April 22, 2011

Dr. Steven Koonin
Under Secretary for Science
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Dr. Koonin:

On behalf of the Association of American Universities (AAU), I am pleased to respond to the March 14, 2011 Department of Energy (DOE) Request for Information (RFI) to help inform its Quadrennial Technology Review (QTR). AAU represents 61 leading public and private U.S. research institutions. AAU focuses on issues important to research intensive universities, such as funding for research, research policy issues, and graduate and undergraduate education. In FY 2008, AAU’s member institutions received $16.7 billion in federal academic research expenditures, which represents 54 percent of all federally funded research provided to colleges and universities. They also awarded over 50 percent of doctoral degrees in the United States and employed over 600,000 people.

Universities can play an important role in helping the Department and the Administration achieve their goals of supplying the nation with clean energy, deploying electric vehicles, reducing greenhouse gas emissions, and reducing our dependence on foreign oil. As reflected in our comments below, we encourage DOE to seek new ways to engage universities, not only to advance the Department’s basic science goals, but also in fields of applied energy and energy technology development and deployment.

The RFI and the accompanying framing document request input from the DOE stakeholder community on several topics and related questions. Below we provide input on those topics and areas in which we believe research universities have specific interests, standing, and opportunities to contribute solutions.

**DOE Energy Technology Mission and U.S. Energy Framework**

The RFI specifically seeks input concerning the DOE’s proposed mission statement for energy technology: *To facilitate the invention, refinement, and early deployment of meaningful technologies that enable options for scaling by the private sector toward national energy goals.* The RFI also seeks input on the six strategic goals proposed by Department relating to transport and stationary energy technologies.
AAU generally supports the Energy Technology Mission and the six strategic goals presented in the QTR framing document. As DOE works to further refine and verify the mission statement and related goals, we would welcome the opportunity to assist in convening appropriate experts from our member universities at workshops and engaging in further discussions with DOE officials on this matter.

**Maintaining Clean Energy Leadership and International Collaboration**

Critical to fulfilling the proposed energy technology mission, achieving the outlined strategic goals, and ensuring continued U.S. clean energy leadership will be stable, sustained, and predictable support for basic energy research. Much basic energy research is conducted at U.S. research universities and it underpins the invention of new, as well as the refinement of existing, energy technologies. Boom-and-bust funding cycles for basic research hampers scientific and technological progress and discourages students from pursuing scientific and technical careers critical to maintaining U.S. leadership. Unstable funding also leads to suboptimal use of U.S. research facilities.

To ensure continued leadership in the development of new energy technologies, we urge DOE, the Administration, and Congress to maintain a robust commitment to advancing basic energy science. This means: 1) ensuring balanced support across the variety of scientific disciplines that underpin energy research; 2) continuing support for key areas of science in which DOE has a longstanding stewardship role; and 3) continuing DOE’s critical role in supporting major scientific user facilities and research tools which are heavily utilized by both academia and industry.

Additionally, DOE must ensure that it has the future scientists, engineers, and technical workforce to support this mission. This is an area where universities, working with DOE, will play an important role. Students represent one of our universities’ primary means of technology transfer. To achieve DOE’s goals, it is important that the Department actively support education and training in the specific scientific and technical disciplines that underpin these goals. The Office of Science Graduate Fellowship Program is a critical component of DOE’s efforts to cultivate its future workforce. AAU would also welcome the opportunity to work with the Department to develop and foster a new applied energy traineeship program to help build programs at universities specifically aimed at achieving the workforce needs required to achieve the strategic goals put forward in the QTR.

Finally, a major focus of DOE should be to facilitate the development and deployment of new energy technologies to keep the United States competitive with other nations and, in particular, with our major trading partners. As the QTR framing document notes (p. 12), our trading partners have outspent the U.S. in energy Research, Development, and Deployment (RD&D) in recent years while other countries, such as China, are greatly ramping up their overall investments in RD&D as a percentage of their GDP.

At the same time, the failure to foster international collaborations aimed at developing and deploying such technologies worldwide will have significant global environment and security implications. We must balance our need to ensure international competitiveness in the energy arena with our need for international cooperation in the development and deployment of new
energy technologies. We must also work to ensure that the new energy technologies we develop, wherever in the world they are created, are able to be cheaply and efficiently deployed in underdeveloped nations. To this end, it is critical that we maintain strong relationships with the international energy research and scientific communities. U.S. research universities are strongly positioned to work with DOE to build and maintain such international relationships. One example of how the university community can play a role in helping DOE facilitate international collaborations is the university-based clean energy centers that were awarded in early September 2010, aimed at facilitating collaboration between the U.S. and China.

**Accelerating Technological Innovation**

The lines between what traditionally has been considered basic and applied research are becoming increasingly blurred, particularly in the energy space. As a result, we think that there will be increased opportunities for universities to work with both DOE and industry to apply, develop, and deploy new energy technologies. With this in mind, we urge DOE to look for ways in which it can help support these efforts on our campuses. Our universities welcome the opportunity to further engage with the Department concerning how they might specifically help to accelerate the development of innovative new energy technologies.

The traditional role of universities in working with DOE has been oriented around performing basic energy research and training. While these are critical functions of our universities, our universities are increasingly playing a greater role in developing new university-industry partnerships aimed at pushing ideas developed on our campuses into the marketplace for the benefit of society more quickly. Our universities, like the national labs, have made significant investments in research infrastructure, which can be utilized to help DOE as it works achieve the goals of the QTR.

DOE has already taken some important steps in this direction. For example, through its creation and support of the new Advanced Research Projects Agency-Energy (ARPA-E), DOE has created a mechanism through which it can support transformational energy research where the risk is high, but from which success will yield dramatic societal benefits. We are pleased that 40 percent of the ARPA-E awards made to date have been to universities, while another 33 percent have been made to small businesses, some of which are university spinoff companies.

The Energy Innovation Hubs and initiatives such as the recently announced i6 Green Challenge are other programs being used by DOE to foster the development of innovative ecosystems that will lead to new advanced energy technologies. We encourage DOE to build upon this approach by expanding other programs, such as the Energy Efficiency and Renewable Energy (EERE) Innovation Ecosystem Development Initiative which announced an initial, but modest, set of awards in September 2010.

We encourage DOE to consider the development of new programs aimed at bridging the so-called “valley of death” that would enable our universities to perform additional proof of concept work, market analysis, and business mentoring needed to successfully translate new energy technologies from the university laboratory to the marketplace. While the DOE Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs are important to helping research cross the “valley of death,” SBIR and STTR funding presumes there is already sufficient evidence that a particular research advance or technology has enough
commercial value to attract further investment for commercialization. Often times, however, there is not the funding available within our universities, or from other sources, to push the research and/or technologies to this point.

On April 1st, AAU along with several other associations provided input and comments on the Administration’s proposed National Innovation Strategy in response an RFI issued by the U.S. Department of Commerce. We are attaching these comments along with those submitted to an earlier RFI issued by the White House Office of Science and Technology Policy and the National Economic Council on improving the commercialization of university based research. We believe that some of the comments and recommendations contained in these letters are applicable to questions raised in the DOE-QTR RFI and accompanying framing document.

