

## **Citation for Honorary Doctor of Medical Science (*honoris causa*)**

### **PROFESSOR RUTH FRANCES BISHOP AO BSc MSc PhD DSc**

Professor Ruth Bishop AO is an eminent Melbourne scientist who has devoted her career to improving child health. She was awarded BSc 1954, MSc 1958, PhD 1961 and DSc 1978, by the University of Melbourne.

Since 1968, when appointed Research Microbiologist in Professor Charlotte Anderson's group at the Royal Children's Hospital Research Foundation, her research has been integrated with the clinical Gastroenterology services at the Melbourne Royal Children's Hospital, and associated with the Department of Paediatrics, University of Melbourne.

Ruth is best known for leading the team, which in collaboration with Dr Ian Holmes at the University of Melbourne's Department of Microbiology in 1973, discovered rotavirus, later shown to be the major cause of severe gastroenteritis in children worldwide. But her career began in the 1960s, working with Charlotte Anderson, Dr Rudge Townley and paediatric surgeon Ms Helen Noblett, to understand gut flora changes in children with a variety of intestinal diseases. She and Dr Rudge Townley then initiated research to understand the pathophysiology of childhood gastroenteritis, studies which led to the discovery of rotavirus. Within the research program she co-supervised and mentored several paediatric gastroenterologists who went on to make major clinical and research contributions in their own right. The lead up to the discovery of rotavirus was classic careful science, mixed with the new clinical investigative technology of small intestinal biopsy, expertly modified by Rudge Townley, and collaboration with expert virologist Dr Ian Holmes.

Ruth Bishop subsequently has vigorously pursued the goal of preventing this serious infection, which kills half a million children each year worldwide. Careful epidemiological studies within Australia, and globally via her WHO Collaborating Laboratory, have greatly informed international development of rotavirus vaccines.

It is tremendously exciting outcome that oral rotavirus vaccines were introduced into the routine immunisation schedule for all Australian children, from July 2007, and that they have been licensed in more than 60 countries. The group, now hosted by the Murdoch Children's Research Institute, continues to develop an Australian candidate vaccine to be given to newborn babies, thus preventing rotavirus disease in the early weeks of life in developing countries, where the disease hits before current vaccines can be given. An equally important aim that this vaccine should be cheap and affordable for developing countries.

Ruth has also played a significant role in understanding other gut disorders affecting children. Perusal of her early career on her CV shows how important her work was in Charlotte Anderson's many contributions to child health. These include gut flora studies in children with celiac disease and cystic fibrosis when Professor Anderson was dissecting these conditions from the 'coeliac syndrome', carbohydrate malabsorption after neonatal gastrointestinal surgery, and later infectious diarrhoea after bone marrow transplantation. More recently, she has fostered pursuit of possible infectious agents as causes of Crohn's Disease, a disorder which has reached almost epidemic proportions in children since it started appearing in this age group in Australia in the 1970s. Once again the association of excellent laboratory science with skilled clinical investigation – in this case endoscopy – is providing new insights into disease mechanisms.

Ruth's eminent work in rotavirus has made her an international icon in the field of diarrhoeal diseases in children. She has been on, and chaired several WHO Committees, and has given wise counsel to many WHO child health programs.

The list of national and international honours bestowed upon Ruth Bishop is long including the University of Melbourne Selwyn-Smith Prize for Clinical Research (1978), the Clunies Ross National Science and Technology Award (1998) and the Children's Vaccine Initiative Award (WHO Geneva 1998). She received the Royal Children's Hospital Gold Medal in 1994 and the AO in 1996. Her international profile greatly exceeds her Australian profile. This is partly due to her quiet style, and avoidance of publicity. There have been few Australian scientists or clinicians who have had such an impact on child health worldwide.

Professor Ruth Bishop AO is a very worthy recipient of an Honorary Doctorate of Medical Science from the University of Melbourne.