



THE SOUTH AFRICAN ASSOCIATION FOR THE  
ADVANCEMENT OF SCIENCE  
DIE SUID-AFRIKAANSE GENOOTSKAP VIR DIE  
BEVORDERING VAN DIE WETENSKAP

**JAARLIKSE MEDALJETOEKENNINGSEREMONIE**  
**12 OKTOBER, 1990**  
**ANNUAL MEDAL AWARD CEREMONY**  
**12 OCTOBER, 1990**

## THE SOUTH AFRICAN GOLD MEDAL

**T**his most prestigious of the S<sup>2</sup>A<sup>3</sup> awards was conferred on CHRISTOPH FRIEDRICH GARBERS, who eminently qualifies as recipient for this gold medal.

Dr Garbers was born in 1929 in Piet Retief in the Transvaal. He studied at the University of Pretoria, gaining a B.Sc. and M.Sc. degree. He obtained his D.Phil. qualification at the University of Zürich, Switzerland in 1954.

From Research Officer at Klipfontein Organic Products at the start of his career, Dr Garbers climbed to Lecturer and finally to Professor of Organic Chemistry at the University of Stellenbosch and to Vice-President of the CSIR and ended his career, on retirement, as President of the Council for Scientific and Industrial Research in Pretoria in 1990.



He is the author of 67 scientific publications, including contributing to two books.

Numerous honours have been bestowed on Dr Garbers. To name a few: the Havenga Prize for Chemistry in 1977, the gold medal from the "SA Akademie vir Wetenskap en Kuns", the State President's Order for Meritorious Service (Class 1) Gold in 1989, an Honorary Doctorate of Science from UNISA in 1989 and from the University of Cape Town in 1990, and the South African Gold Medal from the Association for the Advancement of Science in 1990.

Dr Garbers is recognised internationally as an outstanding scientist. His achievements are noted in the *International Who's Who of Contemporary Achievement*, *International Directory of Distinguished Leadership* and in the *5 000 Personalities of the World*.

### Marloth Memorial Lecture: "SCIENCE AND TECHNOLOGY IN SOUTH AFRICA - QUO VADIS?"

Dr Garbers sketched the historical background of the development and application of scientific knowledge in South Africa. Referring to Dr Rudolf Marloth (1855-1931) whose Chemistry qualification earned him his living and his botanical hobby which brought him fame.

At present South Africa generates 66% of Africa's electricity and utilises 66% of the steel consumed on the continent, 52% of the woolclip, 45% of the mining and 40% of the continent's maize is produced in South Africa. All this on only 3,7% of the land area of Africa with 5,6% of the total population of Africa.

Science and technology are inextricably tied to the economy of a country. The South African universities produced 8 355 first and post-graduates in the Natural Sciences and Engineering Faculties; Botswana 14; Malawi 60; Mozambique 33; Swaziland 43 and Zimbabwe 129. With the black population explosion on the African continent, it is estimated that by the year 2020 there will be 400 000 matriculants with little hope of employment. Often frustrated and underfed, they fall prey to political rhetoric. An alarming fact is that since 1965 there has been a drift away

*continued on page 2*

from the sciences among the white students and the results at school-leaving level for the sciences among the black students are dismal.

If a transformed economy — from primarily a mining to a manufacturing economy — is envisaged, making use of new technologies will:

- create fewer jobs for “hand” manufacturing occupations;
- generate twice as many jobs for technical professionals;
- require nearly 25% more managers and management support personnel;
- bring 30-40% more workers into marketing;
- result in a 30% decline of jobs for the most lowly-paid workers.

There is an overriding requirement for economic growth not only in Southern Africa, but in the other 55 countries in Africa with an estimated population of some 623 million people. Scientists are challenged to re-assess priorities and this should be done fearlessly. On recent visits to Taiwan, Korea and the City State of Singapore, Dr Garbers pointed out that they have managed to adapt their economic structures to cope with a changing world, whereas mainland China, through clinging to outmoded ideologies, has isolated itself and has lagged behind in its economic growth.

South Africa, with its infra-structure, its expertise and technological muscle and Africa's specific know-how, augmented by investment from overseas, can and will lead to more effective mobilisation of South Africa's inherent strengths, with free enterprise principles honoured and the national income in the interim distributed in such a way that growth is sustained and everyone can positively experience the “new” South Africa. Dr Garbers ended his lecture with the exhortation **“Let us work together, with dedication and conviction to become a winning nation”**.