We also draw your attention to a letter which AAU has endorsed along with two other major higher education associations and 137 university presidents and chancellors. This letter, which was spearheaded by University of Michigan President, Mary Sue Coleman, in her role as co-chair of the Department of Commerce National Advisory Council on Innovation and Entrepreneurship, outlines a number of steps that university leaders are committing to take to expand their efforts to promote innovation, entrepreneurship, and the commercialization of research results on their campuses. The letter also outlines steps that the federal government and research agencies can take to assist universities in these efforts. We believe this letter might be useful as DOE looks for ways to better collaborate with universities on energy research and technology issues. A copy of this letter is also attached.

**Assessing Energy Markets and Regional Energy Technology Options**

Universities can support DOE’s efforts to analyze the energy technologies in which it invests by helping to assess their market viability and evaluate their potential for scale up, deployment, and usage in specific regions of the country. We have economists, social scientists, business and market experts, scientists, and engineers on our campuses who would welcome the opportunity to be involved in such efforts if provided the opportunity. At the same time, we have faculty on our campuses that can help DOE better understand the human factors that may help or impede the Department as it works to achieve its strategic energy technology goals.

As it considers how to assess the potential for new energy markets, we encourage DOE to build upon the tremendous success of its Energy Frontier Research Centers (EFRCs) by making new investments in similarly-sized applied university-based energy research centers. The purpose of these centers should be targeted at finding innovative and creative solutions to state and regional energy challenges. They should be modeled in their goals and objectives after the state-based agriculture experiment stations which have proven to be a tremendously effective means to test and demonstrate new agriculture solutions on a state and regional level. These new university-based Energy Innovation Centers (EICs) should focus on conducting multidisciplinary, use-inspired energy science and engineering research aimed at understanding regional energy usage trends that will play a role in the success of new energy technologies. These centers should be required to work closely with the local energy industry and state and local governments to help assess technological viability, environmental desirability, and market feasibility of new energy technologies, specifically taking into account specific regional economic and geographical characteristics and constraints which might play a role in the potential success of a particular new technology.
Conclusion

Developing clean energy is a priority for America’s research universities, which are already engaged in, and increasing their commitment to, energy research and education. As you know, our nation’s universities will play an essential role in training the future scientists, engineers, and technical workforce that will drive the energy economy of the future. We believe that research universities can also be a valuable collaborator with the Department in creating new ways of conceptualizing and conducting the research necessary for creating the new knowledge and breakthrough technologies that are needed to achieve DOE’s strategic energy objectives.

We appreciate the opportunity that DOE has afforded us to comment on its development of the DOE-QTR. AAU looks forward to continuing to engage in a dialogue as the Department develops its final QTR.

Sincerely,

Robert M. Berdahl  
President  
Association of American Universities  
1200 New York Ave., NW Ste. 550  
Washington, D.C. 20005  
Phone: 202-408-7500  
robert_berdahl@aau.edu

2 Attachments
MEMORANDUM

April 1, 2011

TO: Office of the Chief Economist, U.S. Department of Commerce

FROM: Association of American Universities
        Contact: Tobin Smith, toby_smith@aau.edu; (202) 408-7500
Association of Public and Land-grant Universities
        Contact: Robert Samors, rsamors@aplu.org; (202) 478-6044
American Council on Education
        Contact: Ada Meloy, ada_meloy@ace.nche.edu; (202) 939-9361
Association of American Medical Colleges
        Contact: Steve Heinig, sheinig@aamc.org; (202) 828-0488
Council on Governmental Relations
        Contact: Robert Hardy, rhardy@cogr.edu; (202) 289-6655

RE: Innovation Strategy RFI

On behalf of the research universities, affiliated research institutions, medical colleges, and the higher education community represented by our associations, we appreciate the opportunity to comment on the Department of Commerce February 4, 2011 Notice and Request for Information (RFI) for comments on the Administration’s Strategy for American Innovation.

We support the Administration’s Innovation Strategy and fully appreciate the critical role played by university research in the strategy. We share the goal of facilitating the commercialization of research performed at our universities to promote innovation and entrepreneurship. We appreciate the ongoing dialogue that we have had with Department of Commerce, Office of Science and Technology Policy (OSTP), and National Economic Council (NEC) officials about these matters, and view the RFI as another step in this process.

On May 10, 2010, the associations jointly submitted comments on the NEC/OSTP RFI on improving the commercialization of university research. As invited by Commerce in this RFI, we are resubmitting those comments (attached) to help build the record. We believe many of the points made in our response to the previous RFI apply to the issues and questions raised in this RFI.
We begin by applauding the Administration for including a strong commitment to scientific research as a part of its National Innovation Strategy. We feel that stable and sustained funding for scientific research underpins our nation’s innovation engine; it both fuels the new ideas and technologies on which our economy, our health, and our national security depend and generates the talent base that will drive our economy forward. Indeed, the American system of research and higher education, built upon the idea of combining research with training of young scientists and engineers, has been enormously successful, and would be impossible without federal research funding.

Clearly, our nation must take steps to reduce federal spending and address the nation’s growing debt. We must, however, do this in a smart and strategic way. We should not compromise our future economic growth and security through deficit reduction measures that cut spending in areas, such as scientific research and education, that are critical to our nation’s ability to innovate and compete in the future. If we want our children and grandchildren to have opportunities in the future, we need to continue to make funding for scientific research and education a national priority.

One of the principal areas where input was specifically solicited in the NEC/OSTP RFI involved the underlying conditions and infrastructure required to support and enhance the success of Proof of Concept Centers (POCCs). In our response to the RFI we noted several existing effective university POCCs, but noted the need to address how the practices employed by these existing POCCs can be replicated in other settings and through other funding mechanisms such as grant supplements.

One program of this kind that appears quite successful is the Wallace H. Coulter Foundation Translational Research Partnerships in Biomedical Engineering (www.whcf.org/partnership-award/overview). These are 5-year grants of over $500,000/year to ten universities to promote translational research in biomedical engineering. The goal is to move promising technologies to clinical application. An oversight committee of stakeholders oversees the activities at each institution. It is complemented by a program of annual Coulter Translational Research Awards that are made to individuals in amounts of approximately $100,000 per year.

We suggest that the Department of Commerce and other agencies consider the Coulter activities as one model to promote innovation and entrepreneurship. The new Cures Acceleration Network within the proposed NIH National Center for Advancing Translational Sciences might consider this model in developing its strategies and programs. Bridging the gap between early stage university technologies and development of useful products and processes to benefit the public is a critical need. Please note that under the Coulter model title to all inventions remains with the institution, which is free to follow its normal invention licensing policy.

