

**Tribute to Chris King, spoken at a Service of Thanksgiving for his life,
at St Thomas Church, Wells, Somerset, 26.3.2022 by Peter Kennett**

I've known Chris as a friend and colleague for more than 40 years. I first heard Chris's name mentioned in 1978, when he was doing his post graduate year at Keele and his tutor, David Thompson, told me that he had a particularly promising student that year - and he was right. I learned that Chris had spent five years prospecting for diamonds and had actually located a viable diamond deposit in South Africa. No doubt, Chris's Sixth formers at Altrincham Boys' Grammar School must have asked him why on Earth he had left diamond prospecting behind for the far more exhausting role of a schoolteacher, but Chris's standard answer, with a smile, was that he wasn't allowed to keep them!

Chris's enthusiasm for geology was soon recognised by the Earth Science Teachers' Association (ESTA) and he was encouraged to write up his ideas for the magazine. These mostly comprised fun activities which were scientifically sound, but which ensured that his students would enjoy the lesson. Throughout his life, this approach has always been evident, and Chris was always an ardent evangelist for the subject. (His first activity was called *Graptolobics*).

Chris was soon roped in to ESTA Council and he served continuously as the Secondary Convener for ESTA, for 41 years, right up until last summer. He was elected Chairman of ESTA for 1990 to 1992, and was later awarded Honorary Life Membership of the Association.

Some years ago, Chris encouraged the Earth science education community to write a brief autobiography, called *My Earth Science Educator Story*, which I said at the time was really a do-it-yourself obituary! I found Chris's account really helpful, and he referred more than once to the way in which doors had been opened to him at various stages in his career, although some of these doors needed a bit of leaning on before they would open!

Chris taught successfully for 19 years at Altrincham in various roles. It wasn't long before he began to play a significant part in the national education scene via ESTA. The National Curriculum appeared in the 1980s, and the geological component was frequently downplayed by some diehards in the other sciences. With some pushing on doors, Chris's constructive criticism on behalf of ESTA was recognised by the authorities, and they soon began to refer to the "King Fax", before the days of email. Chris worked late, as I found when I visited his house on Lilac Road in 1986 and he told me that his study was a corner of the master bedroom. "It's a funny thing", he said, "but I can be working away up there at night and this woman suddenly walks in and goes to bed!" And yet somehow he found time to look after the family, and even to read books, which had nothing whatever to do with geology.

In the 1980s Chris and I tried to pre-empt the National Curriculum topics, and we started to write a series of teaching packages called *Science of the Earth*. Doors opened in the form of grants from the Geologists' Association and other Trusts, which enabled us to hold writing weekends for small teams of ESTA members. One memorable weekend was sponsored by British Coal Opencast who booked us in to a hotel. Big-wigs from the industry were in the middle of a presentation when the electrical cables of one half of the hotel melted. Blackout! Consternation! Chris and I glanced at each other, shot out of the door and came back with extension cables, which "we just happened to have in the car". You can guess what we christened the hotel!

Our first SoE was *Will my gravestone last?* and in our last Zoom call with Chris he said that he wished the family to choose a granite headstone for him, preferably Shap Granite (He had led many field trips to Shap), so that it would last a long time and so that groups investigating gravestone geology could use it! What a man – ensuring that he could contribute to Earth science education even from the grave! (A sample of Shap Granite was handed to the family to ensure that they would know what to look out for).

The practice of having writing weekends bore fruit later as we developed other initiatives. Chris also wrote a couple of books on sedimentology for A Level for Longmans, as well as all the vast amount of voluntary writing which he undertook.

David Thompson at Keele had laid a firm foundation for seeking more rigorous syllabuses and examination techniques in Geology *per se* at A Level and O Level, and Chris played a leading role in these matters through ESTA. Over the years he acted as Chairman of Examiners for A Level Geology for one of the exam boards. A lot of work there, to be summed up in only 30 seconds!

While still school teaching, Chris supported David Thompson in beginning to coordinate Earth science education on the international scene, which I'll return to later. When David retired from his post at Keele in 1996, Chris was appointed in his place and inherited an established reputation for excellence in the UK, and a growing one abroad. He commuted from Altrincham during his 19 years at Keele. He progressed from Science Education Lecturer, to Head of Education Department, to Professor of Earth Science Education in 2006. Chris's Inaugural Lecture as Professor was memorable, in that he had the audience trying out some of his activities, and it was a treat to see the Keele hierarchy weighing Plasticine spheres in their hands to work out was inside! Chris retired in 2015, whereupon he was bestowed with the title of Emeritus Professor, which not all professors are awarded when they lose their faculties!

