The Photon:
Welcome

On Alumnus Glenn Parkinson

Alumnus Glenn Parkinson is explains how he went from programming Fortran on punch cards to pastoring at a church in Severna Park. Check out his story below!

by Glenn Parkinson, Class of 1972
www.spepchurch.org

It was 1960. I was 10 years old, sitting in the back seat of the car as Dad drove the family through Annapolis one evening. Mom turned around and asked me, "Glenn, what do you want to do when you grow up?" Without hesitation, I said, "I want to be a theoretical physicist, majoring in quantum dynamics." I remember the very words. I remember the blank look on my Mom's face and the silence from my Dad. They had no idea what I was talking about.

Glenn at his first "real" job--an assistant computer operator for the State of Maryland

My own understanding was immature, of course, but I knew that I wanted to understand things. I wanted to know how and why stuff worked. No--it was more than that. I wanted to know why stuff was. Formal religion had never been a part of my upbringing, so my heart turned to science in the quest to understand. I read every book on physical science the library had on the shelves. My science projects were Tesla coils and experiments in ion propulsion. My goal in life was to help invent a practical fusion reactor, while finally discovering the Theory of Everything.

I enjoyed studying physics and math during my years at the University of Maryland. Those were the days of slide rules and logarithm charts. They were also the days when lasers were just becoming available. I remember being the first to use one to create an extended optical lever in a project to measure the

The Photon: Spotlight

On High-Energy Physics

Zooming In On Dzero

by Nicholas Hadley *(http://nscp.umd.edu/~hadley/)*
Professor, UM Physics

Since the beginning of recorded history, people have wondered about the building blocks of matter and the fundamental forces that govern the way that matter moves and changes with time.

In particle physics experiments, we study matter in its simplest forms in order to find the answers to these questions. By using the highest possible energies, we can look at matter on an extremely small scale (otherwise known as shortest distance scales), and try to duplicate conditions that existed only a few moments after the Big Bang from which the universe is believed to have been formed. This is why particle physics is often called high energy physics.

The highest energy accelerator in the world is the Tevatron proton anti-proton collider at the Fermi National Accelerator Laboratory (Fermilab) which is located in Batavia, Illinois, just west of Chicago.

Courtesy of FermiLab (Reidar Hahn, 1996)

Dzero collaboration with the detector in the background

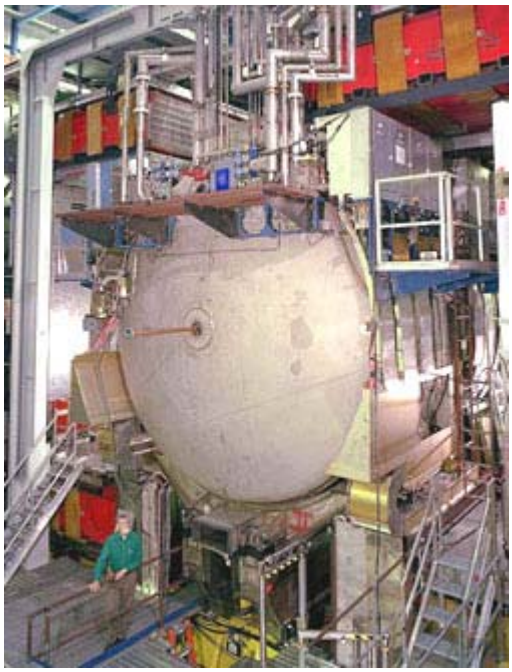
The Maryland particle physics group has worked on an experiment there called the DZero (pronounced "dee-zero") experiment since 1985. The DZero experiment is a large experiment built by more than 500 scientists from 63 institutions located on four continents.

The goal of the experiment is to study a wide range of particle physics phenomena including searches for new particles and new forces. The experiment also studies forces that we know exist at short distance scales where some of their unique properties can be checked.

The four known forces are the electro-magnetic force, the "strong" force, the "weak" force, and gravity. Electricity-magnetism are the familiar electric and magnetic forces which the work of Maxell and Einstein showed can be combined into one force. The "strong" force is the force that holds together the protons and neutrons inside the atomic nucleus. The DZero experiment

studies the electro-magnetic force, the "weak" force, and the "strong" force, but does not study gravity.

