

## Editorial: In Memoriam of Associate Professor Dr Elaine Lawrence

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April 2012



Despite being a graduate of the rigorous Bachelor of Information Technology at the University of Technology, Sydney (UTS) in 1996, I was unfortunate in that I missed being taught by Associate Professor Elaine Lawrence who began working at UTS in 1990 as a Lecturer in Computing Science. Dr Lawrence became a senior lecturer in 2000, and subsequently an associate professor in 2006. Our paths crossed in 2002 when I was tasked to deliver a new course entitled “eBusiness Principles” in my first year of lecturing at the University of Wollongong, and after an initial scurry to find an adequate textbook, I came across Dr Lawrence’s groundbreaking text *Internet Commerce: Digital Models for Business*. Lawrence’s book was a best-seller for Wiley, adopted by almost every course coordinator teaching e-business/e-commerce in Australia, at a time when information technology had burgeoning undergraduate numbers.

When my PhD supervisors, Professor Joan Cooper and Associate Professor Carole Alcock, suggested to me that Dr Lawrence would be a good choice for an examiner in 2003, I must say I was more than a little nervous. After doing some background research on the web to see the fit, I was in even greater awe noting the impact Dr Lawrence was having on the teaching of industry certifications, and the creation of new courses. Elaine

was the Program Leader of the popular Masters of Internetworking degree at UTS and as a qualified Cisco Certified Academic instructor (CAI) she began the CISCO certification courses delivered at UTS, in addition to contributing a plethora of materials to the CISCO Academy that were used by an estimated one million persons globally. Lawrence also tested international teaching materials for CISCO in Ireland and the United States and was the NSW representative for the Educational Council for CISCO. I had spent five years at Nortel Networks, a CISCO competitor, and immediately felt an affinity with her background.

Dr Lawrence was the first student to complete the Doctor of Technology at Deakin University in 2001. In addition to this, Dr Lawrence had a Masters of Business Information Technology, a Graduate Diploma in Commercial Computing and a Bachelor of Arts (awarded the university prize for Journalism). She was a very active senior member of the Australian Computer Society (ACS) for more than 20 years and also a member of the Institute of Electrical and Electronics Engineers (IEEE).

In 1994 she began her own company called CyberConsult who had among its customers, Sydney Water, the Australian Institute of Management, Unilink and the Australian Computer Society. I do remember being taken by the fact that her slogan for her consulting business was “The Human Side of Technology.” Given my thesis was all about emerging technologies and their implications, I found peace in the fact that Dr Lawrence was a potential marker.

After receiving my PhD I corresponded with Dr Lawrence, appreciative of her genuine feedback on my thesis and ways to improve it. She was the perfect academic role model for me, and a wonderful mentor from the outset, although our relationship just developed naturally and we enjoyed corresponding with one another without the labels of mentor and mentee. I remember distinctly that Dr Lawrence had a way with words and she was always armoured with a graceful and tactful way of providing advice. She was reassuring at first, then encouraging, and then quite direct using sentences like “why don’t you consider submitting research to” or “you know this audience would be quite accepting of this perspective”. Amazingly Elaine never seemed in a rush, and yet somehow she did so much! She always made you feel important in her presence and that she had all the time in the world for you.

In 2003, I had the opportunity to contribute to Dr Lawrence’s best seller, and began work on a number of fresh case studies for the latest edition of *Internet Commerce* which was in fact Elaine’s second book. Dr Lawrence by then was well aware of the impact of mobile commerce and especially encouraged me to write about this aspect. It was in her text that I published my first ‘academic’ pieces on the chip implantation of humans- I included a full case write-up on Professor Kevin Warwick and the Cyborg 2.0 story. She did not shy away from this research, and had the foresight to see that one day, just maybe, this might directly relate to the way electronic payments were to be conducted. I don’t believe too many others at the time would have accepted to publish such work in the IT world. Elaine would also insist and encourage me to continue to learn how the new ‘electronic commerce’ models might impact society. It did not surprise me to learn later that in 2009 Elaine’s interest into advancements in technology would bring her to the role of Editor-in-Chief for IARIA’s prestigious *International Journal of Advanced Life Sciences*.

