

# African Strategy for Fundamental and Applied Physics

Pan-African, gender balanced and inclusive

Conveners Meeting : 2021-07-12

**Mandating Body : African Physical Society**

**Steering Committee: [ASFAP-SteeringCommittee@cern.ch](mailto:ASFAP-SteeringCommittee@cern.ch)**

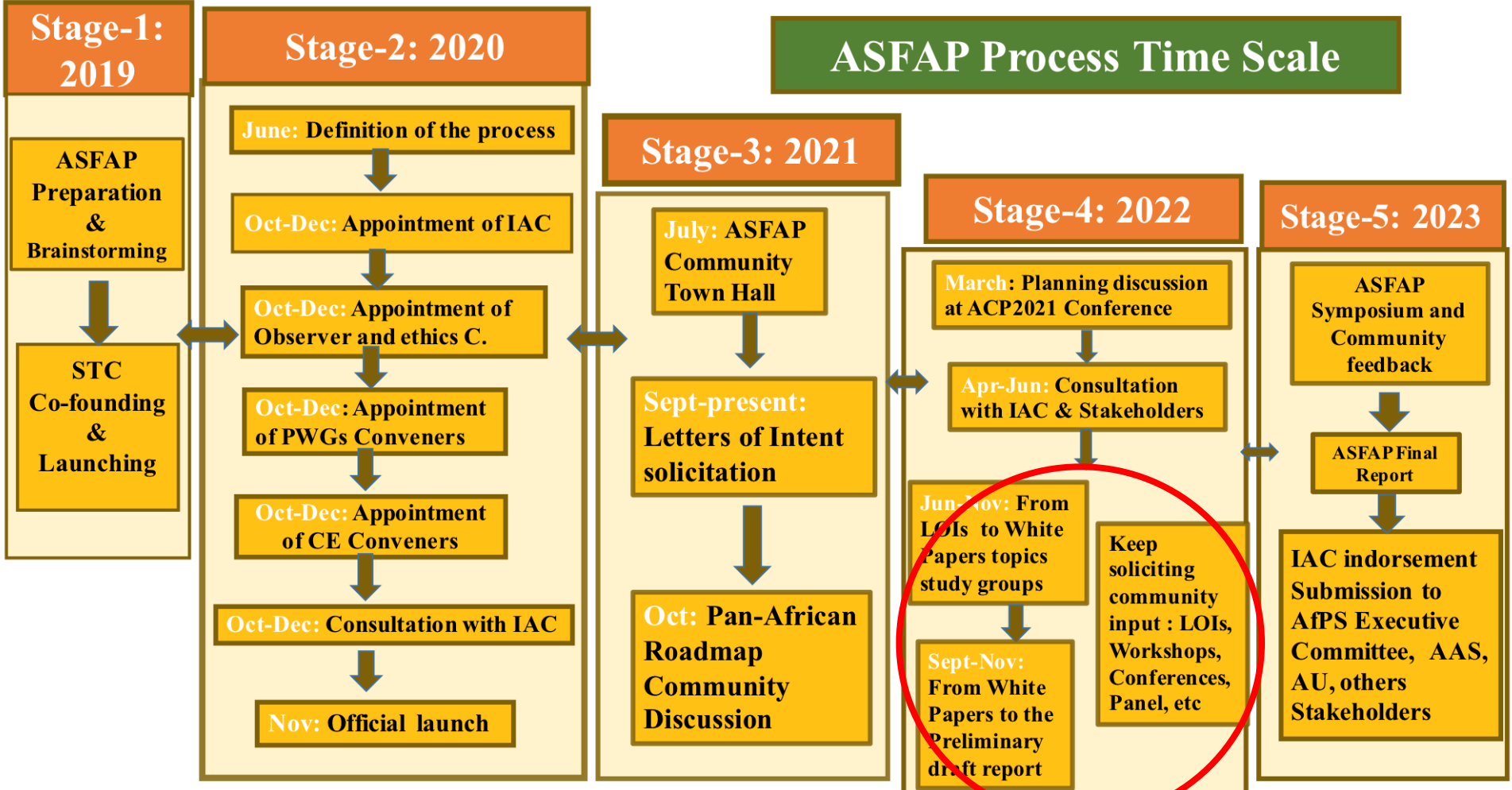
- **Dr. Kétévi Adiklè Assamagan** (BNL, USA), [ketevi@bnl.gov](mailto:ketevi@bnl.gov)
- **Prof. Simon Connell** (University of Johannesburg, SA), [si@mykonos.org.za](mailto:si@mykonos.org.za)
- **Prof. Farida Fassi** (Mohammed V University, Morocco), [farida.fassi@cern.ch](mailto:farida.fassi@cern.ch)
- **Prof. Shaaban Khalil** (CFP, Zewail City, Egypt), [skhalil@zewailcity.edu.eg](mailto:skhalil@zewailcity.edu.eg)
- **Dr. Fairouz Malek** (CNRS and Grenoble Univ., France), [fmalek@lpsc.in2p3.fr](mailto:fmalek@lpsc.in2p3.fr)



