

AWARDS, HONOURS AND ACHIEVEMENTS

- National Research Foundation A-rating (1985; one of the first two original awardees in chemistry)
- Senior Research Fellow/Scholar at Corpus Christi College at Cambridge University (1982)
- Raikes Medal (1973) and Gold Medal (1993) from the South African Chemical Institute

DEFINING MOMENT

His appointment at the University of Cape Town (UCT) when he was still working for the South African Iron and Steel Corporation (IsCOR) was significant because he went into academic life from then on.

WHAT PEOPLE MIGHT NOT KNOW

"I've always loved sport – as a student I was captain of the University of Natal soccer team in Pietermaritzburg, second-team university cricket, rugby for three years while in the United Kingdom, social squash, club dinghy sailing with the family and competition golf with my wife until work pressures made both of us give up sport."

A LIFE OF SCIENTIFIC LEADERSHIP

Raymond Haines would like to believe he missed a chance at a Nobel Prize in Chemistry by no more than a few months. All the same, he has made his mark on the scientific world through decades of leadership at higher education and research institutions around South Africa.

In the late 1960s, industrial and academic chemists around the world were trying to understand an important and recently discovered reaction known as alkene metathesis (referred to as 'olefin dismutation' at the time) – a very efficient way to bond two organic molecules. Haines and a colleague at the University of Sussex studied the mechanism of this reaction and thought they had found the answer.

"There was a lot of conjecture about alkene metathesis around the world at the time," says Haines. "We believed we had found the actual mechanism; it was

a most unusual procedure. Unfortunately due to teaching pressures at UCT, it took us some time to report our findings and the article, a review later designated a citation classic, came out much later than we had hoped."

In the meantime, French chemist Yves Chauvin had published similar findings with what Haines now admits was better evidence. Chauvin won the Nobel Prize in Chemistry in 2005, along with Richard Schrock and Robert Grubbs. The process they described is now widely used in industrial processes, particularly in manufacturing pharmaceuticals. For his part, Haines turned to other pursuits and in particular metal cluster chemistry.

Now retired, Haines has left an indelible mark on the South Africa research landscape. After a three-year period at UCT, he joined the Chemistry Department of the University of Natal in Pietermaritzburg (now part of the University of KwaZulu-Natal), and became Head of Department in 1978. He was appointed Dean of Science in 1992 and subsequently Science and Agriculture, a position he held until his retirement from the post at the end of 2001. He also served on many different review boards and committees, including the Council of the University of Natal, numerous Senate committees of the University, the Advisory Committee of the National Chemistry Research Laboratory of the Council for Scientific and Industrial Research (CSIR) and the Board of the South African Chemical Institute. After his retirement, he spent 13 years as a Chair of the National Research Foundation's (NRF) Subject Assessment Panels and as a member of the Executive Evaluation Committee.

"After my retirement, my wife and I moved to Cape Town in 2005." He explains: "I worked closely with Professor John Moss at UCT until his sudden and unexpected death led me to cut ties to some extent with chemistry."

"I never lost touch with science though. I chaired NRF-ratings committees for virtually every research discipline in the country, and learned much about all the research being tackled in South Africa." He is extremely proud of the contribution he has made to South African science through his involvement in these NRF-ratings committees.



"I think the rating system is very important. The assessor and chairperson have to be from very different areas to ensure objectivity and consistency. It was quite fascinating, and I've always felt it was a very important contribution."

Born in the United Kingdom and a member of a family of engineers and scientists, young Raymond Haines had little doubt that his would be a life of scientific rigour. "I'm the second oldest of six brothers; my next brother down from me has a PhD in chemical engineering, becoming the technical director of a major South African mining house; the next one down took over my father's construction business; the next was a civil engineer; and the youngest is a mechanical engineer and senior lecturer at Stellenbosch University (SU). And my older half-brother was a biochemist at the Medical Research Council at Cambridge University."

Completing a BSc in Chemistry and Physics at the then University of Natal exposed Haines to a strong chemistry department and he followed his heart towards chemistry and inorganic chemistry, completing an Honours and Master's degree there. "I enjoyed inorganic chemistry most; I can't really explain why but something about it grabbed me. In a way it contains the full spectrum of the physical world. I was also fascinated by the remarkable range of colours produced by inorganic compounds and materials."

His undergraduate and initial postgraduate studies were funded through an Iscor bursary and subsequently a prestigious Shell Undergraduate Scholarship but after 5 years of study he was ready for a change of scenery. Under contract

to the parastatal company (later ArcelorMittal) he joined their research division, serving out 18 months contract in their research division. That led to an opportunity to complete his PhD at University College London under one of world's leading inorganic chemists at the time, Sir Ronald Sydney Nyholm. Haines was awarded the PhD in 1966. It was here that he met his wife, a fellow academic and now an internationally acclaimed statistician.

Returning to Iscor, he soon found himself drawn back to academia and to a post at UCT. However Haines' academic career quickly transformed to one of leadership as at the University of Natal he soon became a Head of Department and subsequently, a Dean. He says that one of his best contributions at the university as Head of Department of Chemistry was to ensure that the department and its research groups remained strong. Although a small department, it attracted a good number of Honours and MSc students and stayed competitive with the other major universities at the time such as UCT and the University of the Witwatersrand (Wits). He oversaw the setting up and the development of a science foundation programme at the university designed to help promising disadvantaged students prepare for a BSc degree. It attracted its first group of students in 1993 and is still running.

He is pleased with another major contribution he has made to South African science: As an original Member of Academy of Science of South Africa (ASSAf), he contributed the chemistry chapter of the publication on the *State of Science in South Africa* (2009) published by ASSAf.



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A. Academy of Science of South Africa (ASSAf) Publications

C. ASSAf Policymakers' Booklets

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Legends of South African Science II

Academy of Science of South Africa (ASSAf)

Academy of Science of South Africa (ASSAf)

Academy of Science of South Africa (ASSAf), (2019). Legends of South African Science II.

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