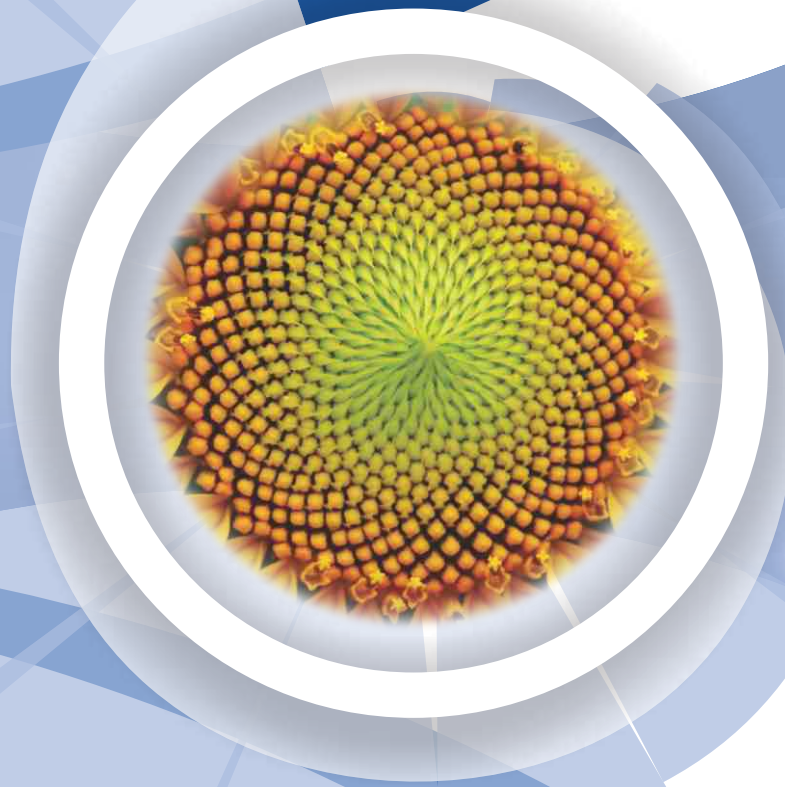


ANNUAL REPORT

2012/2013



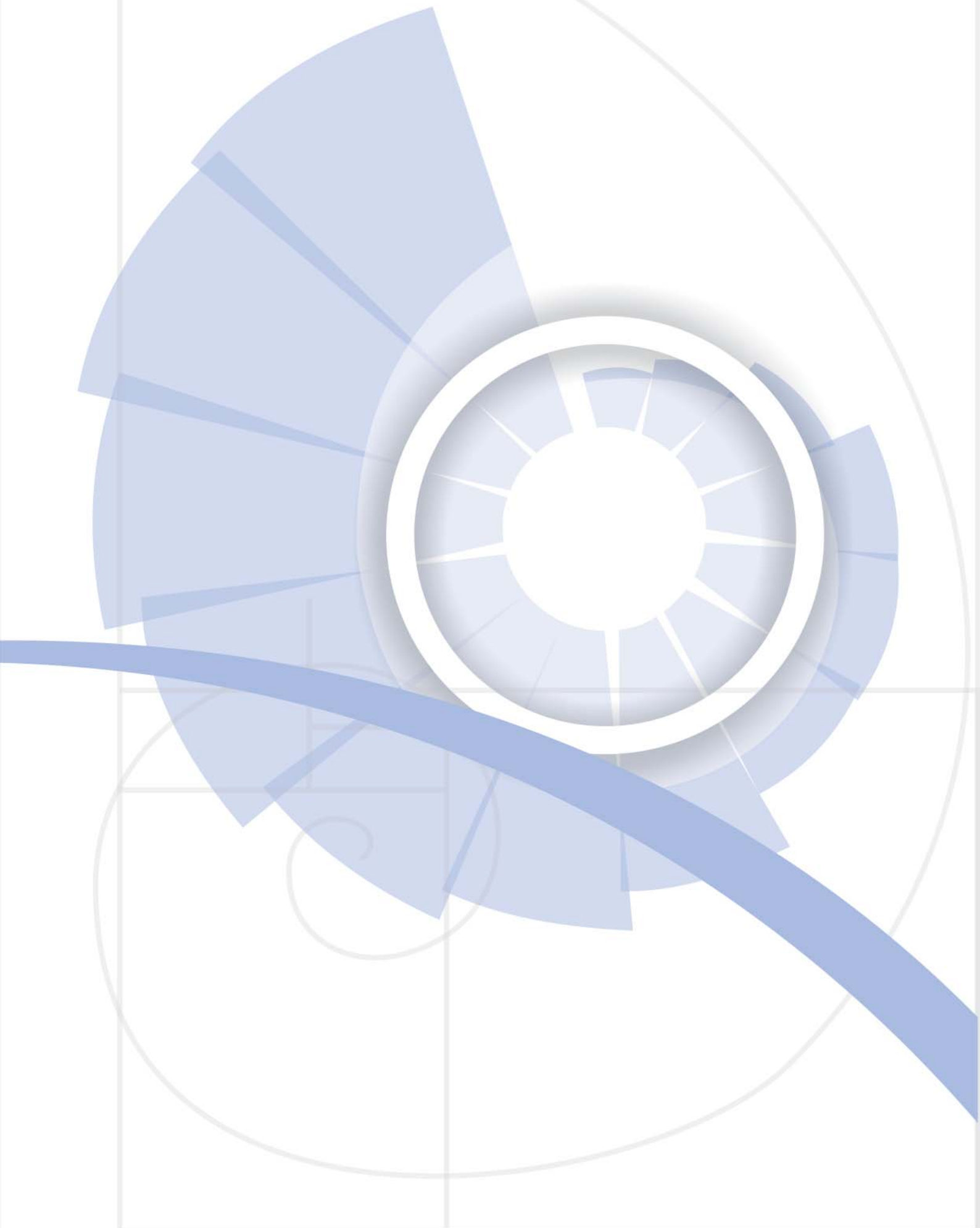
science
& technology

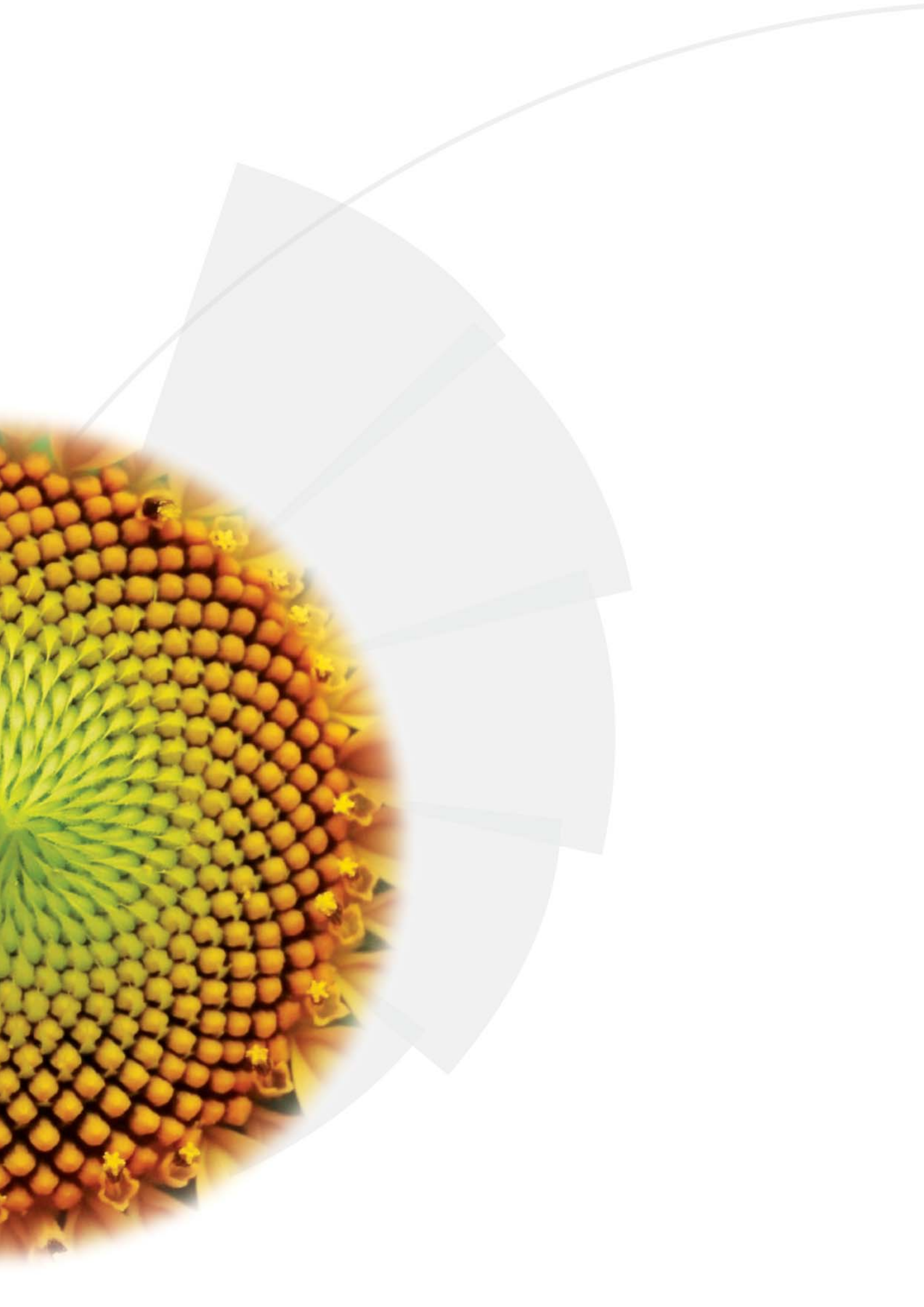
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA



ANNUAL REPORT

2012/2013





Contents

Abbreviations & Acronyms	5
Message from the President	8
Message from the Executive Officer	10
Introduction	12
Strategic Intent	13
Vision	13
Mission	13
Objectives	13
Values	14
Structure	14
1 Administration and Governance Programme	15
1.1 Governance	15
1.2 Council and Membership	16
1.3 Infrastructure – Personnel and Physical	22
2 Policy Advisory Programme	23
2.1 Health and Related Studies	23
2.2 Biosafety and Biosecurity Studies	24
2.3 Energy, Water and Environment Studies	25
2.4 Humanities and Education Studies	26
2.5 Science for Poverty Alleviation	27
3 Scholarly Publishing Programme	29
3.1 Open Access Platform	29
3.2 Scholarly Book Publishing	30
3.3 Peer Review of South African Scholarly Journals	30
3.4 National Scholarly Editors' Forum	30
3.5 Online Scientific Writing Service	30
3.6 Access to Core Commercial Databases	31
3.7 Open Access Publishing	31
3.8 Institutional Repositories	31
3.9 Memorandum of Agreement: Joint Working Groups between DST/DHET	32
3.10 <i>South African Journal of Science</i>	32

4	Liaison Programme	33
4.1	International Liaison Activities	33
4.2	National Liaison Activities	35
5	Communication and Publications Programme	39
5.1	Marketing of the Academy	39
5.2	Production, Publishing and Dissemination	39
5.3	Public Awareness of Science	40
6	South African Young Academy of Science (SAYAS) Activities	41
7	South African Academy of Engineering (SAAE) Activities	43
8	Index to the Abridged Annual Financial Statements for the Year ended 31 March 2013	
	Contents Page	45
	Report of the Independent Auditors	46
	Statement of Financial Position	48
	Statement of Comprehensive Income	49
	Statement of Cash Flows	50
	Notes to the Annual Financial Statements	51
	ANNEXURE A – ASSAf Member Biographies	53
	ANNEXURE B – SAYAS Member Biographies	89
	ANNEXURE C – SAAE Member Biographies	93

Abbreviations & Acronyms

AAS	African Academy of Sciences
AMASA	Annual Meeting of African Science Academies
AMCOW	African Ministers' Council on Water
ASSAf	Academy of Science of South Africa
ATSE	Australian Academy of Technological Sciences and Engineering
AU	African Union
AUC	African Union Commission
BRICS	Brazil, Russia, India, China and South Africa
CAE	Chinese Academy of Engineering
CANSA	Board of the Cancer Association of South Africa
CAPRISA	Centre for the AIDS Programme of Research in South Africa
CAS	Chinese Academy of Sciences
CBEP	Cooperative Biological Engagement Programme
CDs	Communicable Diseases
COHORT	Committee of Heads of Organisations for Research and Technology
CREST	Centre for Research on Science and Technology
CSfPA	Committee on Science for Poverty Alleviation
CSPiSA	Committee on Scholarly Publishing in South Africa
CSIR	Council for Scientific and Industrial Research
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DHET	Department of Higher Education and Training
DPSS	Defence, Peace, Safety and Security
DST	Department of Science and Technology
EU	European Union
FABI	Forestry and Agricultural Biotechnology Institute
FP7	Seventh Framework Programme
FRF	First Rand Foundation
GIZ	<i>Deutsche Gesellschaft fuer Internationale Zusammenarbeit</i>
GM	Genetic Modification
GYA	Global Young Academy
HEQC	Higher Education Quality Committee
HFSP	Human Frontier Science Programme
HSRC	Human Sciences Research Council
IAC	InterAcademy Council
IAMP	InterAcademy Medical Panel
IAP	The Global Network of Science Academies
IBSE	Inquiry-based Science Education
CAETS	International Council for Engineering and Technological Sciences
ICMI	International Commission for Mathematical Instruction
ICSU	International Council for Science

IEEE	Institute of Electrical and Electronics Engineers
INSA	Indian National Science Academy
IOM	Institute of Medicine
MAST	Mauritius Academy of Science and Technology
MatCH	Maternal Adolescent and Child Health Unit
MDGs	Millennium Development Goals
MDR TB	Multi Drug-resistant Tuberculosis
MoU	Memorandum of Understanding
MRC	Medical Research Council
MTEF	Medium-term Expenditure Framework
NACI	National Advisory Council on Innovation
NASAC	Network of African Science Academies
NCDs	Non-communicable Diseases
NCNSM	National Centre for Nano-structured Materials
Necsa	South African Nuclear Energy Corporation
NGOs	Non-government Organisations
NHI	National Health Insurance
NHLS	National Health Laboratory Service
NICD	National Institute for Communicable Diseases
NMMU	Nelson Mandela Metropolitan University
NRF	National Research Foundation
NSBPF	National Scholarly Book Publishers' Forum
NSEF	National Scholarly Editors' Forum
NSI	National System of Innovation
NSTF	National Science and Technology Forum
OWSD	Organisation for Women Scientists in the Developing World
PEPFAR	US President's Emergency Programme for AIDS Relief
RAS	Russian Academy of Sciences
R&D	Research and Development
RECORD	Renewable Energy Centre of Research and Development
RU	Rhodes University
SAAE	South African Academy of Engineering
SAASTA	South African Agency for Science and Technology Advancement
SADC	Southern African Development Community

SADC WISET	SADC Women in Science, Engineering and Technology
SAIS	Finnish Southern African Innovation Support
SAJS	<i>South African Journal of Science</i>
SANBI	South African National Biodiversity Institute
SANCO	South African National Civic Organisation
SANi	South African Nanotechnology Initiative
SAYAS	South African Young Academy of Science
SciELO	Scientific Electronic Library Online
SciELO-SA	Scientific Electronic Library Online-South Africa
SfS	Science for Society
SPP	Scholarly Publishing Programme
SPU	Scholarly Publishing Unit
SSA	Sub-Saharan Africa
S&T	Science and Technology
STEM	Science, Technology, Engineering and Mathematics
STS	Science and Technology for Society
SU	Stellenbosch University
TUT	Tshwane University of Technology
TWAS	The World Academy of Sciences
TWAS ROSSA	TWAS Regional Office of sub-Saharan Africa
UCT	University of Cape Town
UFH	University of Fort Hare
UFS	University of the Free State
UKZN	University of KwaZulu-Natal
UNAS	Uganda National Academy of Sciences
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNISA	University of South Africa
UP	University of Pretoria
US NAS	United States National Academies of Sciences
UWC	University of the Western Cape
WEF	World Economic Forum
WHO	World Health Organisation
WIGSAT	Women in Global Science and Technology
WoK	Web of Knowledge
WoS	Web of Science
WRC	Water Research Commission

Message from the President

The Academy has, in the last year, continued vigorously to give substance to its vision: of providing independent, evidence-based solutions to problems of national significance, and of informing policy development particularly at government level.



This and other key aspects of the workings of the Academy were the subject of a strategic planning session held by the new Council in early 2013. The session coincided with the first meeting between Minister Derek Hanekom, officials from the Department of Science and Technology, and the new Council. The meeting with the Minister served as an excellent opportunity at which to discuss new and expanding opportunities for the Academy, within the context of its core mandate of providing advice to inform policy.

It is gratifying to witness the ever-increasing awareness and acknowledgement, across all sectors, of the role and responsibilities of the Academy. Of course it is not unique in its advisory role, and it is therefore as well to identify synergies that exist between the Academy and other bodies in the country that form part of the National System of Innovation. Such efforts have already begun, and their continuation will no doubt bring added benefits to the system as a whole.

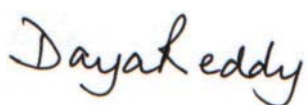
The direction of the Academy's activities is to a large extent set by its standing committees. For example, the activities of the Standing Committee on the Humanities have gained steady momentum as it guides the Academy's involvement in and contributions to vital national debates on the future health and growth of the humanities.

The relationships between the Academy and fellow academies around the world have been strengthened further over the last year. It is worth mentioning the participation in the triennial meeting of IAP, The Global Network of Science Academies, at which South Africa was elected to serve on the IAP Executive. Also worthy of note is a meeting that was hosted by the IAP Council and the Science Council of Japan, on the impact of the nuclear plant accident in that country and its lessons and consequences in relation to nuclear energy policy. Interactions such as these, in which the debates are of central relevance to participating academies and their governments, highlight the benefits of close collaboration with academies around the world in addressing issues of common concern. Such collaboration is also to be found within Africa, through NA-SAC, the Network of African Science Academies, and with individual national academies, for example in localisation of the outcomes of studies for maximum impact in the countries concerned.

Professor Robin Crewe stepped down as President of the Academy in October 2012, having served with distinction as President for eight years, exactly half of the period in which the Academy has been in existence to date. It is a pleasure to acknowledge, with grateful thanks, the leadership of Professor Crewe that has led to a substantial expansion of activities by the Academy, and to an ever-growing international profile. I take this opportunity also to thank retiring Council members, as well as members of the new Council, for their dedicated support and willingness to give freely of their time.

It is a pleasure to thank Professor Diab, Executive Officer of the Academy, and her staff in the secretariat for their efforts in ensuring the smooth and efficient working of the Academy.

I thank the Minister and the officials of the Department of Science and Technology for their advice, their efforts in ensuring a more secure financial state for the Academy, and their enthusiastic support of its activities.



Professor Daya Reddy
President: Academy of Science of South Africa

Message from the Executive Officer



The past year will be remembered as a year of severe financial difficulties for ASSAf, but at the same time a watershed year in the short history of the Academy as it marked the beginning of a new period of tremendous opportunity for ASSAf. This was the second year that ASSAf had continued to support its Scholarly Publishing Programme (SPP) through internal reprioritisation of funds as we sought dedicated external funding to fill the gap left by the termination of the multi-year contract funding from the Department of Science and Technology (DST).

ASSAf's belief that the SPP activities were of strategic importance to the country and core to the Academy's mandate was vindicated when the DST committed to funding the open access platform and related activities with effect from the next financial year, placing ASSAf on a much sounder financial footing. The commitment of the DST to assist with enhancing the policy advisory role of ASSAf within the science system in South Africa in order to enable ASSAf to access increased funding is also greatly appreciated. It is this recognition as a valued source of independent advice that offers the potential for ASSAf to carve a new and enhanced role for itself into the future.

There were many changes in the governance of ASSAf. A new Council took office in October 2012, coinciding with the end of Professor Robin Crewe's term as ASSAf President. It has been a great honour to have served under Professor Crewe's presidency and I thank him for his exceptional leadership and service to ASSAf. The future looks positive for ASSAf, with Professor Daya Reddy having assumed the position of new ASSAf President. I look forward to working together with him as the Academy embarks on the next phase of its development.

A major highlight of the year was the recognition given to the open access platform, SciELO South Africa, particularly the transfer of all responsibilities for hosting the platform to ASSAf, certification of the site, inclusion on the Web of Knowledge and most importantly, the news that ASSAf's open access activities would be fully funded by the DST.

Other highlights included the workshop on Technological Innovations for a Low Carbon Society, jointly hosted with Leopoldina as part of the German-South Year of Science, as well as partnerships with other science academies within Africa, namely Zambia and Zimbabwe on Inquiry-based Science Education (IBSE). ASSAf's own IBSE initiative, launched in ten primary schools as a pilot project, also holds great promise for the future.

It was unfortunate that the long-awaited publication of the consensus study on Nutritional Assessment could not be finalised in this financial year, but it is currently in the production process. There were a number of other reports that were published during the reporting year: workshop proceedings reports on nuclear energy safety and a long-term strategy for HIV/AIDS; two policymakers' booklets – one on water and sanitation, and a second on genetically modified organisms in African agriculture; and a statement on nuclear energy safety.

ASSAf also signaled its commitment to the Humanities through the establishment of a Standing Committee on the humanities to give strategic direction to studies in this important field of study and has begun the process of revitalising its Standing Committee on Science for Poverty Alleviation.

On the international front, the election of the ASSAf President to The Global Network of Science Academies (IAP) executive committee will enable ASSAf to strengthen its global reach and influence.

The Academy's flagship journal, the *South African Journal of Science (SAJS)*, experienced a number of changes in its editorship and production during the year. The journal was successfully transitioned to a new online manuscript management system, ScholarOne, and ASSAf has resumed the publishing of the *SAJS* once again.

For the first time, the activities of the South African Young Academy of Science (SAYAS) and the South African Academy of Engineering (SAAE) are reflected in ASSAf's Annual Report. ASSAf played a major role in the establishment of SAYAS and continues to provide secretariat services to SAYAS for all their activities. The SAAE received a small amount of funding from DST, which was channeled through ASSAf. It is hoped that by reflecting their activities in ASSAf's Annual Report they will receive greater recognition for their contributions to science and technology in South Africa.



Professor Roseanne Diab
Executive Officer: Academy of Science of South Africa

Introduction



The Academy of Science of South Africa (ASSAf), in its unique position as the only national science academy that is officially recognised by the South African government through the ASSAf Act (*Act 67 of 2001*), as amended, aims to provide evidence-based scientific advice on issues of public interest to government and other stakeholders. ASSAf regularly publishes its findings and recommendations and also acknowledges the achievements of South African scientists in order to develop the intellectual capacity of the nation and promote innovative scholarly thinking. The Academy enjoys regular interaction and knowledge exchange with other national science academies throughout the Southern African Development Community (SADC) region, the African continent, and the global scientific community.

Strategic Intent

The Academy will be acknowledged, both nationally and internationally, as a credible, professional and respected collective voice representing the national interests of the sciences, to policy and decision-makers, the private sector, science community and the general public.

Vision

The Academy of Science of South Africa aspires to be the apex organisation for science and scholarship in South Africa, recognised and connected both nationally and internationally. Through its Membership, which represents the collective voice of the most active scholars in all fields of scholarly enquiry, ASSAf aims to generate evidence-based solutions to national problems.

Mission

The mission of the Academy is to:

- recognise scholarly achievement and excellence in the application of scientific thinking for the benefit of society;
- mobilise Members to ensure that they are available to contribute their expertise in the service of society;
- conduct systematic and evidence-based studies on issues of national importance, producing authoritative reports that have significant impact on policymaking;
- promote the development of an indigenous system of South African research publications, increasing their quality, visibility, accessibility and impact;
- publish science-focused periodicals that will showcase the best of southern African research to a wide national and international audience;
- develop productive partnerships with national, regional and international organisations with a view to building our capacity in science and its application within the National System of Innovation (NSI);
- create diversified sources of funding for sustainable functioning and growth of a national academy;
- communicate effectively with relevant stakeholders through various media and fora.

Objectives

The key objective of the Academy is to promote and apply scientific thinking in the service of society. To this end, the Academy shall:

- use the common ground of scientific knowledge and activity to remove barriers between people and obstacles to the full development of their intellectual capacity;
- endeavour in every possible way to inspire, promote and recognise excellence in scientific and technical practice;
- investigate and publicly report on various matters, in its own discretion or at the request of government or organisations in civil society, in order to promote and apply scientific thinking in the service of society;
- promote science education and a culture of science in the population at large;
- maintain strict independence while consulting other organisations and individuals in the widest manner possible;

- endeavour to establish and develop close relations with scientific organisations in South Africa and with similar academies in other countries; and
- take any other action that it may consider necessary towards the attainment of its key objective.

Values

The values of the Academy are to:

- remain independent of government and sectoral lobbies;
- use best-available evidence and scientific knowledge as drivers towards generating recommended solutions to national problems;
- apply multidisciplinary and consilience in its approach;
- adhere to the highest ethical and moral standards;
- recognise the essentially developmental nature of our society and the importance of the natural environment, both for their own sake and from a human and utilitarian perspective.

Structure

The activities of the Academy are structured for budgetary and reporting purposes into five programmes:

- Administration and Governance Programme
- Policy Advisory Programme
- Scholarly Publishing Unit
- Liaison Programme
- Communication and Publications Programme



1 Administration and Governance Programme

This programme is central to the efficient functioning of the Academy, providing essential administrative and financial support to the Council and the secretariat. The programme is also responsible for all reporting requirements.

Strategic objectives of the programme are:

- Promotion of good governance through Council
- Promotion of recognition and involvement of Members
- Promotion of sound financial management
- Promotion of sound human resource management in the secretariat

1.1 Governance

The Academy's activities are guided by the ASSAf Act (*Act 67 of 2001*), as amended by the Science and Technology Laws Amendment Act (*Act 16 of 2011*), and a set of established regulations that collectively comprise the Academy's constitution.

Good governance of the Academy is ensured through regular meetings of Council, the execution of Council elections, support of Council meetings and efficient and effective execution of Council resolutions.

The ASSAf Council comprises 13 members, of whom 12 are elected from the Membership and one is appointed by the Minister of Science and Technology as a representative of the National Advisory Council on Innovation (NACI). The Academy has five office-bearers: the President, two Vice-Presidents, General Secretary and Treasurer.

The appointment of Advisors to the ASSAf Council is executed in terms of Regulation 8 of the Constitution.

The Council has three standing committees: an Executive Committee comprising the office-bearers that allows for decision-making on important matters in the intervals between Council meetings; an Audit Committee, and a Human Resources Committee.

At least four Council meetings are held each year and Council elections will be held every four years with effect from 2012 in accordance with the Science and Technology Laws Amendment Act (*Act 16 of 2011*).

Council members do not receive any remuneration for their involvement in governing the activities of the Academy. Funds are allocated to cover Council members' travel and logistical costs associated with Council and other Academy meetings.

A new ASSAf Council took office in October 2012 after a call to Members for nominations of new Council members. Professors Johann Mouton, Daya Reddy, Zeblon Vilakazi and Brenda Wingfield were elected as new Council members and Professors Adam, Berjak and Soodyall were re-elected. Professor Daya Reddy was elected as ASSAf President, replacing Professor Robin Crewe, who had served in this position for eight years and was not eligible for re-election. Professor Francis Petersen was appointed as the new NACI representative and two Council Advisors, Professors Wieland Gevers and Barney Pityana were appointed.

1.2 Council and Membership

Council Composition



President and Chairperson of ASSAf Council

Prof Dayanand (Daya) Reddy holds the South African Research Chair in Computational Mechanics in the Department of Mathematics and Applied Mathematics at the University of Cape Town. He is also Director of the Centre for Research in Computational and Applied Mechanics, and served as Dean of the Faculty of Science at the University of Cape Town over the period 1999-2005. He is a recipient of the National Order of Mapungubwe (Bronze), and a Fellow of The World Academy of Sciences (TWAS) and the African Academy of Sciences (AAS).



Vice-Presidents

Prof Patricia Berjak is Emeritus Professor and Senior Research Associate at the University of KwaZulu-Natal. She is a Fellow of the university and of TWAS. In 2006, she was awarded the National Order of Mapungubwe (Silver).



Prof Iqbal Parker is the Director of the International Centre for Genetic Engineering and Biotechnology, University of Cape Town. He was the Head of the Division of Medical Biochemistry and Director of Research in the Health Science Faculty at the University of Cape Town. He is a founder Member of the Academy of Science of South Africa and served as General Secretary from 2000-2004. He is a Fellow of TWAS.



General Secretary

Prof Hester (Esté) Vorster, previous Director of the Centre of Excellence for Nutrition at North-West University, is a Research Professor in Nutrition at the university, and General Secretary of the Academy of Science of South Africa.



Treasurer

Prof Sunil Maharaj holds the South African Research Chair in Gravitating Systems. He is a Senior Professor of Applied Mathematics at the University of KwaZulu-Natal and serves as Director of the Astrophysics and Cosmology Research Unit.



ASSAf Council Members

Prof Robert M Adam is Group Executive at the AVENG Group. He was Chief Executive Officer of the South African Nuclear Energy Corporation (Necsa) and was the Director-General of the Department of Science and Technology. He holds the position of Extraordinary Professor of Physics at both the University of Pretoria and the University of South Africa.



Prof Ahmed Bawa is Vice-Chancellor and Principal of the Durban University of Technology. Previously he was Professor and Distinguished Lecturer at Hunter College, City University of New York and Deputy Vice-Chancellor for Research at the University of KwaZulu-Natal. Prior to that, he worked for the Ford Foundation after a career in theoretical physics. He is currently Chairperson of Higher Education South Africa.



Prof Hoosen Coovadia is Emeritus Professor of Paediatrics and Child Health, Emeritus Victor Daitz Professor of HIV/AIDS Research, University of KwaZulu-Natal. He is also a Director: HIV Management, Maternal Adolescent and Child Health Unit (MatCH), University of the Witwatersrand and Commissioner, National Planning Commission, Presidency South Africa. He has been the recipient of some of the highest awards for work in health and human rights from both national and international organisations.



Prof Johann Mouton is Director of the Centre for Research on Evaluation, Science and Technology and Director of the African Doctoral Academy at Stellenbosch University.



Prof Himla Soodyall is the Director of the MRC/NHLS/Wits Human Genomic Diversity and Disease Research Unit at the National Health Laboratory Service (NHLS) and the University of Witwatersrand. She is the recipient of the National Order of Mapungubwe (Bronze).



Prof Zeblon Vilakazi is Director of iThemba LABS and also serves as Group Executive for Research and Development at the South African Nuclear Energy Corporation. He is an Extraordinary Professor at the University of Pretoria, Honorary Associate Professor at the University of the Witwatersrand and a member of the Board of Nuclear Industries Association of South Africa.



Prof Brenda Wingfield is Deputy Dean in the Faculty of Natural and Agricultural Sciences and Professor of Genetics at the University of Pretoria. She also served as the Chair of the National Science and Technology Forum until recently.



NACI Representative

Prof Francis Petersen is Dean of Engineering and the Built Environment at the University of Cape Town. He is a leader in developing South Africa's innovation strategy from his vantage point as Ministerial Advisor, and Chair of the Board of the Council for Scientific and Industrial Research (CSIR).



Council Advisors

Prof Wieland Gevers is Emeritus Professor of Medical Biochemistry and former Senior Deputy Vice-Chancellor at the University of Cape Town. He is a former President of the Academy of Science of South Africa (1998-2004) and is a Fellow of TWAS and a recipient of the National Order of Mapungubwe (Silver).



Prof Nyameko Barney Pityana is the Rector of the College of the Transfiguration, Grahamstown. He is the former Principal and Vice-Chancellor of the University of South Africa. He was Chairperson of Higher Education South Africa and Chairman of the African Council for Distance Education.

Council Member Attendance of Council Meetings in 2012/13

The former ASSAf Council met three times during 2012/13 and the new Council twice. Office-bearers' attendance of the Council meetings averaged 85% (see Record of Attendance at ASSAf Council meetings), while the average attendance rate of non-office-bearers was 55% (including the Advisors to Council).

RECORD OF ATTENDANCE

Council Member	Attendance (Former Council)	Attendance (New Council)
Prof Rob Adam	1	2
Prof Ahmed Bawa	2	0
Prof Patricia Berjak	3	2
Prof Hoosen Coovadia	2	1
Prof Robin Crewe	3	-
*Prof Wieland Gevers	2	0
Prof Sunil Maharaj	3	2
**Prof Catriona Macleod	1	-
Prof Johann Mouton	-	1
Prof Daniel Ncayiyana	2	-
Prof Iqbal Parker	3	1
Prof Francis Petersen	-	0
*Prof Nyameko Barney Pityana	-	0
**Prof Daya Reddy	3	2
Prof Himla Soodyall	2	2
Prof Peter Vale	2	-
Prof Zeblon Vilakazi	-	2
Prof Jimmy Volmink	2	-
Prof Hester Vorster	3	2
Prof Brenda Wingfield	-	2

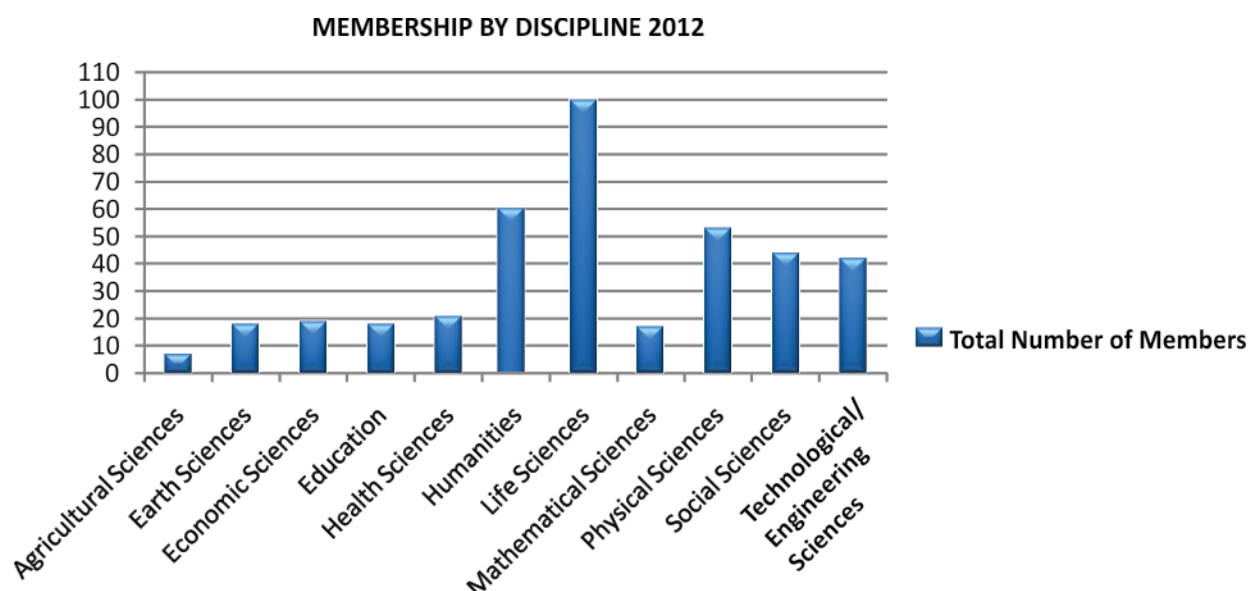
* Council Advisor – new ASSAf Council

** Council Advisor – former ASSAf Council

The Executive Committee met three times during 2012/2013, the Audit Committee four times, and the Human Resources Committee twice.

