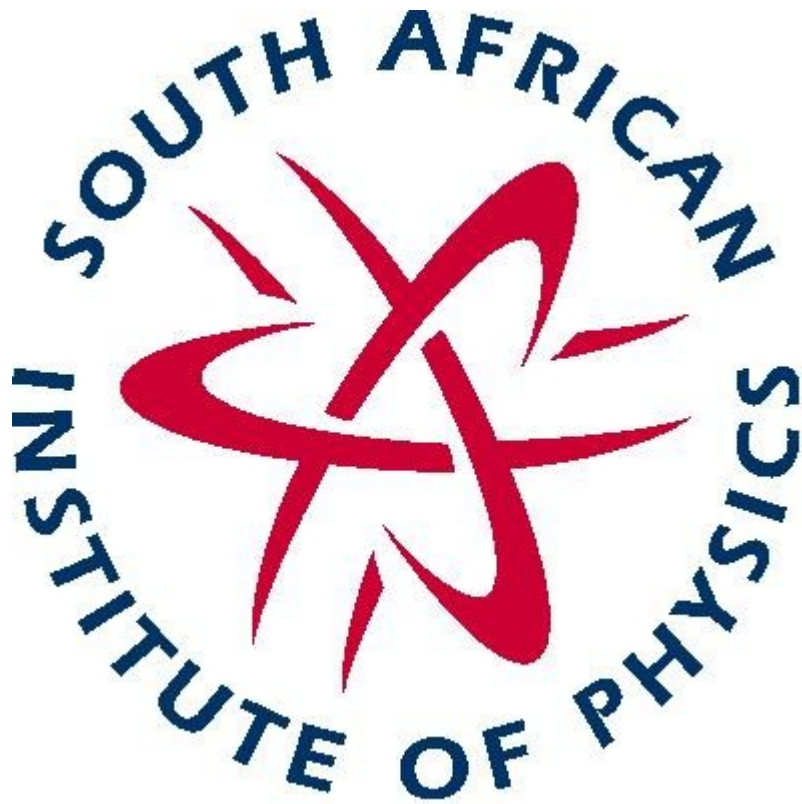


**SOUTH AFRICAN INSTITUTE  
OF  
PHYSICS**



**2008/09 Annual Report**

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# 1. President's Report

## Outgoing Council

The members of the outgoing council in 2009 are

**Table 1: SAIP Council**

<b>Council Member</b>	<b>Portfolio</b>	
1. Prof N. Chetty (UKZN)	President - Exec	
2. Prof. J.A.A. Engelbrecht (Treasurer - NMMU.)	Treasurer - Exec	
3. Dr Andrew Forbes (NLC-CSIR and UKZN)	Secretary - Exec	Co-opted
4. Prof. H. Moraal (North-West U.)	International Liaison - Exec	Co-opted
5. Dr. S.H. Connell (UJ)	Ordinary Member	
6. Dr. I.M.A. Gledhill (CSIR)	Ordinary Member – Industrial Liaison	
7. Prof. W.D. Heiss (U. Stellenbosch),	Ordinary Member - Awards	
8. Dr. P. Martinez (SA Astronomical Observatory)	Ordinary Member - Conference	
9. Prof. E.G. Rohwer (U. Stellenbosch)	Specialist Group Rep	
10. Mr. G.W. Bosman (U. Stellenbosch)	Student Rep	
11. Mr Brian Masara (SAIP)	Executive Officer in attendance	

Council would like to express thanks and farewell to the following outgoing council members Prof Harm Moraal, Prof Erich Rohwer and Prof Dieter Heiss

## Incoming Council

Elections of new council were held in June 2009 and the following will comprise the council for the next two years

<b>Council Member</b>	<b>Portfolio</b>	
1. Dr. P. Martinez (SA Astronomical Observatory)	President - Exec	
2. Prof. J.A.A. Engelbrecht (Treasurer - NMMU.)	Treasurer - Exec	
3. Prof. S.H. Connell (UJ)	President Elect - Exec	
4. Dr .J. Nel (UP)	Secretary - Exec	
5. Prof. N. Chetty (UP)	Past President	Co-opted
6. Dr. I.M.A. Gledhill (CSIR)	Ordinary Member – Industrial Liaison	
7. Prof. F. Scholtz (NiTheP)	Ordinary Member - Awards	
8. Dr. Z. Buthelezi (iThemba Labs)	Ordinary Member	
9. Dr. E. Rammutla (U. Limpopo)	Ordinary Member - Conference	
10. Dr Andrew Forbes (NLC-CSIR and UKZN)	Specialist Group Rep	
11. Mr. G.W. Bosman (U. Stellenbosch)	Student Rep	
12. Mr Brian Masara (SAIP)	Executive Officer in attendance	

### **Meetings of Council During the year**

Council meets three times per year. We keep our travelling expenses down to a minimum: For the July conference all councillors pay their own way. At the October council meeting, Council doubles as the SA IUPAP Liaison Committee; the meeting is held at the NRF and the SA ICSU office pays for travel. Furthermore some councillors pay for their own travel for the February meeting.

