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## HOUSE PASSES SCIENCE, STATE, JUSTICE, COMMERCE BILL; CENSUS BUREAU LOSES \$58.3 MILLION ON HOUSE FLOOR

On June 29, the House of Representatives passed the FY 2007 Science, State, Commerce, Justice, appropriations bill. During consideration of the bill on the House floor many amendments were proposed. Most tried to add money to state and local law enforcement assistance programs. A number of those amendments succeeded and the increased funding for these programs came at the expense of other programs.

The U.S. Census Bureau was particularly hard hit. One amendment by Rep. Mark Kennedy (R-MN) shifted \$50 million from Periodic Census programs, which includes funds for planning for the 2010 count and the American Community Survey, to the Byrne Justice Assistance Grants. A second amendment offered by Rep. Nancy Johnson (R-CT) moved another \$3.3 million from these same accounts to the FBI's Innocent Images program, which pursues online sex predators. Finally, another \$5 million went from Census' economic and demographic statistical programs to the Violence Against Women Act, courtesy of the efforts of Rep. Ginny Brown-Waite (R-FL).

Despite pleas from Rep. Frank Wolf (R-VA), Chair of the relevant appropriations subcommittee, Rep. Allan Mollohan (D-WV), Ranking Democrat on the subcommittee, and others, these amendments received overwhelming support. Wolf, in particular, noted that the Census Bureau was an easy target because members aren't concerned with the Census until the actual year of the count.

It could have been worse. A number of other amendments would have reduced the Bureau's funding even more, but members were convinced to find the money from other programs. There were no amendments affecting the House allocation for the National Science Foundation (NSF) (see Update, June 26, 2006 for NSF's House appropriation).

On July 11, the Senate Commerce, Justice, Science Subcommittee will mark up its version of the FY 2007 appropriations for the NSF, Census Bureau, National Institute of Justice, Bureau of Justice Statistics, and other agencies. The full Senate Appropriations Committee will consider the bill on July 13. After that things become uncertain with regard to full Senate consideration.

## NIH, CONGRESS CELEBRATE OBSSR'S 10TH ANNIVERSARY

On June 21 -23, the National Institutes of Health's (NIH) Office of Behavioral and Social Sciences Research (OBSSR) celebrated the 10th anniversary of its creation and establishment with a two-day conference on the Bethesda, Maryland campus, culminating with a congressional reception and exhibition on Capitol Hill.

Proclaiming what great pleasure it was to celebrate the 10th anniversary of the OBSSR, Director David Abrams welcomed the standing room only crowd. Abrams explained that the conference was designed to celebrate the "enormous achievements and daunting challenges that the behavioral and social sciences both face and have accomplished, not only over the last 10 years but over the past two - three centuries." The behavioral and social sciences, said Abrams, form the "crossroads between biology and behavior." Every innovation that improves society and well-being ultimately requires some form of behavior change, "a daunting challenge and great responsibility," he added. The behavioral and social sciences face "probably the grandest challenge of them all, understanding human behavior in its complexity. . . from individual lifestyle to macro global economics," Abrams continued.

NIH Director Elias Zerhouni, founding OBSSR director and now CEO of the American Psychological Association, Norman B. Anderson, and former OBSSR director, currently NIH Deputy Director, Raynard S. Kington kicked off the celebration.

## NIH Director Shares His Perspective for the Social and Behavioral Sciences

Zerhouni began by welcoming participants to NIH and expressing his satisfaction at having had the privilege of recruiting Abrams to the OBSSR and having "enticed" Kington to become his deputy, stressing that he "values the leadership both have shown."

Foregoing what he called the usual "NIH director's speech," Zerhouni provided participants with his "perspective" of where he sees the social and behavioral sciences going "in turns of its both synergy requirements with the rest of the biomedical field but also the need for the field to stimulate change" in the way health care and medicine for the future is envisioned. Pointing out that 50 percent of the burden of disease can be "directly connected to behavioral, social, and environmental issues, which have grown in importance" Zerhouni emphasized the need to enhance "our ability to influence one of the greatest challenges in our society, the growing burden of disease."

Underscoring that 75 percent of the costs of health care are related to chronic diseases, Zerhouni stressed that the importance of the social and behavioral sciences has already been seen, highlighting that for the first time there is now an "absolute decrease of death rates from cancer." This is mainly due to the reduction of smoking over the past 30 years, from 51 percent of the population smoking to less than 25 percent, he explained. "That was an epidemic," he insisted, and noted that frankly when you look at the impact it is due to a "profound realization" that this was a harmful behavior and that changes would have to come from behavior modification.

