



# **President Report**

**Submitted at  
7 July 2017  
Annual General Meeting**

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# 1 New Structures

## 1.1 New Council 2017 - 2019

### Council Executive

1. Prof. Patrick Woudt (UCT) – President (Standards; Astronomy Liaison)
2. Prof. Deena Naidoo – President-Elect (Wits) (Audit & Risk)
3. Prof. Azwinndini Muronga – Past President (NMMU) (International Liaison)
4. Prof. Andre Venter (NMMU)– Treasurer
5. Prof. Regina Maphanga (CSIR) – Secretary

### Ordinary Members

6. Dr. Rudzani Nmutudi (iThemba Labs) - (Fundraising)
7. Prof. Makaiko Chithambo (RU) - (Awards & Standards)
8. Prof. Martin Ntwaeaborwa (Wits) - (Education)
9. Dr. Iyabo Tinuola Usman (Wits) (Industrial Liaison)

### Co-opted

10. Dr. John Bosco Habarulema (SANSA) - (Conferences)
11. Dr. Buyi Sondezi (UJ) - (Marketing; WiPiSA)
12. Dr. Helen Chuma (Johnson Matthey) - (Outreach Public Understanding of Physics)

### Still To be Elected

13. Divisions Rep on Council
14. Student Rep on Council

### Executive Officer

15. Brian Masara

## 1.2 Divisions and Forum Reps

Group	Chairperson	Affiliation
1. Nuclear, Particle and Radiation Physics Division	Dr. Simon Mullins	iThemba LABS
2. Division for Physics of Condensed Matter and Materials	Prof. Japie Engelbrecht	NMMU
3. Division for Physics Education	Dr Sam Ramaila	UJ
4. Applied Physics Forum	Prof Ernest van Dyk	NMMU
5. Division for Astrophysics and Space Science	Dr Du Toit Strauss (Space Science)	NWU
	Dr Christo Ventre (Astrophysics)	NWU
6. Division for Theoretical and Computational Physics	Prof Kristian Müller-Nedebock	SU
7. Photonics Division	Prof. Andrew Forbes	Wits
8. Forum for Women in Physics	Dr Buyi Sondezi	UJ
9. Biophysics Working Group (Fall under Applied at the moment)	Dr Tjaart Kruger	UP

### 1.3 IUPAP Commissions Reps

IUPAP COMMISSION	REP
IUPAP Associate Secretary General	Dr. Rudzani Nematudi (iThemba Labs)
C.4 Astroparticle Physics – Secretary	Prof. Renier (Adri) Burger (NWU)
C.6 Biological Physics - Member	Prof. Bryan Trevor Sewell (UCT)
C.14 Physics Education - Member	Prof. Deena Naidoo (Wits)
C.13 Physics for Development - member	Prof. Mmantsae Diale (UP)
C.19 Astrophysics – Secretary	Prof. Patrick Woudt (UCT)
WG 5 – Women in Physics - Chairperson	Prof. Igle Gledhill (Wits)

## 2 Constitutional Change Vote

An vote was conducted to introduce a lower level professional designation **Pr.PhysTECH** full name Professional Industrial and Physical Science Technologist to cater for all technicians working physics related careers.

- 90.5% of votes casted were in favour of the new designation.
- We now have to register the Pr.PhysTECH professional designation with SAQA.
- Council would like thank all those who participated in the voting process

### Background to the Designation

During the mid-term review of the SAIP Professional Body registration a recommendation was made by SAQA that SAIP must establish a lower level professional designation subordinate to the Pr.Phys (Professional Physicist Designation). This will be in line with NFQ goals to broaden the skills and training base. Currently SAIP professional designation only caters for those with at least a degree in physics and predominantly made up of those with MSc and PhDs in Physics. However, there are technicians working with physics related qualifications such as certificates and diplomas who can be professionally developed and empowered through the SAIP professional body.

As a result, the SAIP would like to propose as professional designation to cater for technicians in applied areas of physics i.e. Physical Science and Industrial Technicians such as Radiation Protection, Vacuum Technology, Instrumentation and Calibration, Non-Destructive Testing, Nuclear Science etc.

