

Advanced accelerator effort is highly leveraged:  
Big bang for the buck

~ 25 publications (including those that were submitted) plus 4 invited talks

Institution	2002	2003
UCLA	60K	70K
Tech-X	50K	60K
USC	19K	23K
LBNL	20K	20K

**Strong educational component:  
Includes those directly funded and those who are  
closely coupled to the effort**

**Graduate students:**

*CK.Huang (25%), W.Lu, R.Narang M. Zhou, M. Tzoufras, (UCLA)*

*S.Deng (25%), A.Z.Ghalam*

*G.Fubiani (50% from BD for second year), R.Trines (50% for first year) (LBNL)*

*J.Regele (UofColorado)*

**Young researchers:**

*F.S.Tsung (25%) (UCLA)*

*C.Nieter (UofColorado)*

*R.Giaconne*

## Additional funds can have large impact

Additional funds/year (Conservative)	Impact
75K	Support the E-cloud work: Code/Physics (Beam dynamics work)
175K	plus detailed benchmarking between the codes OSIRIS/Vorpal/quickPIC/Fluid (parallel routines-ISICS-and physics)
275K	plus high-impact afterburner/all optical injection/LWFA in channel simulations