1. October 2008 – National Laser Centre CSIR – Pretoria
2. February 2009 – UKZN – Westville Campus – Durban
3. July 2009 – UKZN – Westville Campus – Durban

### **54<sup>th</sup> Annual SAIP Conference**

Council appreciation is expressed to the UKZN, Physics Department and National Institute of Theoretical Physics at University of Kwazulu Natal for successful hosting of the 54<sup>th</sup> SAIP annual conference. Council's heartfelt gratitude goes Prof Francesco Petruccione who was LOC and his team comprising, Dr Mervlyn Moodley, Dr Alan Matthews, Dr Naven Chetty, Prof Sadha Pillay, Dr Kavilan Moodley, and Prof Thomas Konrad

Two winter schools were run on the and a total of 479 delegates attended the conference.

### **55<sup>th</sup> annual conference in 2010 at CSIR-NLC**

The National Laser Centre is offered to host the 55<sup>th</sup> SAIP Annual conference at CSIR. This will be inline to commemorate the 10<sup>th</sup> anniversary of the NLC. The 55<sup>th</sup> SAIP annual conference will be held in out of the traditional period of first week in July due to the world cup that will be taking place at the same period.

### **SAIP AWARDS**

#### **Silver Jubilee Medal and CB van Wyk cash award**

Dr Christine Steenkamp was awarded the Silver Jubilee Medal for 2009 for her outstanding contributions to laser spectroscopy in South Africa. Her achievements are all the more remarkable in view of the fact that her scientific output of an excellent standard occurred in the field of experimental physics, where no research infrastructure was available when she started out her career.

She was awarded a certificate and a Silver medal. She was also awarded cheque of R5000.00 in the name of Prof CB van Wyk who was the second president and founding member of the SAIP

This Silver Jubilee Award is augmented by a cash prize of R5000.00 donated by Prof CB van Wyk, who was the key driver in the founding of the SAIP in 1955, and was its second president form 1957 to 1960. I wish to mention that in 2007, Prof CB van Wyk very generously donated R50 000 to the SAIP Council to use this money to recognise excellence in physics. The Council decided to augment the Silver Jubilee Award in a sustainable way by allocating R5000.00 for the 2009 prize. On behalf of the SAIP Council and all the members of the SAIP, I wish to express my sincere appreciation to Prof CB van Wyk for his generosity and for his continued commitment to excellence in physics.

#### **OR Tambo suite of awards**

Council would like to express appreciation to o Prof Simon Connell and Mr Brian Masara for successfully negotiating a suite of awards in the name of OR Tambo that will be set up by SAIP. All SAIP current

awards will fall into the ORT Suite of awards. However the ORT banquet will occur on odd-numbered years, and the de Beers banquet will occur on even-numbered years. In addition to the de Beers Gold medal and Silver Jubilee medal, three new awards are envisaged these are:

1. Pan-African Lifetime Achievement Award
2. Excellence in Physics Education Award
3. Business and Innovation Award

### **New SAIP Constitution**

A new constitution is being drafted by the Council Constitutional Committee comprising Prof Nithaya Chetty, Dr Jaynie Padaychee and Prof Manfred Hellberg. This is an enormous task that began in 2006 that involves assessing the changing environment that the SAIP currently finds itself in, for example in terms the Executive Office, tax, VAT, and NPO status. The Council Constitutional Committee, Worked through Council and Specialist Group chairs. The next step is Constitutional Working Group then opening the draft to all members for discussion.

### **SAIP Membership**

As of July 2009 the membership stood at

<b>Category</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Associate	25	26	19	17	18	16	13	16
Emeritus	10	12	10	11	28	33	33	32
Honorary Inst	1	1	1	1	1	1	1	1
Honorary	11	12	12	12	12	11	12	14
Institutional	4	3	4	4	3	3	3	3
Ordinary	291	295	274	260	258	273	245	267
Retired	25	26	20	18	6	4	6	6
Student	48	113	154	166	173	207	154	215
Subscriber							1	3
<b>Total</b>	<b>415</b>	<b>488</b>	<b>494</b>	<b>489</b>	<b>499</b>	<b>548</b>	<b>468</b>	<b>557</b>

To sustain the good work of these recent years we need to drastically increase our membership

A target of 1000 members is realistic from within SA there is need to attract foreign African physicists to the SAIP and well as increase corporate members. Council made a decision admit undergraduate student for free and give them electronic magazine benefits implementation logistics for this are still under discussion

### **SA Physics graduate student database**

SAIP received a grant from NRF to establish a South African Physics Graduates Database. Project has now been commissioned and graduates can register online by visiting the website at <https://www.saip.org.za/graduates>

The on-line database will enable the SAIP and NRF to keep accurate statistics of the numbers of graduating physics students. The data will help policy makers plan for the future needs of the national system of innovation. Universities will be requested to appoint secondary administrators who can batch register graduates from their institutions as well as track relevant statistics regarding their institutions

### **Physics and Industry**

Thanks to Dr Kevin Meyer, Igle Gledhill and the Council Industrial Liaison Committee.