**Web :** <https://africanphysicsstrategy.org/>,  
**Wiki :** <https://twiki.cern.ch/twiki/bin/view/AfricanStrategy>  
**Twitter:** <https://twitter.com/StrategyAsfap>

# ASFAP Timeline – the last part Roadmap

## ASFAP Process Time Scale



# Current Situation

- **Assess ASFAP Interim Report**
  - Where there are already contributions, where these are absent, where there could be augmentation or integration.
    - Considering detailed research area submissions and history of workshops etc
  - **Encourage further work**
    - Realistic – some groups may have already exerted themselves as much as they can, others may be prepared to make additions (from Lol, White papers, additional solicitations and Convenors writing)

## Physics groups

1. Accelerators
2. Astrophysics & Cosmology
3. Atomic & Molecular Physics
4. Biophysics
5. Computing & 4IR
6. Earth Science
7. Energy
8. Fluid and Plasma
9. Instrumentation & Detectors
10. Light Sources
11. Condensed Matter & Materials Physics
12. Medical Physics
13. Nuclear Physics
14. Particle Physics
15. Optics and Photonics
16. Complex Systems

## Engagements

1. Community Engagement
2. Observers
3. Ethics
4. Physics Education
5. Women in Physics Forum
6. Young Physicists Forum

# Way Forward

- Status
  - Many Lol
  - Some White papers
- Current
  - Lol and White Paper submission is to stay Open
- **Actions for Working Groups and Subgroups for 2023**
  - Review Lol, group common themes, invite White Papers
  - **Identify obvious gaps** – share list of such with the SC
  - Considering Gaps → Target groups and individuals pro-actively, solicit White papers
  - Gaps are noted by field, area, geography, nationality, diversity area, political imperative.
- Begin drafting the Report by Working group Area
  - Use existing material
  - Use blank heading where material is not available
  - Option to use initiative to develop material
- Draft emerges as LaTeX document on GitHub

