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President Obama Releases FY 2014 Budget

While many federal agencies continue to deal with the effects of sequestration and the National Science Foundation ponders the meaning of the Coburn amendment's restrictions on political science funding (see Update, March 25, 2013), President Obama finally released his budget blueprint for fiscal year (FY) 2014 on April 10 in which among other things he proposes to abolish sequestration for FY 2014.

The budget includes $3.778 trillion in spending for FY 2014. The Administration expects $3.034 trillion in revenues, leaving the deficit at $744 billion or 4.4 percent of a $17 trillion Gross Domestic Product (GDP). The effect of last year's tax increase and predictions for continuing improvements in the economy are reflected in the boost in expected receipts from 15.8 percent of GDP in FY 2012, 16.7 percent in FY 2013 and 17.8 percent in FY 2014. Outlays of government funds would remain above 22 percent of GDP in FY 2014.

Discretionary programs, those that require appropriations, have proposed funding of $1.242 trillion, slightly lower than FY 2013. These are split between non-defense discretionary programs at $624 billion and defense discretionary at $618 billion. Mandatory programs are projected to cost $2.308 trillion in FY 2014, illustrating the continued budgetary impact of Medicare, Medicaid, and Social Security.

Budget authority for non-defense discretionary programs in FY 2014 would amount to 3 percent of GDP, the lowest figure since the Eisenhower Administration. Although defense discretionary spending would continue to decrease, it would remain at 3.8 percent of GDP.

The BRAIN Initiative

One of the new projects in the President's budget is the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative. The Defense Advanced Research Project Agency (DARPA) will spend $50 million, the National Institutes of Health $40 million, and the National Science Foundation (NSF) $20 million "to get a dynamic picture of the brain and better understand how we think, learn, and remember." Aside from helping to develop cures for ailments such as Parkinson's disease and Traumatic Brain Injuries, the initiative also hopes to "reduce language barriers through technological advances in how computers interface with human thought." There are also considerable commitments from private foundations to support the initiative.

The NSF portion will "support research that spans physical, biological and social, and behavioral sciences." NSF's Social, Behavioral and Economic Sciences (SBE) Directorate has programs in cognitive neuroscience and perception, action, and cognition that already contribute to this area of research.

FY 2014 Appropriations Process Begins

With the release of the President's budget, the congressional appropriations subcommittees jumped into the game with a series of hearings with administration officials on April 11 and 12 and continuing the week of April 15. Secretaries of the Departments of Education (Arne Duncan), Homeland Security (Janet Napolitano), and Housing and Urban Development (Shaun Donovan) and the Acting Commerce Secretary (Rebecca Blank) all dutifully appeared before their respective appropriations subcommittees to defend the proposed FY 2014 budgets for their bailiwicks.

Even before the appearance of the President's budget, the House and Senate Budget Committees enacted separate FY 2014 budget resolutions expected to guide the spending committees. There are significant differences in these separate resolutions. The House has set a bottom line for all FY 2014 appropriations bills of $966 billion. The Senate provides the pre-sequestration figure of $1.058 trillion. It also includes proposes for increased revenue by closing tax loopholes; something you will not find in the House resolution.

What follows below is a preliminary look at the agencies that are important to funding social and behavioral sciences research. In releasing its FY 2014 budget, the Administration did not provide final FY 2013 figures for the agencies. The comparisons made by Administration officials at the budget rollouts held by the White House Office of Science and Technology Policy (OSTP) and the federal agencies were to FY 2012 enacted levels.

As per tradition, COSSA will produce a special issue analyzing the President's budget for over 50 federal agencies and programs providing funding comparisons as well as descriptions of how these agencies hope to spend their new funds. Look for it in your electronic mailboxes on May 13.

FY 2014 Agency Budgets

The President proposed FY 2014 funding of $7.628 billion for the **National Science Foundation**. This is an 8.4 percent increase over the FY 2012 enacted level of $7.105 billion. The preliminary number for FY 2013 is approximately $6.9 billion. For the Research and Related Activities account, which includes the SBE directorate, the Administration proposed $6.212 billion. The FY 2012 enacted level was $5.758 billion.

The **SBE directorate** would receive $272.4 million under the President's proposal. The FY 2012 enacted level was $254.2 million. The Education and Human Resources directorate would climb from a FY 2012 enacted level of $830.5 million to a proposed $880.3 million in FY 2014.

The President's proposes $31.833 billion for the **National Institutes of Health (NIH)** program level activities in FY 2014. The enacted FY 2012 level was $30.86 billion. NIH estimates that these funds will support a total of 36,610 research project grants, including 10,269 new and competing awards.

The FY 2014 Budget includes a total program level of $434 million for the **Agency for Healthcare Research and Quality (AHRQ)**, $29 million above the FY 2012 level. This total includes $334 million in Public Health Service (PHS) Evaluation Funds, a decrease of $35 million below FY 2012, and $100 million from the Patient-Centered Outcomes Research Trust Fund.

Total discretionary program level funds would total $5.913 billion for the **Centers for Disease Control and Prevention** under the President's FY 2014 proposal. The equivalent figure for FY 2012 is $6.129 billion. The National Center for Health Statistics request is $181 million, up $22 million from FY 2012.

The Administration asks for $671.1 million in FY 2014 for the activities of the **Institute of Education Sciences (IES)**, an increase of $77.4 million over the 2012 appropriation. Of the IES total, $202.1 million would go for research, development, and dissemination, an increase of $12.5 million. The National Center for Education Statistics' request is $122.7 million, up $14 million from FY 2012. The increase would provide $6 million to support State participation in a pilot Program for International Student Assessment (PISA) study and $8 million to begin collecting certain National Postsecondary Student Aid Survey (NPSAS) data every 2 years, providing more timely information on educational costs, financial aid, enrollment, and student progress.

