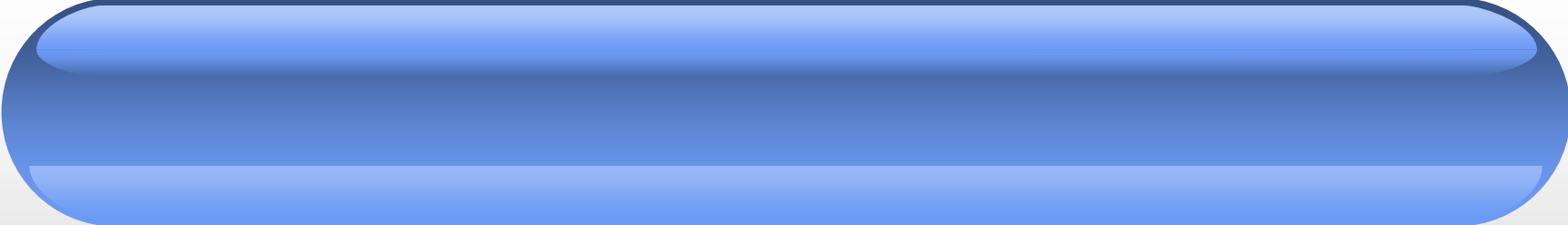


MIT and Leadership

Thomas W. Eagar

SB '72, ScD '75

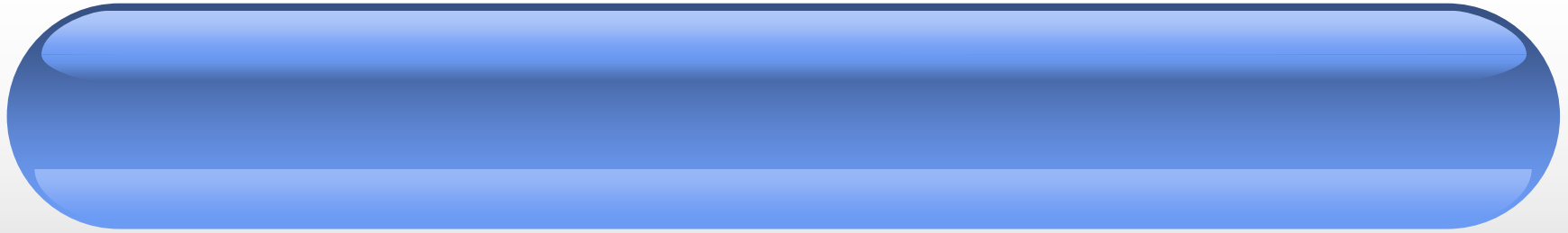
Professor of Materials Engineering & Engineering Systems, MIT



“There is no question but that the Massachusetts Institute of Technology is the best technical school in the country ... I have found the graduates of Tech have a better, more practical, more usable knowledge, as a class, than the graduates of any other school in the country ...

The salvation of America lies in the Massachusetts Institute of Technology.”

Thomas A. Edison
December 17, 1911



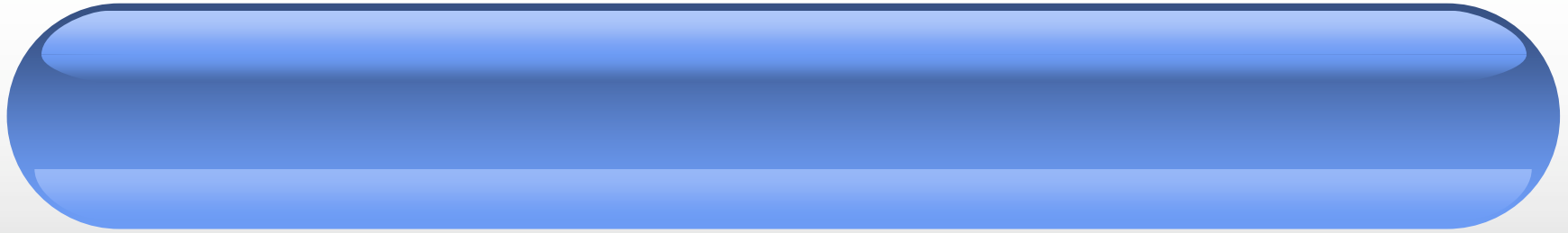
MIT is an iconoclastic society.

Ed Schein

Professor of Organizational Psychology and Management, MIT

MIT has a culture of creativity.

Thomas W. Eagar



MIT taught me how to work hard.

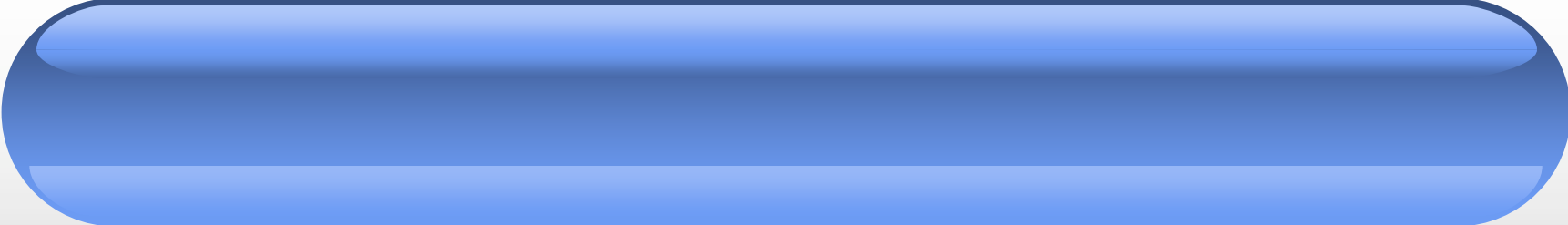
Richard P. Simmons, SB '53
Chair of Board, Allegheny Teledyne

MIT teaches you to work gracefully under pressure.

Robert M. Rose, SB '58, ScD '61
Professor of Materials Science and Engineering, MIT

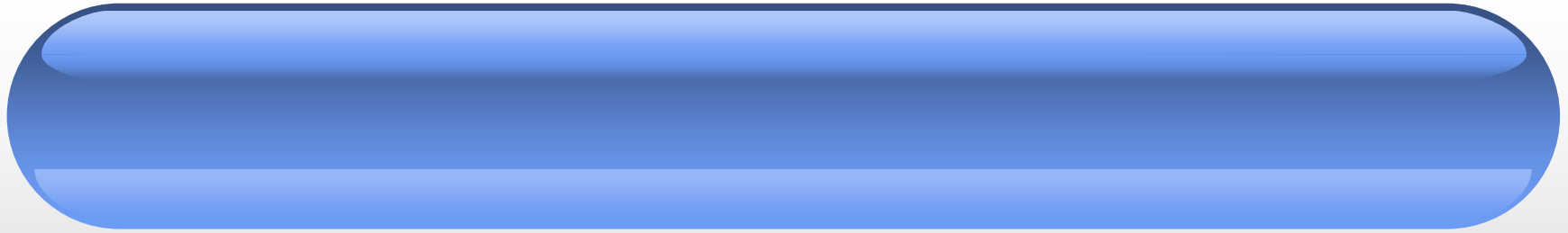
MIT will take you to your limit, whatever it is.

Thomas W. Eagar



“There are no secrets to success.
It is the result of preparation,
hard work, and learning from
the future.”

