



COSSA

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Save the Date
**COSSA Colloquium on Social and Behavioral Science
and Public Policy**
November 4-5, 2013, Washington, D.C.

Silver to Leave COSSA at End of 2013

Howard J. Silver, COSSA's Executive Director, has informed the Executive Committee that he will step down from his position at the end of 2013. At that point, he will have been at COSSA over 30 years and served as its leader for more than 25.

Silver noted that it has been a privilege and honor to have advocated for the social and behavioral sciences all these years. He has enjoyed working with the COSSA staff, the COSSA Board, the leadership of COSSA's members, its constituents, and the many people in the science and higher education community with whom he has collaborated.

During his tenure at COSSA he has lobbied five administrations and 16 congresses. He has worked with nine National Science Foundation (NSF) directors (including two "acting"), five assistant directors for the Social, Behavioral and Economic Sciences (SBE) directorate, and numerous Administrators, Directors, Commissioners, and Assistant Secretaries within the federal agencies. Also during this period, there have been eight chairs of the House committee that has dealt with science, and it has had three different names. There have been a multitude of Appropriations Subcommittee Chairs from both parties during this time as well.

Over the years, Silver has testified many times on Capitol Hill, spoke to National Academies' committees, participated on many panels on science and budgetary policies at AAAS and professional associations' meetings, written hundreds of articles for the COSSA newsletter on congressional and executive branch actions affecting the SBE sciences, including the introductions to the special issues analyzing the president's budget proposals. He has also organized many congressional briefings on a wide range of topics, as well as planning 26 COSSA Annual Meetings (now called the Colloquium on Social and Behavioral Science and Public Policy), including two major anniversary celebrations.

Under Silver's leadership, COSSA helped create the NSF's SBE directorate, NIH's Office of Behavioral and Social Science Research, and the position of Assistant Director for the SBE sciences at the White House Office of Science and Technology. From 1994-2000, elected by his science community colleagues, Silver chaired the Coalition for National Science Funding, an ad-hoc advocacy group for enhancing NSF funding.

In addition, COSSA has been active in numerous other Coalitions and has taken leadership positions in many of them. Two of them, the Coalition to Promote Research (CPR) and the Coalition for the Advancement of Health Through Behavioral and Social Sciences Research (CAHT-BSSR), have been co-chaired by COSSA's Deputy Director Angela Sharpe since their inception. Furthermore, Silver has encouraged COSSA to take a leadership position in the efforts to diversify science, with the Consortium and Sharpe leading the Collaborative for Enhancing Diversity in Science (CEDS), which has produced reports on its two workshops.

Despite all of COSSA's efforts and many reports from the National Academies demonstrating the importance of social and behavioral research to many of the key problems facing this nation and the world, the attacks on the social and behavioral sciences and the threats to their federal funding continue. In the past, there has been criticism of numerous "silly grants," outrage over sex surveys, two tries to eliminate the SBE directorate, and attempts to eliminate or restrict these sciences at both NSF and NIH. COSSA has confronted these challenges and overcome most of them. It will continue to do so in the future, but with a new Executive Director.

The COSSA Executive Committee has hired the Isaacson, Miller search firm to conduct the hunt for Silver's replacement. More information on the search will be forthcoming.

NSF Issues Statement on Implementing the Coburn Amendment

On June 7, the National Science Foundation (NSF) issued a statement on how it intends to implement the amendment sponsored by Sen. Tom Coburn (R-OK) to the Consolidated and Further Continuing Appropriations Act of 2013 (P.L. 113-6) that restricts funding of certain projects by its political science program.

The provisions of the amendment include:

(a) None of the funds made available by this Act may be used to carry out the functions of the Political Science Program in the Division of Social and Economic Sciences of the Directorate for Social, Behavioral, and Economic Sciences of the National Science Foundation, except for research projects that the Director of the National Science Foundation certifies as promoting national security or the economic interests of the United States.

(b) The Director of the National Science Foundation shall publish a statement of the reason for each certification made pursuant to subsection (a) on the public website of the National Science Foundation.

(c) Any unobligated balances for the Political Science Program described in subsection (a)

may be provided for other scientific research and studies that do not duplicate those being funded by other Federal agencies.