The Department's **International Education and foreign language programs** would get a boost to $80.9 million in FY 2014 from the $74.1 million in FY 2012. In FY 2010 the funding for these programs was $129.5 million. All of the FY 2014 increase would go to the domestic programs of Title VI, as the Fubright-Hays overseas program would remain at $7.5 million, same as in FY 2012.

The President's budget provides $982.5 million for the **Census Bureau** in FY 2014. This is an increase of $94.1 million from FY 2012 enacted. The Periodic Censuses and Programs account would receive $726.4 million, an increase of $91.4 million over enacted FY 2012. The Salaries and Expenses account would go up slightly to a proposed $256 million in FY 2014 from $253.3 million in FY 2012.

The **Economic and Statistics Administration (ESA)**, which includes the Bureau of Economic

Analysis (BEA), has a FY 2014 proposed budget of$104 million. BEA would get over $100 million of that. The enacted FY 2012 budget for ESA was $96 million.

The Administration proposes $52.9 million for the base budget of the **Bureau of Justice Statistics (BJS)** in FY 2014 up from $45 million in FY 2012. The Department is also proposing a $44 million increase to $50 million for FY 2014 for the National Criminal Records History Improvement program within BJS. The **National Institute of Justice (NIJ)** would receive a base budget of $44.5 million in FY 2014, an increase from the $40 million in FY 2012. In addition, NIJ would get an extra $3 million to take over the administration of the crimesolutions.gov What Works Clearinghouse. The $4 million Congress keeps adding to the NIJ budget for domestic radicalization research would not receive any funds in the Administration's proposed FY 2014 budget. Finally, the request includes appropriations language that would allow OJP to apply the two percent Research, Evaluation, and Statistics set-aside to the funding provided under the Crime Victims Fund obligation cap for the purposes of supporting crime victim-related research, statistical, and data collection activities. This would permit OJP to use up to $15.5 million from the Crime Victims Fund to support these activities.

Continuing its emphasis on competitive research grants, the President has requested a significant increase for the Nati**onal Institute on Food and Agriculture (NIFA)'s Agricultural and Food Research Initiative (AFRI)**. The President wants the program boosted from $264 million in FY 2012 to $383.4 million in FY 2014. Hatch Act Formula Funds would receive the same $236 million in FY 2014 as they received in FY 2012. NIFA's total budget would increase to $1.293 billion under the request, up from $1.207 billion in FY 2012.

The request for the **Economic Research Service** is a small increase to $78.5 million. The **National Agricultural Statistical Service's** request is the same $159 million it received in FY 2012. Of that total, $42.3 million is to complete the 2012 Census of Agriculture.

The FY 2014 President's request for the **Bureau of Labor Statistics (BLS)** is $613.8 million, a slight boost from the $609.1 million allotted in FY 2012. In order to maintain funding for its core programs, BLS is proposing to eliminate the Mass Layoff Statistics program (a favorite of Congress), the Green Jobs initiative, and the International Labor Comparisons program.

Coburn Fallout and the Troubles Ahead

With the enactment of Sen. Tom Coburn's (R-OK) amendment to restrict National Science Foundation (NSF) funding for political science research to projects the Director certifies as "promoting national security and economic interests of the United States," the question of interpretation remains uncertain. Although the action has generated many denunciations from the President's Science Adviser and former NSF Directors and the Ranking Democrat on the House Research Subcommittee, Rep. Dan Lipinski (D-IL), some grants have already been held up and the fate of the American National Election Study is unclear.

So far, the American Political Science Association has announced the cancellation of the NSF-funded 2013 Ralph Bunche Summer Institute, held at Duke University, which provided opportunities for broadening participation of underrepresented groups by preparing them for graduate school in political science.

While the interpretation discussion continues at NSF on how this amendment affects FY 2013 funding for political science, the playing field for FY 2014 appears to have many difficulties ahead. For starters, both House Majority Leader Eric Cantor (R-VA) and House Science, Space, and Technology (HSST) Chairman Rep. Lamar Smith (R-TX) have made it clear in speeches, meetings with science groups, and in the HSST "views and estimates" on FY 2014, that they intend to go after funding for the social, behavioral and economic sciences (SBE) at NSF (see Update, February 11, 2013 for Cantor's remarks). The HSST "views" state:

"Further the NSF request for the Social, Behavioral and Economic Sciences (SBE) is over $259

million in FY 2013, with significant, preceding annual increases. The Committee is concerned that the Administration has lost sight of NSF's core mission in support of the physical sciences when so much funding is provided for SBE. Several recent studies conducted by NSF's SBE funding have been of questionable value, and something our nation can ill-afford. These SBE funds are better spent on higher priority scientific endeavors that have demonstrated return on investment for the American taxpayer."

The vehicle for this attack is the reauthorization of the America COMPETES Act, which includes the NSF's authorization bill. Most of the line of attack is not new. We have seen it in 1995-96, and again in 2005-06. It states that the NSF is the province of the physical sciences and engineering and the SBE sciences do not belong. Furthermore, these sciences, the argument goes, can receive funding from other federal agencies. The complaint also takes the form of the need to set priorities, and the SBE sciences come at the bottom of any list. There is a corollary attack on social science funding, especially for economics research, at the National Institutes of Health (see Update, July 23, 2012).

While House leaders continue to question the SBE sciences, the Senate has been quiet regarding NSF reauthorization. Key Senators who would be involved in the COMPETES Reauthorization, Commerce, Science and Transportation Committee Chairman Sen. Jay Rockefeller (D-WV) and Sen. Lamar Alexander (R-TN), who played an important role in the original COMPETES bill, have not made any explicit statements on this legislation yet.

In addition to the COMPETES bill the FY 2014 Commerce, Justice, Science (CJS) Appropriations bills offer other opportunities for opponents of federally funded SBE research to create mischief. Coburn will probably be back and the possibilities that those who would restrict funding in COMPETES would do so again in appropriations looms large as well.

As we move forward through the legislative process COSSA and its members, other scientific and higher education groups, as well as universities and business leaders will be manning the barricades to protect the SBE sciences. We hope to have your support and help. Stay tuned!

