by the National Science and Technology Development Agency (NSTDA) and PTT Company Limited. Dr. Phanraksa said that the launching of the programme in the ASEAN region came in correspondence with the findings of the Global State of Young Scientists-ASEAN (GloSYS ASEAN) 2015 survey, conducted in four selected ASEAN member states (Indonesia, Malaysia, Singapore and Thailand).

The project has a very clear five-year agenda. Initially it aims at campaigning and strengthening the existing network of NYAs in the region, before the launching of the official ASEAN Young Scientists Network. Then it will lead the formalization of the ASEAN Young Scientists Network and set up a bi-annual meeting; and by 2020 it aspires to promote visibility of the ASEAN Young Scientists Network through media broadcasting (TV shows, showcase members, radio channels to promote the network, game show; peer-reviewed and open access ASEAN science journal).

Dr. Abdeslam Badre, GYA member and a Champion of the GloSYS Africa Project, concluded the session by presenting an overview of the GloSYS Africa Project. The latter is the second regional study by the GYA after GloSYS ASEAN. Its main research objectives focus on the perceptions of young scholars on their working conditions, career prospects, mobility, and mentorship.

The study is geared toward generating policy recommendations. The speaker could not insist more on the fact that capacity building by collaboration with research partners across African countries was central to the success of the project; inviting, thereby, all the conference attendees to take part in the project's data collection and disseminate its tool among their networks.



Breakout Sessions



There were two breakout sessions with feedback discussions. The first day's sessions were allocated to four crosscutting subthemes:

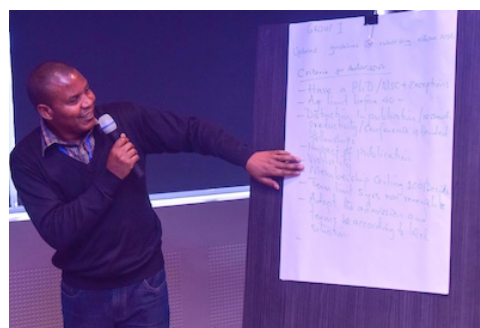
1. Women in Science
2. Science education, funding of research and capacity building
3. Climate change and energy
4. Communicable diseases and sanitation/waste management

The second day's sessions dwelled on delivering tangible outcomes:

1. Updated guidelines for establishing effective NYAs
2. Template MOU between NYAs and Senior Academies
3. Outline of proposed Africa-wide research project for development & funding
4. Preliminary plans for the 3rd Africa Young Academies Regional Conference in 2018

The outcomes of the sessions and discussions were formulated in programmatic recommendations that were mandated by the conference's participants. More importantly, three concrete initiatives were presented and acknowledged as feasible medium-term projects. First, Egypt was proposed and agreed on to be the new champion for hosting the 3rd Africa Young Academies Regional Conference in October 2018 in Cairo, which will be jointly organised by the GYA, the Egyptian Young Academy of Sciences (EYAS), and the Academy of Scientific Research and Technology of Egypt (ASRT).

Second, Dr. Karen Cloete, Co-Chair of SAYAS (South Africa), proposed a tentative conceptual sketch of a booklet project that would serve as a guide for early career researchers covering topics that would serve as building blocks for a strong career foundation. Third, GYA member Dr. Henri Edouard Tonnang proposed an initiative on an Africa e-Supervision System (AfeSuS) Platform for Excellence in the Knowledge Society. A presentation of the main outcomes of the breakout sessions is summarised in the recommendation section below. Annexed to this report is a contextual and methodological description of the two proposed initiatives by Dr. Cloete and Dr. Tonnang.





Closing Remark and Recommendations

As anticipated, the conference helped to generate the momentum, the relationships and networks necessary to stimulate the formation of new NYAs in Africa over the next years, in addition to discussing the effective contribution of NYAs to African development. The convening participants highlighted some pressing challenges that African Young and Senior Academies and scientists need to invest time and energy on. These are:

Challenges for the NYA movement identified

- There remain a number of challenges for young academies in Africa. This includes but is not limited to funding, lack of independence, member participation, and coordination with senior academies, and administrative support.
- This led the meeting to discuss “What would we like to achieve? And how would we like to make things work better?”
- The meeting participants agreed that a general mentoring system is important to many countries in Africa. There should be a link to policy makers to promote mentorship to young scientists.
- It is important to build the momentum of NYAs in Africa. Networking between African NYAs should continue to be promoted. This also requires official communication with the senior academies.
- As many stakeholders are involved, it was recommended to map the roles of the various participants.
- It should be possible to identify crosscutting themes that the players stand for in Africa or across the globe.

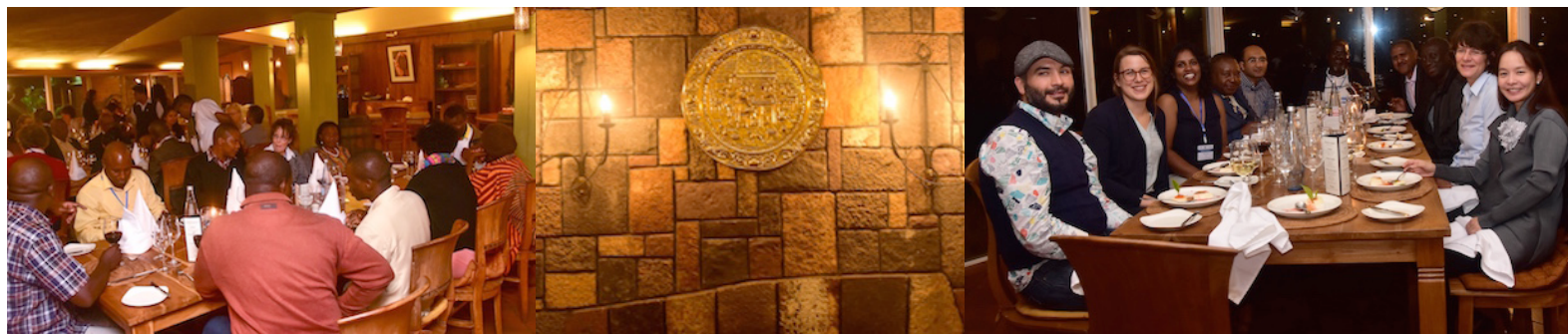
- A comprehensive stakeholders’ database should be maintained, sharing information within Africa.
- It is important to promote a critical mass capacity building in order to reach the competency required.
- The GYA is considered as a key focal point to help facilitate the establishment of NYAs and strengthen the existing ones.

