Citation : Huw Ronald Phillips.

I am deeply honoured and privileged to be asked to present this citation to an esteemed colleague and friend, in Professor Huw Ronald Phillips. I have also been humbled in recent days by the enormous extent of his contribution to the mining industry, which I will attempt to describe below.

Huw was born in 1947 in the picturesque seaside town of Aberystwyth, on the West Coast of Wales.

After finishing his schooling he moved across the border to England, where he attended the University of Bristol, where he completed his Batchelor's Degree in Electrical Engineering, in 1968.

Not surprisingly, he returned to Wales, where he joined the National Coal Board of the UK., occupying various positions in the underground coal mines of East Wales. This work experience allowed him to obtain his Engineer's Certificate, which he obtained in 1970 from the UK Ministry of Technology, in accordance with the UK Mines and Quarries Act.

During this time he decided to return to academic study, concentrating on research work in the area of mine mechanisation, involving the application of scientific principles and good engineering practice to the design and operation of continuous mining machines. He completed his MSc Degree at the University of Newcastle upon Tyne, in 1971. This research work concentrated on the Dynamic analysis of coal ploughing systems by digital simulation. I am sure any foreign students would have found academic debate between a Welshman and a Geordie quite a challenge to understand.

In January 1973, he decided to move fully into the academic world, and was appointed a Senior Research Associate at the Department of Mining Engineering, at the University of Newcastle upon Tyne, under the supervision of the well known Professor Potts.

This period allowed him to achieve his Doctorate, having researched and produced his Ph.D Thesis on "Rock Cutting mechanics related to the design of primary excavation systems".

During these years in the UK, he became a member of the Institute of Mining Engineers of the UK, registered as a Chartered Engineer, and became a member of the Institution of Electrical Engineers of the UK.

Having been awarded his Ph.D, Huw decided to emigrate, to Australia, where he took up a position at the University of New South Wales as a Lecturer, followed by appointment as a Senior lecturer in 1981.

Whilst at the University, he lectured in coal mining, ventilation, health and safety and mining legislation. In addition to lecturing undergraduate students, he also developed two postgraduate courses in Mining Engineering Technology and Advanced Cutting Technology, and taught these through 1980 to 1984. While undertaking this extensive work load, he also supervised a Master's Dissertation and three Doctoral theses.

During this time, Huw was drawn into University administration, and served on several University Boards and committees, including the Faculty of Applied Science Board, the Faculty of Applied Science Higher Degree Committee, and the Policy Committee for the Formation of a School of Mines.

His personal interest in mine mechanisation continued, but moved from the design of cutting systems to the design of coal loading and clearance systems for longwall mining. Because Australian longwalls were highly productive, methane release rates and respirable dust generation then became the main subjects of interest for him. This lead to a two year research project which resulted in the New South Wales coal industry adopting gravimetric sampling for the monitoring of coal dust exposure.

In 1985, Huw decided to make his next international move, and came to South Africa taking up the position of Chamber of Mines Professor of Mining Engineering, at the University of the Witwatersrand.

Subsequently, he was appointed the Head of the School of Mining Engineering, at the University of the Witwatersrand, in the role that many of us hold him in esteem.

He also served during the years 1989 to 1991 as the Deputy Dean of the Faculty of Engineering.

While at the university, he has been involved in the teaching of many subjects, including Introduction to Mining, Mining A, Excavation Engineering, Environmental Engineering and Health, Mine safety and Mining Environment.

He continued his research interests while at Wits, especially in the area of methane and coal dust explosions. This was after the South African industry had experienced a series of methane and coal dust explosions, not only in the coal industry, but also in the gold industry. These incidents were contributing to a poor safety performance of the South African Mining industry, which resulted in several hundred fatalities annually. These occurrences not only stimulated the need for increased research, but also created the platform for a number of statutory changes, and collaborative initiatives being formed, through the Chamber of Mines and the Mine Health and Safety Council.