This last point reinforces a major element of our previous comments: The current legal framework for university technology commercialization, as set forth by the Bayh-Dole Act of 1980 and implementing regulations, is effective and needs to be maintained. One recent study estimated a contribution of $450B to U.S. gross industrial output and the creation of 280,000 new high technology jobs between 1999 and 2007 from U.S. university inventions.¹ University research also has resulted in everyday products such as Google and Internet Explorer, as well as treatments for a wide variety of diseases including osteoporosis, fibromyalgia, and a variety of cancers. A recent study found that during the past 40 years, 153 new FDA-approved drugs,

vaccines, or new indications for existing drugs were discovered through research carried out at public-sector research institutions.\textsuperscript{2} As noted in our previous comments, improvements can be made to university technology commercialization practices. However, the extraordinary success of the enterprise seems too little understood, or at least acknowledged, by both the public and policy makers. In considering how existing government research programs might be improved to spur innovation, we urge the Department to keep the continuing success of the Bayh-Dole Act in mind.

Other points we previously made that are worth reiterating are the need for more resources to better support university technology transfer; the need to assure that new government regulations on conflicts of interest do not have a chilling effect on university-industry partnerships to promote innovation and economic development, particularly through discouraging faculty participation in such activities; modifying and making permanent the R&D tax credit and creating additional tax incentives to promote commercialization; and improving the patent system. Our previous letter contained a detailed discussion of these issues.

We particularly want to point out the fact that the costs of supporting commercialization are not allowed as direct costs of research in traditional federal research grant mechanisms. Further, since the administrative costs reimbursed through facilities and administrative (F&A) costs are capped, there is little to no flexibility in use of these funds for purposes of technology transfer and research commercialization. The greatly increased costs of regulatory compliance incurred by universities in recent years further limits this flexibility. We reiterate our previous suggestions that the Administration create direct federal awards for commercialization activities and either lift the F&A cap or allow certain costs to be charged directly for such activities. Such steps would help in providing additional resources for universities to enhance their technology transfer and commercialization activities.

With regard to some of the other concepts discussed in the Commerce RFI, we support the further exchange of ideas and diffusion of best practices to enhance the social value of innovations. In that regard, several years ago, a group of universities developed a statement of Nine Points to Consider in Licensing University Technology which have become widely accepted (http://www.autm.net/Content/NavigationMenu/TechTransfer/WhitePapers/Points_to_Consider_letter.pdf). We believe direct participation by stakeholders in activities of this kind is essential.

Regarding exports, we support the Administration’s export control reform initiative, and believe that implementing the initiative will facilitate compliance and lessen the burdens caused by the present system. In turn, this should help increase the competitiveness of U.S. companies.

We look forward to continuing to work closely with the Department of Commerce and the Administration on implementing the innovation strategy and facilitating the transfer of knowledge from our universities for broad public benefit.

MEMORANDUM

May 10, 2010

FROM: Association of American Universities
Contact: Tobin Smith, toby_smith@aaau.edu; (202) 408-7500
Association of Public and Land-grant Universities
Contact: Robert Samors, rsamors@aplu.org; (202) 478-6044
American Council on Education
Contact: Ada Meloy, ada_meloy@ace.nche.edu; (202) 939-9361
Association of American Medical Colleges
Contact: Steve Heinig, sheinig@aamc.org; (202) 828-0488
Council on Governmental Relations
Contact: Robert Hardy, rhardy@cogr.edu; (202) 289-6655

TO: James Kohlenberger
Chief of Staff
Office of Science and Technology Policy

Diana Farrell
Deputy Assistant to the President for Economic Policy
National Economic Council

RE: Commercialization of University Research

Dear Mr. Kohlenberger and Ms. Farrell:

On behalf of research universities, affiliated research institutions, medical colleges, and the higher education community represented by our five associations, we appreciate the opportunity to comment on the White House Office of Science and Technology Policy (OSTP) and the National Economic Council (NEC) March 26, 2010 Federal Register request for information (RFI) issued concerning the commercialization of university technology and proof of concept centers (POCCs).

I. Introduction

Our associations believe strongly that university research and education benefit society at large. Therefore, supporting and enhancing technology commercialization is essential to universities’ public mission and their societal responsibility. At the same time, increased commercialization must not come at the expense of our universities’ primary education, research, and public service missions. It is, in fact, these missions that have
historically led to universities’ most important contributions to economic development, job creation, and technology commercialization. In a similar fashion, it is important to recognize that the transfer of new knowledge from universities to the public domain and marketplace occur through a wide range of mechanisms, including publication and the movement of people both into and out of our institutions.

Through education, colleges and universities have prepared generations of students to become productive members of the workforce by equipping them with the skills and training relevant to the economy of the times. Through research, universities create valuable knowledge which, in turn, has served as the foundation for many major technological advances that have had significant economic impacts and led to vast improvements in our quality of life. Through community outreach and engagement, universities have served as socioeconomic anchors for entire regions and contributed in immeasurable ways to the development of socially and economically vibrant communities.

We appreciate the Obama Administration’s deep commitment to and support for university research. As the Administration looks to improve commercialization by universities, we feel strongly these efforts should be closely coupled with broader attempts to improve and strengthen the health of the entire U.S. research university enterprise. There are a number of such efforts currently underway, including one to be undertaken by the National Academies to examine the overall health of U.S. research universities. Given the degree to which effective commercialization and knowledge transfer are based on our traditional missions of education, research, and service, ensuring our universities’ abilities to effectively carry out these missions will perhaps be the most critical factor in ensuring effective commercialization by universities.

The Importance of Maintaining the Bayh-Dole Act

By allowing universities to retain intellectual property from the federally funded research they perform, the Patent and Trademark Law Amendments Act of 1980, commonly referred to as the Bayh-Dole Act, provided an incentive that did not previously exist for universities to seek private sector partners to invest in the development and commercialization of research. As a result, since Bayh-Dole’s enactment, universities have taken a much more active role in seeking out private sector partners to invest in the commercialization of promising technologies emerging from their research efforts.

Since the passage of the Bayh-Dole Act, the nation has witnessed a remarkable increase in patents and licenses resulting from university research. Prior to 1981, fewer than 250 patents were issued to U.S. universities annually and discoveries were seldom commercialized for the public’s benefit.1 By contrast, according to the Association of University Technology Managers’ (AUTM) most recent licensing survey, 3,280 U.S. patents were issued to U.S. universities during 2008 alone, while 595 new companies were formed and 648 new products were introduced based upon university inventions.2 According to a 2009 study by the Biotechnology Industry Association, university technology licensing had a $187 billion positive impact on the U.S. gross domestic product between 1996 and 2007, resulting in the creation of approximately 279,000 new jobs.3

This leads us to an important overarching statement with which our associations agree: *The current legal framework for university technology commercialization, as set forth by the Bayh-Dole Act of 1980 and implementing regulations, is effective and needs to be maintained.*

Despite the effectiveness of the overall legal framework for technology commercialization, improvements can be made to our institutions’ technology commercialization and knowledge transfer functions. Some of these improvements need to be made by universities themselves, while others can be facilitated by changes in government policy and new government programs at both the federal and state level.

While there are some voices suggesting the need to change the Bayh-Dole Act, we caution against generalizing about the overall state of technology commercialization based upon a few examples of how commercialization allegedly may not be working as well as we would all prefer in some industrial sector or subsector. As in business generally, some deals and relationships are successful, while others are not. Since effective methods for commercialization in one sector do not always work in another sector, various models should and are being explored by our universities to ensure effective technology commercialization across all sectors, from the biotechnology industry, to the IT industry, to the non-profit and social services sector. Models must also take into account geographic location. For example, models that may be effective in urban high technology areas may not work in more industrial or rural areas of the country.

