Update on Federal Activities to Spur Commercialization of Research

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At the highest levels within the Obama Administration, senior policy officials continue to debate ways to spur innovation. Enhancing university commercialization capabilities is seen as a primary means of addressing this issue. In addition, accelerating the transfer of discoveries supported by federal grants is perceived as a necessary step in justifying federal spending on research and demonstrating a return on government investment in universities, especially in a constrained budgetary environment.

As a result of interagency discussions led by the National Economic Council (NEC) and the Office of Science and Technology Policy (OSTP) in the White House, new and revised grant programs, changes to federal policies, and other efforts to enhance or alter the current paradigm for commercialization are underway within agencies across the federal government. This report provides an update on the overarching Administration views and agenda in this area, some of the new and anticipated federal activities aimed at spurring commercialization of university research, the role of Congress, and how universities can prepare to participate in continued discussions and initiatives in this space.

The opportunities outlined below vary across federal agencies in scale; with some opportunities tailored to entities that are developing or have recently launched commercialization programs, and others that are more appropriate for institutions with longstanding records of success in this area. The target audience of applicants and/or examples of past award recipients for each opportunity is outlined further below. We would be happy to discuss any of the opportunities described in this document in greater detail and to assist in setting up meetings with agency contacts.

I. Obama Administration Actions and Attitudes Towards Innovation

Since the start of his campaign in 2008, President Obama has emphasized the role of innovation in the U.S. economy. In September 2009, the White House released an innovation agenda (http://www.whitehouse.gov/assets/documents/SEPT_20_Innovation_Whitepaper_FINAL.pdf). This agenda outlined a variety of initiatives, including investment in basic research and education, but highlighted the importance of commercializing technologies in areas of national priorities, such as health care and energy. In particular, the President has emphasized the key role of regional partnerships in strengthening the U.S. economy and creating new industries and job opportunities.

Regional Innovation Clusters
Building on earlier reports from groups such as the Center for American Progress, the Administration has emphasized that innovation occurs best in regional (or place based) clusters where industry, academia, the workforce, and economic development vision come together to spur innovation. These Regional Innovation Clusters (RICs) take different forms in different parts of the country, but tend to be larger...
than one university-specific locale, often including multiple counties and/or crossing state lines. RICs can include research institutions that serve as catalysts of innovation, as well as local governments, venture capitalists, private banks, private investors, workforce investment boards, and non-profit organizations to nurture networks for business financing, business-to-business sales, education, and workforce development. The Administration is also very supportive of RICs that include minority-serving institutions, small/less research intensive universities, and community colleges.

However diverse they may be in their participants, each RIC must focus on a specific industry sector. So while a region, especially in a highly innovative part of the country, might have multiple overlapping RICs, each would be devoted to a specific industry such as biotechnology or information technology. A successful RIC is expected to leverage the region’s unique assets and competitive strengths.

The Obama Administration is interested in strengthening clusters which exist rather than establishing new ones. This could take the form of supporting new RICs entering a growth phase, facilitating the activities of a mature RIC, or assisting RICs that need to transform their focus area due to declining interest in a particular sector.

Various federal agencies have developed programs to strengthen or redirect such clusters and to disseminate information and best practices about the mechanisms for encouraging innovation and partnerships. One example is the ongoing multi-agency hubs led by the Department of Energy (DOE) to fund consortia to implement Energy Regional Innovation Clusters focused on green building technologies, fuel development from solar energy, and modeling and simulation for nuclear reactors (http://energy.gov/hubs). Other examples can be found at the Department of Commerce (DOC), the National Science Foundation (NSF), and the Small Business Administration (SBA) and are discussed below.

**Looking Ahead**

OSTP is actively engaged in discussions on how to highlight President Obama’s successes during the first term of his presidency in spurring innovation. With the next presidential election approaching in one year, the Administration is expected to organize high profile events and announce new initiatives to promote public-private collaborations in support of commercialization as part of a larger economic development agenda.

