

WBS Description	WP leader	FTE	DOE FY06	DOE FY06	NSF FY06	Univ. Prog.	Univ. Prog.
			M&S Direct	Total		DOE FY05	NSF FY05
1 Program direction and administration		9.50	\$766	\$3,006	\$326	\$0	\$0
1.1 Program management-SLAC	SLAC Raubenheimer	4.20	\$405	\$1,123			
1.2 Program management-Fermilab	FNAL Kephart	5.00	\$301	\$1,099			
1.3 Program management-LBNL		0.30	\$10	\$63			
1.3.1 Coordination of GDE-wide Damping Ring R&D	LBNL Wolski	0.05	\$0	\$12			
1.3.2 Coordination of Accelerator Effort at LBNL	LBNL Zisman	0.25	\$10	\$51			
1.4 ILC public relations	FNAL Jackson	0.00	\$50	\$58			
1.5 ILC school	FNAL Chou			\$50			
1.6 GDE Director travel	UNIV Barish/Caltech			\$140			
1.7 GDE Common fund	FNAL Barish			\$473			
1.8 Americas Regional Director	UNIV Dugan/Cornell				\$326		
2 Accelerator design, including RDR		34.24	\$781	\$6,235	\$0	\$0	\$0
2.1 Management		3.30	\$100	\$630	\$0	\$0	\$0
2.1.1 Accelerator design management	SLAC Phinney	1.30		\$214			
2.1.2 Development of the reference design report	FNAL Mishra	2.00	\$100	\$416			
2.2 Global systems		1.75	\$0	\$288	\$0	\$0	\$0
2.2.1 Global systems design	SLAC Himel	0.95		\$156			
2.2.2 Control systems design	SLAC Larsen	0.80		\$132			
2.3 Electron sources		1.50	\$0	\$247	\$0	\$0	\$0
2.3.1 Electron source design	SLAC Brachmann	1.50		\$247			
2.4 Positron sources		5.55	\$7	\$734	\$0	\$0	\$0
2.4.1 Positron source design	SLAC Sheppard	3.55		\$584			
2.4.2 End-to-end simulation of positron source-und to DR	ANL Gai	2.00	\$7	\$150			
2.5 Damping rings		6.05	\$79	\$1,053	\$0	\$0	\$0
2.5.1 Damping ring design	SLAC Cai	2.30		\$378			
2.5.2 Damping ring accelerator physics	FNAL Church	1.00	\$50	\$208			
2.5.3 Damping Ring Injection & Extraction Beamline Design & CI	LBNL Zisman	0.00	\$2	\$2			
2.5.4 Damping Ring Beam Dynamics: Dynamic Aperture	LBNL TBD	0.50	\$3	\$84			
2.5.5 Damping Ring Beam Dynamics: Collective Effects	LBNL Zisman	0.85	\$4	\$231			
2.5.6 Damping ring design and optimization	ANL Xiao	1.40	\$20	\$150			
2.6 Ring to Main Linac		1.30	\$0	\$214	\$0	\$0	\$0
2.6.1 RTML design	SLAC Tenenbaum	1.30		\$214			
2.7 Main Linacs: Optics, beam dynamics, instrumentation		5.74	\$75	\$988	\$0	\$0	\$0
2.7.1 Linac beamline design	SLAC Tenenbaum	0.50		\$82			
2.7.2 Wakefields	SLAC Bane	2.24		\$369			
2.7.3 Main linac accelerator physics	FNAL Solyak	3.00	\$75	\$537			
2.8 Main Linacs: RF systems		1.05	\$0	\$173			
2.8.1 RF System design	SLAC Adolphsen	1.05		\$173			
2.9 Main Linacs: Cavities and Cryomodules							
2.10 Beam delivery system		5.30	\$0	\$871	\$0	\$0	\$0
2.10.1 beam delivery system design	SLAC Seryi	5.30		\$871			
2.11 Conventional facilities		2.69	\$519	\$1,039	\$0	\$0	\$0
2.11.1 Conventional facility design	SLAC Asiri	2.69	\$69	\$517			
2.11.2 Conventional facility design	FNAL Kuchler	0.00	\$450	\$522			
