



**Remarks Prepared for Delivery by
Under Secretary for Science Raymond L. Orbach
to the High Energy Physics Advisory Panel
February 22, 1007**

- Over the next few years, the U.S. and the international high-energy physics communities will see great scientific opportunities and profound changes. These, in turn, will pose profound challenges. We must make the right choices on the right timescales to ensure the vitality and continuity of the field for the next several decades and to maximize the potential for major discovery throughout that period.
- Three events are notable:
 - The U.S. accelerator-based program will complete within the next several years two highly successful experimental campaigns – the Tevatron at Fermilab and the B Factory at SLAC. They are making very significant advances in the field, and I congratulate them for this and for succeeding to run far above their original design luminosities.
 - Second, within the next year, the LHC is scheduled to commence operations, opening wide the door to the Terascale, and ushering in a period of new and exciting scientific opportunity.
 - Finally, the Global Design Effort (GDE) just recently has released a reference design for the International Linear Collider (ILC) – a machine that though its power, precision, and clarity holds great promise for deepening our insight into the mysteries of the universe.
- Many individuals and many groups already have given considerable thought and effort to the path forward in high-energy physics. The P5 Roadmap in particular articulates a broad set of scientific opportunities and compelling priorities, where the highest priority is to go to the Terascale. Given the high stakes – the risks and the rewards of various paths – I welcome the opportunity to continue this dialogue with HEPAP on the future of this field.
- DOE is committed to continuing a vigorous R&D program of accelerator technology. SCRF is a core capability having broad applicability, both to the ILC and to other future accelerator-based facilities as well. Our FY2008 request for ILC R&D and SCRF technology confirms this commitment. We welcome our R&D partnerships with those around the world, in Asia, in Europe, and the Americas. The science is indeed very exciting.
- In making our plans for the future, it is important to be conservative and to learn from our experiences. Even assuming a positive decision to build an ILC, the schedules will almost certainly be lengthier than the optimistic projections. Completing the R&D and engineering design, negotiating an international structure, selecting a site, obtaining firm financial commitments, and building the machine could take us well into the mid-2020s, if not later.
- Within this context, I would like to re-engage HEPAP in discussion of the future of particle physics. If the ILC were not to turn on until the middle or end of the 2020s, what are the right investment choices to ensure the vitality and continuity of the field during the next two to three decades and to maximize the potential for major discovery during that period?