Elaine worked tirelessly on professional community activities. She was one of the first editorial board members

chosen for the *Journal of Theoretical and Applied Electronic Commerce Research* (JTAER) and was one of the first to guest edit a special issue on Mobile Payments doing so for Elsevier's acclaimed *Electronic Commerce Research and Applications* (ECRA). In 2003, she was invited to join the International Committee on Mobile Business in Vienna and in 2005 chaired the highly successful 4th International Conference on Mobile Business (ICMB05) hosted in Sydney. It was an absolutely fantastic occasion where hundreds of delegates from across Australia, New Zealand and Asia (and further) turned out. Mobile business was fresh and new, and many of the papers published in that conference via IEEE Xplore and the hardcopy proceedings went on to be downloaded tens of thousands of times each.

One of my fondest memories of Elaine is at this wonderful conference. So much hard work went into it to get it off the ground and the grander vision that went with ICMB. Elaine made sure that all the delegates were well looked after. I recall one Chinese delegate having lost his passport and travellers cheques en route to the conference venue, and Elaine seeing to it that he was given enough money for his stay in Australia and reassured that all would be okay... She looked resplendent in her blue dress on that last day luncheon where awards and initiatives were announced by her. She worked tirelessly, and yet always looked like she had had more time. The evening dinner at the Casa di Nico at Darling Harbour was spectacular- and again Elaine chose an absolutely gorgeous outfit to wear. She was glowing, and so very happy at her fruits... she made this conference happen but in typical Elaine style she would always generously distribute the glory. I later discovered a pattern in her genius- always, always talk about others and never talk about yourself and what you have achieved. This was Elaine's way—I do remember many times that she highlighted her PhD students and amplified their discoveries before her own. Many of Elaine's students have gone on to be very successful academics and business men and women... some even heads of schools and owners of their own companies, CEOs, CIOs and the like.

My husband and collaborator, Dr MG Michael presented at ICMB06 in Denmark and had the honour of meeting Dr Lawrence in person and spending some quality time with her. This was again the case at ICMB07 in Toronto, Canada when I was pregnant to my second child. Elaine did not like being photographed very much, but she let Michael take a picture of her because she knew that it would mean a great deal to me. I found this photograph particularly interesting, because it looked identical to those I had seen of Elaine on the Internet- Elaine's face shows the "human side of humanity"- she always possessed this very honest smile and her eyes were inviting and gentle. One could not feel intimidated in the presence of Dr Lawrence, despite that she had done so very much on the academic side. Not long after ICMB07, Elaine cited uberveillance in a conference paper on pervasive eHealth monitoring systems in a co-authored paper with Frank Kargl, Martin Fischer and Yen Yang Lim. This came as a complete surprise to MG even though the links between us were beginning to emerge strongly over quite some time. Elaine could see how uberveillance would be integral to both wearable and implantable computing for health applications. Despite most people at the time being watchful of uberveillance, Elaine embraced the concept.

In 2003/04 Elaine had begun researching motes, smart dust and body area networks for medical purposes. I recollect corresponding with her and asking what had inspired this investigation. She was way way ahead of the game in terms of her thinking of the next generation of technologies for mHealth, that much was obvious. At this time, Elaine was entrusted with the Directorship of the mHealth Laboratory within the iNEXT Research Centre. In typical Elaine fashion, she drew leading research academics and scholars from Germany, Spain, Canada and Vietnam to work with the Faculty on Wireless Sensor Networks and Health applications. She also created important links for the iNEXT Research Centre with Professor Matt Welsh and his team from Harvard University, Associate Professor Frank Kargl from Twente University in the Netherlands, and Professor Nina Ziv at the University of New York. In 2008 Elaine's PhD student was awarded her doctorate on the well received, "A Heterogeneous Network Management Approach to Wireless Sensor Networks in Personal Healthcare Environments". In 2008 and 2009 her master's students produced theses on ReMoteCare: Health Monitoring with Streaming Video and Portable Emergency Medical Information Systems for Elderly Care. During 2009 she was working on five projects predominantly related to wireless sensor development kits such as Crossbow's Zigbee MicaZs, Sun's Java Sunspots and Toumaz's Digital Plaster. In that same year Elaine completed two large scale ARC-Discovery grants she had attained, one valued at \$310,000 on the theme of sensors and actor grids for healthcare. Elaine's competitive research grants exceeded one million dollars, just in the time frame she was director of the mHealth Laboratory with more than 80 peer reviewed journal and conference papers, and several books. Despite her research success, she always considered herself to be a teacher, renowned for her ability to translate research into quality information technology courseware.