General (ret.) Colin L. Powell
U.S. Secretary of State



If you want to be successful
professionally,

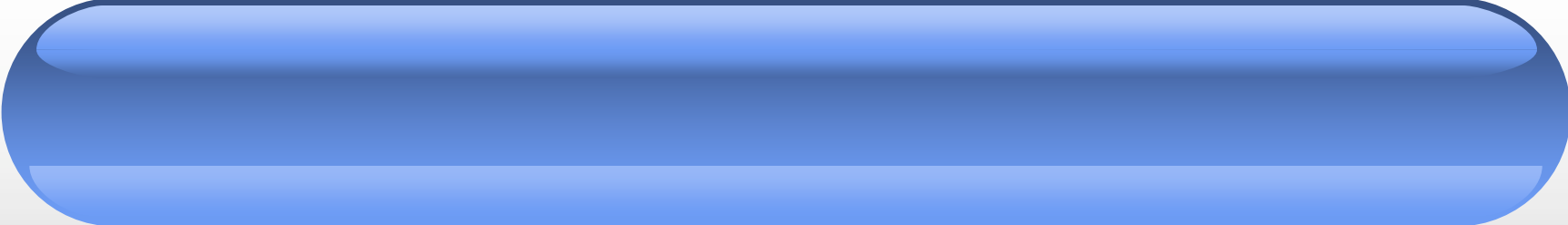
First, learn to do your job

in 40 hours per week, and

Then, work 80 hours per week.

MIT is a “Praise-Free” Zone.

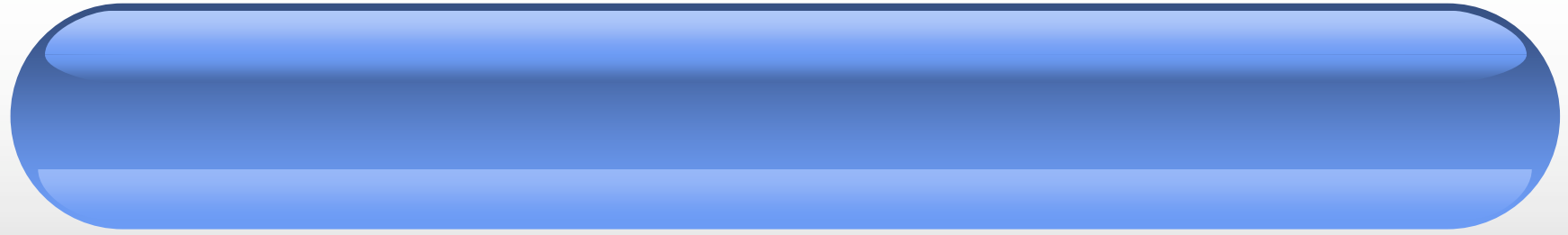




“The MIT faculty and students are reasonably bright, but insecure. That’s why they work so hard. If they received praise, they wouldn’t be so insecure and would not feel the need to work so hard.”

Robert Brown

Provost, MIT

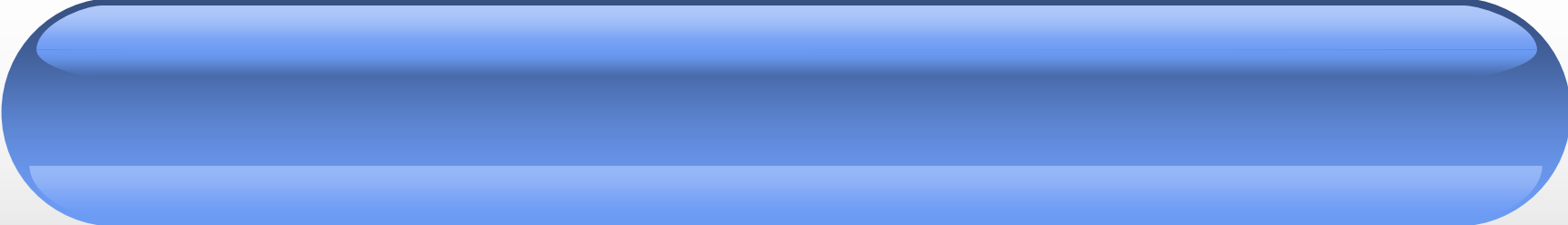


We have met the enemy
and he is us.

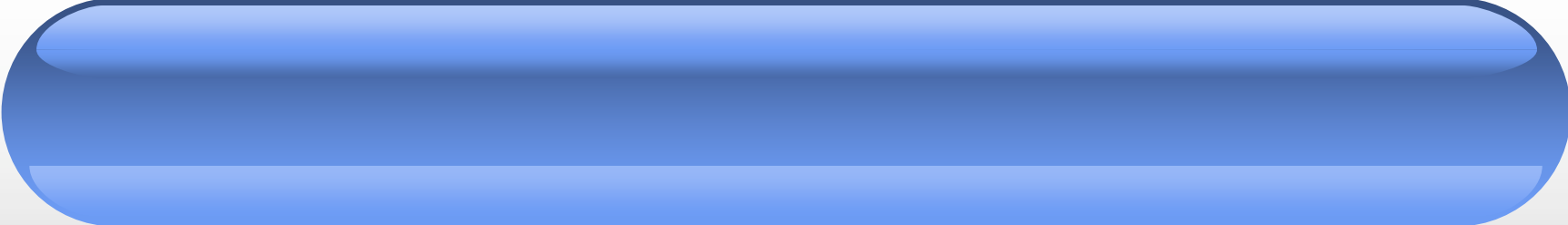
Pogo



**45 % OF MIT FRESHMEN
WERE VALEDICTORIANS IN
THEIR HIGH SCHOOLS**

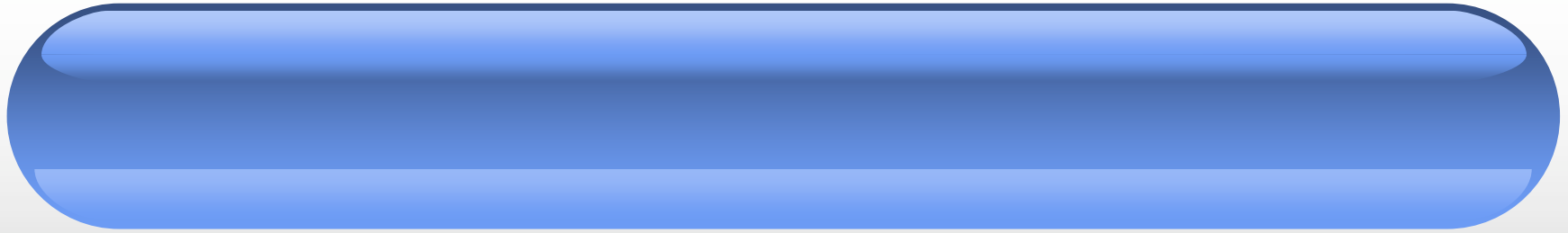


**MIT STUDENTS ARE
WITHIN THE TOP 3 OF
10, 000 OF THE POPULATION**



“A successful man is he who receives a great deal more from his fellow men, usually incomparably more than corresponds to his service to them. The value of a man, however, should be seen in what he gives and not in what he is able to receive.”

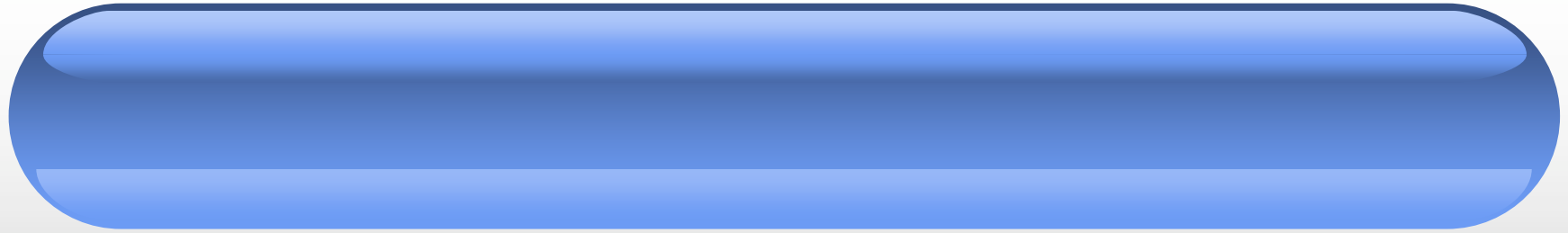
Albert Einstein



There is no greater burden
than having great potential.