Membership

The core function of any national science academy is to honour the country's most outstanding scholars by electing them to Membership of the Academy. ASSAf Members are drawn from the full disciplinary spectrum as shown in the figure below.



A total of 27 new Members was elected during this past year. Another round of nominations and elections will be conducted in mid-2013.

Members elected in 2012 were:

NAME	AFFILIATION	DISCIPLINE
Prof Alfred Botha	Stellenbosch University	Life Sciences
Prof Dan Brown	University of the Western Cape	Humanities
Prof Jane Carruthers	University of South Africa	Humanities
Prof Michael Cherry	Stellenbosch University	Life Sciences
Prof Pumla Gobodo-Madikizela	University of the Free State	Social Sciences
Prof Keshlan Govinder	University of KwaZulu-Natal	Mathematical Sciences
Prof Minrie Greeff	North-West University	Health Sciences
Prof Adam Habib	University of the Witwatersrand	Social Sciences
Prof Henriette Hay	University of the Free State	Education
Prof Christof Heyns	University of Pretoria	Social Sciences
Prof Heidi Hudson	University of the Free State	Humanities
Prof Nelson Ijumba	University of KwaZulu-Natal	Technological/Engineering Sciences
Prof Klaus Koch	Stellenbosch University	Physical Sciences
Prof Johan Kock	University of the Free State	Life Sciences
Prof Shabir Madhi	University of the Witwatersrand	Health Sciences
Prof Thad Metz	University of Johannesburg	Humanities
Prof Robert Millar	University of Pretoria	Life Sciences
Prof Malose Mphahlele	University of South Africa	Physical Sciences
Prof Martin Ntwaeaborwa	University of the Free State	Physical Sciences
Prof Hugh-George Patterson	University of the Free State	Life Sciences
Prof Ian Phimister	University of the Free State	Humanities
Prof Deresh Ramjugernath	University of KwaZulu-Natal	Technological/Engineering Sciences
Prof Lyn Wadley	University of the Witwatersrand	Physical Sciences
Prof Melanie Walker	University of the Free State	Education
Prof Herman Wasserman	Rhodes University	Humanities
Prof Alan Weinberg	University of South Africa	Humanities
Prof Carolyn Williamson	University of Cape Town	Health Sciences

Prof Mohamed Hassan, former Executive Director of TWAS and the AAS, former President of the Network of African Science Academies (NASAC) and current Co-chair of the IAP, was elected as the second Foreign Associate Member of ASSAf. Prof Hassan was elected for the critical role that he played in establishing science academies on the African continent.

The voluntary resignations of Dr Loveness Kaunda and Prof Brenda Louw were approved by the ASSAf Council.

Three Members of the Academy passed away during the year. They were Professors Phillip Tobias, Jakes Gerwel and Justice Arthur Chaskalson.

The total Membership of ASSAf at the end of March 2013 stands at 394. Of these, 23% are women and 28% black.

See Annexure A for a list of ASSAf Members.

1.3 Infrastructure – Personnel and Physical

Activities of the Academy are supported by a secretariat of 18 full-time staff. The secretariat is headed by an Executive Officer, Prof Roseanne Diab, supported by the Chief Operations Officer, Dr Xola Mati.

Two Project Officers, Mr Thabo Radebe, Mr Zwelibanzi Ndayi and a Programme Officer, Ms Zarina Moolla, resigned during the year. Mr Tawanda December, Systems and Database Manager, passed away. Mr Mohau Moja and Ms Gugulethu Mtsweni were employed as Project Officers. Ms Renate Venier was employed as a Membership Liaison Officer. Other duties were redistributed to ensure effective operation. The management team is well-established and functions effectively to provide strategic guidance to the Executive Officer and leadership in each of their respective programmes.

The staff complement at the end of the 2012/2013 financial year was as follows:

Executive Officer:	Professor Roseanne Diab
Chief Operations Officer:	Dr Xola Mati
Financial Manager:	Mr Morakeng Chiloane
Administration Officer – Finance:	Mr Justice Baloyi
Administration Officer – General:	Ms Lebo Makgae
Liaison Manager:	Dr Takalani Rambau
Liaison Officer:	Ms Dorothy Ngila
Membership Liaison Officer:	Ms Renate Venier
Programme Officer:	Ms Phakamile Mngadi
Programme Officer:	Ms Zuki Mpiyakhe
Communication Manager:	Ms Patricia Scholtz
Communication and Programme Officer:	Ms Henriëtte Wagener
Publications Coordinator:	Mr Phathu Nemushungwa
Director: Scholarly Publishing Unit:	Ms Susan Veldsman
SciELO SA Coordinator:	Ms Louise van Heerden
Junior Project Officer:	Mr Mohau Moja
Project Officer:	Ms Gugulethu Mtsweni
Assistant Editor, <i>SAJS</i> :	Dr Linda Fick
DST/NRF Intern:	Mr Msimelelo Dingiswayo
DST/NRF Intern:	Mr Tyrone Ngonyama

The periodical publications of the Academy, viz. the *South African Journal of Science* and *Quest: Science for South Africa* magazine are staffed by part-time contract editors who are supported in their editorial function and in the production of the journals by the full-time staff of the ASSAf secretariat.

2 Policy Advisory Programme

In order for ASSAf to fulfil its policy advisory role regarding key challenges facing the nation, a variety of consensus and forum studies are undertaken. Activities are aligned closely with government's strategic goals. ASSAf has expanded its policy advisory activities through the publication of policymakers' booklets on key topics and through commentaries on national policies.

Evidence-based study activities form the core of the Academy's function and are vital to its future development. Apart from their policy advisory function, evidence-based study activities provide an important mechanism for establishing and strengthening international links, securing external project-related funding, and in mobilising ASSAf Members to volunteer their service on committees and panels.

ASSAf's policy advisory activities are guided by its Standing Committees, which provide strategic direction and guidance. ASSAf has Standing Committees on Health; Scholarly Publishing in South Africa; Science, Technology, Engineering and Mathematics (STEM) Education; Biosafety and Biosecurity; and Science for Poverty Alleviation. A Humanities Standing Committee was established in 2012.

The Academy's full suite of evidence-based projects is summarised below.

2.1 Health and Related Sciences

Improved Nutritional Assessment in South Africa

This consensus study is a follow-up to the consensus report on *HIV/AIDS, TB and Nutrition* (2007). One of the key findings of the 2007 report was the (surprising) national deficit in modern nutritional assessment methods, particularly tests of micronutrient status that were grounded in the most up-to-date understandings of relevant physiology and pathological chemistry, and that were reliable, affordable and practically helpful. The aim of the follow-up study is to address this finding, seeking to identify the best assessment modes to contribute to the prevention and treatment of these pandemic infectious conditions in the country. The six micronutrients identified as being most significant are vitamins A and D, folate, and the trace elements zinc, iron and selenium.

The study is nearing completion and is expected to be published in 2013.

Preparing for the Future of HIV/AIDS in Africa: A Shared Responsibility

ASSAf was one of two African science academies selected by the Institute of Medicine (IOM) to disseminate and localise the IOM report entitled *Envisioning a Strategy to Prepare for the Long-term Burden of HIV/AIDS*.

ASSAf elected to promote and disseminate the IOM report at a regional level and also to provide a platform for the participating countries to discuss the US President's Emergency Programme for AIDS Relief (PEPFAR) transition. The eight countries represented included Botswana, Lesotho, Mozambique, South Africa, Swaziland, Uganda, Zambia and Zimbabwe.

A workshop proceedings report entitled *Preparing for the Future of HIV/AIDS in Africa: A Shared Responsibility* was published in May 2012.

Key messages from the report indicate that a significant reduction of HIV incidence can be achieved through prevention activities, strong national leadership and good strategic frameworks, regardless of whether a cure or a vaccine for HIV/AIDS is found. It states that:

- The IOM report recommendations can be used as part of the advocacy at a regional level to promote shared responsibility by various stakeholders.

- It is necessary to ensure that whatever is implemented is evidence-based.
- The US government has demonstrated its willingness to support Africa in the fight against HIV/AIDS. It is now up to the African leadership to determine how to grow beyond dependency on donor funding.
- There is a need to put good plans in place and also to ensure that they are achieved.
- Accountability for the future through the development of effective HIV/AIDS strategic plans is crucial.
- Assistance to develop the necessary capacities, leadership and coordination that would help in achieving set goals is also essential. Training is an important area where support is required.
- It is also necessary to identify a set of requirements for implementation in order to address prevention.
- The establishment of a movement for the African shared responsibility would reinforce the struggle against HIV/AIDS in Africa.

Reconceptualising Health Professional Education and Training in South Africa

A workshop on the Education of Health Professionals, attended by 27 participants, was held in July 2012 in Pretoria to disseminate the *Lancet* Commission's report titled *Health Professionals for a New Century: Transforming Education to Strengthen Health Systems in an Interdependent World*. The report addresses the global imperative of increasing the quantity and quality of the health workforce equipped with knowledge, skills, competencies and attributes appropriate to the country's health context and aligned with the country's health system, while ensuring the centrality of patients and health-seeking communities. ASSAf received funding from the Inter-Academy Medical Panel (IAMP) to initiate a conversation on implementation in South Africa.

An outcome of the workshop was the recognition that there is need for a consensus view on the education and training of health professionals and other health care workers in South Africa to consolidate current efforts and enhance new efforts to address the severe quantitative and qualitative shortfall in the health workforce.

ASSAf was identified as the most appropriate body to undertake such a study. A consensus study proposal was developed by a subgroup of participants and subsequently approved by the ASSAf Council. Efforts are underway to raise external funding for this study.

Initiative on Vaccines

The Academy embarked on two initiatives with the United States National Academies of Sciences (US NAS) in the reporting year.

The first is an Africa-wide consensus study aimed at investigating the root causes of low coverage and under-immunisation in sub-Saharan Africa, to explore means to sustain immunisation programmes and to consider non-financial issues that have a direct impact on vaccine delivery.

The study will bring together specialists from across Africa and the national science academies of South Africa, Nigeria, and Uganda will act as the three nodes in sub-Saharan Africa. It will be co-ordinated by the US NAS and is expected to commence in 2013.

Tobacco Control in Africa

The second collaborative project between ASSAf and the US NAS centres on tobacco control in Africa and involves science academies in Africa. ASSAf nominated Dr Yussuf Saloojee as the key South African expert to represent ASSAf on the topic. The aim of the project is to bring the issue of tobacco control to the attention of the African policymakers by compiling a policymakers' booklet that will be endorsed and disseminated by the different academies.

2.2 Biosafety and Biosecurity Studies

A Standing Committee on Biosafety and Biosecurity oversees all components of biosafety, including bioethics, bio-risks and good laboratory practice, as well as biosecurity.

The committee is currently undertaking a consensus study on The State of Biosafety and Biosecurity in South Africa funded by the US Cooperative Biological Engagement Programme (CBEP). The project commenced in October 2012 and is due for completion in the second quarter of 2014. The project has the following objectives:

- An assessment of research and diagnostic laboratories in South Africa.
- An assessment of existing legislation and regulation in relation to biosafety and biosecurity.
- An investigation into the applicability and balance of relevant ethical principles.
- An evaluation of existing measures and capacity to detect, identify, control, and prevent the natural, accidental, or deliberate spread of infectious agents.

2.3 Energy, Water and Environment Studies

Science, Water and Sanitation: Supporting Equitable and Sustainable Development in southern Africa

ASSAf hosted a side-event at the Africa Water Week in Cairo, Egypt in May 2012. The Africa Water Week is hosted by the African Ministers' Council on Water (AMCOW) in conjunction with the African Union Commission (AUC) and is the biggest platform for raising awareness about water and sanitation issues in Africa.

ASSAf's policymakers' booklet *on Science, Water and Sanitation: Supporting Equitable and Sustainable Development in southern Africa* was launched.

The event attracted over 1 000 participants from Africa and beyond, including 33 ministers and ministerial representatives responsible for water affairs in Africa, development partners, civil society, the youth, the research and academic community and the media.

The booklet outlines the role that science academies can play in assisting policymakers and managers to address some of the key water challenges in the southern African region. It is intended to be useful to policymakers in the water sector, and to policymakers in those sectors that are major water users, such as the agricultural, industrial and mining sectors, as well as those with a mandate to protect the natural environment and whose policies and decisions impact directly or indirectly on water quantity, quality and accessibility.

The booklet focuses on six countries, namely Mauritius, Mozambique, Namibia, South Africa, Zambia and Zimbabwe, each of which has an established science academy, or one that is in the process of being established. However, the messages in the booklet are relevant to the broader southern African region and should resonate with policymakers in the southern Africa region.

Together with other similar studies from East, West and North Africa, which are in progress, the intention is to present an overview of water issues on the continent.

The booklet highlights seven key messages, namely, ensure access to reliable data; develop human and institutional capacity; improve infrastructure provision and maintenance; address investment and financing; adapt and mitigate implications of climate change; manage water quality; and address sanitation challenges.

Nuclear Energy Safety

A *Nuclear Energy Safety Symposium Proceedings Report* was published in April 2012. This followed a symposium on nuclear energy safety held in October 2011. The report was launched, together with an ASSAf statement on nuclear energy safety, at a conference on Nuclear Power's Future for Africa held in Sandton, Johannesburg in May 2012.

The report highlights, amongst others, lessons learned from the Fukushima Daiichi Nuclear Power Plant disaster and challenges and opportunities for enhancing the safety standards in the nuclear industry.

The report suggests that it is critical to ensure that nuclear safety principles are embraced and a continuous learning environment is cultivated by all the players in the nuclear industry. Nuclear

energy safety should be placed as an overriding priority in order to engender the level of confidence that the public requires of the industry, and to showcase nuclear technology as a means of enhancing the development agenda and contributing towards a sustainable environment.

Technological Innovations for a Low Carbon Society

A symposium on Technological Innovations for a Low Carbon Society was jointly hosted in October 2012 by the national science academies of South Africa and Germany, ASSAf and Leopoldina respectively, as one of many initiatives of the German-South Africa Year of Science. It presented an opportunity to highlight partnerships between Germany and South Africa and to intensify co-operation between the two academies in an area of strategic importance to both countries.

The challenge of finding sustainable, low carbon solutions to a global problem, such as climate change, is pertinent for both Germany and South Africa, notwithstanding their different developmental stages and different socio-economic and political contexts.

Themes addressed included the energy-water-food nexus for resilient societies; low-cost low carbon innovations for poverty alleviation; smart city innovations; new and emerging technologies, such as carbon capture and storage, and *The Beauti-fuel Project* aimed at converting biomass to liquid fuel, and the potential for solar power in South Africa.

The event was hosted at the Nedbank Menlyn Maine auditorium. Nedbank sponsored the venue and catering for the workshop. The attendees at the workshop included four German experts. Attendees were drawn from academia, government, business and civil society.

A workshop proceedings report will be produced in May 2013.

2.4 Humanities and Education Studies

State of Humanities in South Africa

ASSAf has established a Standing Committee on the Humanities, which had its inaugural meeting in May 2012.

The establishment of the Standing Committee followed from one of the recommendations of the ASSAf consensus study on *The State of Humanities in South Africa*, which aimed at examining the status and role of the humanities in South Africa and to suggest ways to strengthen and advance the contribution of the humanities to national life and development in South Africa.

Publication of the ASSAf consensus study coincided with a report of the Humanities and Social Sciences Charter Group of the Department of Higher Education and Training.

Activities have focused on crafting future cooperation and a way forward for the two reports.

Science, Technology, Engineering and Mathematics (STEM) Education

A Standing Committee on Science, Technology, Engineering, and Mathematics (STEM) Education provides strategic direction to the Academy's education initiatives.

An innovative intervention to stimulate learners' interest in science based on the French *Académie des sciences* programme known as *La main à la pâte* was launched on 26 November 2012 by ASSAf in collaboration with the French Academy, as part of the France-South Africa Season.

At the launch Prof Pierre Lena, astrophysicist, French Academy of Sciences and Prof Diane Grayson, physicist and science educator, introduced the concept and application of the programme.

A group of South African trainers drawn predominantly from Gauteng Higher Education Institutions was trained in Inquiry-based Science Education (IBSE) by two French trainers. Training of teachers is underway and the teachers are expected to implement the lessons in the second term of 2013.

The programme will be implemented as a pilot project in ten primary schools in the Tshwane District. It is being implemented with the cooperation of the Gauteng Department of Education and the Tshwane South District.

Further activities related to IBSE included the dissemination of the ASSAf policymakers' booklet on *Inquiry-based Science Education (IBSE): Increasing Participation of Girls in Science in sub-Saharan Africa* that was published in 2011.

Educating girls in sub-Saharan Africa is critical to achieving the Millennium Development Goals (MDGs) and especially those associated with improved maternal health, universal primary education, and reducing acute poverty in the region. The study argues that IBSE can be used to make science appealing to girls and further build a love of science among girls, thereby addressing an urgent need in the region. IBSE is a pedagogical technique of teaching science, which enables students, especially girls, to build on their experiences and to develop an understanding about the scientific aspects of the world around them through the development and use of inquiry skills.

Science academies in sub-Saharan Africa are well placed to promote IBSE and should collaboratively provide evidence-based policy advice to governments on the importance and value of IBSE for girls.

To this end, a workshop was held in Lusaka, Zambia in June 2012. The workshop drew 40 participants from stakeholders such as the Ministry of Science and Technology, universities, teacher colleges, high schools and curriculum development centres. The ASSAf policymakers' booklet was launched at a ceremony officiated by the Zambian Permanent Secretary of the Ministry of Education, Science, Vocational Training and Early Education.

A second workshop was held in Harare, Zimbabwe in July 2012 with approximately 70 participants. The Zimbabwean Minister of Science and Technology officiated at the launch and also gave the keynote address. Amongst the attendees were members of parliament, university lecturers, heads of teacher colleges, high school and primary school teachers and various industry representatives.

The launch of the booklet in Zimbabwe coincided with the review of the science and technology policies in that country.

The policymakers' booklet has been disseminated widely in both Zambia and Zimbabwe.

2.5 Science for Poverty Alleviation

ASSAf originally constituted its Standing Committee on Science for Poverty Alleviation (CSfPA) to contribute to one of the five new national missions outlined in South Africa's Research and Development (R&D) Strategy. Over the past few years, a number of forum-type studies on selected topics relevant in the fight to alleviate poverty in South Africa, have been conducted. Examples of reports published include *Science-based Improvements of Rural Subsistence Agriculture* and *Local Economic Development in Small Towns*.

Regulation of Agricultural Biotechnology in Africa: Mobilising Science and Science Academies for Policymaking

A policymakers' booklet, entitled *Regulation of Agricultural Biotechnology in Africa: Mobilising Science and Science Academies for Policymaking*, was published in November 2012. It stemmed from a joint workshop hosted by the Mauritius Academy of Science and Technology (MAST) on Agricultural Genetic Modification Policy held in Mauritius in June 2011.

Agricultural biotechnology, specifically genetic modification (GM) technology, has the potential to contribute to poverty reduction and food security on the African continent.

Increased crop productivity and increased adaptation to drought and pests are some of the benefits. Yet Africa has been slow to reap the benefits of GM crops. The main objective of this

polymakers' booklet is to provide science-based information that will encourage safe access to GM technology.

It focuses on ways that could improve the efficiency and quality of policy development for GM technology, as well as on building African polymakers' confidence by suggesting effective ways of procuring and using scientific evidence in GM risk analysis. It also focuses on the role of the public; the African national science academies and science-related associations in GM regulatory systems and processes. The key messages are on how this scientific advice can be procured from reputable organisations/institutions, such as African national science academies. Using transparent, inclusive institutional mechanisms to engage the public in GM technology regulatory processes are also recommended.

Given their role of providing evidence-based scientific advice to government and increasing public awareness of science, national science academies in Africa are well placed to take up the challenge of providing evidence-based advice on GM crops. The booklet is a guide to African polymakers on how they can procure and use evidence to make informed decisions on the development, introduction, commercialisation and use of agricultural GM technology.



3 Scholarly Publishing Programme

The Scholarly Publishing Programme (SPP) is regarded as a major intervention within the National System of Innovation (NSI) in South Africa. It is regarded as a national activity on a scale equivalent to that of a national facility. The strategic goal of the SPP is to enhance the national capacity to produce and publish research, on the one hand, and to increase the quality and visibility of South African research publications, on the other. The Scholarly Publishing Unit (SPU) in the Academy is headed by a Director and currently staffed by four staff members and one DST/NRF intern.

The activities of the SPU were originally funded by a three-year contract from the DST that ended in June 2011. The non-renewal of this contract and the consequent shortfall in funding created a severe financial burden on ASSAf during the reporting year and hampered progress. Since this programme is regarded as core to the Academy's mandate, every effort was expended to ensure that it continued and that the staff members were retained.

Considerable time was spent trying to ensure that the SPP is appropriately and fairly resourced in line with its current and potential contribution within the NSI and to enable ASSAf to fulfil the role expected of a national Academy in a modern, rapidly developing knowledge economy such as South Africa. ASSAf was gratified to learn that additional funding for the open access platform was granted by the DST for the Medium-term Expenditure Framework (MTEF) period 2013-2016. Further efforts to secure funding for this important national endeavour are continuing.

Progress in the various aspects of this programme is summarised below.

3.1 *Open Access Platform*

During the past year, steady progress was made in the implementation of the open access platform, known as the Scientific Electronic Library Online (SciELO)-South Africa, for high-quality South African scholarly journals. The project is inspired by a global movement towards the implementation of online journals, pioneered by the SciELO project, based in Brazil.

Criteria for inclusion of journal titles on the platform are (i) recommendations of ASSAf peer-review panels, and/or (ii) accredited by the Department of Higher Education and Training (DHET) and/or internationally indexed journals in the Thomson Reuters (formerly ISI) system.

Currently there are 24 journals available on the SciELO platform (www.scielo.org.za). It is expected that at least 180 journals will eventually be published on the platform.

Two significant achievements for the reporting year are that the SciELO South Africa Collection will be certified in April 2013 as a fully operational collection indexed in the SciELO Network Global Portal according to "Criteria, policies and procedures for site classification and certification in the SciELO Network". The SciELO South Africa Collection will be elevated from 'a collection in development' to a 'certified collection'. This will greatly enhance the visibility of South African journals and will increase impact factors of our local journals.

The SciELO national collections are operated by countries that adopt SciELO principles, methodology and technology. The thematic collections are operated at regional and international levels. They all collaborate as a cooperative decentralised network. Each collection operates under its own coordinating centre, management framework and funding structures. SciELO collections are established and developed in a progressive way, starting as a pilot collection, evolving to an 'in development' status, with regular operation in the web and, when the mandatory SciELO quality criteria are achieved, it acquires the 'certified' status. SciELO collections are governed by an advisory scientific committee responsible for the selection of journals and the periodical evaluation of their performance to remain in the collections.

Second, from January 2013, all SciELO journals appear on the Web of Knowledge (WoK) platform as the SciELO Citation Index. The WoK interface will allow the subscribed user to access the journal

collection Web of Science (WoS) and SciELO together, as well as other individual collections. All the search, navigation and citation metrics functions for the collections will be available together or individually. Thomson Reuters will produce a list of citations annually that the SciELO journals receive in the WoK and in the WoS and SciELO together. This will allow us to have a citation rate of SciELO journals that are indexed in WoS and SciELO.

Usage of the SciELO-SA platform has increased by 42% over the last year.

The Electronic Publishing Trust for Development awarded SPU Director, Susan Veldsman, with a certificate of commendation in its annual awards. These awards recognise the effort made by individuals working in the developing and emerging countries in the furtherance of open access to scholarly publications.

3.2 National Scholarly Book Publishers' Forum (NSBPF)

The National Scholarly Book Publishers' Forum (NSBPF) focuses on book publishing and was inaugurated in 2011.

Under the auspices of the NSBPF, two presentations were made by Prof Wieland Gevers at the Scientific, Technical & Medical Publishers' Conference and Cape Town Book Fair in June 2012. The first presentation was titled "A broad-based programme to enhance scholarly publishing in and from South Africa".

In a second presentation, "Turning research into books", ASSAf surveys were discussed, the reasons for them, and the major findings. Both contributions were submitted to the *Mail and Guardian* – *Getting Ahead*, and were published on 6 July 2012.

3.3 Peer Review of South African Scholarly Journals

A report on the completed peer-review process for South African scholarly journals in the Religion, Theology and Related Fields was completed in the reporting year. Reports on the discipline groups, Law and Health Sciences are nearing completion.

Peer reviewing of the following groups: Engineering; Economic and Business Management; and Information and Communication Studies are expected to be rolled out during 2013.

3.4 National Scholarly Editors' Forum

The National Scholarly Editors' Forum (NSEF) has become an entrenched event in the annual calendar and attendance has risen markedly since its inception. It is aimed at enhancing the quality of editing and management of scholarly journals.

The 6th Annual Meeting of the NSEF was held in Cape Town in July 2012. This meeting will be rotated periodically between the Western Cape and Gauteng. The meeting focused on the role of the editor in scholarly publishing, as well as engaging on issues directly affecting the editors e.g. funding, peer reviewing and editorship.

The forum was attended by 95 editors.

3.5 Online Scientific Writing Service

This service, which entailed the development of a web-based online scientific writing service for post-graduate students and young academic staff, is making good progress. Under the guidance of the ASSAf Committee on Scholarly Publishing in South Africa and with inputs from representatives of other academies (i.e. Tanzania, Zambia and Zimbabwe), a four-tiered modular system has been developed. It is aimed at supplementing and enriching in-house offerings available at some universities and in making the resources available online and free for all postgraduate students across all South African universities.

The system offers four tiers of support: a listing of suitable resources with access details; self-teaching lectures on various aspects of scientific/scholarly writing; a direct mentoring system for help with writing tasks; and short block courses for face-to-face instruction and help.

The one-year contract with the InterAcademy Medical Panel (IAMP) has come to an end. All project updates and expenditures were submitted to the IAMP by the end of May 2012.

3.6 Access to Core Commercial Databases

Investigations into facilitating a staged approach to mega-licensed access by South African public research institutions to leading international commercial journals were completed in 2011 and a report was presented to the Minister of Science and Technology in November 2011. The Academy consulted the organisers of similar services in Chile, Pakistan and India to inform its recommendations.

ASSAf commissioned the Centre for Research on Science and Technology (CREST) at Stellenbosch University to conduct an investigation into the electronic information needs of academic staff, postgraduate students and researchers within universities and research institutions in South Africa. Through this project the SPU is supporting DST with interventions to grow a competitive scientific and industrial base to support a knowledge economy, by providing equal access to knowledge for all researchers in South Africa.

Noting the high policymaking level at which this report is now being considered, the CSPiSA meeting decided not to publish the draft report as an evidence-based study with recommendations, but rather to publish the results of the constituent investigations, which could be very useful to the research community in the public domain.

A combined workshop was held on 20 September 2012 between the Departments of Science and Technology and Higher Education and Training regarding the implications, funding and practical rollout to all institutions.

3.7 Open Access Publishing

Open access is being advocated by the Berlin Declaration of Open Access (October 2003) which acknowledges that the internet has fundamentally changed the practical and economic realities of distributing scientific knowledge and cultural heritage. For the first time ever, the Internet now offers the chance to constitute a global and interactive representation of human knowledge, including cultural heritage and the guarantee of worldwide access.

Governments, universities, research institutions, funding agencies, foundations, libraries, museums, archives, learned societies and professional associations who share the vision expressed in the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities are therefore invited to join the signatories that have already signed the Declaration.

During the reporting year, the Max Planck Institute was notified of ASSAf's intention to sign the Berlin Declaration of Open Access. ASSAf has submitted the signed Declaration to the institute under the signature of the President of ASSAf.

3.8 Institutional Repositories

Institutional repositories are already under development in a number of universities and science councils. They respond to two strategic issues facing academic institutions: the need to reform scholarly communication by increasing access to published work on the part of users and potential collaborators, within the prevailing commercial journal model, and provision of tangible indicators of an institution's quality, thus increasing its visibility, prestige, and public value.

The continuous expansion of institutional repositories remains important and will be promoted by the ASSAf programme in association with other partners, such as the DST and the DHET.

3.9 Memorandum of Agreement: Joint Working Groups between DST/DHET

Working groups comprising officials from the two departments and ASSAf have been established following a workshop held on 23 July 2012 to develop and produce more concrete and consolidated plans on scholarly publishing as a priority area. After a bilateral Ministerial meeting between DST and DHET on 24 January 2013 a Memorandum of Understanding (MoU) was signed by both Ministers to formalise the work and the relationships of the joint working group.

3.10 South African Journal of Science (SAJS)

The *SAJS*, now in its 109th year of publication, aspires to be the leading multidisciplinary journal in Africa, publishing original research with a multidisciplinary or regional focus, as well as serving as a forum for debate about recent developments in research and higher education.

The editorial model comprising an Editor-in-Chief and ten Associate Editors in specific disciplinary fields has been operational for four years and six issues were published on time in 2012. One Editorial Board meeting was held.

A new Editor-in-Chief, Dr John Butler-Adam, was appointed in November 2012, as well as four new Associate Editors.

A major imperative is the expansion of the 'front section' of the *SAJS* in accordance with the recommendations of the business strategy that was developed for the journal in 2011. The goal is to make the *SAJS* the foremost repository of editorial comment, scholarly debate, S&T policy analysis, news and views, book reviews, and correspondence relevant to South Africa.

The visibility of the *SAJS* has increased markedly since its availability on the SciELO-SA platform. It is currently the second most frequently accessed journal on the SciELO-SA platform after the *South African Medical Journal*.

The journal adopted ScholarOne's online manuscript submission and peer-review system in September 2012. With the termination of AOSIS as the publisher of the journal as of the end of December 2012, publication of the *SAJS* reverted to ASSAf from January 2013.

The *SAJS* was actively marketed through media releases to all science journals, science editors, and stakeholders such as research institutes, universities, and relevant government institutions, as well as at science outreach events.

4 Liaison Programme

The purpose of this programme is to establish and maintain effective relations with strategic international partners, such as national science academies and academy networks and other global scientific organisations. On a national level, the programme aims to establish, strengthen and enhance interactions with key stakeholders, such as national government departments, policy-makers in government, and relevant national organisations. The programme is also responsible for capacity development, ensuring that South African scientists are exposed to opportunities available inside and outside South Africa.

The programme is structured into national and international liaison activities and is headed by a Manager and staffed by two Liaison Officers.

4.1 International Liaison Activities

International Science Academy Networks and Bilateral Collaborations

ASSAf participates in and maintains effective relations with international science academy networks to enhance global and continental policy advisory activities and to facilitate funding opportunities.

ASSAf's international and regional linkages are selected strategically to drive S&T development in the Southern African Development Community (SADC) region and Africa as a whole. To date, ASSAf has signed Memoranda of Understanding (MoUs) with science academies in Uganda, Nigeria and Mauritius and has partnered with them on many projects.

ASSAf is a member of The Global Network of Science Academies (IAP), the InterAcademy Council (IAC), the InterAcademy Medical Panel (IAMP), the G8+ (now G-Science) grouping of science academies, and the Network of African Science Academies (NASAC). ASSAf also participates in the Science for Society Forum of Presidents of Academies and the International Human Rights Network of Academies and Scholarly Societies.

Each of these networks provides ASSAf with an opportunity to increase its sphere of influence and further establish South Africa as a global player. ASSAf is a favoured partner on many projects initiated by well-established science academies such as the US National Academies and the German National Academy of Sciences Leopoldina. In March 2013, the Academy entered into a MoU with the Indian National Science Academy (INSA), adding to those with academies in Russia and China.

The Academy of Science of South Africa was elected to the Executive Committee of IAP early in 2013, together with representatives from science academies in Brazil, China, Cuba, India, Mexico, Canada, France, Italy, Japan, and the United States.

In May 2012, ASSAf joined with 15 other national science academies to call on world leaders attending the G8 Summit to give greater consideration to the vital role that science and technology could play in addressing some of the planet's most pressing challenges. The G-Science statements recommended that governments engage the international research community in developing systematic, innovative solutions to three global dilemmas: how to simultaneously meet water and energy needs; how to build resilience to natural and technological disasters; and how to gauge greenhouse gas emissions more accurately on a country-level basis to verify progress toward national goals or international commitments.

Leadership Role in NASAC

Prof Robin Crewe, former ASSAf President, continued to serve as the NASAC President.

As one of the leading science academies on the African continent, it is appropriate that ASSAf plays a role in strengthening NASAC. The ASSAf Liaison Manager continues to assist in ensuring

good governance, the strengthening and initiation of academies across the continent, and the promotion of the policy advisory role of NASAC at the African Union level. International science academies have welcomed this development.

A questionnaire has been finalised and circulated to all African academies with the aim of collecting data on the state of women scientists in African science academies. The results of the survey will inform the NASAC Working Group on Women in Science's activities.

Annual Meeting of African Science Academies

The Annual Meeting of African Science Academies (AMASA) continues to play an important role in bringing together representatives of African academies to share experiences and to provide a platform to conduct policymakers' roundtables and to engage with policymakers and other stakeholders on issues of critical interest for the entire region.

The 2012 AMASA meeting was held in Lagos, Nigeria in November 2012. ASSAf was represented by Prof Roseanne Diab, Dr Takalani Rambau and Prof Ronald Schulze, a Member of ASSAf. The theme of the conference focused on climate change in Africa and its impact on public health and food security.

The final AMASA meeting to be sponsored by the US National Academies will be hosted by the Ethiopian Academy of Sciences in November 2013. The topic will focus on biotechnology in Africa. Thereafter, the responsibility for arranging the meetings and raising funds will rest with NASAC.

Academy Initiation and Development

A country is embedded in a region and derives its strength from the region. By strengthening and initiating science academies in the region, ASSAf is contributing to the strengthening of scholarly work and research activities in the SADC region and beyond.

ASSAf aims to strengthen science academies in Mozambique, Tanzania, Zimbabwe, Zambia and Mauritius through joint projects and mentoring activities.

During the year, ASSAf hosted a side-event at the Africa Water Week in Cairo, Egypt. The Africa Water Week was hosted by the African Ministers' Council on Water (AMCOW) in conjunction with the African Union Commission (AUC) and is the largest platform for raising awareness about water and sanitation issues in Africa.

ASSAf's policymakers' booklet *on Science, Water and Sanitation: Supporting Equitable and Sustainable Development in southern Africa* was launched at the event.

More than 1 000 participants from Africa and beyond, including 33 ministers and ministerial representatives responsible for water affairs in Africa, development partners, civil society, the youth, the research and academic community, and the media attended the event.

The booklet outlines the role that science academies can play in assisting policymakers and managers to address some of the key water challenges in the southern African region

International Human Rights Network of Academies and Scholarly Societies

ASSAf, represented by Professor Peter Vale, participated in the 43rd biennial International Human Rights Network meeting hosted by the Academia Sinica, Taiwan from 23-26 May 2012.