Promoting the relationship between the senior and young academies is a key factor

- The 2nd AYARC has demonstrated a clear common goal of the science community in Africa. Both senior and young academies agree that it is essential that both types of academies closely work together; hence a Memorandum of Understanding (MOU) was put in place (see Annex).

Women in Science

- The meeting agreed that work-life-balance is important to young scientists. To accommodate women in science, an evidence-based report is required. From their personal experience the participants rated a more even distribution of family work and changes in scientific incentives as important to strengthening female participation in science.
- There should be a win-win synergy between governments and the private sector on collective efforts.
- Role models on different levels, from the female Nobel laureate to the engaged seminar teacher at university were regarded as a key to encouraging girls/women to do science.



Promoting diaspora engagement is crucial

- The meeting agreed that diaspora engagement is crucial to Africa. The African brain-drain remains significant for many reasons. Nonetheless, young scientists should try to learn to work with the diaspora. There are many ways to work with the diaspora constructively. These include but are not limited to laboratory visits, conferences, and sabbaticals.
- It was conceived important to keep in mind that certain problems still need to be tackled. For instance, the issue of limited engagement of young scientists in Africa is one of the key problems. This is due to several factors such as lack of enabling environments, lack of scientific knowledge translation platforms, and inadequate resources.

Communicable diseases in Africa as a significant area of work for NYAs

- The state of communicable diseases in Africa and how they interface with non-communicable diseases and issues on sanitation and waste management was discussed in the context of NYAs, Senior Academies and the GYA activities.
- NYAs and Senior Academies could play the following roles in resolving issues related to sanitation and disease burden in Africa:
 - Provide evidence-based advice to government and relevant stakeholders;
 - Engage in public enlightenment programmes through various outreaches. Students could be involved in such initiatives;
 - Provide technical support by giving direction to relevant agencies on how and where to get the best training for health care workers;

- Help technology transfer between African countries, especially between countries of similar health problems.

Science education

Science advocacy campaigns should be bottom-up oriented:

- To attract youth toward science, teaching methods and materials need to be updated and be communicated in an accessible language and channels to young learners.
- Schools should consider the adoption of a dual approach by motivating teachers and educators to make science more attractive and inspiring for younger learners.
- **How to implement change - Instruments to promote science:**
 - Mobile labs and science clubs;
 - Community centres;
 - Edutainment TV, Radio programmes, and Print media;
 - Science games;
 - Social media;
- **Capacity building for young scientists:**
 - Governments should fund research, 1% of GDP; and
 - Provide incentives for young people to engage in science.

Supporting National Young Academies & Senior Academies' Synergies for Strengthening Capacity and Competence Building in Africa

Preamble

The present statement draws upon the outcomes of the 2nd Africa Young Academies Regional Conference (AYARC), held in Mauritius from 24-26 October 2016. The Global Young Academy (GYA), the voice of young scientists around the world, representing over 200 members, and around 60 alumni from over 60 countries will continue to work closely and organically with its international and African partners in order to strengthen science and the research environments in Africa and help facilitate efforts towards capacity and competence building of young scientists. Aware of the role young African scientists can play to enhance Science, Technology & Innovation (STI) and drive the continent toward a knowledge-based economy, the GYA remains an active facilitator and supporter of its African partners and members to materialise three main objectives.

1. Supporting the establishment & synergising of National Young Academies

Supporting the establishment and coordination of National Young Academies (NYAs) around the world, in general, and in Africa, in specific, and accelerating synergies between existing Senior Academies and new-born Young Academies have always been one of the focuses of the GYA since its founding in 2010. During the past five years, the GYA has helped to establish NYAs in Egypt, Zimbabwe, South Africa, Nigeria, Kenya, Ghana, Senegal, Ethiopia and currently Mauritius. The GYA will continue in this direction by strengthening African Science Academies, empowering the advisory role of the Network of African Science Academies (NASAC), enhancing NASAC's intergenerational and international cooperation, and providing access to networks and experts.

2. Capacity and competence building in Africa

The GYA is further committed to allocating continuous attention and efforts to provide capacity and competence building opportunities to young African Scientists through the co-organisation of workshops, conferences and leadership trainings. Hence, as a convener of the 2nd Africa Young Academies Regional Conference, the GYA together with the National Young Academy of Egypt will help organise the 3rd African Meeting of NYAs in October 2018 in Cairo. It will also work together with the South African Young Academy (SAYAS) to facilitate the 3rd Worldwide Meeting (WWM) of Young Academies in July 2017 in South Africa. Furthermore, the GYA in collaboration with the University of Pretoria will continue the running and strengthening of the African Science Leadership Program (ASLP).