* * *

The remainder of this letter will focus on barriers that exist to effective technology commercialization and what actions both universities and the government might take to reduce these barriers and enhance technology commercialization efforts. We have also encouraged our member institutions to submit their own suggestions and views in response to the RFI.

II. Challenges and Barriers to Commercialization

a) Finding Resources to Support Commercialization by Universities

One of the greatest challenges facing universities in the area of technology commercialization is finding funds to support the infrastructure for commercialization and technology transfer and, in particular, support for early stage (gap and proof of concept) funding for new inventions. Technology transfer imposes significant costs on universities at a time when they are already under significant financial stress due to the economy and resulting declines in state support, endowment, and donor giving.

The intent of commercialization by universities should be to transfer technology for further development and effective application to ensure broad public access and increased social welfare. The lack of adequate institutional and/or government resources for commercialization activities, however, may have driven some university technology transfer offices (TTOs) to focus disproportionately on revenue generation as opposed to moving new knowledge into the public domain for the public good. This situation creates the wrong incentives for optimizing technology transfer. While many TTOs operate at a loss, at times, commercialization generates net revenues. However, universities should not pursue commercialization of research primarily for this purpose. Universities, government, and industry have a responsibility to find new ways of providing university technology transfer operations with necessary support so that these operations have the correct incentives to be successful in achieving their broader mission.
To ensure that revenue generation does not drive negative behaviors that can impede technology commercialization, universities must evaluate the indicators that they use to judge the effectiveness and quality of their technology transfer and licensing operations. Indicators that have traditionally been used to measure successful commercialization efforts at universities (e.g. patents, licenses, and revenue generation) have been overused, misapplied, or are sometimes inappropriate surrogates to measure the effectiveness of efforts by universities to commercialize research. Many of our institutions are aware of these issues and are seeking to develop better measures. As discussed below, our associations, as well as others such as AUTM, are also taking steps to develop better commercialization effectiveness measures.

b) State Policies

Some states forbid equity participation in companies (i.e. startups) by state institutions, while others have policies limiting involvement of faculty in such activities due to their status as state employees. There also may be tax and funding issues associated with states that can be problematic. Additionally, states may have specific policies about use of state “facilities” for commercial activities which affect public universities. We encourage the Obama Administration to work with the nation’s governors to examine the impediments these laws and regulations may create for economic innovation and growth, as well as possible solutions.

c) Conflict of Interest

Increased economic engagement inevitably raises the likelihood of more financial relationships between institutions and their researchers and the companies with which they engage. In fact, one gauge of the effectiveness of commercialization is the growth of such relationships. Current perceptions that such relationships are inherently suspicious or invariably lead to unmanageable conflicts of interest must be changed. Both policymakers and the public must understand that these relationships are positive and necessary for universities to achieve greater success in commercializing their research. At the same time, it is critical that as federal agencies move to regulate potential conflicts of interest, they do not put in place regulations which inadvertently discourage appropriate interactions among research faculty, universities, and industry. We understand that conflicts of interest must be closely monitored and kept in check. However, an overly strong focus on elimination, rather than management, of conflict of interest by federal agencies would produce a chilling effect on universities’ willingness and ability to engage in economic development and be directly counter to the Administration’s interest in increasing commercialization by universities. As purveyors of objective knowledge, universities have their own built-in interest in managing conflicts of interest, or perceptions of such conflicts, to ensure that the integrity of research findings are not compromised.

III. Models

As the federal government and universities look for new models to support commercialization by universities, we must carefully balance the need for basic research and knowledge creation against the need to increase commercialization. Many investments in basic research have resulted in new ideas and knowledge that ultimately led to commercial goods. In fact, the National Science Foundation (NSF) reported in the late 1990s that over 70 percent of references to scientific publications listed as “prior art” on the front pages of U.S. patents were linked to public science authored at academic, governmental, and other public institutions, as
opposed to private businesses or companies.\textsuperscript{4} Turning the fruits of basic research into products, however, is not an overnight process, nor can anyone predict up front what the specific results will be.

University contributions to economic development take many forms including not only technology transfer and licensing, but also student education and training, faculty consulting, and the publication of research results, to name just a few examples. Technology transfer and technology licensing are tools to help achieve a key university mission, but their role in this complex equation is sometimes overemphasized.

The human capital aspect of technology transfer is often undervalued, but it is a fact that the students our universities educate and the faculty who conduct our research are usually the most effective means through which translation and technology transfer occurs. For example, many of the most successful university-industry interactions are based on the education and training of students who have the specific skills to meet industry needs, or on relationships that top-notch faculty members have with particular companies. These interactions do not center on intellectual property (IP) at all. Therefore, as new models for commercialization are developed, an emphasis should be placed upon fostering new interactions, relationships, and linkages, both formal and informal, that help to facilitate these efforts. Education and training must also be considered to be major components of such models.

Many universities have created innovative new models. These include new programs and courses that focus on entrepreneurial education, training and incentives for faculty, and competitions that encourage students to engage in entrepreneurial activities.

IV. Changes in Public Policy and Funding

\textit{a) Support for Current Administration Initiatives}

Our associations support the development of new policies that seek to enhance commercialization efforts at universities. We were pleased to see proposals in the Administration’s FY 2011 budget that are designed to address this issue.

The President’s FY2011 Budget Request contains $12 million for a new “NSF Innovation Ecosystem” component within the Partnerships for Innovation (PFI) program. As we understand it, this initiative would provide grants to universities in partnership with other institutions to: 1) increase engagement of faculty and students across all disciplines in the innovation and entrepreneurship process; 2) increase the impact of the most promising university innovations through commercialization, industry alliances, and start-up formation; and 3) develop a regional community that supports the innovation ecosystem around the university. The university community welcomes this new program and will urge Congress to fund it.

We also support the $75 million in funding proposed for the Commerce Department’s Economic Development Administration (EDA) to support the creation of regional innovation clusters. We believe that universities can and should play an important role in the development of such clusters, given universities’ unique capacity to bring together a region’s disparate political, industrial, and societal interests. The Administration’s EDA Regional Cluster Initiative could enable universities to play this convening role, which would be a catalyst to identifying regional core competencies; defining the appropriate roles for regional institutions, the private


5
sector, and governmental organizations; and developing a comprehensive regional strategy for economic growth and job creation.

**b) Additional Policy and Funding Recommendations**

In addition to the programs referenced above, we suggest consideration of the following changes to existing government policies to enhance efforts by universities to commercialize research.

- **Reconsider the current cap and other restrictions on the reimbursement of university administrative costs.** To address the issue of resources, we urge the government to consider eliminating or lifting the existing 26 percent cap on reimbursement of university administrative costs. Costs of supporting commercialization are not allowed as direct costs of research in traditional federal research grant mechanisms. Currently, some of these costs, namely patent costs and related expenses, may be charged to universities’ administrative cost pools for purposes of facilities and administrative (F&A) cost reimbursement. However, since the administrative components of F&A are capped and subject to pressures to support increased costs of regulatory compliance, there is little flexibility to support other activities such as patent and other costs related to commercialization. Removing or lifting the cap would help to ease current financial pressures universities face as a result of growing compliance demands and free up resources for other areas. Additional resources could also be freed up if certain costs, such as those associated with human subject protection, were allowed to be directly charged to grants.

