



African Strategy for Fundamental and Applied Physics



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<https://africanphysicsstrategy.org/>

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Outline

1. The African Strategy
 - Motivation, steering committee, time scale, expectation, general structure of the organization
2. Structural Organization
3. How can you get involved?
4. Timeline
5. Groups and subgroups
6. Endorsement and Support
7. Current Status
8. Members of the IAC
9. Group Conveners

Physics Strategies



1. In June 2020, an updated of the European Strategy for particle physics was released

- a. “The European Strategy for Particle Physics is the cornerstone of Europe’s decision-making process for the long-term future of the field. Mandated by the CERN Council, it is formed through a broad consultation of the grass-roots particle physics community, it actively solicits the opinions of physicists from around the world, and it is developed in close coordination **with similar processes in the US and Japan** in order to ensure coordination between regions and optimal use of resources globally.” This followed the previous 2 European Strategies in 2006 and 2013

2. At the moment, the US is preparing its Strategy, known as Snowmass 2021—final report expected by October 2021

- a. This is a follow up of Snowmass 2013. “The Particle Physics Community Planning Exercise (a.k.a. “Snowmass”) is organized by the Division of Particles and Fields (DPF) of the American Physical Society. Snowmass is a scientific study. It provides an opportunity for the entire particle physics community to come together to identify and document a scientific vision for the future of particle physics in the U.S. and its international partners. Snowmass 2021 will define the most important questions for the field of particle physics and identify promising opportunities to address them. The P5, Particle Physics Project Prioritization Panel, will take the scientific input from Snowmass and develop a strategic plan for U.S. particle physics that can be executed over a 10 year timescale, in the context of a 20-year global vision for the field.

3. Latin America Strategy Forum for Research Infrastructures for High Energy, Cosmology and Astroparticles

- a. “Developing a Strategy to Strengthen Latin American Scientific Collaborations and their Impacts”
- b. First time in Latin American. Mandated by Ibero-American Ministerial Science and Technology. Meeting in Guatemala in October 2018:mandate declaration

4. European Astro particle physics Strategy

<https://www.appec.org/wp-content/uploads/2017/08/APPEC-Strategy-Book-Proof-23-Nov-2.pdf>

The African Strategy



1. Objectives

- a. Develop a Strategy to increase African education and research capabilities, improve collaborations, and inform international partners, sponsors, policymakers on the strategic directions likely to impact African development
- b. Engage African scientists and the international community in the Strategy development
- c. The process to take a few years, to end with the release of the strategy report which will suggest the direction, with actionable items for the next decade. To be repeated periodically, every 7-10 years for the following decades with a review of the impact of previous Strategies
- d. This inaugural African Strategy to set the foundation and framework to draw the participation of African physicists—with inputs from the international communities—in defining education and physics priorities most impactful for Africa

2. General Structure

- a. Steering Committee, Advisory Committee, Group Conveners, sub-group conveners
- b. Solicitation of inputs from the community in the form of Letters of Intent, and White Paper Study Groups**
 - i. Progress discussed in the relevant groups
 - ii. Subgroup and group final reports (at the subgroup and convener levels); Strategy report at the Steering Committee level
 - iii. Feedback and advice from the IAC

3. Logistics

- a. Website, Twiki pages for working groups, repository, mailing lists, discussion forums, meeting Agendas and workshops—**under various stages of development**

Structural Organization



1. Steering Committee

- Overall coordination
- Go-between IAC and Groups
- Preparation of final report

2. IAC

- Review of progress
- Advice on scope
- Engage of international communities and policymakers
- Review and endorsement of final report

3. Groups / Subgroup Conveners

- Coordination at group or subgroup levels
- Encouragement / Solicitations of community inputs
- Preparation of Group reports

4. Liaisons between groups

- To ensure that cross-cutting topics receive proper coverage and consideration in all the relevant groups

5. Timeline - Final report

- to be delivered ~2 years from the start of group activities

How can you get involved?

1. **Nominate subgroup conveners and liaisons**
2. **Volunteer for (sub)conveners**
3. **Submit LOIs / White papers**
4. **Participate in White Paper study groups**
5. **Participate in (sub)group meetings**
 - a. Offer your constructive opinions and expertise
6. **Encourage your research groups to get involved**
7. **Encourage institutional credits for those working on this Strategy**
 - a. For people in leadership roles as (sub)conveners and liaisons
 - b. White papers to be of publishable quality and may be published in a peer-reviewed journal
 - i. White paper finding reviewed and referenced in the Strategy report
 - c. **Your work on this Strategy will receive proper recognition at your institute and internationally, and should result in a paper, and serve the interest of the African Strategy**

Tentative timeline



- **October - December 2020**

- Formation of IAC and WGs conveners
- First meeting with IAC and WGs conveners/invitation to stakeholders