3. Leveraging Science Policy in Africa

It is the uncompromising belief of the GYA that leveraging science for evidence-based policymaking promises to deliver tangible outcomes on the livelihood of societies and efficiency in problem-solving. On this basis, the GYA will continue encouraging and supporting African young researchers to be involved in continental as well as international, interdisciplinary, and intergenerational research dialogues and undertakings, especially in cross-cutting-edge issues such as: women in science; promoting the diaspora engagement in Africa-related research; climate change and energy; and enforcing synergies between young scientists and policy-makers, among others. The GYA will, thus, continue monitoring the GloSYS Africa Project, currently being managed and implemented by a team of African GYA members, which promises to deliver invaluable insights on the state of young scientists in the continent and beyond.



Background

UNESCO and World Bank have acknowledged that boosting the capacity of higher education and postgraduate studies through empowerment scientific research, technology and innovation will immensely boost the economic and social development in Africa (UNESCO 2009, World Bank 2010). In these reports, research has been outlined as an important pillar of higher education; however in Africa, a good number of students that registered for a postgraduate degree (MSc or PhD) may end up not completing the degrees or may finish with a sub-standard output (Lubega and Niyitegeka 2008, Khodabocus 2016).

In order to produce quality postgraduate students appropriate emphasis should be placed on the quality and standard of supervision (Khodabocus 2016). To contribute to the realisation of the Sustainable Development Goals (SDGs); African higher education organisations should improve their ways of empowering the younger generation through increased usage of digitisation and computerisation. It is only new ways of doing things that will help the continent to shift from capacity building to the construction of competence.

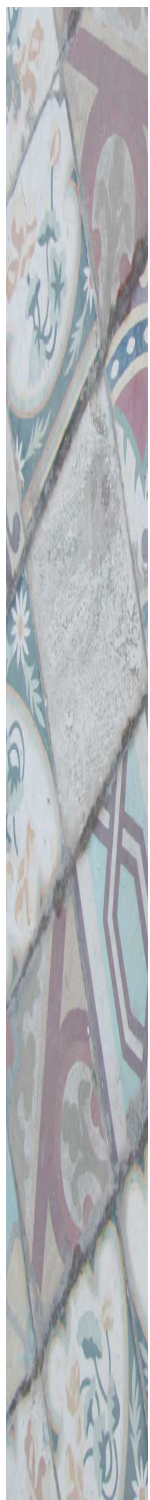
Academies should continually be engaged in the fortification of research capacity within country or region and here the group proposes the development of an e-Supervision System (AfeSuS) that is believed to immensely contribute to improve information sharing and the research network in Africa and beyond. Practically, the present proposal aims at developing an online hub where renowned scientists (in and out of the continent) could be profiled by discipline and research interest to potentially serve as virtual supervisor of the growing number of African postgraduate students with the objective of creating excellent graduates in the knowledge society.

Objectives

This project will provide to the community of postgraduate students an **e-Supervision System** made from the compilation of existing discipline-specific experts around the world can provide adequate supervision and mentorship to the next generation of African scientists.

Specific objectives: The project will help to:

- Enhance the quality of supervisor and supervisory process
- Improve the developing of skills of postgraduate students
- Improve quality of research and thesis through diverse interactions
- Create a platform where scientists desiring to serve as mentor/supervisor to the next generation of African scientist can register and interact
- Profile scientific expertise
- Create a network for research
- Stimulate multi/ inter/ and cross disciplinary research



- Create virtual supervision/ mentorship networking – stimulate the shift from capacity building to the construction of competence
- Promote inter-academic partnership
- Accelerate the formation of a critical mass of African scientists
- Minimise the time of supervision and brain drain
- Create a platform to involve the African diasporas' scientific talent in higher education training programmes
- Exchange of experience between individuals and institutions

Methodology

The project will begin with the development of an interactive web-portal (Africa e-Supervision System (AfeSuS)), which will serve as a hub where researchers around the world will voluntarily create profiles specifying discipline, research interests and availability to mentor and supervise postgraduate students in Africa. Once the AfeSuS has been developed, an aggressive advocacy through the GYA, NYAs, senior academics and other organisations will be put in place to inform and spread the information about the web-portal and stimulate registration. From the registration content to AfeSuS, a database of discipline-specific expertise will be created. This will be a ready-for-search platform, containing fact sheets, links and explanations about available volunteers, mentors and supervisors.

Outputs

Output 1. Database of volunteers' research mentors and supervisors; as **outcome** from this output; the exploitation of the database will offer new options to young African postgraduate students. The **indicators** here are the number of volunteers that will register in the web-portal.

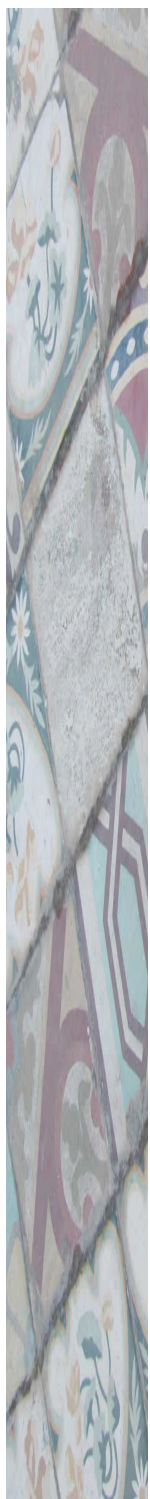
Output 2. Online AfeSuS portal - the **outcome** for this output is the real-time worldwide access to information on research mentors and supervisors. Key **indicators** will be the number of pairings between mentors and supervisors and next generation scientist and the speed of making the links. In addition, students will have access not only to their own selected supervisor, but also to the whole network of those registered to the web-portal. Registered members to the platform will make new professional acquaintances and create new networks.