The White House recently organized such an event to highlight an Administration-driven initiative to promote commercialization of university research. During the summer, 135 university presidents, led by Mary Sue Coleman, President of the University of Michigan, signed a letter (http://www.innovationamerica.us/images/stories/2011/NACIE_Letter-University_Commercialization-20110617084146-20110617215655.pdf) to express their commitment to engaging in partnerships and activities that promote commercialization of university research. The letter also provided recommendations to improve technology transfer of publicly and privately funded research at their institutions. The White House held an event, in concert with the signing of the patent reform bill, to celebrate the commitment of these and other universities to spurring innovation and entrepreneurship. The White House also highlighted specific university technology transfer programs and initiatives on the OSTP website (http://www.whitehouse.gov/blog/2011/09/28/americas-universities-growing-economy-lab-market-initiatives).

The Administration has also begun organizing initiatives in partnership with industry and non-profit organizations that would leverage private sector resources to accomplish White House priorities. For
example, in February, the President launched the Startup America initiative, a national campaign to promote entrepreneurship in high-growth sectors. The campaign was launched in concert with the Startup America Partnership (http://www.startupamericapartnership.org/), a coalition of private sector business representatives who have committed to mobilize business leaders, investors, universities, foundations, and non-profits to develop new initiatives and incentives to encourage the private sector to invest in startup companies. While the White House announced new funding opportunities (specifically, the i6 Green Challenge, outlined further below) and proposed reforms to tax policies for small businesses as part of the initiative, the initiative relies heavily on private sector services to provide direct assistance to entrepreneurs, such as access to networks of venture capital investors and business counseling services. The Administration is expected to continue to partner with private sector coalitions on similar initiatives in this constrained funding environment.

Lastly, at the direction of the White House Office of Management and Budget (OMB) (http://www.whitehouse.gov/sites/default/files/omb/assets/memoranda_2010/m10-11.pdf), federal agencies have also begun experimenting with competitions and prizes for individuals or groups to develop ideas to address major policy challenges. Competitions often draw national media attention to priority issues of the Administration, while costing very little in federal funds. The Administration is expected develop future competitions, similar to the New Kauffman Foundation (http://www.kauffman.org/newsroom/new-kauffman-foundation-award-recognizes-leaders-in-commercialization.aspx) to identify creative approaches for accelerating the commercialization of research.

While budget reductions are imminent, the White House is urging agencies to protect and in some cases increase funding for federal programs that promote innovation, economic development and job creation, a strong indication that federal programs that support research commercialization and entrepreneurship will be prioritized in this difficult budget climate.

II. Federal Agency Activities to Spur Innovation

Department of Commerce/Economic Development Administration
The Department of Commerce (DOC) Office of Innovation and Entrepreneurship (OIE) was created by former Secretary of Commerce Locke in the fall of 2009. The office is located within DOC’s Economic Development Administration (EDA) and spearheads many of the commercialization efforts inside DOC. Meetings with staff at the DOC OIE are informative in learning about future Administration initiatives and agency conferences. However, applicants interested in pursuing EDA grants are highly encouraged to develop ties to their regional office. EDA is a highly decentralized organization, relying principally on its six regional offices to determine the best projects and program recipients for each of its funding streams.

Public input has been sought throughout the development of DOC’s activities. In February 2010, Secretary Locke hosted an Innovation Forum in Washington, D.C. where invited representatives from universities, foundations, and industry met to discuss ways in which university commercialization and technology transfer enterprises could be enhanced. DOC built on this discussion with four regional forums held in June and July 2010 at the University of Massachusetts, the University of Southern California, the University of Michigan, and the Georgia Institute of Technology (http://www.commerce.gov/news/press-releases/2010/06/28/us-department-commerce-announces-series-forums-american-innovation).
The forums produced over 180 recommendations on federal policies and programs, challenges facing universities, and metrics to evaluate university commercialization efforts. In addition, DOC and the White House received input from the public through a Request for Information (RFI) on how best to encourage commercialization of university research. DOC received approximately 205 responses to the RFI from individuals in academia, federal agencies, non-profit organizations and industry; however, the agency has yet to issue any recommendations for EDA activities in this area. Responses to the RFI, which will likely guide future agency actions, can be viewed here: http://www.eda.gov/commrfi-responses.

Lastly, the National Advisory Council on Innovation and Entrepreneurship (NACIE) was established in 2010 to help DOC develop future policy directions in support of innovation and entrepreneurship. The council is co-chaired by Mary Sue Coleman and has six other members from universities (http://www.eda.gov/NACIEmembers). Since its inception, the council has produced recommendations on increasing entrepreneurial access to capital and building innovation ecosystems among other areas of interest to the entrepreneurial community. The council meetings and reports are often good indicators of the future direction of ongoing or proposed initiatives within DOC.