Huw became involved in these initiatives through his research and through his position as the Head of School. In the research area, his interest moved to ventilation to prevent methane explosions, and the design of barriers to prevent the propogation of coal dust explosions. Working with a postgraduate student employed by the CSIR at the Kloppersbos Research Facility, the concept of a bagged stone dust barrier was developed, and tested. The results of this research are now adopted in South Africa, Australia and the United States.

In his role as an academic supervisor at Wits, Huw has supervised 40 Master's dissertations, 19 Doctoral theses and a D.Eng., over a period of 28 years. He still continues with this work, and currently supervises four Ph.D and two M.Sc students.

He has contributed enormously to the administration of the School, and the University, having served throughout this time as a Member of Senate, as a Member of the Architecture and Engineering Advisory Committee from 1987 to 2007, as a member of the Academic Board, from 1991 to 2002, and as a Member of many ad-hoc Selection, Promotion and Policy Committees. In the Faculty of Engineering and the Built Environment, he has served as a Member of the Faculty Board from 1985 to 2012, as a Member of the Graduate Studies Board from 1985 to 1990, and as a Member of the Executive Committee of the Faculty.

Whilst this may seem like a simple list of committee activities, life in the academic world is by no means simple, and the time, work and effort involved in such a level of academic administration is enormous.

This all took place during periods of turbulence, re-organisation and transition at the University, as well as in industry.

During the late 1980's and early 1990's, Wits experienced a very high level of activism and protest before the transition to democracy in 1994. This made the normal administration and teaching activities at the university and the School difficult, a situation which manifested itself from time to time after the transition as well.

Mining engineering intake numbers diminished to economically threateningly low numbers at one stage, probably as a result of these socio-economic and political changes, coupled with the less than attractive image of the industry for young school leavers, at that time. During this period, Huw had to deal with the desire from industry and other quarters to establish a central School of Mines, but was able to bring sanity to the debate through his experience in the practicalities of teaching and academic administration.

After 1994, the demographics of the university and the school changed, and this change also required careful and informed management and administration, with greater emphasis being placed on the needs of previously disadvantaged students, who were coming from impoverished backgrounds, and who were faced with social and economic challenges. Huw successfully steered the School through all of these challenges, maintaining the standards and excellence of the School throughout, while at the same time having to apply these standards to a student base that increased significantly after 2000. Undergraduate numbers swelled from previous averages of 20 students in the 1990s to intakes in the last few years of over 150. This huge increase in numbers was also seen in the postgraduate area of study, with postgraduate numbers increasing four-fold. These increases brought staffing challenges, and equipment and facility challenges. Huw engaged with industry and formed industry liason which resulted in increased industry support, both in terms of money, bursaries and facilities. Whilst other Mining Schools around the world were shrinking in size, Wits established itself as the largest School in the Western and English speaking world, surpassed only by Schools in Russia and China.

The administrative, teaching and support loads of successfully managing the school through these transitions cannot be over-emphasised, and is a tribute to Huw's ability, dedication, tenacity and academic professionalism.

Sadly, during his tenure as the Head of School, Huw lost his first wife Joan to illness, but despite this personal setback, he continued to lead the School. Joan had also been an active member of the Wits fraternity.

During his career Huw has contributed to industry not only through his role in the academic world, but also through serving on many industry committees. In these, he served as a Member of the Australian Government Advisory Committee on Gas Related Problems in Coal Mining from 1980 to 1985, as a Member of the Joint Coal Board's Standing Committee on Dust Research and Control in New South Wales, from 1982 to 1985, as a Member of the International Society of Rock Mechanics

Commission on Rock Boreability, Cuttability and Drillability from 1983 to 1987, a Member of the Explosion Hazards Advisory Committee of the Department of Mineral and Energy Affairs of South Africa from 1985 to 1992, as a Member of the Council of the SAIMM from 1989 to 1992, as Chairman of the Mining Industry Special Interest Group on Explosion Hazards, of SIMRAC, from 1993 to 1997, as a Member of various Working Groups within SIMRAC from 1993 to 2002, as a Member of the International Committee for Coal Research in Brussels, from 1995 to 2006, as a Member of FutureMine Board from 2001 to 2004, as a Member of the Management Committee of Coaltech 2020 from 1998 to 2009, and as Chairman of the South African Committee of the International Committee for Coal Research, from 2002 to 2006.