The Network assists scientists, scholars, engineers, and health professionals around the world who are subjected to severe repression solely for having nonviolently exercised their rights as promulgated by the Universal Declaration of Human Rights.

The case of Prof Cyril Karabus, a South African oncologist, detained in the United Arab Emirates was one of the cases taken up by the Network.

Science and Technology for Society (STS) Forum

ASSAf, represented by Prof Daya Reddy, participated in the 9th annual meeting of the STS Forum, which took place from 7-9 October 2012 in Kyoto, Japan. The STS Forum provided an excellent opportunity for networking with eminent scientists and leaders from across a wide spectrum. The programme comprised a number of plenary and parallel sessions, each devoted to a topic of global importance, such as Science and Technology for the Future of Humankind, Energy and the Environment, and The Role of Universities for the 21st Century, Nuclear Safety and Future Development, Science and Engineering Education for the 21st Century and Global Health.

InterAcademy Medical Panel (IAMP)

ASSAf has successfully bid to host the InterAcademy Medical Panel (IAMP) General Assembly and Conference which will be held from 13-16 August 2013 in Johannesburg. Changing Patterns of Non-communicable Diseases has been selected as the theme for the conference.

Royal Pfizer Workshop

Prof Daya Reddy, newly elected ASSAf President, attended a Royal Pfizer Workshop from 29 October to 1 November 2012, organised by the Royal Society in London. The workshop was aimed at sharing experiences on running science academies in Africa and to build on the work of Royal Pfizer programmes which are to:

- a) strengthen evidence-based policymaking in Africa;
- b) inspire and engage the next generation of scientists in Africa;
- c) champion, promote and recognise excellence in African science.

Leopoldina Symposium on Changing Patterns of Health Problems in sub-Saharan Africa

The German National Academy of Sciences Leopoldina together with the Ghana Academy of Arts and Sciences and NASAC organised a symposium and workshop on the Changing Patterns of Health Problems in sub-Saharan Africa (SSA): Impact of Communicable and Non-Communicable Diseases (NCDs) in November 2012 in Berlin. ASSAf was represented by Prof Esté Vorster.

Leading scientists, including specialists in public health, policymakers, programme managers and representatives from the pharmaceutical industry, gathered to share their perspectives from developing and developed economies.

The participants recommended that it will be vital for the academies to consult and engage further, to promote the available evidence and consider whether they have an additional role to generate new evidence.

4.2 National Liaison Activities

Recognition of Excellence through Awards

Science-for-Society gold medals are the apex awards of the Academy and the South African science system and are awarded in recognition of outstanding achievements by individuals. Up to two gold medals are awarded per annum for outstanding achievement in scientific thinking for the benefit of society.

ASSAf recognised two top South African scientists at the Annual Awards Ceremony in October 2012.

Jill Adler was recognised for her significant achievements in mathematics education. Prof Adler is the First Rand Foundation-National Research Foundation Chair of Mathematics Education at the University of the Witwatersrand, as well as the Chair of Mathematics Education at Kings College, London.

Kobus Eloff was recognised for his many contributions in areas that are important to society. These include soil fertility, toxic plant and cyanobacteria metabolism and ecology, as well as the use of compounds from plants as medicines and biopesticides.

AU-TWAS Prize for Young Scientists

The AU-TWAS award scheme aims to recognise and reward talented young scientists in Africa. The AU-TWAS Prize for Young Scientists in South Africa is managed by ASSAf, on behalf of its partners, the African Union Commission (AUC), TWAS and the Department of Science and Technology (DST). Through this award, the AU and TWAS jointly recognise and reward an outstanding scientist in South Africa. The recipient should be under the age of 40, living and working in South Africa, and have a record of research publications in internationally recognised science journals.

In 2012, two awards were made. The prize in Life and Earth Sciences was awarded to Prof Alta Schutte from North-West University and Prof Thokozani Majozi from the University of Pretoria received the prize for Basic Science, Technology and Innovation.

ESASTAP Plus

ASSAf was requested by the DST in the reporting year to partner in the implementation of ESASTAP Plus, an instrument that aims to strengthen technology, research and innovation cooperation between South Africa and the European Union (EU).

ASSAf is expected to conduct an assessment of the various instruments that have been implemented thus far and in particular the Seventh Framework Programme (FP7), in preparation for Horizon 2020. The latter is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. Running from 2014 to 2020 with an €80 billion budget, the EU's new programme for research and innovation is part of the drive to create new growth and jobs in Europe.

Young Scientists' Activities

ASSAf recognises that it has a responsibility to foster the next generation of leading scholars and to involve young scientists in academy-related activities as much as possible.

The Third Annual Young Scientists' Conference was held at the CSIR international Convention Centre from 15-17 October 2012. The theme was Our Energy Future. The young scientists' conference was funded by the *Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ)* through the Renewable Energy Centre of Research and Development (RECORD), DST and TWAS ROSSA. In total, 200 participants attended the conference, representing 21 universities, nine science councils, government departments and the private sector.

During the conference, young scientists had an opportunity to hear presentations by the heads of the NRF, DST, Parliamentary Portfolio Committee on Science and Technology and ASSAf.

Over 60 oral and poster papers were presented during the conference and a mentoring workshop on the basics of science communication was presented by the South African Agency for Science and Technology Advancement (SASTA).

In addition, a symposium on the state of energy in the country was conducted by GIZ and RECORD, which provided an opportunity for young scientists to interact with policymakers, implementers of policy and research institutions on the subject matter.

EU-SA Young Scientists' Workshop

During the launch of ESASTAP Plus in Cape Town in late 2012, the EU and South Africa showed a keen interest in commencing a dialogue with young scientists in both the EU and South Africa on how best ESASTAP Plus and other collaboration instruments could promote young scientists' development. ASSAf identified and nominated young scientists from both SAYAS and other young

scientists' forums who attended a workshop. Recommendations of this workshop were presented to both the EU and DST and work is underway to incorporate a section on young scientists within the current collaboration framework between the EU and South Africa.

Women Scientists' Activities

A National Chapter of the Organisation of Women in Science for the Developing World (OWSD – formerly TWOWS) was established by ASSAf in 2009.

In 2012, the National Chapter continued to be involved in the process of establishing a SADC Women in Science, Engineering and Technology (SADC WISET) forum stemming from the establishment of the Association of African Women in Science and Technology after the first African Union Conference of African Women in Science and Technology in 2007. ASSAf provided strategic advice on the establishment of SADC WISET and participated in a workshop on the proposed initiative.

In partnership with the United Nations Educational, Scientific and Cultural Organisation (UNESCO) office in Windhoek Namibia, ASSAf produced a report on the *State of Women in Science and Technology in Swaziland*. The report highlighted the unique challenges, activities and perceptions of women scientists in Swaziland and compiled information on women scientists in that country that contributed to the building of an online searchable database.

Committee of Heads of Organisations for Research and Technology (COHORT)

ASSAf continues to act as secretariat to the Committee of Heads of Organisations for Research and Technology (COHORT).

COHORT held its plenary meeting on 3 August 2012 where discussions took place on the Ministerial Review Committee Report on the Science, Technology and Innovation Landscape in South Africa and the Green Paper on Post-school Education.

The Committee also elected additional members of the Executive Committee following the resignations of Professors Rivka Kfir and Rob Adam. The new Executive Committee includes Mr Dhesigen Naidoo (WRC) and Ms Tanya Abrahamse (SANBI).

Regional and National Lectures

Scholarly lectures provide an opportunity for South African researchers to engage with leading international scholars and at the same time raise the profile of the Academy and promote relations with other organisations.

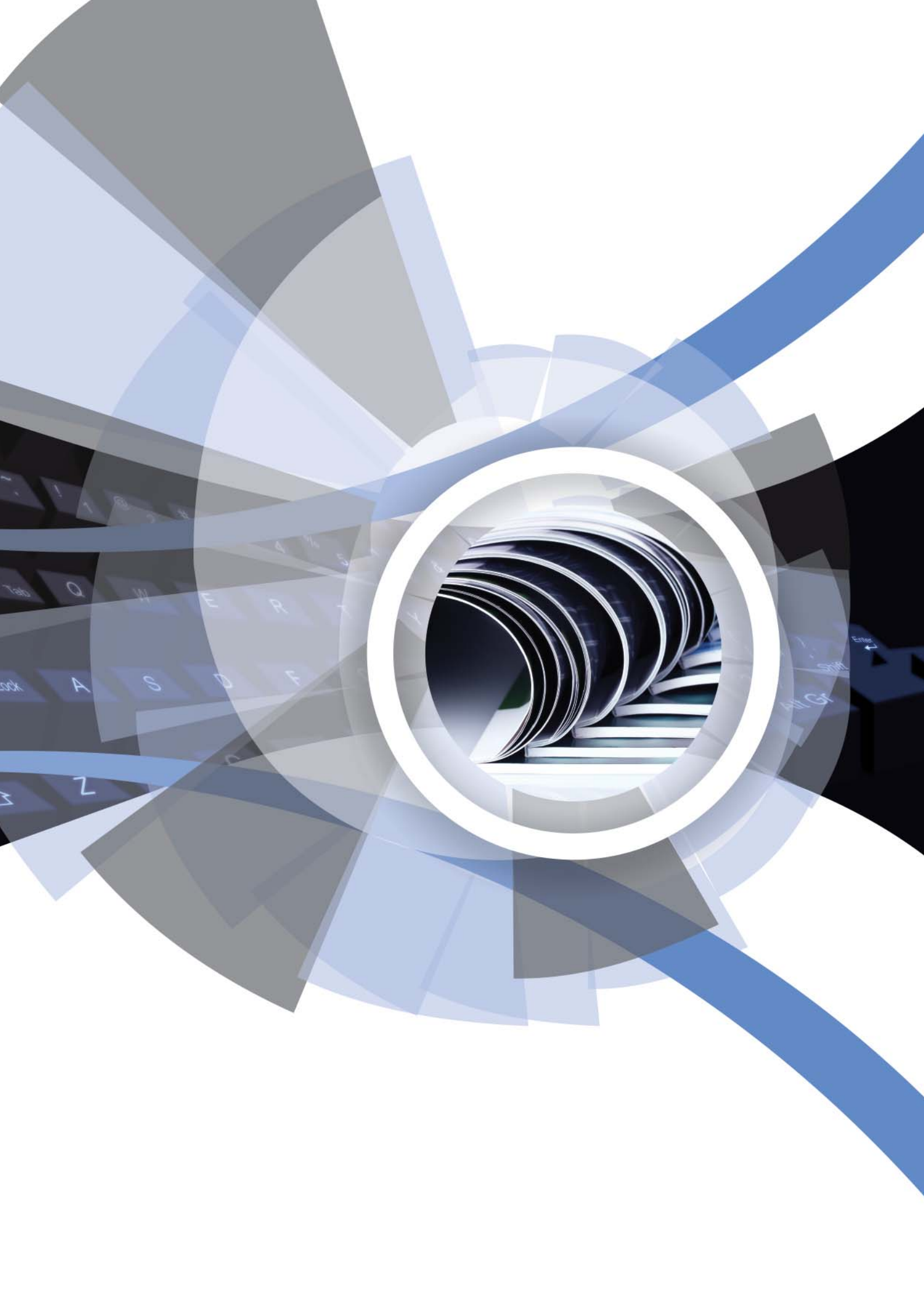
ASSAf annually hosts a Distinguished Visiting Scholar. The visit of Prof Ernst-Ludwig Winnacker, Secretary-General of the Human Frontier Science Programme (HFSP) straddled the current and previous financial years. He presented a series of public lectures at six universities on the topics of Interdisciplinarity and the Frontiers of the Life Sciences and the International Character of Science.

ASSAf also hosted Professors Tove Skutnabb-Kangas and Robert Phillipson as Distinguished Visiting Scholars in October 2012 for a series of public lectures at six universities in South Africa. Both scholars are experts in language policy, having been deeply involved in language maintenance and revitalisation at all levels from the 'grassroots' to university level.

The Academy partnered with the University of the Free State (UFS) to co-host Prof Arthur Kleinman on a visit to South Africa in February 2013.

Prof Kleinman is the Esther and Sidney Rabb Professor, Department of Anthropology, Harvard University and Professor of Medical Anthropology in Global Health and Social Medicine and Professor of Psychiatry, Harvard Medical School.

Regional lectures, in collaboration with the Royal Society of South Africa, were offered on a regular basis throughout 2012/2013 at the University of Cape Town.



5 Communication and Publications Programme

The purpose of this programme is to provide effective and targeted communication with ASSAf stakeholders to support the vision of the Academy to be the apex organisation of science and scholarship in South Africa and to manage and produce all printed material for the Academy. These range from ASSAf's flagship journal, the *South African Journal of Science (SAJS)*, to non-periodical publications for ASSAf's various workshops and studies. The science magazine, *Quest: Science for South Africa*, is published by ASSAf and is aimed at engendering understanding of and an interest in science amongst schoolchildren. ASSAf stakeholders include Members, representatives of government and other science councils, universities, sponsors, other science academies and the public.

The Communication and Publications Programme is staffed by a Communication Manager, a Communication Officer and a Publications Coordinator.

5.1 Marketing of the Academy

ASSAf utilises the advantages of electronic communication optimally and has a well-established internet presence (www.assaf.org.za), an interactive website aimed at the youth that is linked to the popular science magazine, *Quest: Science for South Africa* (www.questinteractive.org.za), and dedicated websites, such as the website for the *South African Journal of Science* (www.sajs.co.za), an ASSAf blog, in which reader interaction is encouraged by addressing topical subjects (www.assaf-interactive.org.za), and a website for online scientific writing (www.assaf.org.za/osc/). All websites are managed internally.

The Academy is also profiled and branded in its publications, dissemination and promotion of its products, i.e. evidence-based research reports, among relevant stakeholders, through the release of press statements and promotion of Academy activities, among others in its quarterly electronic newsletter.

During the reporting year, the opinion of the Academy was sought by the media regarding a variety of science and academic topics. A total of 21 media statements was released and the Academy was marketed at 14 science events, reaching approximately 100 000 learners and members of the public.

ASSAf took part in the DST exhibition during the S&T Budget Vote at Parliament. The exhibition was open to the public from 12-16 May 2012. ASSAf's evidence-based reports were showcased.

The printed and online media is monitored regularly to determine uptake and impact of Academy activities.

Each issue of the popular science magazine, *Quest*, features news on the Academy.

5.2 Production, Publishing and Dissemination

ASSAf produced and disseminated high-quality print versions of periodical publications such as the *SAJS*, *Quest*, quarterly *Science for Society* electronic newsletter, and Annual Report and non-periodical study reports, workshop proceedings, policymakers' booklets and policy commentaries.

Periodical publications are produced timeously; and study reports are produced in a variety of formats from concise to full versions. All publications are disseminated widely to ASSAf stakeholders.

Two proceedings reports, namely *Preparing for the Future of HIV/AIDS in Africa* and the *Nuclear Energy Safety Symposium Report* were published in the reporting year.

Policymakers' booklets on *Science, Water and Sanitation: Supporting Equitable and Sustainable Development in southern Africa* and *Regulation of Agricultural GM Technology in Africa - Mobilising Science and Science Academies for Policymaking* were published.

5.3 Public Awareness of Science

ASSAf promotes awareness of science amongst the public and particularly among the youth through the publication and dissemination of *Quest: Science for South Africa* science magazine, the *Quest* interactive website, release of press statements and active participation in key national science events.

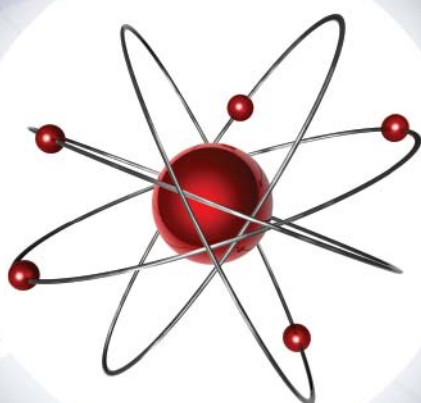
Quest: Science for South Africa is a full-colour, quarterly, popular science magazine directed at a target audience comprising learners, educators and the general public.

With a print run of 25 000 per issue, *Quest* is widely distributed free of charge to public high schools with science departments and at national science events. In the reporting year seven youth-specific science events/olympiads were held. SciFest 2012 was the biggest with more than 70 000 learners visiting the festival. At the National Science and Technology Forum (NSTF), Eskom and Mint-ek competitions, ASSAf sponsored free one-year subscriptions for all the gold category winners.

The magazine is available to the general public through subscription.

Each *Quest* issue is compiled on a specific theme of topical interest, informed by school curricula and general global scientific issues.

In 2012, advertising revenue for *Quest* increased by 46% over 2011 advertising revenue.



6 South African Young Academy of Science (SAYAS) Activities

The South African Young Academy of Science (SAYAS) was founded in September 2011 to be the representative voice of young scientists in South Africa. SAYAS contributes to the national strategic priority of strengthening the skills and human resource base of the country, with a focus on the next generation of scientists. Since its inception, SAYAS has inaugurated 30 members who were selected based on their academic excellence and service to society.

SAYAS members carry out SAYAS activities in working groups and during the past year, the following activities have been undertaken.

Global Young Academy General Assembly and Scientific Conference

SAYAS hosted the Global Young Academy (GYA) General Assembly and Scientific Conference in May 2012 in Sandton, Johannesburg. More than 100 international young scientists attended the meeting, which was opened by Minister Naledi Pandor. An outcome of the meeting was the *Sandton Declaration on Sustainability*, which was subsequently presented by the GYA to the Rio+20 conference. Conference delegates also took part in various outreach activities at schools and higher education institutions to engage with South African youth and young scientists. Several research partnerships were established as a result of these actions.

Young Academies' Symposium on Sustainability

Under the auspices of the German-South Africa Year of Science and funded by the NRF and the German Federal Ministry of Education and Research (BMBF), SAYAS partnered with *Die Junge Akademie* and the GYA to hold the Young Academies' Symposium on Sustainability. After a planning meeting in October 2012, hosted by SAYAS in South Africa, young scientists met in Berlin in March 2013 at the Socio-ecological Novelty – Frontiers in Sustainability Research Symposium. Here, young scientists debated ways to harness novel solutions from environmental challenges with findings documented in a research article. A science-policy panel event was a highlight of the Berlin meeting when scientists and policymakers discussed the role of science in policymaking.

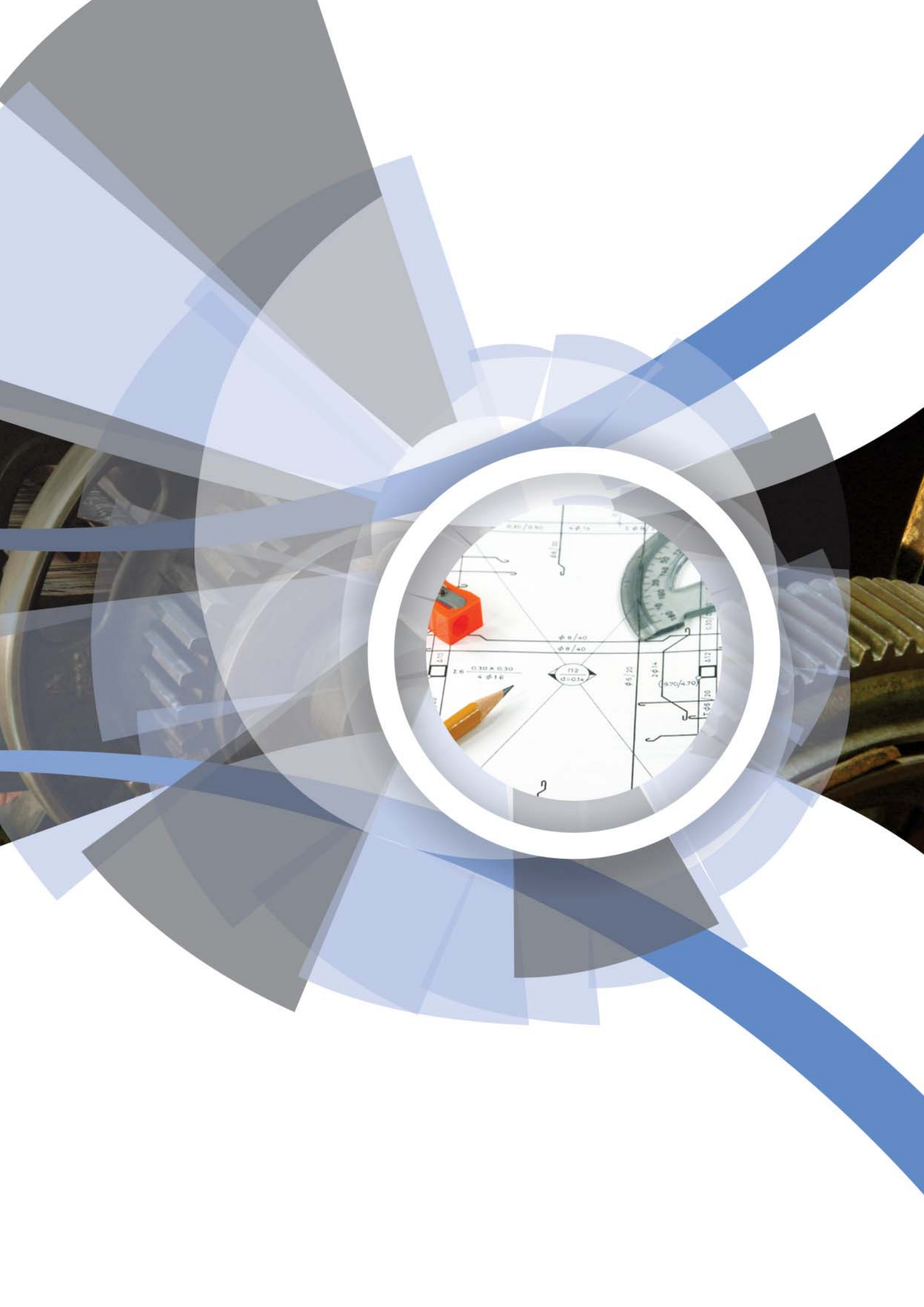
SAYAS Survey of Young Scientists

In 2012, SAYAS launched the SAYAS Survey of Young Scientists, an online survey completed by Honours, Masters and doctoral students and postdoctoral Fellows in South Africa. The survey aims to provide a deeper understanding of the profile and general needs of young scientists in the country for alignment of strategic activities targeting their support and development. Between September 2012 and January 2013, 1 021 young scientists completed the survey and results are presently being prepared for publication. The most interesting finding was that a total of 43% of Honours, Masters, PhD and postdoctoral respondents indicated that the reason for performing their postgraduate studies is that they wanted to pursue an academic career. This figure increased to 58% in the categories of PhDs and postdoctoral scholars. This highlights a knowledge gap regarding the developmental needs of the country (e.g. industry) and career-planning by postgraduate students.

SAYAS New Member Inauguration and Second General Assembly

Eleven new members were elected to membership of SAYAS in 2012 and were inaugurated on 16 October 2012. A Memorandum of Understanding between ASSAf and SAYAS was also signed at the induction ceremony. Dr Khotso Mokhele gave the keynote address on the occasion.

See Annexure B for a list of SAYAS members.



7 South African Academy of Engineering (SAAE) Activities

The South African Academy of Engineering (SAAE) received a small amount of funding from the DST and its secretariat is hosted by ASSAf. The report of the SAAE is included in the ASSAf Annual Report for the first time.

The SAAE is a non-profit, independent voluntary association with 168 Fellows as at March 2013. SAAE strives to:

- promote excellence in the science and application of engineering for the benefit of all members of the public in South Africa;
- promote the technological welfare of the nation by marshalling the knowledge and insights of its members; and
- be recognised as a source of evidence-based, expert advice on matters pertaining to global competitiveness and quality of life for the nation.

Fellows of the Academy are eminent South African engineers of all disciplines with proven ability and achievement. The Academy is able to mobilise the wealth of diverse and multidisciplinary knowledge and experience of its members for the benefit of the nation.

The SAAE is a member of the International Council for Engineering and Technological Sciences (CAETS) and maintains healthy cooperative relations with the other 25 academies of engineering worldwide which are also affiliated to CAETS.

The President of SAAE, Mr Bob Pullen, and Prof Phillip Lloyd, a SAAE Fellow, attended the annual CAETS Council Meeting and Symposium in Zurich in June 2012. Mr Pullen is a member of the CAETS Board of Directors. Prof Lloyd is a member of the CAETS Working Group, comprising representatives of the Australian Academy (ATSE) and of five other academies, that has reviewed the state of development and readiness for implementation of low-carbon technologies for developing electrical energy in the future. Prof Lloyd was also invited to deliver a paper at the CAETS symposium and meeting in Budapest in 2013.

In December 2012 a Memorandum of Understanding (MoU) was concluded between SAAE and the Chinese Academy of Engineering (CAE). This took place in Pretoria when the SAAE hosted a visiting CAE delegation headed by the Vice-President of CAE. The visitors from the CAE also attended discussions with the SAAE regarding implementation of the MoU during a visit to Cape Town.

The Executive Committee of SAAE has initiated an Annual Academy Lecture to focus on topics of national interest and which is intended to be presented by an eminent invited speaker in various centres around the country. The First Annual Academy Lecture on Deployment of Low-emission Technologies for Electric Power Generation in Response to Climate Change was presented by Prof Philip Lloyd at the University of Cape Town on 5 November 2012. The lecture was attended by 80 people.

See Annexure C for a list of SAAE members.



8 Abridged Annual Financial Statements for the Year ended 31 March 2013

INDEX

Report of the Independent Auditors	46
Statement of Financial Position	48
Statement of Comprehensive Income	49
Statement of Cash Flows	50
Notes to the Annual Financial Statements	51

Approval of the Abridged Annual Financial Statements

The Council is responsible for the preparation and fair presentation of the abridged annual financial statements and related information.

The abridged annual financial statements are prepared in accordance with the entity's own accounting policies. These abridged annual financial statements are based on appropriate accounting policies and were consistently applied, except where otherwise stated, and supported by reasonable and prudent judgements and estimates.

The Council is satisfied that the Academy of Science of South Africa will continue as a going concern in the year ahead. For this reason, the abridged annual financial statements have been prepared on a going concern basis.

The abridged annual financial statements for the year ended 31 March 2013 were approved by the Council on the 25th July 2013 and signed on its behalf by:

A handwritten signature in black ink that reads "Dayah eddy". The signature is written in a cursive, slightly slanted style.

Report of the Independent Auditors on the Abridged Annual Financial Statements

TO THE COUNCIL
ACADEMY OF SCIENCE OF SOUTH AFRICA

The accompanying abridged annual financial statements of the Academy of Science of South Africa, which comprise the abridged statement of financial position as at 31 March 2013, and the abridged statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory notes set out on pages 47-51. We expressed an unqualified opinion on those annual financial statements in our auditor's report dated the 25th July 2013.

The abridged annual financial statements do not contain all the disclosures required by the entity's own accounting policies applied in the preparation of the financial statements of Academy of Science of South Africa. Reading the abridged financial statements, therefore is not a substitute for reading the annual financial statements.

Council's Responsibility for the Abridged Annual Financial Statements

The Council is responsible for the preparation and the fair presentation of these abridged financial statements.

Auditor's Responsibility

Our responsibility is to express an opinion on these abridged annual financial statements based on our audit procedures, which we conducted in accordance with International Standard on Auditing 810, Engagements to Report on Summary Financial Statements.

Opinion

In our opinion, these abridged annual financial statements derived from the audited annual financial statements of Academy of Science of South Africa for the year ended 31 March 2013 are consistent, in all material respects with those annual financial statements.



Douglas & Velcich
Chartered Accountants (SA)
Registered Accountants and Auditors

Johannesburg
25 July 2013

Statement of Financial Position at 31 March 2013

	2013 R	2012 R	2011 R
ASSETS			
Non current assets	601 596	857 010	1 190 428
Tangible assets	601 596	857 010	1 190 428
Current assets	12 452 121	10 346 225	10 278 220
Trade and other receivables	457 888	239 666	179 603
Accrued income	2 700 000	1 042 000	381 823
Cash and cash equivalents	9 294 233	9 064 559	9 716 794
Total assets	13 053 717	11 203 235	11 468 648
LIABILITIES			
Non-current liabilities	10 397 348	10 477 763	10 417 726
Operating funds	5 007 634	5 088 049	5 028 012
Sustainability fund	5 389 714	5 389 714	5 389 714
Current liabilities	2 656 369	725 472	1 050 922
Trade and other payables	1 019 653	362 393	76 797
Provisions for leave pay	372 916	363 079	478 475
Deferred grant income	1 263 800	-	495 650
Total reserves and liabilities	13 053 717	11 203 235	11 468 648

Statement of Comprehensive Income for the Year ended 31 March 2013

	2013 R	2012 R	2011 R
INCOME	19 486 368	20 142 470	20 893 317
Grants and donations	18 250 903	18 057 555	17 455 393
Consulting income	-	880 306	2 412 003
Membership fees received	72 151	105 357	82 050
Interest received	336 360	395 422	359 890
Other income	140 676	139 537	312 527
Income from publications	686 278	564 293	271 454
OPERATING EXPENDITURE	19 566 783	20 082 433	20 627 871
Salaries and contributions	1 720 032	1 017 232	1 191 049
Office expenses	2 475 978	2 324 586	2 500 607
Administrative costs	503 710	260 632	401 822
Computer expenses	197 496	155 877	126 023
Depreciation	271 778	382 889	360 577
Printing and stationery	54 376	58 224	135 244
Rent, electricity and maintenance	1 115 316	1 062 356	963 925
Telephone and fax	133 257	149 280	160 761
Travel and accommodation	200 045	255 328	352 255
Project expenses	15 370 773	16 740 615	16 936 215
(DEFICIT)/SURPLUS FOR THE YEAR	(80 415)	60 037	265 446
BALANCE AT BEGINNING OF YEAR	5 088 049	5 028 012	5 981 011
TRANSFER TO SUSTAINABILITY FUND	-	-	(1 218 445)
BALANCE AT END OF YEAR	5 007 634	5 088 049	5 028 012

Statement of Cash Flows for the Year ended 31 March 2013

	2013 R	2012 R	2011 R
Cash flows from operating activities			
Cash receipts from donors and customers	18 537 586	18 531 158	19 872 286
Cash paid to suppliers and employees	(18 627 908)	(19 529 344)	(21 631 907)
Cash (utilised in) operations	(90 322)	(998 186)	(1 759 621)
Interest received	336 360	395 422	359 890
Net inflow/(outflow) from operating activities	246 038	(602 764)	(1 399 731)
Cash flows (utilised in) investing activities	(16 364)	(49 471)	(82 988)
Acquisition of equipment, at cost	(16 364)	(55 459)	(82 988)
Proceeds from disposal of assets	-	5 988	-
Net increase/(decrease) in cash and cash equivalents	229 674	(652 235)	(1 482 719)
Cash and cash equivalents at beginning of year	9 064 559	9 716 794	11 199 513
Cash and cash equivalents at end of year	9 294 233	9 064 559	9 716 794

Notes to the Abridged Financial Statements for the Year ended 31 March 2013

SIGNIFICANT ACCOUNTING POLICIES

1. PRESENTATION OF ANNUAL FINANCIAL STATEMENTS

The annual financial statements have been prepared on the historical cost basis, except for financial instruments, and incorporate the principal accounting policies set out below.

1.1. TANGIBLE ASSETS

Equipment is stated at cost less provision for depreciation. Depreciation is calculated to write off the cost of the assets on the straight line method over their expected useful lives at the following rates:-

Computer equipment and software	- 33.33 % per annum
Furniture and fittings	- 15 % per annum
Office equipment	- 15 % per annum

1.2 FINANCIAL INSTRUMENTS

Financial instruments, which include receivables and bank and cash balances are initially measured at cost, and subsequent recognition is at fair value.

1.3 REVENUE

Income from grants is brought to account in the period to which it relates.

All other income is brought to account as and when received.

NOTE: Full version of the approved and signed audited financial statements are available at the offices of the Academy of Science of South Africa.



ANNEXURE A

ASSAf Member Biographies

Quarraisha Abdool Karim is Associate Professor in Clinical Epidemiology at Columbia University, Associate Scientific Director of CAPRISA and Adjunct Professor in Public Health at the Nelson R Mandela School of Medicine, UKZN. She is the recipient of the 2013 TWAS Prize in Medical Sciences, the 2012 N'Galy-Mann Award, Columbia University's Allan Rosenfield Alumni Award for Excellence, and the 2011 DST Women in Science Award in Life Sciences and Engineering.

Salim S Abdool Karim is a clinical infectious diseases epidemiologist and Director of the Centre for the AIDS Programme of Research in South Africa (CAPRISA), President of the MRC, and Pro Vice-Chancellor (Research) at UKZN. He is the recipient of the TWAS Prize in Medical Sciences, the Drug Information Association's President's Award for Outstanding Achievement in World Health, the ASSAf Science-for-Society Gold Medal and the 2011 Outstanding Senior African Scientist Award.

Rob Adam is Group Executive: Nuclear at the AVENG Group. He was Chief Executive Officer of Necsa and also Director-General of DST. He holds the title of Extraordinary Professor of Physics at both UP and UNISA. He chaired the Steering Committee for the South African bid to host the Square Kilometre Array Radio Telescope.

Ralph Adendorff is Professor and Head of the Department of English Language and Linguistics at RU. A past member of the Editorial Advisory Board of the *TESOL Quarterly*, he is a member of the English National Language Body, and serves on the executives of the Institute for the Study of English in Africa and the Dictionary of South African English at RU.

Jimi Adesina is Professor of Sociology and Head, Department of Anthropology and Sociology at UWC. He directs the Transformative Social Policy Programme and leads the Intellectual Heritage Project at the same university. He is Professorial Research Associate at the Nordic Africa Institute (Uppsala University, Sweden). He has held visiting appointments at the University of Ulster (Northern Ireland), Wits, the UN Research Institute for Social Development (Geneva), the UN Economic Commission for Africa (Addis Ababa), the University of Oxford, and the Nordic Africa Institute, Uppsala University (Sweden), among others.

Miriam Adhikari is an Emeritus Professor working in developing research in the College of Health Sciences at the Nelson Mandela School of Medicine at UKZN. She is a subspecialist in neonatology with a special interest in paediatric nephrology. She was previously Head of Paediatrics and Head of Neonatology at UKZN. She is a MRC and NRF reviewer and a member of the Wellcome Trust.

Jill Adler holds the First Rand Foundation (FRF) Mathematics Education Chair at Wits, and the Chair of Mathematics Education at King's College London. She is the 2012 recipient of the ASSAf Science-for-Society Gold Medal. She leads the QUANTUM research project, the focus of which is mathematics in and for teaching, and the research and development projects within the FRF Chair. She is past Vice-President of the International Commission for Mathematical Instruction (ICMI), and recipient of both the Vice-Chancellor's Research Award, and the Vice-Chancellor's Team Award for Academic Citizenship at Wits.