Linus

from "Peanuts"



One of the values of an
MIT education:

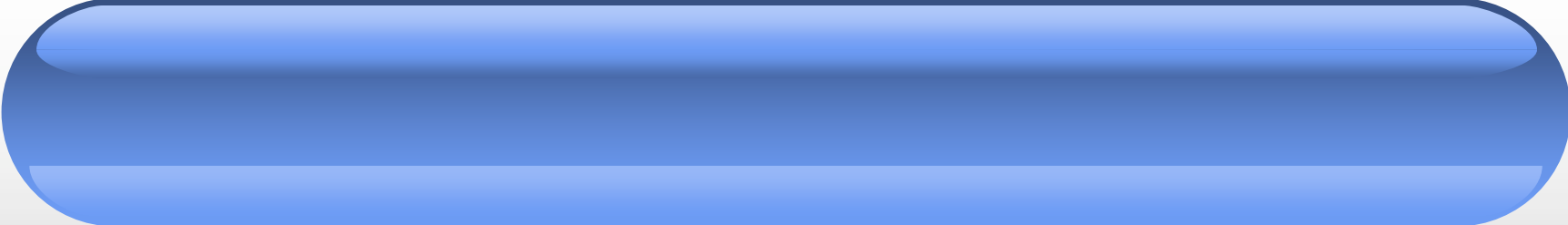
This is the first time many of our
students have learned to fail.

MIT's Culture of Creativity

Hard Work

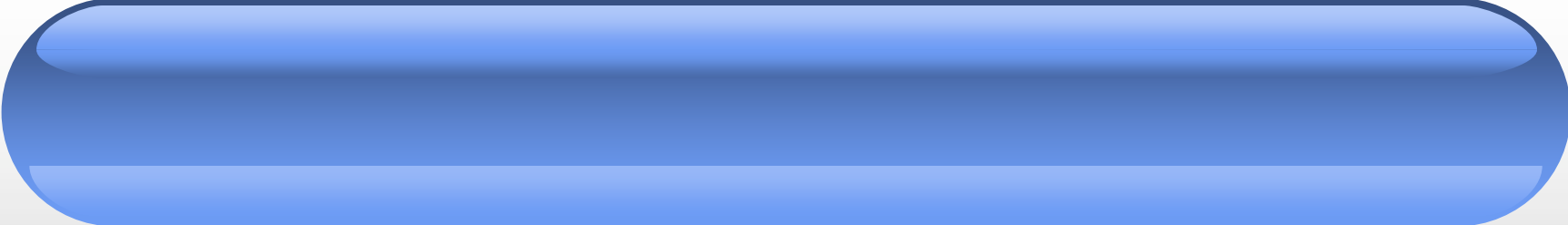
Learning to Fail

Humility (not Insecurity)



“Whenever you are asked if you can do a job, tell ‘em, ‘Certainly I can!’ Then get busy and find out how to do it.”

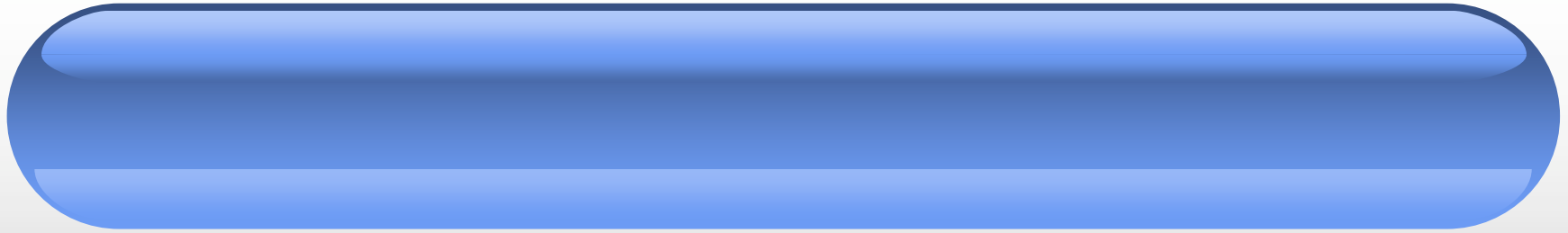
Theodore Roosevelt



“The object of a liberal education is not to teach the young all they will ever need to know. It is to give them the habits, ideas, and techniques that they need to continue to educate themselves. Thus, the object of formal institutional liberal education in youth is to prepare the young to educate themselves throughout their lives.”

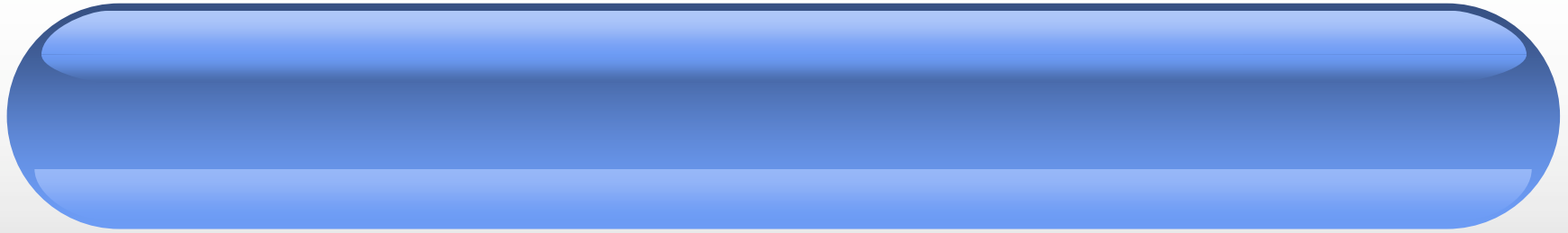
Robert M. Hutchins

President, University of Chicago, 1929–1951



In the fields of observation,
chance favors only the
prepared mind.

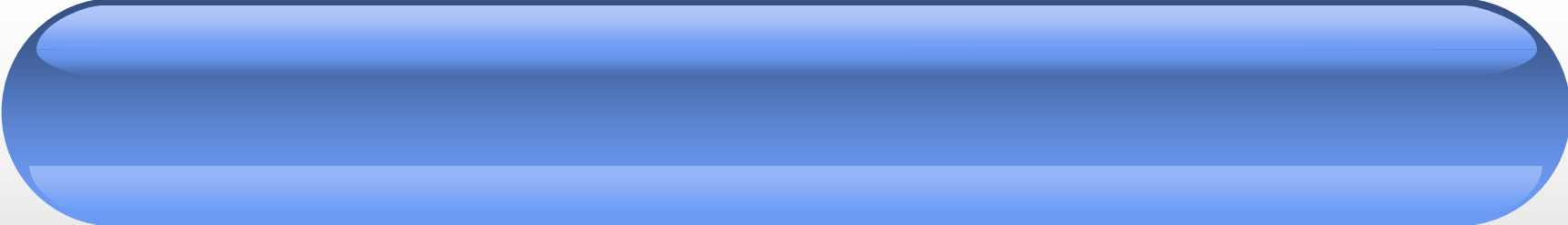
Louis Pasteur



Significant inventions are not mere accidents. The erroneous view [that they are] is widely held, and it is one that the scientific and technical community, unfortunately, has done little to dispel. Happenstance usually plays a part, to be sure, but there is much more to invention than the popular notion of a bolt out of the blue. Knowledge in depth and in breadth are virtual prerequisites. Unless the mind is thoroughly charge beforehand, the proverbial spark of genius, if it should manifest itself, probably will find nothing to ignite.

