In memoriam William A. Craig

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On March 11, 2015, we all have lost a mentor, colleague, and friend, Professor William Alexander Craig. Much has been said about his achievements, and how he wanted to be a doctor while also graduating in mathematics (which would help him greatly later in his career). Having practiced medicine in the Army, he quickly specialized in Infectious Diseases, an area where he would become most known for his ability to combine both excellent laboratory work and deep understanding of the realities of Clinical Microbiology, Infectious Diseases and practical use of antibiotics. It is appropriate, in the context of this tribute in *Antimicrobial Agents and Chemotherapy*, to emphasize William A. Craig’s seminal work on pharmacodynamics of antibiotics, a field that he made popular and brought to universal appreciation, and is now a cornerstone of new antibiotic development and usage. Pharmacology and pharmacodynamics of antibiotics were surely not unknown territories when Dr Craig started his work, but his major and critical contribution was to bring them to a level where everyone involved could appreciate their rationality and importance, not only in animal and other preclinical studies but also in every day clinics and patient care. Thus, key concepts proposed by Dr Craig, such as the critical role of the time during which the $\beta$-lactam free serum concentration remains above the minimal inhibitory concentration (MIC) or of the $fAUC_{24h}/MIC$ ratio (24-hour area under the free serum concentration curve to MIC ratio) for most other antibiotics to drive antibiotic efficacy, and the critical role of protein binding have become essential in the assessment and optimization of usage of all antibiotics. This applies not only in daily clinical practice for existing antibiotics, but has become mandatory for registration of novel antibiotics by the US Food and Drug Administration, the European Medicines Agency and most other regulatory bodies. It is also the
basis for major efforts at improving the current use of antibiotics by monitoring blood levels to
bring them to values that will ensure efficacy and, hopefully, minimize the emergence of
resistance.

Beyond being a doctor and a careful experimenter, William A. Craig was an excellent
presenter of complex scientific concepts and also a wonderful and generous teacher by
welcoming in his laboratory many fellows from all over the world. Conversely, he also was keen
at travelling and staying abroad not only for lecturing but also for performing laboratory work,
demonstrating a unique ability to learn and to communicate. Yet, his desire and ability to help
other interested investigators went further. As early as 1989, he was instrumental in founding
the *International Society of Anti-infective Pharmacology* (ISAP), a group around which much of
the science of antimicrobial pharmacodynamics/pharmacokinetics has evolved. In this, he
showed a remarkable ability to share and guide, to the benefit of many people. William A.
Craig was also an active Editor for *Antimicrobial Agents and Chemotherapy* and Chairman of
the Program Committee of the *Interscience Conference on Antimicrobial Agents and
Chemotherapy* (ICAAC), demonstrating his outstanding commitment to optimizing development
and use of antibiotics and maintenance of high quality science. Dr William A. Craig will be
dearly missed but his work will live on.