

CENTREFOLD

Dr Gloria Olive



Dr Gloria Olive, Senior Lecturer in Mathematics at the University of Otago from 1972, retired from this position in February, 1989. Throughout her varied career she displayed a steady enthusiasm for teaching and especially for encouraging able students. She has successfully combined her interest in teaching with active research in the area of Combinatorics. She taught at a considerable number of institutions, most notably at Otago University and Anderson College (now Anderson University in Anderson, Indiana) where she served as Professor and Chairman of the Mathematics Department from 1952 until 1968.

Gloria was born in New York City on 8 June 1923. She graduated in 1940 from Abraham Lincoln High School. Other coming mathematicians such as Richard Bellman (later at the University of Southern California) and Leon Henkin (University of California, Berkeley) had recently graduated from this school. In 1944 she received her B.A from Brooklyn College, where her teachers included Jesse Douglas, Moses Richardson and Walter Prenowitz. Her first teaching experience was as a Graduate Assistant at the University of Wisconsin (1944–46). From here she received her M.A in 1946, having worked with Professor R. H. Bruck, H. P. Evans, R. E. Langer, and C. C. MacDuffee.

Gloria then enjoyed a variety of teaching experiences, as an instructor at the University of Arizona (1946–48), at Idaho State University (1948–50), and as a Graduate Assistant at Oregon State University (1950–51). Then, after a brief tour of duty as a cryptographer in the U.S. Department of Defense in Washington, D.C., she went to Anderson College in 1952.

While at Anderson, she developed her "generalized powers", an interest that eventually led to her Ph.D at Oregon State University in 1963. Professor C. C. MacDuffee of the University of Wisconsin agreed to accept a visiting professorship at Oregon State University in order to supervise her Ph.D thesis. His unexpected death in 1961 resulted in a situation which led to her being her own thesis supervisor. Formal approval for her thesis was given by Professor

Arvid T. Lonseth, Chairman of the Department as well as the motivator for her Ph.D.. A modification of her thesis was published in the American Mathematical Monthly under the title "Generalized Powers" (Vol 72, 1965, pp 619–627).

Her accomplishments at Anderson led to a marked increase in the number of mathematics students and majors (staff numbers increased from 1 to 4), the establishment of a chapter of Kappa Mu Epsilon (a national mathematics honor society) and the arrangement of visits by some leading mathematicians (such as Charles Curtis and Saunders Mac Lane). She was also a visiting professor during summers at some Canadian universities.

After leaving Anderson in 1968, she became a Professor of Mathematics at the University of Wisconsin-Superior.

Gloria's mathematical interests have revolved about some special functions which arise from the study of combinatorics. These include generalized powers [J.M.A.A. journal of Mathematical Analysis and Applications), 74 (1980), 270–285], the b -transform [J.M.A.A., 60 (1977), 755–778], binomial functions [J.M.A.A., 70 (1979), 460–473; and 83 (1981), 110–126 (with Donald Krouse)], and extended Catalan Numbers [J.M.A.A., 111 (1985), 201–235]. Some of her work on binomial functions overlaps that of Gian-Carlo Rota's "polynomials of binomial type". She has had a special interest in the polynomials which are generated by her generalised powers, and hopes that someone will prove or disprove her conjecture, now about 30 years old, that all their zeros lie on the unit circle. This conjecture has now been verified for infinitely many special cases.

While in New Zealand, Gloria has served the mathematical community in various ways. For example, she has been a member of the NZMS Council and the convener of the New Zealand National Committee for Mathematics. Also, her strong convictions on various academic matters have, on occasion, led to strong communications.

Her retirement will be spent mainly in Dunedin, where, among other activities, she is looking forward to exploring more cycleways on her bicycle. At present she is serving as Appointments Secretary to Professor Saunders Mac Lane (who is William Evans Visiting Professor) and supervisor for Raymond Scurr's M.Sc thesis. In August she is to return (for one semester) as a Visiting Professor at Anderson University, where three of the four members of the Mathematics Department are her former students.

For all of her time with the Mathematics and Statistics Department of Otago University, Gloria has been the only female on the staff with tenure, and as such has been a shining example to both staff and students. She has fought hard for the issues she championed, and contributed to several worthwhile changes (such as the current internal assessment policy applauded by both staff and students). Her colleagues will miss her lively contributions to the debates in departmental meetings. We all wish her health and every happiness in a long and constructive retirement.

Saunders Mac Lane and John Rayner