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# A Personal Tribute to Cliff Beevers, OBE

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I have known of Cliff's work since the mid-1980's, when he started the CALM project (Computer Aided Learning of Mathematics), but did not get to know him well until the early/mid 90's. When he began the CALM project, it was difficult to attract recognition and funding for research and development in this field. Cliff's achievements with CALM must be viewed in this context. If only because there was relatively little educational computing activity before CALM started, it must be recognised as a highly innovative project. Recently I have heard Cliff describing his work to a group of e-Learning and e-Assessment professionals, including many from internationally leading companies and groups in many educational sectors. It was remarkable that much of what Cliff does, and indeed was doing in the late 80's, is the sort of thing that many are now aspiring to do. Very few projects worldwide can match the integration of learning resource, formative feedback and final assessment that CALM has achieved. This was all well described in the book Cliff wrote with colleagues: *Software Tools for Computer Aided Learning in Mathematics* (C E Beevers, B S G Cherry, M M G Foster and G R McGuire).

CALM itself represents only one area of Cliff's professional life. There is not space to do justice to all areas of his work, but his contribution to the Mathwise project was immense, and his latest venture SCROLLA (Scottish Centre for Research into OnLine Learning) has the aim to establish a permanent forum for the wider research community (those in schools, colleges and agencies as well as those in HEIs) for the role of ICT in education. Not many of us may realise that he also has an extensive list of publications to his name on waves and elasticity, which continues well after CALM started.

Clearly then Cliff is a man of vision, and that brings me to the more personal side and his bravery in confronting his deteriorating eyesight. I think he first became aware that he had retinitis pigmentosa in his teens. All who know him and over the years his admirable pack of canine assistants quickly learn that Cliff has refused to let this get the better of him, either in spirit or in what he does. Cliff presenting a talk with slides is an astonishing feat to watch as he works his way faultlessly down a list of bullet points, slide after slide, putting people like me to shame as we even forget what we can read off the screen. Cliff displays related qualities in working relationships: clarity, straightforwardness and honesty, and a disarming sense of humour. He's an excellent colleague to have on your side, but let no one think though that they can get one past him!

Cliff was awarded the OBE in this year's New Year's Honours and I am pleased to have been given this opportunity to pay tribute to his achievements. These achievements are all his own of course, but their recognition is another signal that the entire field of the use of interactive technologies in mathematics has itself come of age.

*Robert Harding, Selwyn College, Cambridge (Email: r.d.harding@ucles-red.cam.ac.uk)*

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## Monthly series on Computer-Aided Assessment in Maths

<http://ltsn.mathstore.ac.uk/articles/maths-caa-series>

Cliff Beevers is the assessment consultant for the LTSN Maths, Stats & OR Network, and edits the above series. Please read the articles as they appear and send your comments to the discussion list [maths-caa@jiscmail.ac.uk](mailto:maths-caa@jiscmail.ac.uk). Below are summaries of some recent contributions. You are invited to suggest articles for this series by contacting Cliff by email at [c.e.beevers@hw.ac.uk](mailto:c.e.beevers@hw.ac.uk)

**April 2003: CAA --- It's a MUGS Game! Does the Mathematics of CAA Matter in the Computer Age?**  
**Contributed by Michael McCabe and David Barrett,**  
**University of Portsmouth**

Rigorous mathematics is preferable to computer simulations for analysing the scoring distributions obtained by guesser's in objective questions. We show that scoring in objective Multiple Response Questions (MRQ) and objective Multiple Choice Questions (MCQ)

is governed by the hypergeometric distribution. Hence, we consider how partial credit and confidence levels can be accounted for by adopting suitable scoring schemes for MCQ and MRQ objective questions. The Mean Uneducated Guesser's Score may be specified as zero ( $MUGS = 0$ ) or some other value in advance, rather than being obtained by trial and error. The importance of the mathematics of CAA as opposed to the CAA of mathematics is highlighted.

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