Physics500 is an online scheme that captures the details of physicists working in industry. The aim is to get up to 500 names on the data base.

The emphasis is on finding 500 physicists working for “business”. This information is to be used to publicise the role of physicists and their career options and will help strengthen ties between SAIP and Industry

The Council Industrial Liaison Committee will consider how to use the information further, e.g. for Research collaborations, Sponsorships, Awards etc.

### **Review BSc Physics Curricula**

A grant of R0.5m for two years has been allocated

Council is still deliberating on the actual implementation plan, some ground work has already been done over the past year. The focus will be on reviewing the high school and undergraduate physics curriculum with the view to making recommendations for improvements. Extremely important that all role players be involved from the very start, e.g. DST, DET, DHE, CHE, NRF, SAIP

The review panel will have international representation, e.g. AAPT

### **Physics Olympiad**

Council would like to thank Dr Case Rijdsdijk, chair of the Council Education Committee for his sterling role in the Physics Olympiad. The Physics Olympiad is now registered with FESTOC

It is Case’s dream to make this a regular event on the school calendar, and this enjoys Council’s fullest support

### **Entrepreneurship Workshop**

The SAIP together with international partners (IOP, APS, ICTP) are organising a Workshop on Entrepreneurship for Scientists and Engineers which will be held at the iThemba Labs in Cape Town, South Africa from 9 – 13 November 2009.

This workshop comes as a follow-up to the recommendations of the World Conference on Physics for Sustainable Development held in South Africa in 2005. One of the key recommendations of the WCPSD was: “**The establishment of a training programme in entrepreneurship and business skills for physicists**”. This recommendation came after realizing that bridging the research commercialization chasm has to be urgently tackled in many developing countries including Africa

### **Biophysics initiative**

After realising the poor state of biophysics in South Africa, SAIP council recommended the establishment of a Working Group on Biophysics. The following members are currently on the working group.

1) Dr Raymond Sparrow – Chairperson

- 2) Prof Johan Malherbe
- 3) Prof Trevor Swell
- 4) Prof Johan Brink
- 5) Dr Christine Steenkamp
- 6) Dr Kristian Muller-Nedebock
- 7) Prof Rienk van Grondelle
- 8) Mr Brian Masara

The current working group will work to include more members and ensure representation of all important stakeholder.

Aim is to develop a critical mass of Biophysicists in South Africa this will be achieved through strategies such as short courses, Summer/Winter schools, invited speakers at SAIP conference, etc

### **Women in Physics in SA (WiPiSA)**

Thanks to Ms Mmantsae Diale (chair), Dr Zinhle Buthelezi, Dr Sarah Buchner, Dr Igle Gledhill, Prof Diane Grayson, Dr Nnenedi Kgabi for leading the WiPiSA working group. WiPiSA aims to address under representation of women in Physics in South Africa. I wish to commend WiPiSA who continue to do sterling work especially with girl learners of science. WiPiSA has bid to host the International Conference on Women in Physics in 2011 (CWIP2011) and enjoys the fullest support of the Council.

### **History of Physics in South Africa**

Prof Runan de Kock and Prof Harm Moraal have been working on this project since 2007. The project has a very wide scope, can only succeed with your fullest cooperation. The majority of physics departments and institutions have responded, including national facilities – and make contributions on the history of physics in South Africa. Thank you! About half a dozen physics departments have not responded – It will be a shame if your department is not included in the final publication!

### **ASSAf Book**

ASSAf hosts TWAS ‘Conference of the Academy of Science for the Developing World’ Durban ICC 19 - 23 October 2009. ASSAf plans to publish a book entitled ‘The State of Science in South Africa’ and to disseminate it during this conference. Each Specialist Group Chair has been asked to work with Prof Harm Moraal to produce the chapter on ‘Physics/Astronomy/Space Sciences’ by the end of July.

### **International co-operation**

Several international cooperation activities took place in 2008. These include the following

- ◆ The SAIP Executive officer Mr Brian Masara spent a week benchmarking best practice at IoP - UK in September 2008
- ◆ Prof Erich Rohwer and Dr Igle Gledhill led the SA delegation to the IUPAP General Assembly to Japan in October 2008
- ◆ Dr Igle Gledhill, Ms Mmantsae Diale, Prof Diane Grayson, Dr Sarah Buchner and Dr Gillian Arendse attended the International Conference on Women in Physics in South Korea in October
- ◆ Mr Brian Masara attended the ICSU General Assembly in Mozambique in October 2008

SAIP has strong ties and collaborations with IUPAP and ICSU

Four South Africans serve on IUPAP commissions (Saalie Allie, Patricia Whitelock, Okkie de Jager and Nithaya Chetty) and Dr Rudzani Ramatudi has been elected Vice President of IUPAP