Capitol Hill Briefing Discusses the Contributions of Economics Research to Health

As noted above, Congress has recently questioned the value of supporting social science research at NSF and NIH. In response, on April 12th COSSA co-sponsored a Congressional briefing with the American Economic Association, AcademyHealth, the Council of Professional Associations on Federal Statistics, the Population Association of America, and Research!America on Economics Research: Saving Lives and Money. A panel of distinguished economists discussed the contributions of economics research to our health and well-being.

The panel was moderated by Mark McClellan, of the Brookings Institution and a former administrator for the Centers for Medicare and Medicaid Services, a former commissioner of the Food and Drug Administration, and a former member of the President's Council of Economic Advisers. According to McClellan, the United States leads the world in biomedical research, but economics research is needed to help these advances improve the health of Americans. He noted that health economics research improves health-related behaviors, improves health care delivery, improves our understanding of health care and scientific discovery, and helps create "big team" scientific research.

McClellan indicated that health is much more related to the choices people make about their behavior and their use of health care than medical treatments. He told the audience that the session will describe how economics research identifies innovative and effective policies for helping people make healthier choices. There is a growing health care delivery gap between what can be done and what is done. Economics research can reduce that gap. McClellan illustrated this point by describing how economic analysis of variations in mortality in different treatments of stroke

patients improved treatments for strokes. He described how an economic study showed how competition among drug plans under Medicare Plan D significantly lowered the cost of pharmaceuticals.

McClellan explained how economic studies measure more precisely the payoffs and the costs of research. He presented the results of a study of the benefits from changes in technology that improved survival rates from common cancers. He described a recent study that tracked the monetary costs of dementia. This research, he declared, identifies opportunities for getting "more bang for the healthcare buck." He also provided examples of "big team" translational research in which economists work as part of interdisciplinary teams.

Nobel Winner Roth on Matching Markets

Last year's Nobel Prize winner in Economic Sciences, Alvin Roth, Stanford University, distinguished between a commodity market in which the buyer decides what to buy and the more complicated "matching" markets in which you can't simply choose, but also have to be chosen, e.g., jobs, schools, organ transplants and spouses. Roth's Nobel prize-winning research on matching theory led to the creation of clearinghouses for kidney exchanges and improvements in the clearinghouses used to match medical residents with hospitals.

Roth noted that there is an acute and growing shortage of kidney transplants. Almost 100,000 patients are waiting for transplants. Only 15,000 transplants become available each year. A kidney exchange increases the number of transplants by allowing donors who are incompatible with their intended recipients to exchange kidneys with other donors. These exchanges faced legal hurdles that were overcome by amending the National Organ Transplant Act and a simultaneity problem. Kidney exchanges initially had to be simultaneous because potential donors could renege on the exchange if their loved one received a kidney first. This limited the number of kidney exchanges because of the difficulty and cost of simultaneously removing and transplanting kidneys in four patients. Economists, computer scientists and surgeons solved this problem by devising a regional clearinghouse for non-simultaneous chains of kidney exchange. These chains have been as long as 60 people and resulted in 30 transplants. The next big challenge is to move from regional kidney exchanges to a national exchange and to figure out the optimum mix of patients who are difficult to transplant and those who are relatively easy.

Roth then discussed the National Resident Matching Program, a carefully designed labor market clearinghouse through which American doctors get their first jobs. Before this clearinghouse was established, U.S. medical markets were chaotic. Hospitals were offering jobs to students up to two years before they completed their medical degrees to get a jump on the competition. Roth was asked to redesign the National Resident Matching Program in 1995 because of declining rates of participation, particularly among a growing number of married couples. His hypothesis: a good clearinghouse produces stable outcomes. In the case of medical residencies, a match is stable if a doctor and a residency program are not matched to each other, but would prefer to be. He tested this hypothesis using laboratory experiment to study successful and unsuccessful medical clearinghouses. Those medical clearinghouses that adopted Roth's design are stable ones.

Roth's work is an example of basic scientific research on the characteristics of matching markets supported by the National Science Foundation (NSF) that paid off in unanticipated ways. He closed by noting the great admiration he found internationally for U.S. leadership in the social sciences and how it would be a mistake to turn away from the government programs at NSF and the National Institutes of Health (NIH) that have helped make these successes possible. He said he was frequently asked why the U.S. wins so many Nobel prizes and he credits the research support given to young scientists.

Volpp on Employer Incentives for Healthier Employees

Kevin Volpp, Wharton School at the University of Pennsylvania, said employers report poor health habits as the top challenge to maintain affordable benefits. Employers, Volpp noted, are

increasingly using incentives to drive better health behaviors with support from public policies that allow penalties and rewards to foster improvement. However, according to Volpp, these financial incentives alone are not effective. For example, a study of patients discharged after myocardial infarction found that only 39 percent of the patients under standard copay and 45 percent with free medication adhered to their medication. Volpp showed how medical adherence can dramatically increase if the incentives are designed to drive engagement by using insights from behavioral economics on how individual decisions are made. These include making rewards for beneficial behavior frequent and immediate, giving patients cash rather than giving them equivalent discounts on their health premiums, using lotteries for rewards, telling people what they would have won if they had been adherent, putting rewards at risk if behavior doesn't change, and taking advantage of the status quo bias.

Volpp described how long-term smoking cessation rates triple in incentive groups if financial payments are tied to cessation. Rates of non-adherence to warfarin, an anti-stroke medication with large benefits but high non-adherence rates, dropped from over 20 percent to less than 5 percent by using lottery-based incentives. Lotteries also proved effective in weight loss programs as did financial deposit contracts. People offered financial incentives to lose weight were five times more likely to reach their weight loss goal than those not offered any incentives. Competition between individuals also increased weight loss. Social incentives can augment the effectiveness of financial incentives. In one study people with good control of their diabetes were paired with people who still had poor control and each pair was offered financial incentives for improved performance. This resulted in a huge improvement in the health of those with poor control.