**Current Funding Opportunities**

**i6 Challenge**—Initially launched in 2010, EDA’s i6 Challenge awards grants to innovative teams to accelerate the commercialization of new technology and encourage the formation of new startups. The program is administered by EDA in partnership with various federal agencies and programs including DOE, the National Institutes of Health (NIH), and the Small Business Innovation Research (SBIR) program at NSF. Recent competitions have been highly competitive and require strong partners with established records in supporting commercialization activities.

On September 23, 2010, DOC issued awards of approximately $1 million to applicants from six different regions of the country (http://www.commerce.gov/blog/2010/09/23/winners-i6-challenge-announced). Subsequent competitions through the i6 challenge have called for proposals to accelerate technology transfer within specific industries. The most recent solicitation, i6 Green, supported proposals to drive the commercialization of green technology and the development of a green innovation economy.

The next rounds of funding are expected to focus on advanced manufacturing, to tie in with the Administration’s ongoing efforts to develop a more robust U.S. manufacturing sector, and/or social entrepreneurship (the agency is considering running two i6 competitions this fall). There may be a reduced matching requirement for the i6 Challenge on social entrepreneurship. Either option would have a major science, technology, engineering and mathematics (STEM) component with additional funds coming from federal agency STEM programs within NSF and the Department of Education (ED) among other agencies.

**Regional Innovation Clusters**—On June 8, EDA announced a new funding opportunity for RICs through the Jobs and Innovation Accelerator Challenge. The new program will provide approximately $33 million in funding from three agencies: EDA, the Department of Labor’s (DOL) Employment Training Administration (ETA), and SBA. Funding will support approximately 20 industry clusters in urban and rural regions across the nation and across various industries.

On September 22, EDA announced the winners of the new challenge (http://www.commerce.gov/blog/2011/09/22/jobs-and-innovation-accelerator-challenge-winners-
announced). Timing for the next round of funding is still uncertain but future funding opportunities are expected as the Administration has focused on RICs as a principle mechanism to fund regional economic development activities.

**University Centers**—EDA also supports grants for economic development centers located at U.S. universities. The centers provide technical assistance to public and private sector organizations in distressed regions to promote local economic development. Annual awards for the past winners of University Center funding were generally between $80,000 to $200,000. While EDA traditionally renewed awards for University Centers that maintained a satisfactory level of performance, the agency now requires all centers to re-compete for funding every five years. The Centers are competed by region (http://www.eda.gov/AboutEDA/Regions.xml). The Atlanta and Seattle regions will hold competitions in FY 2012. Recent appropriations legislation in the Senate, which has yet to pass, would require the programs to establish a University Center in every state.

**Potential Future Funding Opportunities**

Going forward, DOC hopes to expand its efforts to support regional innovation. For example, President Obama’s FY 2012 budget request included $40 million for a new Regional Innovation Program, as authorized in the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act. The program would help build regional innovation clusters based on the strength of local communities and regions, and involve support from the Department of Housing and Urban Development (HUD) and the U.S. Department of Agriculture (USDA). These activities would include feasibility studies, planning activities, technical assistance, attracting additional participants to a cluster, facilitating market development of products and services, developing relationships with other clusters or regions, and interacting with the public and state and local governments to meet the goals of the cluster. Funding for the program will be subject to Congressional appropriations; however the Senate Appropriations Committee incorporated language into recent appropriations legislation, which has yet to pass, supporting funding for the program in FY 2012 at an unspecified level. OIE is expected to define and oversee the program, should it receive funding.

DOC is also expected to continue the popular i6 Challenge program. Future solicitations will likely complement economic development initiatives announced by the White House.

**Small Business Administration**

The Administration and Congress have repeatedly emphasized the importance of small businesses to innovation and economic growth. In addition to the SBA RIC program described below, small businesses have played a key role in other agencies’ innovation initiatives. Examples include the involvement of SBA in multi-agency initiatives such as the Energy Regional Innovation Clusters and the Jobs and Innovation Accelerator Challenge, the participation of SBIR grantees in the DOC i6 Challenge, and the emphasis on university-small business partnerships in NSF Partnerships for Innovation awards.