According to NSF, "the Political Science Program in the Directorate for Social, Behavioral and Economic Sciences (SBE) will continue to engage panels to review grant proposals, using the two National Science Board approved merit review criteria (Intellectual Merit and Broader Impacts)." To comply with the act, "the Panels will also be asked to provide input on whether proposals meet one or both of the additional criteria required -- promoting national security or the economic interests of the United States."

Following the review panels advisory directions, NSF Program Officers will then make funding recommendations, the statement maintains. All Principal Investigators (PI) will receive the customary communications from NSF about funding decisions. However, NSF suggests "that due to the provisions stipulated by P.L. 113-6, funding decisions for Political Science proposals may be delayed."

Finally, NSF points out that these provisions apply only to SBE's Political Science program for Fiscal Year 2013. NSF says it will post information about requirements for future fiscal years as they are known. NSF encourages investigators to stay apprised of future notices regarding the Political Science program by visiting http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5418&org=SES&from=home.

NCHS Releases Annual *Health, United States* Report

The National Center for Health Statistics (NCHS) has released its annual report, [*Health, United States, 2012*](#), which is submitted each year by the Secretary of the Department of Health and Human Services to the President and Congress. The 2012 report includes data through 2011 on health statistics trends over time, including birth and death rates, infant mortality, life expectancy, morbidity and health status, risk factors, use of ambulatory and inpatient care, health personnel and facilities, financing of health care, health insurance and managed care, and other health topics. Some of the highlights from the 2012 report include:

- In 2011, 48 percent of adults did not meet federal physical activity guidelines.
- Between 2010 and 2011, the percentage of adults aged 19-25 who were uninsured decreased from 34 percent to 28 percent.
- Expenditures for hospital care accounted for 31 percent of all national health care expenditures in 2010. Physician and clinical services accounted for 20 percent of the total.

Each year the report focuses on a special topic of importance to current discussions in public health. This year's edition features a special section on Emergency Care. Notable findings include:

- One in five Americans say they visited the emergency room at least once in the past year; seven percent visited twice or more.
- In 2009-2010, cold symptoms were the most common reason for emergency room visits by children, and injuries were the most common reason for visits by adults.
- In 2009-2010, 81 percent of emergency department visits were discharged for follow-up care as needed, 16 percent ended with the patient being admitted to the hospital, two percent ended with the patient leaving without completing the visit, and less than one percent ended in the patient's death.

The complete report, an abridged version (*Health, United States, 2012: In Brief*), and the data are available [here](#). Later in the summer, NCHS plans to release an interactive version of *Health, United States, 2012*.

IOM/NRC Committee Reports on Priorities for Research to Reduce the Threat of Firearm-Related Violence

On June 5, a little more than six weeks after holding its workshop on April 23, (see [Update, May 28, 2013](#)), a Committee sponsored by the Centers for Disease Control and Prevention (CDC) and convened by the Institute of Medicine (IOM) and the National Research Council (NRC) has released a report on *Priorities for Research to Reduce the Threat of Firearm-Related Violence*.

As the panel's chair, AAAS Chief Executive Officer Alan Leshner told the workshop, the charge for the panel is to identify "the most critical research questions that can be answered in the short-term (within a three year time frame)." The goal is to "improve knowledge of the causes of gun violence, the interventions that prevent gun violence, and strategies to minimize the public health burden of gun violence."

For the CDC, the focus is on the public health aspects of firearm violence. After years of congressional restrictions on CDC's capacity to conduct research on this topic, President Obama, following the tragedy in Newtown, CT, issued an Executive Order allowing the agency to resume support of firearms-related research.

The report stressed the critical importance of collecting high quality, usable, credible, accessible data "both for advancement of research and development of sound policies." Currently, the report indicates, there is lack of data about gun possession, distribution, ownership, acquisition, and storage that make it difficult to answer questions about occurrence and risk factors or to evaluate programs.

According to the Committee, the priorities for the research fall into five categories: Characteristics of Firearm Violence, Risk and Protective Factors, Firearm Violence Prevention and Other Interventions, Impact of Gun Safety Technology, and Video Games and Other Media.

Within the Characteristics of Firearm Violence area, the report recommends the following priorities: 1) Characterize the scope of and motivations for gun acquisition, ownership, and use, and how they are distributed across subpopulations; and 2) Characterize differences in nonfatal and fatal gun use across the United States, including self-inflicted use.

