Thank you all for being here this morning. I'd like to thank Dr. Marta Cehelsky and Dr. Steven Beering for their stewardship of this great event, and I'd especially like to thank Pier Oddone for not just his stewardship of Fermilab and the Fermi Research Alliance through this critical time in the lab's history, but also for his vision of the lab's future and his tremendous work navigating the often murky and frustrating political and bureaucratic waters.

It's an honor to be invited to come speak to you all. You represent the top academic institutions on the planet, and the Universities Research Association can be tremendously proud of its 40 year legacy in management and operation of one of our nation's premier science labs: Fermi National Accelerator Laboratory.

I am exceptionally honored to represent Fermilab and fundamentally believe in the importance of the lab's mission. This has been a challenging year for funding in every level of government, but I'm proud of the bipartisan work we've done this year to shore up support for both the Office of Science and for High Energy Physics. So despite the frustrations of an imperfect budget process, I've still found members from both parties to work with on the importance of these investments. And I think we have had some successes in both the FY2011 continuing resolution, and the FY2012 omnibus appropriations bill. And that's the point I want to make this morning. If there is one thing I'd like to leave you with, it's the message that Congress *can* be capable of understanding that basic, fundamental science *is* important… but I need all of your help spreading that message.

I also want to formally make two public – and I hope lasting – announcements.

But first, a few words about Fermilab: Fermi National Accelerator Laboratory, located not only in my home district, but actually about 5 minutes from my house in Winfield, Illinois, has, with the shutdown of the Tevatron, completed the last chapter in the accelerator's proud legacy of exploration at the most fundamental level of energy and matter. And while the shutdown of the Tevatron wasn't quite the end of the accelerator's contributions to scientific understanding – there's still a few years worth of data to crunch – it does mean we have to look forward to the future of the lab. And I know that it can be a bright future.

Fermilab's proud heritage includes studies of quark scattering using Hadron, Muon, and neutrino beams; precise studies of matter-antimatter asymmetry; precision tests of the Standard Model; and of course the discovery of the bottom and top quarks. Fermilab has had a commitment to excellence and scientific understanding that isn't just something we're proud of in Illinois' 14th district… it's something we must be proud of as a nation and as a humankind. The 86 Universities represented here, from across the United States, Canada and Japan, speak directly to that point!

So for me, High Energy Physics goes beyond parochial interests and local politics, these endeavors are inextricably linked to both our national success, and fundamentally, our national character.

Together with the rest of the national laboratories at Cornell, Jefferson Lab, Argonne, Brookhaven, Lawrence Berkeley

Laboratory and others, our laboratories promote cross-disciplinary interactions between various academic fields, as well as between scientists and engineers, and they serve as an irreplaceable channel for the broader goal of developing our base of an advanced STEM Workforce.

Data from just the collider detector experiment at Fermilab produces two dozen Ph.D. theses per year, and a scientific paper every six days. The DZero experiment goes even further with three dozen Ph.D. theses from new data and 50 scientific papers per year. In total, Fermilab can produce more than 100 Ph.Ds in a single year based solely on lab data. Not only are these researchers directly beneficial to society through their own work, they're also an invaluable component of improving general literacy in science and technology nationwide.

Many Fermilab researchers teach at universities – I know several who teach at Northern Illinois University in my district and the University of Chicago – as well as other universities across the country. So students get to learn from these teachers…but so do other teachers!

In this sense, Fermilab's broader academic base is an invaluable component of teaching our nation's teachers and improving our basic scientific literacy. This sort of faculty interaction is, I believe, crucial if we wish to reverse the long decline in the quality of K through 12 education in math and science that was highlighted in the 2007 "Gathering Storm" report from the National Academies. It is the seed-corn of scientific literacy.

The U.S. research system is unique. We've found an incredibly powerful combination - wedding education and research - by incorporating universities, user facilities and Department of Energy resources.

But this system is only as stable as our commitment to it, which is why sustained and predictable research funding is so crucial. The 2007 reorganization under America COMPETES was a good first step, but Congress must redouble its efforts to provide a clear, predictable, long-term path mapping out the seriousness of our investment. I've spoken frequently on the need to provide business owners and entrepreneurs relief from uncertainty caused by poor government planning; they can handle risk, but they cannot handle uncertainty. And as everyone in this room knows, it is no different for the physicists, students and engineers investing themselves in our scientific endeavor. They can handle the challenges of science and engineering, which is why we in government must not fail in providing them the long-term certainty they need to focus on those challenges.

So this morning, I am formally making the announcement that I'm calling on the Congress to begin the transition to a real long-term budget making process. This is the 21st Century; we have 21st Century challenges, 21st Century technology, and 21st Century resources. There is no reason why our budget process should still be mired in the 18th Century.

Just last night, David Dreier, Chairman of the House Rules Committee made the following statement: "*...our federal budget process is broken. The annual rush to complete action on a budget,*

authorization and appropriations bill not only produces poor results, but also reduces the amount of time available for careful oversight and management of existing federal programs." He made that statement in the context of a hearing on legislation he sponsored that would have the President submit a two-year budget, and Congress would consider a two-year budget resolution, and two-year appropriations bills. I commend the chairman's work on this; it is an important step forward. But in regard to long-term scientific funding… let's do more. Let's do better. Why not plan 4 years? Or 6 years? Or 10 years out when it comes to our scientific enterprise?