**Current Funding Opportunities**

**Innovative Economy Clusters Program**—In September 2010, SBA issued awards of up to $600,000 to entities that led regional cluster projects to support the growth of an existing regional cluster. The RICs had to involve public-private partnerships that align federal resources with existing state and local resources, regional strengths, and economic growth opportunities in communities. RICs were directed to place emphasis on services for small businesses, such as counseling, mentoring and networking, and
linkages to technology, development and financing opportunities. The ten clusters that were chosen for awards can be found here: http://www.sba.gov/about-sba-info/24931/11574. SBA proposed continuation of the program in the Administration’s FY 2012 budget request, but at an unspecified funding level. Recent House appropriations legislation proposed funding for cluster programs within SBA at a level of $8 million in FY 2012.

National Science Foundation
While NSF primarily supports basic research, there are a number of NSF programs that focus on translating basic discoveries made through NSF-supported research into new products for the marketplace. NSF supports a number of high-profile, competitive programs that conduct translational research as part of their larger mission. These include Science and Technology Centers (STCs), Engineering Research Centers (ERCs), and Materials Research Centers and Teams (MRCTs), among others. The programs whose primary missions are technology transfer and the facilitation of public-private partnerships are outlined below.

Current Funding Opportunities

Industry/University Cooperative Research Centers (I/UCRC)—The I/UCRC program establishes collaborative engineering and scientific research centers driven by long-term partnerships among industry, academic institutions, and government. NSF contributes a small amount of funding to establish and develop I/UCRCs, with industry partners contributing the majority of the support for a center. In general, an institution must be awarded a planning grant before it can submit a full center proposal. This requirement is waived if the institution wants to join an existing center. New center proposals must focus on research areas not covered by current or previously existing I/UCRCs. While an institution may apply to be a single institution I/UCRC, NSF encourages multi-institution centers. Awards are small, (ranging from $11,500 for a planning grant award to $80,000 for a Phase I award); however, success rates for applicants are high. More information, including examples of awards can be found at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5501&org=IIP&from=home.

Partnerships for Innovation (PFI)—Building upon the Administration’s support for RICs, this program was reformulated in the President’s FY 2011 budget request to support “innovation ecosystems” composed of colleges, universities, state and local governments, private sector firms, and nonprofits in an effort to encourage research commercialization and stimulate economic growth. The most recent solicitation called for partnerships composed of academic researchers and small businesses to encourage researchers to adapt their research for use in new applications and enhance the capabilities of small businesses to take advantage of this research. These awards are intended to span the institution rather than focus on a particular PI’s research. Additional information on the program and examples of past awards can be found at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5261.

Accelerating Innovation Research (AIR)—AIR was launched at the end of 2010 to support the commercialization of NSF-funded research and activities that promote entrepreneurship among students and faculty. The program also supports collaborations of award recipients from various NSF programs including STCs, ERCs, I/UCRCs, PFIs, and MRCTs among others, to accelerate the commercialization new concepts, processes, or products. Awards of up to $300,000 (with a potential $50,000 supplement) are given to investigators to develop a plan to bring their concept to the marketplace. Collaborations of NSF award recipients can receive awards up to $1 million. The last round of funding was issued in July. Future solicitations are expected; however the timing for the next
round of funding is not yet known. More information on the program including a link to the most recent solicitation can be found at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503553.

**NSF Innovation Corps (I-Corps)**—Announced in July 2011, I-Corps leverages existing funding from the NSF PFI, AIR, ERCs, STCs and SBIR/STTR programs, as well as support from partners in the private sector and academia, to identify and support the commercialization of NSF projects with significant potential to be translated to the marketplace. The program will set up a national network of scientists, engineers, innovators, business leaders, and entrepreneurs to serve as volunteer mentors to awardees. NSF plans to invest $1.25 million in I-Corps projects in FY 2011, awarding grants of up to $50,000 to an estimated 100 projects. Funding opportunities will be available for the next three years. Applicants must have an active NSF award or one that has been active within five years from the date of submission to I-Corps. The most recent round of awardees was announced on October 6. A list of award recipients can be found at http://www.nsf.gov/news/news_summ.jsp?cntn_id=121879&org=NSF&from=news. Awards are issued to up to 25 teams on a quarterly basis. More information on the program can be found at http://www.nsf.gov/news/special_reports/i-corps/. The I-Corps solicitation can be found at http://www.nsf.gov/pubs/2011/nsf11560/nsf11560.htm.

