South African Institute of Physics

PRESIDENT'S REPORT JULY 2003- JUNE 2004

1. Council

The following members were elected to serve on Council for the term July 2003 to June 2005 and were allocated portfolios as indicated:

Edmund Zingu (President)	International Liaison
Harm Moraal (Vice-President)	WYP 2005
Jaynie Padayachee (Secretary)	Communication
Japie Engelbrecht (Treasurer)	Finance
Patricia Whitelock (Past-President)	Conferences
Nithaya Chetty	Transformation
Simon Connell	Marketing
Dieter Heiss	Awards
Diane Grayson	Education

Executive Committee
Edmund Zingu
Harm Moraal
Jaynie Padayachee
(alternates: Patricia Whitelock, Japie Engelbrecht)

The awards committee comprised of Dieter Heiss (convenor), Krish Bharuth-Ram, Andrew Leitch and Michael Feast, with Robert de Mello Koch as alternate.
The Committee responsible for Marketing and outreach consisted of Simon Connell (convenor), Kevin Govender, Derick Fish and Henry Tromp. Edmund Zingu represented SAIP Council on the Management and Policy Committee for *Shaping the Future of Physics in South Africa* (see section 10).

Four meetings were held during the past twelve months:
June 2003, at the University of Stellenbosch (during the conference);
27 October 2003 at Mangosuthu Technikon, Durban;
20 February 2003 at the University of Free State, Bloemfontein (with the conference organizers);
29 June 2004 during the conference at the University of Free State, Bloemfontein.

2. Membership

As of 29 June 2004 the SAIP membership was as follows:

By Category	June 2004	June 2003	By Specialist Area	
Honorary Members	12	12	Applied and Industrial Physics	27
Emeritus	10	12	Astrophysics	88
Ordinary Members	274	295	Education	30
Associate	19	26	Lasers, Optics and Spectroscopy	33
Student	154	113	Nuclear, Radiation and Particle Physics	65
Retired	20	26	Plasma Physics	8
Institutional	4	3	Solar-Terrestrial & Space Physics	17
Honorary Institutional	1	1	Condensed Matters and Materials Science	152
			Theoretical Physics	27
Total Members	494	488	General	8

The total membership has been increasing at a constant rate despite those who have lost their membership due to the outstanding dues. Whereas 83 new applications for membership were processed during the year, at least 50 members were removed from the database of members.

3. Finances

The treasurer's report will show that the financial situation of the Institute has improved, thanks to handsome profits from the recent conferences held in Potchefstroom and Stellenbosch respectively, and the dues that were paid by the diligent members of the Institute. Council has endeavoured to limit the expenses of the Institute to the bare minimum. Whereas it is useful and prudent to accumulate reserves, Council has identified a future fulltime secretariat as a priority, and consequently agreed to establish a trust fund with an initial amount of R100 000. We will welcome proposals for developing the project.

Members whose subscriptions are in arrears for more than two years face the prospects of having their membership cancelled. Council has continued to prevail upon such members to pay their arrears as we consider it essential to grow the membership, rather than losing members.

4. Transformation

Whereas the Transformation Committee concluded its task in 2002 in making specific recommendations to Council, a member of Council (Nithaya Chetty) has been entrusted with the responsibility to monitor and manage the implementation of the recommendations. At the 2003 AGM, notice was served that a number of changes to the constitution and by-laws will be proposed at this AGM. Details of the proposed changes have been communicated to the members prior to the AGM and will be discussed shortly.

5. Annual Conference

The 48th Annual Conference was hosted by the Physics Department of the University of Stellenbosch from 24 to 27 June 2003. Traditionally the conference is held in July of each year. During 2002 the conference was held during the month of September whereas the Stellenbosch

conference was held in June. The attendance for the Stellenbosch of 420 exceeded all previous attendances. The particular month of the year does not appear to have a significant impact on the conference. The large contingent of students (227) attending the conference was consistent with the recent trend of conference participation. Of the 290 papers that were presented, 92 were poster presentations.

The Winter School on Lasers and Applications took place on the 24 June, attracting 143 participants to a full day program of 9 lectures. Prof Carl Wiemann, Nobel Laureate, presented lectures at both the Winter School and the Conference. The Stellenbosch conference included an exciting session for high school learners. In addition to the sessions earmarked for the high school learners, they attended the very entertaining lecturette competition. The sessions for high school learners will be repeated this year and would become a standard feature of the annual conference. Our sincere appreciation is extended to the Physics Department of the University of Stellenbosch, and every individual who contributed to the success of the conference.

In response to comments and concerns about the format of the annual conference, Council and its Conference sub-committee have deliberated the matter and will be making recommendations to the AGM.