**Professional Industrial and Physical Science Technicians**, as the title suggests, assist senior scientists (**Pr.Phys**) and engineers by collecting, managing, analyzing, and interpreting a wide array of physical science information. They apply physics based scientific-methods, techniques, concepts and principles in testing, measurement, monitoring, design and installation of equipment, products and processes. In addition, the country currently has a shortage of skills in this area such that the current Government Gazette on Critical Skills has a category for **Physical and Engineering Science Technicians**

## 3 Office Matters & Operations

### 3.1 Current staff at the office

The Council is indebted to the SAIP Office lead by the Mr Brian Masara the Executive Officer. Together with Ms Ndanganeni Mahani the Project and Marketing Officer and Ms Lizzy Sathekge the Secretary at the SAIP office they continue to assist Council and all SAIP members

### **3.2 Web Master and Systems Developer**

The council is in the process of filling in the position of Webmaster and IT Systems Developer for SAIP.

We have must advertised in order to get someone with experience and/or some training in IT. In addition, we also want the webmaster to work on the **Online Physics Teaching and Learning Platform (OPTLP)** system development. The IT person who will be recruited must work on both the current SAIP IT system as well as develop the OPTLP. The MoU for technical assistance in developing the OPTLP was signed between SAIP and NECSA a copy is attached.

The SAIP office has received several applications and the council is planning to have the interviews soon after the SAIP 2017 conference.

### **3.3 Furniture Purchase and Boardroom Set-up**

The SAIP office does not have a meeting / boardroom facilities. At CSIR we relied on Prof Gledhill to book meeting facilities of the CSIR whenever we had meetings. Igle has now retired from the CSIR hence we do not have anyone on SAIP council to book facilities such as the knowledge commons for SAIP events and meetings. Council has approved the purchase of boardroom furniture and set up a board room facility. This is economically viable and sustainable.

### **3.4 SAIP Sever Location**

The SAIP server will now be hosted on the SAAO cloud. The successful candidate for the IT post will be involved in the migration and setup so as to be able to manage the server.

## **4 Fundraising & Financial Sustainability**

The executive officer and council continue to ensure that activities and operations are done in a financially sustainable manner.

We cannot spend on new activities before we receive the funding, one cannot apply for funding in retrospect for a project already done.

At the moment, SAIP entirely depend on DST grant for office operations and salaries. Our annual surplus is of the order of R200K which cannot run the office, we need to use this to build the reserves and a contingency fund; Similar institutions like ICSU-ROA, NSTF also have the order of 4/5 employees, compare same industry to get a picture.

SAIP council is increasing its efforts in Fundraising drive and getting PBO Donor Deductible Status

### **4.1 Donor Deductible Status**

SAIP Council is experimenting with the model of a fundraising Donor Relations Manager for SAIP. We have paused in order to obtain section 18A status. It will be impossible for a professional fundraiser to fundraise for SAIP from corporates without the section 18 A status. The council is engaging SARS to obtain the Donor Deductible status.

We are now awaiting the outcome of the letter submitted to SARS.

### **4.2 Appointment of Fundraising Consultant for SAIP**

SAIP appointed Mrs Jill Ritchie as the fundraising manager for SAIP with effect from 1 February 2017. Her contract is attached. She will use the title SAIP- **Donor Relations Manager**.

Her appointment follows the fact that council raised concern regarding the dwindling financial resources of SAIP. Council unanimously agreed that SAIP has to improve its fundraising capacity to remain sustainable. A recommendation was made to consider engaging a fundraising consultant to help the SAIP improve its fundraising capacity. The consultant will work with the CEO and Council Fundraising Committee to broaden the funding sources of SAIP hence improving sustainability through sourcing both restricted and unrestricted funds.

The fundraising consultant will also help SAIP regarding Public Relations and Professional Communication. Fundraising goes hand in hand with the image we put out there e.g. professional reports, social media, etc.

### **4.3 Projects M&E and Impact Assessment Systems**

SAIP Council is looking at the best strategy for M&E and Impact assessment for all SAIP projects given the importance donors place on this and the need for financial sustainability. If we can demonstrate impact we might leverage more funding for all our projects

## **5 Teacher Development**

### **5.1 SAIP DBE Possible Collaboration**

We had a fruitful meeting with Mrs Veena Maharaj - Chief Education Specialist: Physical Sciences from Department of Basic Education at National level to discuss and explore areas of cooperation. We identified several areas where we can work together and here are the urgent ones in which SAIP can possibly participate;

- 1) Proposal and Justification to split Physical Science into Physics and Chemistry - this is already underway and Veena can give more details on how SAIP can support the process.
- 2) SAIP Participating in the trilateral ministerial committee comprising DST, DBE and DHET, here SAIP can come in with the strategy on improving physics education and a cross-cutting project such as the online physics teaching and learning platform
- 3) Project to develop physical science lesson plans
- 4) DBE science Indaba for 2017 - we can present our strategy on improving physics education
- 5) SAIP participation in National Subject Committee for Sciences at National, provincial and district level.