- **Provide for supplemental grants to support the translation of research with a high potential for commercialization.** A great deal of focus recently has been placed on developing new translational research programs by federal research agencies. While we believe such programs can play an important role in helping to transfer research into the marketplace, effectiveness at translating research for commercialization is not necessarily the same as translational research. Indeed, there are many good ideas with significant commercialization potential already being generated from existing and more traditional federal research programs. The problem is that researchers and universities do not have resources available to support the proof of concept work, market analysis, and mentoring needed to translate these ideas from the university laboratory to the marketplace.

  To address this situation, we recommend that the Administration consider the establishment of new “Translational Supplemental Awards.” These awards would be made by the major federal research agencies to support proposals jointly submitted by an existing principal investigator and the university TTO or another appropriate institutional research or technology commercialization official. These awards would be made at the tail end of federally funded awards to support next stage research for projects that show strong clinical or market potential. We believe that providing such awards would both incentivize researchers to think about the potential commercial applications of their research and help to change the culture of the federal research agencies in ways that would help facilitate the commercialization goals of the Administration.

- **Modify the R&D tax credit.** The Administration is already on record in support of making the existing R&D tax credit permanent, a goal we support. In addition, we encourage the Administration to seek modifications to the R&D tax credit so that it provides a greater incentive for such investments instead of penalizing companies that invest in university research by not granting them full credit for research performed outside of the company, as is currently the case.
Create additional tax incentives to promote commercialization. We encourage the exploration of additional ways in which the tax code could be used to encourage early stage investment in university technologies and to reward companies that license university technologies. For example, tax credits or deferral of taxes for angel investors in emerging companies can help spur additional investment at a critical period in a company’s development.

Seek new ways to reduce or supplement the growing expenses involved in patents. While we realize that increasing the degree to which universities obtain patents does not necessarily result in increased commercialization, patenting costs are increasingly becoming a barrier to commercialization by universities. We recommend consideration of new methods to support such expenses, perhaps along the lines of the competitive allocation process that is currently being used in the United Kingdom. One example might be to develop a separate commercialization rate supplement based on a set of indicators of commercialization success compared to total federal research dollars received.

c) Metrics for Success

As previously mentioned, in the past, too much weight has been assigned to the role of intellectual property and revenue generation in defining university success in commercialization and economic development. Indeed, the statistics on university licensing revenues contained in the annual AUTM Licensing Activity Survey have too often been used as metrics by the media and others, including state governors, to determine the “success” of university technology transfer and commercialization efforts.

Government at all levels, universities, industry, and the non-profit sector should develop a consensus on new metrics that accurately and appropriately reflect the range of university contributions to local, regional, and national economies.

There are significant efforts underway within and outside the university community to identify new measures of economic contributions to regional economies. AUTM, for example, has undertaken a significant effort to reexamine the information it collects annually from its members and has also undertaken an effort to collect examples of success stories in technology commercialization through the Better World Report. The Association of Public and Land-grant Universities recently held a national workshop to identify additional measures of university contributions to regional economic growth and innovation. The workshop included a focus on how new measures of economic growth and commercialization might determine or influence institutional behaviors. Meanwhile, the Association of American Universities is examining new indicators that can be used specifically by universities in evaluating their own technology commercialization efforts and TTOs.

d) Forums for Ongoing Dialogue

Universities and industry need to engage in a robust dialogue to identify and disseminate key factors underlying successful university-industry arrangements. The University-Industry Demonstration Partnership (UIDP) has invested considerable energy in developing tools to identify areas of common ground and divergence between university-industry partners. This work builds upon previous efforts undertaken by the National Academies Government-University-Industry Research Roundtable (GUIRR). In addition, the National Academy of Sciences’ forthcoming report, University Management of Intellectual Property, will lay the groundwork for
further discussion of this issue. These existing and other forums for dialogue should be encouraged and supported by all interested parties – government, universities, industry, and non-profits.

V. Proof of Concept Centers

Part II of the RFI specifically asks for input concerning the underlying conditions and infrastructure required to support and enhance the success of POCCs.

Our associations believe that POCCs can be an important, but not the only, ingredient in helping universities commercialize technologies. In fact, we have been active in helping to shape and advocate proposals (e.g., the IMPACT proposal developed by Krisztina Holly at the University of Southern California) that would help to develop and support such centers.5

We are concerned, however, about the significant degree of attention given to POCCs in the RFI. While we view POCCs as one important mechanism through which commercialization can be improved, there are many other effective tools, including those discussed earlier in this letter. We are also concerned that the exact definition of POCCs in the RFI is unclear. We believe there are very few truly effective university POCCs currently operating. These include the Deshpande Center at MIT and the von Liebig Centers at the University of California, San Diego. Yet the RFI talks about NSF Engineering Research Centers (ERCs) as if they were initially designed as POCCs. The third generation (Gen-3) ERCs that NSF is now establishing appear more like POCCs in concept. However, we think that existing first and second generation ERCs were established for different reasons and serve a significantly different role than POCCs. It would be misguided to try to characterize or define their purposes and roles to be the same as POCCs. For this reason, we urge OSTP and NEC to be more precise and narrow in their definition of POCCs as they move forward with these initiatives.

Perhaps the real question to be addressed is how some of the practices of existing POCCs can be replicated in other settings, both within and outside of universities, to help facilitate technology commercialization in other models. One major issue concerns how to support and incentivize efforts to enhance “Proof of Concept” work as a part of existing universities’ TTOs. Expanding the operations of TTOs to include some of the functions that have made POCCs effective might be an important step that could be taken to enhance commercialization. We point to our recommendation for the provision of Translational Supplemental Awards as one way to help enhance the ability of universities and their TTOs to support such translational efforts. We must also look closely at the role that entities such as university research parks play in commercialization and the unique role that universities can play in facilitating the development of regional clusters.

Finally, we note that, as with other models, the POCC model is likely to work well for commercialization of some technologies but not for others. Many university technologies are in life science areas where the role of POCCs may be less clear given the typically long developmental cycles in this field. For example, there are concerns that POCCs are not as effective in facilitating development of early-stage therapeutics compared to engineering technologies such as those that might be developed by ERCs.

---

VI. Conclusion

Our associations look forward to continuing to work closely with the Administration as it seeks to facilitate university knowledge transfer from our campuses into the marketplace. At the same time, we reemphasize the need to focus on helping to facilitate the transfer of knowledge from our universities for broader societal benefit through multiple avenues and not to focus efforts too narrowly. We pledge to do what we can to seek improvements and new ways of thinking at our universities that will enable them to continue to provide this important service to the nation and to do so even more effectively.
April 19, 2011

The Honorable Gary Locke  
Secretary of Commerce  
1401 Constitution Avenue, N.W.  
Washington, D.C. 20230

Dear Secretary Locke:

        Enclosed please find another copy of the letter that I and members of the National Advisory Council on Innovation and Entrepreneurship, have prepared for your consideration. After presenting the letter with our recommendations, we informed our higher educational colleagues at the Association of American Universities (AAU) and the Association of Public and Land-Grant Universities (APLU) who expressed a keen interest in adding their support to these recommendations. I am attaching a list of those names and institutions for your information.