Anthony Jide Afolayan is the leader of the Centre for Phytomedicine Research and the Director of the Central Analytical laboratory at UFH. He is also the Research Niche Area Leader – Unlocking the Potential of Indigenous Plants for Sustainable Livelihoods in the Eastern Cape.

Mark Alexander is Professor of Civil Engineering at UCT and Director of the Concrete Materials and Structural Integrity Research Unit at UCT. He teaches and researches in cement and concrete materials engineering, relating to design and construction. He is President of RILEM, an international organisation concerned with construction materials and structures. He acts as a specialist consultant on concrete materials problems. He co-authored *Aggregates in Concrete*.

Marco Andreoli is a private consultant in radioactive raw materials and Specialist Scientist at Necsa (formerly the Atomic Energy Board), which he joined in 1982 till retirement in 2011. He is a Fellow of the Geological Society of South Africa, an Honorary Research Associate in the School of Geosciences at Wits, and a member of the Royal Society of South Africa.

Harold Annegarn is a Research Professor in the Department of Geography, Environmental Management and Energy Studies at UJ. He is the Director of the Sustainable Energy Technology and Research Centre. His research interests are air quality, global atmospheric chemistry, household energy and remote sensing. He is a member of the Gauteng Advisory Committee to the Department of Economic Development, and Secretary-General of the African Association for Remote Sensing of the Environment.

Christopher Charles Appleton is an Emeritus Professor of Parasitology in the School of Biological and Conservation Sciences at UKZN. He is a Fellow of the university.

Reinhard Richard Arndt was one of the founders of the Rand Afrikaans University, and Head of the Chemistry Department for 12 years. He was also the President of the Foundation for Research Development.

Lewis David Ashwal is Professor of Petrology, Mineralogy and Geochemistry at Wits School of Geosciences.

Lucinda Backwell is a Senior Researcher in the Bernard Price Institute for Palaeontological Research in the School of Geosciences at Wits. Her primary research interests include early hominid cultural behaviour and cognition, origin and evolution of bone tool technology, ethnoarchaeology amongst Kalahari Bushmen hunter-gatherers.

Saleem Badat is Vice-Chancellor of RU. He was Director of the Education Policy Unit at the UWC and the first Chief Executive Officer of the Council on Higher Education. He is the recipient of various academic awards, including Honorary doctorates from the Universities of the Free State and York and an Inyathelo Exceptional Philanthropy Award.

Himansu Baijnath is an Honorary Research Professor in the School of Biological and Conservation Sciences at UKZN.

Narend Baijnath is Pro Vice-Chancellor of UNISA. He taught at UCT and UWC prior to joining Technikon SA in 1998, where he was Dean, then Deputy Vice-Chancellor. He serves on the Editorial Boards of several national and international journals. In 2008, he was appointed a Fellow at St Edmunds College, Cambridge University and simultaneously a Research Professor at the Open University in the UK. He is a member of the Higher Education Quality Committee (HEQC) Board.

Yunus Ballim currently holds a personal Professorship at Wits and was the Head of the School of Civil and Environmental Engineering from 2001 to 2005. He is currently a Professor of Construction Materials in this school.

Jacek Banasiak is a Senior Professor in the School of Mathematical Sciences at UKZN and has been a Research Professor there since 2011. In 2013, he became a Fellow of the University. He was the Vice-President of the South African Mathematical Society and has been the Editor-in-Chief of *Afrika Matematika*, the journal of the African Mathematical Union, since 2010. In 2012 he received the South African Mathematical Society Award for Research Distinction.

Eric Bateman is Emeritus Professor of Respiratory Medicine, UCT and Director of the UCT Lung Institute. He is a Fellow of the Royal College of Physicians, an elected Fellow of UCT, an Honorary life Fellow of the South African Thoracic Society and an Honorary member of the Primary Care Respiratory Group (United Kingdom). Recent awards include the Fellowship in the Art and Science of Medicine (Gold) from the South African Medical Association, the 2012 President's Award from the European Thoracic Society for his global contribution to respiratory medicine, and the 2013 Alan Pifer Award from UCT for outstanding welfare-related research.

Prof Ahmed Bawa is Vice-Chancellor and Principal of the Durban University of Technology. He was Professor and Distinguished Lecturer at Hunter College, City University of New York and Deputy Vice-Chancellor for Research at UKZN. Prior to that, he worked for the Ford Foundation after a career in theoretical physics. He is currently Chairperson of the Higher Education South Africa.

Solomon Benatar is Emeritus Professor of Medicine and past founding Director of UCT's Bioethics Centre. He was Head of the UCT/GSH Department of Medicine and President of the International Association of Bioethics. He is Professor in the Dalla Lana School of Public Health and Joint Centre for Bioethics (2008-2013). His accolades include election as foreign associate member of the US National Academy of Sciences' Institute of Medicine; Honorary foreign member of the American Academy of Arts and Sciences, Fellow of the Royal Society of South Africa; Honorary Fellow of the American College of Physicians and Honorary Fellow of the College of Physicians of South Africa. He received the 2011 Henry Knowles Beecher Award from the Hastings Centre, New York.

Nigel Charles Bennett is a Professor in Zoology and Entomology at UP and also occupies the DST-NRF Research Chair in the field of Mammalian Behavioural Ecology and Physiology and the UP Austin Roberts Chair of African Mammalogy. He has been awarded the UP Chancellor's Medal for his research twice, as well as receiving the Exceptional Academic Achiever Award for the past ten years. He is a Fellow of the Zoological Society of London and a Fellow of the Royal Society of South Africa. He has been the recipient of the Gold medal from the Zoological Society of Southern Africa and the Havenga Prize for outstanding contributions to Life Sciences awarded by the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns*.

G Michael Berger was Associate Professor and Head of Chemical Pathology at the Red Cross Children's Hospital from 1980 -1989 and Professor and Head of Chemical Pathology at the University of Natal Medical School from 1990-1996. He was Head of the Lipid Clinic at Groote Schuur Hospital.

Patricia Berjak is Emeritus Professor and Senior Research Associate at UKZN. She is a Fellow of the University and of TWAS. In 2006, she was awarded the National Order of Mapungubwe (Silver).

Ann Bernstein heads the Centre for Development and Enterprise, South Africa. She was a member of the Transition Team and then the Board of the Development Bank of Southern Africa. She is a Fellow at the National Endowment for Democracy, Washington DC and she serves on the Board of the Brenthurst Foundation. In 2008 and in 2009 she was an invited faculty member at the World Economic Forum in Davos. Her book, *The Case for Business in Developing Economies* was awarded the annual Sir Anthony Fisher Award by the Atlas Research Foundation in Washington DC.

Arvin Bhana is Executive Director of Research in the Human and Social Development Research Programme in the HSRC and an Adjunct Associate Professor in the School of Psychology at UKZN.

Krish Bharuth-Ram was the Head of National Advisory Council on Innovation. Some of the positions he has held include Head of Department of the School of Physics and Dean of the Science Faculty at the former University of Durban-Westville, Director of iThemba LABS and Executive Director/ Interim Vice-President: Research Infrastructure and National Facilities at the NRF, and Chair of the Board of Directors of the National Nuclear Regulator.

Ramesh Bharuthram was previously Dean of Science at Wits. He has served as Professor of Physics, Dean of the Faculty of Science, Deputy Vice-Chancellor at the former University of Durban-Westville; and as Director: Research at the ML Sultan Technikon and UKZN. Presently, he is Deputy Vice-Chancellor (Academic) at UWC.

Nicholas Biekpe is Professor of Development Finance and Econometrics at UCT's Business School and the President of the Africagrowth Institute. He was Professor of Development Finance at SU Business School. He is also a Chartered Statistician (Royal Statistical Society, UK) and Chartered Scientist of the Science Council of UK.

Judith Bishop is Director of Computer Science in Microsoft Research, based in Redmond, United States of America. She leads a team of programme research managers in her role to create strong links between Microsoft's research groups and universities globally. Until 2009, she was Professor at UP. She holds an Honorary Professorship at UCT.

Nigel Tempest Bishop was appointed Head of Department of Mathematics at RU in October 2009. Previously, he was Professor of Applied Mathematics at UNISA. His research interest is gravitational wave astronomy.

Gregory L Blatch is Professor and Dean of the College of Health and Biomedicine, Victoria University, Melbourne, Australia. He served as Head of the School of Biomedical and Health Sciences at Victoria University and was Professor of Biochemistry and Director of the Biomedical Biotechnology Research Unit at RU. He is a former President of the South African Society of Biochemistry and Molecular Biology, and he was awarded the Gold Medal from the Society for his contributions to the promotion of biochemistry at the national, continental and international levels. He is a former Wellcome Trust International Senior Research Fellow.

David Block is a Professor of Applied Mathematics and Astronomy at Wits. He was elected a Fellow of the Royal Astronomical Society of London at the age of 19. His first research paper, on relativistic astrophysics, was published in London, by the Royal Astronomical Society, at age 20. Block is the only scientist on the continent of Africa whose research work has twice been featured on the cover of the prestigious scientific journal *Nature*.

Alfred Botha is a Professor of Microbiology at SU where he conducts fundamental and applied research in environmental microbiology focusing on soil and water ecosystems, as well as human health. He has served on Editorial Boards of international scientific journals, as well on several Advisory Committees for the Deciduous Fruit Producers' Industry, NRF and the WRC of South Africa.

Liesbeth Botha is Executive Director: CSIR Materials Science and Manufacturing.

Rudie Botha is Emeritus Professor of General Linguistics at SU and Honorary Professor of Linguistics at Utrecht University.

Thomas Hamilton Bothwell is Emeritus Professor of Medicine and an Honorary Professorial Research Fellow at Wits.

Paul Bowen is Professor and former Head of the Department of Construction Economics and Management at UCT. He has also served as a Senior Deputy Dean in the Faculty of Engineering and the Built Environment. His research interest is HIV/AIDS in the construction industry, workplace stress of construction professionals, and job satisfaction in the construction industry.

Charles Kimberlin Brain was Director of the Transvaal Museum in Pretoria and is currently Curator Emeritus at the museum. He is also Honorary Professor of Zoology at Wits and Research Associate at the Bernard Price Institute for Palaeontological Research.

George Branch is Emeritus Professor of Biological Sciences and the Marine Biology Research Institute, UCT. His research covers rocky shores, estuaries, marine protected areas and the ecosystem effects of fishing.

Chris Brink is Vice-Chancellor of Newcastle University, UK, and was previously the Rector and Vice-Chancellor of SU.

Paul Andries Brink is Professor and Chairman of the Research Committee, Department of Internal Medicine at SU.

Duncan Brown is Dean of the Arts Faculty at UWC. He has published widely in the field of South African literary and cultural studies. He is also a Fellow of UKZN and Research Fellow at the Ferguson Centre for African and Asian Studies, Open University, United Kingdom.

James Bull is Emeritus Professor and Honorary Research Associate in Organic Chemistry at UCT.

Renier Adriaan Burger is Professor of Physics at the Potchefstroom campus of NWU.

Sandra Burman is Professor of Socio-Legal Studies at UCT and founder Director of the Interfaculty Centre for Socio-Legal Research.

Stephanie Gail Burton is Vice-Principal: Research and Postgraduate Education at UP. She served as the Vice-Chairperson of the National Science and Technology Forum until June 2011, and is a member of two international committees of the International Union of Biochemistry and Molecular Biology.

Jane Carruthers is Emeritus Professor at UNISA and is a pioneer of environmental history in South Africa. She is a Fellow of the Royal Society of South Africa, Fellow of Clare Hall, Cambridge, and Research Associate of the Centre for Invasion Biology at SU. She has held many international Visiting Fellowships and is the recipient of several academic prizes. Currently, she is Chair of the Academic Advisory Board of the Rachel Carson Centre at the Ludwig Maximilian University in Munich, and President of the International Consortium of Environmental History Organisations based at Duke University.

Jennifer Case is a Professor in the Department of Chemical Engineering at UCT, with a special responsibility for academic development. She teaches in the undergraduate Chemical Engineering Programme and her research on the student experience of learning has been widely published.

Michael Chapman is Emeritus Professor and Fellow of UKZN. He is also a Fellow of the Stellenbosch Institute for Advanced Study. He was Professor of English at UKZN. He is a recipient of the English Academy of Southern Africa Gold Medal for Service to English Education; the Bill Venter Award for *Southern African Literatures* and the SANLAM National Literary Award for *South African English Poetry: A Modern Perspective*.

Philip Allan Charles was Director of the South African Astronomical Observatory. Previously he was Head of the Astronomy Group at the ING, La Palma, and Head of Astrophysics at the University of Oxford. He is currently Head of the Department of Physics and Astronomy at the University of Southampton, and holds Visiting Professor appointments at UCT and Oxford.

Michael Cherry is a Professor of Zoology at SU. He has taught biology at Winchester College, and was Curator of Ornithology and Herpetology at the SA Museum. His research is focused primarily on the evolution of animal signals. Since 1989 he has been contributing South African correspondent for *Nature*, and he has served as Editor-in-Chief of the *South African Journal of Wildlife Research* and the *South African Journal of Science*.

Nithaya Chetty is a Professor of Physics at UP, and NRF Group Executive for Astronomy. He was President of the South African Institute of Physics. He is a two-time winner of the American Fulbright Fellowship. He was the recipient of the NRF President's Award.

Rachel Chikwamba is a Chief Scientist in plant biopharming and protein expression, as well as the Group Executive for Strategic Alliances and Communication at the CSIR. She is also an Adjunct Senior Lecturer in the Department of Botany at UP and a member of the Forestry and Agricultural Biotechnology Institute.

Anusuya Chinsamy-Turan is a palaeobiologist at the Zoology Department at UCT.

Renfrew Christie is Dean of Research at UWC.

Alan Christoffels is Interim Director of the South African National Bioinformatics Institute and Director of the MRC Bioinformatics Capacity Development Research Unit. Since 2009 he has been the DST/NRF Research Chair in Bioinformatics and Health Genomics.

Walter T Claassen was Professor and Vice-Rector for Research at SU.

Peter Eiddon Cleaton-Jones was Head of the Dental Research Institute, Wits. He has extensive experience on research ethics committees – MRC 1990 to 2002 (Chair 1998 to 2002), Wits 1974 to present (Chair 1985 to present) HSRC Council 2002 to present (Chair 2002 to 2005).

Thomas Eugene Cloete is Vice-Rector, Research and Innovation at SU. He is the former Dean of the Faculty of Science at SU and Head of Microbiology and Plant Pathology, Faculty of Natural and Agricultural Sciences at UP. He is the founding Director of the Stellenbosch University Water Institute. He has received several awards, including the Havenga Price for Biology of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns*, and the ASSAf Science-for-Society Gold Medal. He is a Board member of the CSIR and also of the Board of the Cancer Association of South Africa (CANSA). He also serves on the Editorial Boards of several journals.

Maureen Coetzee holds a SARCHI Chair in Medical Entomology and Vector Control and is Director of the Malaria Entomology Research Unit in the Faculty of Health Sciences at Wits. Her recent awards include the American Mosquito Control Association John N Belkin Memorial Award; African Union Kwame Nkrumah Scientific Award Programme, Women Scientist Regional Award; Vice-Chancellor's Research Award; DST/L'Oreal Women in Science Awards, Distinguished Women Scientist: Life, Natural and Engineering Sciences category. She is an elected Fellow of the Royal Entomological Society, the Royal Society for Tropical Medicine and Hygiene and the Royal Society of South Africa.

John Darrell Comins is Emeritus Research Professor and Director of the Raman and Luminescence Laboratory at Wits. He was previously Director of the DST/NRF Centre of Excellence in Strong Materials, *ad hominem* Professor of Optical Spectroscopy of Solids, Professor of Solid State Physics and Chairman of the Materials Physics Research Institute.

Neville Raymond Comins currently consults in the fields of Innovation, National Systems of Innovation, and Science Park Development. He held positions as Interim Technical Advisor for the Finnish Southern African Innovation Support (SAIS) Programme, National Innovation Advisor for the Cooperation Framework on Systems of Innovation, founding CEO of The Innovation Hub Management Company (Pty) Ltd, Director for Integrated Projects and Director of the Division of Materials Science and Technology at the CSIR. He twice received the CSIR Merit Award and the Arthur Child Award for Innovation. He is a Fellow of the Royal Aeronautical Society and an Honorary Professor at Wits.

Simon H Connell is an Extraordinary Associate Professor at NWU.

Jacobus Conradie is the Head of the Accelerator and Engineering Department of iThemba LABS. He is a member of the South African Institute of Physics and of the International Organising Committee on Cyclotrons and their Applications.

Prof Hoosen Coovadia is Emeritus Professor of Paediatrics and Child Health, Emeritus Victor Daitz Professor of HIV/AIDS Research, UKZN. He is also a Director: HIV Management, Maternal Adolescent and Child Health Unit, Wits and Commissioner, National Planning Commission, Presidency South Africa. He has been the recipient of some of the highest awards for work in health and human rights from both national and international organisations.

Anna Coutsooudis is a public health scientist and is a Professor in the Department of Paediatrics and Child Health, UKZN. She is immediate past President of the Technical Steering Committee of the World Health Organisation (WHO) Child and Adolescent Health Unit. She has received the Nutrition Society Award in recognition of outstanding contribution to nutrition research in South Africa over many years and more recently she was awarded the ASSAf Science-for-Society Gold Medal. She is a Fellow of TWAS.

Don Cowan is Director of the Centre for Genomics Research at UP. Previously, he was Director of the Institute for Microbial Biotechnology and Metagenomics and Senior Professor of Microbiology at UWC. He is currently President of the Royal Society of South Africa.

Richard Mark Cowling is a Distinguished Professor in the Botany Department at NMMU. He was the Leslie Hill Professor of Plant Conservation and Director of the Institute for Plant Conservation at UCT. He has been widely recognised for his contributions both locally and internationally. He is a foreign associate of the US National Academy of Sciences and a Fellow of the Ecological Society

of America. Other prestigious awards include a Pew Fellows Programme Award and the Society for Conservation Biology's Distinguished Service Award.

Robin Michael Crewe is leader of the Social Insects Research Group and Extraordinary Professor of Zoology and Entomology of UP, past President of ASSAf and Chair of the Network of African Science Academies. He is a council member of TWAS and is a Board member of the NRF.

Felix Dapare Dakora is Professor and holds the South African Research Chair in Agrochemurgy and Plant Symbioses at TUT. He was Dean of Research at the Cape Peninsula University of Technology. He is a Fellow of the Royal Society of South Africa and an Adjunct Professor to the University of Western Australia. He is a joint recipient of the UNESCO-Equatorial Guinea International Prize for Research in the Life Sciences.

Peter Dankelmann is Professor in the Department of Mathematics at UJ.

Dennis Martin Davis sits as Judge of the Cape High Court, and is also a Competition Appeal Court Judge.

Christian Rudolph de Beer is Senior Vice-Principal at UP. He was Professor and Head of the Department of Commercial Law and Dean of the Faculty of Law at the former Potchefstroom University.

John Wesley de Gruchy is Professor Emeritus of Christian Studies at UCT. He was Director of the Graduate School in Humanities, as well as a life Fellow and a Senior Scholar. He is an Extraordinary Professor at SU. He received the Karl Barth Prize (Berlin) in 2000 for his work on the legacy of Dietrich Bonhoeffer, and has received Honorary doctorates from RU, SU, and the Chicago Theological Seminary.

Cheryl de la Rey is the Vice-Chancellor and Principal of UP. She is a Professor in UP's Department of Psychology. Her previous executive positions include Chief Executive Officer of the Council on Higher Education, Deputy Vice-Chancellor at UCT and Executive Director at the NRF. She is registered as a psychologist by the Health Professions Council of South Africa, is a Fellow of the Psychological Association of South Africa and a Fellow of the Royal Society of South Africa.

Wessel Van Zyl de Villiers is currently the Group Executive: Strategy and Performance at Necsa. He serves on the executive committee of the National Science and Technology Forum and is the past Chairman of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns*. He was/is a member of various Advisory Boards and review panels. He also represented Necsa or South Africa in several international nuclear collaboration programmes. He participates on a regular basis in activities of the International Atomic Energy Agency.

David Dewar is Emeritus Professor and Senior Research Scholar in the School of Architecture, Planning and Geomatics at UCT. He was elected a Fellow of UCT in 1997. He has published widely in the fields of City and Regional Planning and has received numerous awards for his work, including the Mayor of Cape Town Medal. He was a member of the National Development and Planning Commission charged, *inter alia*, with drawing up a Green Paper on Planning in South Africa.

Maarten de Wit is the Chair of Earth Stewardship Science at NMMU in Port Elizabeth, and the Director of the Africa Earth Observatory Network. He is the founding Director of the Centre for Interactive Graphical Computing of Earth Systems and the Africa Earth Observatory Network. He has done extensive fieldwork in North and South America, Europe, Antarctica, and throughout Africa. He is Honorary Fellow of the Geological Society of America and of the Geological Society of London.

Roseanne Diab is the Executive Officer of ASSAf and Emeritus Professor in the School of Environmental Sciences, UKZN. She is a Fellow of UKZN, the South African Geographical Society and TWAS. She has served on numerous international committees such as the International Ozone Commission, the Commission on Atmospheric Chemistry and Global Pollution and the Stratospheric Processes and their Role in Climate Steering Group. She is active in the Organisation for Women Scientists in the Developing World (OWSD) and serves on the Gender Advisory Board to TWAS.

Leon Milner Theodore Dicks is a Professor of Microbiology at SU. He is the Chief Editor of *SA Journal of Enology and Viticulture* and serves on the Editorial Boards of the *International Journal of Food Microbiology*, *Journal of Applied Microbiology*, *Letters in Applied Microbiology*, *Probiotics and Antimicrobial Proteins*, *Beneficial Microbes*, *Bioscience of Microbiota*, *Food and Health* and *Annals of Microbiology*.

Thulani H Dlamini is an Executive Manager: Research & Development at Sasol. He was Group Executive: Research & Development at the CSIR overseeing a portfolio that included R&D strategy, emerging research areas and information services. He was formerly Manager: National Laser Centre and Chief Researcher at Sasol.

Kathleen Ann Driver is Emeritus Professor of Mathematics and former Dean of the Faculty of Science, UCT.

John Duncan is a consultant/researcher in Higher Education. He was Dean of Research at RU.

Norman TF Duncan is Professor in Psychology and the Dean of Humanities at UP. He is the Past President of the Psychological Society of South Africa.

Lourens Marthinus du Plessis is Research Professor in the Faculty of Law at NWU, Potchefstroom.

Willemien du Plessis is Professor of Law and Director of the Research Unit at the Faculty of Law, NWU. She is also Co-chair of the Research Committee of the International Union for Conservation of Nature Academy of Environmental Law. She serves on the Editorial Board of various journals and publishes in national and international journals. She is the Secretary of the Environmental Law Association of South Africa. She serves on the NRF Appeal Rating Committee.

James du Preez is Head of the Department of Microbial, Biochemical and Food Biotechnology at UFS. His research interests are in fermentation biotechnology and yeast physiology. He is the recipient of the UFS Centenary Medal, UFS Medal for Research Excellence, South African Society for Microbiology Silver Medal and the UFS Award for Service to the Faculty. He currently serves in the Council of the South African Society for Microbiology and was appointed the American Society for Microbiology's ambassador to South Africa. He also serves on the Applied Life Sciences and Non-medical Biotechnology Grant Evaluation Panel of the Scientific Council of the European Research Council.

Anton Eberhard is a Professor at UCT where he directs the Management Programme in Infrastructure Reform and Regulation at the Graduate School of Business. He was the founding Director of the Energy and Development Research Centre and is a foundation Member of ASSAf. He currently serves on the country's National Planning Commission. In 2012, he received the SA National Energy Association's Award for outstanding sustained contribution to the enhancement of the South African energy environment.

George Andrian Ekama is Professor at UCT and a specialist in biological wastewater treatment systems.

George Francis Rayner Ellis is Emeritus Professor of Mathematics at UCT. He was President of the Royal Society of South Africa and a former Council member of ASSAf. He is a Fellow of TWAS and a Fellow of the Royal Society, London. He is a Fellow of UCT; has Honorary degrees from Haverford College, Natal University, London University (Queen Mary), and UCT. He has been awarded the Herschel Medal (RSSA), Achievement Award (Claude Harris Leon Foundation), Gold Medal: South African Association for the Advancement of Science, Star of South Africa Medal presented by President Nelson Mandela, 2004 Templeton Prize, NSTF 2004 Award for an Individual Contribution to Science and Technology over a lifetime, ASSAf Science-for-Society Gold Medal, Order of Mapungubwe (Silver), Honorary Fellowship of the Royal Society of South Africa, and South African Institute of Physics De Beers Gold Medal.

Irma Eloff is the Dean: Faculty of Education, UP. Her research focuses on education and educational psychology.

Theuns Eloff is Vice-Chancellor of NWU. He has been appointed as Extraordinary Professor at the Potchefstroom Campus Business School. He received a number of awards in recognition of his role in the negotiations process: The Junior Chamber of South Africa's award as one of Four Outstanding Young South Africans; the Harvard Business Club Statesmen of the Year Award; the Junior Chamber International's Ten Outstanding Young Persons of the World Award; the World Economic Forum's honor as one of 100 Global Leaders for Tomorrow.

Petra Engelbrecht is a Research Professor in the Faculty of Education, Canterbury Christ Church University, England and was Executive Dean, Faculty of Education Sciences on the Potchefstroom Campus of NWU.

Patrick George Eriksson is Head of the Department of Geology at UP. UP awards include, Medal for Academic Excellence, Centenary Research Medal, and Chancellor's Award for Research. Other awards include, the NRF President's Award, South Africa Medal of the Southern Africa Association for the Advancement of Science, Continental Scientist Award of the African Union, 2010 National Science and Technology Forum's Lifetime Achievement Award and 2012 Earth Sciences Award of TWAS. He is the Editor-in-Chief of the *Journal of African Earth Sciences* and Co-editor of *Gondwana Research*, *Marine and Petroleum Geology* and *Sedimentary Geology*. He is a Fellow of the Geological Society of SA, Geological Society of Africa, Royal Society of South Africa, and a member of the New York Academy of Sciences.

Theunis Erasmus was Vice-Rector at UP, and former Chairman of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns*.

Arthur George Every is Emeritus Professor of Physics at Wits and has held visiting positions at Oxford, Cornell, Illinois and a number of other overseas universities. He is Editor-in-Chief of the international journal *Ultrasonics*, and has been on the organising and advisory committees of numerous international conferences. He is a Fellow of the Royal Society of South Africa, and an Honorary member of the SA Institute of Nondestructive Testing.

Bernard Fanaroff is Managing Director of Fanaroff Associates and Project Manager of the South African Square Kilometer Array Project. He was Deputy Director-General in the Office of the President, Deputy Director-General in the Department of Safety and Security, Chairman of the Integrated Justice System Board and National Secretary of the National Union of Metalworkers of SA.

Jill Margaret Farrant is Professor and holds a Research Chair (Molecular Physiology of Plant Desiccation Tolerance) in the Department of Molecular and Cell Biology, UCT.

Michael William Feast is Honorary Professor of Astronomy at UCT. He was Director of the South African Astronomical Observatory and Vice-President of the International Astronomy Union.

Johannes Wolfgang Fedderke is Director of Economic Research Southern Africa and Professor of Economics and International Affairs at Pennsylvania State University and is a consultant for the World Bank. He is Professor at the Wits Business School and the Helen Suzman Chair of Political Economy at Wits. He is Visiting Professor at Nuffield College Oxford University and RAND Graduate School, Santa Monica. He is the founding President of the African Econometrics Society.

John Field is Emeritus Professor and Senior Scholar in the Marine Research Institute at UCT. He is past Chair of the Global Ocean Observing System and past President of the Scientific Committee on Oceanic Research of International Council for Science (ICSU). He is currently Chair of the Partnership for Observation of the Global Ocean and on the Scientific Advisory Council of the Plymouth Marine Laboratory, UK.

Brian Figaji is a retired Professor, and was Vice-Chancellor of the former Peninsula Technikon.

Maxim Finkelstein is Senior Professor in the Department of Mathematical Statistics, UFS. He previously worked as a Researcher, Senior Researcher, and Principle Researcher at St Petersburg Ele-

ktropribor Institute, Russia. He is also a Visiting Researcher of the Max Planck Institute for Demographic Research in Germany. He is a recipient of a number of research awards from UFS and also of two Sichel Medals awarded for the best statistical publication of South African researchers and academics. He is an Editor-in-Chief of *South African Statistical Journal*.

Rosalie Finlayson is Emeritus Professor at UNISA. She was previously Academic Planner at the university.

Peter Folb is Emeritus Professor of Pharmacology at UCT. He was Chief Specialist Scientist at the MRC and Professor of Pharmacology, UCT, as well as Chief Physician. He was Chair of the South African Medicines Control Council and Temporary Advisor, World Health Organisation and Consultant to the World Bank. He is Fellow of the Royal College of Physicians, London, the Royal Society of South Africa and UCT.

Sharon Fonn is Professor in the School of Public Health, Wits. She co-leads the Consortium for Advanced Research Training in Africa and is the Deputy President of the Association of Schools of Public Health in Africa. She was the Head of the School of Public Health, Wits. She is a medical doctor and registered public health specialist. She was awarded the DST's South African Ministry of Science and Technology's Distinguished Scientist Award for contributions to the quality of life of women and is a Woodrow Wilson Centre Scholar.

Pierre William Froneman is Professor in the Department of Zoology and Entomology at RU.

Richard Francis Fuggle currently practises as an environmental consultant. He is Emeritus Professor of Environmental Studies at UCT. He is a registered natural scientist, and a certified environmental practitioner in South Africa. He is a former President of the International Association for Impact Assessment. He has received a number of awards and distinctions for his contributions to the advancement of environmental impact assessment both nationally and internationally.

Christoph Friedrich Garbers is a retired Professor of Organic Chemistry. He served on a Working Group with the ANC, COSATU and the South African National Civic Organisation (SANCO) on the Science and Technology Initiative, on an Advisory Panel to the Minister of Arts, Culture, Science and Technology, on the National Commission on Higher Education and as member of the IUPAC-UNESCO International Council for Chemistry. He has a long association with UNISA as member of its Council and subsequently as Chancellor. He holds four Honorary doctorates and is the recipient of many fellowships, prizes and medals, *inter alia*, the Order for Meritorious Service Class 1: Gold.

Geoff Garrett is presently Chief Scientist of Queensland. He was President and Chief Executive Officer of the CSIR and Chief Executive of Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO). A former South African Engineer of the Year, he is a recipient of the Centenary Medal for service to the Australian society through science. In June 2008, he was appointed as an Officer of the Order of Australia in the Queen's Birthday Honours List.

Jan Geertsema was Director of Research Support at NWU, Dean of the Faculty of Natural Sciences and Professor of Statistics at Potchefstroom University. After his retirement in 2006 he was appointed Quality Manager of the Faculty of Natural Sciences at Potchefstroom. He is a Fellow of the South African Statistical Association and a former President, was member of the Council of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns*, member of the Southern African Research & Innovation Management Association and member of the Institute of Mathematical Statistics (USA).

Wieland Gevers is Emeritus Professor of Medical Biochemistry at UCT. He was previously Senior Deputy Vice-Chancellor at UCT, and President of ASSAf. He was awarded Gold Medals by the Medical Research Council, ASSAf, and TWAS, and the National Order of Mapungubwe in Silver. He is a Fellow of TWAS.

Hendrik Geyer is Director of the Stellenbosch Institute for Advanced Study. Previously, he served as Interim Director of the National Institute for Theoretical Physics. He has been Professor of Theoretical Physics at SU and formerly a member of the Pelindaba Theoretical Physics Group.

Nicolaas Claudius (Nico) Gey van Pittius is the Deputy Dean: Research of the Faculty of Medicine and Health Sciences, SU. He is also an Associate Professor in Biomedical Sciences. He is a core member of the DST/NRF Centre of Excellence in Biomedical Tuberculosis Research and a member of the Medical Research Council's Centre for Molecular and Cellular Biology in the Division of Molecular Biology and Human Genetics of the Department of Biomedical Sciences, SU.

David Glasser is a Professor of Chemical Engineering and a Director of the Material and Process Synthesis research unit at UNISA. He is also a Visiting Professor at Wits. His work has mainly been in the area of improving the efficiency of chemical processes.

Irvy (Igle) Gledhill is a Scientist in the Defence, Peace, Safety and Security Unit of the CSIR. Her field is numerical modelling, with her principal research interest in computational fluid dynamics (the aerodynamics of acceleration). She has collaborated in infrastructure engineering models and in molecular modelling (electronic structure methods). She is President-Elect of the South African Institute of Physics.

Pumla Gobodo-Madikizela is Senior Research Professor on trauma, forgiveness and reconciliation at UFS. She served as co-ordinator of victims' public testimonies on South Africa's Truth and Reconciliation Commission, and as facilitator of encounters between perpetrators and family members of victims. Her critically acclaimed book, *A Human Being Died That Night: A South African Story of Forgiveness* won the Alan Paton Award in South Africa and the Christopher Award in the United States.

Richard Joseph Goldstone was a Justice of the Constitutional Court. He served as the Chief Prosecutor of the United Nation's International Criminal Tribunals for the former Yugoslavia and Rwanda. He is an Honorary Bencher of the Inner Temple, London and an Honorary Fellow of St John's College, Cambridge. He is an Honorary member of the Association of the Bar of the City of New York and a foreign member of the American Academy of Arts and Sciences. He is an Honorary life member of the International Bar Association and Honorary President of the Human Rights Institute of the International Bar Association. He chairs the Executive Committee of the Institute for Historical Justice and Reconciliation. He serves on the Board of the Salzburg Global Seminar.

Rob Gous is Emeritus Professor and Senior Research Fellow at UKZN. He is a trustee of both the Protein Research Foundation and the Baynesfield Trust, and is the Head of the Research Portfolio Committee of the South African Pork Producers Organisation. He has been Chairman of the South African Branch of the World's Poultry Science Association for many years, and is also one of the five Vice-President of the world body of this association.

Kesh Govinder is Professor of Applied Mathematics and Dean and Head of School of Mathematics, Statistics and Computer Science at UKZN. He is a regular reviewer for international journals and sits on the Editorial Board of the *Journal of Applied Mathematics*. He is a member of various international and local learned societies, in particular, a member of the International Astronomical Union.

Glenda Gray is Executive Director of the Perinatal HIV Research Unit, Associate Professor of Paediatrics, at Wits, and member of the Vaccine and Infectious Disease Division of the Fred Hutchinson Cancer Research Centre. She is member of the Institute of Medicine of the US National Academies and is on the IOM's Global Health Board and Vaccine Group. She received the N'Galy-Mann lectureship in recognition of HIV research contribution in South Africa. Recently, she received a Doctor of Science, *honoris causa* from Simon Fraser University, Canada. She was elected to the American Academy of Microbiology in 2012.

Diane Jeanette Grayson is Director of Institutional Audits at the Council on Higher Education, where she is responsible for the Quality Enhancement Project which focuses on improving student success in higher education. She has worked in physics, science and engineering education and academic development at UKZN, UP and UNISA, and has been a Visiting Professor in Sweden, Japan, Australia and Malaysia. She also served as Academic Vice-Rector of the Mathematics, Science and Technology Education College in Limpopo.