3 Research and development		37.44	\$4,921	\$12,076	\$242	\$650	\$119
3.1 Management		0.80	\$0	\$132	\$0	\$0	\$0
3.1.1 R&D management	SLAC Markiewicz	0.80		\$132			
3.2 Global systems		2.72	\$519	\$871	\$0	\$113	\$0
3.2.1 High availability power supplies	SLAC Seryi	0.35		\$125			
3.2.2 High availability kicker	SLAC Ross	0.35	\$250	\$325			
3.2.2.1 Fast kicker development	SLAC(MOI) LLNL: Cook	0.42	\$50	\$200			
3.2.3 Diagnostic Processor for power supply	SLAC Bellomo	0.10	\$60	\$81			
3.2.4 High availability control system & standard instr. Modules	SLAC Larsen	1.00	\$85	\$255			
3.2.5 Development of Universal Accelerator Parser	LBNL Bates	0.50		\$20			
3.2.6 2_03: Design and Fabrication of a Radiation-Hard 500-MH: UNIV	UNIV Gan/Ohio State					\$75	
3.2.7 2_09: Radiation damage studies of materials and electroni UNIV	UNIV Pellet/UC Davis					\$38	
3.3 Electron sources		1.85	\$100	\$411	\$0	\$35	\$0
3.3.1 Polarized electron source	SLAC Brachmann	1.85	\$100	\$411		\$35	
3.3.2 2_40: Development of Polarized Photocathodes for the Lin UNIV	UNIV Prepost/Univ. Wisconsin					\$35	
3.4 Positron sources		4.77	\$152	\$1,255	\$0	\$40	\$0
3.4.1 NC Positron Capture Structure	SLAC Adolphsen	3.19	\$97	\$628			
3.4.2 E166 Positron Polarization Expt.	SLAC Sheppard		\$25	\$27			
3.4.3 Positron source target design	LLNL Gronberg	1.58	\$30	\$600			
3.4.4 2_37: Undulator-based production of polarized positrons UNIV	UNIV Bugg/Tennessee					\$40	
3.5 Damping rings		2.53	\$340	\$783	\$0	\$92	\$70
3.5.1 Electron cloud measurements and PEP-II studies	SLAC Pivi	0.85	\$109	\$256			
3.5.2 ATF Ring BPM electronics	SLAC Ross	1.65	\$230	\$517			
3.5.3 Damping Rings Studies at LBNL-ALS	LBNL Byrd	0.04	\$0	\$10			
3.5.4 2_22: Investigation of Novel Schemes for Injection/Extrac UNIV	UNIV Gollin/Univ. Ill					\$17	
3.5.5 2_25: Investigation and prototyping of fast kicker options UNIV	UNIV Palmer/Cornell					\$75	
3.5.6 2_34: Experimental, simulation, and design studies for lin: UNIV	UNIV Sagan/Cornell						\$47
3.5.7 2_07: Fast Synchrotron Radiation Radiation Imaiqing System for Bea UNIV	UNIV Alexander/Cornell						\$24
3.6 Ring to Main Linac		0.00	\$0	\$0	\$0	\$35	\$0
3.6.1 2_27: Effects of Coherent Synchrotron Radiation in Linear UNIV	UNIV Ellison/UNM					\$35	
3.7 Main Linacs: Optics, beam dynamics, instrumentation		0.00	\$0	\$0	\$0	\$49	\$0
3.7.1 2_30: Beam simulation: main beam transport in the linacs UNIV	UNIV Rubin/Cornell					\$21	
3.7.2 2_11: Ground motion studies vs. depth UNIV	UNIV Velasco/Northwestern					\$28	
3.8 Main Linacs: RF systems		6.94	\$612	\$1,883	\$0	\$90	\$0
3.8.1.1 Marx Modulator	SLAC Leyh	4.45	\$240	\$988			
3.8.1.2 Marx modulator mechanical engineering	LLNL Gronberg	0.20	\$130	\$200			
3.8.2 SC Linac Quad and BPM	SLAC Adolphsen	1.05	\$142	\$324			
3.8.3.1 Coupler development	SLAC Adolphsen	1.00	\$100	\$271			