Paul Flory

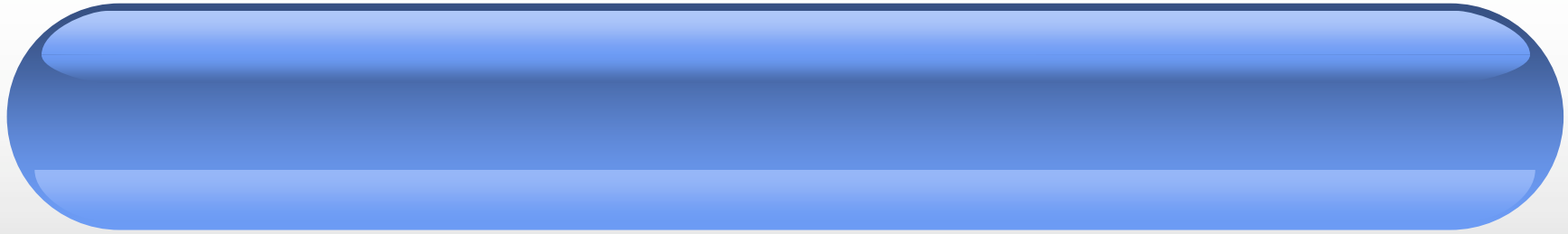
1974 Nobel Laureate in Chemistry



“The mind is not a receptacle; information is not education. Education is what remains after the information that has been taught has been forgotten.”

Robert M. Hutchins

President, University of Chicago, 1929–1951



“Character is the aim of true education ...

... and science, history, and literature are but means used to accomplish this desired end. True education seeks to make men and women not only good mathematicians, proficient linguists, profound scientists, or brilliant literary lights, but also honest people with virtue, temperance, and brotherly love. It seeks to make men and women who prize truth, justice, wisdom, benevolence, and self-control as the choicest acquisitions of a successful life.”

David O. McKay

Durable Qualities All Engineers Should Have – Boeing

Good grasp of engineering science fundamentals

Mathematics

Physical and Life Sciences

Good understanding of the design process

(i.e., understand engineering)

Basic understanding of the context in which engineering is practiced

Economics

History

Manufacturing

Customer Needs

Good Communication Skills

Written

Verbal

Graphic

Listening

Ability to think both critically and creatively – independently and cooperatively

Flexibility – An ability and the self-confidence to adapt to rapid/major change

Profound understanding of the importance of team work

Fundamental Principles

Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

1. using their knowledge and skill for the enhancement of human welfare and the environment
2. being honest and impartial and serving with fidelity the public, their employers and clients;
3. striving to increase the competence and prestige of the engineering profession; and
4. supporting the professional and technical societies of their disciplines.

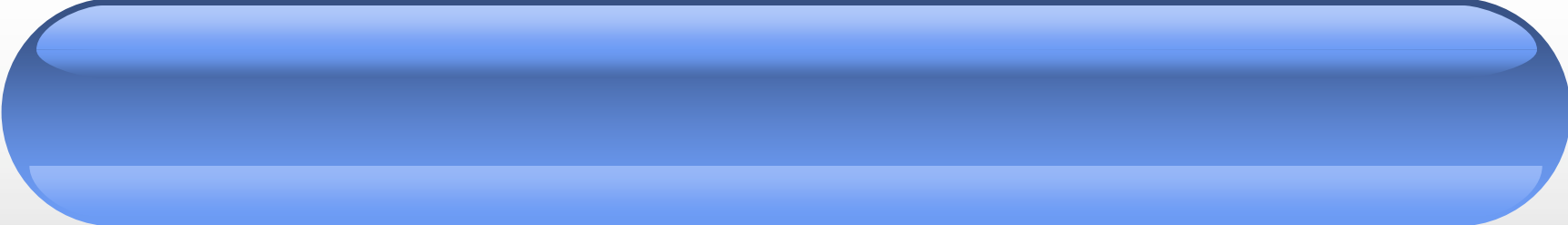
Fundamental Canons of Engineering

1. Engineers shall hold paramount the safety, health and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties.
2. Engineers shall perform services only in areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.
5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
6. Engineers shall act in such a manner as to uphold and enhance the honor, integrity, and dignity of the engineering profession.
7. Engineers shall continue their professional development throughout their careers, and shall provide opportunities for the professional development of those engineers under their supervision.



“Why do MIT alums usually end up working for Yale and Harvard graduates?”

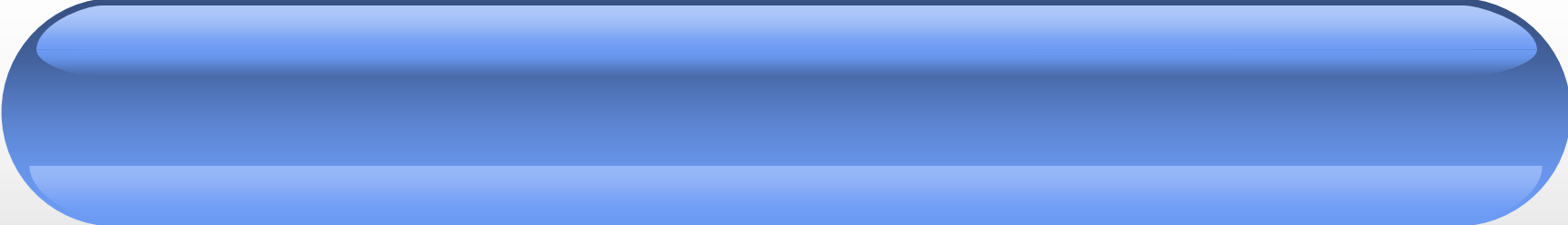
MIT student



“I’m convinced that MIT’s already large contribution to our society would sharply expand if its graduates were even better advocates and raconteurs for their views and labors.”

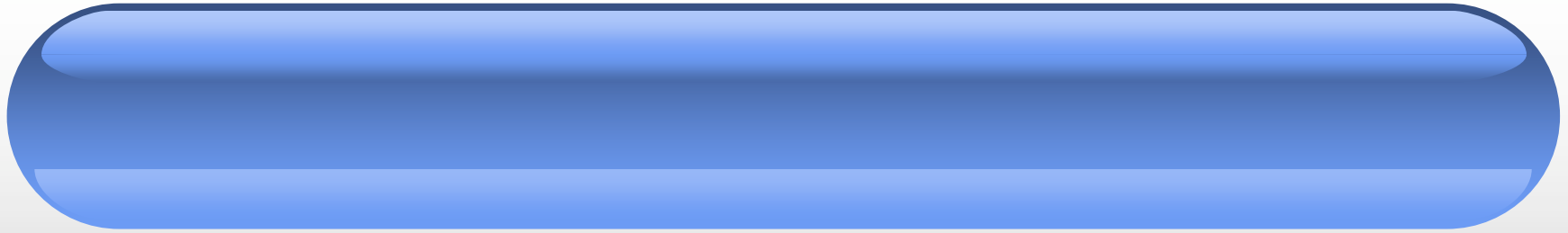
Alan G. Spoon

COO Washington Post



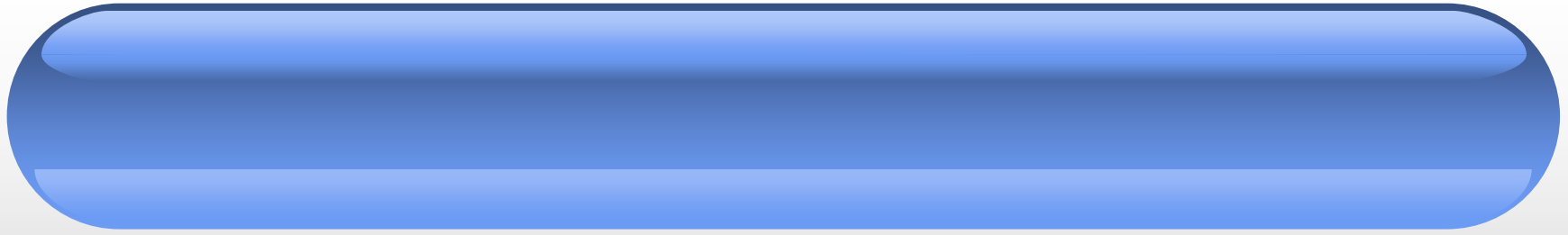
MIT takes some of the best
raw talent in the world and
turns them into high-class
technicians.