### **5.2 Up Coming Events**

#### **5.2.1 Teachers Workshop at SAIP2017**

We had a teachers' workshop at SAIP2017. This is funded through the SAPHO funding secured from SAASTA

#### **5.2.2 NMMU NSW2017 Pre-Launch Teacher Development Activity 29 July 2017**

A teacher development activity is planned for 29 July at NMMU. This will form part of expansion of the project to Eastern Cape province.

We have started building the team for EC teacher development and so far

#### **5.2.3 Vhembe District Teacher Development 24 – 28 July 2017**

Teacher development activities are planned for Vhembe district for 24 – 28 July 2017 where Grade 12 Physical science Topics will be covered. Key topics will include Electricity and Magnetism; (Electrodynamics), 2D / 3D Wave-fronts, Optical Phenomena and Electrochemical Reactions, Mechanics, Work Energy and Power. The District has seven clusters with seven training centers to service 304 teachers.

The team will visit 9 centers. It will be 2 centers from Monday to Thursday and one centre by the whole team on the last day.

DBE Vhembe district will fund the logistical costs to have the teachers organised meeting venue and catering. SAIP has to fund the trainers expenses and materials for use at the training. A grant from the DST was applied for via NMMU pre-launch activities for NSW2017

## **6 Marketing and Outreach**

### **6.1 Facebook**

We now have 820 likes on SAIP Facebook page

### **6.2 PC Magazine**

There is need to decide on new Editor for PC Magazine – this is normally the responsibility of Outreach Portfolio Holder on council.

Prof Thomas Konrad has indicated his intention to step down.

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### **6.3 SciFEST 2017**

Outreach funds are exhausted hence we are doing minimal activities. In March 2017 SAIP participated at the SCiFEST with support from the biophysics project since the week coincided with Biophysics Week was from 6-10 March 2017.

SAIP would like to thank Prof Chithambo and his department for assisting SAIP at SCIFEST.

The activity report is attached







SCIFEST 2017

#### 6.4 Science Beyond Borders 2017

SAIP also participated at Science Beyond Borders Festival in Vhembe District, Limpopo over 5 days (8-12 May 2017). There were 6 337 learners who attended the event over the period of 5 days.

#### 6.5 NSW2017

SAIP bid for National Science Week 2017 was successful we were awarded R125K. We had requested R220k but SAASTA indicates that all bids were reduced by a certain percentage. 10 physics departments will take part in various activities through the HUB & SPOKE model.

#### 6.6 NSW2016

SAIP participated in NSW2017 through the HUB&SPOKE model

Target Audience	Total Reached
Schools	62
Learners	4482
Educators	171
University Students	1058
Postgraduates	184
Researchers and Academics	941
General Public	82585
Grand Total	89421

#### 2. SAIP NSW 2016 Reps

Institution	Event Coordinators
1. UNISA	Dr Moloji Sabata
2. NWU - Mafikeng	Dr Kaitano.Dzinavatonga
3. US	Dr Pieter Neethling
4. NWU- Potch	Prof Christo Venter
5. WSU	Mr Thembinkosi Dyeyi
6. UWC	Dr Mark Herbert

Institution	Event Coordinators
7. UL	Mr Netsianda Makonde
8. UNIVEN	Dr Eric Maluta
9. WITS	Prof Andreas Faltenbacher
10. NMMU	Dr Nobom Hashe
11. UP	Prof Mmantsae Diale



UWC Dr Mark Herbert NSW2016



Univen Team at Nzhelele Valley Mall



## 7 SA Physics Olympiad

SAIP Received R198K for the SAPHO2017

### 7.1 SAPHO 2016

#### SAIP SAPHO Gold Award Winner is SA's Matric 2016 Top Achiever

Mr. Conrad Strydom who won the SA Physics Olympiad, SAPHO2016 Gold Medal is the country's Top Achiever for Matric Class of 2016. He will be Studying Physics at University of Stellenbosch

It is interesting to also note that Mr. Hamandishe Mathivha (Silver Award winner) from Mbilwi Secondary School in Sibasa, Thohoyandou was named South Africa's top maths and physical science matric pupil of 2015. Mathivha was also Limpopo's second-best pupil for 2015.

