

EDITORIAL

1. OBITUARY TO PROF. JOHN BRADLEY
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1. OBITUARY TO PROF. JOHN BRADLEY

MEMORIAM JOHN BRADLEY (1937-2022)



By Marissa Rollnick and Elizabeth Mavhunga (Taken from SACI website)

Professor John Bradley joined the Wits School of Chemistry in 1964 after completing his studies at the University of Leeds and the University of London (King's College) and his postdoctoral fellowship at Florida State University. He worked his way up the ranks and became a full professor. He spent 58 fruitful years at Wits in several capacities, all with the central theme of Chemical Education.

Early Period: Wits School of Chemistry, 1964 – 1990:

He began as a pure chemist, but through his contact with other colleagues who were concerned about the lack of conceptual learning in undergraduate courses, he began to explore better ways of teaching

chemistry. He was actively involved in curriculum development in both lecture and laboratory classes across the undergraduate spectrum (1st year general chemistry and 2nd- 4th year organic chemistry as well as 4th year science education. According to Gus Gerrans, in 1986 he introduced SGTs (Small Group Tutorials) in 1st year chemistry courses as part of what was called TLLM (Teaching Less and Learning More).

He was the driving force behind the creation of the Science Education Committee in the Faculty of Science together with notable academics in other disciplines and created Honours options in Science Education, offered primarily to teachers and teacher educators. This was followed by the creation of a Master's degree in Science Education. His concern about the poor throughput rate in the Faculty of Science led to the establishment in the late 1980s of a two-year bridging programme leading to second year BSc. This later evolved into the College of Science (a fully-fledged extended curriculum programme at Wits which ran from 1990-2004).

His mentoring approach to chemical education started with his colleagues, exemplified by the reflections of Dr Margie White, a former tutor (1981 – 2006) who reflected, “My approach to teaching changed drastically in that time.... input from John turned my understanding of chemical concepts and the teaching of them, upside down - start with the small (the microscopic) and then understand the large (macroscopic)”.

During this period, he was president of SACI (1988-1990), education officer of SACI (1992-2015) and Chairman of IUPAC committee for the teaching of chemistry.

RADMASTE (Research and Development in Mathematics, Science and Technology Education):
1990 – 2014

As his interest in Chemical Education grew, John felt the need for making a wider impact on the teaching and learning of chemistry in South Africa and later beyond. Together with colleagues in physics and mathematics, he established RADMASTE, an organisation that worked to improve the teaching of both teachers and teacher educators and began the work that led to international recognition – the development of microscale chemistry kits and accompanying materials, culminating in a NSTF award in 1998, an award from International Organization for Chemical Sciences in Development, and finally an international microscale chemistry award. A fellow microscale developer in the UK, Bob Worley reflects, “A giant in the microscale world has passed on. I was determined at the time in 1991, ... not to lose the well-known school experiment - the reduction of copper oxide by hydrogen. I found one (safe) method (developed) by John, ... which I adapted for use with equipment found in our school labs”.

An article by Beverley Bell, formerly of RADMASTE, provides evidence of Important work with Chemistry teachers in Africa (50 sites in 28 Countries), South and Central America and the Caribbean (7 countries), Europe and Eurasia (24 countries), Asia (10 countries), Indian Ocean Islands (4).

A former RADMASTE colleague and now lecturer in the Wits School of Education, Dr Mpunki Nakedi reflects, “to me John was not just a teacher, a leader or a colleague, but was like a father I feel I did not honour enough, and I am immensely grateful for that profound undeserved connection”.

Throughout his career, John found time to supervise postgraduate Students, amongst them, Professor Nthabiseng Ogude (PhD 1991), Professor Elizabeth Mavhunga (Masters with distinction in 1997), Dr Betty Dlamini (PhD 2000), Dr Sabelo Manyatsi (PhD 1997) and Dr Margie White (PhD 1997).

Dr Betty Dlamini reflected, “He will indeed be remembered for his sharp observations and his gentle comments while guiding the theses writing. You just never forget his insights to your ideas as a student”.

“Retirement”

John never really retired. RADMASTE moved to the Wits Education Campus in 2009, he taught chemistry courses for the honours programme in Science Education on an honorary basis from 2002 – 2018. Marissa Rollnick reflects, “I began to co-teach the course with him and gained a new insight into chemistry ideas, some so new that to understand his approach, I found it necessary to video record his classes, as what he was sharing was unavailable in any literature. In later years he began to provide “notes” which provided insight into his thinking on key topics such as ‘acids and bases’ and ‘atomic structure and bonding’”.

Peter Moodie, with a physics background, relearnt most of his chemistry from John and was struck by John’s ability to take a reader straight to key principles, often lost in textbooks. He writes, “I was relieved after struggling with bonding theory rules, to be reminded that bonding is simply electrostatic attraction between atoms. The physics was so obvious when he pointed out that big idea. But I wondered how many students do get lost in the labyrinth of chemical theory in various topics. John argued that these are mostly taught separately with no Big Ideas offered to create a whole picture.”

John Bradley made an invaluable contribution to future science teachers, teaching final year students chemistry up to November 2022. As Professor Elizabeth Mavhunga put it, “he persistently challenged us to think big, think contemporary and never be complacent about our teaching offerings”, a stimulus for her initiative to review the 4 years of the B.Ed., which she began in 2021 in

collaboration with Dr Emmanuel Mushayikwa. According to Peter Moodie, John submitted a paper to IUPAC just before he went on leave in December 2022. In this paper he elucidated much of his thinking about the future direction of initial teacher education in the context of climate change and social change.

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From AJCE

Prof. John Bradley

1. Has been serving as a member of the International Advisory Board of AJCE since its establishment in 2011.
2. Has been serving as anonymous reviewer of manuscripts submitted to AJCE.
3. Has published and co-published articles in AJCE.

We miss his professional support to AJCE. Let God bless his soul and give strength to his family.