# Way Forward

- Backup

# 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

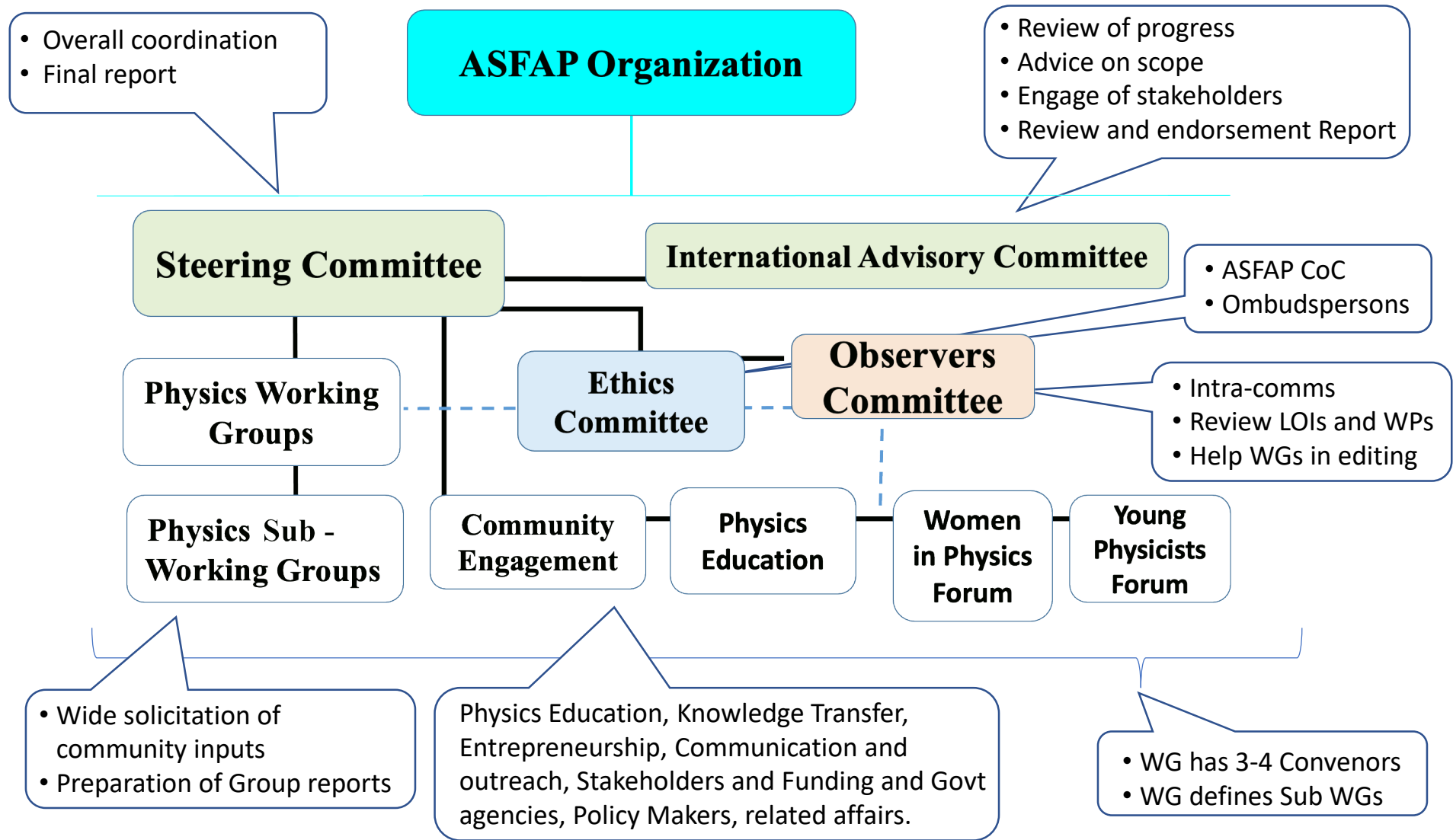
## 2. General Structure

- a. Broad footprint by discipline and fields
- b. Steering Committee, Advisory Committee, Group Conveners, Sub-group Conveners
- c. 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 – Post COVID Virtual Working enabled by electronic technology platforms

- a. Website, Twiki pages for working groups, Cloud repository, multi-group mailing lists, discussion forums, Indico meeting Agendas and virtual workshops — **continuous development**