Thomas W. Eagar



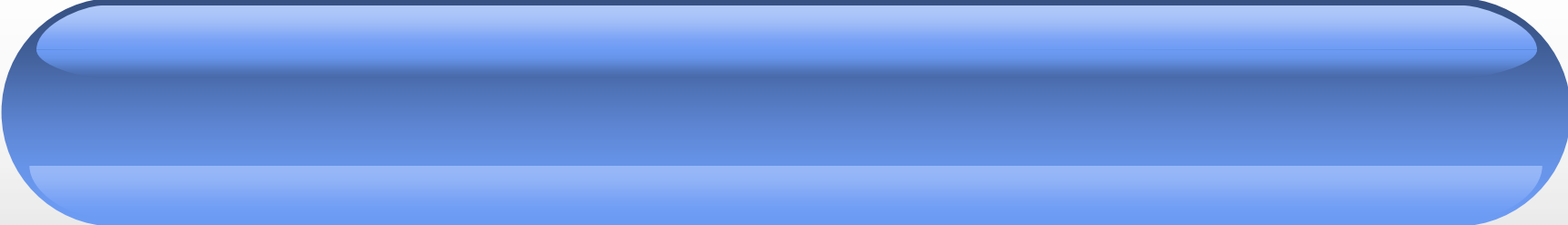
Why do you want to be an
engineer?

Why don't you want to be a
leader?



Hint -

YOU CAN BE BOTH!



“The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function. One should, for example, be able to see that things are hopeless and yet be determined to make them otherwise.”

F. Scott Fitzgerald

Twelve Qualities of a Leader = Norman Augustine

Character

Vision

Competence

Energy

Courage

Perseverance

Decisiveness

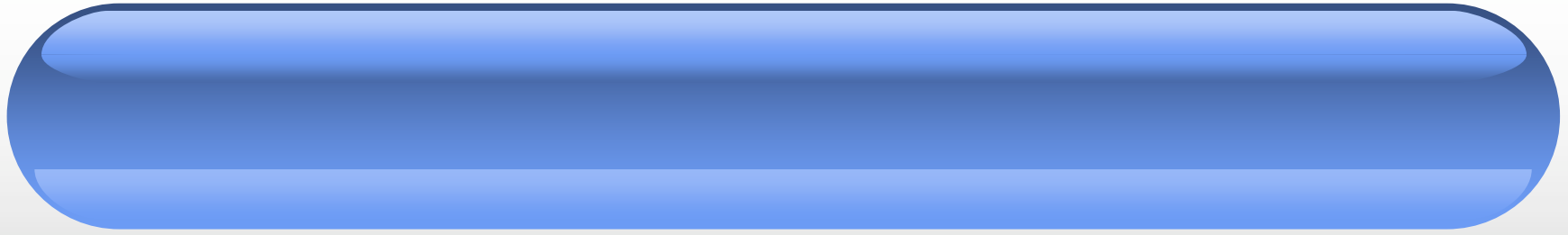
Judgement

Mentoring

Listening

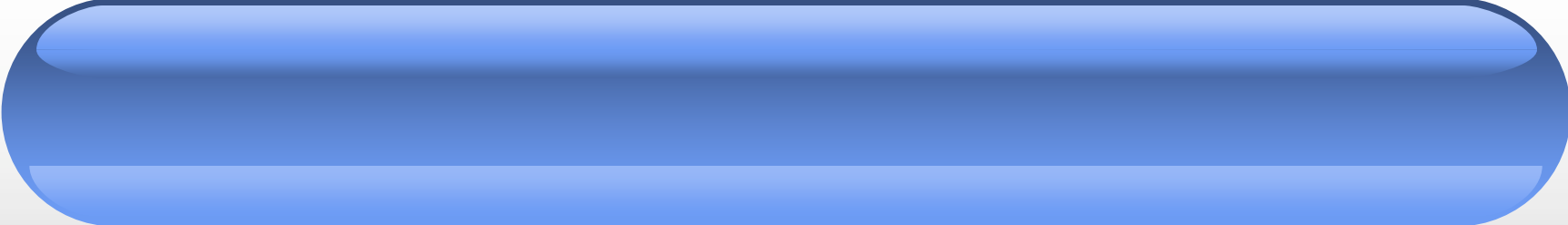
Selflessness/Teamwork

Motivation



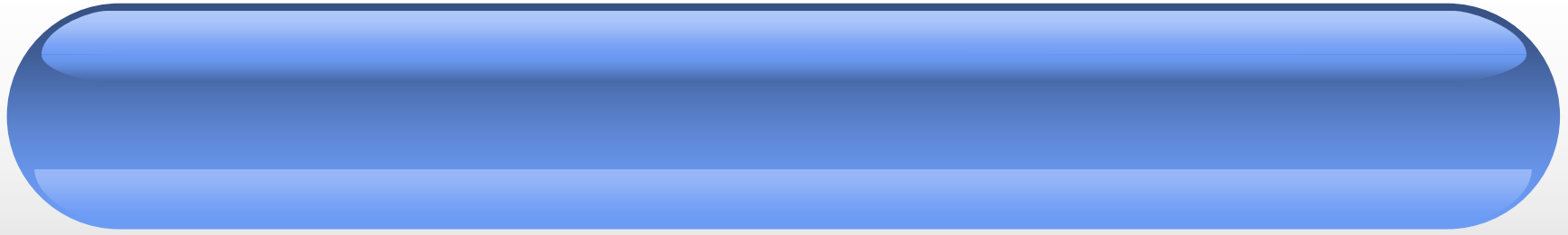
The purpose of scouting is to encourage boys – not to discourage them.

Bert van Uitert

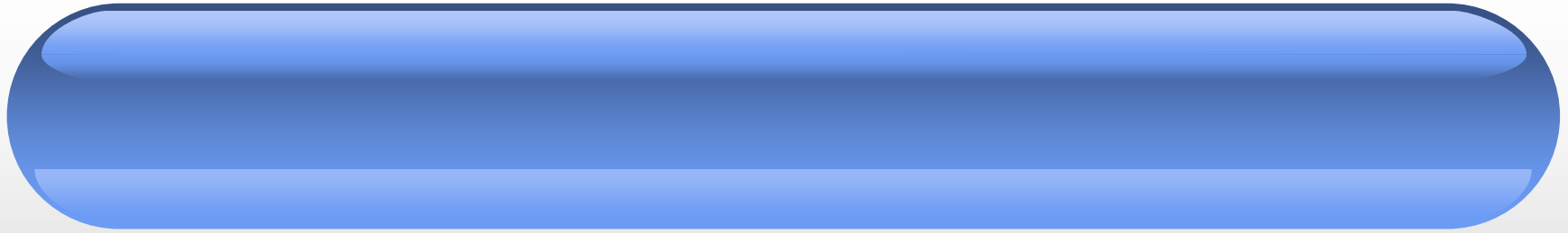


Never attribute to malice
that which can be
adequately explained by
ignorance.