Minrie Greeff is Professor in Research in the Africa Unit for Trans-disciplinary Health Research at NWU. In 1994, she was appointed as the Head of the Department of Nursing at the Potchefstroom University. In 1999, she became the Director of the School of Nursing Science. She was Director of the research committee and member of the Board of directors of the Tau Lambda-at-Large Chapter of the Sigma Theta Tau International Honor Society for Nurses. She has received numerous awards and was inducted into the Researcher's Hall of Fame of the FUNDISA, the American Biographical Institute's Professional Hall of Fame and most recently, inducted into the International Nurse Researcher Hall of Fame of Sigma Theta Tau International.

Gideon Petrus Greyvenstein is Executive Director of Ennex Developments and was previously General Manager: Engineering at the Pebble-bed Modular Reactor and Dean of the Faculty of Engineering at NWU.

Nicolaas Johannes Grové is Registrar at UP. He was Professor in the Department of Private Law at the university.

Adam Habib is Vice-Chancellor at Wits. He was formerly Deputy Vice-Chancellor Research, Innovation and Advancement at UJ, and has held academic appointments over the last decade at the University of Durban-Westville and UKZN and at the Human Sciences Research Council. He has served as Co-editor of both the social science academic journal, *Transformation*, and the official disciplinary journal of the South African Association of Political Science, *Politikon*.

Ariff Ahmed Hafejee is Professor of Surgery, Chief Specialist Surgeon, Head of the Renal Transplant Unit at Addington Hospital, Head of Gastrointestinal Unit at King Edward VIII Hospital, Head of Alimentation Unit at King Edward VIII Hospital and Chairman of the Optic and Imaging Unit at the Nelson R Mandela School of Medicine at UKZN. He is a Fellow of the university.

Fritz JW Hahne is former Director of the African Institute for Mathematical Science and was Professor of Theoretical Physics and Dean of Science at SU.

Raymond Haines is a retired Professor of Inorganic Chemistry from UKZN and a Fellow of UKZN. He was the Head of the Department of Chemistry and the Dean of Science (subsequently Science and Agriculture). He is now an Honorary Research Associate at UCT.

Carolyn Hamilton holds a DST-NRF Research Chair in Archive and Public Culture based in the Social Anthropology Department at UCT. Her research areas include the ethnography and history of the archive; the history of pre-industrial South Africa; and the anthropology of the past in the present. She is a member of the Public Life of Ideas Network, successor to the Constitution of Public Intellectual Life Project which she led.

Lawrence Hamilton is Professor (Research Focus) of Politics at UJ and an Affiliated Lecturer in the Department of Politics and International Studies, Cambridge University. He is also a life member of Clare Hall, Cambridge, where he has been a Mellon Research Fellow and Visiting Fellow. The South African National Research Foundation has awarded him their President's Award and an NRF Blue Skies Award for research achievements.

Ronald Harley is a Regents' Professor at the Georgia Institute of Technology, Atlanta, USA. He is also a Fellow and Emeritus Professor at UKZN. He was Professor of Electrical Machines and Power Systems and Head of the Department of Electrical Engineering at the University of Natal in Durban. He was elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and he was the Vice-President of Operations of the IEEE Power Electronics Society. He is also a Fellow of the Royal Society in South Africa, the South African Institute of Electrical Engineers and the British Institution of Engineering and Technology.

Susan Theresa Largier Harrison is Professor in the Department of Chemical Engineering, UCT and Director of the Centre for Bioprocess Engineering Research.

Rashid Hassan is the Director of the Centre for Environmental Economics and Policy in Africa, Faculty of Natural and Agricultural Sciences, UP. He was previously Programme Director at the CSIR,

South Africa and regional economist at the International Maize and Wheat Improvement Centre, CIMMYT International. He is a Fellow of TWAS and Senior Fellow of the Africa Association of Agricultural Economists. He serves as member of Editorial Boards of many international journals and founding Chief Editor of the *African Journal of Agric and Resource Economics*.

Henriette Rosalyn Hay is Vice-Rector: Academic at UFS. She was Vice-Rector: Teaching and Learning and Director of the Centre for Higher Education Studies and Development at UFS and Dean: Academic Development at the Central University of Technology. She was Vice-President of the South African Association for Research and Development in Higher Education and is an executive committee member of the Higher Education Learning and Teaching Association of Southern Africa.

Manfred Armin Hellberg is Emeritus Professor of Physics and Senior Research Associate at UKZN. He was Dean of Science and was twice Pro Vice-Chancellor at the university. He is a Fellow of UKZN.

Fred Thomas Hendricks is the Dean of the Faculty of Humanities at RU. He is President of the South African Humanities Deans' Association, Chief Editor of the *Journal of Contemporary African Studies* and Associate Director of the African Humanities Programme of the American Council of Learned Societies.

Jozeph Johannes Henning is a Distinguished Professor and Dean of the Faculty of Law at UFS. He is a Professorial Research Fellow in Comparative Corporate Law at the Institute of Advanced Legal Studies of the University of London and a Visiting Professor at the Law School of BPP University College in London. He is an attorney of the High Court of South Africa. He is the first South African lawyer to be elected as an Honorary member of the Society of Advanced Legal Studies of the United Kingdom and as an Honorary Fellow of the Order of the Coif of the United States. He has been awarded the Centenary Medal as Distinguished Research Professor by the University of the Free State and a Certificate of Honour, Jesus College, University of Cambridge.

Christopher Henshilwood is a Professor at the Institute for Human Evolution, Wits and holds a South African Research Chair in the Origins of Modern Human Behaviour funded by the National Research Foundation. He is also Professor of African Archaeology at the Institute for Archaeology, History Culture and Religion at the University of Bergen, Norway.

Christof Heyns is Professor of Human Rights Law and Co-director of the Institute for International and Comparative Law in Africa at UP. He is an Adjunct Professor at the Washington College of Law of the American University in Washington, and a Visiting Fellow at Kellogg College at Oxford University. He is currently a Fulbright Visiting Scholar at Harvard Law School. He is the founding Co-editor-in-Chief of the *African Human Rights Law Reports* and was the founding Co-editor of the *African Human Rights Law Journal*.

Winston Hide is Associate Professor of Bioinformatics and Computational Biology in the Department of Biostatistics at Harvard School of Public Health where he leads development of public health bioinformatics addressing the transition to modern genomic approaches to public health in the developed and developing worlds. He was the founder of the SA National Bioinformatics Institute.

John Anthony Higgins is a Professor in the English Department at UCT, where he is also a member of the College of Fellows. He is the author of the award-winning study, *Raymond Williams: Literature, Marxism and Cultural Materialism*.

Diane Hildebrandt joined UNISA's College of Science, Engineering and Technology in March 2013 and is the SARChI Professor of Sustainable Process Engineering at the University of the Witwatersrand. She also was the Co-director for the Centre for Optimisation, Modelling and Process Synthesis at the University of the Witwatersrand.

Michael Johan Richard Hoch is an Honorary Professorial Research Fellow at Wits and Visiting Research Scientist at the National High Magnetic Field Laboratory, Tallahassee, Florida, USA.

Jan-Hendrik Servaas Hofmeyr is Professor of Biocomplexity and Biochemistry at SU and Director of the Centre for Studies in Complexity.

Sarah Jane Howie is a Professor in the Department of Mathematics, Science and Technology Education and the Director of the Centre for Evaluation and Assessment at UP.

Heidi Hudson is Professor of International Relations and Director of the Centre for Africa Studies at UFS. She previously worked in the Department of Political Science, at the former University of Durban-Westville and also served as departmental Chairperson of the Department of Political Science at UFS. She is past President of the South African Association of Political Studies. She is Co-editor of *International Feminist Journal of Politic*. She has held several Fellowships, such as Fulbright, and at the Nordic Africa Institute and the University of Calgary, Canada and serves on the Editorial Board of, among others, *International Peacekeeping*, *Politikon* and *Africa Insight*.

Henk Huismans is a Professor and Head of Genetics at UP where he was a Professor and Head of the Department of Virology.

Brian John Huntley was former Chief Executive Officer of the South African National Biodiversity Institute and is an Emeritus Professor at UCT. He is currently an advisor to several United Nations agencies.

Gregory Dudley Hussey is Professor and Director of the Institute of Infectious Diseases and Molecular Medicine at UCT. He was Head of the Pediatric Infectious Diseases Unit in the School of Child and Adolescent Health at UCT.

Nicola Illing is a Professor in the Department of Molecular and Cell Biology at UCT. Her research uses the tools of molecular genetics to study the evolution of development in plants and animals.

Nelson Ijumba is the Deputy Vice-Chancellor (Research) at UKZN and also a Professor of Electrical Engineering. He is a senior member of the Southern African Institution of Electrical Engineers, a member of the Institute of Electrical and Electronics Engineers, and a member of the Institution of Engineering and Technology. He is a registered professional engineer with the Engineering Council of South Africa and a Chartered Engineer of the United Kingdom Engineering Council.

David Steve Jacobs is an Associate Professor in the Department of Biological Sciences and holds a Research Chair in Animal Evolution and Systematics at UCT. His research on evolution incorporates aspects of both the phenotype and genotype.

Peter Jacobs is Professor Extraordinaire in the Division of Haematological Pathology, Faculty of Medicine and Health Sciences at SU, Professor of Internal Medicine, College of Medicine, University of Nebraska Medical Centre; Foundation Professor of Haematology at UCT; Chief Consultant Physician, Groote Schuur Hospital Teaching Group. He is Master in the American College of Physicians; Fellow of the Royal College of Physicians (Edinburgh); Fellow of the Colleges of Medicine (SA); Fellow of the Royal College of Pathologists (UK); International Fellow, College of Pathologists (USA); American Society of Clinical Oncology; Fellow of the Royal Society (SA); life Fellowship Royal Society of Medicine (UK); and member of WHO, Topic Advisory Group.

Wilmot James is a Member of Parliament and Chairperson of the Democratic Alliance. He was the Executive Chairperson of the Africa Genome Education Institute; Executive Director of the Social Cohesion and Integration Programme at the HSRC; Dean of Humanities and Professor of Sociology at UCT; and Executive Director of the Institute of Democracy in South Africa.

Hilary Janks is a Professor in the School of Education at Wits. Her publications focus on critical literacy and she is the Co-director of the Mobile Literacies research project funded by Zenex. She was awarded the Education Association of South Africa Medal of Honour in 2013 for her contribution to research in the field of education.

Estrelita Janse van Rensburg is a Global Medical Director at Global Central Laboratories, Quintiles and an Extraordinary Professor at the Faculty of Health Sciences at UP.

HCJ (Dingie) Janse van Rensburg is Extraordinary Professor in the Centre for Health Systems Research and Development at UFS. He was Outstanding Professor and Director of the same Cen-

tre. His most important work is on the history, structure and dynamics of the South African health system. His awards include an Honorary Doctorate from the University of Antwerp (Belgium); Free State Premier's Excellence Award Gold for outstanding excellence and leadership in the category: Research and Development; University Council Medal for outstanding and continuous contributions as an academic, particularly in respect of contributions outside the UFS context.

Jonathan David Jansen is Rector and Vice-Chancellor at the University of the Free State and is President of the South African Institute of Race Relations.

Neil Jarvis is a Senior Manager: Health and Biosciences in the Division of Research and Development at Necsa. He manages the Nuclear Technologies in Medicine and the Biosciences Initiative, a national technology platform to develop innovative products and research tools. He also serves on the Programme Management Committee of the African Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology. He has been the recipient of several awards including the South African Chemical Institute's Raikes Medal in 1994 and the Necsa Chairperson's Award as the company's top performer.

Mohamed S Jeenah is the Executive Director responsible for Research and Development at the Agricultural Research Council where he is responsible for research which spans the entire agricultural value chain from livestock to crops to natural resource management. His experience in the management of research is extensive with active involvement in health, education and now agriculture. The major cross-over in all three areas is the utilisation of his expertise in promoting vaccine development, as well as biotechnology.

Trefor Jenkins is Emeritus Professor and Honorary Professorial Research Fellow, Division of Human Genetics, School of Pathology, National Health Laboratory Service at Wits.

Eugene Llewellyn Julies is Executive Director of Warrodoms Consulting, and Chief Technical Advisor to the Ministry of Commerce in Afghanistan. He was Chief Executive Officer of the South African Bureau of Standards.

Michael Jeffrey Kahn is Professor Extraordinaire at SU and Director of Research and Innovation Associates. He was Executive Director at the Human Sciences Research Council and Special Advisor to the Minister of Science and Technology.

Evance Rabban Kalula is Professor of Law in the Faculty of Law, UCT. He is also Deputy Dean and Director of the Institute of Development and Labour Law. He is a Senate representative on the UCT Council and its Executive Committee.

Michael Charles Kew is Professor Emeritus of Medicine and Honorary Research Professor in the Faculty of Health Sciences at Wits, and an Honorary Research Professor in the Department of Medicine at UCT and Groote Schuur Hospital. He was formerly Dora Dart Professor of Medicine, Wits Medical School and Director, South African Medical Research Council Molecular Hepatology Research Unit. He was Fogarty Visiting Scientist, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland, USA. He is also a Fellow of the Royal Society of South Africa.

Klaus Koch is currently the Executive Head of the Department of Chemistry and Polymer Science at SU, actively maintaining the Platinum Metals Chemistry Research Group of which he was the founder at SU. He was a founding member of the Department of Analytical Sciences at UCT in the mid-1980s, later serving as Acting Head until this was incorporated into the Department of Chemistry at the university.

Lodewyk Kock is at present a Distinguished Professor at UFS. He has received the President's Award for outstanding research from the NRF and the American Society for Microbiology MIRCEN Award. Recently, the yeast genus *Kockiozyma* was named after him by Thai and Japanese scholars in recognition of his contributions to yeast research. He was appointed Director: Industrial Biotechnology UNESCO MIRCEN since 1998 and is at present Commissioner of the International Commission on Yeasts.

Rifka Kfir was the Chief Executive Officer of the Water Research Commission. She has also held senior management positions in the CSIR and the NRF. She serves on the Board of the International Water Management Institute.

Benito Makhala Khotseng was Deputy Vice-Chancellor at UFS, Visiting Professor of Comparative Education at Seton Hall University, New Jersey, USA and Board member of the Higher Education Quality Committee of the Council on Higher Education.

Johann Kirsten is Professor and Head of the Department of Agricultural Economics, Extension and Rural Development at UP. He formerly served as a Council member of the National Agricultural Marketing Council in South Africa and as the Vice-President of the International Association of Agricultural Economists.

Duard Godfried Kleyn is Professor and Dean of the Faculty of Law at UP.

Horst Helmut Klump is Professor Emeritus of Biochemistry and Head of the Department of Biochemistry at UCT, Professor of Physical Biochemistry and Physical Chemistry at Freiburg University (Germany), Fellow of UCT and Fellow of the Royal Society of South Africa.

Carolina Koornhof is currently the Executive Director: Finance and Business Activities at UP. Previously she was Dean of the Faculty of Economic and Management Sciences. Her field of research is accounting and specifically reporting and accounting theory. She is a member of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns*.

Girish J Kotwal was Professor and Chair of Medical Virology, member of the Institute of Infectious Diseases and Molecular Medicine at UCT, Director of the WHO Influenza Centre in South Africa and Senior International Wellcome Trust Fellow for Biomedical Sciences in South Africa. He is Professor of Microbiology and Biochemistry at the University of Medicine and Health Services, St Kitts, WI, Adjunct Professor of Medicine at UMass Medical School, USA, and Henan University of Traditional Chinese Medicine, China.

Renée C Kraan-Korteweg is a founder and Co-director of the Astrophysics, Cosmology and Gravity Centre, established in 2009 at UCT. She heads the Department of Astronomy at the university.

Helen Laburn is the Deputy Vice-Chancellor (Research) at Wits. She was Dean of the Faculty of Health Sciences at Wits. She was rewarded for her national and international reputation in her research field of thermoregulation by foreign membership of the Physiological Society of the United Kingdom, Fellowship of the Royal Society of South Africa and Honorary Fellowship of the Physiology Society of Southern Africa. She has served as Chairman of the South African National Committee for the International Union of Physiological Sciences and has represented South Africa at international General Assemblies of Union. She holds an Honorary Professorial appointment in the School of Physiology. She is a Director of the Wits Health Consortium, the Wits Origins Centre Association and Wits Enterprise.

Maryke Labuschagne is Professor and Head of the division of Plant Breeding in the Department of Plant Sciences at UFS. She has received several awards, including Scientist of the Year Award from Grain South Africa; the African Union Kwame Nkrumah Continental Scientific Award for life and earth sciences; National Agriculturalist of the year for 2008; winner of the Cereal Science and Technology, South Africa, prize for research and development, and winner of the National Science and Technology Forum Award in the category of research capacity development in the last 5-10 years. She currently is the South African representative to the American Association of Cereal Chemists International.

Bernard Lategan is the founding Director of the Stellenbosch Institute for Advanced Study. He was Dean of the Faculty of Arts and Social Sciences member of the Council of SU. He served on the Editorial Boards of several scholarly journals and in the management of a number of international societies, including the *Studiorum Novi Testamenti Societas* and the World Values Survey.

Alison Lewis is a registered professional engineer, a Professor in the Chemical Engineering Department at UCT and the Director of the Crystallisation and Precipitation Research Unit, one of the accredited research units at UCT where she is the Head of the Department.

Attie Johannes Ligthelm is Dean of the School of Dentistry at UP.

Elsabé Loots is the Dean of the Faculty of Economic and Management Sciences on the Potchefstroom Campus of NWU. She held professorial appointments in Economics at Rand Afrikaans University, UFS and Monash University. She is a past President of the Economic Society of South Africa and currently chairs the South African Commerce Deans Association.

Jean M-S Lubuma is Head of the Department of Mathematics and Applied Mathematics and was Chairperson of the School of Mathematical Sciences in the Faculty of Natural and Agricultural Sciences at the University of Pretoria. He is holder of the SARCHI Chair in Mathematical Models and Methods in Bioengineering and Biosciences.

Catriona Macleod is Professor of Psychology at RU and principal investigator in the Critical Studies in Sexualities and Reproduction Research Programme. She is author of the book *Adolescence, pregnancy and abortion: constructing a threat of degeneration* (Routledge, 2011) that won the Distinguished Publication Award of the US-based Association for Women in Psychology Award and RU Vice-Chancellor's Book Award. She has written extensively in the area of sexuality, teenage pregnancy, abortion and feminist theory. She is Editor-in-Chief of the international journal *Feminism & Psychology*.

Shabir Madhi is a certified infectious disease specialist and he currently holds the positions of Executive Director of the National Institute for Communicable Diseases at the National Health Laboratory Service, DST/NRF Research Chair for Vaccine Preventable Disease and Professor of Vaccinology at Wits. He is also the President of the World Society for Pediatric Infectious Diseases and is involved in clinical trials on vaccine preventable diseases, some of which have been pivotal in making global recommendations by the World Health Organisation for the introduction of live-saving vaccines into childhood immunisation programmes.

Christopher Cuthber Posela Madiba was Chief Director of Systems Development and Coordination in the Department of Education.

Nomathemba Virginia Magi was Project Manager – Implementation of the new curriculum, the National Curriculum Statement Grades 10-12 at the national Department of Education. She was Dean of the Faculty of Education at the University of Zululand.

Sunil Maharaj holds the South African Research Chair in Gravitating Systems. He is a Senior Professor of Applied Mathematics at UKZN and serves as Director of the Astrophysics and Cosmology Research Unit.

Thokozani Majozi is Professor in the Department of Chemical Engineering at UP. He is a Fellow of the CSIR, a Fellow of the Water Institute of Southern Africa, a Fellow of the SAAE and a Board member of Necsa.

Malegapuru William Makgoba is Vice-Chancellor of UKZN. He is a Fellow of the Royal College of Physicians of London and was elected as foreign associate member of the United States National Academy of Sciences' Institute of Medicine.

Duma Enoch Malaza was Chief Executive Officer of Higher Education South Africa and the former Director of Quality Assurance at UP.

Johannes Albertus Geldenhuys Malherbe is a retired Professor of Electronic and Computer Engineering at UP where he was Dean of Engineering and Vice-Principal.

Tinyiko Sam Maluleke is a Deputy Vice-Chancellor at UJ. He is responsible for the areas of internationalisation, advancement and student affairs. He is on the Editorial Committees of several

national and international peer-reviewed journals. As Visiting Professor and Guest Lecturer he has lectured and taught at the several universities including Hamburg University (Germany), University of Lausanne (Switzerland), Duke University (USA), University of Nairobi (Kenya), University of Edinburgh (Scotland, UK), Haverford College (USA).

Mzamo P Mangaliso is a Professor of Strategic Management at the University of Massachusetts, Amherst, Massachusetts in the USA. He was President and Chief Executive Officer of the NRF.

Chabani Manganyi was Chairman of the Council for Higher Education and was Vice-Principal of UP. He was also Vice-Chancellor of the University of the North and Director-General in the Department of Education. Following his retirement, he was appointed Senior Research Fellow in the Unit for Advanced Studies at UP where he has continued his research and writing on the lives of three South Africans.

Vincent Maphai is Executive Director of Corporate Affairs and Transformation at the South African Breweries. Previously he was Chairman of BHP Billiton. For two decades he was an academic at various universities in South Africa and abroad. He is also Professor of Philosophy at UJ.

Adrian David Marais is the Head of the Division of Chemical Pathology in the UCT Health Sciences Faculty and forms part of the MRC Cape Heart Group.

Jacobus Gideon Maree is Professor in the Department of Educational Psychology at UP. He is the former Editor of the *South African Journal of Psychology* and *Perspectives in Education*, Managing Editor of *Gifted Education International*, Co-editor of the *SA Journal of Science and Technology* and a member of several national and international bodies, including the National Career Development Association (USA), the Society for Vocational Psychology (USA), the International Association of Applied Psychology (USA) and the Psychology Association of South Africa. He was awarded the Chancellor's Medal for Teaching and Learning by UP in 2010.

Tshilidzi Marwala is Deputy Vice-Chancellor: Research at UJ. He also serves on the Boards of City Power Johannesburg and EOH (Pty) Ltd).

Thoko V Mayekiso is the Deputy Vice-Chancellor for Research and Engagement at NMMU, where she previously was the Executive Dean of the Faculty of Arts. She is a Professor of Psychology and a registered clinical psychologist and a member of the Agricultural Research Council.

Bongani Mawethu Mayosi is Professor and Head of the Department of Medicine at UCT and Groote Schuur Hospital, Cape Town. He is the President of the College of Physicians of South Africa and Vice-President of the Pan African Society of Cardiology.

Anthony David Mbewu is Chief Executive Officer of the South African Government Printing Works. He was formerly President of the MRC and is currently an Honorary Professor in Cardiology and Internal Medicine at UCT. He was an Advisor on health research to former President Thabo Mbeki. He is a former Vice-President of ASSAf; a Fellow of the Royal College of Physicians of the UK; and member of the Institute of Medicine of the National Academy of Sciences.

Veronica McKay is Deputy Executive Dean: College of Education at UNISA. From 2007-2011 she was seconded to the Department of Basic Education as Chief Executive Officer of the South African Literacy Campaign and to coordinate the development of the department's school workbooks.

Lirieka Meintjes-Van der Walt is an Adjunct Professor of Law at UFH.

Barry Vincent Mendelow is Emeritus Professor in the Department of Molecular Medicine and Haematology at Wits. Prior to retiring he was Professor and Head, Pathology, Baragwanath Hospital; Assistant Dean (Research) Faculty of Health Sciences; Executive Director (Research) at Wits; Research Manager of the South African Institute for Medical Research; Professor and Head, Department of Haematology, Wits; and Professor and Head, Molecular Medicine and Haematology, Wits. He is a Fellow of the Royal Society of South Africa.

Rajend Mesthrie is Professor of Linguistics at UCT and holder of an NRF Research Chair. He is currently President of the Linguistics Society of Southern Africa. His work focuses mainly on sociolinguistics in the Southern African context.

Thaddeus Metz is Humanities Research Professor and Head of Philosophy at UJ. He is recognised for his research on three major topics in value theory: using a principle of respect for human dignity to resolve moral controversies in law, politics, business and medicine; interpreting the African ethic of *ubuntu* in an analytic, rigorous way; and systematically developing and evaluating theoretical approaches to what makes a life meaningful. Awards for his research from the past few years include: an A-rating President's Award from the NRF, the Vice-Chancellor's Research Award from Wits, and a Fellowship from the Stellenbosch Institute for Advanced Study in South Africa.

Joseph Philip Michael is Professor of Organic Chemistry at Wits. He is a Fellow of both the Royal Society of Chemistry (UK) and the Royal Society of South Africa. He has been awarded the Gold Medal of the South African Chemical Institute for his contributions in the field of organic synthesis and achievements and service rendered to the chemical community.

John Robert Midgley is Deputy Vice-Chancellor: Research and Innovation at the University of Zululand, a former Deputy Vice-Chancellor: Academic Affairs and Research at UFH and a former Professor and Dean of Law at RU. He was President of the Society of Law Teachers of Southern Africa and Chairperson of the South African Law Deans Association. He was a member of the NRF Panel of Independent Assessors and is currently a Panel Chairperson.

Guy Franklin Midgley leads the South African National Biodiversity Institute's Climate Change and BioAdaptation Programme, and is an Associate Professor in the School of Agricultural, Earth, and Environmental Sciences, UKZN. His research interests include general ecology, and climate change and CO₂ impacts on biodiversity and ecosystems and their relevance for adaptation. He also provides policy support to the Department of Environmental Affairs on climate change and biodiversity issues.

Robert Millar is currently Director of the Mammal Research Institute at UP and Director of the UCT/MRC Receptor Biology Group. He is at the forefront of health and medical sciences in areas such as biochemistry, neuroendocrinology and cancer research. He has received the Wellcome Gold Medal, the Oppenheimer Gold Medal, and is a Geoffrey Harris Laureate and Ernst and Berta Scharrer Laureate. He is a Fellow of both the Royal Society of Edinburgh and the Royal Society of South Africa. He holds 18 patents and has presented numerous plenary and keynote lectures at local and international conferences.

Duncan Mitchell is Emeritus Professor of Physiology at Wits, and Honorary Research Professorial Fellow in its Brain Function Research Group.

Valerie Mizrahi is the Director of the Institute of Infectious Disease and Molecular Medicine and a Professor at UCT. She directs the MRC/NHLS/UCT Molecular Mycobacteriology Research Unit, and heads the UCT node of the DST/NRF Centre of Excellence for Biomedical TB Research. She was an International Research Scholar of the Howard Hughes Medical Institute and was selected as a Senior International Research Scholar of the institute. She has received the Order of the Mapungubwe (Silver) and her other awards include the 2000 UNESCO-L'Oreal For Women in Science Award (African and Middle East Region), the Gold and Silver Medals of the South African Society for Biochemistry and Molecular Biology and the President's Award from the NRF. She is an Associate Fellow of TWAS.

Philemon Mphathi Mjwara is Director-General of the DST. He was the Group Executive of Research and Development; Strategic Human Capital Development at the CSIR.

Fazal Mahomed is the Director of the Centre for Differential Equations, Continuum Mechanics and Applications at Wits and is joint leader of the NRF research niche area on Symmetry Approaches in Differential Equations, Continuum Mechanics and Applications. He served two terms in the International Commission on Development and Exchange of the International Mathematical Union.

Renosi Mokate is Executive Director of the World Bank. She is the former Deputy Governor and Executive Director at the Reserve Bank. She previously served as Chairperson of the Financial and Fiscal Commission.

Khotso Mokhele was Vice-President of the International Council for Science Committee for Scientific Planning and Review and a member of the Executive Board. He is a founding member of the Council Regional Committee for Africa and a founder member of the Association of Black Scientists, Engineers and Technologists. He was President and Chief Executive Officer of the NRF.

Harm Moraal is Emeritus Professor of Physics at NWU. His specialty is cosmic-ray physics. He was awarded the Havenga Prize of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns* in 2004, and the De Beers Gold Medal Award of the South African Institute of Physics in 2012. He is a member of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns*.

Vincent Clifford Moran is Emeritus Professor and Research Associate, Department of Biological Sciences, UCT. He was Professor of Entomology and Dean of Science, RU and Dean of Science, UCT. He is a Research Fellow at Merton College, University of Oxford and is life Fellow at UCT. He is a member of the Council of the International Congress of Entomology and Honorary life member of the Entomological Society of Southern Africa. He is a Fellow of the Royal Society of South Africa and a founder member of ASSAf.

Alan G Morris is Professor in the Department of Human Biology at UCT. He is currently a Council member of the Van Riebeeck Society for the Publication of Southern African Historical Documents and an Associate Editor of the *South African Journal of Science*. He is also a member of the Association of Southern African Professional Archaeologists, the Anatomical Society of Southern Africa, the Canadian Association of Physical Anthropologists and the American Association of Physical Anthropologists. He is a Fulbright Visiting Fellow to the United States based in the Department of Anthropology at Ohio State University in Columbus Ohio.

Lynn Morris is a Chief Specialist Scientist and Head of the AIDS Unit at the National Institute for Communicable Diseases (NICD) in Johannesburg, South Africa and holds a joint appointment Research Professor at Wits. She is a member of the Board of the MRC.

Johann Mouton is Director of the Centre for Research on Evaluation, Science and Technology and Director of the African Doctoral Academy at SU.

Malose Jack Mphahlele is Professor of Organic Chemistry at UNISA and Research Professor and Chairperson of the Department of Chemistry at the same university. He was Professor and Head of Department of Chemistry and Biochemistry at Medunsa. He is an active member of the American Association of the Advancement of Sciences and the American Chemical Society. He is the first black South African MSc and PhD graduate in chemistry of UP and RU, respectively.

Bangilizwe Mqeke is a Professor of Law and former Dean of Law at RU. He is an advocate of the High Court of South Africa.

John Cantius Mubangizi is a Professor of Law at UKZN. He is also Deputy Vice-Chancellor and Head of the College of Law and Management Studies at the university.

Mammo Muchie is a DST/NRF Research Professor of Innovation Studies at the Institute of Economics Research on Innovation, at the Tshwane University of Technology. He is also a Professor at Development and International Relations for Aalborg University. He is Senior Research Associate at the Sanyaja Lall Programme for Technology and Management for Development at Oxford University.

Sospeter Mwijarubi Muhongo is Professor of Geology, University of Dar Es Salaam and an Honorary Professor of Geology at UP. He is the Editor-in-Chief of the *Journal of African Earth Sciences* and Vice-President of the Commission for the Geological Map of the World. He was the founding Regional Director of the International Council for Science Regional Office for Africa, Honorary Fellow

of the Geological Society of London, Honorary Research Fellow, Chinese Academy of Geological Sciences and is a Fellow of TWAS.

Johan Pieter Muller is Professor Emeritus at UCT. He was formerly Professor of Curriculum and Deputy Dean of Research in the Faculty of Humanities at UCT.

Sagadevan Govindasamy Mundree is Professor and Deputy Director of the Centre for Tropical Crops and Biocommodities at Queensland University of Technology. He is the former CEO of Plant-Bio, South Africa's National Innovation Centre for Agricultural Biotechnology and Senior Executive of the Queensland Department of Primary Industries and Fisheries.

David Mycock is Assistant Dean Postgraduate in the Faculty of Science at Wits. He is Chairman of the International Seed Testing Association Seed Storage Committee (Zurich, Switzerland). He has more than twenty years teaching experience at the Wits Access Programme. He has also participated in the Agricultural Research Council/UNESCO initiatives for biotechnological training of students from SADC and other African countries. He is the recipient of teaching awards from UNESCO and Wits.

Christina Mynhardt is Professor in the Department of Mathematics and Statistics at the University of Victoria, Canada.

Jean B Nachenga is Extraordinary Professor in the Department of Internal Medicine and Director of the Centre for Infectious Diseases at SU and Honorary full Professor of Medicine in the Department of Medicine at UCT. He is also an Associate Scientist in the Department of International Health with a joint appointment in the Department of Epidemiology at Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland and Visiting Scientist, Centre for Biostatistics in AIDS Research at Harvard School of Public Health, Boston.

Gonasageran Naidoo is Professor Emeritus and Senior Research Associate in the School of Life Sciences, UKZN. He is a Fellow of the university.

Shamila Nair is Senior Programme Specialist, Africa Department (United Nations Education, Scientific and Cultural Organisation in Paris), Coordinator of the UN Science and Technology Cluster and Director of Research at the French Institute for Health and Medical Research. She was until recently Chief of the Unit for the Implementation of the African Union/Consolidated Plan of Action for Science and Technology.

Luigi Renzo Nassimbeni is Senior Research Scholar at UCT. He held the Chairs of Chemical Crystallography and Physical Chemistry at the university and directed the Supramolecular Chemistry Research Unit at the same institution.

Nicoli Natrass is Professor of Economics and Director of the AIDS and Society Research Unit at UCT.

Daniel James Ncayiyana has been Editor of the *South African Medical Journal* since 1993, and currently serves as Advisor to the President of the Human Sciences Research Council. He was Deputy Vice-Chancellor at UCT and Vice-Chancellor, Durban Institute of Technology.

Njabulo Simakhahle Ndebele is Chancellor at UJ. He was Vice-Chancellor and Principal at UCT, following his tenure as a Scholar-in-Residence at the Ford Foundation in New York. He also served as Vice-Chancellor of the University of the North and, previously, as Vice-Rector of UWC. He was a founding Chair of the Southern African Regional Universities Association, and is President of the Association of African Universities. He has been awarded a number of Honorary doctorates in literature from universities in the UK, US, the Netherlands, Japan, and South Africa.

Phuthi E Ngoepe is Professor and Director of the Materials Modelling Centre of the University of Limpopo.

Mokubung Nkomo is Deputy Vice-Chancellor of Teaching, Learning and Technology at the Tshwane University of Technology.

Wiseman Nkuhlu is Chancellor of UP, Chairperson of Pan African Capital Holdings and was the first Chairperson of the Council for Higher Education. He was the Chief Executive Officer of the Secretariat of New Partnership for Africa's Development.

Jo MF Noero is Professor and Director in the School of Architecture at UCT. He was the Ruth and Norman Moore Chair of Architecture at Washington University and Director of Graduate Studies. He is an Honorary Fellow of the Royal Institute of British Architects.

Loyiso Gordon Nongxa is Professor and former Vice-Chancellor and Principal at Wits. He was previously Deputy Vice-Chancellor: Research at the University of Witwatersrand and Dean of Science at UWC.

Odireleng Martin Ntwaeaborwa is Professor of Physics at UFS. He is the President of the South African Nanotechnology Initiative (SANI). He is a member of the South African Institute of Physics, the South African Nanotechnology Initiative, the American Vacuum Society and the American Chemical Society. He has received numerous awards including the Research Excellence Award from UFS, Young Black Research Award from the National Science and Technology Forum, and Holloway Young Research award from the Thin Film Division of the American Vacuum Society.

Tebello Nyokong is Professor of Physical Chemistry at RU. She is a recipient of the Order of Mapungubwe: Bronze.