Acknowledging that the pace of social change is slow, Zerhouni declared that we need to sustain OBSSR's efforts over the next decades. Telling a story he "really likes to tell," Zerhouni talked about the disgrace, shame, and stigma once associated with using a glove in baseball. According to Zerhouni, in the 1870s the in-thing was to play baseball without gloves. It took a total of 26 years for the baseball association to change its rules and accept the use of gloves in baseball, he related. The same is true about seatbelts, he said, noting his astonishment at the time it takes for a "very simple measure" like the use of seatbelts to be accepted as a "socially-favored" behavior.

According to Zerhouni, the profound question he constantly asks himself is: Why is it that the human population does not accept change at the pace as quickly as he and scientists would like them to? It is a question he thinks relates fundamentally to our understanding of science and the way we accumulate knowledge. "Behavior is an emerging property from subsystems of which we do not have a deep understanding," he stressed. At the same time the emergent properties, mind, behavior, and thoughts are not easily reduced to their reductionist elements, he emphasized.

Zerhouni explained that in science you have to begin with a reductionist approach and you have to develop valid measures and you have to go from there and deduce general laws and emerging properties. The core challenge for OBSSR and the social/behavioral sciences is to understand the creation of systemic societal change, while hopefully avoiding the unintended consequences of those changes.

## Society on the Path to a Collision: No Single Discipline Has the Answer

Solutions are needed, Zerhouni declared. "When you look at the next 25 years and you look at every prediction, clearly we are on a path to a collision," he stressed. Health care as we know it, he continued, is not sustainable; it has to change. The issue is how is it going to change.

It is clear, said Zerhouni, that when you have a system that becomes unsustainable, policymakers like to think about immediate solutions. The first solution you have in any

organization that has difficulties is to reduce costs. The NIH is doing that, Zerhouni stressed. But when you reduce costs “at some point you reduce the essence of the system,” he continued, “people become less insured, there is less access, there is a rationing of care.” At some point you have to change your operating model, your concept of what health care is all about, he argued. When you do this, and “you really think deeply about where are we in science, you realize that there is no single discipline that has the answer,” Zerhouni asserted.

“What we need to do is provide the scientific base and the scientific evidence to provoke change at a profound level and not provoke change at the margins,” he emphasized. He added that it is not possible for him to see how we will be able to transform health in America with all of the rising threats that we know, including diabetes and obesity, which are increasing at a very fast rate, “without changing the philosophical and conceptual model of what health is all about.” Zerhouni testified to Congress that this is the “century where the 5,000 year history of patient/doctor relationship is going to change.” We have a challenge, he continued, because our ideas and our ability to see a new organization for health are actually limited because there “are a lot of barriers between disciplines.” An interdisciplinary approach, he emphasized, is necessary and the social and behavioral sciences will have an important role.

The key, he stressed, “is that we also need a new vision of how medicine and health will evolve.” We are going to evolve from a curative model of health where we waited for the disease to manifest and for the patient to lose some function or have pain, and then present him/herself to the doctor. But we all know now that chronic diseases do not occur on the day of the visit to the doctor, they really start 20 years before, they start in their communities, in their families’ lives, at a point when medical intervention is not even considered.

## Predictive, Personalized, Pre-emptive, and Participatory Medicine: A Systems Approach Is Required

Acknowledging that in Washington that you have to break a complex issue down to one sentence, Zerhouni has simplified his message into what he calls the *four Ps - predictive, personalized, pre-emptive (prevention), and participation*. It is very hard to see how the NIH will succeed without participation from patients, their communities, their political environment, their local environment, their behavioral change factors, and their social environment, he added. “If we do not understand that [medicine] needs a comprehensive, interdisciplinary solution, we will fail,” Zerhouni emphasized. “There is not one aspect of this system can succeed on its own,” he continued. So his message, Zerhouni underscored, “is that the behavioral and social sciences need to promote the idea of a systems approach.” He acknowledged, however, that the systems approach cannot be addressed as easily as in fields where you can apply reductionistic approaches as quickly and as easily as you can in more molecularly-driven research. “That synthesis is the great challenge and the reason” why he wanted to be at the conference and share his thoughts, Zerhouni concluded. Earlier in the week prior to the conference, Zerhouni congratulated OBSSR for being “a tremendous asset to NIH throughout its first ten years” in an email sent to all of NIH.