# Structure and Organization



# International Advisory Committee

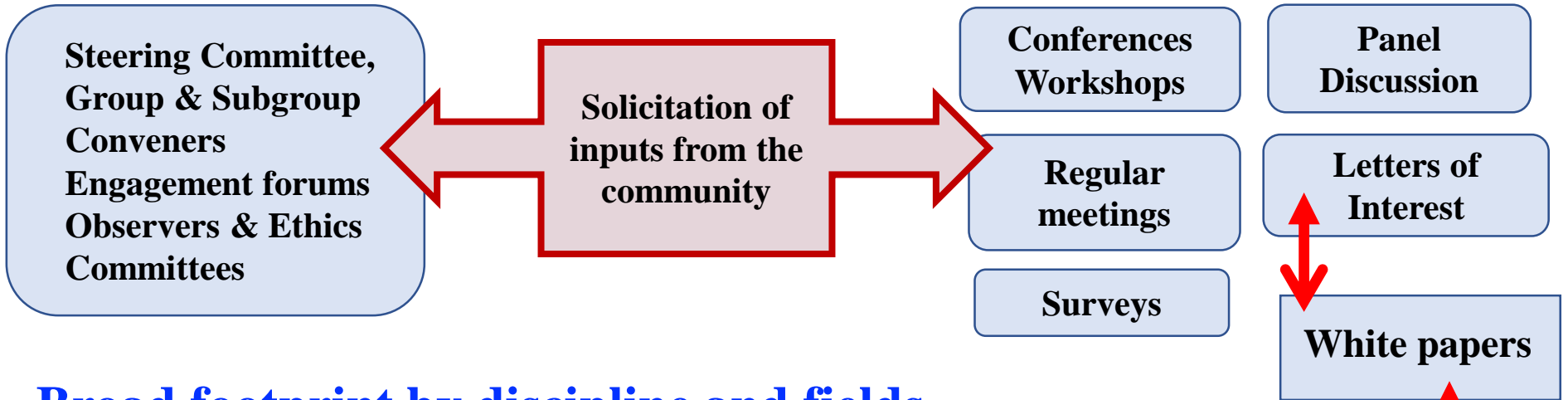
- Prof. Ahmadou Wagué** (President [AfPS](#))
- Prof. Atish Dabholkar** (Director of ICTP)
- Prof. Azwinndini Muronga** (Dean of Science, NMMU, SA)
- Prof. Emmanuel Tsemmelis** (CERN IR)
- Prof. Faiçal Azaiez** (Director of iThemba LABS, SA)
- Dr. Fadila Boughanemi** (EU Deputy Head of Int Cooperation, R&I Unit)
- Prof. Omar Fassi-Fehri** (The perpetual secretary of Hassan II Academy of S&T, Morocco)
- Prof. Fernando Quevedo** (Former Director of ICTP)
- Prof. James S. Gates** (Brown University, President 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 DDG, HoD of Nucl Sciences & App)
- Prof. M. Norbert Hounkonnou** (President, NASAC)
- Prof. Petra Rudolf** (U Groningen, President of EPS)
- Prof. Raheel Qamar** (Head S&T Sector, ICESCO)
- Dr. Raïssa Malu** (mem. DRC Presidential Panel to the AU)
- 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 of the JPS, Osaka U., Japan)
- Prof. Wang Yifang** (Director at IHEP/CAS, China)
- Prof. Winston Soboyejo** (Former President of AUST, Nigeria, Provost Worcester Polytech, USA)
- Dr. Shamila Nair-Bedouelle** (UNESCO Assistant DG for Natural Sciences)
- Dr. Takalani Nemaungani** (DSI, Acting Chief Director of Astronomy, SA)
- Prof. Young-Kee Kim** (Louis Block Distinguished Service Professor of Physics Chair, U of Chicago, USA)
- Prof. Zeblon Vilakazi** (Vice Chancellor, U Witwatersrand, SA).