- **January - March 2021**

- Definition of subgroups of each WGs
- Consultation with the IAC / stakeholders
- Call for nominations of subgroup conveners

- **April - June 2021**

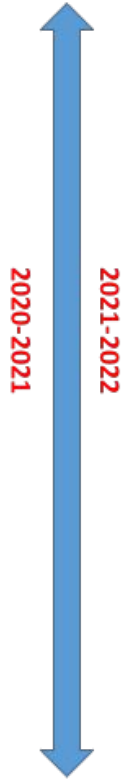
- Selections of subgroup conveners
- Start of regular group meetings
- Africa-wide town hall

- **July - September 2021**

- Call for Letters of Intent
- From LOIs to White Paper study groups

- **October - December 2021**

- Community planning meeting
- White paper studies in progress
- Outline of the Strategy report



2020-2021

2021-2022

- **January - March 2022**

- Group contributions to the report
- Preliminary draft of report
- Consultation with IAC & Stakeholders / IAC & Stakeholders feedback

- **April - June 2022**

- White paper study groups finalized
- Report matured
- Community feedback

- **July - September 2022**

- ASFAP symposium
- Community feedback

- **October - December 2022**

- Final report endorsed by IAC.
- Report submitted to the African Academy of Sciences and other Stakeholders in Africa, and distributed widely

To be revised as we progress. Deadline for LOIs and White Papers will be set appropriately

Working Groups and Sub-Groups



Physics WGs:

- Accelerators
- Astrophysics & Cosmology
- Computing & the 4IR
- **Energy Group**
- Instrumentation & Detectors
- Light Sources
- **Materials Physics**
- Medical Physics
- Nuclear Physics
- Particle Physics
- **Additional Physics Groups**
 - **Earth Science; Fluid & Plasma Physics; Atomic, Molecular & Optical Physics; Theoretical & Applied Mechanics; Photonics & Optics**

Community Engagement: Physics Education, Knowledge Transfer, Entrepreneurship, Communication and outreach, Stakeholders and Funding and government agencies, policy makers related affairs.

Group Conveners

- Each WG has 3 to 4 co-conveners, depending on the group
- Selection of group conveners in progress. So far 24 co-conveners have accepted to serve
- Gender parity is an ethical attitude and one rule among others of our code-of-conduct
- Others, on-going invitations
- Seeking co-conveners for the additional groups

The Sub-groups and the related conveners

- For each working group, subgroups will be defined by the group conveners and the Steering Committee
- Then call for nominations of subgroup conveners; final selections by conveners and steering committee
- Gender balance encouraged

Endorsement and Support



- **Formal support and umbrella of the ASFAP**
 - Endorsement and support from AfPS
 - Link of the ASFAP website for the African Physical Society (AfPS) website
 - AfPS to open a forum of discussions for boosting ASFAP in the Continent
 - Regular report of progress on ASFAP at AfPS meetings or workshops
 - Endorsement of the final report on ASFAP by AfPS
- Endorsement from the International Union of Pure and Applied Physics (IUPAP) & AfPS
- Support message from CERN Director General
- Seeking support / engagement from the the African Academy of Sciences (AAS)
- Support from IAC members
- Through the AAS, we aim to reach African Union

Current Status

1. Website under development and other logistics being setup
2. First meeting with group conveners on Nov 10, and separately with the IAC on Nov 11
3. We received positive feedback and suggestions
 - a. These are being implemented
4. Engage the conveners for the definition of the subgroups of each group
5. Follow up on invited conveners that have not responded yet
6. Pursue engagement with AAS, with the aim to reach AU
7. Seek conveners for the additional physics groups mentioned on page 8
 - a. Replacement of declinations
8. Tentatively meet again with IAC and conveners before the end of 2020
9. For the rest, follow the timeline on page 7

Members of the IAC



- **Prof. Ahmadou Wagué** (President of AfPS)
- **Prof. Atish Dabholkar** (Director of ICTP)
- **Prof. Emmanuel Tsesmelis** (CERN International Relations)
- **Prof. Faïçal Azaiez** (Director of iThemba LABS, South Africa)
- **Dr. Fadila Boughanemi** (EU Deputy Head of International Cooperation, Research and Innovation Unit)
- **Prof. Fernando Quevedo** (Former Director of ICTP)
- **Prof. James S. Gates** (Brown University, President Elect of APS)
- **Dr. Latifa Elouadrhiri** (Physicist Jefferson Lab & DOE, USA)
- **Prof. Michel Spiro** (President of IUPAP)
- **Prof. Mohamed Hassan** (President of TWAS)
- **Dr. Najat Mokhtar** (IAEA Deputy Director General and head of the Department of Nuclear Sciences and Applications)
- **Prof. Petra Rudolf** (University of Groningen, The Netherlands, President of EPS)
- **Prof. Rob Adam** (Director of SKA, South Africa)
- **Prof. Rohini Godbole** (India Institute of Science)
- **Prof. Rolf Heuer** (President of the SESAME Council)
- **Prof. Setsuko Tajima** (President Elect of the Japan Physical Society, Osaka U., Japan)
- **Prof. Wang Yifang** (Director at IHEP/CAS, China)
- **Prof. Winston Soboyejo** (Former president of AUST, Nigeria, Provost Worcester Polytech. Inst., USA)
- **Dr. Shamila Nair-Bedouelle** (UNESCO Assistant Director-General for Natural Sciences)
- **Dr. Takalani Nemaungani** (Department of Science and Technology, Acting Chief Director of Astronomy, South Africa)
- **Prof. Zeblon Vilakazi** (Vice Chancellor, University of the Witwatersrand, South Africa).