        Thank you for the opportunity to present these recommendations to you on these important matters.

        Sincerely,

        Mary Sue Coleman
Co-Chair, National Advisory Council on  
Innovation and Entrepreneurship

Enclosures
Dear Secretary Locke:

As the leaders of America’s leading research universities, we are grateful for the commitment demonstrated by this administration to the research conducted by our students and faculty. At a time of significant budgetary challenges, we appreciate this administration’s recognition of the continued need to invest in research and education through its support of strong budgets for the National Science Foundation, the National Institutes of Health, the Department of Energy’s Office of Science, the Department of Commerce’s National Institute of Standards and Technology, the Department of Defense Research and Engineering Organizations, and other such agencies.

Fueled by federal funding and encouraged by enlightened federal policies such as the Bayh-Dole Act of 1980, America’s colleges and universities spur economic growth and prepare the next generation of scientists, engineers and entrepreneurs. Breakthroughs from university-based research have led to entirely new industries in sectors such as information technology, biotechnology, clean energy, and nanotechnology. Universities participate in regional innovation clusters, partner with existing companies to commercialize federally-funded research, nurture startups, attract and motivate commercialization talent, and educate and train a world-class workforce.

Already engaged in many activities that promote innovation, entrepreneurship, and the commercialization of research results, we are committed to working even more closely with industry, private foundations, venture capitalists and local, state and federal governments to enhance our efforts. These organizations, too, have significant roles to play in improving the technology commercialization processes, encouraging entrepreneurship, and instituting policies and programs that support regional economic development.

In pursuit of these shared goals, many of our universities are actively building campus-wide innovation ecosystems and expanding them into regional and national networks. But as we move forward, we also will employ new strategies, enhance existing activities, and expand our efforts in several areas.

Promoting Student Innovation and Entrepreneurship
Many campuses already offer courses aimed at teaching entrepreneurship, provide new opportunities for experiential learning, run student business plan competitions, support student clubs, and sponsor programs that put multidisciplinary student teams to work solving real world challenges. To promote student innovation and entrepreneurship further, we will:
The Honorable Gary Locke  
April 15, 2011  
Page Two

- Build upon and expand these activities.
- Create new programs and grow existing activities on our campuses to encourage undergraduates, graduate students, and post-doctoral students to pursue careers as innovators and entrepreneurs.
- Develop new cross-college, cross-disciplinary programs that connect business with science, math, technology and engineering fields.
- Extend these programs to reach young people in underserved and low-income areas by involving community colleges in consortia for training and mentoring in innovation and entrepreneurial activities.

Encouraging faculty innovation and entrepreneurship
Financial incentives, faculty industry sabbatical leaves, campus prizes and other forms of recognition encourage faculty innovation and entrepreneurship. To promote these ideals further, we will:

- Expand efforts to encourage, recognize and reward faculty interest in research commercialization by providing incentives and encouraging engagements with industry, entrepreneurs and venture partners.
- Create or expand programs that connect faculty and students to the resources they need: industry partners, entrepreneurial mentors, translational research and “proof-of-concept” funds, accelerator facilities and venture creation services.
- Encourage streamlining and reduction in reporting and compliance requirements, which would allow faculty to increase time spent on proposal writing and research.

We also call upon the federal government to refrain from enacting policies, such as overly stringent regulations on conflict of interest, that discourage our faculty from working with industry or developing innovative technologies.

Actively supporting the university technology transfer function
Moving an idea effectively across the “valley of death” requires critical programs that include funding for proof of concept research and new mechanisms within the existing grant process that help defray the costs and risks. To actively support the university technology transfer function we will:

- Work to further reduce barriers to technology transfer to accelerate the rate at which ideas move from the lab to the marketplace. Central to this effort will be to ensure that our technology transfer offices are adequately staffed with skilled professionals who are provided with the resources to effectively and efficiently perform their jobs.
- Publicly promote the importance of technology transfer, to encourage participation by our researchers and encourage engagements with potential partners.
- Establish policies to encourage technology transfer offices to strive to maximize the societal and economic development benefits of discoveries, rather than maximizing revenues.
We also encourage government and state governments, and business collaborators to

- Expand networking conferences and events to exchange best practices and attract talent and resources for commercialization activities.
- Assist in these efforts by subsidizing the costs of research commercialization.
- Create a new SBIR program that could focus on commercialization with Phase 0 awards to be used by universities to engage in prototyping, funding mentoring talent and supporting market-readiness initiatives.
- Establish federal tax credits that could be provided to industry to encourage businesses and venture partners to leverage university technologies and start-up venture opportunities.

**Facilitating University-Industry Collaboration** To increase the presence of industries on campus, many of our institutions have established a "front door" or portals to enhance access to research expertise, intellectual property, and commercial opportunities. To facilitate university-industry collaboration, we will:

- Further support programs that facilitate sharing of labs, facilities, student-faculty teams, and other resources.
- Strengthen strategic investments in university-industry collaborations aimed at advancing technologies of mutual interest and renowned research programs, designed to enhance market-pull of research.
- Develop ways to incentivize and support industry R&D professionals to collaborate with universities.
- Encourage the development of accelerators and public-private partnerships on or within close proximity to campuses; and find ways to provide innovation services to new enterprises external to the university.

We also call on federal agencies to assist by:

- Building entrepreneurship and innovation components into agency grants;
- Creating opportunities within federal agencies for high-risk innovative research;
- Allowing, as appropriate, commercial potential to be a part of grant proposals through the development of commercialization plans;
- Including the evaluation of market potential of new technologies as a milestone component in research;
- Facilitating the presence of industry on campus by creating an IRS exemption for university-industry collaborations built around university-owned intellectual property and conducted in university buildings;
- Promoting a DARPA-hybrid model of collaboration between small firms and universities; and
Funding talent collaborations, especially for universities with less-developed innovation ecosystems.

Engaging with regional and local economic development efforts
Our universities will promote efforts to link regional and national stakeholders together in support of research and education critical to local businesses and industry by:

- Striving to expand existing university participation in national, regional and local economic development efforts.
- Fostering consortia of research universities and industries across regions.
- Working with the federal government and other stakeholders and professional associations to improve the coordination of the nation’s venture accelerators, including development of a searchable database of all federally funded intellectual property.
- Working with local, regional, state and business leaders to promote access to assets such as research parks, accelerators, and laboratories to support regional industries, especially existing and small, young companies.
- Participating in developing and implementing economic strategies
- Partnering in community development and revitalization efforts.