Within the Risk and Protective Factors area, the report calls for the following priorities: 1) Identify factors associated with juveniles and youths having access to, possessing, and carrying guns; 2) Evaluate the potential health risks and benefits (for example, suicide rates, personal protection) of having a firearm in the home under a variety of circumstances (including storage practices) and settings; and 3) Improve understanding of risk factors that influence the probability of firearm violence in specific high-risk physical locations.

Under the Firearm Violence Prevention and Other Interventions Priority, the report recommends research to: 1) Improve understanding of whether interventions intended to diminish the illegal carrying of firearms, such as background checks, reduce firearm violence; 2) Improve understanding of whether reducing criminal access to legally purchased guns reduces firearm violence; 3) Improve understanding of the effectiveness of actions directed at preventing access to firearms by violence-prone individuals; 4) Determine the degree to which various childhood education or prevention programs reduce firearm violence in childhood and later in life; and 5) Evaluate whether programs to alter physical environments in high-crime areas result in a decrease in firearm violence.

With regard to the Impact of Gun Safety Technology, the reports calls for: 1) Identification of the effects of different technological approaches, including passive ones, to reduce firearm-related injury and death, and the compliance with such safety devices; and 2) Examination of past consumer experiences with accepting safety technologies to inform the development and uptake of new gun safety technologies.

Finally, under the Video Games and Other Media priority, the panel suggests examining the relationship between exposure to media violence and real-life violence, including synthesizing evidence from existing studies and relevant databases that would reveal long-term associations between violent media exposure in childhood and subsequent adolescent or adult firearm-related violence. Furthermore, the panel wants to know: If such a relationship exists, is it causal and who is most susceptible?

The report can be found at: <http://www.iom.edu/Reports/2013/Priorities-for-Research-to-Reduce-the-Threat-of-Firearm-Related-Violence.aspx>.

NRC Workshop Evaluates the Risks of Natural Gas Fracking

The process of extracting natural shale gas by hydraulic fracturing (or "fracking") has created an abundance of inexpensive natural gas. However, the relative novelty of fracking on a massive scale and the lack of evidence-based clarity on what the risks really are and how they are best mitigated have led many to view unconventional natural gas development with suspicion. The National Research Council (NRC)'s Board on Environmental Change and Society (BECS), chaired by Richard Moss, University of Maryland, convened a two-day workshop in May to assess the data surrounding various risks associated with fracking, taking the systematic approach to risk characterization recommended in the 1996 NRC report, *Understanding Risk*, which has not yet been applied in this context.

The workshop committee is chaired by Mitchell Small, Carnegie Mellon University; Paul Stern, NRC, is the study director. In addition to the areas discussed in detail below, the workshop also covered operational risks, risks to air and water resources, ecological risks, and interaction among risks. The archived webcast of the workshop and presenters' slides are available [here](#), and a summary report is forthcoming. Presenters also plan to publish the results of their research in scientific journals. A second workshop, on the Governance of Risks of Unconventional Shale Gas Development, will take place on August 15 and 16.

In order to provide a basis for the risks and concerns being explored in the workshop, Thomas Webler, Social and Environmental Research Institute, and his colleagues invited members of groups interested in fracking to share their concerns via an anonymous online survey. These groups included local anti-fracking groups, regulators, gas company associations, the consumer gas industry, renewable energy groups, the media, and financial groups. They received 372 responses ranging in length from two to 2,555 words. The researchers coded the responses into five categories: precursors (e.g., poor regulations), risk amplifiers (e.g., risk obfuscation of information), hazards (e.g., fracking fluid), hazard events (e.g., a spill), and consequences (e.g., groundwater contamination). They identified nine overarching themes that have not yet received much analytical attention: 1) Quality of life impacts (loss of rural character, crime, loss of natural beauty, and community conflict), 2) Economic impacts (declines in property values and disruption to existing businesses and tourism), 3) Impacts distant from well sites (earthquakes, injection wells, wastewater), 4) Climate change and impact on renewable energy, 5) Quality and availability of information, 6) Regulations and regulatory capture, 7) Ethics and justice, 8) Wasted water resources, and 9) Ecosystems and domestic animal impacts.