Cyril Thomas O'Connor is a Senior Research Scholar in the Department of Chemical Engineering at UCT. He was the Director of the Centre for Minerals Research and was founder Director of the Centre for Catalysis Research. He is President of the International Mineral Processing Council, is a former Vice-President of the International Zeolite Association, is a member of the Executive of the South African Academy of Engineering (SAAE) and is CEO of the South African Minerals to Metals Research Institute. He is an Honorary Fellow and Fellow of the South African Institute of Mining and Metallurgy, a Fellow of the Royal Society of South Africa, UCT, the SAAE, the South African Institution of Chemical Engineering and is a founder member of ASSAf.

Darragh O'Donoghue is an astrophysicist and Deputy Chair of the Board of Directors and Head of the Instrumentation Division of the Southern African Large Telescope. His main research interests are astronomical technology and close binary stars.

Chikwelu Larry Obi is the Deputy Vice-Chancellor, Academic Affairs and Research at the Walter Sisulu University. He is a rated researcher of the National Research Foundation, founder and former Niche Area Leader of the National Research Foundation HIV and AIDS Research Group, University of Venda and a former member of the South African Council of Natural Scientific Professions.

Catherine A Odora Hoppers is the DST/NRF SARCHI Research Chair in Development Education at UNISA. She was a technical adviser on Indigenous Knowledge Systems to the Parliamentary Portfolio Committee on Arts, Culture, Science and Technology and led the Task Team to draft the national policy on Indigenous Knowledge Systems. She was a Distinguished Professional at the HSRC; an Associate Professor at UP; a Visiting Professor at Stockholm University (Sweden); Scientific Coordinator and Campus Director for the Council for the Development of Social Science in Africa Annual Social Science Campus, and a recipient of an Honorary doctorate in Philosophy from Orebro University (Sweden) and an Honorary doctorate in Education from NMMU.

Douglas William Oliver is the Director: School of Pharmacy at NWU. He is founder member of the Academy of Pharmaceutical Sciences and President of the SA Society for Basic and Clinical Pharmacology.

Gilbert Oke Martin Onwu is Professor of Chemical Education in the Faculty of Education, UP.

Phillip Onyebujoh is an infectious diseases physician and the Manager for TB/HIV clinical studies for the Special Programme for Research and Training in Tropical Diseases at the World Health Organisation in Geneva, Switzerland. Key positions include Team Leader: Evidence for TB/HIV Treatment Policy, Task Manager for the ProTEST initiative of the Stop TB department of WHO, Geneva, Chief Specialist and Director: Clinical and Biomedical TB Research Unit, South African Medical Research Council, Vice-chairperson of the South African Medicines Control Council Clinical Trials subcommittee Honorary Senior Lecturer and Consultant: Division of Bacteriology, Windeyer Institute of Medical Sciences, University College, London. He is a Fellow of the Wellcome Trust and the Royal College of Physicians of London.

Frederick Mark Orkin is a consultant in public sector change management and in social statistics in South Africa. He is also a Visiting Professor in Public Management at Wits and an Associate Fellow of the Department of Social Policy and Intervention at Oxford University. He was Director-General of the Public Administration Leadership and Management Academy, Chief Executive Officer of the HSRC, Head of Statistics SA, Professor of Research Methodology in the Faculty of Management at Wits and founder Director of the Community Agency for Social Enquiry.

Nicky Gopalan Padayachee was Professor and Dean of the Faculty of Health Sciences, UCT. He is President of the Health Professions Council of South Africa.

Norman Pammenter is a Professor Emeritus and Senior Research Associate at UKZN. He is a Fellow of the university, Fellow of the Royal Society of South Africa and has been awarded the Gold Medal of the South African Association of Botanists.

Mohammed Iqbal Parker is the Director of the Cape Town Component of the International Centre for Genetic Engineering and Biotechnology. Prior to this he was the Head of the Division of Medical Biochemistry and Director of Research for the Health Science Faculty at UCT. He has been Director of the MRC Oesophageal Cancer Research Unit since 1998 and was awarded the DST/NRF Research Chair in Cancer Biology in 2007. He was President of the South African Society of Biochemistry and Molecular Biology, is founder Secretary-General of The Federation of African Societies of Biochemistry and Molecular Biology. He is a founder Member of ASSAf and has served as General Secretary. He is currently one of the Vice-Presidents of the Academy.

John Parkington is Professor in the Department of Archaeology at UCT.

Adrian (Adi) Walter Paterson is the Chief Executive Officer of the Australian Nuclear Science and Technology Organisation. He was involved in the renewal of science and technology policy and funding through the Department Science and Technology as Chief Operating Officer. He is former Executive Vice-President of the CSIR.

Hugh Patterton is Professor in the Department of Biotechnology at UFS and Director for the Advanced Biomolecular Research strategic academic cluster at the same university. He was Research Associate in the Department of Biochemistry and Molecular Biology at Pennsylvania State University in State College. He was awarded a Wellcome Trust International Senior Research Fellowship.

Robert Clive Pattinson is Professor and Clinical Head of the Department of Obstetrics and Gynaecology at UP and Chief Specialist at Kalafong Hospital. He is also the Director of the Maternal and Infant Health Care Strategies Research Unit at the MRC.

Claire Penn is the Simmonds Hampton Chair of Speech Pathology and Audiology at Wits. She was awarded the Order of Mapungubwe (Silver) in 2007 and was category winner of Shoprite Checkers Woman of the year in 2008. She directs the Health Communication Research Unit.

Francis Petersen is Dean of Engineering and the Built Environment at UCT. He is a leader in developing South Africa's innovation strategy from his vantage point as Ministerial Advisor, Chair of

the Board of the CSIR and Dean of Engineering at UCT. He is playing an important role in forging relationships that are vital to South Africa's R&D strategy.

John Morley Pettifor is a paediatrician, and Emeritus Professor and Honorary Professorial Researcher at Wits. He was chief paediatrician and Head of the Department of Paediatrics at Chris Hani Baragwanath Hospital. His research interests focus on child nutrition, and calcium, vitamin D and bone metabolism.

Mamokgethi Phakeng is Professor and Vice-Principal of Research and Innovation at UNISA. She is also Honorary Professor of Mathematics Education at Wits University. Before joining UNISA as Executive Dean of the College of Science, Engineering and Technology she served as Associate Professor and founding Director of the Marang Centre for Mathematics and Science Education at Wits. She is the pioneer and leader of the multimillion rand FirstRand Foundation Mathematics Education Chairs and the South African Numeracy Chairs initiatives funded by Anglo American Chairman's Fund, Rand Merchant Bank, FirstRand Foundation and DST and managed by the NRF.

Nancy Phaswana-Mafuya is the Director of Social Aspects of HIV/AIDS Research Alliance of the HSRC; Executive Editor of *SAHARA J*; and an Honorary Professor at NMMU. She is a member of the Secretariat of the Global HIV Prevention Working Group and SADC HIV Research and Prevention Working Group. She is the Principal Investigator of the: World Health Organisation's groundbreaking population-based study on ageing and health in South Africa. She has received two national finalist awards (in the Young Black Women Category) for contribution to science and technology.

Samuel George Harker Philander is Knox Taylor Professor of Geosciences at Princeton University, Research Professor at UCT and former Director, African Centre for Climate and Earth System Science, Cape Town.

Ian Phimister is Senior Research Professor at UFS. He has held positions at the Universities of Zambia, Witwatersrand, Cape Town, Oxford and Sheffield. He is an Honorary Professor at UP, and is Emeritus Professor of the University of Sheffield. He has been Visiting Research Fellow or Professor at the Universities of Zimbabwe, Malawi, London, Glasgow, Sydney and Geneva.

William Pick is Emeritus Professor and former Head of the School of Public Health at Wits, honorary Professor at UCT, Honorary Professor at UWC, and Professor Extraordinaire at SU. He served as the interim President of the MRC, was a Fellow of the Royal Society of Medicine and a Fellow of the Royal Society of Tropical Medicine and Hygiene.

Jaco Pienaar is the Director of WorkWell – the Research Unit for Economic and Management Sciences in the faculty of the same name at NWU. His research interests include work stress and psychological reactions, coping and other mediators and moderators of work stress, and the relation between work and individual health and wellbeing. In this field, he has collaborated on nationally and internationally funded projects with researchers from Sweden, Belgium and the Netherlands.

Pragasen Pillay is Professor in the Department of Electrical and Computer Engineering and Hydro-Quebec Senior Chair and holds the Jean Newell Distinguished Professorship in Engineering at Concordia University. He is also a part-time Professor at UCT.

Viness Pillay is a Fulbright Scholar and a NRF/DST Research Chair in Pharmaceutical Biomaterials and Polymer-Engineered Drug Delivery Technologies. He is a Fellow of the African Academy of Sciences. He is a personal Professor of Pharmaceutics, and Director of the Advanced Drug Delivery Platform at Wits and the African Network for Drugs and Diagnostics Innovation Centre of Excellence in Advanced Drug Delivery Technology.

Calie Pistorius is the Vice-Chancellor of the University of Hull in the UK. He was the Vice-Chancellor and Principal of UP and Chairperson of the National Advisory Council on Innovation.

Chris Pistorius is Professor of Materials Science and Engineering at Carnegie Mellon University, Pittsburgh, Pennsylvania, USA. He was Head of the Department of Materials Science and Metallurgical Engineering at UP. He is a Fellow of the South African Academy of Engineering.

Nyameko Barney Pityana is the Rector of the College of the Transfiguration. He is the former Principal and Vice-Chancellor of UNISA. He was Chairperson of Higher Education South Africa and Chairman of the African Council for Distance Education.

Deborah Posel is the founding Director of the Institute for Humanities in Africa at UCT, where she is also a Professor in Sociology. She was previously the founding Director of the Wits Institute for Social and Economic Research at Wits. She completed a D Phil at Nuffield College, University of Oxford in 1987, where she was also a Gwilyn Gibbon Prize Research Fellow. She has written extensively on the history of apartheid.

Anastassios Pouris is Professor and Director of the Institute for Technological Innovation at UP.

Zacharias Andries Pretorius is Professor of Plant Pathology in the Department of Plant Sciences at UFS. He has served as President of the Southern African Society for Plant Pathology.

Bernard Alexander Prior is Professor Extraordinary in the Department of Microbiology and the former Chairman of the School of Biological Sciences at SU. He is currently honorary Professor at the Durban University of Technology and Senior Researcher in the Institute for Wine Biotechnology, SU.

Hugh Wynford Pritchard is Head of Research in the Seed Conservation Department of the Royal Botanic Gardens Kew, UK and a member of Kew's Senior Science Group. He was a founding Trustee of the International Society for Seed Science and is currently a Trustee to the Society for Low Temperature Biology. He holds Honorary Professorships with the Chinese Academy of Science and the University of Sussex, UK.

Otto Walter Prozesky was Deputy Vice-Chancellor of UP and President of the MRC prior to retiring. He was recipient of the National Order of Merit (Silver). He was a founding Member of ASSAf and a Fellow of the Royal Society of South Africa.

Raj Ramesar is Professor and Head of the Division of Human Genetics at UCT. He also serves as Director of the MRC Human Genetics Research Unit, and the Cancer Association of South Africa's Colorectal Cancer Research Consortium.

Deresh Ramjugernath is a Professor of Chemical Engineering at UKZN. He is Director of the Thermodynamics Research Unit and also the holder of the DST/NRF South African Research Chair in Fluorine Process Engineering and Separation Technology. His research focuses on understanding chemical process development and optimisation in the area of separation technology. The activities are integral to the development of a fluorochemical industry in the country.

Mamphela Aletta Ramphela is the former Chairperson of the Technology Innovation Agency's Board. She was previously Managing Director at the World Bank and Vice-Chancellor of UCT. She is also the Chair of Circle Capital Ventures and a former Co-chair of the Global Commission on International Migration.

Michele Ramsay is the Head of the Molecular Genetics Laboratory in the Division of Human Genetics at the National Health Laboratory Service and is a Professor at Wits. She is the interim Director of the Sydney Brenner Institute for Molecular Bioscience.

Douglas Eric Rawlings is currently acting Dean of Science, SU. He was previously acting Deputy Vice-Chancellor (Research), Dean of Science, Vice-Dean of Science and Chair of Department of Microbiology at SU. He was also Professor of Microbiology at UCT. He is a Fellow of UCT, a founding Member of ASSAf and a Fellow of the Royal Society of South Africa.

Daya Reddy holds the South African Research Chair in Computational Mechanics at UCT. He is a former Dean of the Faculty of Science, UCT. He is a Fellow of the Royal Society of South Africa, the South African Academy of Engineering, and of the *Akademie vir Wetenskap en Kuns*. Internationally, he is a Fellow of the International Association of Computational Mechanics, of the African Academy of Sciences, and TWAS. He is a recipient of the Order of Mapungubwe (Bronze) and

of the Georg Forster Award from the Alexander von Humboldt Foundation of Germany. He is the current President of ASSAf.

Priscilla Reddy is the Director of the Health Promotion Research and Development Unit of the MRC. She has been a Visiting Professor at NMMU and UKZN and Visiting Associate Professor at the Rollins School of Public Health at Emory University, the School of Nursing and Health Studies at Georgetown University, and the School of Public Health at the University of Michigan, Ann Arbor.

Helen Rees is the Executive Director of the Reproductive Health and HIV Research Institute at Wits, where she is also a Personal Professor in the Department of Obstetrics and Gynaecology. She is an Honorary Professor at the London School of Hygiene and Tropical Medicine and was the LSHTM International Health Clark Lecturer, and is an alumna of Harvard Business School. She was Co-chair of South Africa's National AIDS Council's Programme Review Committee and a member of the SANAC National Executive. She is a member of the National Advisory Group on Immunisations. She served as Chair of South Africa's Medicines Control Council and as a member of the National Research Ethics Committee. She has received many awards for contributions to science, the health sector and society including the Officer of the British Empire Award from Queen Elizabeth II and the ASSAf Gold Medal for Science-for-Society.

Thomas Rehle serves as a Director and Senior Programme Advisor in the HSRC. He is a Visiting Professor of International Health at the School of Public Health and Family Medicine, UCT. He directed the German Support Programme on AIDS for Developing Countries implemented by the German Agency for Technical Cooperation. He is a member of the UNAIDS Reference Group on Estimates, Modelling and Projections and serves on the Steering Committee of the WHO Working Group on HIV Incidence Assays.

Carolus Reinecke was Professor of Biochemistry and Vice-Chancellor of the former Potchefstroom University.

David Mark Richardson is Professor in the Department of Botany and Zoology at SU and Director of the DST-NRF Centre of Excellence for Invasion Biology. His primary research interest is in the field of biological invasions, particularly the ecology and management of plant invasions.

Linda Marlene Richter is a Distinguished Research Fellow at the HSRC. She is an elected Fellow of UKZN, and an Honorary Professor in Psychology; Honorary Professor in Paediatrics and Child Health at Wits, and a Research Associate in the Department of Psychiatry at Oxford University.

Terence John Robinson is Vice-Dean Research: Faculty of Science, SU. He is the former Head of the Department of Zoology and Executive Head, Department of Botany and Zoology, SU. He is Executive and founding Board member of the World Lagomorph Society and a Board member of the International Chromosome and Genome Society. He serves on the Editorial Board of *Cytogenetics and Genome Research*, *Chromosome Research*, *Heredity*. He is the recipient of the UP Commemorative Research Medal as part of the university's Honouring our Leading Minds (1908-2008) Centenary Project and the British Association Medal of the South African Association for the Advancement of Science (Silver).

Andreas Roodt is an outstanding Professor in Inorganic Chemistry at UFS. He is a Chairperson of the Department of Chemistry and Coordinator of the UFS research cluster in Materials and Nanosciences. He is a Fellow of the Royal Society of Chemistry in the United Kingdom.

Neil Roos is a Director of the Postgraduate School at UFS where he is responsible for the strategic and academic direction of the University's Postgraduate School. He has published recently in the *Journal of Southern African Studies*, *Journal of Social History* and *Social History*, and is the author of *Ordinary Springboks: White Servicemen and Social Justice in South Africa, 1939-1961*.

Cornelia Roux is a Professor and Research Director of a research focus area at the Faculty of Education Sciences, NWU. She is a full member of the International Seminar of Religious Education and Values, member of the National Religious Education Society, London, Fellow of the Farmington

Institute for Christian Education, University of Oxford, and member of the Association for Religious Studies in Southern Africa. She is also the founder of the international research group, Human Rights Education in Diversity.

Justus Christiaan Roux is Director of the Research Unit for Language and Literatures in the South African Context in the Faculty of Arts at NWU. He is a Fellow of the Alexander von Humboldt Foundation.

Heinz Rüther is Emeritus Professor of Geomatics at UCT and was Head of the Department of Surveying at the university. He is now the Principal Investigator of the African Cultural Heritage Sites and Landscapes database.

Edward Peter Rybicki is a Professor in Microbiology in the Department of Molecular and Cell Biology, a member of the Institute of Infectious Disease and Molecular Medicine, and serving as Academic Liaison to the Research Portal Project at UCT. His primary research interests are in plant-made vaccines and virus diversity.

Michael John Samways is Professor and Chair of the Department of Conservation Ecology and Entomology at SU.

Roelf Feenstra Sandenbergh is Dean, Faculty of Engineering, Built Environment and Information Technology at UP. He is Professor of Metallurgical Engineering, UP and a Fellow of the South African Academy of Engineering.

Machaba Michael Sathekge is Professor and Head of Nuclear Medicine Department at UP. He is President of the College of Nuclear Physicians, as well as an Honorary Registrar of the Colleges of Medicine of South Africa. He is also the President of International Society of Radio-labelled Blood Elements.

Christopher Saunders is Emeritus Professor at UCT. He is Research Associate, London School of Economics and Research Associate, Archives and Public Culture, UCT. He was a Visiting Fellow at All Souls College, Oxford. His scholarly interests lie in the 20th century history of southern Africa.

Mary Catherine Scholes is full Professor in the School of Animal, Plant and Environmental Sciences and serves as the Assistant Dean for Postgraduate Studies in the Faculty of Science at Wits. She serves as the Vice-chairperson for the International Committee of Climate Change, Agriculture and Food Security, as well as the Secretary-General for the Scientific Council on Problems in the Environment. She also chairs the Advisory Board of the Max Planck Institute for Chemistry. She has been awarded the Vice-Chancellor's Teaching and Research awards. She is a Fellow of the Royal Society of South Africa. She is the recipient of a number of national and international awards including being elected as a foreign member of the Royal Swedish Academy of Agriculture and Forestry.

Robert Scholes is a systems ecologist in the CSIR's Natural Resources and the Environment Division. He is a Fellow of the Council and serves on the Board of South African National Space Agency. He is Chair of the Group on Earth Observation Biodiversity Observation Network. His work focuses on global change, specifically in the carbon cycle, effects on terrestrial ecosystems and biodiversity.

Barry David Schoub is the former Executive Director of the National Institute for Communicable Diseases. He was appointed as the first Professor and Head of the Department of Virology, Wits and he was Director of the National Institute for Virology. Currently he is Chairman of the Scientific Advisory Panel and Vice-chairman of the Board of Trustees of the Poliomyelitis Research Foundation. Amongst the awards he has received are the Order of Mapungubwe (Silver), the Paul Harris Award of Rotary International, the 2012 Jewish Achievers Award, Lifetime Achievers Award for 2012 of the African Society of Laboratory Medicine, lifetime membership of the Federation of Infectious Diseases of South Africa and the 2012 Research Award and the Daubenton Prize from Wits.

Roland Schulze is Emeritus Professor at UKZN. He is best known for his work in hydrological modelling and climate change impacts studies.

Casper Schutte was Professor of Chemistry at UNISA and Interim Manager of the South African Bioinformatics Initiative.

Soraya Seedat is Professor, Executive Head of Department of Psychiatry at SU, South African Research Chair in Posttraumatic Stress Disorder, and Co-director of the MRC Unit on Anxiety and Stress Disorders. She has been an investigator of the South African Stress and Health Study, a component survey of the World Mental Health Surveys Initiative, since 1999.

Bob JR Seretlo is Emeritus Professor of Physics at UFH. He was Dean of the Faculty of Science at the university.

Vikash Sewram is Director of the Oncology Research Unit of the MRC and Director of the Cancer Research Initiative of South Africa. He is also an Honorary Professor in the Department of Surgery, Nelson R Mandela School of Medicine, UKZN.

Charlie Shackleton is Professor in Environmental Science at RU and holder of the DST-NRF SARCHI Chair in Interdisciplinary Science in Land and Natural Resource Use for Sustainable Livelihoods. Previously he has held positions at the CSIR, the Rural Facility of Wits, provincial government and Walter Sisulu University.

John Francis Sharpey-Schafer is a retired Nuclear Physicist. He is Extraordinary Professor at UWC and he was Director of iThemba LABS. He was also a Professor of Physics at the University of Liverpool, UK. He helped set up the MARST graduate school in 1998 at NWU and initiated the MANuS and MatSci Graduate schools as a University of Zululand and UWC in collaboration with iThemba LABS. He is a Fellow of the Institute of Physics (UK).

Olive Shisana is Chief Executive Officer of the HSRC. Prior to this she served as Executive Director of Social Aspects of HIV/AIDS and Health at the same organisation. She served on many national and international scientific committees and Advisory Boards, such as the US Institute of Medicine's Committee on Methodological Challenges in HIV Prevention Trials, the Global HIV Prevention Working Group, the Emory University Global Health Institute Advisory Board, the South African National AIDS Council and the Nelson Mandela 46664 campaign. She has been elected as President of the International Social Science Council based in Paris. She has recently been appointed to Head the South Africa's BRICS Think Tank. She is a founding Member of ASSAf.

Sibusiso Sibisi is Chief Executive Officer of the CSIR. He was Executive Director (R&D) at Plessey South Africa and Deputy Vice-Chancellor for Research and Innovation, UCT.

Roy Siegfried is Professor Emeritus at UCT. He has served as Director of the Sir Percy Fitzpatrick Institute of African Ornithology.

Silvester Ron Simango is Associate Professor of Linguistics in the Department of English Language and Linguistics at RU. His work focuses on morphology and syntax, as well as language contact in southern Africa. He is an executive Board member of the Linguistic Society of Southern Africa and has previously taught at the University of Limpopo and the University of Malawi.

Leickness Chisamu Simbayi is the Executive Director of HIV/AIDS, sexually transmitted infections and tuberculosis research programme at the HSRC. He is an Honorary Professor in the Department of Psychiatry and Mental Health at UCT.

Mala Singh is Professor Extraordinaire in the Centre for Higher Education Research, Teaching and Learning at RU. Previously, she has been Professor of International Higher Education Research in the Centre for Public Leadership and Social Enterprise at the Open University in the United Kingdom; founding Executive Director of the Higher Education Quality Committee of the Council on Higher Education; and Professor and Head of the Department of Philosophy at the former University of Durban-Westville. She has published in philosophy and in higher education policy. Her current research interests are in international and comparative higher education policy and conceptions of and approaches to higher education and social change.

Suprakas Sinha-Ray is Chief Researcher and Director of DST/CSIR Nanotechnology Innovation Centre, National Centre for Nanostructured Materials, CSIR. He is also a Visiting Professor at the Department of Applied Chemistry, UJ; Distinguished Professor, Department of Chemistry, King Abdulaziz University, Kingdom of Saudi Arab; Extraordinary Professor, Department of Food Sciences, UP.

Beric William Skews is currently Director of the Flow Research Unit at Wits where he has previously held Chairs in Mechanical and in Aeronautical Engineering. He has held academic posts in Canada, Japan, and Australia and eight years as R&D Manager at Eskom. He has been active in international and local professional bodies, including the Advisory Committees for the International Shock Wave Symposia, the International Congress on High-Speed Imaging and Photonics, and the International Shock Interaction Symposia, as well as the organising committees of international symposia. He was the founder President of the South African Institute of Aeronautical Engineers and has received a number of awards, medals, and honours from international and local professional bodies for services to education, professional societies, and contributions to science and engineering.

Hendrik Christoffel (Hennie) Snyman is Emeritus Professor of Physics at NMMU and former Rector and Vice-Chancellor of the Port Elizabeth Technikon.

Himla Soodyall is the Director of the MRC/NHLS/Wits Human Genomic Diversity and Disease Research Unit at the National Health Laboratory Service and Wits. She is the recipient of the Order of Mapungubwe (Bronze).

Dan Stein is Professor and Chair of the Dept of Psychiatry and Mental Health at UCT, Director of the MRC Unit on Anxiety and Stress Disorders, and Visiting Professor of Psychiatry at Mt Sinai Medical School in New York.

Theodor John Stewart is Emeritus Professor of statistical sciences (with particular emphasis on operations research) at UCT. He had held the Chair at UCT from 1984-2008, following earlier periods at the CSIR and in the mining and chemical industries. He is a recipient of the Gold Medal of the International Society on Multiple Criteria Decision-making, and five-time winner of the Tom Rozwadowski Medal of the Operations Research Society of South Africa. He is a Fellow of the Royal Society of South Africa.

Pieter Streicher Steyn is Professor of Chemistry at SU. He was Director of Research at SU and was elected as an external Fellow of the CSIR in 2001.

Pieter Helenius Stoker is Professor Emeritus at the School of Physics, NWU. He was Head of the Department of Physics and Dean of the Faculty of Natural Sciences at the former Potchefstroom University.

Anton Ströh is Dean of the Faculty of Natural and Agricultural Sciences and a Council member of UP.

Rolf Heinrich Stumpf was Vice-Chancellor at NMMU, Deputy Vice-Chancellor at SU and President of the HSRC. He is a member of the Executive Committee of Higher Education South Africa.

Gerald Edwin (Gerry) Swan is Dean of the Faculty of Veterinary Science at UP. He was President of the South African Veterinary Association, member of the Medicines Control Council and member of the San Parks Board.

Frans Swanepoel is Deputy Director of the African Doctoral Academy at SU. He is a former Professor of Animal Science and Dean of Agriculture at UFH; Professor and Director of the Postgraduate School of Agriculture and Rural Development at UP; and Senior Director Research Development at UFS. During 1997-1998 he was seconded to the NRF to manage the Food Production and Food Security, and Rural and Urban Development Programmes. He is a former Senior Fulbright Fellow at the Cornell International Institute for Food, Agriculture and Development, Cornell University, and currently serves as Visiting Fellow at the Institute for African Development, Cornell University, USA. He is a member of the Board of the Agricultural Research Council of South Africa, also former Deputy Chairperson and acting Chairperson.

Christiaan F Swanepoel is Emeritus Professor and Research Fellow in the Department of African Languages at UNISA. He was Vice-Dean of Languages and Vice-Principal: Academic and Research, UNISA. He is six times recipient of the African Languages Association of Southern Africa Award. In 2012, he served on the ASSAf commentary team tasked to comment on the *Green Paper for Post-School Education and Training* issued by the DHET. He was elected reviewer for *US-China Foreign Language Journal* (2011) issued monthly by the David Publishing Company.

Hendrik Swart is a Senior Professor and currently the Head of the Department of Physics at UFS. He is the Head of the National Nano Surface Characterisation and Solid State Lighting Group at UFS.

Bohua Sun is Professor at the Cape Peninsula University of Technology, Director of the Centre for Research in Applied Technology. He is Chief Editor of *Advances in Materials and Mechanics Advances in Engineering Mechanics*, Associate Editor of the *Journal of Nanomaterials* and founding Chief Editor of the *Journal of Mechanics and MEMS*. He was selected as Top 10 Headline Figures of Overseas Chinese in 2010.

Nthoana Tau-Mzamane is Registrar at Walter Sisulu University. She was President and Chief Executive Officer of the Agricultural Research Council; Head of the Department of Agriculture, Land and Environment in Limpopo Province and Professor of Agriculture at UFH.

John Reginald Nuttall Taylor is Professor of Food Science at UP, specialising in Cereal Science and Technology. He is a past President of the International Association for Cereal Science and Technology and a Fellow of the International Academy of Food Science and Technology, and of the American Association of Cereal Chemists International.

Petro Terblanche is a Managing Director: Pelchem (Pty) Ltd. Prior to that she was the Group Executive of Research & Development at Necsa. She was the Executive Director of the Technology and Innovation Directorate at the MRC. She was previously Head of the Biochemtek Division at the CSIR.

Jennifer Ann Thomson is Emeritus Professor of Microbiology in the Department of Molecular and Cell Biology at UCT. She is co-founder of South African Women in Science and Engineering. She won the L'Oréal-UNESCO Award for Women in Science in 2004 and has an Honorary doctorate from the Sorbonne. She has published three books: *Genes for Africa*, *Seeds for the Future* and *Food for Africa*.

Keyan Gray Tomaselli is Director and Senior Professor at the Centre for Communication, Media and Society at UKZN. He is a Fellow of the university, and also a Fellow of the International Communication Institute. His research interests are critical indigenous methodologies, political economy, African cinema and visual anthropology. He was a founder member of the international Association for Cultural Studies and of the Academic and Non-Fiction Authors' Association of South Africa. He is Editor of the ISI-listed *Critical Arts: South-North Cultural and Media Studies* and founder and Co-editor of *Journal of African Cinemas*. He has served as President of the SA Communication Association and on the International Council of the International Association for Semiotic Studies.

Peter Doughtrey Tyson is a climatologist. He is Emeritus Professor and was former Head of the Department of Geography and Environmental Studies, Director of the Climatology Research Group, Dean of the Faculty of Science, Deputy Vice-Chancellor and Vice-Principal of Wits. He is a Fellow of the Royal Society of South Africa and was a founder Member of ASSAf. He has been awarded Honorary DSc degrees from Wits and UP. He undertook international scientific work in the environmental change programmes of the International Council for Science and was elected Vice-President of the International Council for Science from 2002 until 2005.

Leana Uys is Emeritus Professor at UKZN where she was previously the Deputy Vice-Chancellor and Head of the College of Health Sciences. She was appointed Head of the School of Nursing at UKZN in 1986. Her research focuses on health systems, mainly for psychiatric patients. She received the Nell J Watts Lifetime Achievement Award from Sigma Theta Tau International in November

2011 and was recognised in the South African Hall of Fame for Research Excellence in Nursing by FUNDISA in August 2011. She was elected a Fellow of UKZN in 2013.

Peter Vale is Professor of Humanities at UJ and Chair of the Academic Advisory Board of the Stellenbosch Institute for Advanced Study. He also chairs the ASSAf Standing Committee of the Humanities. In 2013, he delivered the 29th EH Carr Memorial Lecture at the University of Aberystwyth in Wales. Most recently with Estelle H Prinsloo, Vale edited Number 115 of the journal, *Thesis Eleven*, which is devoted to a consideration of South Africa after twenty years of democracy.

Annél van Aswegen is Director: Human Resources and a member of Council of UP. She is a Professor in the Department of Private Law. She was formerly Professor and Head of the Department of Private Law, Acting Registrar: Professional Services and a member of Council of UNISA.

Hennie van Coller is a Distinguished Professor and Head of the Department of Afrikaans and Dutch, German and French at UFS.

Andries Johannes van der Walt is Professor, Faculty of Law and South African Research Chair in Property Law, SU. He is Extraordinary Professor, Faculty of Law, UP and formerly, Professor, Faculty of Law, UNISA. He was instrumental in the development of the new field of constitutional property law. His book on this topic is the only one of its kind in South Africa. He is also active in property theory, especially on the transformation of South African property law. He is Fellow of the Royal Society of South Africa.

Jan Horn van Heerden is Professor and Head of the Department of Economics at UP.

Willem Francois Petrus van Heerden is currently Professor and Head of the Department of Oral Pathology and Oral Biology in the School of Dentistry at UP. He was elected as one of UP's 100 Leading Minds over the Past Century in 2008. He has served on the Council of the International Association of Oral Pathologists and served as President of this association in 2010 - 2012. He has received UP's Education Innovation Award on two occasions and received the university's Exceptional Academic Achiever Award for 12 years.

Paul David van Helden is Professor and Head of Molecular Biology and Human Genetics at SU. He is the Director of the MRC/SU Centre for Molecular and Cellular Biology, and Director of the DST-NRF Centre of Excellence for Biomedical Tuberculosis Research.

Albert van Jaarsveld is the Chief Executive Officer of the NRF. His distinguished career in research, teaching and leadership includes academic and management positions at SU and UP, and the position of Adjunct Professor: Environmental Studies Programme at Dartmouth College, United States.

Anton Albert van Niekerk is Professor and Chair of the Philosophy Department and Director of the Centre for Applied Ethics at SU. He is a former President of the Philosophical Society of Southern Africa, a former Editor of the *South African Journal of Philosophy* and a former member of the Council of SU. He is Chairperson of the Board of the Ethics Institute of South Africa, and a former member of the Board of directors of the International Association of Bioethics.

Frederik van Niekerk is Deputy Vice-Chancellor: Research, Innovation and Technology at NWU. His career in innovation management and leadership includes academic and management positions at NWU and senior management positions at Necsa, Denel Aviation and the Pebble-bed Modular Reactor.

Johannes van Staden is Professor Emeritus and Director of the Research Centre for Plant Growth and Development, School of Life Sciences, UKZN. He is Research Fellow at the University College of Wales; University of California, Davis; National Australian University; The Hebrew University of Jerusalem; Broom's Barn Experimental Station in the UK; the University of West-Hungary. He is the Editor-in-Chief, *South African Journal of Botany and Plant Growth Regulation*; Associate Editor, *Journal of Ethnopharmacology*, *Acta Physiologia Plantarum* and *Plant Cell, Tissue and Organ Culture*; and

an Editorial Board member of a number of other journals. In 2013, he achieved first position on the Thomson Reuters world list of highly cited researchers in the field of pharmacology and toxicology.

Brian van Wilgen is Chief Ecologist with the Natural Resources and Environment unit of the CSIR. He has an appointment as Extraordinary Professor in the Department of Botany and Zoology at SU where he is a core team member of the DST-NRF Centre of Excellence for Invasion Biology. He is Associate Editor of the *International Journal of Wildland Fire*, *Fire Ecology*, and of the *South African Journal of Science*.

Jacobus Daniel van Wyk is Visiting Professor (Research) in the Group on Electronic Energy Processing of the Department of Electrical and Electronic Engineering Science at UJ. He was Professor of Electrical and Electronic Engineering at the Rand Afrikaans University and UJ from 1971 to 2004 and founding Dean of Engineering. He was Professor of Electrical and Computer Engineering, Research Leader in the National Science Foundation Engineering Research Centre for Power Electronic Systems, as well as Research Professor at Virginia Polytechnic and State University, Blacksburg, USA, from 1999 to 2008.

Arnold Van Zyl is the Rector of the Technical University of Chemnitz in Germany; a member of the *Kuratorium* of the Fraunhofer Institute in Germany, a former Council member of ASSAf; a former member of the National Advisory Council on Innovation and a Visiting Professor at Tongji University in Shanghai, China.

Willem Heber (Emile) van Zyl is a Professor in Microbiology and Head of Microbiology Department at SU. He is DST/NRF Senior Chair of Energy Research: Bio-fuels. He is the recipient of several scientific honours and awards, the most recent including the Prestigious Senior Chair of Energy Research: Bio-fuels and Other Clean Alternative Fuels, awarded by SANERI and in 2011 he was a finalist for the SANE Energy Awards.

Johan van Zyl is the Group Chief Executive Officer of Sanlam Limited. He was Vice-Chancellor and Principal at UP and Professor of Agricultural Economics.

