

## "In memoriam: william a. Craig."

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## In Memoriam: William A. Craig

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On March 11, 2015, we all 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 U.S. 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 that 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 everyday 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 MIC or of the  $fAUC_{24h}/MIC$  ratio (ratio of the 24-h area under the free serum concentration curve to MIC) as the main driver for efficacy for most other antibiotics, as well as 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 also has become mandatory for registration of novel antibiotics by the U.S. 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 who welcomed into his laboratory many fellows from all over the world. Conversely, he also was keen on traveling 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 a past chairman of the program committee of the Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), demonstrating his outstanding commitment to optimizing the development and use of antibiotics and to maintaining high-quality science. Dr. William A. Craig will be dearly missed but his work will live on.

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