Budget – 5.000 EUROS

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3. Unesco (2009). *Financing tertiary Education in Africa. Task Force pour l'Enseignement Supérieur en Afrique, UNESCO, Paris.*

Initiative 2: *Designing a successful research career: Essentials for postgraduate and early career researchers - A guide for the African researcher*



Project champion: Dr. Karen J. Cloete

Team members: South African Young Academy of Science, African Young Academies, African Senior Academies, Global Young Academy

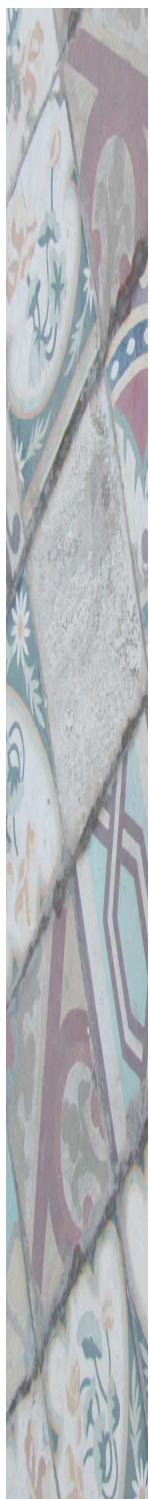
Background

Educating the next generation of researchers in Africa is vital in positioning Africa as one of the key producers of fresh knowledge that may lead innovation, address challenges, maintain economic growth, and safeguard prosperity and societal wellbeing. However, education in the form of research capacity building is limited in Africa, with only a few early career researchers growing careers with sustainable and transformational potential. Furthermore, most research institutes lack a sufficient number of doctoral-qualified staff or employ an academic middle tier whose development has been hampered by decades of underfunding, debilitating high quality skills transfer to a new generation of researchers. Particularly in Africa, the frightening brain drain is of great concern bearing in mind its growing youth population that will require quality mentoring to blossom into the next generation of leading researchers.

Professional skills that need to be attained at the early stage of the career include budgeting, grant-writing, managing personnel, and writing academic papers, to name but a few. Expert researchers simply do not have the energy or incentive to guide novice peers due to numerous commitments. Consequently, essential professional skills are never transferred to most early career researchers, who may then also sacrifice acquiring essential professional research skills in the rat race to secure funding and publish. In essence, time and resources are simply lacking in acquiring a vast amount of essential professional skills, which also indirectly negatively impacts the generation and implementation of big ideas or even prompts unnecessary career detours in young professionals.

To ensure a brighter future for early career researchers in Africa, either at the postgraduate or early career level, professional skills in building a successful research career must be acquired. Research skills may be sourced from different media, which may include the internet and books. Resources such as books may however only cover one skill topic with relevance to a specific region and discipline, making it necessary and time-consuming to consult a range of texts. In essence, the ideal skills transfer media would be a science career guidance booklet covering a range of relevant topics written by experienced researchers from Africa and around the globe for the next generation of African researchers. Such a booklet may serve as a pocket guide in surviving and thriving in a career in Africa and the global research environment.

Initiative 2: *Designing a successful research career: Essentials for postgraduate and early career researchers - A guide for the African researcher*



The aim of this project will be to compile a guide for early career researchers covering topics that will serve as building blocks for a strong career foundation.

Specific objectives include:

- Building capacity of early career researchers;
- Advancing quality research from an early career stage in Africa and the rest of the world;
- Creating a stage for young and senior African academy members as well as GYA members to exchange and showcase experience;
- Improving collaboration between members of the South African Young Academy of Science, Young and Senior African Academies, and the GYA.

The guide will recognise differences among research cultures, research disciplines, research types (pure basic research, strategic basic research, and applied research), and research organisations, and will be aimed at scholars still planning and designing a career, either at the postgraduate or postdoctoral level. In essence, as members of African academies, the authors feel they have a responsibility to support early career researchers and share their skills with Africa and the rest of the world.

Project activities

- Networking with other Young and Senior members of African Academies as well as the Global Young Academy to advertise the project and gather authors for selected chapters (Phase A);
- Writing and editing of chapters by interested members (Phase B);
- Creating a title and design (Phase C);
- Compiling a budget (Phase D);
- Publishing, creating marketing and launch plans (Phase E).

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE [NAME OF SENIOR ACADEMY] (ACRONYM OF SENIOR ACADEMY)

[Address of Senior Academy (Location and Postal), including email address]

and herein represented by

The President, ACRONYM OF SENIOR ACADEMY

S/he being duly authorized thereto

(hereinafter referred to as "ACRONYM OF SENIOR ACADEMY")

AND

[NAME OF YOUNG ACADEMY] (ACRONYM OF YOUNG ACADEMY)

[Address of Young Academy (Location and Postal), including email address]

A body composed of top rated professionals (Below X years of age) in all fields of academic and industrial research. The [Name of Young Academy] (Acronym of Young Academy) constitutes a national platform for promoting research and the career of young researchers.

It represents the voice of young researchers in dialogues of metropolitan, national and international importance in all fields of human endeavour.

and herein represented by:

The President, [Acronym of Young Academy]

and S/he being duly authorised thereto

(Hereinafter referred to as [Acronym of Young Academy])

WHEREAS

Both academies have a common objective in the area of scientific research, capacity and institutional building and wish to complement each other's efforts in these areas. The [Acronym of Young Academy] came into existence due to the pioneering effort of [Acronym of Senior Academy], in collaboration with other national academies (If Applicable).