## Anderson: A Look Back to the Beginning

Norman B. Anderson noted that he was there to act as the conference’s “designated historian.” He began by recognizing that the social and behavioral sciences have made “incredible progress” over the last 10-11 years with OBSSR. He noted that OBSSR was congressionally-mandated in 1993 and officially opened its doors in 1995. The Office, said Anderson, came into existence during the time of a “steady state or no-growth budget environment,” before the doubling of NIH’s budget. Interestingly enough, he pointed out, that period is recurring. We are actually now in a period of declining budgets for NIH. He explained that it is very important that “we as behavioral and social scientists help in any way that we can to support an increase in the budget at NIH. Not only is it good for our work,” Anderson said, “but for the overall work of NIH.”

In the beginning, OBSSR faced a number of challenges, Anderson began. The first of these was visibility. The OBSSR was a new office and on campus only a few of the directors knew about it. The other 15,000 people had not a clue as to what OBSSR did, he related. It was the same thing with the extramural community; most scientists did not know office existed.

A second challenge was to justify OBSSR’s existence, particularly on the NIH campus. Anderson recalled that he was often asked “why is such an office here?” He also heard from NIH staff that “NIH does not fund social and behavioral sciences.” Many of the people who worked at NIH did not realize that there was a “very long tradition” of NIH funding social and behavioral science research, he noted. More “substantively, the social and behavioral science community had to work towards scientific credibility,” he explained. One question that repeatedly came up, he noted, was: Is the science any good and worth funding? Anderson added that you hear those types of questions, particularly in tough budgetary times. We had to show that our science was important to NIH, he recounted.

OBSSR was a brand new office that did not fund grants; it does not tell institutes what to do. So the question was: How are you going to accomplish the specific mandates given to the Office by Congress. According to Anderson, the first step for OBSSR was to develop a philosophy. Congress mandated the Office’s mission, but it needed a philosophy to guide its work. “At the highest level, the OBSSR’s philosophy was that it supported the overall mission of the NIH through advancing behavioral and social sciences research to

improve the health of the public," he said.

Anderson reminded NIH staff that when he was there he was fond of paraphrasing late President John F. Kennedy: Ask not what NIH can do for behavioral and social sciences research ask what can social and behavioral sciences research can do for NIH. The community felt we had something very important to offer this institution and by focusing on the kinds of things we could do, we could help NIH function better. We believe that "scientific advances could be accelerated by greater attention to behavioral and social sciences factors and their interactions with biomedical variables, many of the same things Dr. Zerhouni spoke about," Anderson explained.

There are a number of reasons why OBSSR was important, he continued. While obvious to the social and behavioral science community, in 1995 they were not obvious to the NIH. These reasons included: 1) behavioral and social factors are major contributors to health and illness; 2) behavioral and social factors represent important avenues for diagnosis, treatment, and prevention; and 3) by focusing more on behavioral and social factors and their interactions with biological factors, the NIH would be more effective in fulfilling its mission.

## A Bold New Agenda for the Future Needed

At NIH, "science rules" explained Anderson, emphasizing that "very good science is the main currency at NIH." We had to showcase our science. There was a "great deal of skepticism on the part of NIH as a whole as whether the social and behavioral science research that was being funded was any good." So the OBSSR had to put together a number of different activities and provide a variety of forums that allowed "our very best to shine," Anderson explained. He acknowledged that a number of the people attending the conference participated in those events, which included speaker series and briefings for NIH directors.

Anderson continued that once the Office had a philosophy and a justification it still needed a plan of action to advance the field. That led to the development of the OBSSR strategic plan. The original three strategic goals included: 1) advance behavioral and social science training; 2) integrate a bio-behavioral, interdisciplinary perspective, what is now called transdisciplinary, across NIH; and 3) improve communication among health scientists and with the public. Most of those goals have been accomplished over the last ten years, "an incredible success story," Anderson applauded. Now we are ready to take the next step, he declared. Echoing Zerhouni, the challenge now, Anderson asserted, is that OBSSR continue to play a critical role in helping NIH fulfill its ultimate objectives. What we need now that we have accomplished most of the activities in the initial strategic plan, he concluded, is "a bold new agenda for the future."

