

**JWR Luncheon Keynote Address
Chicago NASA Future Forum
October 10, 2008
“Inspiration, Innovation, and Discovery”**

Let me first offer my congratulations to NASA on its 50th anniversary.

It is fitting that we in Chicago help mark this occasion.

Chicago is proud to be the home of Boeing, which has for many years been a partner with NASA in its efforts to further space exploration.

We are also home to one of the largest flight centers in the world – O’Hare Airport – where unfortunately making a connection sometimes seems as difficult as sending a man to the moon.

But more importantly, Chicago is home to this wonderful Planetarium.

It was America’s first, and it remains today one of Chicago’s cultural centerpieces.

It is greatly enriched by Jim Lovell’s contribution.

Walking through the building, one cannot help but be struck by NASA’s impact.

The Adler hosts about 65,000 area students every year.

Its staff works with about 1,000 educators, both in Chicago and around the country, to promote science education and for professional development

The Adler does a great deal to spread awareness about space exploration and astronomy.

Through these efforts, the Adler, NASA, and our students all come out ahead.

And scientific education is oh-so-important to us today.

I am grateful to Paul [Knappenberger] and my friend Frank Clark, who chairs the Board here at the Adler, for all they do to maintain this fine educational institution.

There are four themes about NASA today that strike me as profoundly important: exploration, innovation, collaboration, and education.

Let me begin with exploration.

I am reminded of an ad supposedly placed by Ernest Shackleton before his 1914-1916 British-Imperial Trans-Antarctic Expedition.

The ad supposedly read:

Men wanted for Hazardous Journey. Small wages, bitter cold, long months of complete darkness, constant danger, safe return doubtful. Honor and recognition in case of success.

There is some speculation that this tale is apocryphal. But I think whether or not the ad actually ran is secondary to its message.

It is a message that I think encapsulates how the American public feels about NASA's mission.

The hazards of the journey are periodically made too real to those of us watching from Earth.

We do not underestimate the dangers.

But I think we also take great pride in NASA's successes.

All Americans watch with awe when we see a launch from Cape Canaveral or an intricate spacewalk.

I know that we all breathe a sigh of relief when we see the shuttle touch down safely at the end of a mission.

NASA celebrates its 50th anniversary this year not by looking back on its accomplishments, but by thinking ahead to exploration of Mars and Pluto, a return to the moon, and many other endeavors.

This is a testament to NASA's ability to help stimulate our imagination.

Next, let me turn to what I see as NASA's second key value: innovation.

The innovations that have blossomed from the space program – either directly or indirectly – are too numerous to detail here.

These inventions touch our lives every day in ways we don't even realize.

I have read that Speedo has used NASA's wind tunnels and experience in fluid and air dynamics to improve the material that their competitive swimsuits are made of.

What I believe is most noteworthy about NASA's focus on innovation is that it works hand-in-hand with industry on the products it helps to incubate.

This could serve as a powerful example for us as we tackle our nation's energy challenges.

Even as government is increasing its commitment to research and development, industry must redouble its efforts to deploy new technological alternatives to our carbon-intensive energy infrastructure.

We need new technologies to provide diverse, efficient, and cost-effective forms of electric generation.

Coal, natural gas, renewables, and nuclear all must be part of the equation.

We also need innovation across our economy to improve the efficiency of our cars, our homes, and the gadgetry we have come to count on in our lives.

Government and industry must work together, as they have for the last half-a-century with the space program, if we are to overcome our energy challenges.

NASA's third key value is collaboration.

It is in some ways ironic that NASA can be seen as a symbol of collaboration.

NASA is young enough that we can all remember it was born from a "space race" with the Soviet Union.

Its founding intellectual capital – men like Werner Von Braun – fled to the U.S. after World War II because of concerns about

the Soviets plans for rocket development.

In its early years, NASA was as much a security organization as it was a scientific one.

Today, rather than compete with Russia, NASA today cooperates with our former adversary.

We are partners in building the International Space Station.

Our shuttles launch their cosmonauts, and their launch vehicles supplied our astronauts on the Space Station in the wake of the *Columbia* tragedy.

NASA has launched Italian, Israeli, and German astronauts into orbit, and those of many other origins as well.

I believe that this collaborative spirit will be increasingly important as we think about the major global scientific challenges we face, most prominently climate change.

To make meaningful strides on combating climate change, we will need to act with this same philosophy.

It was my great privilege to co-chair the National Commission on Energy Policy.

NCEP exemplifies the kind of collaboration we need on the climate change issue.

The Commission represents some of the brightest minds of industry, government, academia, and labor, and the environmental movement.

It is also bi-partisan, something that is unfortunately all-too-rare when it comes to our national energy policy.

This spirit of collaboration is something we desperately need more of if we are to solve the problem of climate change.

Let me finish with the value I see in NASA that is most personally important to me: education.

It is no secret that the United States is in serious need of a new generation of workers who are adept at math, science, and engineering.

We have an aging workforce.

In 2011, the first of America's 78 million baby boomers will turn 65.

As they leave our workforce, they take with them valuable skills and knowledge.

The impact on American business and industry will be profound.

Boeing has conducted research that shows that 2/3rds of American aerospace engineers are over 40.

Exelon is the largest operator of nuclear power plants, and we are acutely aware that many of the professionals who run our reactors safely and efficiently will be approaching retirement.

Exelon, Boeing, and many other companies have a strong interest in ensuring that the coming generations of students have an aptitude in science, math, and engineering.

This is not something that we, as a nation, have prepared well for. It shows in the test scores of our students

NASA does great good for the American economy, American business, and American science by actively promoting education.

Chicago's students benefit from its close partnership with the Adler.

The partnership impacts students whose schools come here to visit and whose teachers received training and enrichment through the Adler's programming.

I believe that the missions of NASA and the Planetarium will continue to inspire new generations of students.

If that translates into more interest in math, science, and engineering, nothing would make me happier.

My family and Frank Clark's support the Rowe-Clark Math & Science Academy, a college preparatory school in Humboldt Park.

We choose to support this cause because we believe that education – particularly based in math and science – betters the lives of these students and betters our company and our economy as a whole.

I would be thrilled to see those students graduate and go on to prominent roles at NASA.

I would like to close my remarks with a modest challenge to those of you in the audience.

I challenge each of you to think about what your companies or institutions – and what you as individuals – can do to inspire young people to learn about science and math.

It would be wonderful if the Chicago Public Schools had more math and science preparatory academies across the city, but this is not the only path.

We must all think about how we can nurture the pipeline that will produce the next generation of engineers, astrophysicists, and astronauts who will propel the Boeings, the Exelons, and the NASAs forward for another 50 years.

If NASA can send an exploration vehicle to Pluto, surely we can come up with solutions to improve our students' science and math proficiency.

We have much riding on our ability to succeed. And like Ernest Shackleton noted, there will be honor and recognition for us if we succeed.

Thank you.