NOW THEREFORE

Both parties in view of their common objective, have reached a mutual understanding to enter into a cooperative arrangement as set out in this Memorandum of Understanding (MoU) to collaborate in scientific research, development and training in all fields of learning, public education, information and national development.

Template: Memorandum of Understanding

NOW THEREFORE

Each party pledges to bring its expert knowledge base, facilities and human resources to bear upon this cooperative arrangement for its success.

Within the scope of this cooperative arrangement,

[SENIOR ACADEMY ACRONYM] and **[YOUNG ACADEMY ACRONYM]** shall avail their expertise in the areas of:

- Human capital development
- Networking
- Goodwill

To each other

NOW THEREFORE THE PARTIES HERETO AGREE AS FOLLOWS:

The preamble hereto shall form an integral part of this agreement.

1. Our relationship together
 - 1.1. There shall be mutuality in relationship, **[SENIOR ACADEMY ACRONYM]** being seen as the mentor and supervising national academy.
 - 1.2. **[YOUNG ACADEMY ACRONYM]** shall be free to run her activities as an academy and **[SENIOR ACADEMY ACRONYM]** shall act in advisory capacity to her as well as a benefactor when deemed necessary/appropriate.
2. Membership selection process
 - 2.1. **[YOUNG ACADEMY ACRONYM]** shall be responsible for the process of selection of its members.
 - 2.2. The Senior Academy may provide input to this process and shall be informed of the outcome.
 - 2.3. The selection criteria and materials used for the process shall be provided to **[SENIOR ACADEMY ACRONYM]** as necessary.
 - 2.4. The summary of selected members shall be presented to **[SENIOR ACADEMY ACRONYM]** within one month of the conclusion of selection.
3. Support for programmes and research grant
 - 3.1. Before the end of December of every year, **[YOUNG ACADEMY ACRONYM]** shall provide **[SENIOR ACADEMY ACRONYM]** with a detail of planned programmes and proposals for the next year, with cost implications, and **[SENIOR ACADEMY ACRONYM]** would advise and render financial support, as possible, via a subvention to cover selected expenses.
 - 3.2. **[SENIOR ACADEMY ACRONYM]** shall additionally assist **[YOUNG ACADEMY ACRONYM]** in securing funding from local, national and international governments, non-governmental organizations and funding agencies.
 - 3.3. **[SENIOR ACADEMY ACRONYM]** shall provide where necessary and possible logistic, moral and other forms of support to **[YOUNG ACADEMY ACRONYM]** and her members in their activities.

Template: Memorandum of Understanding

4. Obligations

- 4.1. [YOUNG ACADEMY ACRONYM] shall, at the end of every year, make a report to [SENIOR ACADEMY ACRONYM] which will include the list of her executed activities in the Year and its financial report.
- 4.2. [YOUNG ACADEMY ACRONYM] members and alumni shall at the request of [SENIOR ACADEMY ACRONYM] participate in and support to the best of their ability [SENIOR ACADEMY ACRONYM] programmes and activities.
- 4.3. [YOUNG ACADEMY ACRONYM] shall acknowledge the support from [SENIOR ACADEMY ACRONYM] in her activities and programmes
- 4.4. Each body shall provide for at least two members of the other, to have an observer status at her General Assembly

5. AGENCY AND PARTNERSHIP

- 5.1. No party shall present itself as the representative or agent of the other party for any business, legal or any other reason, nor shall it have the power of authority to commit the other party, unless it receives the other party's prior written consent.

6. COMMENCEMENT AND DURATION

- 6.1. This MoU shall operate as from the date of last signature thereof ("the Effective Date") and shall remain binding for a period of X (XXX [In Word]) years in the first instance, unless terminated prior thereto by mutual written consent between the parties.

- 6.2. The parties may after expiry thereof, renew this MoU.

7. GOVERNING LAW

- 7.1. This MoU shall be governed by and interpreted in accordance with the laws of the [Official Name of Country].

8. GENERAL

- 8.1. This document and Annexure "A" hereto contain the entire MoU between the parties and neither party shall be bound by any undertaking, representation or warranty not recorded herein or added hereto as provided herein.
- 8.2. No alteration, variation, addition or agreed cancellation of this MoU shall be of any force or effect unless reduced to writing as an addendum to this MoU and signed by the parties or their duly authorized signatories.
- 8.3. No failure or delay on the part of either party in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or privilege preclude any other or further exercise thereof, or the exercise of any other right, power or privilege. The rights and remedies herein expressly provided are cumulative and not exclusive of any rights or remedies which the parties would otherwise have.
- 8.4. No indulgence, leniency or extension of time which either party ("the Grantor") may grant or show to the other shall in any way prejudice the Grantor or preclude the Grantor from exercising any of its rights in the future.
- 8.5. No provision of this Agreement shall supersede the [SENIOR ACADEMY ACRONYM] Constitution or the [YOUNG ACADEMY ACRONYM] Constitution, with respect to any matter. If and where any clause herein contravenes the Constitution of either party, such provision rather than be binding and enforceable shall be null and void and of no effect whatsoever.