# ASFAP General Structure

Submit LOIs : <https://indico.cern.ch/event/1061921/>



## Broad footprint by discipline and fields

- Progress discussion in the relevant groups
- Reports of the Groups/Subgroups and fora at the Conveners levels
- Strategy report at the Steering Committee level
- IAC provides feedback and advice

- The process will take a few years and end with the release of the strategy report
- The report will suggest the direction, with actionable items for the next decade
- The process is to be repeated periodically, every 7-10 years for the following decades with a review of the impact of previous strategy

# Committees & Conveners mission

## Steering Committee (STC)

- Overall coordination
- Go-between IAC, OC, EC, W. Groups and Forums
- Final report preparation

## International Advisory Committee (IAC)

- Review of progress
- Advice on scope
- Engage of International Communities and Policymakers
- Final Report Endorsement

## Observers Committee (OC)

- Advising and conveying ideas between STC and WGs/forums
- Review LOIs and White paper
- Help WGs in report editing

## Ethics Committee (EC)

- Responsible for dissemination and maintain the Guidelines of **ASFAP Code of conduct**
- A subset of EC might serve as an Ombudspersons

## Groups / Subgroup Conveners/Liaisons between groups

- Encouraging and soliciting community inputs
- Preparation of the Group reports
- Liaisons have to ensure that cross-cutting topics receive proper coverage and consideration in all the relevant groups

**ASFAP Working Group Guidelines is fleshed out**

# Groups & Forums mission

## Community Engagement:

- **Knowledge Transfer, Entrepreneurship**
- **Communication and Outreach**
- **Stakeholders and Funding, Government Agencies, Policy makers related business**

## Physics Education

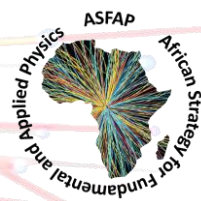
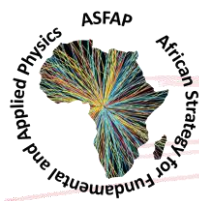
- **Promote science-led development on a sustainable basis**
- **Contribute to the scientific literacy of High Schools and Universities**
- **Revitalize Higher Education**

## Women in Physics Forum

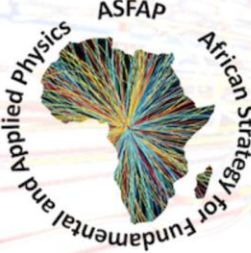
- **Mitigate the shortage participation of African Women in Physics**
- **Inspire Young Women to consider Scientific Careers**

## Young Physicists Forum

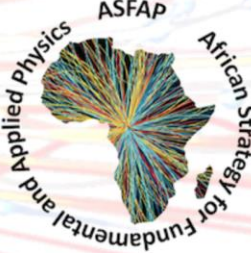
- **Engaging Young people in Physics Science, Technology and Engineering**



# ASFAP Web ..... WG Docs



## African Strategy for Fundamental and Applied Physics



[MISSION](#) [ORGANIZATION](#) [TIMELINE](#) [SUPPORT](#) [TWIKI SITE](#) [WG DOCUMENTS](#) [NEWS](#) [PUBLICATIONS](#)

### Twiki

Twiki Page

### DOCUMENTS

Founding Document  
Strategy Report

### SUPPORTS

Endorsement  
Financial & In-kind


### ORGANIZATION

Steering Committee  
Advisory Committee  
Group Conveners


### PHYSICS GROUPS

Accelerators  
Astrophysics & Cosmology  
Atomic & Molecular Physics  
Biophysics  
Computing & 4IR  
Earth Science  
Energy  
Fluid and Plasma  
Instrumentation & Detectors

## WG DOCUMENTS





[ASFAP Working Group Guidelines](#)



[ASFAP Working group Code of Conduct](#)

### FOLLOW US ON SOCIAL MEDIA

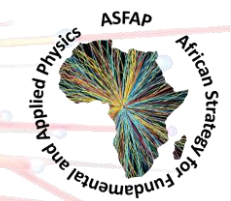
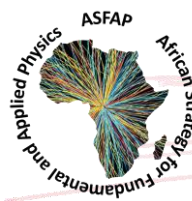