The most important result from DZero to date is the discovery of the top quark in 1995 which was done simultaneously by DZero and another experiment at Fermilab. The Maryland group were major contributors to the discovery of the top quark. **Prof. Drew Baden** came up with one of the key ideas that enable Dzero to separate the wanted top quark events from the much more numerous background events from processes not containing a top quark. **Prof. Nick Hadley** was co-head of the top quark group, a group of 70 physicists, on the DZero experiment at the time of the discovery. Maryland students and postdocs made some of the key measurements that led to the discovery.



Courtesy of FermiLab (Reidar Hahn, 1997)

Dzero Detector

In addition to the top quark discovery, the Maryland group on DZero has been active in searches for new particles and in studies of the electroweak force. **Prof. Sarah Eno** has been

having mass.

Courtesy of FermiLab (Fred Ullrich, 2000)
Muon pixel planes at DZero

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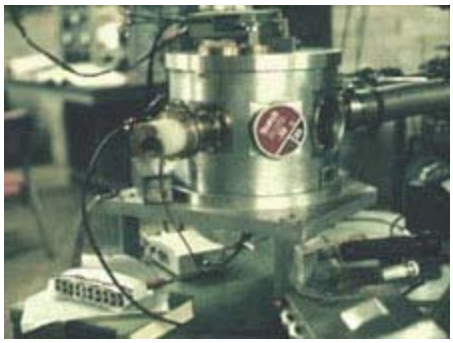
gravitational constant--my partner and I had to arrange to use the physics building in the middle of the night in order to minimize traffic rumble. Class illustrations using the particle accelerator were especially exciting.



One of Glenn's projects for a physics class

Those were also the days of the new computer science building, with its Univac 1108. My dorm room in Cambridge Hall overlooked the facility. It's value became evident during the campus anti-war riots of the early '70's, since the National Guard would immediately create a human ring around that one particular building. I spent hours there programming Fortran on punch cards.

The National Guard surrounding the Computer Science building during a campus anti-war riot

In fact, it was in that building that my life changed. It's remarkable how your life can change so suddenly, without warning, from the simplest of observations. It was 2 AM, and I was trying to debug an assignment due the next day. Without a console, debugging consisted solely of analyzing your printout. Someone, however, had tampered with the operating system, causing the Univac to print a different selection of error messages--a variety of humorous remarks that were obviously a joke.

I was fascinated, wondering how I might have pulled off such a prank. Since the remarks correlated with genuine errors, I realized that all you would have to do would be to replace the code that held the error message itself. Since the computer did not "mean" what it said, but only printed whatever memory block it was told to, it wouldn't know the difference.

That's when it hit me--the implications of a completely closed universe and mechanistic philosophy of life. If I am nothing more than a biological machine, then I can "mean" no more than the Univac spitting out foolish statements. Complex, programmed, but ultimately without absolute meaning or purpose. I remember stopping my work, standing up, and saying out loud, "I don't believe that." I didn't realize it, but my life had just changed.

Within six months, I found in Christianity a rational approach to life that satisfied my mind with respect to both the world around me and world within me. My quest to know why things are took a spiritual turn. After my BS in physics, my graduate work pursued Theology. I became a pastor in a conservative branch of the Presbyterian church, and have served in that capacity for some 25 years.

Severna Park Evangelical Presbyterian

I find that my preparation in physics has proven invaluable to my work as a pastor and my life as a Christian. My biblical research tends to be careful, as I test my hypothesis against what I find to be actual biblical data. I also find it easy to appreciate both biblical faith and scientific enquiry, looking for faulty logic and personal bias in each discipline. Anyone interested in reading my own five part summary of Christ's gospel can find it at my church's website: www.spepchurch.org, under "Gospel" and "Resources".

I have never lost my original passion for physics. I am currently enjoying Greene's Elegant Universe, as well as the biblical insights of astrophysicist Hugh Ross (The Creator and the Cosmos) and the recent works on intelligent design theory. My math is rusty, but I love to read of contemporary theories and experiments. It is my ardent desire that one day, in the Paradise I earnestly look forward to, I will have the time to once again pick up the trail of the Theory of Everything (if we haven't already come across it by then!)

• See Glenn's profile

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