Towards the end of Chris' tenure, it appeared to those of us who were frequent visitors to Keele that the University seemed to be unaware of the high regard in which its post grad course in Earth science was held, both at home and abroad: indeed, Keele had become the only institution to offer the course. Applications for the course even seemed to be discouraged. Chris, however, was not to be defeated, and found ways of attaching geologists onto other sessions in overtime, and managed to deliver practical activities in an old dungeon beneath Chemistry, where even Bunsen burners were not permitted! When even this course closed down, Chris managed to attract funding to run short Summer Courses to enable existing teachers to become specialist Earth science teachers. In fact, the last activity in which he was involved was the Summer School last year, shortly before the first signs of his illness emerged.

Chris was also keen on promoting the public understanding of Science, via local groups, such as the U3A and the North Staffs Group of the Geologists' Association. He also formed a small team which introduced a nationwide "GeoWeek" of outdoor activities for members of the public in May, which even ran during the Covid epidemic, with due regard to the rules of course.

Now all this shows just how inventive Chris was and how he simply would not be defeated by changing circumstances, but would cheerfully find ways around it. Whilst training was readily provided for many subject teachers, provision for the Earth sciences was woefully inadequate, or non-existent. Hence the following phone conversation between Chris and me, on the eve of my retirement in 1999.

Chris, (enthusiastically): "Hello Peter, what are you going to do when you retire?"

Me (cautiously): "Why?"

Chris (persuasively): "Well, I've had an idea....."

Me (resignedly): "Oh, go on then".

So what was the idea? Simply that if external funding could be found, workshops could be provided for school teachers, at no salary cost to the institutions. The sessions would be radically different from most existing schemes, and would involve much hands-on practical work. Chris failed to obtain funding from charities. However, at a big Conference that year, the ESTA display stand was approached by a representative from what is now Oil and Gas UK, named Annette Thomas. Annette was introduced to Chris – enough said! So, without even leaning on it, a door opened for a major, and we believe, quite unique initiative.

The outcome was the Earth Science Education Unit (ESEU), with Chris as Director based at Keele, supported by Anna Hryczyszyn and me, to deliver workshops as a pilot project. The industry soon saw the potential, and promoted the growth of the ESEU across Great Britain, so that in the end the Unit had about 50 *ad hoc* facilitators. Chris even invited the Chief Executive to attend a workshop, and soon had him investigating erosion by shaking rocks in a plastic bottle, or making his own rock in a syringe, so funding continued for a total of 16 years, and ESEU workshops are still led, in a modest way, through ESTA.

We believe that Chris' approach is unique, and the research showed that the majority of schools who had experienced ESEU workshops revised their schemes of work shortly after the visit. Chris calculated that a total of 37,000 teachers or student teachers had attended one or more workshops, representing several million students who would have benefited.

Chris also realised that publishers had rushed into print to meet the National Curriculum requirements and that some of the Earth science was quite dreadful. Furthermore, teachers were using the school textbooks to teach themselves!

So Chris organised a team of ESTA members who ploughed through all the appropriate textbooks and mostly managed to persuade the publishers to modify their texts.

At intervals, Chris and colleagues addressed the All-Party Parliamentary Group for Earth Sciences. On one occasion, Chris had to get a plastic box with carefully constructed layers of flour and sand through the House of Commons security, to demonstrate a fold mountain range. He pleaded with them not to disturb the box and it was duly returned undamaged, so we assume they must have X-rayed it instead!

The next door that Chris tried involved UNESCO's Year of Planet Earth in 2007/9. He thought that UNESCO might offer funding to deliver workshops in 3 Third World countries. His proposals were turned down, but he continued to mull over the idea, including while listening (or not!) to a sermon in church. The outcome was phone calls to Elizabeth Devon and me to see if we would join with him in writing activities for the Year and in developing a website where they could be hosted. We got some modest charitable funding which enabled the launch of Earthlearningidea (ELI) which has continued for 14 years to the present day, thanks to Elizabeth and Martin Devon's sterling work in running the website. The first activity on earthquake damage was tried out enthusiastically in Nepal by a British physicist involved in training Nepali teachers and the early activities were indeed aimed primarily at developing nations.

We have since enlarged the scope of the activities, many of which have been reworked from ESEU workshops, with new ones added from the inspirational sessions called “Bring and Share” which Chris chaired at many ESTA Conferences as well as ideas from other countries. As of last Monday, 387 ELI activities have been published, and over 5.7 million downloads have been recorded across 211 countries. Thus the global reach has been vastly higher than what could have been achieved by just two or three of us visiting three countries in 2008. Volunteers in other countries have translated many of the activities into 11 other languages.