Recognizing exemplary economic engagement
To accelerate achievement of the goals outlined in this letter, we call on the National Advisory Council on Innovation and Entrepreneurship and the Obama Administration to work with the higher education community to develop a national program to identify, recognize and celebrate exemplars of “economically engaged” universities. This program would:

- Raise awareness about the importance of higher education and economic engagement in driving regional and national economic growth
- Assist with the creation of organizational assessment tools and measurement criteria that capture the full range of our impact
- Educate higher education leaders about the practices of best-in-class institutions
- Recognize national role models and honor them with a Presidential Award for economic engagement.

Our universities, and the national associations that represent us, are committed to sharing best practices, and to identifying additional federal policies that will help to leverage investments made by government, and industry, in the research conducted at our institutions. Further, we will continue to use national forums, such as the Association of University Technology Managers (AUTM), the University Industry Demonstration Partnership (UIDP) and the Commerce Department’s National Advisory Council on Innovation and Entrepreneurship, to engage in an ongoing dialogue with industry, non-profit foundations and the government on how we can advance our shared objectives. We are also seeking ways to collectively implement recommendations made by the National Research Council in its October 2010 report, Managing University Intellectual Property in the Public Interest.
Although the specifics of our strategies will vary, reflecting the diverse missions and resources of our institutions, we pledge our universities to greater efforts to advance regional and national economic growth. We are dedicated to ensuring that the knowledge and technological breakthroughs developed at our institutions are rapidly and broadly disseminated to advance the nation’s social and economic interests.

Sincerely,

Mary Sue Coleman
Co-Chair, National Advisory Council on Innovation and Entrepreneurship (NACIE)