Around 1980 the annual conference lasted 3½ days ending at lunch time on the Saturday. By 2003 the conference had been fitted into 2½ days, ending around lunch time on the Friday. This year we have three full days of presentations with the banquet to be held on Friday evening. I have been informed that the banquet is sold out which signifies that the changes to the format of the conference have been well received.

6. Awards

The prestigious De Beers Gold Medal is to be awarded this year and the announcement will be made at the banquet. The SAIP is very grateful to De Beers for sponsoring this medal and contributing to the cost of the banquet. Several companies sponsor student awards in the various specialist areas. We are appreciative of the generosity of the sponsors and wish to thank the Specialists Groups who have negotiated these sponsorships.

7. Specialist Groups

The specialist areas of interest of the members of SAIP are reflected in the table above. Whereas the Astrophysics and the Solar-terrestrial/plasma groups have merged to form an Astrophysics and Space Science specialist group in accordance with the recommendations of the Transformation Committee, the areas of interests are still reflected as were submitted by the members when they initially applied for membership.
Difficulties have been experienced with the management of the Applied Physics Interest Group or the Applied and Industrial Physics Group (renamed). In the interim, the CMPMS group has taken over some of the management responsibility. A recommendation to reposition AIPG is being awaited from the members of the Applied and Industrial Physics Group.

8. Communication

The electronic newsletter has remained an effective medium of communication for members of the SAIP. We express our gratitude to the editor of the electronic newsletter, Judith Ncapayi

(ncapayi@tlabs.ac.za) and to those who have contributed to the various editions. Members are encouraged to provide contributions of news to the editor.

The website is being accessed regularly (hits are being monitored). Interest in the SAIP from abroad is growing and it was pleasing to received entrants to the logo competition from 5 other countries, considering the fact that the competition was not advertised extensively other than on the SAIP website, through the newsletter only, and a number of email messages to local institutions.
The majority (approximately 90%) of the members of SAIP make use of electronic communications. The proposed changes to the constitution include amendments that will allow us to use electronic communication more extensively and save on mailing costs.

9. Outreach

Emasondosondo, a physics outreach project to high schools, developed out of the collaboration between the University of the Witwatersrand, University of Columbia in the US, and the Department of Education. The SAIP has been supportive of the initiative and has played an active role in expanding the project to involve physics departments in other parts of the country. The initial funding arrangement came to an end at the end of 2003 and we are grateful to the NSF (US) who has been the major sponsor of this project. The activities in Gauteng will be resumed later this year with the continued involvement of the University of Columbia and it is envisaged that the mobile facility will be replicated, subject to funding being secured.

The High School Learner programme at the SAIP Conference has benefited from the Emasondosondo project as the equipment which has been developed through the project has now been made available for the High School Learner programme.

10. Shaping the Future of Physics in South Africa

In recent years the physics community has expressed its concerns about the state of support for physics, the dwindling interest in physics by students, and the limited impact that physics has had on the economy of South Africa. In response to these concerns, Council engaged with the Department of Science and Technology (DST) and the National Research Foundation (NRF), to initiate a process that would revitalize physics in South Africa. The three principals (DST, NRF and SAIP) collectively developed and launched the project to shape the future of physics in South Africa. We are indebted to the two sponsoring organisation: DST and NRF, and their respective Chief Executive Officers namely Dr Rob Adam and Dr Khotso Mokhele, who enthusiastically and generously supported the review and foresight exercise.
The physics community established the Management and Policy Committee to oversee the review and foresight component of the project. An International Panel of physicists was appointed to undertake the review and foresight, albeit that they operated under severe time constraints. A Technical Team comprising largely of NRF personnel provided logistical support.

The Panel commenced its activities on 8 March 2004 and after visits to several institutions and organizations and discussions with various members of the community, the International Panel presented its draft report and findings on 19 March 2004 at an open meeting at the NRF. The final report was received on 13 April 2004 and was published on the SAIP website. The physics community was invited to comment on the report before it was formally presented to Council, the NRF and DST. The report provides a detailed look at options within the management of physics and physics training in South Africa. The report does not propose concrete reforms, but advances a series of suggestions for future action by Council of the SAIP, the Management of

Physics departments and research centres, and the South African authorities, ranging from mechanisms for coordination, to policies for training of physics (scientists and engineers), to the identification of strategic projects in physics (science and technology) of national significance.
The Council is grateful to the physics community for the contributions made to this report through their written and verbal engagement with the International Panel, and it is hoped that the publication of this report will contribute to ongoing debate, discussion and development in the country. The contributions of the physics departments and organisations that hosted the visits of the International Panel are sincerely appreciated.
Physicists, managers of physics-related activities and organisations, and others with interests or responsibility for long-term development, are invited to use this report as a framework against which to map the future positioning of physics. The report was formally tabled at the meeting of the Council on Tuesday 29 June 2004 and Council's proposals will be presented to the AGM.