So, how did such international co-operation evolve? Chris and other ESTA members attended an initial conference in Southampton in 1993. Discussions between Chris, David Thompson, Nir Orion from Israel and Ravi Shankar from India, among others, led to the formation of the International Geoscience Education Organisation (IGEO), with Chris as its first Chairman in 2000. He was a major force in other international geoscience organisations, and led the Field Officer network launched in Vienna in 2019. The Field Officers lead workshops based on the Earth Science Education Unit model, mainly in their own country and in their own language.

Chris attended so many conferences of these international bodies, that we presented him with a home-made bus pass when he reached the age of 60, giving him free bus travel (but by no other means!) from Altrincham to 18 countries. These meetings put him in a position to persuade others to get involved, and earned the usual admiration of his encouraging personality. His overall input to the international scene has been incalculable and others have written tributes to him for various international websites and periodicals.

Among the very many articles and books which Chris wrote, his most recent venture surely deserves to be his most lasting legacy. He helped to devise an international syllabus for 16 year olds and then set about writing a major online textbook to accompany it. Chris co-ordinated a team of teachers in England to customise the book for England. His illness meant that he was unable to complete the final editing of the England edition, but it was done in time by others and Chris was relieved to see that it had been uploaded to the website on February 4th. Chris’s typical clarity of wording and inspirational choice of examples make this an essential resource for every school student and of course it is completely free.

During his busy career, Chris was honoured by the Earth science community in many ways, including the Geological Society’s Distinguished Service Award in 2003 and the RH Worth Prize in 2011. The Geologists’ Association presented Chris with its Halstead Medal in 2012. In 2018 he was honoured with an international Geoethics Medal. Two international bodies have just announced an award for “Promoting Geoscience Teaching in memory of Professor Chris King”. A “Chris King medal for service to the geoscience education community”, has also been proposed, to be awarded every 4 years.

Chris’s own brave announcement in late January that he had few days left to live brought tributes from all over the world. We only have time for a few of these, but the family have all of them in full.

The following selection of tributes from Earth science educators in other countries was kindly read by Pete Loader.

Prof R. Baskar (India): "Only Zen Masters had the courage to say last goodbye - who were great spiritual masters. I consider you in the same category- you were our role model. While living, you were full of grace and, during departure, full of grace. You will live in our memories forever - you were our GURU, and we learnt from you. Your personality and thoughts have influenced us. We will pray for you and your family".

Nir Orion (Israel): "You cannot (say) farewell since you will always stay with us. Your deep and clear geological footprints (are) scattered worldwide. Your footprints have already been lithified, and generations of educators will follow in your footsteps".

Jean-Luc Berenguer (France): "We haven't known each other for very long, but the actions we have been able to carry out together, in the framework of the European Geological Union for example, make me say that we will miss you very much. We have such a great responsibility to carry on, with the same dynamism and the same expertise, all the actions you have initiated".

Xavier Juan (Spain); "Chris has been a master, not only as a geoscience Educator, but also as a person that we will never forget".

Ravi Shankar from India writes: "Above all, Chris was an amazing gentleman and a pleasure to work with. He respected, supported and cheered everyone. He treated all with vast amounts of dignity, support and understanding. Chris brought a special kind of light into the room; his gentle, wry smile and dry humour was always a delight! With such exemplary attributes he touched the hearts of all. He was an example of a great human being and a great geoscientist, who devoted his entire life to Earth science education. His vast legacy should be continued in the future".

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Inevitably most of my comments have focused on Chris's professional life, but as we have heard, Chris was devoted to his family and always found time for them. He had an interest in sport and used to run for exercise, if not for pleasure. He was an active member of his local church, and his faith enabled him to state, when he received the diagnosis of his final cancer, that he was not afraid of death.

I happened to watch an art programme on TV, the day after our last virtual meeting with Chris, Elizabeth Devon and Xavier Juan, when he told us the sad news. The art historian spoke about JMW Turner, 200 years ago. She said that Turner was not afraid to espouse current developments in science and technology and looked toward the future. She said that "He was one of life's great affirmers". Surely this is a most apt epitaph for our beloved friend and colleague, Chris King.

At the close of the service, a group gathered around a table at the rear of the church, to try out some of the activities, which were mentioned in passing during the Tribute. All of them may be found at Earthlearningidea.

These included:

- One of the worst school textbook quotes regarding the nature of the mantle, followed by a demonstration with a slinky spring;
- Weighing Plasticine spheres to model the Earth's density;
- Shaking rocks in a plastic pot to investigate erosion;
- Making your own rock;

- “Quake shake” – i.e. shaking a tray of wet sand to watch the way in which “blocks of flats” subsided;
- Modelling the formation of a mountain range in a plastic box with layers of sand and flour;
- Party popper volcanoes.