Daniel Verwoerd is Research Coordinator of the Faculty of Veterinary Science at UP. He was the founder of the Molecular Biology Section specialising in molecular studies on viruses of veterinary importance and Director of the Onderstepoort Veterinary Institute of Agricultural Research Council. Honours include a Gold Medal from the SA Veterinary Association, a Silver Medal from the SA Microbiological Society, an Honorary doctorate UP, the Havenga and MT Steyn Prizes from the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns*.

Zebulon Zenzele Vilakazi is Director of iThemba LABS and also serves as Group Executive for Research and Development at Necsa. He is an Extraordinary Professor at UP, Honorary Associate Professor at Wits and a member of the Board of Nuclear Industries Association of South Africa.

Sibusiso Vil-Nkomo is Professor and Executive Director: Institutional Advancement at UP where he was Dean of Commerce.

Daniel Visser is Deputy Vice-Chancellor: Research at UCT and a Professor of Law, specialising in the law of unjustified enrichment. He is a member of the World Academy of Arts and Science, a former Chair of the South African chapter of the International Academy of Comparative Law, and a former President of the Southern African Society of Legal Historians.

Renuka Vithal is a Deputy Vice-Chancellor at UKZN. Her role is to provide strategic leadership on teaching and learning, developing university teaching and learning policies and monitoring their consistent university-wide implementation; supporting the development of scholarship in university teaching and learning and leading curriculum transformation. A former Dean of Education at UKZN, she is also a Professor of Mathematics Education with a broad range of research and publications in the social, cultural and political dimensions of mathematics education.

Wilma Viviers is a Professor of International Trade and Leader of the Trade and Development research entity at NWU. Her research on export promotion has made a significant contribution to

developing a scientifically based decision support model for the identification of South African export opportunities. She has been appointed to several Editorial Boards and national and international committees. She has received a number of prizes, including five university teaching excellence awards, an International Trade Institute of Southern Africa's Fellowship for her contribution to enhance South Africa's teaching and research in international trade; the Women in Research Award of the South African Association of Women Graduates, as well as the DST's Distinguished Women in Science first runner-up award in the Social Science and Humanities category.

James Andrew (Jimmy) Volmink is Dean of Health Sciences and Professor of Community Health in the Faculty of Health Sciences at SU. He is also Director of the South African Cochrane Centre of the Medical Research Council.

Gerhard von Gruenewaldt is Research Advisor to Wits and a private consultant. He was a Professor of Geology at UP before his appointment as Vice-President of the Foundation for Research Development and later the NRF.

Hester (Esté) Vorster, previous Director of the Centre of Excellence for Nutrition at NWU, is a Research Professor in Nutrition at the university, and General Secretary of ASSAf.

Lyn Wadley is an Honorary Professor of Archaeology in the School of Geography, Archaeology and Environmental Studies at Wits. She is affiliated to the Institute for Human Evolution at the University. She lectured at the university from 1982 to 2004, and continues to supervise graduate students. She serves on a number of Editorial Boards and is the past President of the South African Archaeological Society and former Chair of the Association of Southern African Professional Archaeologists.

Yusuf Waghid is a full Professor of Philosophy of Education in the Department of Education Policy Studies and previously Dean of the Faculty of Education at SU. He is Editor-in-Chief of the *South African Journal of Higher Education*. In 2011 he received the prestigious NRF Special Recognition Award: Champion of Research Capacity Development at Higher Education Institutions in South Africa as recognition for his influence and significant contribution towards the transformation of the social science community in South Africa.

Anthony David Mortimer Walker is Emeritus Professor and Honorary Research Associate in Physics at UKZN. He is part-time Director of Special Projects in the Research Office and a Fellow of the university.

Melanie Walker is SARCHI Chair in Higher Education and Development and Director of the Centre for Higher Education and Capabilities Research at UFS. She was previously Professor of Higher Education at the University of Nottingham, UK. She has been the recipient of research grants from the Higher Education Academy, UK; the Economic and Social Research Council, UK; the European Commission; the British Council; Higher Education Funding Council, UK, as well as various other university research grants.

Brian Warner is Distinguished Emeritus Professor of Natural Philosophy and a Senior Scholar at UCT, and Visiting Professor at the University of Southampton. He has DSc degrees from London University and Oxford University and *honoris causa* from UCT. He has been the recipient of the John FW Herschel Medal of the Royal Society of South Africa, the Gill Medal of the Astronomical Society of South Africa and the ASSAf Science-for-Society Gold Medal. He is an Honorary Fellow of the Royal Astronomical Society, UCT, University College London, the Royal Astronomical Society of New Zealand and the Royal Society of South Africa. He was Chairman of the Board of the South African Museum and a member of the Board of the South African Library.

Herman Wasserman is Professor and Deputy Head of the School of Journalism and Media Studies, RU. He has taught at the Universities of Stellenbosch, Newcastle and Sheffield. He has held a Fulbright research Fellowship at Indiana University, and has twice been elected a Fellow of the Media Ethics Colloquia hosted by the University of Missouri. He edits the academic journal, *Ecquid Novi: African Journalism Studies*, and sits on the Editorial Boards of eight other international jour-

nals. Since 2013 he has been Head of the International Communication Section of the International Association for Media and Communication Research.

Vanessa Jane Watson is Professor in the School of Architecture, Planning and Geomatics at UCT, Deputy Dean of the faculty, and on the Executive of the African Centre for Cities at UCT.

Alan Weinberg is Emeritus Professor of English at UNISA and contracted to the Research Department of UNISA. He was formerly Professor, Department English Studies, UNISA. He received a Special Chancellor's Prize Award in 2011. He has served on the UNISA Press Senate Committee as Literary and Cultural representative, and is an expert consultant for UNISA Press. He is a Patron of Research Seminars at Wits.

Mark Charles Wentzel is Professor with the Water Research Group in the Department of Civil Engineering at UCT.

Patricia Ann Whitelock is an Astronomer with the South African Astronomical Observatory and Adjunct Professor at UCT. She is the former Director of SAAO and founding Chair of the National Astrophysics and Space Science Programme Steering Committee. She is on the Steering Committee for the International Astronomical Union's Office of Astronomy for Development, the Council for the Strasbourg Astronomical Data Centre, France, the Executive Committee for the International Virtual Observatory Alliance and the Board of the National Institute of Theoretical Physics. She is a Fellow of the Royal Society of South Africa, foreign associate of the Royal Astronomical Society (UK) and Honorary Member of the SA Institute of Physics.

Alan Whiteside is the founder and Executive Director of the Health Economics and HIV/AIDS Research Division at UKZN. He started and edited the newsletter, *AIDS Analysis Africa*. In 2003 he was appointed by Secretary-General Kofi Annan as one of the commissioners on the Commission for HIV/AIDS and Governance in Africa. Other academic appointments include Visiting Professor School of Medicine Liverpool University, Leverhulme Visiting Professor University of Southampton and Visiting Fellow University of East Anglia. He is an elected member of the governing Council of the International AIDS Society and a member of the Governing Council of Waterford Kamhlaba College.

Anna-Lise Williamson is Professor in the Division of Medical Virology in the Department of Clinical Laboratory Sciences at UCT. She is also a member of the Institute of Infectious Disease and Molecular Medicine at the university.

Carolyn Williamson is Professor and Head of the Division of Medical Virology at UCT. She is a member of the Institute of Infectious Disease and Molecular Medicine, UCT. Her work on HIV started in 1992 when she was employed at the South African Institute for Medical Research. She currently Heads the HIV Diversity and Pathogenesis Group in the Institute of Infectious Diseases and Molecular Medicine, and is a member of numerous national and international research consortia. Her research focus is on HIV evolution and pathogenesis; and how to use this information towards the development of improved microbicides and vaccines.

Francis Wilson is Emeritus Professor in Economics at UCT. He is the Director of the Data First Resource Unit in the Centre for Social Science Research.

Brenda Wingfield is Deputy Dean in the Faculty of Natural and Agricultural Sciences and Professor of Genetics at UP. She is also the former Chairperson of the National Science and Technology Forum.

Michael Wingfield is Professor and Director of the Forestry and Agricultural Biotechnology Institute at UP. He is Director of the Centre of Excellence in Tree Health Biotechnology and Tree Protection Co-operative Programme. He serves/has served in many positions and has received numerous awards and honours. He has been elected as a Fellow of scientific societies including the Royal Society of South Africa, the Southern African Society for Plant Pathology and the American Phytopathological Society. He received an Honorary doctorate from the University of British Columbia, Canada in 2012 and the Kwame Nkrumah Scientific Award from the African Union in 2013.

Marié Philliphina Wissing is Professor in Psychology and Researcher in the African Unit for Transdisciplinary Health Research at NWU.

David Randle Woods was Vice-Chancellor of RU and Deputy Vice-Chancellor: Research at UCT. He is a Fellow of the American Academy of Microbiology and a life Fellow of UCT.

Laurence Stuart Wright is Senior Research Associate, NWU and formerly HA Molteno Professor of English and Director, Institute for the Study of English in Africa at RU. He is Emeritus Professor, RU and Honorary life President of the Shakespeare Society of Southern Africa. He has been awarded the English Academy's Gold Medal for services to English and the Vice-Chancellor's Distinguished Senior Research Medal.

Xiaohua Xia is a Professor in the Electrical, Electronic and Computer Engineering Department, UP, Director of the Centre of New Energy Systems, and the Director of the National Hub for the Post-graduate Programme in Energy Efficiency and Demand-side Management, South Africa.

Hong-Kun Xu is Chair Professor and Head of the Department of Applied Mathematics at the National Sun Yat-sen University in Kaohsiung, Taiwan. He was Senior Professor at UKZN.

Heather Zar is Professor and Head of the Department of Paediatrics and Child Health, Director of the School of Child and Adolescent Health and Director of the Division of Paediatric Pulmonology at UCT, Red Cross War Memorial Children's Hospital, Cape Town. She is President of the South African Thoracic Society and of the Pan African Thoracic Society.

Alphose Zingoni is Professor of Structural Engineering and Head of the Department of Civil Engineering at the UCT. He is a Fellow of the Institution of Structural Engineers (London) and of the South African Academy of Engineering.

Foreign Associates

Sydney Brenner is a two-time recipient of the Canada Gairdner International Award and the 2002 Nobel Prize Laureate in Physiology or Medicine. He has been widely recognised as one of the key contributors to the understanding of modern molecular biology, programmed cell death (apoptosis), and the role of genes in organ development. He has been instrumental not only in shaping the understanding of modern molecular genetics and cell biology but his research using *C. elegans* has been fundamental to its adoption as a model organism worldwide. He was proleptic Director of the MRC Laboratory where he later set up a Unit of Molecular Genetics based in the Department of Medicine. He founded The Molecular Sciences Institute in California, USA. He retired from the Institute in 2000 and in 2001 was appointed a Distinguished Professor in the Salk Institute for Biological Studies.

Mohamed Hassan is the past President of the African Academy of Sciences and the Network of African Academies of Science and current Co-chair of the Global Network of Science Academies. He was a Professor and Dean in the School of Mathematical Sciences, Khartoum University, Sudan and he served the Executive Director of TWAS. Since 2010, he has served as the Co-chair of the Global Network of Science Academies. He is a Fellow of TWAS, the African Academy of Sciences and the Islamic World Academy of Sciences. He championed the founding of the AAS and NASAC and in particular, he assisted ASSAf in its infancy phase by ensuring that it reaped the benefits from capacity building grants, which saw ASSAf playing a crucial role in issues such as water, science education, biosecurity and scientific writing in Africa.



ANNEXURE B

SAYAS Member Biographies

Mpfariseni Budeli completed a PhD in Commercial Law at UCT. She is a Professor in the Department of Mercantile Law at UNISA. She is also a Visiting Professor for Labour Law at the University of Lusaka, Zambia and the University of Dar Es Salaam, Tanzania.

Shadreck Chirikure obtained a PhD from the Institute of Archaeology, University College, London. He is Senior Lecturer in the Department of Archaeology at UCT.

Yahya Choonara completed a PhD at Wits in 2009. He is Associate Professor in the Department of Pharmacy and Pharmacology, Research Manager of the Wits Advanced Drug Delivery Platform and Director for Drug Delivery Research of the Wits/MRC Hub of the National Medical Devices Innovation Platform. He is a TWAS Young Affiliate and a winner of a SA BHP-Billiton National Science and Technology Forum Award.

Mokhotjwa (Simon) Dhlamini is an Associate Professor in the Department of Physics at UNISA. He obtained his PhD from UFS. His current research focuses on the synthesis and characterisation of nanophosphors. He is currently a Visiting Professor at the National Centre for Nanostructured Materials (NCNSM) of the CSIR.

Anél du Plessis is Professor of Law at the Faculty of Law, NWU. She has lectured and published in the fields of human rights, constitutional law, local government law and environmental law and sustainability governance since 2005 and is heading a research project entitled, Local Government and Environmental Rights.

Andrea Fuller is an Associate Professor in the School of Physiology and Director of the Brain Function Research Group at Wits. The main focus of her current research is the physiological capacity of large terrestrial mammals to cope with predicted effects of climate change.

Marieka Gryzenhout is Senior Lecturer at UFS. Her research entails detailed taxonomic studies of the *Cryphonectriaceae*, a family she described. Within this family, an additional eight new genera were described besides *Cryphonectria* and *Endothia*. These various fungi represent some of the most important fungal pathogens of forest trees in the world, including South Africa.

Louis Kotzé is Professor of Law at NWU where he directs the postgraduate LLM Programme in Environmental Law and Governance. He is the author, co-author, and co-editor of various publications on themes related to South African, regional and international environmental law.

Genevieve Langdon is an Associate Professor in the Department of Mechanical Engineering at UCT and is a member of the Blast Impact and Survivability Research Unit. She obtained her PhD in Mechanical Engineering from the University of Liverpool in 2003.

Christine Lochner is Co-director of the MRC Unit on Anxiety and Stress Disorders at the Department of Psychiatry at SU. She is a qualified and practising clinical psychologist, with clinical, genetics and brain imaging research on anxiety disorders, particularly obsessive-compulsive spectrum disorders a priority.

Regina Maphanga is an Associate Professor at the Materials Modelling Centre, University of Limpopo and a Junior Associate at the Abdus Salam International Centre for Theoretical Physics in Italy. She completed her PhD in Physics in 2005. Her research focuses on computational modelling of cathode materials for lithium-ion batteries for use in energy storage devices.

Lyndy McGaw is a Senior Lecturer at UP and is Deputy Leader of the Phytomedicine Programme. She obtained her PhD in 2002 from the former University of Natal and completed postdoctoral

Fellowships at UP, King's College London and the University of Adelaide. Her research focuses on biological activity and toxicity of plant extracts and compounds.

Andrew McKechnie is a Professor in the Department of Zoology and Entomology, UP, and is a core team member of the DST/NRF Centre of Excellence at the Percy FitzPatrick Institute. He obtained his PhD in 2002 from the former University of Natal, before completing a postdoctoral Fellowship at the University of New Mexico.

Penny Moore is a Senior Scientist at the AIDS Research Unit, National Institute for Communicable Diseases of the National Health Laboratory Services. She holds a joint appointment as Senior Researcher in the School of Pathology, Wits. She obtained her PhD in 2003 from the University of London working on the hepatitis B virus.

Patience Mthunzi holds a PhD in Physics (Biophotonics – Optical Tweezers Area) from the University of St Andrews, Scotland. She started employment with the National Laser Centre at the CSIR in the Biophotonics Group in October 2004.

Voster Muchenje holds a PhD (Animal Science). He is a Professor of Animal Science and Head of the Department of Livestock and Pasture Science, UFH. He is also the Co-chair of the NRF SARCHI Chair in Meat Science. He is a recipient of the South African Society for Animal Science President's Award.

Jeff Murugan studied for a PhD jointly at Oxford University as a Lindbury Fellow and UCT before embarking on postdoctoral work at Brown University in the USA. He is currently Senior Lecturer in the Department of Mathematics & Applied Mathematics and Deputy Director of the Astrophysics, Cosmology & Gravity Centre and Head of the Laboratory for Quantum Gravity & Strings at UCT. His research expertise is in the area of string theory, quantum gravity and emergent phenomena.

Bronwyn Myers is an Associate Professor and a Specialist Scientist in the Alcohol and Drug Abuse Research Unit of the MRC, where she heads up the Substance Abuse Treatment and Interventions Research sub-stream. This unit is a leading research unit for addictions in Africa.

Fulufhelo Nelwamondo is currently a Principal Researcher and Manager for Information Security Area of Competence, which resides within the Modelling and Digital Science unit of the CSIR. He holds a PhD in Electrical Engineering from Wits. He is a Visiting Professor of Electrical Engineering at UJ.

Mathieu Rouget is a Professor at UKZN and holder of the SARCHI Chair in Land Use Planning and Management. His research focuses on the interface between biodiversity conservation and human activities on issues such as alien plant invasions, climate change, effective conservation planning and implementation, and ecosystem services.

Alta Schutte is Professor of Physiology and the Director of the Hypertension in Africa Research Team, at NWU. Her research focus is the identification of early markers for the development of hypertension, and ultimately the prevention of cardiovascular disease in the black South African population. She obtained her PhD in 2002.

Jerome Amir Singh is Head of Ethics and Law at the Centre for the AIDS Programme of Research in South Africa, UKZN. He is also Adjunct Professor at Dalla Lana School of Public Health and Joint Centre for Bioethics at the University of Toronto, Canada. His focus areas include global health governance, research ethics, human rights, and international humanitarian law.

Bernard Slippers is a Professor in Genetics at UP. He is a Research Leader of the Tree Protection Co-operative Programme and DST-NRF Centre of Excellence in Tree Health Biotechnology at the Forestry and Agricultural Biotechnology Institute (FABI).

Erick Strauss is a Professor in the Department of Biochemistry at SU. He holds a PhD from Cornell University, which he obtained in 2003. Strauss is a leading scientist on the biosynthesis and enzymol-

ogy of the essential metabolic cofactor, coenzyme A. Currently his research interests focuses on targeting pathways dependent on this cofactor for antimicrobial drug design.

Aldo Stroebel is Executive Director International Relations and Cooperation at the NRF and Affiliated Associate Professor at the Centre for Sustainable Agriculture, UFS focusing on smallholder livestock systems in sub-Saharan Africa. He qualified with BSc and Honours degrees from UP, and a Masters from the University of Ghent, Belgium before researching for his PhD at UFS and Cornell University, USA.

De Wet Swanepoel is an Associate Professor and Clinical Research Audiologist at the Department of Communication Pathology, UP. He is also an Adjunct Professor at the University of Western Australia and Senior Fellow at the Ear Science Institute Australia. His research and clinical interests span the field of early identification and diagnosis of hearing loss, objective measures of auditory functioning, and ear and hearing telehealth.

John Terblanche is an Associate Professor in the Department of Conservation Ecology and Entomology at SU. His research is in interdisciplinary biology including global climate change and physiological responses to environmental changes.

Marietjie Venter obtained a PhD (Medical Virology) from Wits in 2003. From 2005-2012 she established a research programme at UP on respiratory and vector-borne zoonotic viruses. Since 2009, she has held a joint appointment as Associate Professor, Zoonosis Research Unit, Medical Virology, UP and Co-director of the Centre for Respiratory Diseases and Meningitis, NICD.

Amanda Weltman holds a PhD in Physics from Columbia University in New York. She has specialised in the fields of cosmology, string theory and theoretical physics and is well known for proposing the Chameleon particle that may explain the accelerated expansion of the universe. She is a Senior Lecturer in the Department of Mathematics and Applied Mathematics at UCT and has worked as a postdoctoral researcher at the Centre for Theoretical Cosmology in Cambridge.

Caradee Wright is a Senior Researcher in the Climate Studies, Modelling and Environmental Health Research Group at the CSIR. She specialises in public health with a particular emphasis on environmental health research. She obtained a PhD at the University of Otago in New Zealand, where she measured schoolchildren's personal solar UV radiation exposure for skin cancer prevention.



SOUTH AFRICAN
ACADEMY OF ENGINEERING

ANNEXURE C

SAAE Member Biographies

Christiaan Adrich has been Professor in the Department of Process Engineering at SU since 1999 and is the founding Director of the Anglo Platinum Centre for Process Monitoring at the university. He received the President's Award of the Foundation of Research and Development in South Africa for international recognition of research in 1995, is listed on the 2000 Outstanding Scientists of the 21st Century and 2000 Outstanding Intellectuals of the 21st Century.

Mark Alexander is Professor in the Department of Civil Engineering at UCT and Director of the Concrete Materials and Structural Integrity Research Unit at UCT. He is a specialist consultant to industry and the profession on concrete materials issues and on the application of research to industry.

Nazir Alli is CEO of the South African National Roads Agency Ltd since 1998. As Chief Director: Roads in the Department of Transport, he led the team that established the South African National Roads Agency – a commercially managed agency and was the convenor of the Infrastructure Group for the White Paper on National Transport Policy in 1996.

Salim Amod is the founder and Managing Director of Development & Engineering Consultants (Pty) Ltd. He is a Council member of ECSA and the SA Council for the Project and Construction Management Professions since 2005, and was instrumental in the establishment of the Construction Industry Development Board.

Francois Anderson is Chief Radar and EW System Engineer at CSIR and Fellow at CSIR Defence Peace Safety and Security unit (DPSS). He received the CSIR Outstanding Achiever Award for Defence Technology Policy and Strategy Planning and for providing leadership in the implementation of these in 1998, CSIR Excellence Award for Career Achievement in 2006, and CSIR DPSS Excellence Awards in 2008, 2009 and 2011.

Hans Auret is retired Managing Director of Claassen Auret Inc Consulting Engineers. He has 42 years experience as a consulting engineer and 30 years experience of leading-edge electrical and electronic technology for high-IT, communication and broadcast industries and renewable and alternative energy.

Ricardo Badiali is a mechanical consulting engineer and owner and Director of RB Engineering. He is a specialist in the piping and pressure vessel industry and as pipeline design engineer has been involved in many national and international projects that received awards. His most significant contribution to engineering and the economic wellbeing of South Africa is his design capability of piping and pressure vessels for the nuclear industry.

Yunus Ballim is Professor in the School of Civil & Environmental Engineering at Wits. He was Head of the school from 2001 to 2005. He specialises in cement and concrete materials and received the PCI Research Fellowship 1989-1991 and the Bram Fischer-Oxford University Fellowship Award in 2000. He is a member of the Concrete Society of Southern Africa and a full member of RILEM (France).

Trevor Balzer is Chief Operations Officer in the Department of Water Affairs and Forestry. He was appointed Special Adviser to the Minister of Water Affairs and Forestry in July 2007 and Programme Manager: Special Programmes in the Department of Water Affairs in July 2009. Since July 2010, he serves as Chief Operations Officer for the Department of Water Affairs and Forestry with responsibility for the Regional Bulk Infrastructure Programme and the National Macro Organisation of the State.

Robert Barbour retired as Executive Chairman of Mozal, a company responsible for building a new \$1,3bn aluminium smelter in Mocambique. He was Chairman and Managing Director of Alusaf

Limited from 1982 to 1998 with executive responsibility for one of the largest aluminium production complexes in the world in Richards Bay, South Africa. As Project Director he promoted and built the Hillside smelter which is currently the world's most modern reference smelter.

Nic Barcza retired as General Manager: Market Development and Project Evaluation, Oriel Resources Plc and consultant to Mintek. He specialises in ferro alloy technology development and has received two gold medals from Mintek for outstanding achievements in technology transfer for his work in the area of ferro alloys

Danie Barnard retired as Chief Engineer Infrastructure, Spoornet. He received the Spoornet Infinity Award for Road Rail Vehicle Maintenance Project and Productivity Improvements and the RSA Productivity Award (Silver) in 1989.

James Barnard is Global Practice and Technology Leader with Black & Veatch in Kansas City, USA. He specialises in biological processes for waste water recovery and developed the Bardenpho and Phoredox Processes for the removal of nitrogen and phosphorus from effluents. He received a gold medal from the *SA Akademie vir Wetenskap en Kuns* in 1989, the Camp Award from the Water Environment Federation and was the first recipient of the Koch/Imhoff Award of the International Water Association.

Willem Barnard is currently Executive Chairman of VASTech (Pty) Ltd and Extraordinary Professor of the SU. Formerly he was CEO of KWV Ltd and Chairman of the Board of KWV International.

Thinus Basson is Global Senior Advisor Infrastructure at Hatch. He retired as Executive Director of BKS (Pty) Ltd and specialises in water resource management and development planning. He advises regularly on senior governmental and management levels on technical, policy and strategy issues and has been involved in studies of several international rivers

Coen Bester is Founder CEO of BrainWorks Management (Pty) Ltd, a company that provides strategic management services to fast-growing, high-tech companies. He was part of the founding team of the Innovation Hub, founder of the Innovation Hub Incubator and co-founder of the IT Coachlab, established the BrainWorks Technology Incubator and founded the BrainWorks Virtual Incubator that provides business mentoring to a portfolio of businesses.

Ed Bojé is Professor in the Department of Electrical Engineering at UCT. He was AECI Professor of Control, Electrical Engineering at the University of Natal and has been involved in the management of engineering both at discipline and at faculty level for around 20 years, including being Deputy Dean of Engineering at UKZN from 2009 to 2011.

Tony Boniface is Director of Arcus Gibb. He specialises in rock mechanics and tunnelling and has been involved in the construction of the 83-km long Orange-Fish Tunnel, the 45-km transfer tunnel for the Lesotho Highlands Project, the Braamhoek Pumped Storage Scheme as well as several international projects. He is a member of Gauteng province's support team managing the development of the Gautrain Rapid Rail Project where his involvement includes providing specialist input on tunnelling and associated underground works

Johan Bosman retired as Director of Kwezi V3 Engineers. Previously he was Chief Director of Transportation Systems in the Planning Directorate of the National Department of Transport where his career covered a broad spectrum of transportation aspects. Since leaving the Department, he worked as independent transportation consultant as well as a part-time Professor in Transportation Engineering in the Department of Civil and Urban Engineering of the Engineering Faculty of UJ.

Dawie Botha retired as Executive Director of the South African Institution of Civil Engineering (SAICE). Currently he is a part-time lecturer at the Peninsula University of Technology and serves as the author of the UNESCO-DST Engineering Initiative.

Liesbeth Botha has been Executive Director of Materials Science and Manufacturing at the Council for Scientific and Industrial Research since 2008. Previously she was Executive Director of Innovation and Commercialisation at SU. She received recognition from the Innovation Fund for the

contribution at SU by the university receiving the award for Most Technologically Innovative Higher Education Institute in South Africa 2005.

Pieter Bredell has been an independent Nuclear Consultant since 2009. He was attached to Necsa from 1970 until 2009 where he was Senior Manager in the Nuclear Fuel Cycle Department. He launched Necsa's Nuclear Liabilities Management Division and implemented a techno-economic system for the management of Necsa's nuclear liabilities (including de-commissioning and waste management) and Necsa's Nuclear Fuel Cycle Department and re-established a system for techno-economic assessment of the options for introducing the nuclear fuel cycle in SA.

David Brink is Chairman of Murray & Roberts Holdings Limited and Unitrans Limited, Deputy Chairman of the ABSA Group Limited and ABSA Bank Limited and Director of Sanlam Limited, Sappi Limited, BHP Billiton Plc and BHP Billiton Limited. He was IMM Marketing Person of the Year in 1992, awarded Wits Business School Business Excellence Award in 1994, Engineer of the Year in 1995 and Harvard Business School Statesman of the Year in 1996.

Andries Burger is Professor and Departmental Chairman, Process Engineering at SU. He specialises in effluent treatment and over a period of 20 years in industry he was involved in the design and construction of plants for desalination, demineralisation and disinfection of effluent. Since his appointment at SU in 2004, he was instrumental in the establishment of the Separation Technology Research Group that focuses on super-critical extraction and distillation.

Colin Carter is retired Director of Ninham Shand Consulting Engineers. He was a member of the consulting consortium for the building of the Gariep and Vanderkloof Dams and Chairman of the Lesotho Highlands Consultants for Katse Dam and the Transfer Tunnel.

Malose Chaba is the Chief Operating Officer: Aggregates and Readymix of AfriSam. He joined the company in September 2011. Previously he worked for Murray & Roberts between 2004 and 2011. He joined the group in 2004 as Managing Director and in 2009 he was appointed Executive Director of Murray & Roberts Holdings and Group Assurance.

Peter Clogg retired as CEO of Group Five. He has more than 40 years experience in the civil engineering construction industry. He was President of the Federation of Civil Engineering Contractors and a member of the Civil Engineering Advisory Council and the National Housing Forum Business Caucus.

Vernon Collis is a professional structural engineer and an architect and has been Director of a multidisciplinary consultancy Vernon Collis & Associates since 1992. His most significant contribution lies in the application of intermediate and appropriate technologies in the African context, and researching how these technologies can be applied for developing countries to reduce demand on natural resources. He jointly received the Holcim Award for sustainability (Africa/Middle East) in 2005 and the Cape Institute of Architecture Award for Architecture in 2007.

Pieter Cox retired as Chief Executive and Deputy Chairman, Sasol Limited. He received the Frans du Toit Medal for Business Leadership from the *SA Akademie vir Wetenskap en Kuns* in 2001, the Wits Business School Management Excellence Award in 2002, the MS Louw Award from the *Afrikaanse Handelsinstituut* in 2002, the Brigadier Stokes Award from the SA Institute of Mining and Metallurgy in 2003 and the UNISA School of Business Leadership Award for Leadership in Practice in 2003.

Ian Craig has been Professor and Group Head of the Department of Electrical, Electronic and Computer Engineering at UP since 1995. He is a Council member of the International Federation of Automatic Control and past President of the South African Council for Automation and Computation. He has received Mintek's Silver Medal for Application of Process Control to Milling.

Frank Crowley retired as Managing Director of Grinaker-LTA Ltd. He has more than 40 years experience in the civil engineering construction industry and was the first recipient of the Basil Read

Gold Medal awarded by the construction division of SAICE for outstanding achievement in the construction of Upington Airport.

John Cruise is a Consulting Mining Engineer. He was consulting engineer for the introduction of the implosion method of demolition in South Africa, pioneered the current method and techniques for stabilising undermined ground so that it could have future use, responsible for the development and application of the SLUGSHOT orepass hang-up clearance device in mines and was intimately involved in the introduction of a new mining method to South Africa, namely the development of a large dredging operation to mine the mineral sand dunes of Richards Bay.

Jan de Beer retired as CEO of Eskom Enterprises. Since 2003 he has been working as international consultant in power generation and distribution. He is non-executive Director of and Advisor to multi-national companies and is currently mainly working on the Mmamabula Coal Fired Power Station Project in Botswana as Technical Advisor to CIC Energy Corporation.

Bram de Klerk is Group Executive of Sasol Limited. He became member of the GEC and Group General Manager of Sasol Limited in 2003 with responsibility for Sasol Technology and since 2006 for Sasol Synfuels, Operations Excellence, New Energy, Project Mafutha and Safety, Health and Environment.

Antonie de Klerk is Executive Director and Professor of the UP. Formerly he established the Department of Engineering and Technology Management at the university and was appointed as first Head. He also served as the Director of the Graduate School of Management at the UP from 2000 to 2004.

Giel de Lange is Managing Director at IST Nuclear Power Systems. He received honours on behalf of IST Industrial as winner of Technology Top 100 Award (Category Construction & Infrastructure) in 1998 and 1999 and the Ministerial Award for Excellence in Technology.

Louis de Waal is a consultant to HHO Africa. Formerly he was partner, Director and Chairman of HHO and he is Chairman of the Table Mountain Aerial Cableway Company

Marius de Waal is retired Chairman of IDC, Iscor, Transnet and Siemens. He was awarded the MS Louw Trophy of the *Afrikaanse Handelsintituut*, the State President's Decoration for Meritorious Service (Gold), the Frans du Toit Medal for Business Leadership and Honorary doctorates by NWU, UL, UP and SU.

Pieter de Waal retired as Manager Technology of Billiton Aluminium Ltd. He was Manager Technology in the London office of Billiton Aluminium Ltd after the unbundling of Genkor, and the controlling shareholder of ALUSAF, and the creation of Billiton Plc. After his retirement he joined Blue Cube Systems (Pty) Ltd as Executive Director.

Tania Douglas is Professor of Biomedical Engineering at the UCT, Deputy Dean for Research in the Faculty of Health Sciences of the university and Director of the MRC/UCT Medical Imaging Research Unit. She is a leading scholar in the field of medical imaging aiming to address major public health problems in South Africa through research that focuses on the development of innovative instruments and techniques for diagnosis.

Simphiwe Duma is the CEO of the Technology Innovation Agency. Previously he was Chief Executive and Chief Engineer at Psidot Technology Holdings (Pty) Ltd. He was Lead Engineer for the electrical back-up systems for the 2010 World Cup Host Cities for DME, Project Manager for electrification audits for the INEBP Unit at the Department of Minerals And Energy, Project Leader for New Process Design for the Industrial Participation Programme within the Department of Trade and Industry, among others.

Johann du Plessis is retired Managing Director of BKS (Pty) Ltd. He became Director of BKS in 1982 and Managing Director in 1993.

Willem du Preez retired as Programme Manager: Fuel Manufacturing Industrialisation at PBMR (Pty) Ltd. He is a past Director of the BKS Group and founder shareholder, Executive Director and Chairman of Integrators of System Technology.

Madeleine du Toit is Professor in the Department of Materials Science and Metallurgical Engineering at UP. She is a registered international welding engineer with the International Institute of Welding, member of the American Welding Society and member of the Forensic Engineering Association of South Africa and an active consultant in the SA metallurgical, manufacturing and aircraft industries.

George Ekama is Professor of Water Quality Engineering in the Department of Civil Engineering at UCT. He is a member of the International Association for Water Quality, Fellow of the Royal Society of South Africa, Senior Fellow of the Water Institute of Southern Africa and member of the Water Environment Federation of the USA.

Con Fauconnier is retired Chief Executive Officer of Exxaro Resources Ltd. Currently he is Honorary Professor in the Faculty of Engineering, Built Environment and Information Technology of UP and a Fellow of the Gordon Institute of Business Science. He received the Brigadier Stokes Memorial Award from SAIMM for a lifetime of outstanding service to the mining industry, was awarded an Honorary Fellowship in the Geological Society of South Africa and received an Honorary doctorate in Natural and Agricultural Science from the UFS.

Brian Figaji retired as the Vice-Chancellor of the Peninsula Technikon at the end of 2004 and thereafter as South Africa's representative on the Executive Board at UNESCO. He is a Director of companies and serves on a variety of education-related trusts and NGOs. He was appointed to the National Commission on Higher Education in 1995 and played a key role in shaping the new higher education system in South Africa.

Jack Fletcher is Professor of Chemical Engineering at UCT. He transformed the UCT CatCentre from a typical university-based academic grouping into a national capability for heterogeneous catalysis research and development.

Robert Fröhling is Principal Engineer, Mechanical Technology at Transnet Freight Rail. He is an internationally recognised expert in rail vehicle system dynamics, vehicle/track interaction and wheel/rail interaction and took technical and design responsibility for the international MTAB Iron Ore Wagon Project. He received the Spoornet Chairman's Award in 2000 in the category Team Specialist for the development of the Measuring Pantograph System.