Hanlon's Razor



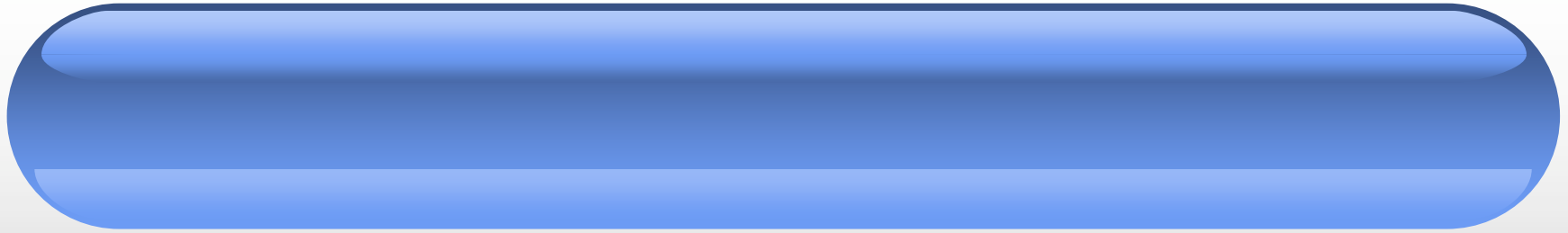
never say no,
but always tell them
what yes means



Management is not being brilliant ...
Management is craftsmanship.

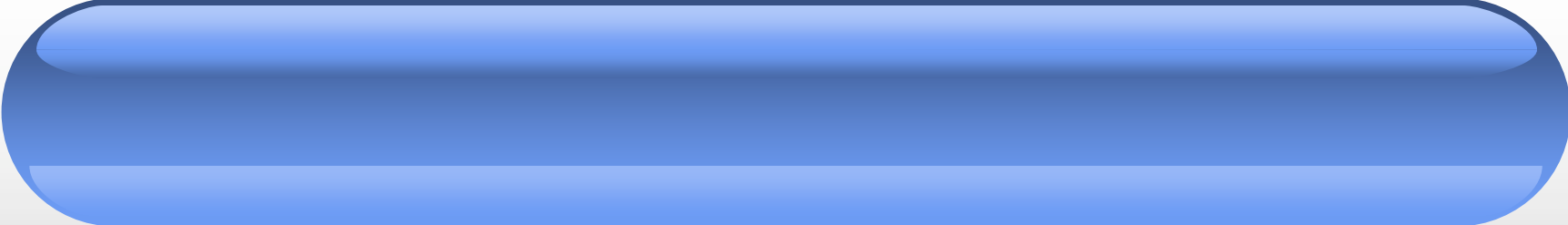
Most of the time it is hard work to
get a very few simple things across
so that ordinary people can do them.

Peter Drucker



No one, ever managed men
into battle.

Admiral Grace Hopper



“We trained hard ... but it seemed that everytime we were beginning to form up into teams, we would be reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing; and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency and demoralization.”

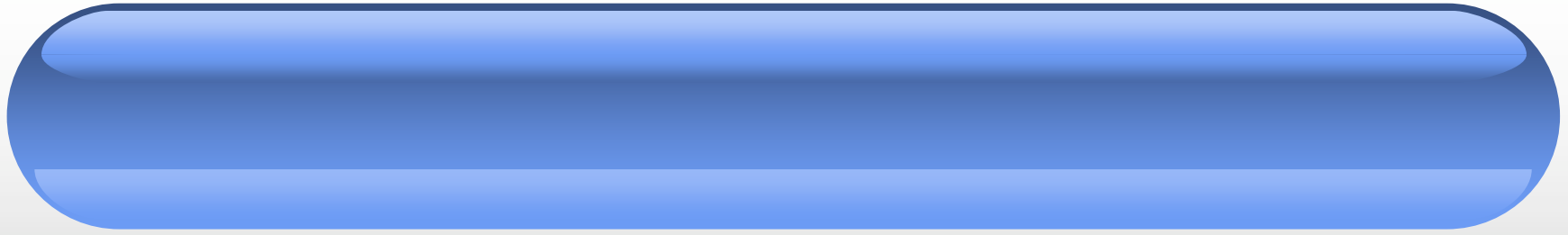
Petronius Arbiter
Greek Navy, 210 B.C.

from *Leaders to Managers: The Fatal Shift*

“The *Generalstab* tried desperately for a hundred years to train up a generation of leaders for the German army; but it never worked, because the men who delighted their superiors, i.e., the managers, got the high commands, while the men who delighted the lower ranks, i.e., the leaders, got reprimands.”

Hugh Nibley

Professor of Ancient Scripture, BYU



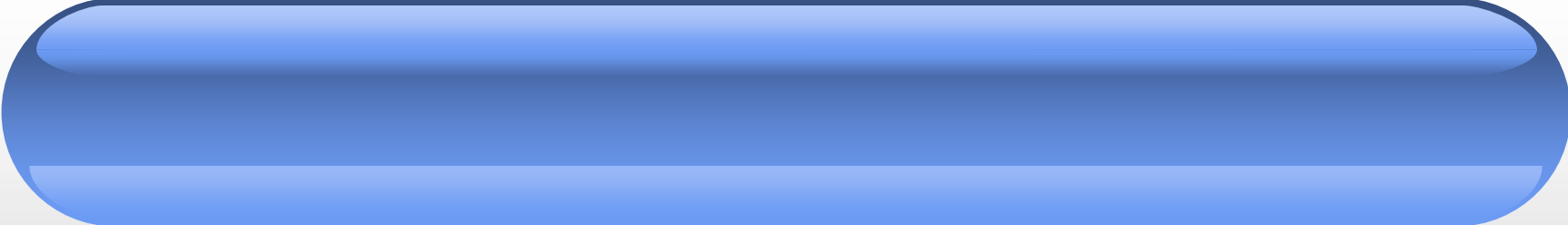
When you have to make a choice, and don't make it, that in itself is a choice.

William James

from *Leaders to Managers: The Fatal Shift*

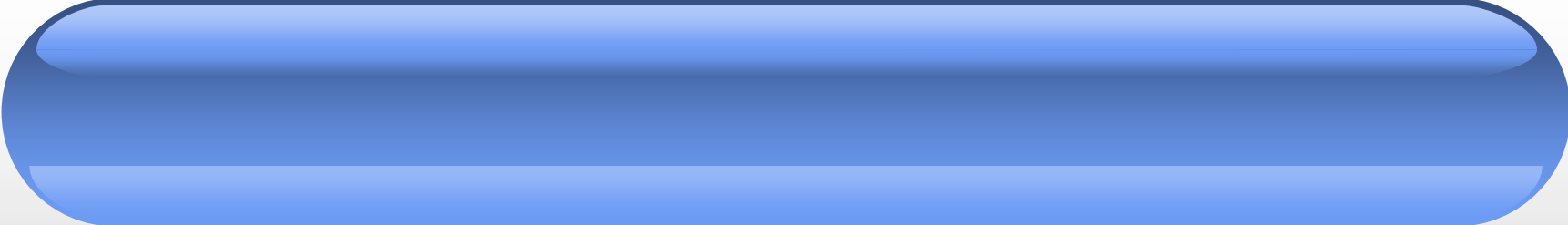
“Leaders are movers and shakers, original, inventive, unpredictable, imaginative, full of surprises that discomfit the enemy in war and the main office in peace. For the managers are safe, conservative, predictable, conforming organization men and team players, dedicated to the establishment. The leader, for example, has a passion for equality. We think of great generals from David and Alexander on down, sharing their beans or *maza* with their men, calling them by their first names, marching along with them in the heat, sleeping on the ground, and being first over the wall.”

Hugh Nibley



“It does an organization no good when its leader refuses to share his leadership function with his lieutenants. The more centers of leadership you find in a company, the stronger it will become.”