Public Health Risks

John Adgate, Colorado School of Public Health, reported on the public health impacts of shale gas development and production. He suggested taking a systems approach to understanding these risks (thinking of natural gas production as a series of episodic exposures over the course of well development to production). He discussed the results of a health impact assessment conducted in Battlement Mesa, a retirement community in Garfield County, Colorado. He conceded that a major challenge of performing such assessments is a lack of reliable, complete public health data for affected communities. Adgate divided the potential adverse health impacts from natural gas

fracking into three broad categories: impacts from chemical activities (causing both acute and chronic symptoms and cancer risk), impacts from industrial activities (like traffic accidents, noise, and fire and explosion risk), and community changes (including decreased physical activity, school enrollment turnover, decreased social engagement, and psychosocial stress). Adgate and his colleagues offered three recommendations to mitigate some of these risks: preventing pollution, promoting a culture of safety, and enhancing communication among stakeholders. We still need research, Adgate suggested, on environmental concentrations, exposures, health outcomes tracking, and community impacts of noise and traffic, as well as psycho-social effects.

David Brown, Southwest Pennsylvania Environmental Health Project, discussed how his project evaluates the health concerns of people who think their health has been compromised by nearby gas drilling activities. The most common symptoms experienced by individuals and families include skin rash or irritation, nausea or vomiting, abdominal pain, breathing difficulties or cough, and nosebleeds. Individuals also reported anxiety and stress, nervous system issues (like headache and dizziness), and eye or throat irritation. Brown said that a total of 27 cases in the area were proven to be attributable to natural gas extraction, mostly via air exposure (with the remainder from water exposure).

Tiffany Bredfeldt, Texas Commission on Environmental Quality, discussed how the commission assesses health risks from fracking. Using tools like auto gas chromatographs, canister samplers, and emissions-detecting flyovers, the commission can identify where problems are occurring. Overall, the commission found relatively low levels of emissions, although they still received odor and irritation complaints from citizens. The problems they did find were almost all due to human or mechanical failure and could be quickly remedied, he declared.

Implications for Climate Change

Richard Newell, Duke University, presented some of the implications of shale gas development for climate change. He noted that natural gas made up about 26 percent of the total carbon dioxide and methane emissions from U.S. fossil energy in 2011 and that the surge in shale gas production has led to a decline in natural gas prices. This trend raises the question of how projected increases in natural gas consumption would affect greenhouse gas emissions. Newell noted that the impact of increased use of natural gas is complicated and has both direct and indirect implications for greenhouse gas emissions. As the price of natural gas decreases, consumers will substitute natural gas for other fuels—both high-emitting fuels like coal and oil and lower emission fuels like nuclear power and renewable. In addition, declines in natural gas prices will also lead to lower overall energy prices, potentially leading to an increase in overall energy consumption. The aggregate impacts of these trends comprise the net climate impact of natural gas abundance.

Newell noted that natural gas currently makes up only 13 percent of U.S. energy expenditures and suggested that low natural gas prices are more likely to lead to substitution of natural gas for other fuels than increased overall energy demands. Because natural gas emissions are lower than coal and oil, market pressures encouraging substitution of natural gas for those sources would result in overall lower levels of greenhouse gas emissions. However, Newell cautioned, his projections merely characterize what is likely to happen due to the increased natural gas supply, and should not be interpreted as a solution to climate change. In fact, he argued, natural gas abundance will probably not have a substantial effect on future greenhouse gas emissions. Climate change is a problem that policy makers still need to tackle, he concluded.

Risks to Communities

Jeffrey Jacquet, South Dakota University, explained some of the risks communities face from shale gas development. He noted that while little research has been done into the community effects of shale gas extraction specifically, we can draw on existing knowledge about the community impacts of other types of energy development, environmental contamination and change, and technological disasters. Natural resource development is associated with community benefits like plentiful and well-paying jobs, increased opportunity for taxes and revenues, increased community income,

overall population growth, and increased local investment. However, natural resource abundance can also be "cursed"-- the benefits are often short-term, unevenly distributed, and unpredictable, while the costs mount over the long term and include volatility, instability, homogenization, high unemployment, poverty, inequality, crime, low educational attainment, and corruption. The "natural resources curse" first emerged in international development literature, but the concept has been applied in the U.S. at the level of individual communities that have abundant mineral wealth.