3.8.3.2 RF coupler test stand development	LLNL Rusnak	0.25		\$100			
3.8.4 2_44: 20 MW Magnicon for International Linear Collider IL UNIV	UNIV Hirschfield/Yale					\$60	
3.8.5 2_18: Control of beam loss in High-repetition rate High-pc UNIV	UNIV Chen/MIT					\$30	
3.9 Main Linacs: Cavities and Cryomodules		11.40	\$3,061	\$5,511	\$242	\$162	\$0
3.9.1 TTF2 HOM Monitor	SLAC Ross	1.40	\$45	\$278			
3.9.2 Cavity fabrication	FNAL Foley	2.00	\$1,400	\$1,925			
3.9.2.1 Two large grain cavities	FNAL (MC) Jlab:Mammossee		\$200	\$200			
3.9.3 Cavity processing	FNAL Rowe, Boffo	4.00	\$1,380	\$2,202			
3.9.3.1 BCP processing	FNAL (MC) Cornell:Padamsee		\$165	\$165			
3.9.3.2 EP Processing	FNAL (MC) Jlab:Mammossee		\$400	\$400			
3.9.4 ILC Cryomodule design	FNAL Peterson	3.00	\$100	\$566			

3.9.5	Fabrication of test ILC cavities using large/single grain	Jlab	Kneisel	1.00	\$136	\$400				
3.9.6	2_47: Magnetic Investigation of High Purity Niobium for S	UNIV	Lee/Univ. Wisconsin						\$64	
3.9.7	2_48: 3D Atom-Probe Microscopy on Niobium for SRF Cav	UNIV	Seidman/Northwestern						\$40	
3.9.8	2_52: Investigation of Plasma Etching for Superconducting	UNIV	Vuskovic/Old Dominion Univ						\$58	
3.9.9	Research in superconducting radiofrequency systems	UNIV	Padamsee/Cornell			\$140				
3.9.10	New cavity shapes and new materials	UNIV	Padamsee/Cornell				\$242			
3.10	Beam delivery system			6.42	\$137	\$1,231	\$0	\$35	\$49	
3.10.1	ESA BDS/MDI Experiments	SLAC	Tenenbaum	0.30	\$0	\$49				
3.10.1.1	ESA BPM Precision Tests - T474									
3.10.1.2	ESA Collimator wakefield Tests - T480									
3.10.1.3	ESA Synchrotron rad. spectrometer - T475									
3.10.2	ATF2 Cavity BPM Electronics	SLAC	Ross	1.40	\$42	\$274				
3.10.3	Nanometer resolution BPM system	LLNL	Walston	0.22	\$20	\$100				
3.10.4	Final focus quadrupole full length coil	BNL	Annerella	1.75	\$25	\$320				
3.10.5	Conceptual design work	BNL	Parker	1.75		\$280				
3.10.6	Beam delivery system-collimators	FNAL	Mohkov	1.00	\$50	\$208				
3.10.7	2_04: RF Beam Position Monitors for Measuring Beam Posi	UNIV	Kolomensky/UCB					\$35		
3.10.8	2_26: Continuing Research and Development of Linac and UNIV		Warner/Colo. State							\$49
3.11	Conventional facilities			0.00	\$590	\$870	\$0	\$0	\$0	\$0
4	Technical Systems engineering and cost estimation in support of RDR			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.1	Management, technical and engineering services			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.1.1	Cost and engineering management	FNAL	Garbincius							
4.2	Vacuum Systems			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.2.1	Vacuum systems engineering and cost estimation									
4.3	Magnet Systems			0.00	\$0	\$280	\$0	\$0	\$0	\$0
4.3.1	Magnet Systems engineering and cost estimation	FNAL	Tompkins			\$280				