Template: Memorandum of Understanding

Signed at _____ this _____ day of _____ [Year]

AS WITNESSES:

1. _____
[SENIOR ACADEMY NAME (ACRONYM)]
2. _____
Names in Full

Capacity (Duly Authorized)

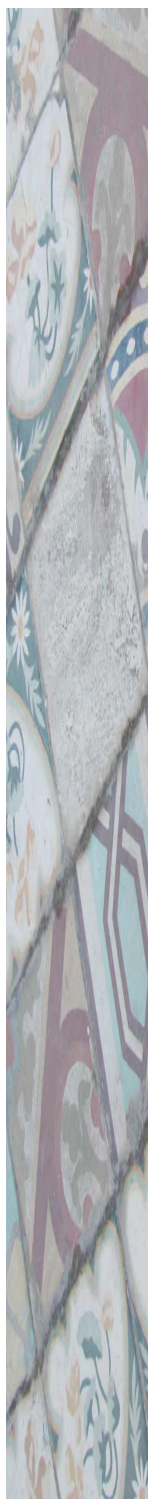
Signed at _____ this _____ day of _____ [Year]

AS WITNESSES:

1. _____
[YOUNG ACADEMY NAME (ACRONYM)]
2. _____
Names in Full

Capacity (Duly Authorized)

Survey: *Challenges of Early Career Researchers (ECR): Experiences from African Young Researchers and Scholars*



The GloSYS Africa project is led by a team of African members and alumni of the Global Young Academy (GYA) and aims to explore and examine the central issues, as well as the contextual factors that have a bearing on the career prospects of early career scientists and scholars, and to present recommendations for the immediate future. To gain a better understanding of the situation of Early Career Researchers (ECR) at the beginning of the project, we seek your support to identify the most important issues in your country.

It would be of great help if you could share your views on the topics addressed in the questions below so that we may include your statements in our feedback session with all research partners on the project to design the most regionally comprehensive survey we can. We appreciate feedback both from scholars in academia and researchers in enterprise, government agencies, NGOs and other organisations, across all fields of study. Answers from individuals will be treated anonymously if you do not want to provide personal details. Please send your feedback by 30 September 2016.

A summary of results in form of a short presentation will be shared at the 2nd Africa Young Academies Regional Conference from 24-26 October, 2016, where the first survey will be piloted. Please answer the following 6 questions briefly as they apply in your country.

Country of residence:

Country of birth:

Name:

University/Organisation:

Email contact:

1. What are the major challenges everyone pursuing an academic or research oriented career faces?
2. What are specific challenges of early career researchers without a PhD?
3. What are specific challenges of early career researchers with a PhD?
4. What should we know about the challenges and opportunities for young scientists and scholars from your country in the diaspora – both in other African countries and on other continents?
5. What features are salient to understanding the characteristics of your country with regard to its higher education and research systems (e.g. most important employment sectors; regulations; cultural norms; funding opportunities; history)?
6. How can the GloSYS Africa Project invite young scientists and scholars to participate in a survey / online survey?

The GloSYS study aims at improving the career advancement of young scientists around the world by examining conditions, obstacles, and opportunities that shape the career paths of young scientists and scholars.

GloSYS Project Description

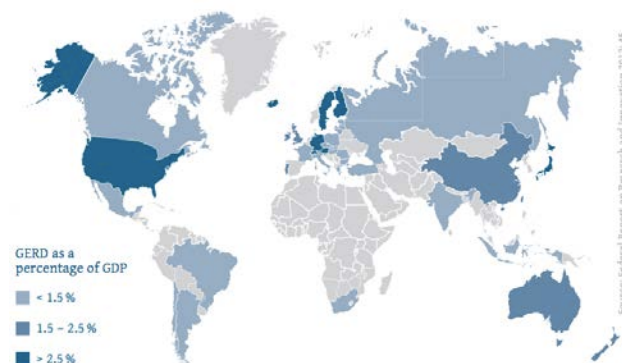
Academics, employers, and policy makers recognize the importance of global networks for achieving scientific excellence and solving international problems. Young scientists occupy a unique and pivotal position in this regard. Widely recognized as being among the most creative and energetic researchers, young scientists and scholars can also be more mobile and better trained than ever before. They thus constitute a vast pool of global talent that stands to change the geography of knowledge in fundamental ways. Early career researchers also play an increasingly important role in the knowledge-based economy, where research and innovation are the drivers of economic growth and socioeconomic development for countries around the world. They are often the key innovators and creators that provide the intellectual capital needed to grow strong national research and innovation systems.

Understanding how young researchers can succeed in and contribute to the knowledge landscape, and what obstacles they encounter in the process across the world is the subject of the GloSYS project. By exploring the global state of young scientists and identifying their opportunities and concerns, the GloSYS project aims to initiate change and catalyze improvement in the global system of science.

Publications concentrating on early career scientists in developing countries are rare and often fail to reflect on science and academia from within. Most available knowledge consists of studies coordinated by researchers working abroad and not in the region under examination.

Need for Action identified in GloSYS

Results from the GloSYS precursor study (Friesenhahn & Beaudry, 2014 – see link below) show that the current knowledge on the state of young scientists is incomplete and geographically biased, with knowledge primarily produced in Europe and North America. This mirrors the Gross domestic expenditure on research and development (GERD) as a percentage of gross domestic product (GDP) in 2010.



GloSYS identified a need for action in the following areas:

1. **Transparency and fairness** in assessment criteria for career development.
2. **Systematic mentoring** to guide careers.
3. **Focused training** in all aspects of academia.
4. **Autonomy** over their research.
5. **Values** of work-life balance.
6. **Working conditions.**
7. **Support structures.**

Cooperation in Africa

The GloSYS precursor study indicates that there is a huge knowledge deficit on the state of young scientist and scholars in Africa. Reliable, systematic and comparable data is simply missing, despite the value of such information for informing public policy initiatives that could substantially improve career development and support for young scientists. No doubt, improving the status of young African researchers will reflect on the development of their countries.

The Global Young Academy seeks partnerships with African experts, organizations, donors and stakeholders to support a project investigating the “State of Young Scientists in Africa”.