### LINKS

- [1. African Physics Society](#)
- [2. African Academy of Sciences](#)
- [3. The Network of African Science Academies \(NASAC\)](#)

### RECENT POSTS: AFRICA PHYSICS STRATEGY

[ASFAP interviewed on rfi](#)  
[African Workshop on Computing and Fourth Industrial Revolution](#)  
[ASFAP Community Town Hall, July 12-15, 2021](#)



# ASFAP Twiki ..... structure, activity

twiki.cern.ch/twiki/bin/view/AfricanStrategy/WebHome

SimonHConnell | Log Out | AfricanStrategy

WebHome | Physics... | ASFAP... | Media a... | ASFAP... | start [S... | Suppor... | physics... | NNV -... | africa a... | Start P... | Edit | Attach | PDF

- DOCUMENTS**
- [Founding Document](#)
- [Strategy Report](#)
- [WG Guidelines](#)
- SUPPORTS**
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- [Materials Physics](#)
- [Medical Physics](#)
- [Nuclear Physics](#)
- [Particle Physics](#)
- [Optics and Photonics](#)
- [Theoretical & Applied Mechanics](#)
- ENGAGEMENT**
- [Community Engagement](#)
- [Observers Committee](#)
- [Ethics Committee](#)
- [Physics Education](#)
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- [Young Physicists Forum](#)



## AFRICAN STRATEGY FOR FUNDAMENTAL AND APPLIED PHYSICS (ASFAP)

Scientific and technological achievements have become commonplace. As remarkable as these achievements are for other regions of the world, enormous challenges and opportunities remain to be addressed in Africa. Although vital for development, Africa's science, innovation, education and research infrastructure, particularly in fields such as Fundamental and Applied Physics, has been over the years under-valued and under-resourced. The vision is that Africa should take its equal place as a co-leader in the global scientific process, along with all the social-economic benefits thereto. The necessity of initiating ASFAP has become essential for Africa, hence our ambition and motivation to jump-start this process.

[The ASFAP website](#)

### Introduction

[ASFAP ambition and challenges](#)

### Events

1. The Steering Committee of the African Strategy has **launched** ASFAP on November 18, 2020, during an [online workshop organized jointly by AfPS and AfLS](#).
2. ASFAP was presented at the 107th meeting of the European Committee for Future Accelerators (**ECFA**) on November 20th, 2020. [Slides](#).
3. An introduction of the ASFAP strategy project was presented on December 8th, 2020 at the 12th General assembly of the [African Academy of Sciences](#) (AAS).
4. ASFAP is on page 25 of the [ECFA Newsletter #6](#).

### Attachments

!	Attachment	History	Action	Size	Date	Who	Comment
	<a href="#">Proposal-ASFAP.docx.pdf</a>	r1	<a href="#">manage</a>	168.1 K	2020-10-16 - 14:21	<a href="#">FairouzMalek</a>	ASFAP version date October 15th, 2020
	<a href="#">Proposal-ASFAP_cover.png</a>	r1	<a href="#">manage</a>	116.5 K	2020-10-16 - 14:47	<a href="#">FairouzMalek</a>	

[Edit](#) | [Attach](#) | [Watch](#) | [Print version](#) | [History: r30 < r29 < r28 < r27 < r26](#) | [Backlinks](#) | [Raw View](#) | [WYSIWYG](#) | [More topic actions](#)

Topic revision: r30 - 2021-04-23 - [GopolangMohlabengExternal](#)

# Support for ASFAP

- General mandate
- Close interaction
- Final Report Endorsement

**Funding Agencies and Governments  
Organizations,  
Institutions, Academies**



# 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 aim to be published
  - c) White paper finding reviewed and referenced in the Strategy report



## Thuma mina – Send Me

<https://www.youtube.com/watch?v=d48Bwux-btq0>

Musician Hugh Masekela

Inspired SA President Cyril Ramaphosa