4.4	Cryomodule			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.4.1	Cavity package engineering and cost estimation									
4.5	Cavity package			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.5.1	Damping rings engineering and cost estimation									
4.6	RF power			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.6.1	RF power engineering and cost estimation									
4.7	Instrumentation			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.7.1	Instrumentation engineering and cost estimation									
4.8	Dumps and collimators			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.8.1	Dumps and collimators engineering and cost estimation									
4.9	Accelerator Physics			0.00	\$0	\$0	\$0	\$0	\$0	\$0
4.9.1	Accelerator physics engineering and cost estimation									
4.10	Industrial Studies			0.00	\$590	\$590	\$0	\$0	\$0	\$0
4.10.1	Industrial Studies engineering and cost estimation	FNAL	Garbincius		\$590	\$590				
5	Infrastructure and test facilities			18.06	\$2,068	\$5,216	\$0	\$0	\$0	\$0
5.1	Management					\$0				
5.2	Global systems					\$0				
5.3	Electron sources					\$0				
5.4	Positron sources					\$0				
5.5	Damping rings			1.05	\$90	\$299	\$0	\$0	\$0	\$0
5.5.1	ATF Damping Ring Studies	SLAC	Ross	0.75	\$80	\$209				
5.5.1.1	ATF Beam dynamics and instrumentation studies									
5.5.1.2	ATF hardware development									
5.5.2	Development of Injection/Extraction Kickers at KEK-ATF	LBNL	Byrd	0.15	\$5	\$45				
5.5.3	Studies of Beam Dynamics at KEK-ATF	LBNL	TBD	0.15	\$5	\$45				
5.6	Ring to Main Linac					\$0				
5.7	Main Linacs: Optics, beam dynamics, instrumentation									
5.8	Main Linacs: RF systems			8.84	\$839	\$2,355	\$0	\$0	\$0	\$0
5.8.1	1.3 GHz RF Power Source	SLAC	Adolphsen	4.84	\$219	\$1,030				
5.8.2	ILCTA support	SLAC	Cassel	0.50	\$20	\$104				
5.8.2.1	HA Modulator IGBT Switch array									
5.8.2.2	ILCTA Cryodesign									
5.8.3	RF Power	FNAL	Nagaitsev	1.50	\$450	\$747				
5.8.4	LLRF Controls	FNAL	Carcagno	2.00	\$150	\$474				
5.9	Main Linacs: Cavities and Cryomodules			5.50	\$900	\$1,869	\$0	\$0	\$0	\$0
5.9.1	Cavity Horizontal Test stand	FNAL	Hocker	1.75	\$200	\$494				
5.9.2	Cavity Vertical Test stand	FNAL	Ginsburg	1.75	\$300	\$610				
5.9.3	Cryogenics for test stands	FNAL	Theilacker	2.00	\$400	\$764				
5.10	Beam delivery system			2.66	\$239	\$694	\$0	\$0	\$0	\$0
5.10.1	Design and Fabrication of magnets for ATF2	SLAC	Seryi	1.00	\$70	\$239				
5.10.2	ESA Beamline Instrumentation Upgrade	SLAC	Woods/Arnold	1.66	\$169	\$454				
5.11	Conventional facilities					\$0				
6	Reserve					\$2,437				
6.1	General reserve					\$1,160				
6.2	FY06 University Accelerator R&D program	DOE/GDE	Grannis/Dugan			\$700				
6.3	Fermilab reserve	FNAL	Kephart			\$377				
6.4	SLAC reserve	SLAC	Raubenheimer			\$200				
Total				99.23	\$9,126	\$29,841	\$568	\$650	\$119	