<http://www.iol.co.za/news/matric-results/conrad-is-class-of-2016s-top-achiever-7332489>

<http://saip.org.za/index.php/news-and-events/other-events/403-congratulations-to-mr-conrad-strydom-sa-s-overall-matric-top-achiever-sapho2016-gold-medallis>

<https://www.facebook.com/1660099704207118/photos/a.1663368073880281.1073741827.1660099704207118/1838276973056056/?type=3>



At the presentation of Conrad Strydom's SAPHO Award , from left to right, his parents, Johan and Ilse Strydom, Pieter Hoffman, his Science Teacher, Case Rijdsijk (SAIP & Convener of SAPHO), Charlotte Rabie (Science Teacher )and Hermanus High School Headmaster, Greg Hassenkamp.

## 8 Membership Matters

### 8.1 Membership status

Category	Jun-17	Dec-16	Dec-15	Dec-14
1. Associate	56	37	17	10
2. Emeritus	6	6	6	6
3. Institutional	3	3	3	3
4. Fellow	17	17	17	17
5. Honorary & Emeritus	37	37	36	37
6. Ordinary	264	250	237	220
7. Professional Physicist	196	181	142	72
8. Retired	6	7	7	7
9. Students	235	230	189	162
10. Subscribers	2	2	2	2
11. E Members (non paying students)	2598	2200	53	35
<b>Total</b>	<b>3420</b>	<b>2970</b>	<b>709</b>	<b>571</b>

## 8.2 CPD Management system

We have now entered a testing phase for the SAIP CPD system to prepare for implementation.

- 1) Council members are now testing the system by logging in and experiment with the system guided by by-laws and constitution.

The CPD system user manual will be released when the system is made available to members

- 2) Next step is drafting the implementation procedures and controls.
- 3) Then it will be opened to SAIP members.
- 4) We aim to launch the CPD system by 1 September 2017 to all PrPhys members.

## 9 Physics in Africa Survey

The SAIP in collaboration with APS, ICTP, EPS and IOP are working on a project to improve physics in Africa. The first step of the project is a survey on the state of Physics in Africa, next, we will strategize priorities, find resources, and implement programs that will resolve the identified issues. Background to the project is available here <http://saip.org.za/index.php/physics-in-africa-survey>

We are currently compiling information for South Africa, I will compile the consolidated questionnaire. A request was sent to HODs and heads of national facilities to give a summary of the following;

- Question 4 graduates throughput on average from universities
- Question 5 major physics research programmes in your departments and approximate number of physicists
- Question 6 Physics related facilities and approximate number of physicists

The matter was also brought up at HoDs meeting. Information should be forwarded by the end of July 2017.

## 10 Conferences & Events

### 10.1 International Conference on Physics Education (ICPE) 2018 from 1 – 5 October 2018

<http://events.saip.org.za/event/ICPE-SAIP-WITS 2018>

This conference will be co-hosted by the South African Institute of Physics (SAIP) and the School of Physics, University of the Witwatersrand (WITS), jointly with The International Commission on Physics Education (C14) of the International Union of Pure and Applied Physics (IUPAP).

The main objective of the International Conference on Physics Education is to attract physics educators, postgraduate students, teachers, researchers and policy makers working in physics educational research and in physics education. Participants are expected from schools, colleges, universities and governments from all parts of the world. Teacher development and postgraduate students will be one of the key areas of the conference. The conference will enable participants to share and exchange scientific information views and experiences on important issues in Physics Education.

The main theme of the conference is: "Education consisting Physics Education for Development: a focus on context";. The scientific program will comprise a diverse range of international of high-level talks in various Education consisting of plenary talks, parallel oral and poster sessions, teacher workshops/symposia and sessions for Women in Physics.

### 10.2 African School of Physics 2018

The African School of Physics has requested the SAIP manage their finances. R1.3 Million was received for ASP from CERN. In 2018 the ASP will be held in Namibia.

### 10.3 SACPM 2017

The SA Conference on Photonics Materials went well. Thanks to the organizers of the conference.

#### **10.4 UNISA Few-Body Physics 2017**

SAIP is assisted the Department of Physics of the University of South Africa in organizing and hosting a symposium on International symposium on New Developments in Methods and Applications of Few-body Physics: in Memory of Professor SA Sofianos 2- 5 May 2017

#### **10.5 CCP2016**

The 2016 International Conference on Computational Physics (CCP2016) was be held in South Africa and it was the first time it came to Africa. Thanks to Prof Nithaya Chetty for lobbying.

#### **10.6 Texas Meeting on Relativistic Astrophysics**

The 29th Texas Symposium on Relativistic Astrophysics will be held in Cape Town, South Africa, from December 3 to 8, 2017. It is organized by North-West University, Potchefstroom, in cooperation with the University of Cape Town and several other South African institutions.