## Kington: Challenges for SBS in Connecting with the Broader Biomedical Community

Kington, who served approximately two years as OBSSR's second director, noted that his first reaction about the job was that he was very fortunate to have come into that position when he did. The Office had/has a first rate staff of scientists and administrators who were/are fully committed to the mission of the Office. He also shared that he appreciated mentoring her received from Ruth Kirschstein, then Acting Director of the NIH.

According to Kington, he was also fortunate that Anderson had commissioned an Institute of Medicine (IOM) report, *New Horizons in Health*, that identified the most promising areas in the behavioral and social sciences that would help the agency achieve its mission of advancing science to promote the Nation's health. The Committee that wrote the report, said Kington, was directed to focus on areas of science that were of interest and common to many of the NIH institutes and centers (ICs), represented the greatest scientific opportunities, and were of greatest importance to the health of the public. The list of ten priority areas identified by the Committee remains a "great articulation of high priorities for exploration in the social and behavioral sciences and in many ways that list connects remarkably well with Dr. Zerhouni's vision of the four Ps," Kington related.

In fact, he explained, the first area in the report "was the development of so-called early warning indicators that would allow the identification of precursors to disease at the earliest possible stage of development which is a perfect match to the predictive and personalized Ps." Kington related that he knew then that the priorities identified by the Committee "were right on target" and accordingly set upon giving a series of presentations of the report's findings to the ICs advisory councils. Prior to making these presentations, he met individually with the IC directors to discuss their plans and expectations for interacting with OBSSR. According to Kington, he wanted a chance to reinforce the idea that the Office was really there to help the 27 IC directors achieve their missions. The meetings, Kington noted, were extremely valuable in helping him understand how the directors saw these areas of science. He was able to discern "pockets of really profound lack of understanding of the importance of these areas of science in helping the [NIH] achieve its mission."

He shared that one "of the most stunning moments in his tenure," at the NIH, including the last three years spent as Deputy Director, occurred when he proposed that an IC's training program expand to include more opportunities to train social and behavioral scientists. The response from the Institute director, Kington related, was "but you must understand that the students in this program are the very best and the brightest students." Stunned, he recounted that "he literally laughed at everything embedded in the

comment” and proceeded to explain “that it was in his experience not uncommon for even the brightest students to choose careers in the behavioral and social sciences.”

Kington explained that he described that experience for two reasons. One is to remind everyone that there “remains a substantial, although [he] believes, diminishing amount of bias against and a lack of understanding of these areas of science in the traditional biomedical research community.” Second, to make the point that it is highly unlikely that an IC director would make that comment to him today he would like to think “reflects a broader understanding of these fields, rather than better efforts to edit what is said to the director of OBSSR.” Even then, Kington emphasized, exchanges like that were rare. It was the only meeting that he left feeling there “was little room for dialogue in exploring opportunities” for collaboration with OBSSR. To the contrary, he underscored, when he went in expecting resistance or indifference, he left the meetings impressed with the understanding and openness of the director to collaboration. After completing the meetings with the directors, he was “genuinely pleased with the degree to which the agency as a whole embraced the idea that support of behavioral and social sciences was essential if the agency was to succeed.”

Kington noted that he divided the ICs into three categories: 1) those who got it and saw these fields as being an essential to their portfolios and essential investments for achieving their missions; 2) those who were just beginning to explore these areas and were open to them and knew at some level that in order to achieve their missions they needed to think more about these investments in their portfolios; and 3) those who believe that these fields are “irrelevant to their missions or worse, a waste of money.” He believes now, as he did then, that the vast majority of the ICs fall into the first two categories. “That is a significant achievement for the behavioral and social sciences,” he emphasized.

Yet, there remain parts of the biomedical community strongly hanging on in that last category. Scientists who believe that everything will “be fixed in the great by and by simply by a pill or genetic manipulation of some sort and have little use for the behavioral and social sciences in their vision of where science should go.” He related that while the continued presence of that kind of thinking remains “a great disappointment” to him, that “even worst [this type of thinking] may result in missed opportunities for the scientific community that will lead to the evidence base that will ultimately lead to the improvements in health for the Nation.”

### ‘Cultural Challenges’ for the SBS

Acknowledging that he had tried to be “very frank” in sharing his vision of the challenges before the behavioral and social sciences in connecting into the broader biomedical research community, including the bias that continues to exist, Kington expressed his concern regarding the responses of some social and behavioral scientists to the challenges they face: both the scientific challenges and what might be described as “cultural challenges.” Even with the knowledge of pockets of real bias against and lack of understanding of the social and behavioral sciences among “those who should know better,” Kington insisted that “the worst thing that the behavioral and social sciences can do is use that as an excuse not to be self critical, or more important, not to be self correcting.”