**D**IE SILWER “BRITISH ASSOCIATION MEDAL” is aan DEREK ALBERT McNAMARA toegeken vir sy uitmuntende bydrae tot die Elektromagnetiese- en Rekenaarsingenieurswese.



Hy studeer aan die Universiteit van Kaapstad en aan die “Ohio State University”, VSA.

Aanvanklik werk hy by die WNNR by die Nasionale Instituut vir Lugvaart- en Stelseltegnologie en later by die Elektromagnetiese Analise-seksie. In 1985 word hy Senior Lektor, mede-professor en in 1990 professor in die Department Elektroniese- en Rekenaarsingenieurswese by die Universiteit van Pretoria.

In 1973 ontvang Professor McNamara 'n toekenning van die WNNR en in 1990 die President se toekenning vir sy uitstaande werk. Internasionale erkenning bly ook nie agterweë nie. In 1990 word Professor McNamara genooi om lid te word, vir 'n tydperk van vyf jaar, van “The Electromagnetics Academy” wat aan die “Massachusetts Institute of Technology” verbonde is.

Alleen of saam met kollegas het hy 29 publikasies tot sy krediet, asook 30 publikasies in verrigtinge van konferensies. Saam met C.W.I. Pistorius en J.A.S. Malherbe is die boek *“Introduction to the Uniform Geometrical Theory of Diffraction”* in 1990 in die VSA gepubliseer.

Derek Albert McNamara is in 1955 in Kaapstad gebore en is voorwaar 'n waardige ontvanger van die Silwermedalje.

ORTRUD OELLERMANN is a graduate of the University of Natal and the Western Michigan University, USA. She is at present Professor in the Department of Computer Science at the University of Natal in Durban.



Certificates of Merit, Bronze Medals, Prizes and a Fulbright Scholarship are among the awards that have been bestowed on this most accomplished young Mathematician and Computer Scientist.

Professor Oellermann has published two books, numerous publications and professional talks to date with several publications pending and others in the pipe line.

Peers and colleagues, no doubt, will follow Professor Oellermann's career with great interest.

Professor Oellermann received the S<sup>2</sup>A<sup>3</sup> Merit Award.

MICHAEL J. WINGFIELD is in Warner Beach, Natal in 1954 gebore. Hy studeer aan die Universiteite van Kaapstad, Minnesota, VSA, Stellenbosch en Pietermaritzburg, Natal.

Sy loopbaan neem 'n aanvang in 1978 toe hy by die plantbeskermingsnavorsingsinstituut in Stellenbosch aansluit. In 1980 vertrek hy na die Universiteit van Minnesota om daar Assistent Navorsers te word.

In 1988 keer hy terug en sluit by die Universiteit van die Oranje Vrystaat aan, in the Departement Mikrobiologie en Biochemie, waar hy in 1990 tot professor benoem is.

Professor Wingfield dien op verskeie komitees en werk as mede-redakteur op 'n aantal nasionale sowel as internasionale tydskrifte. Hy het ook tientalle publikasies op sy naam. Ook is hy al meermale na internasionale simposia genooi om daar referate te lewer.

Professor Michael Wingfield is die ontvanger van die S<sup>2</sup>A<sup>3</sup> Merietesertifikaat.



## GENCOR- S<sup>2</sup>A<sup>3</sup> BRONZE MEDALS 1990

This coveted award is sponsored by the Gencor Development Trust. The various companies within the Gencor group contribute to the maintenance of this Trust. The funds are distributed to a wide variety of projects such as to Small Business Development, Health Services, Education and Training programmes and Conservation projects, to mention a few.

A Bronze Medal is made available annually to each of the 22 Universities countrywide, to be awarded to the student who has completed the most outstanding Masters' Thesis in any one of the Science Disciplines.

### ■ Randse Afrikaanse Universiteit:

Mnr. N.W. Alberts, M.A. (Sielkunde)(Met Lof),

*'Sosiale Vaardigheid, Streshantering en Chroniese Siektegedrag'*

### ■ University of the Witwatersrand:

Miss D.G. Evans, M.Sc. (Chemistry),

*'The Linear Space of Ring Conformations'*

### ■ University of Port Elizabeth:

Mr. V. Alberts, M.Sc. (Physics)(Cum Laude),

*'Epitaxial Growth of GaAs on Si'*

### ■ Potchefstroomse Universiteit vir CHO:

Mnr. B. von M. Harmse, M.Ing. (Chemies) (Met Lof),

*'A Quantification of Chemical and Physical Factors on SO<sub>2</sub> Oxidation Catalysts'*

