

## NSPE

### **I feel very honored to receive this award...**

...but also let me note that I feel somewhat sheepish as well

### **Burnout**

You see, if I were to pick the two most important characteristics of engineers, I would choose

...creativity

...and analytical ability

Unfortunately, my years as engineering dean managed to burn out the creative side of my brain...

And my more recent duties as a university president forced to deal with fundamental science such as deficit financing and voodoo economics has managed to burn out the remaining analytic side.

### **Leadership**

Fortunately, there is yet another characteristic of engineers that has proven useful during these latter years...  
...and that is leadership...particularly during a time when the rapid changes in our society are being increasingly driven by technology.

Looking back over history, one can identify certain abrupt changes, discontinuities, in the nature, the very fabric of our civilization...

The Renaissance, the Age of Discovery, the Industrial Revolution

There are many who contend that our society is once again undergoing such a dramatic shift in fundamental perspective and structure.

Today we are evolving rapidly to a new post-industrial, knowledge-based society, just as a century ago our agrarian society evolved through the Industrial Revolution.

Key element in transformation, is the emergence of knowledge as the new critical commodity, as important as mineral ores, timber, and access to low skilled labor were at an earlier time.

As Erich Bloch, Director of the National Science Foundation suggests, we are entering a new age, an "Age of Knowledge"

And in this age, the major force behind economic change is technology, itself.

Of course, we know that technology has played an increasingly important role for many years.

Technological innovation, achieved by applying new knowledge created through basic research, has been responsible for nearly half of all US productivity gains since WWII

At another level, technologies of transportation and communication make possible an integrated economy.

Tremendous new industries have been created by new technical knowledge: electronics is the obvious example of the last three decades; biotechnology may be the example for the coming three decades.

### **A new role for the engineer**

It is clear that our state is in the midst of a profound transition...  
...from an industrial economy based upon the abundance of natural resources, unskilled labor, and, to some degree, constrained, slowly moving domestic markets...

To a knowledge-based economy, characterized by intensely competitive world markets, rapid change, and--most important of all--educated people and their ideas.

This has not been...and will not be...an easy transition to make.

Increasingly, our society is turning to those who have the capacity to understanding and to apply knowledge for its leadership

One can even see this trend within the Ivy covered walls of the university...  
Indeed, not only have engineers assumed leadership roles in  
our leading science and technology institutes...  
...Chuck Vest at MIT  
...Tom Everhard at Caltech  
but even bastions of liberal studies are turning to engineers  
...Chang Lin Tien at UC-Berkeley  
...Steve Sample at USC  
...JJD at Michigan  
Throughout American society  
...in higher education  
...in industry  
...in business and finance  
...we are seeing engineers moving into positions of leadership  
Who knows...perhaps someday we will even see  
...a tidal wave of engineers moving into elected public office  
...in our communities, in our states, and in Washingt  
...Lord knows we certainly could use more folks at the top  
that understood technological change and its implications

#### **NSPE**

And, of course, that is why NSPE is so important...  
For beyond providing the foundation for the engineering profession,  
you provide as well its leadership.  
Through your influence, you can persuade more of our  
engineering colleagues to move into leadership roles  
throughout our society...  
And provide them with the encouragement and support they will need.

**Hence, while I accept this award this evening with a sense**  
of humility for my present inactivity as a practicing engineer...  
I also accept it as a symbol of the importance of engineering  
leadership for our society as we face the age of knowledge  
that is our destiny.