**Potential Future Funding Opportunities**

In response to the President’s continued emphasis on accelerating technology commercialization, NSF is considering a variety of ways to strengthen its support of such activities. In particular, support for new RIC programs is expected to expand, and the NSF Engineering Directorate is contemplating approaches for FY 2013 to alter or enhance existing programs in this space, such as PFI, ERCs, and I/UCRCs. Future initiatives are likely to focus on Administration priorities including advanced manufacturing, wireless infrastructure, clean energy and robotics among others.

**National Institutes of Health**

National Institutes of Health (NIH) Director Francis Collins has made translational research the centerpiece of his agenda for the agency, not only to address the slow, expensive, and highly risk-prone nature of translating basic research into therapeutics for patients, but to justify continued support and expansion of such a large (approximately $30 billion) federal agency, in a constrained fiscal environment. Recent NIH activities exemplify this priority.

**Current Funding Opportunities**

**Clinical and Translational Science Awards**—The Clinical and Translational Science Awards (CTSA) program was launched in 2006 to provide infrastructure grant awards to academic medical research institutions that will accelerate the translation of research discoveries into treatments for patients. Currently, the program supports a network of 60 CTSAs in approximately 30 states and the District of Columbia. Centers conduct pre-clinical research, clinical trials, and comparative effectiveness research, while engaging the local community in research efforts and training the next generation of translational researchers. Awards are large at about $200 million over five years, and highly competitive. The CTSA program was recently re-competed with awards announced in June (http://www.nih.gov/news/health/jun2011/ncrr-14.htm). NIH plans to continue the program under a newly established center at NIH known as the National Center for Advancing Translational Sciences (NCATS). More information on NCATS can be found below.
The CTSA program is expected to undergo some changes as it transitions to NCATS, and future opportunities for new centers are uncertain as the program has reached its goal of supporting 60 centers across the country. For more information on the program visit: http://www.ncrr.nih.gov/clinical_research_resources/clinical_and_translational_science_awards/index.asp.

**Therapeutics for Rare and Neglected Disease Program**—The Therapeutics for Rare and Neglected Disease (TRND) program is a collaborative drug discovery and development program housed within the NIH Office of Rare Diseases Research (ORDR). Successful applicants enter into a cooperative agreement with TRND; providing the drug starting point and the ongoing rare or neglected disease expertise in exchange for access to TRND drug development operational support such as medicinal chemistry, animal pharmacology or IND enabling studies to advance the drug program. More information on the program can be found at http://nctt.nih.gov/trnd/.

**National Cancer Institute**—The National Cancer Institute (NCI) is arguably the largest institutional supporter of translational research at NIH. Examples of translational research programs at NCI include the Translational Research Program (TRP) and the NCI Cancer Center program. TRP integrates discoveries of the biology of human cancer with the development of new interventions for the prevention, diagnosis and treatment of cancer patients. The program supports the Specialized Programs of Research Excellence (SPORES) grants to translate discoveries from laboratories or population studies to clinics for testing in human cancer patients. More information on the program can be found at http://dctd.cancer.gov/ProgramPages/trp/default.htm. Applications for the next round of funding are due January 20, 2012. The solicitation for funding can be found at http://grants.nih.gov/grants/guide/pa-files/PAR-10-003.html.

The NCI Cancer Center program supports formal research centers that foster interactions between basic laboratory, clinical, and population scientists and provide investigators with access to services and technologies for their research. Cancer Center applicants may request funding of up to $1 million for direct costs in the first year, and grants can be highly competitive. More information including recipients of past awards can be found at http://cancercenters.cancer.gov/.

**National Center for Advancing Translational Sciences**—Over the past year, NIH has prepared for a significant agency-wide reorganization to create NCATS. The goal of NCATS is to accelerate the translation of basic research into cures and treatments by developing innovative methods and technologies for discovering, testing and implementing new diagnostics and therapeutics for a wide range of diseases. The new center is intended to compliment, rather than replicate or compete with current translational science activities in other institutes and centers at NIH. The center, which has a proposed budget is $721.6 million, will include the CTSA program, the TRND program, and a newly created Cures Acceleration Network (CAN) which is described further below, among some other programs and initiatives. Funding will be dependent on Congressional appropriations; however, funds for the programs within the proposed center have been incorporated into recent appropriations legislation that has yet to pass the full Congress. Pending final funding, NIH officials expect to formally launch the new center in FY 2012.