Kington noted that he has seen examples of resistance to open self-criticism in these fields because of the fear that it will influence those who hold the purse strings. While he understands the urge not to “air dirty laundry and give those who are already biased another excuse to act on that bias,” he also understands that there is a price to be paid for putting forth a “uniformly positive but incomplete picture” of a group of fields of science. If given the choice, Kington emphasized that he would choose the hard truth any day over an incomplete but pretty and false picture if it means it will help us quickly advance in addressing the real scientific challenges these fields face.

The greatest challenges he believes these fields face are related to the rigor of measurement of behavioral and social causal factors in outcomes. He acknowledged, however, that there is “even bias in the language of how these challenges are described by those outside of these fields.” The same types of problems and measurement in the biomedical sciences are referred to “as challenging and complex,” but when they occur in the behavioral and social sciences are often referred to as “fuzzy and poorly defined.” But the problems are there nevertheless, Kington pointed out. Without advances in addressing these problems the integration of the behavioral and social sciences into the research enterprise to maximize our impact on health will be limited, he stressed. He noted that he has been impressed by Abrams’ readiness to begin a dialogue on these thorny measurement issues in ways scientists and other disciplines can appreciate. “That is no small accomplishment,” Kington maintained.

The other area Kington continues to have concern about is the need for scientists trained to bridge the behavioral, social, and biomedical sciences. Perhaps, he related, “there is no area with greater need than the area of gene-environment interaction where there are enormous possibilities for new areas research building on the base of the behavioral and social sciences.” These areas, both the training of a new generation of behavioral and social scientists who can bridge into the biomedical sciences and the importance of the behavioral and social scientists in disentangling gene-environment interactions, were also identified by the IOM report as a high priority area, he stressed.

Kington concluded that it should come as no surprise that “he believes the behavioral and social sciences have a role to play at every stage of the continuum of health research, from the most basic, which seeks to understand the fundamental structures and systems of the human body and its interaction with the environment, to the most applied research aimed at ensuring that scientific advances are applied in real-life settings.” Although, he conceded, the easiest case for the importance of these disciplines is health research at the applied end of the continuum.

According to Kington, an awareness of that importance is growing. “We can have a pill to correct every conceivable medical and public health problem, but ultimately a person must first obtain that pill, and second, swallow it,” he suggested. For at least the foreseeable future and on a long-term basis for some, with fewer side effects, people will still need to have this process of obtaining and taking these medications. As any practicing health professional will tell you, he continued, this is a deceptively simply challenge, and yet, one that is extraordinarily difficult even when the scientists, the health providers, and the patients all know that the pill will ultimately treat or cure a disease.

The importance of the behavioral and social sciences in addressing the problems of assuring that treatments are used appropriately may seem self-evident, but Kington ventured that many scientists involved in research that leads to the creation of these magic pills understand little about the challenges in getting each person to take them appropriately. Kington noted that the recognition of the value of these pills at points along the other end of the continuum of research is growing and there is broader acceptance of the need for evidence-based behavioral interventions even “when we are making advances in understanding causation at the very most basic molecular and genetic level.”

Fundamentally, said Kington, “the behavioral and biomedical sciences are greatly expanding their visions of how they connect to the social sciences.” Many of the advances that will allow us to get better at predicting, as noted by Dr. Zerhouni in the fourth P, will also assist us in getting better at targeting behavioral interventions. “The need for better behavioral interventions will not be reduced anytime soon,” Kington insisted. In the vision of health and medicine that Zerhouni outlined as the four Ps, the behavioral and social sciences are not only relevant but essential if the participatory P is to be fully realized, Kington stressed. The behavioral and social sciences “are the disciplines that will allow us with scientific rigor to engage individuals, families, and communities as active partners in this new world of medicine and health.” He urged these disciplines “to step up to the plate on that front.”

In spite of his criticism of both the biomedical community and its continued pockets of resistance to acceptance of behavioral and social sciences as essential parts of the portfolio of the NIH, and the social and behavioral sciences for their pockets of resistance to self-criticism and self-correction, Kington concluded that he sees great opportunities for the application of the behavioral and social sciences in helping the NH achieve the four Ps described by Zerhouni.