In 2008, despite the very busy workload and pressure she was under as the Head of the newly amalgamated School of Computing and Communications in the Faculty of Engineering and Information Technology at UTS, she agreed to write the foreword of our book on *Innovative Automatic Identification and Location Based Services: from bar codes to chip implants*. MG and I could think of few people who knew the both of us so well and could additionally trace back the history of our thought as early as 2003. In 2009, when I asked Elaine to be a referee on my promotions application she did so instantaneously being ever so encouraging. In fact, I do not recollect Elaine being someone who said 'no' very often...

At about the same time as our book hit the shelves in 2009, Elaine had been the head of school for two years, during a trying period where several departments at UTS were being reorganised. The emphasis on paperwork at that time and bureaucracy ran deep and Elaine being Elaine, she did not cut any corners. In a tribute by a UTS staff member

the following was said about her: "Elaine shone in her role as Head of the School of Computing and Communications, formed from the merging of two pre-existing academic units. Elaine projected charisma, gravitas, authoritativeness, compassion, tolerance and genuine affection for all her staff, academic and non academic. Her personality and leadership allowed the merged School to succeed, overcoming reservations and defusing parochialism, empowering a culture of unity and mutual support. It is thanks to Elaine that the School is such a success today."

On the 14<sup>th</sup> of December 2009, I contacted Elaine to tell her I had received my promotion to Associate Professor and that MG and I were expecting our third child just after we were to host the IEEE International Symposium on Technology and Society (ISTAS) in 2010. Elaine always loved hearing about children and family. I recollect the many many times that she spoke to me of her beautiful husband John who also co-authored with her on many occasions related to taxation and internet commerce. And of course, she would never tire of talking of the achievements of Sue and Michael, their two children whom she was so so proud of... I cannot tell you how inspiring this was for a young academic starting out... It is sometimes inconceivable to consider that Elaine's higher research degree journey began when her children were mere toddlers. She loved what she did... It was on sharing my news during this time that Elaine told me the devastating news that she had breast cancer. She wrote in reply: "What fabulous new times - an Ass Pro and a new baby - congratulations on both. This is very exciting. Now for some bad news from me - I have breast cancer... I am not at all impressed. Wish me luck - your news has cheered me up completely..."

After two operations and finally chemotherapy, she returned to work in April 2010 on a part-time basis and by July was back full-time. The last correspondence she had with MG was one of victory- she was determined not to let this cancer beat her- and she declared herself 100% well. She was still sending conference call for papers at web speed and apologising for the cross-postings as she had thousands of people on her numerous mailing lists. She had brought people together from all over Europe and Asia and Australia and New Zealand and conducted outreach work also in North and South America. In June 2011 she even made it to Slovenia for the annual Bled conference. What many of us did not know however is that in the beginning of that year Elaine had battled a second unrelated cancer, this time ovarian, for which she had to undergo yet another operation and more substantial chemotherapy. On the 18<sup>th</sup> of September Elaine was admitted to hospital suffering from severe pain, and rested finally on the 18<sup>th</sup> of October 2011.

This *In Memoriam* is meant for all those who knew Elaine, as an opportunity to remember her life and works. Wife, mother, teacher, researcher- someone who epitomised dignity in all its forms- Elaine will be missed deeply. She was not only a fine academic but she possessed all those human qualities that made her stand out.

The record from the UTS Vice Chancellor's Report in November 2011 stated: "We are deeply saddened by the passing away on 18 October of Associate Professor Elaine Lawrence, Head of the School of Computing and Communications in the Faculty of Engineering and Information Technology. Elaine has been a committed and valued member of the UTS family since 1990, and a true leader in Females in Engineering and Information Technology (FEIT). She is survived by her husband, John, and children Susie and Michael, and will be greatly missed by her friends at UTS."