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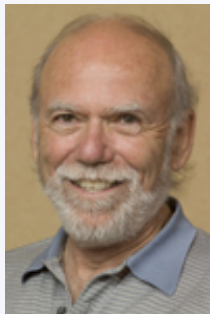
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Director's Corner

15 February 2007



Barry Barish

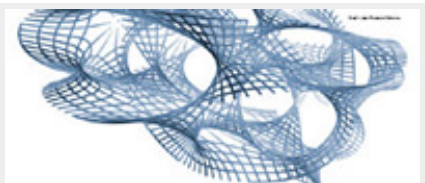
The International Linear Collider: Gateway to the Quantum Universe

In addition to the technical reports released last week in Beijing that describe the reference design for the ILC, we also published in draft form a very attractive and informative companion document, "The International Linear Collider: Gateway to the Quantum Universe." It can be downloaded in [pdf format](#). The Reference Design Report (RDR), the Detector Concept Report (DCR) and this companion piece will all be published in final form this coming summer, after reviews and modifications are incorporated. The companion document tells the story of the ILC by those involved in designing and planning it. The document translates the technical and detailed materials for a much broader audience.

What is the Terascale and what might it reveal? The report highlights some leading ideas like the possible discovery of new forms of matter, the Higgs boson that is conjectured to be responsible for mass, maybe the discovery of an entirely new family of elementary 'superparticles,' or perhaps that there are more than four dimensions in nature. Such discoveries could help us understand the dark matter of the universe and even help us reconcile gravity with quantum theory, perhaps the deepest underlying question in physics.

What are the right tools to study the Terascale? The report describes how the ILC will enable precision experiments to expand on discoveries made at the LHC and to reveal the new laws of nature at the Terascale. The machine itself is described in a step-by-step guide, including the major challenges, starting from the sources of electrons and positrons and ending with the detectors that will uncover the science.

How is the design being approached and how is it being carried out? The report describes the global approach being used by the GDE in planning and designing, which we expect to be followed by global participation in all aspects of the actual project from funding, building, management, to



The Terascale promises to revolutionise our views of the universe.



Phil Burrows, Oxford, who chaired and led the effort to develop the "Gateway to the Quantum Universe" report, working with Elizabeth Clements, ILC communicator.

carrying out the actual scientific research.

Finally, on to the big questions 'How much does it cost? How and where will it be built?' The report describes the methodology used in estimating the costs (or value) and gives the key numbers. The report discusses how the siting is being approached, how the technical components are being industrialised, and how the ILC will educate and capture the imagination of future generations of scientists.

I encourage you to download the report and enjoy the story it tells. Much thanks are due to our ILC communicators and to the scientists who have authored this attractive document. Accelerator experts, theorists and experimentalists from different labs and universities across all three regions wrote, edited and discussed the text. There's a full list of all committee members in the pdf file.

-- *Barry Barish*