## Many Challenges Remain

Noting that the world is changing incredibly rapidly, Abrams provided an overview of the impact of those changes. Abrams cited the mapping of the human genome and gene-chip technology and the change it has brought to the biological sciences, including systems integration, which Abrams noted is helping to move them to the next level, as an example. Abrams expressed his belief that the same is coming true for the behavioral and social sciences as informatics and communications technology provide a set of powerful new tools to understand behavior change and the complexities of change at multiple levels of structure.

The big picture, discussed Abrams, is the power of behavioral and social trends. For example, he noted that life expectancy has increased an astounding 30 years in the past century. The vast majority of that increase, particularly in the early part of the century, he explained, is due to changes in social and economic factors, including the increased quality of life. While behavioral and social research cannot take credit for all of this, he acknowledged, it does show the “profound power of small changes over large number of years to create huge absolute disease risks or huge absolute benefits at the societal and population level.” Whether it is life expectancy or increased expectations for the aging population over age 65, or infant mortality, we are improving, he maintained. Yet, Abrams emphasized, over the past few years as a result of fiscal and other constraints when compared to 20 other countries, America is actually slipping in some health measures.

The incredible change in cardiovascular disease since the 1960s is another example of positive change, said Abrams. Here epidemiological and risk factors research such as the Framingham study have identified some of the behavioral risk factors. In addition, there have been great breakthroughs in biomedical sciences and treatment. According to Abrams, it has been estimated that five or six years of the 30 years of increased life expectancy is the result of improvement of detection and treatment, as well as the lifestyle change that has occurred in our population. But without the behavioral, social, and biomedical sciences working together, he contended, we could expect many more deaths per year, acknowledging at the same time, that heart disease is still the leading cause of death and disability in our country. So, there is plenty more work to do, he insisted.

Abrams cited the HIV/AIDS epidemic as another example of a success story of biomedical, behavioral and social sciences working together in partnership. It includes working to implement the knowledge base from behavioral and social science research to reduce the incidence of HIV through understanding risky behavior, employing appropriate ways to protect confidentiality, reducing stigma, allowing individuals to be screened and treated and using anti-retroviral therapy.

Perhaps, Abrams insisted, the single biggest success story of the 20th Century is the story of tobacco use. This is a human-created epidemic, largely created by technology at the turn of the century through the creation of the automatic tobacco rolling machine which allowed for mass production and low costs for marketing and packaging of cigarettes. Abrams looked at the epidemic beginning in 1910 and highlighted the 20 year incubation period for lung cancer, the leading cause of death from tobacco. Ninety percent of all lung cancer would go away if there was no smoking, he pointed out. While we have been able to remove tires from the market place when there is an excess of predicted deaths, “we have been unable to remove this [cigarettes] defective product from the marketplace,” he bemoaned.

## Emerging Public Health Threats and Persistent Health Challenges Remain

Emerging public health threats, Abrams pointed out, include: unsustainable cost of health care, obesity, the pandemic flu, natural and human made disasters, and an aging population. At the same time, persistent health challenges remain: disparities in health, tobacco use, and the toxic built environment, which he contended is an unintended consequence of progress.

We have to adjust our timeframes for the behavioral and social sciences and the basic science discovery process, Abrams cautioned. As Dr. Zerhouni noted, it is realistic to change a population in 25 - 30 years, he explained. That is the time frame of the uptake of the tobacco epidemic between the 1920s and the 1960s and it is the timeframe between the 1960s and 2000 for cutting tobacco use in half through multiple interventions and discoveries through biological sciences working in partnership with behavioral, social, and population sciences. According to Abrams, that timeframe is reasonable and we should not expect short-term, quick-fix solutions that may, in fact, inadvertently from a systems perspective, create unintended consequences and perturbances somewhere else in the system. Hence, he stressed, the systems philosophy that Zerhouni alluded to is an essential part of our strategic plan for learning to use systems computer science and systems thinking in the sciences so the kind of progress being made by biology can be approached in what he would call "systems-sociology or systems-populomics and systems behavioral psychology," explained Abrams.

The keys to the future, according to Abrams, include: capitalizing on new discoveries and new tools, conducting interdisciplinary science, and building partnerships to solve problems. "The idea of a sharp distinction between health and disease is really a medical artifact," he argued. The action is in the interaction, explained Abrams.