### **Physics on the African continent**

SAIP in collaboration with IOP – UK are planning a meeting with presidents African Physical Societies/Institutes in November 2009 to be sponsored by IoP. New SAIP Constitution envisages a ‘Forum for African Physicists’

### **Public understanding and outreach**

SAIP is working successfully with National Laser Centre – PULSE project to increase understanding of physics in schools and society. The project is driven by both SAIP and NLC through Mr Roelf Botha, part-time Marketing Officer. The project is involved in activities such as

- ◆ Production of materials for marketing physics
- ◆ Electronic materials that can be used on a national basis
- ◆ Visits to schools
- ◆ Participation in public science festival or awareness events such as SciFest

### **Physics Comment**

SAIP in March 2009 successfully launched an quarterly electronic PDF news letter, the Physics Comment. The Editorial board: Dr Jaynie Padaychee (Editor-in-chief), Prof Edmund Zingu and Dr Claire Lee. This is an excellent vehicle to publicise your physics stories

### **SACNSP Membership**

SAIP is now registered as a voluntary organisation with SACNSP

## **2. Treasurer’s Report**

### **2.1. 2008/09 Audited Accounts**

The financial report is attached as appendix 1.

## **3. Silver Jubilee Medal**

This year’s SAIP silver Jubilee Medal was awarded to Dr Christine M Steenkamp at the SAIP 54<sup>th</sup> Annual Banquet held at MOYO restaurant in Durban.

### **3.1. Citation SAIP Silver Jubilee: Dr Christine M Steenkamp**

Dr Christine Steenkamp is awarded the Silver Jubilee Medal for 2009 for her outstanding contributions to laser spectroscopy in South Africa. Her achievements are all the more remarkable in view of the fact that her scientific output of an excellent standard occurred in the field of experimental physics, where no research infrastructure was available when she started out her career.

She was responsible for the design and construction of most of the apparatus currently being used in her investigations. She constructed and used a unique vacuum ultra violet laser source, and has used it to investigate super-cooled CO molecules. Rotationally resolved spectra of electronic excitations could be studied using this source. For the first time measurements of the spectra of the rare CO isotopomers could be obtained in a laboratory. This is of great interest to the astrophysics community, since such information is required to interpret results obtained from space station observations of interstellar space. Two publications



in the Astrophysical Journal including follow up work in the Journal of Molecular Spectroscopy testify to the relevance of this research. Together with a PhD student she continues the project owing to the international interest in the unique laser facility that she has constructed.

The quality of her work attracted the attention of Prof Carl Wieman, Nobel laureate in 2001, who, subsequent to a visit to South Africa, invited her to join his group in Boulder, Colorado for an extended research visit in 2004/5. This has led to a new experimental initiative, supported by the African Laser Centre, where Christine started a project aimed at laser cooling of atoms. Under her supervision, an MSc student has produced an excellent thesis.

Her achievements, however, go far beyond the publications and presentations at international and national conferences. She has been able to inspire students to become involved in research at the Laser Research Institute in Stellenbosch. Her experimental skills and her ability to handle theoretical aspects of the work have become well known amongst her peers, and her leadership has led to the establishment of a team of students and colleagues. Her influence has made an impact within the Lasers, Optics and Spectroscopy Specialist Group of the SAIP where she has become a well known and respected member of the research community. She has contributed considerably to initiatives of the African Laser Center and the African Institute for the Mathematical Sciences, both initiatives aimed at establishing and improving science research in Africa. Here, her pioneering spirit and ability to do excellent experimental science with meager resources has demonstrated her creativity. Her ability to work as a team member while leading an initiative makes her contributions highly effective.

The unique qualities of Christine Steenkamp have been acknowledged at various stages of her short career, as is evident from the long list of awards appearing in her CV. Here we note that in 1997 she was the recipient of the Stellenbosch University Chancellor's Award. In 2003 she was one of three national recipients of the Women in Science Fellowships awarded by the Department of Science and Technology. Her research achievements are recognized by her peers and she has received support for her research from the NRF through the Thuthuka program, the National Laser Centre, as well as the African Laser Centre.

Christine's personality and career represent the type of role model that the South African Institute of Physics can proudly identify with. She is indeed inspiring a new generation of young physicists. She is the obvious candidate to be awarded the Silver Medal in this year 2009, the most prestigious award bestowed by the Institute to young researchers under the age of 35 years.

## **4. Students Committee**

The students reports is attached as appendix 2

## **5. Women in Physics**

Women in Physics, now well known as WiPiSA are an established project of SAIP. The project has been made successful by the continuous support from SAIP council with project management, Department of Science and Technology in funding and Department of Physics at University of Pretoria in time and office.

The addition of SAIP executive officer has seen the acceleration of WiPiSA activities. There has been collaboration between DST department like science platforms and youth into science, in making WiPiSA successful.

