

SA Bioscience Overview

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The discipline of structural biology has had a rocky start and chequered history in South Africa. Despite structural biology having transformed the life sciences over the last half century and the continued relevance being documented almost daily through novel revelations in the premier scientific journals such as Nature, Science, Proceedings of the National Academy of Sciences (USA), New Scientist, and novel drugs being developed continuously based on its insights, the field has been systematically underdeveloped in South Africa. In the 1970's to the 2000's, structural biology was seen as too expensive for universities and funding agencies in South Africa. Hence the first rotating anode generators were installed only in the early 2000's in Cape Town and Johannesburg under the respective leadership of Profs Trevor Sewell and Heini Dirr. From these late beginnings, the discipline has expanded slowly but steadily to secondary centres throughout the country including Bloemfontein, Stellenbosch, Pietermaritzburg, Pretoria, Richards Bay, Potchefstroom, Makhandla/Grahamstown and others. As centres are not all equally well equipped in hardware, expertise and manpower, a complex network of extensive collaborations have developed between the groups helping researchers and students in different parts of the country to push their projects forward.

Despite the hardships encountered over many years and enduring into the present, the community of structural biologists is currently fairly cohesive and still growing. However, many dangers lurk that could rapidly derail the gains made over the last years. These include the weak financial support in the South African funding landscape, the (imminent) retirement of the trailblazers in the field, limited employment prospects for graduates and a resulting associated brain-drain out of the country, the poorly developed drug industry in South Africa, to name just a few.

Thus while structural biology appears passably well established in South Africa at present with fairly good links to international infrastructure such as the ESRF and Diamond, the continued development of the discipline will require significant will power, hard work, the identification of alternate funding sources, the further development of international ties, and the engagement with and support from appropriate representatives in the South African funding agencies and ministries.

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