David Ogilvey

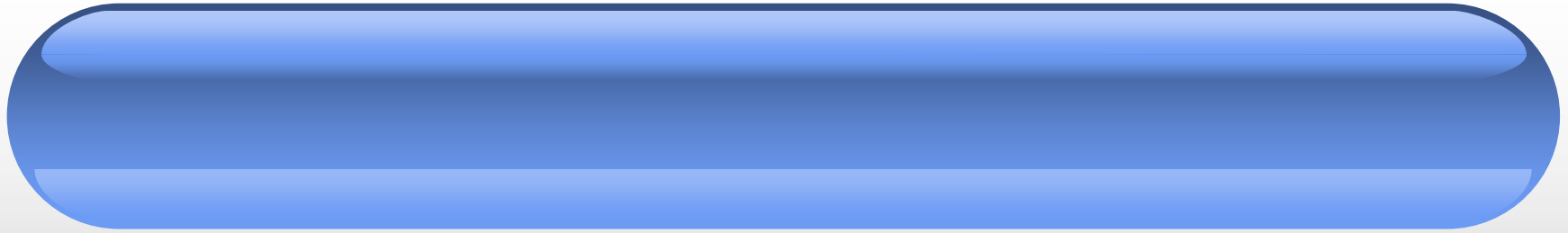


The wicked leader is he who the people despise.

The good leader is he who the people revere.

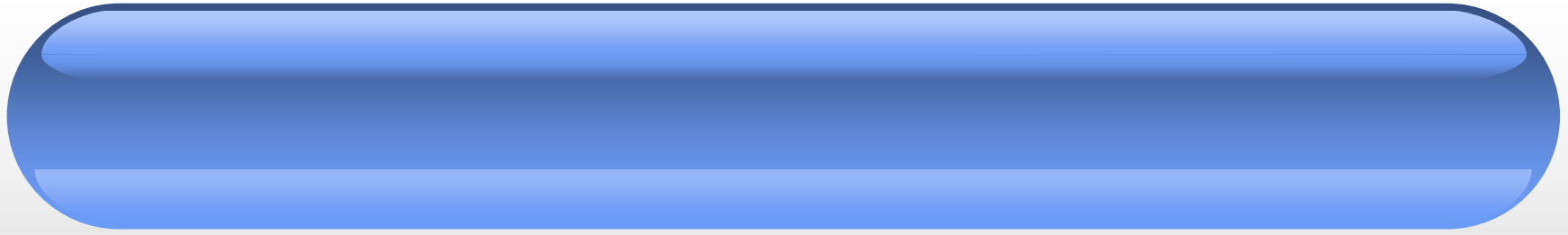
The great leader is he who the people say, “We did it ourselves.”

Lao Tsu



Strange as it sounds, great leaders gain authority by giving it away.

James Stockdale

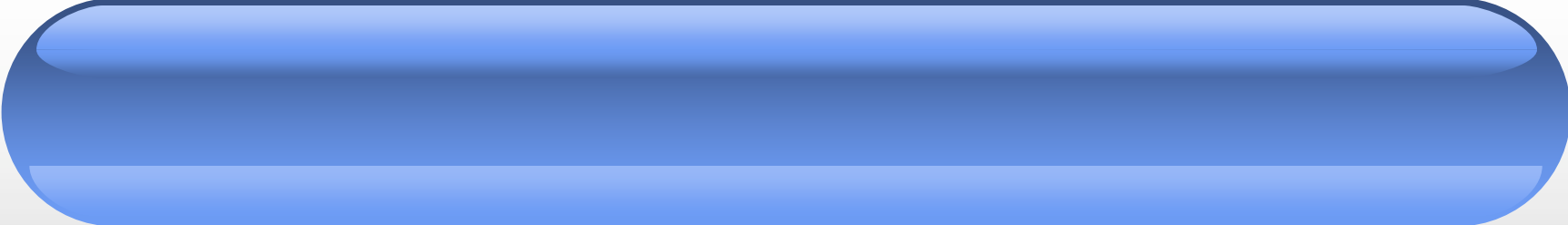


When you use your authority,
You lose your authority.

from *Leaders to Managers: The Fatal Shift*

“For the manager, on the other hand, the idea of equality is repugnant and indeed counter-productive. Where promotion, perks, privilege, and power are the name of the game, awe and reverence for rank is everything, the inspiration and motivation of all good men. Where would management be without the inflexible paper processing, dress standards, attention to proper social, political and religious affiliation, vigilant watch over habits and attitudes, etc., that gratify the stock-holders and satisfy security ... That is why the rise of management always marks the decline, alas, of culture.”

Hugh Nibley



How can you determine whether you want to work for a company before you even walk through the doorway?

Look for the number of assigned spaces in the parking lot.

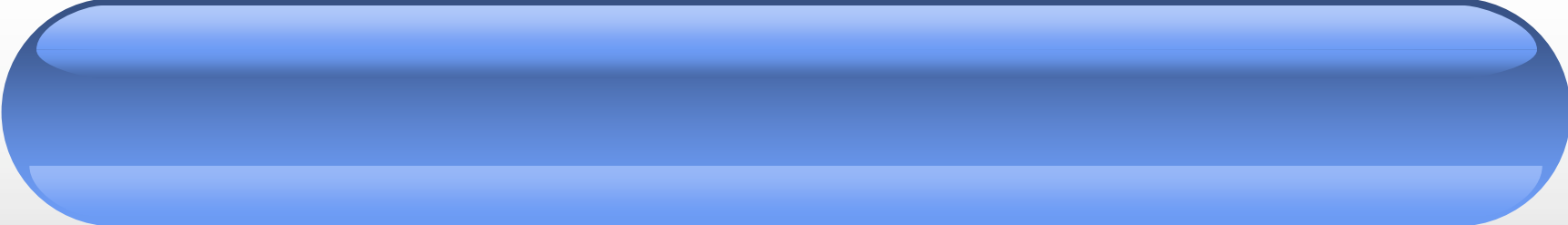
from *Leaders to Managers: The Fatal Shift*

“Managers do not promote individuals whose competence might threaten their own position; and so as the power of management spreads ever wider, the quality deteriorates, if that is possible. In short, while management shuns equality, it feeds on mediocrity.

On the other hand, leadership is escape from mediocrity...

For the qualities of leadership are the same in all fields, the leader being simply the one who sets the highest example.

Hugh Nibley



Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius – and a lot of courage – to move in the opposite direction.

