

A Tribute to Michael F. Lynch

Festschriften are quite common in scientific publishing, but the *Journal of Chemical Information and Computer Sciences* has not traditionally produced such publications. In this issue, however, we break with our own standard practice, for a quite exceptional reason.

It is now 25 years since Mike Lynch joined the Faculty at the University of Sheffield and during this time, he has left more of a mark on information science than do most people. His professional output has been significant and prodigious and perhaps even more important, he has touched the lives of hundreds of people, every one of whom is happy to call Mike a friend. A number of his erstwhile students and colleagues have contributed papers to this issue, and with these papers, and this foreword, we dedicate this issue of the *Journal of Chemical Information and Computer Sciences* to Mike Lynch's quarter century at Sheffield. Unaware of these plans, Lynch et al. submitted three papers on their current work and we are happy also to publish these in this particular issue.

Michael F. Lynch took his B.Sc. and Ph.D. degrees from the National University of Ireland in 1954 and 1957, respectively, and then worked in Prelog's laboratory at the ETH as a postdoctoral research fellow. After two years of working in industry in the U.K., he joined the staff of the Chemical Abstracts Service in 1961. Within four years, he had been named head of CAS' Basic Research Department, where he was involved in experimental textual and chemical databases. In 1963, he published a paper¹ in the *Journal of Chemical Documentation*, the forerunner to this Journal, thus initiating a relationship which, in the 28 years since then, has benefitted the Journal immeasurably.

In 1965, he joined the Postgraduate School of Librarianship and Information Science, now the Department of Information Studies, at the University of Sheffield, where he remains to this day. At Sheffield, he began his development of automatic indexing procedures, a research project which blossomed into what have become standard methods for index production,² and which have been widely used commercially.³ His first paper² on this subject was published in 1967 in the *Journal of Chemical Documentation*.

Characteristically, Mike started work on reaction indexing at a time in the late sixties when most were still struggling to produce viable structure-searching algorithms. He identified all the ground rules in the difficult problem of identification of structural commonality between reactants and products⁴ and finally perfected a graph-matching procedure⁵ that can now be found imbedded in many online systems, both public and private. At the same time that this work was proceeding, Mike's group at Sheffield was in the forefront of research aimed at the development of screen-based substructure search algorithms. His seminal contribution to this area was the frequency-based screen⁶⁻⁸ that is now used in all the important substructure search systems.

Searching of generically defined structures, which are the "Markush structures" frequently found in patents, represents a new level of difficulty in substructure searching and a

number of papers in the February 1990 issue of this Journal dwelt on this problem. In this issue, as though in response, Lynch publishes three papers detailing a solution to it. These papers (pp 233-270) are commended to the reader, who will discover that the Sheffield approach to the representation and searching of generic structures is no minor variation on known substructure search algorithms but rather a deep-seated design which promises to overcome all the problems in such algorithms.

And so it goes; he doesn't seem to age like the rest of us. Instead he goes from challenge to challenge, constantly providing new insights and new solutions. The impact which he has had on the information community has been enormous. Sheffield is on the map in chemical information largely because of Mike Lynch. At a time when all the action in chemical computing was thought to be in the U.S., Mike had established a graduate course in the subject at Sheffield and was training gifted people who would later come to make their own substantial contributions to the discipline.

Finally, his personality. It is difficult to imagine anyone who is more well-liked. He never fails to have time for you, to chat with you, help you, or advise you. He is the most approachable of men. He spends a great deal of time reviewing papers for this Journal and does so thoroughly and punctually. His only fault is that he seems unable to offer an unkind word to some authors who probably have earned it.

So this issue is for you, Mike. The first 25 years has been our pleasure and we look forward to many more!

George W. A. Milne
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