Our 3-year project has already received core funding in late 2015 and has taken its first steps. To strengthen our network of partners, we would like to initiate contact with and invite:

- Organizations in Africa interested in collaboration
- Funding partners to finance local initiatives e.g. collaborating researchers, advisors and/or meetings in Africa
- Experts on the higher education and science system in Africa
- People in governmental positions or otherwise involved in policy making with a focus on science and higher education
- African Academies and network of academies interested in collaboration

For more **detailed information on the project, please turn the page! Please contact us** to get involved.

GloSYS Africa Regional Study – Project Overview

GloSYS Africa is the second regional study of the GYA after GloSYS ASEAN. The main **research objectives** focus on the perceptions of young scholars on their working conditions, career prospects, mobility, and mentorship. **Policy recommendations** will be based on the results of the study. **Capacity building by collaboration** with research partners across African countries is central to the success of the project.

GloSYS Africa – Research Context

Science is universal, the scientific community is becoming more and more globalized, and the academic workforce is more mobile than ever. Nevertheless, science and research policy is still primarily a national issue and has to answer the specific needs of a country.

Though a universal science can contribute to solving global problems, local problems often require local solutions, technology is not independent from social context, and often there is local knowledge that is necessary to further development. Therefore, each GloSYS regional study takes into account the particular needs of a region while maintaining a global comparative perspective. Though being a very heterogeneous continent, the majority of the higher education and research systems in Africa are facing the following challenges:

1. **Development of a skilled workforce.** Enrolment in higher education is rising, but there is a shortage of sufficiently skilled teachers in higher education.
2. **Research output is low.** The world share of scientific research output from Africa is very low, even if compared to other developing regions like Asia or South America. There is a shortage of well-qualified researchers with international research-experience.
3. **Funding of research is insufficient and inefficient.** Research topics are often not tied to national development objectives, leading to a disconnect between university researchers and policy makers. Research funding at national level is generally low and has been decreasing over the last two decades. Even when available, in some cases, ease of access and timely delivery has been a concern.
4. **Mobility of young scientists.** Low salaries, insufficient research opportunities, unfavorable academic environment, and difficult career perspectives put pressure on young scientists and scholars, leading to highly qualified personnel leaving their home countries permanently.

To advance science development in Africa, a more accurate assessment of the state of young scientists is essential as they are required to not only do good science, but also to be the leaders of change and development in the African science landscape.

GloSYS Africa – Project Details

Begin: late 2015

Duration: 36 months

Target groups: Young scientists and scholars in Africa with a Masters degree or higher, and young scientists and scholars from Africa with a PhD in the diaspora working in either a) higher education, b) public or private funded research organizations, or c) business enterprises.

Participating countries: Cameroon, Egypt, Ethiopia, Ghana, Kenya, Mauritius, Morocco, Mozambique, Nigeria, Senegal, South Africa, Tunisia, Uganda, and Zimbabwe

Research Objectives:

Measure **perceptions** of young researchers and identify **barriers** and **opportunities** impacting:

- Working conditions / Work satisfaction
- Career advancement
- Mentorship and support
- Mobility – “brain gain” and “brain drain”
- Gender disparity

Methodology: mixed method-approach, based on questionnaire, and semi-structured interviews.

Results and expected outcomes:

The study aims to provide policy-relevant information at national and regional level based on empirical evidence.

Results will be published in scientific papers, and will be presented at international conferences and policy meetings.

Collaboration with local scholars will improve the validity and applicability of the research and support skill-development.

Research team:

Project leadership: The project is led by GYA members Dr Abidemi Akindele (Nigeria), Dr Abdeslam Badre (Morocco), Dr Anna Coussens (South Africa), Dr Fridah Kanana (Kenya), and Dr Mohammed Faraq (Egypt), supported by members of the GloSYS working group, the GYA office and National Young Academies in Africa.

Research partners: Prof Yamina Elkirat (Morocco), Prof Ibrahim Oanda (Kenya/Senegal), Dr Emmanuel Ojo (South Africa), and Prof Uchenna Udeani (Nigeria).

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Project website: <http://globalyoungacademy.net/activities/the-global-state-of-young-scientists>

2nd Africa Young Academies Regional Conference Empowering the Next Generation of Scientists in Africa

24-26 October 2016, Volla Hotel - Bagatelle, Mauritius (All conference sessions will take place in Educator Main at Volla Hotel)