Finally, Volpp explained how automated hovering systems utilize wireless technologies and advances in the understanding of behavioral economics to create new opportunities to improve population health. Under automated hovering, devices capture and transmit data about participant behavior to a program that calculates incentives, transmits communications to the participant, and transfers funds electronically to the participant. Automated hovering is being tested for glycemic control, smoking cessation, weight loss, and medication adherence. It is also used to test provider versus patient incentives. This approach, Volpp concluded, will help bring about significant opportunities for improvement in quality and cost of chronic care management using technology and strategies based on behavioral economics.

Antos on Research's Impact on Policy Makers

Joseph Antos, American Enterprise Institute (AEI), said there was a natural evolution from basic research to application, but it doesn't always work this way in practice because the information from the research doesn't reach key decision makers or decisions makers are not open to new ideas. A lot of work is necessary to facilitate and improve this process, Antos suggested. Before coming to AEI, he was Assistant Director for Health and Human Resources at the Congressional Budget Office and he described the important role CBO plays in providing estimates of the costs and benefits of different health care policies. These estimates in turn depend critically on economic research on the behavior of individuals and businesses. Unfortunately, policy makers often want specific numbers and are uninterested in the range of uncertainty about the estimates.

Antos pointed out that economic research on health-care control is especially important now. If health-care costs continue to grow more rapidly than the GDP, health-care expenditures will put increasing pressure on other discretionary expenditures including government spending on biomedical research. He also argued, that there is a legitimate concern that research on cost control not provide justifications for health care rationing.

According to Antos, government funding for economic research is necessary because private sources have their own agendas. Profit-making businesses are interested only in research where they can capture the gains from the research. If the federal government does not fund this research, we cannot expect the private sector to pick up the slack, he asserted. It is, however, difficult to find the right balance between competing budget priorities among government agencies supporting health-related research in these times, Antos suggested.

Closing, Antos declared that the government also has a role in collecting important health-related data such as the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey. In this area of data collection, Antos indicated that we have a lot of information about patients, but not enough concerning the supply side of health care. Information is needed about how businesses act and the government is uniquely positioned to collect these data, he concluded.

This article was contributed by Dan Newlon, American Economics Association.

Assessing the Value of Research in Advancing National Goals

On April 8, the National Academies' Committee on Assessing the Value of Research in Advancing National Goals held its second meeting. The panel is tasked with investigating "some of the many pathways through which research contributes to our economy and well-being and serves other national goals," and in particular "how research contributes to human and knowledge capital in government and private business through the training of a research workforce." The Committee is sponsored by the Division of Behavioral and Social Sciences and Education (DBASSE) in collaboration with the Policy and Global Affairs division's Board on Science, Technology and Economic Policy (STEP) and the Committee on Science, Engineering, and Public Policy (COSEPUP). The new committee is chaired by Richard Celeste, former Ohio Governor and President Emeritus of Colorado College. Former Congressman John Porter (R-IL) is also on the panel.

The meeting began with a panel discussion during which representatives of private and government research organizations shared their perspectives on how to make decisions on research investments and facilitate innovation. John Kelly, III, IBM, commented on his company's approach to innovation. IBM's research network spans facilities and universities across the United States and the world. Kelly observed that some of most important decisions are not about the innovation and research itself, but the choices related to the diffusion of the technology-what partners to work with and where. IBM also invests a great amount in acquisitions (nearly equivalent to what it spends on research); the choices of which technologies to acquire and how to merge them with existing technology can have an enormous impact on innovation.

Jeff Wadsworth, Battelle Memorial Institute, shared some concerns about the current innovation climate and the potential challenges of accurately assessing the value of research. He cautioned that relying on metrics to assess research brings the pitfall of "measuring what you can measure" and ignoring valid characteristics that are more difficult to quantify. For example, focusing on something like patents might lead one to undervalue institutions that take out fewer patents because they move on a more rapid timescale. He noted that politicians tend to be uneasy with pluralism in research, especially when there is no obvious immediate application. Wadsworth also pointed out that the U.S. faces stiff global competition. While U.S. R&D funding needs to make its way through the Congressional budget process, such funding faces many fewer procedural obstacles in central command economies like China. Wadsworth noted that in 2013, Asian countries will collectively outspend the U.S. on research and development for the first time.

Regina Dugan, Motorola Mobility and former Director of the Defense Advanced Research Projects Agency (DARPA), shared her perspective on how organizations can create an environment that fosters innovation. She argued that innovation is a discipline, not something that happens in a black box, and therefore, organizations can be designed to reliably deliver results. The real challenge, Dugan suggested, is not generating ideas, but choosing among them. She argued that the linear model of innovation, which proposes that innovation proceeds in stages, from basic research to applied research to development to production to commercialization and diffusion, is outmoded and lacks the support of data. An artificial divide between basic and applied research removes a sense of urgency from the project. Instead, Dugan recommended trying to steer research toward "Pasteur's quadrant" (focused on both advancing basic scientific understanding and considering practical applications) as distinct from "Edison's quadrant" (pure application) and "Bohr's quadrant" (pure basic research). Work in this area should be project oriented, exist in a fixed time period, and

cross-disciplinary. However, to facilitate this kind of innovation, organizations must adjust for speed, scale, and agility.

Bruce B. Darling, National Research Council and former Vice President for Laboratory Management at the University of California, discussed ways the National Laboratories promote innovation. Darling noted that the Livermore National Laboratory and the Los Alamos National Laboratory both perform classified nuclear research, and thus run the risk of becoming isolated from the broader scientific community. To avoid this, the labs place a huge emphasis on building relationships. They bring in researchers and collaborate with scientists at major universities (including the University of California system, CalTech, Stanford, and MIT); they work with companies in the private sector on technologies like computing and semiconductors; they foster competition between the labs; and they even share their progress with some of their international competitors.