**Cures Acceleration Network**—The health care reform law enacted in 2010 created a new program, the Cures Acceleration Network (CAN), within NIH aimed at increasing translational research. CAN will be located within NCATS and will conduct and support revolutionary advances in translating scientific discoveries from bench to bedside. Early indications from the FY 2012 appropriations process suggest
that Congress will provide as much as $20 million to NIH to start CAN this coming year. Upon receiving funding from Congress, NIH can establish a Cures Acceleration Board to provide recommendations for future CAN funding and activities. Funding solicitations from the program, however, are not expected for another year.

**Advancing Regulatory Science**—The Advancing Regulatory Science (ARS) initiative is an NIH-FDA partnership built on the “Microscope to Marketplace” collaboration announced in February 2010, and seeks to accelerate the process from scientific breakthroughs to FDA-approved medical products ([http://www.fda.gov/ScienceResearch/SpecialTopics/RegulatoryScience/default.htm](http://www.fda.gov/ScienceResearch/SpecialTopics/RegulatoryScience/default.htm)). In addition to awarding grants and contracts to accelerate high need cures, ARS will work with CAN (as described above) to facilitate FDA review and approval of cures by establishing regular communications between FDA and NIH and ensuring that CAN activities are coordinated with FDA approval requirements. The program awarded approximately $9 million to four research projects in regulatory science in September 2010. The full list of award recipients can be found at [http://www.nih.gov/news/health/sep2010/od-27.htm](http://www.nih.gov/news/health/sep2010/od-27.htm). Future awards are expected, however awards will continue to be relatively small.

**Centers for Accelerated Innovation Program**—NIH has announced the development of new Centers for Accelerated Innovation, aimed at addressing the knowledge and funding gaps during early stage development that are needed to transform novel medical device technologies into marketable products. Areas to be supported by these awards include pilot funding, awarded based on scientific merit and commercial potential; provision of commercialization resources and expertise such as assistance with business plan development, market research, and intellectual property protection; and educational and networking activities. An additional goal of the program is to facilitate the development of better applications to NIH’s SBIR program.

The National Heart, Lung and Blood Institute (NHLBI) is taking the lead for NIH on the program. While the program is still in its initial planning stages, an NIH appointed working group has met to collect and review current best practices, critical elements for commercialization, and activities needed to fill gaps in the current system. The working group has developed recommendations for the program’s organization and functions which were approved by the NHLBI advisory council in June. The recommendations can be found here: [http://www.nhlbi.nih.gov/meetings/nhbac/june11min.htm](http://www.nhlbi.nih.gov/meetings/nhbac/june11min.htm).

The first competition is expected to have between one and three awards with a two-to-one cost share and require existing collaborations among industry and universities focused on diseases covered by NHLBI research. Other institutes are contemplating ways to incorporate this funding mechanism and approach as well.

**Innovative Centers for Translation**—The National Institute for Biomedical Imaging and Bioengineering (NIBIB) is in the early design phase of a new center grant program entitled Innovative Centers for Translation. The centers would be based in part on the Howard Hughes Medical Institute (HHMI)-NIBIB interdisciplinary research training program in that they would bring together individuals from engineering, science, and medicine among other disciplines to develop interdisciplinary solutions to medical problems. Center grants are likely to be awarded through a cooperative agreement (U mechanism or such) so that NIBIB staff can maintain some authority over the decision making of each center. The centers would fund small, short-term grants for high-impact research. Funding for the program and specific center grants has yet to be determined.

**Potential Future Funding Opportunities**
While funding for new initiatives may be constrained by Congress, under the leadership of Dr. Collins, NIH is expected to continue to expand translational research opportunities through the newly established NCATS division and within existing research programs. Congress is generally very supportive of the shift toward translational research at NIH, and has not proposed significant reductions in top line funding for NIH in FY 2012. Moving forward, research opportunities within existing programs may have an increased focus on translation of basic research discoveries, and new opportunities through proposed translational research programs are expected once the agency finalizes the proposed reorganization.