Musa Furumele is Chief Executive of Gandlati Strategic Equity (Pty) Ltd. He was Director and Managing Director of Semanya Furumele Consulting from 1996 to 2008. He is a member of the Professional Advisory Committee on Civil Engineering. He joined other black pioneers in 1995 and founded a firm in an arena historically uncharted by the previously disenfranchised and he has since played a leading role in nurturing the firm and has mentored several professionals, some of whom moved on to occupy strategic positions in other organisations.

Ferdie Geyer is retired Chairman of G H Marais & Partners. He served the company for 35 years as partner, Director, Managing Director and Executive Chairman. He was a Council member of SAACE for 14 years and President in 1983.

David Glasser joined UNISA's College of Science, Engineering and Technology in March 2013 after retiring as Professor of Chemical Engineering and Director of the Centre of Material and Process Synthesis, School of Chemical and Metallurgical Engineering at Wits. He was Dean of Engineering at Wits, member of the Council of the University and is currently an Honorary Professor at Wits. He received international recognition for the attainable region method of reactor synthesis and was awarded the Inaugural Harry Oppenheimer Memorial Award (Gold Medal and Fellowship) by SAICE in 2002 and the Science-for-Society Gold Medal of the Academy of Science of South Africa.

Trueman Goba is Chairman of Hatch Goba (Pty) Ltd and Director of Jones and Wagener (Pty) Ltd. He participates actively in the affairs of the engineering profession and was appointed by the

Minister of Public Works for a four-year term as member of the new Engineering Council of South Africa in 2001. He is the Vice-President of SAAE and serves on the National Planning Commission.

John Gregg retired as Chairman of Gibb Africa. He served as member of the Environmental Task Committee of the International Association of Consulting Engineers and is a past Chairman of the Conference on Asphalt Pavements for Southern Africa.

Sybrand Grobbelaar retired as CEO of Grintek Limited. He joined the Group in 1976 and became CEO in 1988. He is a founder member of the Electronics Industry Federation and the Aerospace Maritime and Defence Association. He received a Laureate Award from the Alumni Association of UP in 1997.

Louis Grobler is Dean of the Faculty of Engineering at NWU. He developed the Power Alert which uses national SABC TV to manage Eskom's national load. In 2007, this project was chosen as the Best International Energy Project of the year by the Association of Energy Engineers in Atlanta, USA and it also received the Roger Garlick Award for the most innovative use of TV for stunts and special effects.

Sue Harrison holds the South African DST/NRF Research Chair in Bioprocess Engineering and is the Director of CeBER, the Centre for Bioprocess Engineering Research and Deputy Dean of the Faculty of Engineering and the Built Environment at UCT. She is a founder member of Cape Biotech Initiative which provided a foundation from which to form the DST-funded biotechnology regional innovation centre, the Cape Biotech Trust. She is also a Board member of the Technology Innovation Agency.

Ralph Havenstein is Chief Executive Officer for Norilsk Nickel International and serves as a non-executive Director at various companies. Previously he was Chief Executive Officer of Anglo American Platinum Corporation Ltd and between 1991 and 2003 he was Manager, New Ventures at Sasol, General Manager Sasolchem, Managing Director of chemical activities at Sasol and in 1998 he was appointed to the Sasol Limited Board as Executive Director.

John Havinga retired as Managing Director of the Mining Products Division of Grinaker-LTA Limited. He was instrumental in the establishment of concrete sleeper factories in Australia, Brazil, Sri Lanka and Argentina and received the Concrete Society of SA's Concrete Man of the Year Award in 1996.

Stephan Heyns is Professor in the Department of Mechanical and Aeronautical Engineering at UP. He currently heads a very well-established research group at the university and since January 2012 also became Director of the newly established Eskom Specialist Centre in Plant Asset Management at UP.

Diane Hildebrandt joined UNISA's College of Science, Engineering and Technology in March 2013. Previously she was Director of the Centre of Material and Process Engineering of the School of Chemical and Metallurgical Engineering at UCT. She received the President's Award of the Foundation for Research and Development, the Distinguished Researcher Award of Wits and the Meiring Naudé Medal of the Royal Society of South Africa in 1997.

Emile Horak is a founding partner of a specialist consultancy firm, KUBU Consultancy (Pty) Ltd and Emile Horak and Associates (Pty) Ltd. Previously he was Head of the Department of Civil Engineering at UP, Executive Director of Engineering of the Technikon SA, Director of Murray & Roberts Roads and Earthworks and Director of Tolcon.

Stefan Hrabar is Director of ATS Mirlem (Pty) Limited. Previously he was Director of Murray & Roberts Engineering Solutions Limited. He was responsible for the design, procurement and construction of South Africa's first offshore gas platform in Mossel Bay, the design and implementation of an Offshore Fabrication Facility in Saldanha Bay and the development of a Section 21 Company for offshore oil & gas of which he is the Chairman.

Fred Hugo retired as Director of the Institute of Transport Technology, Department of Civil Engineering, SU. He is a leading authority on the effects of accelerated pavement testing and has more than forty years experience in the civil engineering industry. He is a specialist in pavement engineering and works internationally in that field.

Dave Hulbert retired as Manager of Hydrometallurgy at Mintek in 2011 and was re-appointed as Specialist Consultant, Hydrometallurgy at Mintek. He was awarded two Mintek Gold Medals and received the National Productivity Award in 1998. He holds several patents, including one for flotation control technology that has been implemented commercially on many plants in about seven countries.

Sunny Iyuke is Professor and Head of the School of Chemical & Metallurgical Engineering at Wits. He shared a Gold Medal on Rysoil-high performance synthetic lubricants from palm oil and received a Silver Medal on carbon nanotube and carbon nanofibresynthesis by FC-CVD at the Ehren-urkunde (2004), *Internationale Ausstellung (Ideen-Erfindungen)* in Nurnberg in 2004.

David Jacobson is an international consultant. He retired from Allied Electronics Corporation Limited as Group Executive Director for Science & Technology. Previously he was Professor in the Field of Mathematics in the Department of Computational and Applied Mathematics at Wits and Director, Vice-President and Deputy President of the Council for Scientific and Industrial Research from 1975 to 1985.

Abbas Jamie is Director at Optimus Investments, Director at West Coast Power Solutions and Exco member at ASAP Projects. He contributed to black empowerment in the civil engineering industry in South Africa through SABTACO, the restructuring and repositioning of Arcus Gibb as a major empowerment company, and the growing of Arcus Engineering Consultants into one of the biggest black-owned civil engineering consultants in South Africa. He contributed to transformation in the civil engineering industry in South Africa through chairing the transformation committee of SAACE.

Herman Joubert is Managing Director Tech IQ Consulting Engineers. Projects include the Gautrain Rapid Rail Link between Pretoria, Johannesburg and the Johannesburg International Airport, feeder roads at Katse Dam in Lesotho, Tambo Springs Freight Logistics Hub and transportation planning and traffic engineering of major development nodes.

Johan Joubert is Professor in the Department of Electrical, Electronic and Computer Engineering at UP. His specialist field is electromagnetism, and the design and analysis of microwave antennas and components. He received an outstanding Academic Achiever Award from UP in 1999 and 2002 and a Mellon Foundation Award.

Elsabe Kearsley is Head of the Department of Civil Engineering at UP. She established the concrete materials research laboratory at the University of Pretoria. She is a member of an ECSA panel that evaluates foreign civil engineering qualifications, Chairperson of SAICE Editorial Panel and member of the Advisory Panel for CSIR Built Environment and was a member of the NSTF Adjudication Panel for the Scientist of the Year Awards (2004-2008).

Hansie Knoetze is Deputy Dean (Teaching) in the Faculty of Engineering at SU. He started his career with Kentron-South and made an important contribution to the development of local capabilities in the internal ballistic design of solid rocket motors and the performance prediction of solid rocket motors and still serves as consultant in the field of internal ballistics.

Bingle Kruger retired as CEO, BKS Group (Pty) Ltd (now AECOM) of which he was co-founder in 1965. Under his leadership the group has made significant progress in ownership transformation and in globalisation. He was a founder Member of the South African Academy of Engineering and served as President from 1997 to 2008. He received the TuksAlumni Laureatus Award in 2000 and the degree D Eng (Honoris Causa) from UP in 2003.

Bea Lacquet is Dean of the Faculty of Engineering and the Built Environment at Wits. She was appointed as Professor and holder of the De Beers Chair of Electronics at Wits in 2003, Deputy Dean

in 2005, Dean of the Faculty of Engineering and the Built Environment in 2007. She is a member of the Council of Wits.

Allyson Lawless is Managing Director at SAICE Professional Development and Projects and an engineer at Allyson Lawless (Pty) Ltd. She founded Allyson Lawless (Pty) Ltd in 1981 and worked as Managing Director and developed a range of low-cost software for the structural and civil engineering profession. She received the NU Award and the EG Malherbe Award for outstanding service in education, science and industry and the Silver Award for SA Software Export.

Steve Lennon is Group Executive: Sustainability at Eskom Holdings SOC Ltd. He is a Fellow of the Royal Society and was Eskom Executive of the Year.

Barry Lessing retired as Deputy Managing Director, Transnet. He joined the SAR & H in 1959 and served the organisation for 37. He was Deputy Managing Director of Transnet Ltd from 1992 until retirement in 1996.

Wilhelm Leuschner is Professor in the Department of Electrical, Electronic and Computer Engineering at UP. He specialises in photonics, radiometry, photometry and optical communication networks and currently does research in the field of radiometry and photometry.

Alison Lewis is Professor and Head of the Department of Chemical Engineering, UCT and Director of the Crystallisation and Precipitation Research Unit. She initiated and manages a multi-component research programme which has developed a novel technology for mine water and brine treatment which received a Highly Commended Certificate in 2010 in the British IChemE Sustainable Technology Awards.

Philip Lloyd has been Research Professor at the Energy Institute of the Cape Peninsula University of Technology since 2009. He received the SA National Energy Association Award in 2010, the Conrad Gerber Award as African Intellectual of the Year in 2012 and was nominated as a member of the IPCC team which shared the Nobel Peace Prize in 2007.

Pierre Lombard was General Manager of Spoornet until 2000. He was a member of the Board of Directors of the International Heavy Haul Association (IHHA) from 1993-2000 and was Elected Chairman of the IHHA for 1997-1999. From 2001, he was Programme Manager at UP's Chair in Railway Engineering and worked as railway engineer.

Leon Lorenzen is Group General Manager and Executive Consultant (Metallurgy) at Snowden Mining Industry Consultants in Perth, Australia. He has in-depth experience in mineral processing, electrochemistry, reactive systems, hydrometallurgy, waste treatment and biofuels particularly with regard to application of these technologies in the process industries.

Willem Louw is Director of the Centre for Business Management of Projects SU's Business School Executive Development company. During 25 years service in Sasol/Sasol Technology he was involved in and responsible for two projects that were declared RSA and international projects of the year (Polypropylene Plant, Secunda in 1991 and Replacement of Benfield tower, Secunda in 1995) by the Project Management Institute.

Hylton Macdonald is Group Risk Manager of AVENG Ltd since 2005. Previously he worked for LTA Civil Engineering and was Managing Director of Grinaker-LTA Engineering up to 2005. He was Concrete Man of the Year in 1987

Neil Macleod has been Head: Water and Sanitation in the eThekweni Municipality since 1992. He developed the free basic water policy in 1996 and a free basic sanitation policy in 2005 and assisted national government as Chair of the national free basic services task team in the implementation of this policy nationally from 2001.

Thembinkosi Madikane is Managing Director of Igoda Projects (Pty) Ltd. He was responsible for management of lighting optimisation rollout of 102 ABSA branches and the design and project

management of electrical and electronic installation in Durban International Airport, the Moses Mabhida Stadium and the Durban International Convention Arena.

Nape Maepa is the retired Chairman of the SA Telecommunications Regulatory Authority. Subsequently he was President of VPSTN LLC an FCC-licensed global carrier in Alexandria, VA, USA with operations worldwide providing traffic and VPN services.

Danai Magugumela has been Managing Director of AECOM, SA since November 2012. She was CEO of the BKS Group (Pty) Ltd from 2006 until the company merged with AECOM in 2012. She served as SABITA facilitator in the Roads Develop People Programme in 1998, and served on numerous fora on issues of municipal service delivery with particular emphasis on public-private partnerships.

Sunil Maharaj is Head of the Department of Electrical, Electronic and Computer Engineering and holder of SENTECH Chair in Broadband Wireless Multimedia Communications (BWMC) at UP. He was the winner of the 2010 Department of Trade and Industry Technology Award: THRIP Advanced Hi-Tech for research work in broadband wireless communications.

James Maina is Chief Research Engineer and Research Group Leader: Transport Infrastructure Engineering at CSIR Built Environment. He performed outstanding research towards finding solutions for large and detailed problems in the field of transport infrastructure engineering in various areas contributing to both local and international pavement design methods. He was awarded the JD Roberts Award by Murray and Roberts together with the CSIR for this research.

Thoko Majozi is Professor in the Department of Chemical Engineering at UP. He developed a unified heat and mass integration framework for the South African Industry which led to a 30% reduction in effluent and a wastewater minimisation technique in batch operation which led to a 20 % reduction in effluent. He won Second Prize in the Zdenek Burainec Memorial Award in Italy in 2005 and the S₂A₃ British Association Medal in 2008.

Jan Malherbe is Professor in the Department of Electrical, Electronic and Computer Engineering at UP. He served as Dean of Engineering and Vice-Principal of UP. The Havenga Prize for Engineering was awarded to him in 1995 and the IEEE Third Millennium Medal in 2000.

Trevor Manuel has been Minister in The Presidency: National Planning Commission since 2009 and Chancellor of the Cape Peninsula University of Technology. He is Chairman of the Development Committee of the International Monetary Fund and a Member of Parliament. He was awarded the Africa Prize by the German Africa Foundation and named Euromoney's African Finance Minister of the Year in 1997.

Roy Marcus is Chairman of The Da Vinci Institute for Technology Management and Chairman of the Council of UJ. Previously he was Dean of the Faculty of Engineering at Wits, Managing Director of Cargo Carriers and President of the South African Engineering Association. He is a member of the National Advisory Council on Innovation and Vice-Chairperson of the Edward De Bono Foundation of South Africa

John Marriott is retired General Manager of SASOL with responsibility for Research, Development and Technology at Sasol and Advisor to Sasol Synfuels International. He is the Deputy Chairperson of the South African National Energy Development Institute.

Tshilidzi Marwala is the Deputy Vice-Chancellor: Research at UJ. Prior to this appointment he was Executive Dean in the Faculty of Engineering and the Built Environment. He was appointed to the Carl and Emily Fuchs Chair of Electrical Engineering in 2005 and was personal Professor of Electrical Engineering at Wits since 2005. He received the Order of Mapungubwe in 2004 and a Tuks Alumni Laureate Award in 2004.

Josua Meyer is Head of the Department of Mechanical and Aeronautical Engineering and Chairman of the School of Engineering at UP. He is a Fellow of the Royal Aeronautical Society and a

member of the American Institute of Aeronautics and Astronautics. He serves as member of the Professional Advisory Committee and the Qualifications and Examinations Committee of the Engineering Council of South Africa.

Petrie Meyer is Professor and Head of the Department of Electrical and Electronic Engineering at SU. He is involved in research projects with a wide spectrum of South African microwave industries. He was awarded the Stellenbosch University Chancellor's Medal in 1988, the THRIP Award for Excellence in Student Development in 2004 and the Stellenbosch University Rector's Award for Research in 2008.

Rodney Milford is Programme Manager: Construction Industry Performance at the Construction Industry Development Board (Cidb) and was previously Director of CSIR Building and Construction Technology and of CSIR Knowledge Services. He received the CSIR Outstanding Achiever Award (Team Award) in 1999 and the CSIR Outstanding Achiever Award (Individual Award) in 1997.

Mafika Mkwana is Chairman of Western Areas Ltd, Letseng Diamonds and OrlyFunt Holdings. He was Chief Executive Officer of Metro Rail, Director of Spoornet, Director of SAA and Managing Director of Transnet.

Allen Morgan retired as CEO of ESKOM after serving ESKOM for 29 years in various capacities. Largely through his personal drive, Eskom's commitment to electrify 1 750 000 homes by the end of 2000 was achieved one year early. He was named Eskom Executive of the Year in 1989 and is Honorary Professor of the Moscow State Academy of Instrument Engineering and Computer Sciences.

Dawid Mostert is retired CEO of Dorbyl and past President of SEIFSA. He was Honorary President of the SA Institute of Mechanical Engineers from 1993-1995 and received a gold medal from the latter in 1992.

Mike Muller is Visiting Adjunct Professor at Wits Graduate School of Public and Development Management, Commissioner in the National Planning Commission and Chair of the World Economic Forum Global Agenda Council on Water Security. He co-authored the White Paper on Water and Sanitation and a National Water Policy for South Africa and produced a new legislative framework for both water services and water resources.

Mike Myburgh retired as Chief Executive of the South African Airways in 1998. He started his career with SA Railways and Harbours in 1963 and served in various capacities until his appointment as CEO of SAA in 1993. He was a member of the Board of Governors of IATA and President of the Association of African Airlines.

Dempsey Naidoo is Executive Chairman of PD Naidoo & Associates (Pty) Ltd. He is also the founder of one of SA's first emergent practices that has now become a leading brand and service provider in the country and in Africa. He used this platform to create 15 new technology enterprises and launched careers of many entrepreneurs in engineering. PDNA is a multiple winner of Business Excellence and technical awards.

William Nairn retired in 2004 as Group Technical Director, Anglo American Plc and he retired from the Board of Anglo Gold Ashanti in May 2013. He continues to serve as Chairman of MDM Engineering Group, is Chairman of MTM's group procurement committee, and is a technical adviser to EO & Son.

Felix Ndlovu is Projects Director with Transnet Projects. Previously he was Executive Manager at Protekon in charge of project engineering of railway infrastructure projects.

Mongezi Ntsokolo is Group Executive of the Eskom Transmission Division. He is a member of the Black Management Forum and a contributor to the Eskom African Leadership initiative.

Alan Nurick is Head of the Department of Mechanical Engineering Science at UJ. He received a medal for Applied Mathematics from UCT, a medal for outstanding service to the profession from

the South African Council for Professional Engineers and the South African Institute of Aerospace Engineering's John Weston Gold Medal for dedicated service to the South African aerospace industry.

Gerald Nurick is Professor of Mechanical Engineering at UCT. He established the Blast Impact and Survivability Research Unit High Strain Rate Laboratory at UCT, started research in comminution as a subsection of impact dynamics, and is currently doing research into scaling of blast-loaded structures involving the development of expertise in computational codes to predict the effect of blasts on structures.

Cyril O'Connor is the immediate past Director of the Centre for Minerals Research and was the founder Director of the Centre for Catalysis Research in the Department of Chemical Engineering UCT. He was Head of the Department of Chemical Engineering, Dean of the Faculty of Engineering & the Built Environment and served as Acting Deputy Vice-Chancellor in 2008/9. He is presently President of the International Mineral Processing Council, and is CEO of the South African Minerals to Metals Research Institute.

Adi Paterson is the Chief Executive Officer of the Australian Nuclear Science and Technology Organisation. Formerly he was General Manager, Business Development and Operations of PBMR (Pty) Ltd and Chief Operating Officer in the Department of Science and Technology. In 2012 he was elected Professional Engineer of the Year by the Sydney Division of Engineers, Australia.

Willem Perold is Vice-Dean of Research in the Faculty of Engineering at SU. He is rated a B2 researcher by the NRF and the research of his group has attracted funding from the IDC to form a spin-off company to develop and market a CAD tool for superconducting integrated circuit design.

Bryan Perrie is Managing Director of the Cement and Concrete Institute. He has contributed significantly to the development and dissemination of concrete technology in South Africa. He represented SA on the World Road Association Concrete Pavements sub-committee since 2000 and serves on various South African national standards committees.

Francis Petersen is Dean of the Faculty of Engineering and Built Environment at UCT. Previously he was Head of Strategy of Anglo Platinum Corporation, Executive Vice-President: Research and Development at Mintek and he lectured at the Cape Technikon. He was Cape Technikon Researcher of the Year and has received the Ernest Oppenheimer Memorial Trust Award for research excellence.

Willie Pienaar is Managing Director, Tolplan Consulting (Pty) Ltd. He combined transportation engineering, civil engineering and financial expertise to perform toll road traffic and financial feasibility studies for more than 20 toll roads/routes and drafted the first standard South African toll plaza operations specifications and contract in 1984.

Calie Pistorius, former Vice-Chancellor of UP, is currently the Vice-Chancellor of the University of Hull. He is a member of the Humber Local Economic Partnership, a member of the City Leadership Board in Hull, a Director of Yorkshire Universities, the Centre for Low Carbon Futures and The Deep, a Yorkshire Patron and serves on the CBI Regional Council for Yorkshire and the Humber.

Chris Pistorius is Professor of Materials Science and Engineering at the Carnegie Mellon University in Pittsburgh in the USA. Previously he was Head of the Department of Materials Science and Metallurgical Engineering at UP and President of the Corrosion Institute of Southern Africa.

Tony Press is Projects Executive at Algoa Project Services. He was Project Manager on the design and construction of the world's first-ice protected floating production storage offloading platform for Canada.

Tinus Pretorius is Professor, Head of Department and Chairman of the Graduate School of Technology Management at UP. As Head of the school he played a significant role in building it to the

leading school of its kind on the continent and one that is well known in its field of specialisation in the world. He made valuable contributions to projects in the nuclear, aerospace, defence and automotive industries

Vic Prins is a Director of Royal HaskoningDHV South. Previously he was Managing Director: International at Africon and CEO of Stewart Scott International. He made a significant contribution to the development of a national transport policy for South Africa, was intimately involved in the development and implementation of aviation policy in South Africa as well as in the establishment, implementation and regulation of the Airports Company of South Africa and the Air Traffic and Navigation Services Company.

Bob Pullen is retired Deputy CEO of BKS and a past President of ECSA. He is currently a specialist consultant at AECOM. His main area of experience is in engineering hydrology, water resources development and management, flood hydrology, environmental management and institutional development. He has been President of the South African Academy of Engineering since 2008.

Daya Reddy holds the South African Research Chair in Computational Mechanics in the Department of Mathematics and Applied Mathematics at UCT and is President of the Academy of Science of South Africa. He has served UCT in various capacities and was Dean of the Faculty of Science from 1999 to 2005. He received the Georg Foster Award from the Alexander von Humboldt Foundation in Germany and the Order of Mapungubwe (Bronze).

Tony Redman is Group Technical Director and Chairman of Anglo Coal. He is responsible to the Anglo American Plc Board for technical aspects worldwide.

Felix Reinders is Programme Manager: Agricultural Water Resources and Conservation at the Agricultural Research Council's Institute for Agricultural Engineering. He is a Council member of SA Irrigation Institute and Chairman of the SA National Committee on Irrigation and Drainage. He received the Gold Medal for outstanding services to the SAIAE in 1996 and the Gold Medal for outstanding services to the SA Irrigation Institute and the irrigation fraternity in South Africa in 2005.

Christine Render is General Manager, Process Commercialisation at Sasol Technology. She is the recipient of Team Technology/Innovation Awards for several projects at Sasol.

Paul Roberts is an independent specialist consultant on water resources and water engineering since retirement from the Department of Water Affairs and Forestry. He is a former Chairman of the South African National Committee on Large Dams and former member and President of the International Commission on Large Dams.

Howard Roberts is a consultant and non-executive member of RMB's Credit Committee. He was the leader of a team that developed design fundamentals for the Sasol II Synthol Reactors and one that developed processes for the conversion of methanol to olefins and for the conversion of olefins to diesel.

Gustav Rohde is Chief Operating Officer of Aurecon. Previously he was CEO of Africon and his work experience spans road rehabilitation, feasibility studies, materials, and infrastructure asset management.

Albert Rooseboom is Emeritus Professor in Hydraulics, Faculty of Engineering at SU. His research fields cover hydraulics and sediment transport. He was a member of the Water Research Commission and Chairman of the Sedimentation Committee of ICOLD, a member of advisory committees of UNESCO (Paris) ICE (London) IRTCES (Beijing) and a specialist consultant on river projects in 12 African countries.

John Sampson is Managing Director of Transportation and Traffic Technology Africa (Pty) Ltd and member of the Integrated Transport Master Plan Steering Committee for Gauteng. He is the President of SA Road Federation and has been extensively involved in setting the South African standards for traffic engineering over a period of 40 years.

Roelf Sandenbergh is Dean of the Faculty of Engineering, Built Environment and Information Technology at UP. He is Chairman of the Professional Advisory Committee on Metallurgical Engineering of the Engineering Council of South Africa, Honorary life member of the South African Institute of Mining and Metallurgy and past President of the Corrosion Institute of Southern Africa.

Arnold Schoonwinkel is Vice-Rector for Learning and Teaching at SU. From 2002 to 2012 he was the Dean of the Faculty of Engineering. He was co-recipient of the Gold Medal of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns* for the advancement of science and technology through the SUNSAT Microsatellite Programme in 1999.

Thero Setiloane is Executive Director, Real Africa Investments Ltd. He is Chairman of the Agricultural Research Board, Director of the Commonwealth Leadership Forum, member of the FRD University Development Board and Director of the National Institute of Technology Leadership.

Mike Shand is a consultant at Aurecon. He headed the Hydro Department of Ninham Shand and Partners since 1977. He served as Project Leader of the Department of Water Affairs and Forestry's water resources studies to plan the augmentation and the annual management of water supplies for the cities of East London, Port Elizabeth and Cape Town and feasibility studies for Cape Town.

Pepi Silinga is Chief Executive of the COEGA Development Corporation. He is non-executive Director on the Board of the Rural Housing Loan Fund, non-executive Trustee on the Board of the Independent Development Trust and non-executive Chairperson of the CIDB and the Council of UFH.

Johan Slabber is Professor in the Department of Mechanical and Aeronautical Engineering at UP. He was General Manager Reactor Technology at the Atomic Energy Board. From 1994-1999 he was Nuclear Material Safeguards Inspector with the International Atomic Energy Agency and as a member of the agency shared the Nobel Peace Prize that was presented to the organisation in 1999.

Dick Stacey is Professor Emeritus of the School of Mining Engineering at Wits. He is an Honorary life Fellow of SAIMM and was awarded a B-rating by NRF, the Brigadier Stokes Medal in 2008 by SAIMM and several silver medals for publications from SAIMM.

Bob Stanway is a Specialist Transportation Engineer and Technical Advisor to the City of Tshwane on the planning and implementation of its A Re Yeng Bus Rapid Transit system. He was Director of Transportation Planning and Management and Executive Director: Transportation in the City of Johannesburg taking the Rea Vaya Bus Rapid Transit system from conception to operation within a period of three years prior to the 2010 Soccer World Cup.

David Stephenson is Emeritus Professor of Hydraulic Engineering, Wits, Adjunct Professor of water Engineering, University of Botswana, Director of Stephenson & Associates Consulting Engineers and works as Water resources advisor in Botswana, Lesotho and Mozambique.

Jasper Steyn is Director: Automotive Focus Group in the Department of Engineering and Technology Management at UP. He is Consultant for Barlow Lab, LGI, Business Enterprises at UP and Director of the Laboratory for Advanced Engineering at the university.

Herman Steyn is Professor in Electronic Engineering and Head of the Department of Electrical and Electronic Engineering at SU. He is also Executive Director of SUNSPACE. He is currently the Project Leader of the international QB50 mission for ZA-AeroSat Cubesat.

Pieter Strauss retired from management in BKS where he was Director and Division Head and now works as specialist consultant on pavements and materials. He received the SAICE/CAPSA Award for outstanding achievements in the field of asphalt technology in 1990 and the Best Paper Award of the Transportation Division of SAICE in 2002 for a paper on a design method for concrete pavements.

Waldo Stumpf is Professor and Acting Head of the Department of Materials Science and Metallurgical Engineering at UP. He was Chief Executive Officer of Necsa from January 1990 to 2001 and redirected the organisation from a strategic mission to a combined technical and commercial future.

Harry Swart is Manager of the business processes service line at Bentley West Management Consultants. He was Director of the Division for Earth, Marine and Atmospheric Science and Technology of CSIR was involved in developing the CSIR's technology management and investment practices.

Willem van Biljon is CEO of Advanced Technologies and Engineering Company (Pty) Ltd in Midrand. He established advanced engineering capabilities in the aerospace sector of the industry and created new export business to sustain an international competitive systems capability within the local aerospace industry.

Jack van der Merwe is CEO, Gautrain. Previously he was Superintendent General and Head of the Gauteng Department of Public Transport, Roads and Works and he represented his department on various national forums and professional bodies such as the Ministerial Conference of Ministers of Transport and the Committee of Transport Officials.

Nielen van der Merwe is Professor of Rock Engineering at the School of Mining at Wits. He was appointed as Programme Manager at Miningtek, CSIR in 1999 and was Head of the Mining Engineering Department at UP from 2001-2006. He was President of the South African National Group on Rock Mechanics for three terms, Vice-President of the international Society for Rock Mechanics and President of the International Society for Rock Mechanics.

Pieter van der Walt is Consultant at Reutech Radar Systems and Professor Extraordinary in Electrical and Electronic Engineering at SU. He served as Dean of the Faculty of Engineering at the university and consultant for the Centre for Electrical and Electronic Engineering.

Jannie van der Westhuizen retired as Group General Manager of Sasol Limited with portfolio Group HR, Group IT, Sasol Mining (Pty) Ltd and certain Sasol Group interventions. He is the recipient of the Laureatus 2000 award of UP in recognition of exceptional achievement.

Frank van Duuren is a retired consulting engineer/specialist in water and public health engineering. He was Rand Water Board Professor at UP. He lectured in water engineering, environmental science and food technology to postgraduate engineering and medical students. He was Secretary-General of the SAAE for ten years until 2002.

Wikus van Niekerk is Director of the Centre for Renewable and Sustainable Energy Studies at SU. He established the Sound and Vibration Research Group at the university including one of the best-equipped NVH laboratories in the country, as well as the Centre for Renewable and Sustainable Energy Studies at SU. This is one of the best-known centres of expertise in this field in South Africa.

Peter van Niekerk is Water Resources Engineering Expert in the Department of Water Affairs. He joined the Department of Water Affairs in 1974 and was appointed Water Resources Engineering Expert by the Minister of Water Affairs and Forestry in special dispensation.

Willem van Niekerk is Senior Vice-President, Strategic Planning and Business Development of Tronox Ltd since the integration of Tronox and Exxaro Mineral Sands in June 2012. He has more than 20 years experience in research and development, operations and business development in the mineral sands industry including the design of the slag furnaces.

Theo van Robbroeck is retired Director-General of the Department of Public Works. He was President of the International Commission on Large Dams from 1994 to 1997 and he received an Honorary doctorate in Engineering from the SU in 1994.

Eric van Steen is Professor of Chemical Engineering in the Department of Chemical Engineering at UCT. His field of expertise is heterogeneous catalysis, especially on the Fischer-Tropsch process, reactor design and thermodynamic analysis.

Daan van Wyk is Visiting Professor, UJ. Formerly he was J Byron Maupin Professor of Engineering at the Virginia Polytechnic Institute and State University in Blacksburg, Virginia, USA and Research Leader, National Science Foundation Engineering Research Centre for Power Electronic Systems, VPISU. He was the founding Chairman of the Department of Electrical and Electronic Engineering at the Rand Afrikaans University (now UJ), founding Dean of Engineering and Vice-Rector of the university. He received the Havenga Prize of the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns* in 1989.

Willem van Wyk is retired Managing Director of Iscor. He was President of SEIFSA, Chairman of the South African Corporative Forum, member of the government's Industrial Advisory Board, founder member of the Consultative Business Forum and member and Chairman of the Board of NWU.

Arnold van Zyl is Rector of the Chemnitz University of Technology. Previously he was Vice-President (Research and Innovation) of SU. From 1990-2008 he held various positions with DaimlerBenz.

Olaus van Zyl is the Project Co-ordinator for the Gautrain Rapid Rail Link Project, one of the largest transportation projects in South Africa. He was Deputy CEO of the BKS Group of Companies and Provincial Minister for Roads and Public Transport in the Gauteng Provincial Government.

Kit Vaughan is Emeritus Professor of Biomedical Engineering at UCT and CEO of CapeRay Medical (Pty) Ltd which is a spin-off company from research on digital mammography done at UCT.

Kobus Venter is an engineering geologist. He retired as Divisional Director of BKS Engineering in 2003. He continues to do consulting work in specialised fields and is a member of the Professional Advisory Committee for Earth Sciences of the SA Council for Natural Scientific Professions.

Alex Visser is Emeritus Professor of the Department of Civil Engineering of UP. He received the Award for Meritorious Research for long-term contributions in the low-volume roads field from SAICE and the Chairman's Award from the Transportation Engineering Division of SAICE for contributions to transportation engineering.

Fritz Wagener retired as CEO from Jones & Wagener in 2005. He is currently a Director of Fritz Wagener & Associates. He specialises in foundations on problem soils such as collapsing sand, heaving clay and dolomite.

Kevin Wall is Manager, Urban Management and Infrastructure at CSIR Knowledge Services. He is a former Assistant City in the Cape Town City Engineer's Department, Chief Executive of Cape Utility Homes and Regional Director of Ninham Shand Consulting Engineers.

Allan Wijnberg is Director CEO of PRDW (Pty) Ltd Consulting Port and Coastal Engineers. He was the Project Director for the new port of Ngqura and the deepening and widening of the entrance channel to the Port of Durban. Both projects received CESA Engineering excellence commendations.

Rob Williamson is Director of Knight Piésold (Pty) Limited. He is a specialist on modern tailings disposal technology in South Africa and internationally and, as Chairman of the ICOLD Tailings Dam Committee, is leading initiatives in current tailings dam technology. He is Chairman of the South African National Committee on Large Dams and Chairman of the Tailings Dam Committee, International Commission on Large Dams.

Dave Wright is General Manager: Corporate Planning with Engen Petroleum Ltd. He serves on the Engen Refinery Cleaner Fuels Upgrade Project steering committee and on the Executive Committee and Board of SA National Energy Association (SANEA). He is the Chairman of SA National Committee for World Petroleum Council. He was awarded the SANEA Education Award in 2008.

Xiaohua Xia is Professor in Electrical, Electronic and Computer Engineering at UP. He is also Director of the Centre of New Energy Systems and Director of the National Hub for the Postgraduate Programme in Energy Efficiency and Demand-side Management. He has received the Ernest Oppenheimer Memorial Trust Sabbatical Award and the Exceptional Academic Achiever Award from UP.

John Zietsman is founding Director of Zietsman Lloyd & Hemsted and is an expert in a variety of disciplines of offshore engineering, naval architecture, offshore mining and dredging.

Alphose Zingoni is Professor and Head of the Department of Structural Engineering at UCT. He developed practical analytical solution procedures for a wide range of shell structures encountered in the civil, structural and mechanical engineering disciplines. He is the recipient of a prestigious Royal Commission for the Exhibition of 1851 and postdoctoral research Fellowship of the UK.