WiPiSA remains a non-sexist organization, appreciating men who support the objectives of the organization. In addition, it is worth mentioning that the organization accommodates all women from all countries working or studying in South Africa.

### **5.1.2. The Working Group**

The working group consist of:

1. Mmantsae Diale (Chair)
2. Dr Zinhle Buthelezi (Treasurer)
3. Sarah Buchner (Secretary)
4. Dr Nnenesi Kgabi
5. Dr Igle Gledhill
6. Prof Diane Grayson.

WiPiSA working group was able to make contact with a few young women who became interested in helping with the working group activities. This is part of the succession plan for WiPiSA working group. At SAIP 2009, we will introduce these new recruits to WiPiSA working group to all women in physics community. These will join the existing working group in preparation for continuity when the present working group finishes with the ICWIP 2011, the task at hand.

These are:

1. Dr Regina Maphanga
2. Wendy Dlamini
3. Mpho Tshisaphumo
4. Malebo Mokagane

In addition to these women in physics, we have at least one person, Dr Christine Steenkamp who will be in charge of project in her institution. WiPiSA working group would be very delighted to have women physicists in various South African institutions leading projects that are addressing the objectives of WiPiSA.

### **5.2. Women in Physics: The baseline study**

We are planning a launch of the baseline study report, as a public announcement of the study to be published in accredited journal. This publication, which has been presented in Korea at ICWIP 2008 as a poster, will be a full paper. The title of this paper is: The baseline study of Women in Physics in South Africa with post-graduate degrees in physics between 1995 and 2005. The aim of the publicity is to advertise physics as career and the importance of Science, engineering and technology in the society.

In addition to the baseline study, WiPiSA working group will start now in 2009 to collect statistics that will be needed in 2011 ICWIP country report. We encourage SAIP to help in getting statistics from different institutions. The chair of WIPISA, Mmantsae Diale will soon send statistics requests through the SAIP office.

### **5.3. *International Women in Physics Survey***

From ICWIP 2008 in Korea, Diane Grayson has been appointed by the working group to liaise with American Institute of Physics in conducting a new survey of International women in physics. The survey aims at reporting to IUPAP the progress of Women in Physics Project after three international conferences.

### **5.4. *ICWIP 2011***

WiPiSA working group has taken a challenge to bid to host the next ICWIP conference in 2011. As a follow-up from ICWIP 2008 in Korea, WiPiSA working group has taken a challenge to host ICWIP 2011. The bid committee has now become interim local organising committee (LOC): Igle Gledhill (chair); Brian Masara; Diane Grayson; Harm Moraal; Jin-Hee Yoon; Linette White; Mmantsae Diale; Nnnesi Kgabi; Zinhle Buthelezi; Daniel Nyanganura (ICSU Regional Office for Africa); Sarah Buchner.

#### **5.4.1. Bid Progress**

There have been a few meetings in preparation for the bid proposal to IUPAP. The final document has been put in place (attached)

- 4.1 Dates chosen as: 6 – 8 April 2011 has been chosen as a better time for Western Cape weather conditions.
- 4.2 Venue: Stellenbosch is a favourite town and Protea hotel is isolated from Cape Town distracting activities and crime.
- 4.3 Interim LOC: The LOC is interim till we win the Bid to host ICWIP 2011.
- 4.4 International advisory committee
- 4.5 The Western Cape tourism has been very helpful in putting together the final bid document.

The statistics of Women in Physics in South Africa are difficult to obtain from universities and research centres. I am appealing to council to be involved in encouraging physics departments to send statistics on request.

WiPiSA is bidding to host the 4<sup>th</sup> International Conference of Women in Physics in 2011. We invite the council to support our efforts.

## 6. Specialist Group Reports

### 6.1. Applied Physics Specialist Group

This interest group is growing stronger each year. At this conference 31 oral presentations (including non-specialist lecture) and 20 posters were presented. 30-40 people attended lectures and 18 attended the AGM of the interest group.

The past year's activities include:

- Bringing to fruition the Physics 500 initiative (Kevin Meyer, Igle Gledhill) with a website and brochure now available.
- Representation on the NIASA subcommittee (Katse Maphoto)
- The specialist group agreed to make an Applied physics contribution to the ASSAF book

Forthcoming conferences of relevance include:

- Photonic materials 2011 (Ernest van Dyk)
- Entrepreneurship (2009) (Brian Masara)
- Imaging beams 2010 (Frikkie de Beer)

The present committee serves for another year.-

### 6.2. Astrophysics and Space Science Specialist Group

A total of 77 abstracts we received for the 2009 SAIP conference in Space Science and Astrophysics for both oral and poster presentations. Two parallel sessions with 28 oral talks in Space Science and 29 oral presentations in Astrophysics and cosmology were held.

The student prizes funded by HMO, SAAO, HartRAO, KAT and SAIP will be in the following categories: 2 PhD prizes (one Space Science and the other Astrophysics), 2 MSc prizes (one in Astrophysics, and the other in Space Science), 2 Poster prizes and 2 Encouragement prizes (one Astrophysics and one Space Science).

