

# 2007 Walter Boas Medal in Physics awarded to Associate Professor Derek Leinweber

The AIP Boas Medal Selection Panel 2007 has unanimously recommended the award of the 2007 Walter Boas medal to Associate Professor Derek Leinweber, CSSM, Discipline of Physics, School of Chemistry and Physics, University of Adelaide.

The Walter Boas award is made by the Australian Institute of Physics for original research making, in the opinion of the examiners, the most important contribution to physics. This is judged in papers published during the four years immediately preceding the date on which entries for the award close.

Associate Professor Leinweber has made world-leading contributions to quantum chromodynamics, the quantum field theory of the strong force. In particular his contribution to analytical and supercomputer methods for Lattice QCD has elucidated non-perturbative solutions that have provided experimentally verifiable determinations of properties of particles and nuclei. His research has, among other achievements, led to a precise prediction of the role of strange quarks in the magnetic moment and charge distribution in particles such as the proton and neutron, which has led to significant interest from major accelerator projects worldwide.

Associate Professor Leinweber's work is characterised by a lucidity of exposition aided greatly by his innovative use of computational tools to aid in visualisation. The significance of this contribution can be seen in the adoption of animations, produced by Associate Professor Leinweber, in the 2004 Nobel Prize lecture of Professor Frank Wilczek.

Associate Professor Leinweber has produced a significant and widely cited body of work in papers published in the 4 years preceding the date on which entries for the award close. This is evidenced not only by citation rates that are high for the cohort of applicants for the award or the cohort of researchers in Associate Professor Leinweber's field of research but in absolute terms for any discipline in physics. In addition, the importance of his contribution to physics, while judged primarily in his published papers, can be seen in the media coverage given to his results and his resulting ability to engage the media on broader physics related topics.