11. Education

Members of the SAIP participated in their personal capacities and on behalf of Council in the finalization of the National FET Curriculum Statement for Grades 10 – 12 which was eventually approved by Cabinet in October 2003. Certain aspects of the implementation strategy have not been resolved. A pilot phase has been contemplated during which only certain schools will initially adopt the new curriculum, starting in 2006. Such a pilot phase could have grave consequences for universities where students might be entering with disparate school backgrounds. It is now uncertain whether the pilot phase will be implemented or delayed. The brief of the International Panel for the project: "Shaping the future of Physics in South Africa" did not include a review of Physics at high school level since the new National Curriculum Statement is yet to be implemented and its impact on university physics is unknown. The recommendations do however include proposals relevant to the FET band.

12. Marketing

In 1982 the Council decided to get a logo for the SAIP. A logo competition was then launched, with the grand prize of R50 offered for the winning entry. As part of the transformation, Council launched a competition for the design of a new logo in 2003. This time the grand prize was R3000. The 39 designs from 6 countries were considered by Council and four designs were short listed. Members of SAIP were invited to vote on the shortlisted designs to determine the most favoured design. The result of the logo competition will be made known at the banquet.

13. World Year of Physics 2005

At its General Assembly in October 2002 in Berlin, the International Union of Pure and Applied Physics (IUPAP) declared 2005 as the World Year of Physics (WYP 2005). The World Year of Physics 2005 is timed to coincide with the centennial celebration of Albert Einstein's miraculous year in which he published three of his most famous publications: special relativity, the photoelectric effect and Brownian motion. In South Africa it coincides with the 50th anniversary of the South African Institute of Physics. UNESCO endorsed the WYP 2005 declaration in October 2003 and in June 2004 the United Nations declared 2005 the International Year of Physics (IYP2005).
The activities in South Africa in 2005 aim to involve science, engineering and technology stakeholders in implementing activities across the country that illustrate the essential and beneficial role of science, engineering and technology (SET) in the everyday lives of all South Africans, and to generate interest in, and raise the profile of SET. Physicists and their institutions are encouraged to plan for their participation in the national activities.

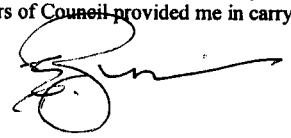
A National Steering Committee that is being coordinated by the Department of Science and Technology has been established and it met on 20 May 2004 to commence the planning and coordination of activities for 2005. The members of the National Steering Committee are:
Dr. T. Seekoe (DST) - Chair
Ms. L. Disantolo (SAASTA)
Mr. K. Govender (NECSA)
Dr. B. Madolo (DST)
Prof. H. Moraal (SAIP)
Mr. C. Rijsdijk (ex SAAO)
Ms. G. Stone (iThemba LABS)
Prof. E.C. Zingu (SAIP)

Activities planned for South Africa include, but are not limited to:

- A special postage stamp to celebrate WYP2005.
- A special issue in July 2005 of the South African Journal of Science to celebrate both the World Year of Physics and the 50th anniversary of the SAIP on 7 July 2005. This edition of the SAJS will provide the opportunity for physicists to present a diverse range of contributions. The SAJS has also been invited to cover Physics throughout 2005.
- The 16th Chris Engelbrecht Summer School on Advanced Scientific Computing that will be held in January 2005 will be the first major event on the South African physics calendar which will give special attention to the work of Albert Einstein.
- The SASOL SciFest in Grahamstown in March, will focus on Physics and would be used as the official launch of WYP 2005 in South African.
- The 50th SAIP Annual Conference is to be held from 4 to 8 July 2005 and hosted by the University of Pretoria.
- The General Assembly of the International Union of Pure and Applied Physics (IUPAP) will be held in Cape Town in October 2005.
- A World Conference on Physics and Sustainable Development is scheduled immediately after the IUPAP General Assembly in the International Conference Centre in Durban. The main organizers and sponsors of the conference are: UNESCO, ICTP, IUPAP, IAEA and SAIP.

Several other activities are being planned and a separate report will be presented at the AGM. Within Council, the activities around the World Year of Physics 2005 are being coordinated by Harm Moraal. Members are encouraged to participate in the activities in 2005 and utilize the opportunities to advance physics in South Africa.

The success of activities undertaken by the SAIP and its Council is a credit to the participation and contribution of several individuals and groups, within the SAIP. I am grateful for the support that fellow members of Council provided me in carrying out my tasks.



Edmund Zingu
President: SAIP
2 July 2004