III. Congressional Activities to Spur Commercialization

While the Administration is the primary driver of federal programs to accelerate the commercialization of federally-funded research, Congress is supportive of activities in this space and has passed several bills related to this area. Congress does not often define the details of new program implementation; however, it is responsible for funding new initiatives, which has grown increasingly difficult since the 2010 mid-term election which brought in a wave of new, fiscally conservative Members. Congress also faces a new mandate passed as part of the debt ceiling negotiation bill that requires passage of at least $1.2 trillion in budget savings over the next ten years by December 23, 2011. While federal science programs often enjoy bipartisan support, Members of Congress will be under considerable pressure to reduce spending on all federal programs and services, including some of their favored programs. The deficit reduction debate may also delay action on any Congressional proposals to advance commercialization activities.

America COMPETES Act Reauthorization
In December 2010, Congress reauthorized the America COMPETES Act of 2007. A number of provisions in the legislation focus on promoting innovation and enhancing university commercialization efforts. For example, the bill requires universities receiving NSF research grants to report on their strategy for commercializing the results of such research and authorizes the use of innovation prizes throughout the federal government. Further, the bill places greater emphasis across federal science agencies on modeling and simulation for manufacturing, and calls for further development of a national innovation strategy.

America Invents Act
This fall, Congress passed the America Invents Act, which reauthorized and reformed various patent and trademark laws. The bills aims to reduce the backlog of patents by hiring more patent examiners, modernizing technology in the Patent and Trademark Office, and speeding up the review process. It institutes a "first-to-file" system to bring the U.S. patent system in line with other countries and potentially reduce litigation by using more transparent, objective standards for determining patentability. The bill also includes a special exemption for universities, preventing use of the “prior user defense” against patents owned by universities or their technology transfer organizations.

SBIR/STTR Reauthorization
In May, the House and Senate passed a four month extension of the SBIR/STTR programs which were due to expire on May 31. The programs were temporarily extended further in the most recent Continuing Resolution, which keeps the government funded through November 18, 2011. The SBIR program, as currently authorized, requires federal agencies with an extramural research budget of more than $100 million to set aside 2.5 percent of its budget for small businesses to engage in research, while
STTR, a smaller program, requires that 0.3 percent of the budget be allocated for partnerships between small businesses and research institutions or nonprofits to foster innovation. The major point of contention in reauthorization legislation has been a proposal to increase the set aside percentages, which would cut into federal agency research funds available to other entities such as universities. Congress is expected to act on a year-long reauthorization bill for the programs in the near term.

Related Policy Issues
In addition to the legislation outlined above, there are significant policy issues which universities and others have raised as presenting challenges to the current innovation paradigm. These include current export control policy, tax policy, immigration policy, and policies addressing conflicts of interest in research. While the Administration can make some unilateral alterations in these areas, most significant changes will require Congressional action or approval.

Changes in the tax code are likely to be considered as Congress works to identify the $1.2 trillion in federal savings before the end of calendar year. Many Members of Congress have advocated for a more streamlined tax policy, with fewer deductions for special interests, in addition to a lower corporate tax rate and a permanent research and development credit to incentivize investment in research and spur economic growth.

Members of Congress have also proposed legislation to make it easier for highly skilled foreign graduates of U.S. universities with STEM degrees to obtain green cards to work at U.S. companies, and/or create their own startup companies in the U.S., assuming they’ve secured venture capital funding. Many Members of Congress refuse to address immigration reform in a piece-meal manner though, and may not consider such measures unless they are incorporated into a larger immigration reform bill. The likelihood of Congress addressing such a polarizing issue in a divided Congress and in an election year is very low.

Related initiatives from bills being developed for future consideration include programs that would provide supplements to federal research grants to support commercialization activities; creation of a dedicated commercialization fund sponsored by DOC to promote clean energy technologies; and reforms to current SBIR policies to create a new “pre-incorporation” or “Phase 0” funding stream.

While support for innovation as a key element of U.S. economic health is strong, there are fundamental disagreements about the federal role in this area, and the extent to which the Administration or Congress will be able to comprehensively address these political and well-entrenched issues in the remaining year of President Obama’s first term remain to be seen.