Jacquet identified four major risks natural gas production poses to communities. The first, rapid industrialization, places communities at risk of becoming boomtowns and is associated with rapid growth, strained municipal services, poor quality of life, out-migration of residents, and overbuilt and unplanned construction. The second major risk is the "corrosive community" effect, seen in places where the costs and benefits of energy development are distributed unequally within the community. Corrosive communities are characterized by fierce conflict, winners and losers, distrust, confusion and uncertainty, litigation, blame, and distaste over benefits. Jacquet suggested that community conflict can be worse than the environmental problem itself. Another risk faced by communities is a stigma of "contamination" if an environmental disaster or accident occurs there (Three Mile Island is an obvious example). These communities are no longer a "psychological refuge" for their residents, and the stigma associated with them can have little or no relation to the actual levels of contamination or health impacts. The final risk to communities is psycho-social stress or disruption. As the gas extraction operation changes the nature of the community, residents' self-identification with the community may also change, leading to stress and mental and physical health symptoms. Jacquet concluded by suggesting four areas that deserve further exploration: 1) community capture of wealth, 2) health and social-psychological disruption, 3) the long-term investment and sustainability, and 4) long-term development picture for the shale gas industry.

Susan Christopherson, Cornell University, gave a summary discussion of what we know and what we still need to know about shale gas extraction risks to communities. We know that the actual and perceived risks of fracking extend beyond the well site, that rural communities face poor outcomes of resource extraction if precautionary measures are not undertaken to mitigate them, that many community risks are driven by unequal distribution of costs and benefits, and that risks are cumulative, causing additional community and individual stress as they build. Among the questions that still need answering, Christopherson pointed to questions about the distribution of risks, costs, and benefits, including land ownership and mineral rights ownership; questions concerning where jobs are created and whether jobs in other local industries are crowded out; questions about short- and long-term public costs (such as roads, emergency services, public safety, and health care); and risks connected to loss of local control over land. Lastly, Christopherson suggested that more attention should be paid to spatial dimensions, including differences among local contexts, how risks apply to non-rural communities, and the impact on areas that are out of the immediate location of the fracking site (e.g., truck routes).

Congressional Briefing Discusses Research to Improve Math and Science Scores

As the United States looks to improve its standing in the global workforce, science, technology, engineering, and mathematics (STEM) education is seen as one of the primary tools to bring us to the forefront of innovation and prosperity. On May 23rd, seven associations, including COSSA and its members the American Educational Research Association (AERA), the American Psychological Association (APA) and the Society for Research in Child Development (SRCD), sponsored a congressional briefing, *From the Lab to the Classroom: Institute of Education Sciences Research to Improve Our Nation's Math and Science Achievement*. After introductory remarks from Institute for Educational Sciences Director John Easton, three accomplished research professors shared their work and the overarching implications of their findings. Steve Breckler, Executive Director for Science at APA and the Chair of the COSSA Executive Committee, moderated the session.

Douglas Clements is the Kennedy Endowed chair in Early Childhood Learning at the University of

Denver with a specialization in early childhood mathematics education and education policy. Clements discussed the recent discovery that early childhood mathematic ability is an accurate predictor of literacy levels at an older age. He went on to discuss how teachers' predictions of their students' mathematic ability is surprisingly low. In addition to early math intervention, he said, students can benefit from high expectations of their teachers. His research addressed how young children use math to perform various physical tasks such as building and taking apart block structures and playing games. By using these interactive activities, Clements believes that educators and policymakers can better understand effective teaching techniques.

Robert Siegler, Carnegie Mellon University, discussed two separate but related topics. The first was how to help children with mathematics learning difficulties and the second, how to prevent these difficulties from arising in the first place. Much of the research was focused on students' understanding of fractions and division. It was revealed that a staggeringly high percentage of students in middle and high school that were entirely unable to rank fractions from least to greatest. Siegler discussed the importance of basic fractions and division in order to move on to more advanced topics such as algebra. One of the Siegler's most important findings was that between 6th and 8th grade, the disparity of conceptual knowledge of fractions grows between high achieving and low achieving students. These grades seem to be a key target area for developing the math skills of low achieving students.

Nora Newcombe, Temple University, presented the findings of a research study that she conducted in public schools in four cities throughout the United States. Newcombe studied the effectiveness of kit-based programming as compared to text-based curriculum. The research produced results that suggest the cognitive science kits used in some of the schools show a lot of promise. This development was tempered by the fact that demographics that are typically underrepresented in science (African-American and Hispanic) did not experience the same gains as those who are well represented in science (White and Asian). Newcombe attributed this discrepancy to general attitudes toward science and/or instructional variables. Closing the achievement gap, she said, is just as important as raising the overall level of achievement.

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