

OBITUARY

Professor Frederick Chong

MA(Camb.), MSc(Syd.), PhD(Iowa SU), DSc(Hon. Macq.), DSc(Hon. Syd.), C. Math, FIMA(UK)
1915 – 1999

At his 80th birthday party in Sydney on 5 March 1995, Fred Chong joked about being ABC: Australian-born Chinese. He also told why a recent addition to his family would become a mathematician: at age 4 years she was calling him (Great)³-Uncle Freddy.

Frederick Chong died on 14 May 1999 from complications after a car accident.

Throughout his education in Sydney, Frederick Chong was an outstanding student. He later viewed the teachers at Redfern Public School as among the best he ever encountered. A credit to this beginning, and to Cleveland Street and Fort Street High Schools, he achieved first position in Mathematics at the New South Wales Leaving Certificate. He graduated Bachelor of Science in Mathematics from the University of Sydney in 1935 with First Class Honours and the University Medal. His University studies were supported by scholarships: the Barker I & II, the Horner Exhibition and the Norbert Quirk Prize; all awarded to the outstanding mathematician of the year. On graduation he completed a Master of Science degree, at that time a research degree, and in 1937 as the recipient of the Postgraduate Barker Scholarship, went to St John's College, Cambridge.

The Cambridge experience had a profound influence on Chong. Whilst gaining First Class Honours in the Mathematical Tripos and Master of Arts, he heard (always to vividly remember and compare) the lectures of many great scholars of the period such as A.S. Eddington, P. Dirac, P. Hall, J.A. Todd [At], J.H.C. Whitehead, M.H.A. Newman and J.C. Burkill.

In 1940, Chong was appointed Assistant Lecturer in Mathematics at Sydney University's New England College which later became the University of New England. He was promoted to Lecturer in 1941 and was Chairman of the Science Departments in 1945 and 1946. From 1947 to 1956, he lectured at Sydney University in the Department of Mathematics, as Lecturer until 1949 and then as Senior Lecturer. Chong went to Iowa State University in 1950, where he completed in record time a thesis on boundary-value problems.

At age 40, Chong accepted appointment as Professor of Mathematics at Auckland University College in New Zealand. At this time, Professor K.E. Bullen said Dr Chong was the "best mathematics expositor that Sydney University had known" (Sydney's *Daily Telegraph* newspaper, 13 August 1955, page 9). Conversely, Chong had great respect for both his Sydney University seniors, Bullen and Professor T.G. Room.

Macquarie University announced the appointment of its first four Professors on 9 May 1965 (*Sydney Morning Herald* of the next day, page 4). This included Frederick Chong who was Foundation Professor of Mathematics in the School of Mathematics and Physics. The grouping of disciplines into the ten Macquarie Schools (rather than more traditional Faculties) was influenced by these original appointees. Chong eliminated the Pure–Applied distinction and worked with Physics to support the applications of his subject. Furthermore, "that Computing would be important in the future of university teaching was apparent to Fred Chong as far back as 1965" [MH] ; indeed, one of the first staff to join the School was Mr Harry Hancock who directed the establishment of Computing. Enrolments of over 2000 students in first-year computing units are now common place.

Macquarie took its first students during a lean year created by the introduction of the Wyndham Scheme into NSW high schools. To help improve the qualifications of teachers under the new Scheme, Chong conducted substantial in-service courses which led to his successful Special Masters Program for Mathematics Teachers (SMPMT) at Macquarie. He ran these programs, which continued for a short time after his retirement in 1980, almost single-handedly on Saturday mornings. The SMPMT graduates dotted around the State feel part of an elite group to have experienced so much of Chong's inspiring instruction.

More generally, Chong students from all stages of his life still marvel at the intellectual beauty he showed them. Pitched at a level perfectly suited to the audience, his lucid lectures incorporated humour and precision. In one Macquarie lecture room luxuriously appointed with five blackboards (now gone!), it is said that the last full stop would be placed at the bottom right of the fifth board punctually after the scheduled 50 minutes. Chong became known as a public speaker and, apart from more than 50 scholarly lectures to mathematical associations and teaching conferences in the period 1966-79, gave 14 Speech Day Addresses to schools and two tertiary Graduation Addresses.

For many of his 14 years at Macquarie he was the Head of School. He was extremely popular with and respected by his staff, supported by a wonderful secretary, Mrs Florence Kaldor. Chong allowed people to concentrate on their strengths while helping them overcome weaknesses. He expressed satisfaction with the quality of staff appointments he made and in the manner it was possible then to make them. During these years, Chong played a full administrative role as a heeded member of the Academic Senate and University Council of Macquarie University.

Beyond his personal teaching, Chong had a strong influence on education. I well remember at High School studying his adaptation of Maxwell's geometry text on algebraic geometry and seeing

his name on past Leaving Certificate papers. Being Assistant Examiner for the NSW Leaving Certificate Examination in Mathematics I and II from 1940 to 1954, he was Chief Examiner in 1955. He joined the NSW Board of Senior School Studies in 1967, became Chair of the HSC Mathematics Syllabus Committee in 1968, and Chair of the Mathematics Examination Committee in 1970; he remained in these positions until 1978.

Chong was very active in the NSW Mathematical Association and was President from 1953 to 1954. The topic of his Presidential Address was Knot Theory: possibly the first time this subject (now close to my heart) was presented in Australia. Another subject that Chong brought to Australia was the Theory of Distributions. He had been interested in Dirac's outrageous delta function since his Cambridge days. Then, after hearing the prize winning work of Laurent Schwartz at the International Congress of Mathematicians at Harvard in 1950, Chong made this the subject of his invited address at the Inaugural Meeting of the Australian Mathematical Society in Melbourne in 1956. His approach rendered distributions accessible to a very wide mathematical audience including SMPMT students.

In recent years, Chong was honoured in various important ways. The British Institute of Mathematics and its Applications conferred upon him the title of "Chartered Mathematician" and Fellow. On 29 April 1992, Macquarie University awarded him the degree of Doctor of Science, *honoris causa*. He was very happy this year to learn that his alma mater Sydney University intended to award him an honorary DSc on 4 June. The award was made posthumously.

After retirement, Fred Chong continued to live near Macquarie. He would visit to collect mail and to work with Ron Andrews. I heartily recommend (see [St]) their book [CA] as a source of inspiration and understanding of Chong's purpose. I already miss Freddy's visits to Macquarie and our occasional discussions.

There will be a Memorial Celebration for Frederick Chong at Macquarie University beginning at 7:30 pm on Friday 26 November 1999.

References

[At] M.F. Atiyah, Obituary: John Arthur Todd, *Bulletin London Math. Soc.* 30(3) (1998) 225-335.

[MH] B. Mansfield and M. Hutchinson, *Liberality of Opportunity: Macquarie University 1964-1989* (Macquarie University in association with Hale & Iremonger, 1992).

[CA] F. Chong and R.J. Andrews, *A View of Mathematics: Big Picture Plus Close-ups* (The Mathematical Association of New South Wales, March 1995).

[St] R. Street, Review of [CA], *Gazette Australian Math. Soc.* 23 (5) (1996) 214-215.

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