During the afternoon session, committee members (full list available here) gave brief reports on topics of interest. Gregory Tassey, National Institute of Standards and Technology, discussed the role of technology and economic growth and the innovation life cycle. Jason Owen-Smith, University of Michigan, spoke about work he'd done with panel member Alicia Carriquiry, Iowa State University, on the potential of STAR METRICS (Science and Technology for America's Reinvestment: Measuring the Effect of Research on Innovation, Competitiveness and Science) as a research tool. Bronwyn Hall, University of California, Berkeley, presented approaches to measuring the quality of public research. Stephen Fienberg, Carnegie Mellon University, discussed a portfolio approach to evaluating and managing research. Ann Griswold, SciScripter, LLC, shared some insights into successful university technology transfer programs. Stephanie Shipp, Science and Technology Policy Institute, discussed metrics for measuring technology transfer programs. David Mowery, University of California, Berkeley, and Kevin Finneran, National Academy of Sciences, reported back on a recent workshop that focused on trends in the innovation ecosystem. Lastly, Miron Straf, DBASSE, discussed some recent meetings and literature relevant to the Committee's focus.

BBCSS Workshop Explores Next Generation of Individual and Group Assessment

The Board on Behavioral, Cognitive, and Sensory Sciences (BBCSS) at the National Academies held a two-day data workshop on "New Directions in Assessing Individuals and Groups." The workshop was a project of the Committee on Measuring Human Capabilities: Performance Potential of Individuals and Collectives (chaired by Jack W. Stuster, Anacapa Sciences, Inc.) and sponsored by the U.S. Army Research Institute. Following publication of a workshop summary report, the Committee will conduct a consensus study to develop findings, conclusions, and recommendations for a final report. More information about the project is available here.

Fred Oswald, Rice University, gave an overview presentation on "The Evolving Goals of Candidate Testing and Its Role in Personnel Selection." He explained that classic psychometrics focused on discrete constructs assessed through full-scale testing. Now, however, the field is moving toward assessing characteristics that are complex, conditional on environment, adaptive, and multidimensional (ability to multitask, for example). He cautioned that in order to be useful, the new models should work better or more efficiently than traditional methods (rather than simply producing the same results). He also noted that factors like culture and team dynamics can have an impact on assessments, which researchers should be aware of.

Alina von Davier, Educational Testing Service (ETS), gave the keynote address on "Psychometrics for a New Generation of Assessments." She pointed out that there is a gap between how people study and learn and the methods we currently employ to measure their capabilities. The next generation of assessments will consist of new applications of existing assessments (to test new skills, age groups, communities, etc.), new tasks (more complex challenges or games), new modes of administration (testing subjects continuously or through distributed technologies), higher stakes (where assessments may be considered in economic decision making), and more complex data

structures (incorporating both process and outcome data and longitudinal data). ETS's Center for Advanced Psychometrics was created to develop such assessments. As an example, von Davier described a collaborative problem solving task, which enables researchers to code team interactions to analyze both process data (observed while the team is at work) and outcome data (the team's result in the task). Such data can be used to determine which interactions were responses to previous team members' contributions and which were spontaneous, modeling how team members played off one another.

Rodney Lowman, Alliant International University, discussed some of the ethical implications of future testing techniques and personnel selection paradigms. He identified six major ethical areas for further consideration: 1) Expanding assessment from a single domain or construct to a multidimensional profile, 2) Testing individuals once versus continual testing, 3) Assessing for team fit instead of selecting the best-qualified individual, 4) Use of biomarkers, 5) Whether those being assessed are entitled to feedback, and 6) Unproctored versus proctored testing and the ethics of internet testing.

Emerging Constructs and Theory

Christopher Patrick, Florida State University, discussed a "Psychoneurometric Approach to Individual Differences Assessment." He described how individual neurobiological indicators can assess an individual's disposition across broad constructs. Patrick gave two examples of neurobehavioral constructs: 1) defense reactivity (a subject's negative emotional response in the face of threat), which characterizes a person's level of fear vs. boldness, and 2) inhibitory control (a subject's ability to restrain impulses).

Michael Kane, University of North Carolina, Greensboro, gave a presentation that focused on "The Emerging Constructs of Working Memory Capacity and Executive Attention." He explained that working memory is used by the brain to maintain quick access to goal-ready information. Kane showed the results of his research on the effects of distraction on working memory (when subjects are distracted, working memory capacity decreases). He also discussed the impact of mind-wandering on working memory.

Todd Little, Kansas University, spoke about "The Agentic Self: Action Control Beliefs." He noted that a sense of personal agency is a behavioral self-regulation. An individual's "action control beliefs" toward a given goal consist of their understanding of what it would take to accomplish the goal and their self- assessment of whether they possess the necessary characteristics. Little noted that these beliefs are acquired through a variety of means, including experience, instruction, feedback, observations, social comparisons, and emotions.

Measuring Difference and Predicting Performance for Individuals

Paul Sackett, University of Minnesota, proposed a "Taxonomic Structure for Thinking About Ways to Improve the Quality of Selection Systems." He suggested researchers could identify new predictor constructs, measure existing constructs better (through contextualizing assessment questions, utilizing narrower personality dimensions, and implementing real-time warnings for false responders), better understanding of the criterion domain (more accurate specification of what aspects of "performance" are desired), and better specification and estimation of predictor-criterion relationships (when, for example, the relationship between a predictor and a given performance are not linear).

James Rounds, University of Illinois at Urbana-Champaign, argued for "Rethinking Interests." Noting that researchers have deemphasized the role of interests in determining performance over the past few decades, Rounds discussed three studies suggesting that interests may be far more useful predictors of success than previously thought. One study found that interests are good predictors of performance (when congruence between interests and environment is considered); another indicated that interests can be better than personality traits at predicting career and educational success; the third study suggested that interests stabilize earlier in life than previously thought and

remain more stable than personality traits.