He has also served on three editorial boards, of the Australian Journal of Coal Mining Technology and Research, Mining Science and Technology and Mineral Resources Engineering. In addition, he has been appointed as the Editor of the Australian Journal of Coal Mining Technology and Research from 1981 to 1984, and as a Moderator for the Chamber of Mines of South Africa Examinations in Mine Environmental Control.

Huw's research output has been prolific to say the least. He has published fifty five technical research papers throughout the world, as well as seven general papers, four published notes and a chapter in a book on mechanical properties of coal.

In the consulting field, Huw has undertaken more than forty commissions on behalf of government agencies, mining companies and mining equipment suppliers. This has involved working for short periods in Germany, South Korea, Turkey and the United States. He has also undertaken work in South Africa, Australia and the United Kingdom, and is currently engaged with the on-going case of the Pike River Coal explosion in New Zealand.

My first encounter with Huw was at a meeting that I convened on behalf of the Mine Managers Association, at which I dared to suggest that the mining engineering curriculum be changed to align to the Mine Managers Certificate. The response I received was in due recognition of my naivety that the centre of my universe was in the company I worked for, and the Corporate office is everything to everyone. Huw soon put me right on that one, and it was an early learning lesson that the academic world is a different one to the corporate world. One which I was soon to learn about.

My second experience was when I found myself in his office, ready to start as a lecturer myself at Wits. He put me at ease with the task that lay ahead of me, but it was very soon afterwards that I learnt that despite what one may think, you only discover how little you know when you have to stand in front of an audience to explain what you forgot twenty years before. I also learnt very quickly that the world of the university is not an easy one, and that the notion that lecturers and university staff have lots of holidays and spare time, is an absolute myth.

A colleague recently said "academics are sensitive and difficult people". I can attest to this from personal experience, but Huw was himself sensitive to this fact, and managed to build a coherent team that it was a pleasure to be a member of.

My period at Wits, working with Huw, is probably the period of my life when I have worked the hardest, but which was also the most rewarding, and therefore I personally am deeply indebted to his guidance, support and professionalism.

On a personal note, Huw has recently remarried, to Beatrice, and Huw has a daughter, Andrea, and a son, Paul, from his first marriage.

Huw has contributed greatly to the mining industry, not only in South Africa, but throughout the world.

His legacy includes not only his academic contributions, his research, his involvement with industry and his administration and supervision, but especially in the numbers of students at both under graduate and post graduate level who have passed through the Universities of New South Wales, and Wits, during his tenure and guidance, who now are scattered across the mining globe, as captains of, and advisors to, our great industry.

This morning I counted the faces on the photographs in the staff room at Wits, and found that 703 undergraduates have passed through Wits during the time that Huw was Head of School. It would seem that even more postgraduates have been through the Wits system in this time of his office as Head of School, with some 180 passing through the Certificate Programme as well. I am sure many of the faces on this rogue's gallery are here today, and many others have assumed senior positions in industry. Names spring to mind such as John Mackenzie, Wayne Robinson, Mzila Mthenyane, Phillip Tobias, Celiwe Mosoane, Eric Lilford, Donovan munro and William Joughin, to name but a few. Several of our Council members also received their Doctorates either under his direct supervision, or his tenure, including Dr Gys Landmann, Dr John Cruise and Dr Gordon Smith.

This tenure also saw the first HDSA candidates pass through the School, the first HDSA female graduate in 2002, and a transition from small classes of beer drinking rugby players to fully representative demographic numbers, including an intake of up to thirty percent females.

While at the School, I chatted with the current Head of School, Professor Fred Cawood, who said to me that he felt Huw's legacy to the School was on the one hand creating stability in the School, during a long tenure, though difficult times, and creating a happy school, where there are more happy people than unhappy ones. This, it seems, in academic departments, is remarkable and exceptional.

These contributions to industry in general, and the South African mining industry in particular, make this award of the Brigadier Stokes award, the most prestigious of all awards, to Professor Huw Phillips, a truly worthy and deserved one, and one that we can all be very proud of being a part of presenting today.