The specialist group meeting was attended by 50 people, it was agreed that the parallel sessions between Space Science and Astrophysics should be maintained, and to have common non-specialist talks.

#### Activities

HMO: During 2008 a new ionosonde was installed at the Hermanus Magnetic Observatory (HMO). The number of space physics postgraduate students has increased significantly in the last few years. HMO has continued to run its Winter and Summer Schools. The Science Committee of the World Data Centre appointed Dr Cilliers from the HMO for a three year term to represent South Africa on this committee.

SAAO: There has been major progress with the two main problem areas that have prevented SALT from reaching its design goals:

the image quality (IQ) problems lie entirely with the opto-mechanical interface of the SAC (Spherical Aberration Corrector) to the payload structure, and to internal mis-alignment of the SAC mirrors. The interface has been redesigned, new components manufactured, and installation began in mid-April 2009. SALT's principal instrument, RSS (Robert Stobie Spectrograph), has been undergoing optical repair in the US due to unanticipated degradation of the lens coupling fluid. SAAO's Cape Town site has now completed the replacement of its electrical reticulation. The MRM building has been completely refurbished to become our new IT centre, and all the computer equipment has been successfully installed.

The current committee is as follows:

1. Chair: Dr Ramotholo Sefako (rrs@saa.ac.za)
2. Secretary: Prof. Stefan Ferreira (Stefan.Ferreira@nwu.ac.za)
3. Fundraiser: Prof. Patrick Woudt (pwoudt@ast.uct.ac.za)
4. Student Representative: Marissa Kotze (Astrophysics)
5. Patrick Sibanda (Space Science)

### **6.3. Condensed Matter Physics and Material Science Specialist Group**

The third in a very successful conference series on photonic material, organized by Michael Hayes and Danie Auret (UP) was held in Mabula this year. The next will be in March/April 2011 in Kariega. Contact Hendrik Swart (UFS), Jackie Nel (UP), or Ernest van Dyk (NMMU) for further details. This year's SAIP conference had a full programme and ALL 12 prizes will be awarded at the banquet. The new chair is Japie Engelbrecht (NMMU), and David Britton (UCT) is now deputy chair. All other portfolios are unchanged.

### **6.4. Education Specialist Group**

The group reports that

- 1) The final phase of the SAIP FET Teacher Support project has been implemented
- 2) The group will present the FET project to SAASTE and SAARMSE conferences next year to maintain the momentum of the project.
- 3) The group will seek to get teacher attendance at next year's conference
- 4) The group will get input from teachers and schools to try to identify FET problems
- 5) The group will try to get the group's presentations published as proceedings to attract other potential physics educators and students to the conference
- 6) Give input into council's proposed investigation into SA's undergraduate programme.

A new chairperson (Mr S Ramaila) and vice chairman (Mr D Clerk) were elected and a working group of 11 people was appointed.

### **6.5. Lasers Optics and Spectroscopy Specialist Group**

**Photonics Initiative of South Africa:** A strategy document has been presented to DST after a national workshop incorporating all stakeholders was held in October 2008. DST has now requested an Implementation plan. MR60 per annum over 5 years.

**OSA and SPIE student chapters:** The NLC and LRI student chapters are very active in outreach programs and the leadership attended OSA conference. Students organized logistics and funding for invited lecture by Prof Singh from NASA.

**Training and workshops:** Community was active during 2008/2009, with several events including:

- High energy laser workshop (International speakers)
- Introduction to laser beams with international speakers (African Laser Centre (ALC))
- Introduction to Laser course (African Laser Centre (ALC))
- ALC student workshop at Kariega.

### **6.6. Nuclear, Particle and Radiation Physics Specialist Group**

The specialist group facilitated the attendance of an invited plenary speaker, namely Prof Yorick Blumenfeld who is the current head of the REX-ISOLDE facility at CERN. iThemba LABS covered his travel costs and the SAIP2009 organizers covered his local costs. There were 17 oral presentations (5 PhD, 4 MSc) and 5 Poster presentations; (5 MSc ; 1 PhD). The somewhat low number of presenters was influenced by the fact that iThemba LABS was running a measurement during the week of the SAIP2009 conference – hence a significant number of physicists and postgraduates were unable to attend the conference. The suggestion that the specialist group take the lead in the soliciting possible interest in the procurement of a synchrotron for South Africa was rejected. It was suggested that this should be the task of a broad forum of scientists within South Africa, since such a facility would be multidisciplinary.

### **6.7. Theoretical Physics Specialist Group**

NITheP is now fully functional and should have its full staff complement by September 2009. Several programs for researchers and students have been launched and are currently active. All managerial structures are now also in place.