Earl Hunt, University of Washington, spoke about "The Assessment of Cognitive Skills: Case History, Diagnosis, and Prognosis." Hunt reminded participants that cognitive skills' testing is only able to assess what can be measured within the predetermined test window, and thus results are limited by those constraints. New technology has expanded what can be measured to include skills like working memory, prioritizing logic over instinct, overcoming unconscious bias in decision making, and spatial orientation skills. However, the limits of assessment still prevent researchers from testing skills like taking multiple perspectives to solve problems, group problem solving, and personal discipline.

Group Composition Processes and Performance

Scott Tannenbaum, Group for Organizational Effectiveness, discussed "Team Composition: Theory, Practice and the Future." Keeping in mind the complexity and multiple constraints (time, availability, resources) of putting together an effective team, Tannenbaum and his collaborators designed a prototype for a decision aid system. The system allows the user to inputs team requirements, candidate attributes, and any constraints (eligibility criteria, people who can't be on a team together) and uses an algorithm to produce potential team configurations and predict the effectiveness and potential obstacles for each team.

Leslie DeChurch, Georgia Institute of Technology, gave a presentation on "Understanding & Enabling the Collective Capabilities of Teams." She suggested that the way teams are formed (whether they are formed by team members or a third party and how much information is available about individuals' characteristics during the formation process) has an impact on the teams' performance. DeChurch and her colleagues created an online system that displayed data about individuals' work habits and allowed teams to self-organize. Teams that were self-organized had better communication and members were more confident in their ability to work together.

Anita Williams Woolley, Carnegie Melon University, spoke about "Collective Intelligence in the Performance of Human Groups." Woolley's research focused on whether a group can perform better than one would expect based on the average intelligence of its members (collective intelligence) and whether collective intelligence can translate across domains (general collective intelligence). She found that groups could be tested for collective intelligence, and that high collective intelligence was a good predictor of group learning. Factors that facilitate collective intelligence include equality of contributions, social perceptiveness, and low or moderate diversity in learning styles (visual versus verbal, etc.).

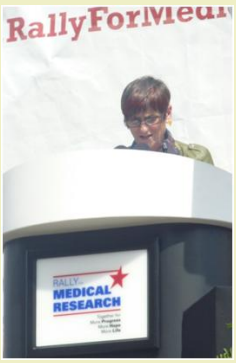
Two New NCHS Data Reports: Premarital Cohabitation and Prescription Drug Costs

A National Center for Health Statistics (NCHS) data report uses information from the National Survey of Family Growth to analyze cohabitation relationships for women over 2006-2010. The report finds that an increasing number of women (48 percent) cohabited as their first union, up from 34 percent in 1995. Seventy percent of women with less than a high-school diploma cohabited (versus 47 percent with a bachelor's degree or higher). Forty percent of these cohabitation relationships transitioned to marriage within three years. To read the complete report, click here.

A new NCHS data brief on strategies adults use to reduce their prescription costs reports that younger adults (18-64) are twice as likely as those over 65 to not take their prescription medication to save money. In addition, adults whose income was near or below the poverty line were more than twice as likely to not take their medication as prescribed to save money. Click here for the full data brief.

COSSA Joins the April 8th Rally for Medical Research: "More Progress,

More Hope, More Life"



Rep. Rosa DeLauro

COSSA joined the American Association for Cancer Research (AACR) and more than 200 organizations for a "Rally for Medical Research" on the steps of the Carnegie Library in Washington on April 8th. The Rally represented a unified call by thousands of scientists, researchers, patients, doctors, and advocates in protest of the sequestration cuts to medical research funding for the National Institutes of Health (NIH).

Ranking Democrat of the House Appropriations Subcommittee on Labor, Health and Human Services and Education (LHHS) Rep. Rosa DeLauro (CT) and Ranking Democrat on the House Budget Committee Rep. Chris Van Hollen (MD) spoke at the Rally. Van Hollen's district includes the NIH. "When they see a grassroots movement rising up, from doctors, from scientists, from advocates and patients, you are impossible to ignore," DeLauro told Rally participants. Van Hollen focused his remarks on the detrimental impact the sequester will have on scientific research. There were also statements of support from President Obama, Democratic National Committee chairwoman Rep. Debbie Wasserman Schultz (FL), and Sen. Jerry Moran (R-KS).

Rep. Debbie Wasserman Schultz

As noted on the webpage for the Rally: "The goal of medical research is to extend the length of life and to improve the quality of life for the population. Medical research includes the basic, applied, and translational research intended to aid and support the body of knowledge in the field of health and medicine. Medical research can be divided into two general categories: the evaluation of new treatments for both safety and efficacy in what are termed clinical trials, and all other research that contributes to the development of new treatments. A wide range of options to prevent and treat disease requires knowledge of a wide range of biological, behavioral, and social factors. Medical research helps us learn how our bodies work, why we get sick, and what we can do to get and stay well."

The Rally was streamed lived for participation by local rally sites across the country and is available for viewing on YouTube.

Research on Comparative Effectiveness and Implementation of HIV/AIDS and Alcohol Interventions

According to the National Institute of Alcohol Abuse and Alcoholism (NIAAA), HIV-positive alcohol users remain an underserved group at high risk for medication adherence and rapid disease progression, medication toxicities, organ failure, and poor viremic control leading to increased risk of transmission and premature death. To respond to this fact, NIAAA is supporting a new initiative to advance the knowledge of the comparative effectiveness and implementation of alcohol-focused interventions among HIV-positive individuals.

The goal of the initiative is to inform clinical decision-making that will enhance treatment outcomes and reduce harms associated with interventions for HIV-positive individuals with alcohol use disorders. The initiative is divided into two parts: 1) testing alternative approaches to the implementation of effective alcohol interventions to reduce HIV disease transmission and progression in a variety of settings; and/or 2) comparative effectiveness research focused on understanding factors related to alcohol reduction and patient engagement in appropriate alcohol and HIV care leading to long-term retention in treatment.