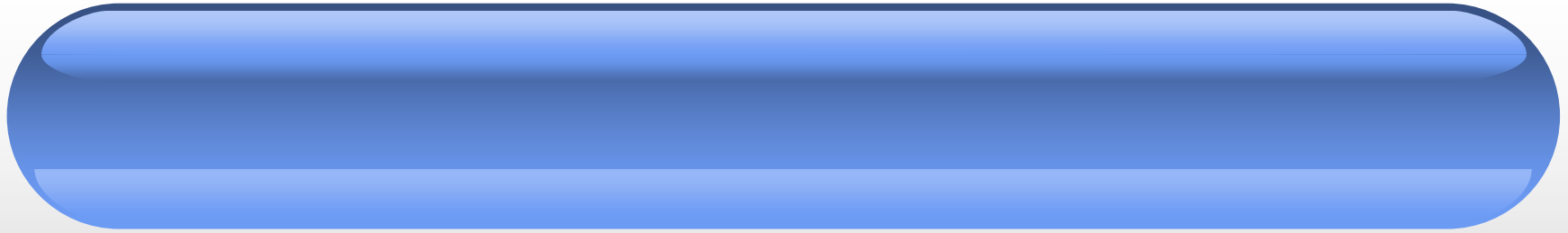
Albert Einstein

The Tao of Pooh

Confucianism vs. Taoism

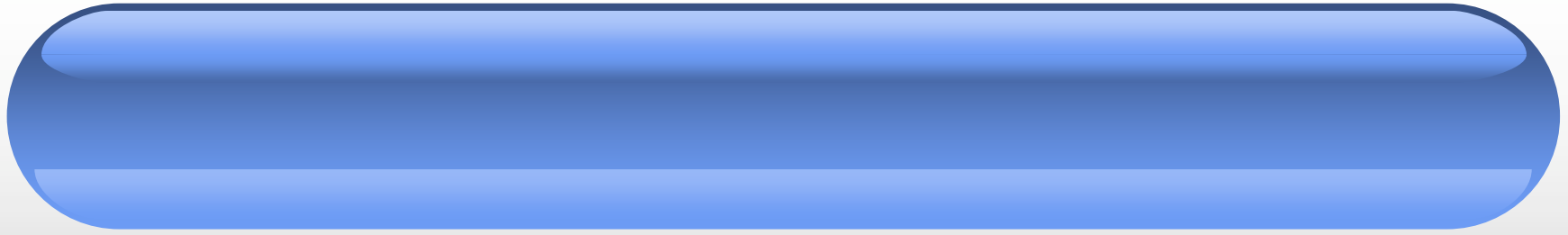
Rules vs. Principles

Lesser Law vs. Higher Law



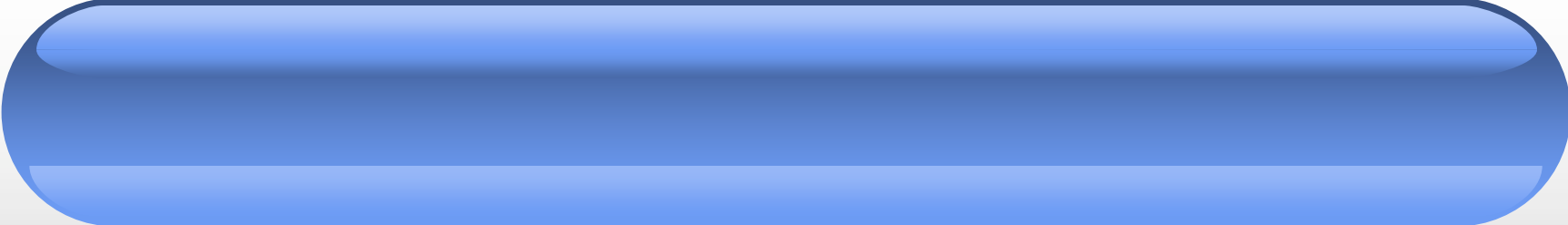
I teach them correct principles
and they govern themselves.

J. Smith, Jr.



The young man knows the rules.
But the experienced man knows
the exceptions.

Oliver Wendell Holmes, Sr.



“The ideal [person] is the one who is willing to learn, but who thinks for himself; who respects the convictions of others, but who will stand up for his own against any power whatever.”

Robert M. Hutchins

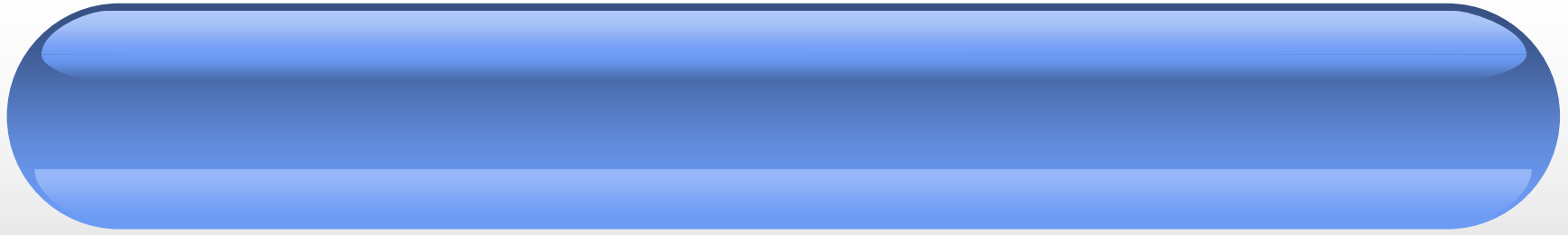
President, University of Chicago, 1929–1951

from *Leaders to Managers: The Fatal Shift*

“True leaders are inspiring because they are inspired, caught up in a higher purpose, devoid of personal ambition, idealistic and incorruptible ...

The manager "knows the price of everything and the value of nothing", because for him the value is the price.”

Hugh Nibley



The fundamental problem with Business Schools is that they teach Management and not Leadership.

A Leader...

- ... gets the right things done
- ... does more than is required
- ... balances professional and personal responsibilities
- ... respects the contributions of everyone
- ... contributes to the community
- ... takes initiative
- ... follows others when not leader

Creating a Culture of Change

Leadership

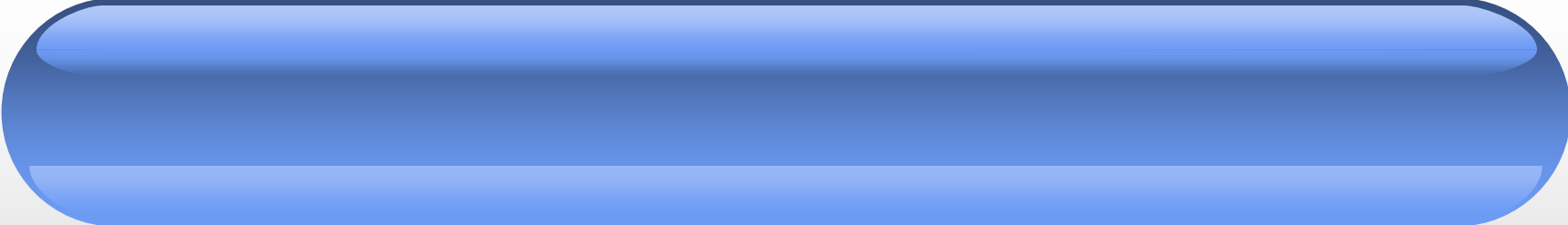
(Not Dictatorship)

Push Responsibility Down to
the Lowest Competent Level

Reward Innovation

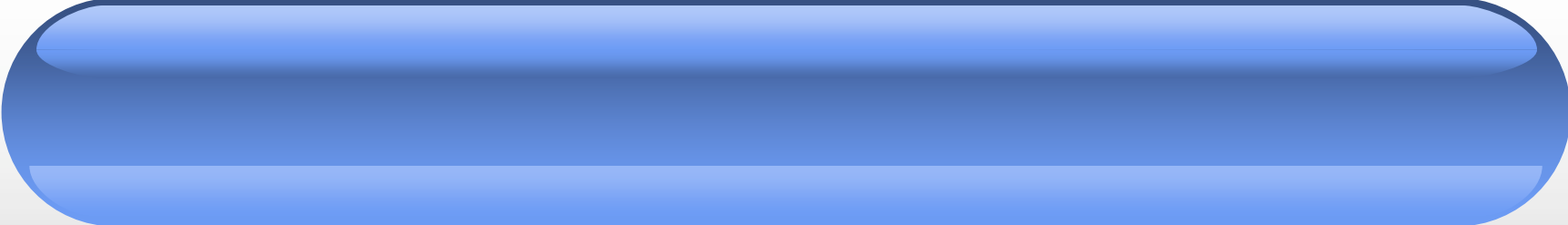
(Do Not Punish Failure)

Cut the Overhead



“It must be considered that there is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things.”

Machiavelli



They copied all they could follow,
But they couldn't copy my mind,
And I left 'em sweating and stealing
A year and a half behind.

Rudyard Kipling
The Mary Gloster