We need to be innovative in order to succeed. Budget certainty is just as important as stable funding levels. As leaders of cutting edge educational institutions you all know this. No serious organization only plans one year out! The ups and downs of funding levels and program authorizations are a clear failure on the part of policymakers to provide this crucial programmatic and funding certainty. And there is a direct cost for this failure: scientists, students, industries and academic organizations are slowed and distracted. The interruption of investment in these crucial areas is disruptive and demoralizing for the community. It hits junior scientists who may lack the requisite experience to get funding in a hypercompetitive environment and it hurts experienced scientists who may have to search for funding by shuffling between different universities.

So we must change this culture in Congress, and so that's why this morning I'm making the formal announcement that I'm going to

begin the campaign of changing the way Congress budgets and authorizes these activities. We must do better.

But I also want to make a second formal announcement: Over the last year, those of you that have met with me or had formal or informal discussions with me, know that I've talked about the importance of an "elevator speech." Members of Congress are constantly drinking from a fire hose in terms of information intake. So I've stressed the importance of being able to quickly and succinctly describe the benefits and importance of investments in fundamental research. And my second formal announcement is tied-into that point in the form of a request from all of you: I want every person in this room to develop a serious and lasting relationship with at least 3 members of their state's congressional delegation. And if you already have that? Double down. Develop twice as many relationships as you currently have. And I don't just mean a casual meeting; force yourselves to really make friends with members of Congress! Trust me, I know how hard that may sound! We're not the easiest group of people to get to know! But challenge yourselves to have your new "friends" programmed into your personal cell phones! If each of you in this room collectively do this, you could have half the Congress on speed dial. A senator and three representatives each! Congress is a reactive body, not a proactive one. And the culture cannot be changed without external pressure.

This is my big ask of you today. Really challenge yourselves to do this and you can dwarf any impact I could personally hope to have on my own. And here's the reason I'm pleading you to do this: The Tevatron is a legacy of which I hope everyone can be immensely

proud. The most optimistic projections for its productivity when it was first conceived could not have imagined how valuable a tool it would prove to be. I'm reminded of the NASA rovers, Spirit and Opportunity, which were designed for 90 day missions, and we got nearly a decade of science out of each. 40 times more productive life than planned. And despite some of the characters involved in local politics, the 14th Congressional District, Fermilab, and the Tevatron aren't on Mars… but the impact of the scientific endeavor is no less impressive than the accomplishments of those two rovers. With a pedigree spanning half a century, it is self-evident that basic research drives our understanding of the universe, and from that understanding the payoffs are incalculably high, which is why science driven technology has accounted for more than 50 percent of the growth of the U.S. economy during the last half-century.

New ideas and new innovations that spawn new products, new services, new companies and new industries that all affect human capabilities and well-being further down the line. Our fundamental understanding of electromagnetism has led directly to our ability to manipulate electrons in everything from continent spanning power grids to invisibly small microprocessors.

Research and development in accelerator technology has produced a direct impact as that technology has been refined and distributed. Today, there are more than 17,000 particle accelerators in operation around the world; not just at research institutions, but also in private industry in hospitals and other locations.

Beyond the broader scale and scope of our fundamental discoveries, there's no shortage of dividends on our investment: PET scans, superconducting wire, cancer treatments, grid computing, the Internet and industrial material treatments are a tiny fraction of the payoffs we've seen. Advances in medical technology and health care treatments; broader economy-wide competitive and efficiency gains; and generations enriched with intellectual capital are examples of other benefits.

The contributions of High Energy Physics, specifically, JUST within materials science: whether it's treating plastics and turning them into films, implanting ions into silicon chips, or developing the components of artificial heart valves, we would not have this core understanding without investments made *generations* ago in accelerator technology and research physics.

This kind of technology-based economic growth cannot proceed without preserving our investment in the kind of fundamental research and facilities supported by the Office of Science and High Energy Physics. And I think it's important to guard against administrations, of either party, or congresses, of either party, from directing large increases to the areas of spending they happen to favor politically. Science is an ecosystem and we must not pollute it with political expediency because this will always come at the expense of the fundamental, long-term scientific research in which the nation needs to invest.

As a people, we strive not only for economic growth, prosperity and job creation, but also for exploration of the frontiers of both

knowledge and geography; pushing ourselves against the boundaries of both our capabilities and understanding.

With pervasive economic uncertainty, it is more important than ever that we reinforce our national commitment to basic research.

Our long-term success in both economic innovation, problem solving and inspiring future generations of Americans depends on it. The utility offered to our country and to the world by expanding new physics beyond the standard model may be difficult to discern today, but the work being done by physicists and engineers at Fermilab and other centers around the world will undoubtedly produce those benefits.

Fermi lab is the only single purpose High Energy Physics lab in the U.S. and I want to work with all of you to ensure it is a competitive global leader on the intensity frontier. We may not know precisely what impact Muon cooling or high-field magnetic design or high-intensity beams from proton accelerators may produce in the future, but I have no doubt that these projects at the forefront of the Intensity Frontier will enrich our lives for generations to come.

We need to have a serious budget debate in Washington, but we must recognize that not all federal spending is created equal.

In the past 50 years, federal direct payments to individuals have more than tripled as a share of GDP, while our investments in science have flat lined, if not outright decreased. Basic research and high energy physics are embedded in our national DNA. They're part of who we are: our jobs, our economy, our

community, even our identity as a nation. Now, more than ever, we need to recommit ourselves in both government and at the grassroots to make robust and lasting investments in basic research. Our national scientific endeavor must never become a partisan one; we can all work together to drive America's economy, innovative talent, and scientific understanding forward. Thank you all again for inviting me, it's an honor to be here. And time allowing I hope I can answer a few questions.