

**William B. Atwood**  
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Santa Cruz, CA 95060

**Degrees:**

B.S. (1970) B.S. in Physics (with honors), California Institute of Technology.  
Winner of The Young Award in Physics in Junior Year  
Ph.D. (1975) Stanford University

**Professional Experience:**

2001 - present Appointed Adj. Prof. at UCSC (associated with SCIPP). Have continued teaching undergraduate course including Quantum Mech. (139a), Intro Physics (7a), and Independent Studies (192 - course in Acoustics and directed studies in Particle Astrophysics). Re-engaged in research and analysis of the GLAST satellite and its mission.

2001 - 2001 Lecturer, Phys. Dept. UCSC. Taught the upper division Quantum Mechanics course (139a) - Spring Quarter.

2000 - 2001 Retired from SLAC (January). Pursued violin making.

1999 - 2000 Leave of Absence from SLAC (March) to pursue violin making.

1992 - 1999 **GLAST** (Gamma ray, Large Area Space Telescope). In 1992 I became involved in the development of a follow-on high energy gamma ray, space-based telescope to the highly successful EGRET experiment. The instrument concept was mostly of my fashioning, and I subsequently demonstrated its potential using the below mention simulation tools (GISMO). In addition to my technical role, I played a part in shaping the alliance of physicists from the USA, Europe and Japan. GLAST is a joint project between DOE, NASA, and NSF and is a major program at Stanford. GLAST passed through a number of NASA and DOE reviews and is presently an active flight program.

1994 - 1997 Member of the **Technology Review Committee** for NASA's SEU theme area.

1990 - 1994 C++ based **GISMO** detector simulation/analysis package. Begun at CERN and developed upon return to SLAC in 1990.

1990 **B Decays** (ed. S. Stone). I along with John Jaros co-authored the chapter on **B-Life Times**.

1989 - 1990 **CERN**, a year's sabbatical starting Fall of 1989. I joined the newly commissioned **Aleph Experiment** running at the LEP Storage ring. My work there focused at first on aiding in the commissioning process, particularly with the tracking detectors' calibrations and software. Research topics subsequently included  $\tau$  lepton and B life times, B meson decays, and low-mass Higg's searches.

1986 - 1989 Program Manager for the commissioning of the Stanford Linear Collider (January 1986 to August 1989), working in John Seeman's LINAC Group in the Accelerator Division at SLAC.

1982- 1985 Served on the **IEEE Nuclear Science Symposium Program Committee**. In Addition, I was the co-inventor of the **Lasertron** concept in collaboration with Prof. M. Breidenbach in 1983 as a possible giga-watt microwave power source. The idea arose from a combination of my experience with the E-128

experiment (i.e. a photo-cathode driven electron gun) and the quest for the lab to extend its energy.

1979 - 1984 **DELCO** experiment at the PEP storage ring. In 1979, I was promoted to Assistant Professor at SLAC and also began a program to develop planer spark counter technology into large area detectors for particle physics experiments. In 1982, at my request, I was transferred to the permanent staff at SLAC. In 1984, I assumed the position of Spokesman for the DELCO experiment.

1979 7th SLAC Summer Institute on Particle Physics. I gave the lecture series entitled **Lepton Nucleon Scattering**, which was subsequently published in the book "**Lectures on Lepton Nucleon Scattering and Quantum Chromodynamics**" in 1982.

1978 Rejoined Prof. Taylor's group in 1978, working to measure parity violation in electron scattering off a deuterium target. The second experiment, E-128, was the first experiment to establish parity violation in electron scattering, thereby validating the Glashow, Weinberg, Salam SU2 x U1 gauge theory of electro-weak interactions. I also worked on two proposals for a facility detector at the PEP Storage ring. In conjunction with the second proposal, **Super Delco**, in partnership with C. Prescott and B. Barish, I developed the "**wavebar**" **shower counter**. While the **Super Delco** proposal failed to win approval, wavebar shower counters became common in many HEP experiments in the 1980's.

1977 **CERN** (Geneva, Switzerland). I was Scientific Associate during 1977 and participated in the di-muon experiment at the ISR headed by Prof. S. Ting. The goal of this experiment was to extend measurements of the di-muon mass spectrum to the highest possible energy.

1970 - 1976 Prof. R. E. Taylor's group at SLAC. My graduate thesis concerned the behavior of electron scattering at 50 and 60 deg. off nucleons which is dominated by the W1 structure function. This revealed definite evidence for scaling violation and extended the inelastic electron scattering data to the edge of the kinematic boundary set by the maximum SLAC beam energy. This experiment was the last in the series of experiments that eventually lead to Friedman, Kendall and Taylor's Noble Prize awarded in 1990. After receiving my PhD in 1975 I stayed on with the SLAC group as a post-doc.

1968 - 1970 While a undergraduate at CalTech I worked part time in the Caltech Users Group headed by Prof. Alvin Tolestrup. During this time I analyzed and published my first paper on a nucleon charge exchange experiment performed at Brookhaven Nation Laboratory.