### ■ Universiteit van Pretoria:

Mnr. C.P. Crosby, M.Ing (Meganiese Ingenieurswese),

*'The Numerical Prediction of Airflow through and Around Permeable Windbreaks and over Buildings'*

### ■ University of Fort Hare:

Mr. P.J.C. Conradie, M.Sc. Agric. (Animal Science) (Cum Laude),

*'Evaluation of Whole Maize versus Milled Maize as Concentrate Component for High Producing Dairy Cows'*

### ■ University of Natal - Pietermaritzburg:

Miss F.E. Drewes, M.Sc. (Botany)(Cum Laude),

*'An Examination of the Thermoinhibition of Tagetes Minuta L. Achenes'*

### ■ University of Natal - Durban:

Mr. R.L. Portsmouth, M.Sc. (Chemical Engineering) (Cum Laude),

*'The Kinetics of 2-Methyl-3-Buten-2oL Dehydration over an Alumina Catalyst'*

### ■ Rhodes University:

Miss K.M. Dower, M.Sc. (Zoology)(With Distinction),

*'Sand Inundation on Rocky Shores: Its Effects on Species Richness and the Structure of Species Assemblages'*

## ANNUAL GENERAL MEETING 12 OCTOBER, 1990

Professor Erik Holm introduced the newly-elected National President, Professor Paul Smit. He thanked his Council and the National secretary, Mrs. Anne Bentum, for their loyal support during his term of office. He gave a short resumé of past events and future aspirations of the SA and concluded by wishing the incoming President a happy and fruitful year ahead.

**Professor Paul J. Smit** is in 1932 in Pretoria gebore. Hy behaal sy B.A. (Ed. Phys.) aan die Universiteit van Pretoria en in 1969 verwerf hy sy graad Ph.D. onder Professor Phillip Tobias aan die Unversiteit van die Witwatersrand.

Professor Smit is tans verbonde aan die Universiteit van die Noorde waar hy hoof van die Departement Menslike Bewegingskunde is.

Hy is outeur van verskeie wetenskaplike werke, waarvan sommige handboeke is. Hy is skrywer van talle artikels wat in wetenskaplike tydskrifte gepubliseer is.

The next Annual General Meeting  
will be held in Pretoria.  
The date and venue to be  
determined at a later date.

Die pas gekose President, Professor Smit  
bedank lede van die S<sup>2</sup>A<sup>3</sup> en gaste vir hul  
teenwoordigheid en verklaar die  
byeenkoms gesluit.

## PAST PRESIDENTS 1980 - 1990

1978 - 1980	Prof. D.M. Joubert
1981 - 1982	Mr. D.G. Kingwill
1983 - 1984	Prof. R.D. Griesel
1985 - 1986	Dr. G.N. Nelson
1987	Brig. G.H. Robertson
1988/89/90	Prof. E. Holm

## S<sup>2</sup>A<sup>3</sup> COUNCIL: RAAD 1990 - 1991

President:	Prof. P. Smit	
Vise-presidente:	Dr C. Albrecht	(Suidwes-Kaap)
	Prof. J.A.J. Meester	(Natal)
	Prof. Oelofsen	(Oos-Kaap)
	Dr F.A. Korb	(Witwatersrand en voorsitter van die medaljekomitee)
	Mnr. E. Hanau	(Noord-Transvaal)
	Dr B. van Drimmelen	(Transvaal en voorsitter van Pretoriatak)
Ere-tesourier:	Mnr. G. den Dulk	
Sekretaris:	Mev. A. Bentum	
Add. lede:	Mev. E. den Dulk	(Marloth gedenkuitgawe en skakeling met pers)
	Prof. J. Wolfaardt	(Buitelandse korrespondensie)
Oud-presidente:	Prof. E. Holm, Brig. G. Robertson, Prof. J. Sellschop, Prof. G. van Drimmelen	
Pretoriatak Verteen- woordigers:	Prof. G. Erens, Dr E. Fourie, Prof. J. Geerthsen, Mev. U. Ortner, Dr P. Skoberla	

A plenary meeting, to finalise plans for  
and to inaugurate an

### INTERNATIONAL UNION OF ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE

will take place in

**HONG KONG**

from 6 May to 10 May, 1991

**One delegate and two observers only  
may attend from each Association.**

ESMÉ den DULK  
Pretoria S<sup>2</sup>A<sup>3</sup>

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