The Chris Engelbrecht Summer School series is now a NITheP program. A successful school on nuclear physics was held in January 2009. A school on Quantum Optics is scheduled for January 2010 and a proposal for another school in January 2011 has been accepted. The topic of this school is:” Weakly interacting particles and neutrino physics

The OTP management elected in 2009 remains unchanged.

# 7. Appendix 1: Financial Report

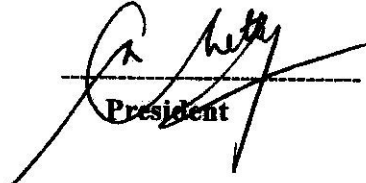
# SOUTH AFRICAN INSTITUTE OF PHYSICS

## FINANCIAL STATEMENTS For the year ended 31 March 2009

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Notes to the financial statements	4

The financial statements set out on pages 2 to 4 are certified as a correct reflection of the financial state of the Institute for the year ended 31 March 2009

  
 \_\_\_\_\_  
 President

  
 \_\_\_\_\_  
 Treasurer


### ACCOUNTING OFFICER'S REPORT

I have determined that the financial statements are in agreement with the accounting records. No audit was required and none has been conducted, but I have adopted such procedures, and conducted such enquiries in relation to the accounting records as I considered necessary to ensure the correctness of the statements.

The financial statements do not reflect outstanding membership subscriptions, where a number of fees are still due.

The Accumulated Funds have not been apportioned to set aside funds for the provision of Bursaries and Prizes.

The budget for the year ended 31 March 2010 appears to be realistic.

  
 \_\_\_\_\_  
**Peter van der Merwe**  
 B.A.(UCT) C.A.(S.A.)  
 Port Elizabeth  
 30 May 2009



# SOUTH AFRICAN INSTITUTE OF PHYSICS

## INCOME & EXPENDITURE ACCOUNT for the YEAR ENDED 31 MARCH -

	Notes	2009 R		2008 R
<b>INCOME</b>				
Membership fees				
- Ordinary & Associate		73994		66430
- IoP Members		6391		5640
- Institutional members	1	4000		6000
<b>Total membership fees</b>		84385		78070
Conference Income (UP)	2	0		38441
Donations		1194		225
Interest - on savings accounts		167894		156315
Refund from NRF		188452		
Sponsorships		4500		8500
<b>TOTAL INCOME</b>		446426		281551
<b>Less : EXPENDITURE</b>				
Affiliation fees -NSTF & NIASA		616	1500	
Membership - IoP to UK		9420	0	
Accounting fees		25020	3000	
Bank charges		1981	811	
Honoraria		12500	10500	
Meetings - Educational Committee		460	5011	
- IUPAP		55191	17760	
Invited speaker		15000		
Legal fees - new SAIP Constitution		3000		
Prizes - Astrophysics & Space Science		6500	6000	
- Theoretical Physics		1500	1000	
- Lasers & Photonics		1500	3000	
- Applied Physics		1000	3500	
- Nuclear		1500	1000	
Sponsorship - Goodfellow		2905	0	
Secretary's expenses		3398	2419	
Treasurer's expenses		466	215	
Travel expenses		44070	27727	
History of SAIP		31455	375	
Website & Postnet box		2693	990	
Winterschool		0	7833	
Sundries - engraving of medals		0	220175	92641
<b>SURPLUS for the YEAR</b>		226251		188910
<b>ACCUMULATED FUNDS, b/fwd</b>		558093		369183
<b>ACCUMULATED FUNDS, c/fwd</b>		784344		558093

## SOUTH AFRICAN INSTITUTE OF PHYSICS

BALANCE SHEET  
at 31 MARCH -

	Notes	2009 R		2008 R
<b>ASSETS</b>				
Cash at bankers				
- Standard Bank SME a/c 1 759 593 2		31837		32821
- Standard Bank 32 day call a/c				
- Stanlib Moneymarket A a/c 75178308		1270328		1746621
- Stanlib Moneymarket B (CB van Wyk Trust)		62846		56091
		1365010		1835533
Accounts receivable		0		0
<b>TOTAL ASSETS</b>		1365010		1835533
<b>FUNDED BY -</b>				
<b>1. ACCUMULATED FUNDS</b>		784344		558093
<b>2. TRUST FUNDS</b>				
(i) WIPSA Conference	122803		0	
Less : Costs	61228	61575	0	0
(ii) KOREA Conference		-123711		0
(iii) SAIP Office				
Less : Balance paid to CIMSTE				
(iii) NRF - Graduates Database	0			
Less : Costs	27462	-27462		
(iv) DST - Women in Physics	126043		193013	
Less : Costs	58723	67320	66970	126043
(v) DST : Contribution to Physics Office	498744		527000	
Less : Costs	464971	33774	28256	498744
Contribution to Physics 500	54000		79000	
Less : Costs - K Meyer	23960	30040	25000	54000
Contribution to Physics Marketing	250000		250000	
Less : Costs	62585	187415	0	250000
(vi) SAASTA Grant	175750		175750	
Less : Payment - Theoretical Physics	91499	84251	0	175750
(vii) FET Project	113812		46491	
Further contribution	107811		98010	
Less : Costs	34083	187540	30690	113812
(viii) CB van Wyk Trust - Donation	56091		51117	
Add : Interest to 31 March 2009	6755	62846	4974	56091
<b>CURRENT LIABILITIES</b>				
Accounts payable		13579		0
Provision - Accounting fee		3500		3000
		1365010		1835533