Day 1: Monday 24 th October		
Time	Event	
8:00-9:00	Arrival & Registration	
	Opening Ceremony	
	Dr Vidushi Neerghen-Bhujun, Master of Ceremony	
	Dr Abidemi J. Akindele, Co-Chair of Conference OC	
	Dr Orakanoke Phanraksa, Co-Chair of GYA	
9:00-9:45	Dr Jean-Claude Aubrey, President of Mauritius Academy of Science	
	Dr Jackie Olang, Executive Director MASAC	
	Prof Aderemi Kuku, AAS President	
	Ms Johanna Rapp, Robert Bosch Foundation	
	Prof Romeela Mohee, Vice-Chancellor University of Mauritius	
9:45-9:55	Mrs Leela Devi Dookun-Luchoomun, Honourable Minister of Education and Human Resources, Tertiary Education and Scientific Research	
9:55-10:15	Prof Ameenah Gurib-Fakim, GCSK, CSK, Her Excellency, President of the Republic of Mauritius	
10:15-10:35	Group Photo & Coffee Break	
	Session 1: Women in Science: an African Perspective (10:35-12:30)	
	Chair - Prof Esther Mwaikambo, Tanzania Academy of Sciences	
10:35-10:50	"The path of a successful female scientist", Her Excellency, President of the Republic of Mauritius, Prof Ameenah Gurib-Fakim, GCSK, CSK	
10:50-11:30	Panel Presentations: Dr Isabel Pilirani Kazanga (Eqwaz/Malawi); Dr Karen Cloete (SAYAS); Dr Dhalia Garwe (ZAS)	
11:30-12:30	Panel discussion + Q&A	
12:30-13:30	Lunch	
	Session 2: Reflections on 1 st Regional Conference (13:30-14:30)	
	Chair - Prof Paul Baki Olande, Kenya National Academy of Sciences	
13:30-14:00	Outcomes, Implementation, Challenges and Opportunities - Dr Abidemi Akindele	
14:00-14:10	"GYA as a facilitator in global and regional NYA cooperation" - Dr Orakanoke Phanraksa	
14:10-14:20	"GYA-NYA interrelationship for regional advancement" - Dr Beale Wagner, MD GYA	
14:20-14:30	Discussion + Q&A	
	Session 3: Bridging Senior & Young Academies (14:30-16:00)	
	Chair - Prof Oumar Sock, Academy of Science and Technology of Senegal	
14:30-14:50	"Synergy between Senior and Young Academies: a sine qua non for the transformation of Africa" - Prof Masresha Felene (EAS)	
14:50-15:00	Q & A	
15:00-16:00	Breakout sessions: Parallel discussions	
16:00-16:30	Coffee Break	
16:30-17:30	Breakout Session Feedback & Discussion (15 min. for each group)	
	Closing of day 1	
19:30-21:30	Dinner	

Day 2: Tuesday 25 th October		
Time	Event	
	Session 1: Reconnecting Diaspora in Africa (9:00-10:30)	
	Chair - Prof Patrick Rubaihayo, Uganda National Academy of Sciences	
9:00-9:15	"Effective diaspora engagement for empowering Young Scientists" - Prof Himla Soodyali, Academy of Science of South Africa	
9:15-9:55	Panel Presentations: Prof Aderemi Kuku (AAS); Dr Isabel Pilirani Kazanga (Malawi); Dr Dexter Taqviweryi (ZIMYAS); Dr Bahaa Eddine Samroukh (Morocco)	
9:55-10:30	Discussion + Q&A	
10:30-11:00	Coffee Break	
	Session 2: Young & Senior Academies' Presentations (11:00-12:30)	
	Chair - Prof Robert Tinga Guiguemde, National Academy of Sciences of Burkina Faso	
11:00-11:30	Presentations from established African NYAs (Kenya, Ethiopia, Senegal, Uganda, South Africa & Tanzania)	
11:30-12:00	Progress report from Senior Academies on engagements with NYAs in respective countries (Kenya, Ethiopia, Senegal, Uganda, South Africa & Tanzania)	
12:00-12:30	Discussion + Q&A	
12:30-13:30	Lunch	
	Session 3: Science Leadership in Africa (13:30-16:00)	
	Chairs - Prof Kalu Mado Onuoho, Nigerian Academy of Science Prof Omar Fassi-Fehri, (Hassan II Academy of Sciences and Technology, Morocco)	
13:30-13:50	"Strengthening African Academies II" - Prof Jutta Schnitzer-Ungeluf, Executive Director of The Leopoldina	
13:50-14:10	Discussion + Q&A	
14:10-14:30	Report on survey-findings from African NYAs - Dr Abidemi Akindele	
14:30-15:15	Presentations from leadership initiatives: African Science Leadership Program - Dr Vidushi Neerghen-Bhujun Next Einstein Forum - Dr Abdelham Badre ASEAN Science Leadership Program - Dr Orakanoke Phanraksa	
15:15-15:45	Discussion + Q&A	
15:45-16:15	Coffee Break	
	Session 4: Global Sale of Young Scientists (16:15-17:00)	
	Chair - Prof Marwena D. Gumedze Y, L'Académie Nationale des Sciences, Arts et Lettres du Togo	
16:15-16:45	"Overview on GloSYS-Africa" - Dr Badre Abdelham	
16:45-17:00	Discussion + Q&A	
	Closing of day 2	
17:00-21:00	Tour & Dinner	

Day 3: Wednesday 26 th October		
Time	Event	
	Session 1: African NYA Movements (8:30-11:00)	
	Chair - Prof Masresha Felene, Ethiopian Academy of Sciences	
8:30-8:50	"Implementation of regional and global policy frameworks: how can science academies help?" Prof Robin Crewe (University of Pretoria/Co-Chair InterAcademy Partnership Project)	
8:50-9:00	Discussion + Q&A	
9:00-9:40	"NYAs in Africa: Sustainable intra-regional engagements for high impact" (Nigeria, Egypt & Burundi)	
9:40-10:20	Presentation of proposals for Africa-wide research project (Dr Karen Cloete, Dr Kwabena Owusu Danquah, Dr Henri Tonnang, Dr David Niyukuri & Dr Tolu Oni)	
10:20-10:30	General Discussion on Way Forward	
10:30-10:45	Coffee Break	
	Session 2: African NYAs Advancement & Closing Note (10:45-12:00)	
	Chair - Prof Aderemi Kuku (President, African Academy of Sciences)	
10:45-11:30	Breakout sessions: 1. Updated guidelines for establishing effective NYAs 2. Template MOU between NYAs and Senior Academies 3. Outline of proposed Africa-wide research project for development & funding 4. Preliminary plans for the 3 rd Africa Young Academies Regional Conference in 2018	
11:30-12:00	Reports on Breakout sessions & Feedback	
12:00-12:15	Conference Closing Remarks & Departure	





Conference Partners

The conference is supported by

Robert Bosch Stiftung



"2nd Africa Young Academies Regional Conference"

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**GLOBAL
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