Group Conveners (1)

https://drive.google.com/file/d/1FH7dsrpN2jt6IyiKa-Zu_ng8uy2L-pl/view



Co-Conveners	Gender	Group	Origin	Citizenship	Residence	Affiliation	Comments
1- Zinhle Bethelazi	F	Particle P	S. Africa	S. Africa	S. Africa	ithemba LABS	Accepted
2- Mohammed Chabab	M	Particle P	Morocco	Morocco	Morocco	Cadi Ayyad U	Accepted
3- Yasmine Amhis	F	Particle P	Algeria	France	France	CNRS-IN2P3	Accepted
4- Marc Dalton	M	Nuclear P	S. Africa	S. Africa	USA	JLab	Accepted
5- Svedalina Dimitrova	F	Nuclear P	Bulgaria	Bulgaria	Bulgaria	BAS	Accepted
6- Hassan Ibrahim	M	Nuclear P	Egypt	Egypt	Egypt	Cairo U.	Accepted
7- Amor Nadji	M	Accelerators	Algeria	Fance	France	Synchrotron Soleil	Accepted
8- Joele Mira	M	Accelerators	S. Africa	S. Africa	S. Africa	iThemba LABS	Accepted
9- Ahmed A. Abdelalim	M	Accelerators	Egypt	Egypt	Egypt	Zewail City	accepted
10- Stephen Avery	M	Medical P	N/A	USA	USA	Penn Medicine	accepted
11- Bidemi Idayat Akinlade	F	Medical P	Nigeria	Nigeria	Nigeria	College of Medicine, University of Ibadan	Invitation 02/11
12- Rajaa Sebihi	F	Medical P	Morocco	Morocco	Morocco	Mohammed V	Accepted
13- Thierry d'Almeida	M	Light Sources	Benin	Benin	Benin/FR	A. D. Sèmè City	Accepted
14- Tabbetha Dobbins	F	Light Sources	African-American	USA	USA	Rowan U.	Accepted
15- Gihan Kamal	F	Light Sources	Egypt	Egypt	Egypt	Helwan U.	Accepted ¹²

Group Conveners (2)



Co-Conveners	Gender	Group	Origin	Citizen ship	Residence	Affiliation	Comments
16-Farès Djama	M	Instrum.&Detect.	Algeria	France	France	CNRS-IN2P3	Accepted
17-Siegfried Fortsch	M	Instrum.&Detect.	Austria	Austria	S. Africa	iThemba LABS	Accepted
18-Ulrich Goerlach	M	Instrum.&Detect.	Germany	German	France	CNRS-IN2P3	Accepted
19-Mirjana Povic	F	Astro&Cosmo	Serbia	Serbia	Ethiopia	ESSTI	Accepted
20-Lerothodi Leeuw	M	Astro&Cosmo	South Africa	SA	SA	UWC	Accepted
21-Bernard D. Asabere	M	Astro&Cosmo	Ghana	Ghana	Ghana	GSSTI / AVN Ghana	Accepted
22-Happy M. Sithole	M	Computing & 4IR	S. Africa	S. Africa	S. Africa	CSIR	Accepted
23-Khoudia Gueye Sy	F	Computing & 4IR	Senegal	Senegal	Senegal	SenChix Association	Invited 26/10
24-Ghita Rahal	F	Computing & 4IR	Algeria	France	France	CNRS-IN2P3	Accepted

Group Conveners (3)



Co-Conveners	Gender	Group	Origin	Citizenship	Residence	Affiliation	Comments
25-M.-Christine Gasingirwa	F	Comm. Engage.	Rwanda	Rwanda	Rwanda	Ministry of Educ.	Accepted
26-Mmaki Jantjies	F	Comm. Engage.	S.Africa	S.Africa	S.Africa	University of Western Cape	Invited 26/10
27-Simi Nwogugu	F	Comm. Engage.	Nigeria	Nigeria	Nigeria	CEO, JA Africa info@ja-africa.org	Invited 28/10
28-Jamal Mimmouni	M	Comm. Engage.	Algeria	Algeria	Algeria	Constantine U. and president of AfAS	Accepted

Seeking conveners for the additional groups mentioned on page 8