Dr Fanaroff's academic and professional career started when he was awarded a BSc Hons in Theoretical Physics from the University of the Witwatersrand. Building on this foundation he went on to complete a PhD in Radio Astronomy and Astrophysics at the University of Cambridge. He also holds an LLD (Honoris Causa) from Rhodes University and a D Phil (Honoris Causa) from the University of the Western Cape.

During his PhD studies he discovered a schema of classifying objects, later to be known as the Fanaroff-Riley classes. According to this classification, which uses the morphology of large scale radio emissions, radio sources are divided into two classes, referred to as Fanaroff and Riley Class I (FR1) and Class II (FR2). FR1 sources are brightest towards the middle while FR2 sources are brightest at the edges. A reasonably sharp split in luminosity between the two classes was observed: FRIs were low luminosity and FRIIs were high luminosity.

Today we understand that this difference in morphology reflects different methods of energy transport in the radio source. FRI objects have bright jets in the center which are inefficient in the sense that they radiate a significant amount of their energy away as they travel. The FRII objects have faint jets but bright hotspots at the ends of their lobes suggesting they transport energy efficiently to the ends of the lobes. This classification continues to play an important role today, as evidenced by the fact that Dr Fanaroff’s paper describing this phenomenon has been cited over 1500 times.

After completing his PhD, Dr Fanaroff returned to South Africa and, for a brief period, taught at Wits. He then joined the fledgling trade union movement to which he made an enormous contribution, at considerable personal sacrifice, over a period of 26 years, first in the Industrial Aid Society based in Johannesburg, then in the Metal and Allied Workers’ Union and finally in the National Union of Metal Workers of South Africa into which MAWU merged in 1987.

At all stages, Dr Fanaroff played a central role in developing and implementing union strategy. He did this firstly through negotiating with employers on an individual factory basis, with a view to securing the signing of recognition agreements, a defensive and highly vulnerable phase. This approach saw MAWU grow to be the largest black trade union in South African with a membership of 80 000. Secondly, he helped initiate a significant policy departure when MAWU decided to join the National Industrial Council for the Steel Engineering and Metal Industry in 1983. Thirdly, he helped steer NUMSA into an equally radical policy shift in the early 1990s when it adopted a new strategic vision of reconstruction in cooperation with the ANC. In the middle phase Dr Fanaroff served as National Organizer for MAWU then as organizing secretary of the metal section in NUMSA and then as coordinator of an overall national bargaining structure.

He played perhaps the most important role of any in MAWU/NUMSA in confronting the Steel and Engineering Employer's Association (SEIFSA) representing 56 employer associations and unions representing 160 000 white craft unionists. This initiative forced SEIFSA to recognise MAWU as the most representative trade union in the industry and ultimately, to genuinely negotiate annual wage settlements starting in 1988-89.

Dr Fanaroff’s vision, shared by others in MAWU, to create a united national union of metal workers which had the power to negotiate effectively on behalf of its members, was further advanced when MAWU joined with Automobile and Motor unions to form the National Union of Metal Workers in South Africa in 1987. NUMSA had a paid up membership of 235 000 in 1990, the biggest affiliate in COSATU. What is particularly noteworthy and remarkable about this record is that, through practically all of this period, the steel engineering sector was contracting and shedding jobs at a high rate.

In the final phase of Dr Fanaroff’s career as a trade unionist he played a pivotal role in shifting union policy from resistance to reconstruction helping lead the union into a wide range of tri-partite fora (comprising government, business and unions). The union now played a pioneering role in developing a new industrial restructuring policy in a context of economic liberalization and intensifying global competition which focused on worker training, job security and job creation. One product of these
discussions in NUMSA and COSATU was the reconstruction and development plan, adopted in 1994 as the policy of the new government.

In 2003 Dr Fanaroff was appointed as project director of South Africa’s Square Kilometer Array (SKA) bid. Against serious competing bids from three other countries, Dr Fanaroff and his team successfully steered the bid to ensure that South Africa was assured of hosting the largest share of the SKA – a wonderful affirmation of his leadership of the project and a significant contribution to the consolidation of high-level science in South Africa.

The SKA will be the world's most powerful radio telescope, roughly 50 to 100 times more sensitive than any other radio telescope on Earth. The SKA will be able to probe the edges of our Universe, probing fundamental questions in astronomy, physics and cosmology, including the nature of dark energy and dark matter. It will be a major step in developing high-level skills and cutting-edge technology in Africa. Under Dr Fanaroff's leadership, top scientists and engineers have already been attracted to South Africa, while local scientists have been inspired by the opportunities that the SKA presents.

Dr Fanaroff has been the Deputy Director General in the Office of President Mandela and the Head of the Office for the Reconstruction and Development Programme; the Deputy Director General of the Department of Safety and Security, the chair of the Integrated Justice System Board and the Steering Committee for Border Control and is currently the Project Director of South Africa's Square Kilometre Array bid and the construction of the Karoo Array Telescope. He serves as a non-executive director of Eskom Holdings Ltd and a Visiting Professor in Physics at Oxford University.

Given his achievements, it is fitting that Wits honours Dr Bernard Lewis Fanaroff by awarding him an Honorary Doctorate.