He drew the audience's attention to what he described as "a recent ground-breaking, theoretical and conceptual article" by Glass and McAtee in *Social Science and Medicine* (April 2006), which discusses the "concept of embodiment." This means that an individual over the lifespan is an expression of the total interaction among its environment, its genome and the expression of genetic substrates. "That leads to a dynamic, interactive and ever-changing organism at an exquisite level of complexity that only partnerships from genomics to global economics that only as systems integration can really begin to do justice to really understanding the genes for chronic diseases," Abrams contended. "These genes are multi-determined and multi-factorial and require a characterization at a systems level of the interaction and the dynamic change over real time from birth to old age."

Behavioral expression is really the leading edge of the gene-environment interaction, he insisted. Accordingly, said Abrams, "we have to bring this down from an abstract theory level to make a real difference in actual grant applications that can move the field forward and not around the edges and not in a cosmetic way, but in a dramatic new view that really capitalizes on the extraordinary explosion in knowledge and the tools and technologies that we didn't have available even ten years ago." So as we go from levels of causation, he continued, from the macro environment to under the skin and interactions with vulnerable genes, we would propose a more reciprocal interactive and dynamic model. The key conceptual integration for the future of our science, Abrams maintained, is that the biomedical model and the ecological model are really two sides of the same coin. It represents a real culture change, perhaps starting at the NIH and then filtering through because we are the leaders, he underscored.

Abrams cautioned that is also important to keep your eye on the prize. "If we are not affecting policy and making real change in individual lives through taking basic science, both behavioral and social science as well as basic biomedical science, and translating it and diffusing it to the larger population, then the job is not finished." "So we have to go from cells to society, from basic science to applications and policy, and we have to do it across the continuum of wellness and disease, from primary care, prevention and preemption to earlier detection, and reducing risk at that level to informed-decision making and focusing on diagnosing and treatment all the way through survivorship. Ultimately we have to do the efficient delivery," he emphasized.

Abrams concluded by emphasizing that the social and behavioral factors can and must be an integral part of the discovery, development, and delivery process. "Behavior is the bridge between biology and society. The vision of the OBSSR is to mobilize the biomedical, behavioral, social science and population science research communities as partners to solve the most pressing health challenges faced by our society."

## Congressional Reception and Exhibition Held

On June 23, COSSA and 18 other organizations brought the OBSSR's 10th anniversary celebration to Capitol Hill in the House of Representatives' Cannon Caucus Room with a poster session and ice cream social. The reception and exhibition highlighted the contributions of social and behavioral research supported by 17 of the 27 NIH institutes and centers. Each IC had as many as three posters featuring the research supported by that institute. Nearly 500 hill staffers, federal agency personnel, and policymakers attended the Friday afternoon event, including Rep. Darrell Issa (R-CA).

Participating NIH institutes and centers included: OBSSR, Cancer (NCI); Center for Complementary and Alternative Medicine (NCCAM); Heart, Lung, Blood (NHLBI); Human Genome (NHGRI); Aging (NIA); Alcohol Abuse and Alcoholism (NIAAA); Child Health and Human Development (NICHD); Drug Abuse (NIDA); Deafness and Other Communicative

Disorders (NIDCD); Dental and Craniofacial (NIDCR); Diabetes and Digestive and Kidney Diseases(NIDDK); Environment Health Science (NIEHS); General Medical Sciences(NIGMS); Mental Health (NIMH); Neurological Disorders and Stroke (NINDS); Nursing (NINR); and the Office of Research on Women's Health (ORW).

Besides COSSA, the event's sponsors included: Coalition for the Advancement of Health Through Behavioral and Social Science Research (CAHT-BSSR), American Association of Colleges of Nursing, American Cancer Society, American Economic Association, American Educational Research Association, American Psychological Association, American Sociological Association, Association of American Medical Colleges, Coalition to Protect Research, Decade of Behavior, The Gerontological Society of America, Institute for the Advancement of Social Work Research, The National Opinion Research Center, Partnership for Prevention, Society for Research in Child Development, The AIDS Institute, The National Campaign to Prevent Teen Pregnancy, and the University of Michigan.

## CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS COSSA

Executive Director: Howard J. Silver  
Deputy Director for Health Policy: Angela L. Sharpe  
Associate Director for Public Affairs: Pamela L. Pressley  
Assistant Director for Government Affairs: La Tosha C. Lewis  
President: Myron Gutmann

The Consortium of Social Science Associations (COSSA), an advocacy organization for Federal support for the social and behavioral sciences.

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