Specific research objectives of the funding opportunity announcement (FOA), RFA-AA-13-003, Research on Comparative Effectiveness and Implementation of HIV/AIDS and Alcohol Interventions, include:

- Comparative research on behavioral interventions for alcohol use disorders in "real world" clinical settings;
- Comparative research contrasting pharmacotherapeutic and behavioral interventions in "real world" clinical settings;
- Comparative health services research on individual patient characteristics, venues, organizations and management approaches for delivery of alcohol/HIV services;
- Research that seeks to address the aforementioned objectives for the population as a whole and in specific subpopulations at highest risk for HIV progression or transmission as a result of alcohol misuse;
- Research on the implementation of these interventions, with emphasis on elucidating disparities among at-risk and HIV-positive racial/ethnic groups with respect to alcohol treatment, health services, and prevention.

NIAAA points out that well-controlled clinical trials have identified both pharmacological and behavioral therapies for alcohol dependence, yet is less is known about the response to these interventions among patients seem in typical HIV clinical settings with multiple comorbidities and different levels of severity. Such information might reveal which treatments work best among different subsets of HIV subsets of HIV positive patients and identify factors that could predict the safety, benefits and risks associated with a particular intervention.

The Institute further notes that in addition to the many unanswered questions about comparative effectiveness of various treatments for alcohol use disorders, it is unknown how decision-makers and clinicians will choose to use these interventions based on their perceived efficacy and effectiveness, available resources in specific settings, or characteristics of specific populations.

"Implementation science is the scientific study of methods to promote the integration of research findings and evidence-based interventions into health care policy and practice and hence to improve the quality and effectiveness of health services and care." In this regard, manualized brief alcohol interventions and other therapies are being evaluated, but need to be tested in a wider variety of settings for fidelity, acceptability and ease of use, and effectiveness. Additionally, training for both researchers and interventionists needs to be increased to ensure appropriate implementation. The primary goals of this activity are to ensure the development of a framework for comprehensive research on the implementation of interventions for co-occurring alcohol and HIV/AIDS, and to facilitate the uptake of effective alcohol-focused interventions in both alcohol and HIV testing and treatment venues.

Specific goals for translation research in this area includes but is not limited to the development and testing of novel methods for: a) identifying HIV-positive individuals in need of alcohol interventions; b) linkage to acute care for co-occurring HIV/AIDS and alcohol use disorders in specific community treatment settings; and c) linkage to care over the lifespan for substance using, abusing, and dependent individuals, with a particular focus on alcohol and other licit drugs. Additional priorities for translational research include: 1) to improve measures relevant to processes and outcomes within these comorbid populations, including the development of indices of disease risk, severity, and mortality; 2) to assess the costs and comparative effectiveness of new technologies associated with point points of care medical diagnostics and improved technologies for monitoring substance use events and virologic failure in large systems of care.

Letters of intent are due April 29, 2013. Applications are due May 29, 2013. For more information and/or to apply, see http://grants.nih.gov/grants/guide/rfa-files/RFA-AA-13-003.html.

Applications Wanted for Alcohol Use Disorders: Treatment, Services, and Recovery Research

The National Institute of Alcohol Abuse and Alcoholism (NIAAA) has issued a series of funding opportunity announcements (FOA) for research project grants (PA-13-160), small grants (PA-13-162), and exploratory/developmental research grant (PA-13-161), designed to support research on behavioral and pharmacological treatment for alcohol use disorders; organizational, financial, and management factors that facilitate or inhibit the delivery of services for alcohol use disorders; and phenomenon of recovery from alcohol use disorders.

The small grant FOA seeks small research projects that can be carried out in a short period of time with limited resources including pilot and feasibility studies, secondary analysis of existing data; small, self-contained research projects; development of research methodology; and development of new research technology. NIAAA emphasizes that the scope of interest is wide-ranging, including behavioral treatments; recovery strategies; and the organizational, financial, management, and environmental factors that facilitate or inhibit the delivery of evidence-based services for alcohol use disorders.

Research objectives include, but are not limited to: behavioral therapies and mechanisms of behavioral change; health services research and studies on a number of special emphasis populations and topics (psychiatric/substance abuse/medical comorbidity; adolescents; health disparities/special populations; and use of novel methods and technologies).

Innovation Research Methods: Prevention and Management of Symptoms in Chronic Illness

The National Institute of Nursing Research (NINR) and the National Cancer Institute (NCI) have issued a funding opportunity announcement (PA-13-166), Innovation Research Methods: Prevention and Management of Symptoms in Chronic Illness, that seeks to update the randomize control trial (RCT) design using novel research methods that are practical, innovative and hold promise for producing more effective outcomes. The traditional scientific design for developing and determining the efficacy of a treatment intervention consists of designing the intervention a priori, testing it in a RCT, conducting analyses, revising and retesting the intervention in a new RCT.

NINR and NCI note that research questions and treatments of symptoms such as pain require novel research designs beyond the traditional RCT. The institutes further note that developing and testing the most optimal, potent treatment regimens, and strategies possible maximizes public health impact, enhances personalized health, and conserves health resources. Novel clinical research designs applied to symptom management trials may identify those treatment strategies that best alter the course of symptom burden in chronic illness by addressing the issues of varied treatment responses across patients, subject retention, adherence to treatment regimens.

The FOA uses the Academic Research Enhancement Award (AREA) which enable qualified scientists to receive support for small-scale research projects. The grants are intended to create a research opportunity for scientists and institutions otherwise unlikely to participate extensively in the National Institutes of Health (NIH) programs.

For more information and/or to apply, see http://grants.nih.gov/grants/guide/pa-files/PA-13-166.html.

NIDA Mentored Clinical Scientists Development Program Award in Drug Abuse and Addiction

The National Institute of Drug Abuse (NIDA) Mentored Clinical Scientists Development Award in Drug Abuse and Addiction (K12) is designed to encourage institutions to develop and/or sustain programs that support intensive, mentored research training and career development experiences for clinician scientists. The expectation is that these programs will provide scholars the mentoring, training, and research experiences necessary for research independence in the area of drug abuse

and addiction. Each award is intended to provide three-five years of consecutive 12-month appointments.