Michael Crow
Member, NACIE

G.P. “Bud” Peterson
Member, NACIE

Holden Thorp
Member, NACIE
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary Sue Coleman, President</td>
<td>University of Michigan</td>
<td>Michael Crow, President</td>
</tr>
<tr>
<td>G.P. “Bud” Peterson, President</td>
<td>Georgia Institute of Technology</td>
<td>Holden Thorp, Chancellor</td>
</tr>
<tr>
<td>Robert M. Berdahl, President</td>
<td>Association of American Universities</td>
<td>M. Peter McPherson, President</td>
</tr>
<tr>
<td>MRC Greenwood, President</td>
<td>University of Hawaii System</td>
<td>Stan L. Albrecht, President</td>
</tr>
<tr>
<td>Edward R. MacKay, Chancellor</td>
<td>University System of New Hampshire</td>
<td>Jack M. Wilson, President</td>
</tr>
<tr>
<td>Randy Woodson, Chancellor</td>
<td>North Carolina State University</td>
<td>James B. Milliken, President</td>
</tr>
<tr>
<td>Michael F. Adams, President</td>
<td>University of Georgia</td>
<td>G. David Gearhart, Chancellor</td>
</tr>
<tr>
<td>R. Bowen Loftin, President</td>
<td>Texas A&amp;M University</td>
<td>Philip E. Austin, Interim President</td>
</tr>
<tr>
<td>Philip L. Dubois, Chancellor</td>
<td>University of North Carolina at Charlotte</td>
<td>Phyllis Wise, Interim President</td>
</tr>
<tr>
<td>Luis M. Proenza, President</td>
<td>The University of Akron</td>
<td>Rosemary DePaolo, Chancellor</td>
</tr>
<tr>
<td>Thomas F. George, Chancellor</td>
<td>University of Missouri-St. Louis</td>
<td>Lou Anna Simon, President</td>
</tr>
<tr>
<td>John Dunn, President</td>
<td>Western Michigan University</td>
<td>James W. Abbott, President</td>
</tr>
<tr>
<td>Eric J. Barron, President</td>
<td>Florida State University</td>
<td>Milton D. Glick, President</td>
</tr>
<tr>
<td>James R. Ramsey, President</td>
<td>University of Louisville</td>
<td>Gregory L. Geoffroy, President</td>
</tr>
<tr>
<td>Patrick T. Harker, President</td>
<td>University of Delaware</td>
<td>James D. Spaniolo, President</td>
</tr>
<tr>
<td>Daniel D. Reneau, President</td>
<td>Louisiana Tech University</td>
<td>Roderick J. McDavis, President</td>
</tr>
<tr>
<td>Scott S. Cowen, President</td>
<td>Tulane University</td>
<td>Timothy P. White, Chancellor</td>
</tr>
<tr>
<td>Allen L. Sessoms, President</td>
<td>University of the District of Columbia</td>
<td>Samuel L. Stanley, Jr., President</td>
</tr>
<tr>
<td>Brady Deaton, Chancellor</td>
<td>University of Missouri</td>
<td>Robert N. Shelton, President</td>
</tr>
<tr>
<td>John D. Welty, President</td>
<td>California State University, Fresno</td>
<td>Brian Rogers, Chancellor</td>
</tr>
<tr>
<td>Glenn D. Mroz, President</td>
<td>Michigan Technological University</td>
<td>Gary K. Ostrander, Vice Chancellor</td>
</tr>
<tr>
<td>Judy Genshaft, President</td>
<td>University of South Florida System</td>
<td>Philip P. DiStefano, Chancellor</td>
</tr>
<tr>
<td>Nancy Cantor, President</td>
<td>Graham Spanier, President</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>Syracuse University</td>
<td>Penn State University</td>
<td></td>
</tr>
<tr>
<td>Harvey Perlman, Chancellor</td>
<td>Wallace Loh, President</td>
<td></td>
</tr>
<tr>
<td>University of Nebraska-Lincoln</td>
<td>University of Maryland</td>
<td></td>
</tr>
<tr>
<td>Shirley C. Raines, President</td>
<td>E. Gordon Gee, President</td>
<td></td>
</tr>
<tr>
<td>The University of Memphis</td>
<td>The Ohio State University</td>
<td></td>
</tr>
<tr>
<td>M. Duane Nellis, President</td>
<td>Mark Nordenberg, Chancellor</td>
<td></td>
</tr>
<tr>
<td>University of Idaho</td>
<td>University of Pittsburgh</td>
<td></td>
</tr>
<tr>
<td>Guy Bailey, President</td>
<td>Jean-Lou A. Chameau, President</td>
<td></td>
</tr>
<tr>
<td>Texas Tech University</td>
<td>California Institute of Technology</td>
<td></td>
</tr>
<tr>
<td>Kirk Schulz, President</td>
<td>Bernadette Gray-Little, Chancellor</td>
<td></td>
</tr>
<tr>
<td>Kansas State University</td>
<td>University of Kansas</td>
<td></td>
</tr>
<tr>
<td>Satish K. Tripathi, Officer-in-Charge</td>
<td>Mark P. Becker, President</td>
<td></td>
</tr>
<tr>
<td>University of Buffalo</td>
<td>Georgia State University</td>
<td></td>
</tr>
<tr>
<td>Linda P.B. Katehi, Chancellor</td>
<td>Jay Gogue, President</td>
<td></td>
</tr>
<tr>
<td>University of California Davis</td>
<td>Auburn University</td>
<td></td>
</tr>
<tr>
<td>Ed Ray, President</td>
<td>Michael J. Hogan, President</td>
<td></td>
</tr>
<tr>
<td>Oregon State University</td>
<td>University of Illinois</td>
<td></td>
</tr>
<tr>
<td>John Sexton, President</td>
<td>Robert C. Holub, Chancellor</td>
<td></td>
</tr>
<tr>
<td>New York University</td>
<td>University of Massachusetts, Amherst</td>
<td></td>
</tr>
<tr>
<td>John C. Hitt, President</td>
<td>James W. Wagner, President</td>
<td></td>
</tr>
<tr>
<td>University of Central Florida</td>
<td>Emory University</td>
<td></td>
</tr>
<tr>
<td>Jared Cohon, President</td>
<td>David L. Chicoine, President</td>
<td></td>
</tr>
<tr>
<td>Carnegie Mellon University</td>
<td>South Dakota State University</td>
<td></td>
</tr>
<tr>
<td>V. Lane Rawlins, President</td>
<td>Dean L. Bresciani, President</td>
<td></td>
</tr>
<tr>
<td>University of North Texas</td>
<td>North Dakota State University</td>
<td></td>
</tr>
<tr>
<td>David M. Dooley, President</td>
<td>Robert Bruininks, President</td>
<td></td>
</tr>
<tr>
<td>The University of Rhode Island</td>
<td>University of Minnesota</td>
<td></td>
</tr>
<tr>
<td>Mark E. Keenum, President</td>
<td>Sally Mason, President</td>
<td></td>
</tr>
<tr>
<td>Mississippi State University</td>
<td>University of Iowa</td>
<td></td>
</tr>
<tr>
<td>Carol Z. Garrison, President</td>
<td>Lloyd A. Jacobs, President</td>
<td></td>
</tr>
<tr>
<td>The University of Alabama at Birmingham</td>
<td>The University of Toledo</td>
<td></td>
</tr>
<tr>
<td>James F. Barker, President</td>
<td>Harold M. Maurer, Chancellor</td>
<td></td>
</tr>
<tr>
<td>Clemson University</td>
<td>University of Nebraska Medical Center</td>
<td></td>
</tr>
<tr>
<td>Lee T. Todd, President</td>
<td>David J. Schmidly, President</td>
<td></td>
</tr>
<tr>
<td>University of Kentucky</td>
<td>University of New Mexico</td>
<td></td>
</tr>
<tr>
<td>Leo Morton, Chancellor</td>
<td>Jeffrey D. Armstrong, President</td>
<td></td>
</tr>
<tr>
<td>University of Missouri – Kansas City</td>
<td>California Polytechnic State University</td>
<td></td>
</tr>
<tr>
<td>E. Joseph Savoie, President</td>
<td>John Peters, President</td>
<td></td>
</tr>
<tr>
<td>University of Louisiana at Lafayette</td>
<td>Northern Illinois University</td>
<td></td>
</tr>
<tr>
<td>Michael K. Young, President</td>
<td>Richard W. Lariviere, President</td>
<td></td>
</tr>
<tr>
<td>University of Utah</td>
<td>University of Oregon</td>
<td></td>
</tr>
<tr>
<td>Elson S. Floyd, President</td>
<td>David Leebron, President</td>
<td></td>
</tr>
<tr>
<td>Washington State University</td>
<td>Rice University</td>
<td></td>
</tr>
<tr>
<td>John V. Lombardi, President</td>
<td>Matthew Goldstein, Chancellor</td>
<td></td>
</tr>
<tr>
<td>Louisiana State University System</td>
<td>The City University of New York (CUNY)</td>
<td></td>
</tr>
<tr>
<td>Jimmy G. Cheek, Chancellor</td>
<td>Richard H. Brodhead, President</td>
<td></td>
</tr>
<tr>
<td>The University of Tennessee, Knoxville</td>
<td>Duke University</td>
<td></td>
</tr>
<tr>
<td>President Name</td>
<td>University Name</td>
<td>President Name</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------------------------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Gregory H. Williams</td>
<td>University of Cincinnati</td>
<td>Robert A. Wharton</td>
</tr>
<tr>
<td>Mark W. Huddleston</td>
<td>University of New Hampshire</td>
<td>Bernard J. Machen</td>
</tr>
<tr>
<td>Allan Gilmour</td>
<td>Wayne State University</td>
<td>Mary Jane Saunders</td>
</tr>
<tr>
<td>Peter Magrath</td>
<td>Binghamton University</td>
<td>Muriel Howard</td>
</tr>
<tr>
<td>Amy Gutmann</td>
<td>University of Pennsylvania</td>
<td>Mark B. Rosenberg</td>
</tr>
<tr>
<td>Robert A. Corrigan</td>
<td>San Francisco State University</td>
<td>Diana Natalicio</td>
</tr>
<tr>
<td>Richard L. McCormick</td>
<td>Rutgers, The State University of New Jersey</td>
<td>Joel Seligman</td>
</tr>
<tr>
<td>Barbara R. Snyder</td>
<td>Case Western Reserve University</td>
<td>Carolyn (Biddy) Martin</td>
</tr>
<tr>
<td>Mark S. Wrighton</td>
<td>Washington University in St. Louis</td>
<td>Susan Hockfield</td>
</tr>
<tr>
<td>Teresa Sullivan</td>
<td>University of Virginia</td>
<td>Marye Anne Fox</td>
</tr>
<tr>
<td>Michael McRobbie</td>
<td>Indiana University</td>
<td>Morton Shapiro</td>
</tr>
<tr>
<td>Donald L. Beggs</td>
<td>Wichita State University</td>
<td>George C. Wright</td>
</tr>
<tr>
<td>Bruce Benson</td>
<td>University of Colorado System</td>
<td>David J. Skorton</td>
</tr>
<tr>
<td>Ruth J. Simmons</td>
<td>Brown University</td>
<td>Denise M. Trauth</td>
</tr>
<tr>
<td>Daniel W. Jones</td>
<td>The University of Mississippi</td>
<td>Stephen L. Weber</td>
</tr>
<tr>
<td>Ronald J. Daniels</td>
<td>The Johns Hopkins University</td>
<td>David Boren</td>
</tr>
<tr>
<td>M. W. Scoggins</td>
<td>Colorado School of Mines</td>
<td>Ann Weaver Hart</td>
</tr>
<tr>
<td>Mark G. Yudof</td>
<td>University of California</td>
<td>Henry T. Yang</td>
</tr>
<tr>
<td>George Blumenthal</td>
<td>University of California, Santa Cruz</td>
<td>Shirley M. Tilghman</td>
</tr>
<tr>
<td>Gene D. Block</td>
<td>University of California-Los Angeles</td>
<td>Linda Brady</td>
</tr>
<tr>
<td>Renu Khator</td>
<td>University Houston System &amp; President of The University of Houston</td>
<td>Michael F. Adams, President</td>
</tr>
<tr>
<td>Francisco Cigarroa</td>
<td>University of Texas System</td>
<td>C.L. Max Nikias</td>
</tr>
</tbody>
</table>
| George M. Philip, President  
| University at Albany, State University of New York | Carol Cartwright, President  
| Bowling Green State University |
| Jerry Wartgow, Chancellor  
| University of Colorado Denver | Kevin P. Reilly, President  
| University of Wisconsin System |