# **SOUTH AFRICAN INSTITUTE OF PHYSICS**

## **NOTES TO THE FINANCIAL STATEMENTS for the year ended 31 March 2009**

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### **Institutional members**

NNR  
Necsa

### **Accumulated funds**

No decision has yet been made to set aside a portion of the Accumulated Funds for the provision of bursaries, prizes and National Office, which it is believed is the intention of the Institute

It is suggested that this be done.

**8. Appendix 2 : Students Report**



## Report from the Student Representative on the SAIP Council.

### General Remarks

The South African Institute of Physics (SAIP) offers a unique opportunity for physics students across South Africa to interact with their scientific peers. The increasing numbers of student members to the SAIP shows great promise for the growth and popularity of the SAIP. Thus it is important to keep the student community active member in decisions made which will influence their continued support of the SAIP. Within this respect I would like to commend the council (both SAIP and Student Council) for their efforts.

### Student Activities at the SAIP conference

#### *Scientific contributions*

The annual SAIP conference sets an ideal stage for student members to get recognition for their work. This year feedback from the various specialist groups clearly suggest that the quality of the student contributions took a leap forward.

#### *Luncheon with Plenary Speakers*

This event should still be refined into a winning formula. Currently the sit-down format is adequate for allowing students' access to the plenary speaker. However, I see this event evolving more to a intimate question and answer session with the esteemed quest speakers.

#### *Student Meetings*

This platform shows a lot of promise, especially in the last 2 meetings the number of students attending this meeting has increased, and still can. This is a clear indication that student members want to be more active.

#### *Student Feedback*

An evaluation process of the annual conference has been set in motion. This year was the first such attempt and the results from the conference evaluation that the student members who attended the Student Meeting filled in is as follow:

1. Please rate your overall satisfaction with the conference: **66% Very disappointed**, 33% Satisfied
2. Please rate your overall satisfaction with the exhibits area: **56% Very disappointed**, 41% Satisfied, 3% Very satisfied
3. Please rate your overall satisfaction with the format of the conference (i.e.- morning sessions, breaks, lunch, afternoon sessions/breakouts): 18% Very disappointed, 3% Satisfied, **79% Very satisfied**
4. Please rate your overall satisfaction with the reception and breaks: **56% Very disappointed**, 38% Satisfied, 3% Very satisfied, 3% Not applicable
5. Please rate your overall satisfaction with the facilities: **39% Very disappointed**, 37% Satisfied, 6% Very satisfied, 18% Not applicable
6. Please rate your overall satisfaction with the location of the conference (Westville Campus, Durban): 8% Very disappointed, **72% Satisfied**, 18% Very satisfied, 2% Not applicable
7. Overall, based on your total experience at the conference, will you attend or recommend someone else attend next year's conference? **56% Yes**, 36% No, 5% Undecided, 3% No comment

## **Student Member Activities in South Africa**

### *International Year of Astronomy*

As part of International Year of Astronomy a lot of the students took part in the South African Astronomical Observatory (SAAO) Open nights, hosted twice a month at The Observatory in Cape Town. At the Open nights, members of the public can visit SAAO and attend a talk on an astronomical topic from a professional astronomer. They can also visit the telescopes on-site and engage in stargazing activities on good weather evenings.

## **Future Projects**

### *Outreach*

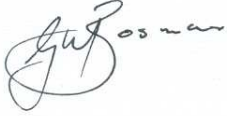
The SAIP Marketing and Outreach manager, Mr. R Botha, has indicated that student members are required for various outreach activities. This was well received by the majority of student members who attended this year's student meeting. At this meeting it was proposed that the administration of all outreach activities should be centralized at the SAIP offices.

Currently student members at Stellenbosch University (SU) and CSIR National Laser Centre (NLC) are also members of the Optical Society of America (OSA), which allows funding for outreach. The OSA student society at SU, has so far participated in numerous outreach sessions with schools in the Western Cape, which focused on the many uses of light and optics.

### *Physics Demonstration Competition*

It was suggested by current SAIP President Dr. P Martinez that students should structure a physics demonstration competition. The aim of such a competition would be to generate enthusiasm for physics and to increase its popularity amongst school learners. These demonstrations should be informative and interactive and should at large be managed and undertaken by physics students. The SAIP Student

Council has taken up responsibility for this event and is aiming to implement this completion at the next SAIP conference at the CSIR in 2010.

A handwritten signature in black ink, appearing to read 'GW Bosman', with a stylized, circular flourish at the beginning.

***GW Bosman***

***SAIP Student Representative***