Clinician scientist is defined as an investigator who has a medical doctorate, public health doctorate, or other doctorate related to human healthcare; and/or an investigator with a research doctorate and either clinical responsibilities or direct interaction with human subjects-- physicians, clinical psychologists, epidemiologists, social workers, pharmacists, and behavioral scientists, among others.

For more information see http://grants.nih.gov/grants/guide/pa-files/PAR-13-163.html.

Addressing Health Disparities in NIDDK Diseases: Applications Wanted

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the National Institutes of Health (NIH) recognizes that there are many diseases and disorders that disproportionately affect the health of underserved populations in the U.S. African-Americans, Hispanic Americans, American Indians, Alaska Natives, some Asian-Americans, Native Hawaiians and other Pacific Islanders, and rural populations experience much higher risks of and poorer health status than the general population. Several of the diseases that disproportionately afflict underserved populations are high priority research areas for NIDDK.

The Institute is seeking research designed to improve the understanding of the causes of disparities in health and disability in the U.S. and to develop and test more effective interventions for reducing and/or eliminating health disparities directly related to its mission. Accordingly, it has released a funding opportunity announcement (FOA), Addressing Health Disparities in NIDDK Diseases (PA-13-183), to this end. Research approaches may include metabolic, genetic, clinical, behavioral, and/or epidemiologic studies in representative populations.

Appropriate topics include but are not limited to:

- Testing approaches that influence healthcare delivery to reduce disapraties in prevention and treatment;
- Better understanding of the racial and ethnic differences in screening, diagnosis, incidence, and prevalence of NIDDK diseases and whether there are differences among sub-groups in the rates of progression; with an emphasis on identifying factors that help inform treatment development, practice or policy designed to reduce or eliminate disparities.
- Studies to investigate environmental or behavioral factors, such as medical care, lifestyle, and socioeconomic status that may contribute to risk for development and progression of NIDDK diseases and related complications.

For more information and/or to apply, see http://grants.nih.gov/grants/guide/pa-files/PA-13-183.html.

Drug Abuse Dissertation Research Awards Available

The National Institute of Drug Abuse (NIDA) of the National Institutes of Health (NIH) recently announced the availability of NIH Dissertation Award grants (R36) to support drug abuse doctoral dissertation research in NIDA areas of priority. These areas include research on basic and clinical neuroscience and behavior, developmental trajectories, epidemiology, prevention, treatment, services, and/or women and sex/gender differences. NIDA supports more than 85 percent of the world's research on the health aspects of drug abuse and addiction. Research supported by the Institute encompasses basic, behavioral, and applied science related to the underlying mechanisms and health effects of drug abuse.

It is hoped that this program will ultimately facilitate the entry of promising new investigators into

the field of drug abuse research and promote transdisciplinary collaborations. Accordingly, grant support is designed to encourage doctoral candidates from a wide variety of academic disciplines and programs to conduct research in these areas of interest to NIDA.

The Awards will provide selected students with grant-in-aid support to perform drug abuse dissertation research on a topic related to the study of development, epidemiology, prevention, treatment, services, or women and sex/gender differences, and thereby increase the pool of highly talented drug abuse scientists who conduct research in these areas.

Given the complexity of drug abuse research, it is permitted to conduct the proposed dissertation research in conjunction with an ongoing research study or to use extant data. Research studies focused on HIV/AIDS and Health Disparities are encouraged. Examples of the research foci of the grant program include but are not limited to:

- Studies of multiple factors that influence drug use outcomes. That is, studies that examine genetic, neurological, biomedical, familial, behavioral, environmental, social, cultural, developmental, psychopathological, and psychological factors, their interactions, and mediating characteristics.
- Research to assess the impact of mental health interventions in childhood on subsequent drug abuse.
- Studies to assess the nature, scope, and consequences of drug-related trauma, violence and crime including violent and nonviolent crime, interpersonal violence, and substance abuse and other comorbid physical and mental health problems.
- Research to assess the impact of drug use on adverse behavioral, social, and health consequences (e.g., trauma, violence, educational attainment, HIV) as well as the role of adverse consequences on further drug involvement.
- Methodological research to improve the analysis of complex prevention trial data-for example, statistical modeling for multi-level data, analysis of longitudinal data, and research examining complex interactions between qualitative and quantitative outcome data.
- Research involving secondary analyses of existing behavioral treatment research data sets to identify predictors, moderators, or mediators of treatment outcome, mechanisms of action of treatment, or secondary effects of treatment on participants in various contexts (e.g., peer group, school, work, family) or on participants' family members (e.g., children).
- Conducting secondary analysis of combined behavioral and pharmacological treatment clinical trials.
- Research on instrument development and/or psychometric analysis of tools for the clinical assessment of drug abuse, treatment efficacy, treatment fidelity, and HIV risk, or for constructs believed to be related to mechanisms of action of behavioral treatment efficacy.
- Studies of developmental cognitive processes of rewards, losses, social cues in decision-making, and value incentives that are relevant to treatment and integration of relevant developmental cognitive processes into the development of treatments.
- Studies to inform our understanding of how peer influence contributes to decision making processes in group treatment settings.
- Research focusing on the development or improvement of research methods---including but not limited to study design, measurement, data collection, and analytic procedures---for studying the societal impact of drug abuse and/or the delivery, quality, outcomes, and economics of drug abuse prevention or treatment services.

Applications may be submitted after May 16, 2013. For more information and/or to apply see http://grants.nih.gov/grants/guide/pa-files/PAR-13-182.html.

Editor's Note

This issue of Update was delayed one week in order to present the numbers from the President's budget request. As noted earlier, the next Update (May 13) will be the special issue that analyzes that budget proposal for over 50 agencies that support social, behavioral, and economic sciences research.

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