



2013 Charles C. Shepard  
Science Awards Ceremony

# *Unwarranted Variation in Health Care*

**Keynote Speaker:  
John E. Wennberg, MD, MPH**

**October 1, 2013 • 10:00 a.m.**

Tom Harkin Global Communications Center • Building 19 • Auditorium A • CDC Roybal Campus





# CHARLES C. SHEPARD

The preeminent science awards of CDC/ATSDR, inaugurated in 1986, are named in honor of Charles C. Shepard, MD, the internationally recognized microbiologist who was chief of the Leprosy and Rickettsia Branch at CDC for more than 30 years, until his death on February 18, 1985.

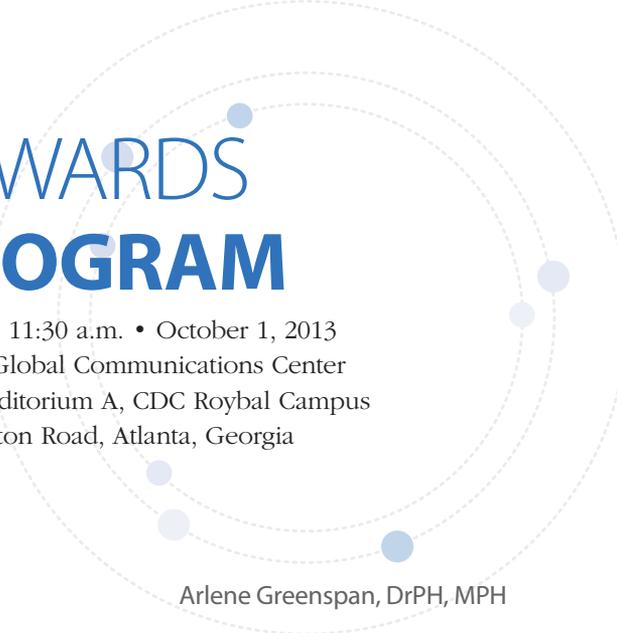
Charles Carter Shepard was born in Ord, Nebraska, on December 18, 1914. He attended Stanford University (1932–1935) and then transferred to Northwestern University, where he received BS, MS, and MD degrees. In 1941, he joined the Commissioned Corps of the Public Health Service. From 1942 through 1948, he worked at the National Institutes of Health (NIH) in Bethesda, Maryland.

While on sabbatical during 1948–1949, he worked in the laboratory of Arne Tiselius in Uppsala, Sweden, and learned the new physical separation techniques that would revolutionize immunology and biochemistry. He returned to Bethesda for a year before moving to the Rocky Mountain Laboratory, National Institute of Allergy and Infectious Diseases, NIH, in Hamilton, Montana, to study various pathogenic bacteria and their phages at the biochemical and ultrastructural levels. In 1953, he came to CDC, where he continued his outstanding work with rickettsiae and began his distinguished and definitive experiments with mycobacteria, which resulted in the cultivation of the leprosy bacillus, *Mycobacterium leprae*, in mice. His landmark article, “The Experimental Disease that Follows the Injection of Human Leprosy Bacilli into Foot-Pads of Mice” (*Journal of Experimental Medicine* 1960;112:445–454), is still considered a classic in microbiology. His achievement made possible the large-scale evaluation of antibiotic efficacy and reduced testing time from several years to only months. It also paved the way for leprosy vaccine studies.

Dr. Shepard made significant early contributions to the diagnosis, natural history, and epidemiology of Rocky Mountain spotted fever; Q fever; and scrub, murine, and epidemic typhus. He was also co-discoverer (with Joseph McDade) of the Legionnaires' disease bacterium (*Legionella pneumophila*) after the now famous outbreak of virulent pneumonia in Philadelphia in 1976.

Dr. Shepard received numerous awards, among them the Gorgas Medal (1962), the Kimble Methodology Award (1962), the Philip R. Edwards Award (1964), the World Leprosy Day Award (1970), and the first CDC Medal of Excellence (1977). He also received the HEW Distinguished Service Medal (1978), the Raol Folleraux Award (1978), and the Richard and Hinda Rosenthal Award (1979). He was active in multiple professional organizations, including the Armed Forces Epidemiologic Board Commission on Rickettsial Diseases; the WHO Immunology of Leprosy Program; the WHO Advisory Panel on Leprosy; the Heiser Program for Research in Leprosy; and the Leprosy Research Council, which he chaired. He was also involved in many editorial activities, having served on the board of directors of the *International Journal of Leprosy* and as a frequent reviewer for numerous prestigious journals.

Although Dr. Shepard's contributions to science and public health were prodigious, perhaps his greatest legacy is the influence he has had on the CDC scientists who have followed in his footsteps and have continued to find inspiration in the scientific integrity and excellence he has come to represent.



# AWARDS PROGRAM

10:00 a.m. to 11:30 a.m. • October 1, 2013  
Tom Harkin Global Communications Center  
Building 19, Auditorium A, CDC Roybal Campus  
1600 Clifton Road, Atlanta, Georgia

**Introductory Remarks**

Arlene Greenspan, DrPH, MPH

**Introduction of Keynote Speaker**

Thomas R. Frieden, MD, MPH

**“Unwarranted Variation of Health Care”**

John E. Wennberg, MD, MPH

**Presentation of the 2013**

**Charles C. Shepard Science Awards**

Tanja Popovic, MD, PhD

**Assessment**  
**Data Methods and Study Design**  
**Laboratory Science**  
**Prevention and Control**  
**Lifetime Scientific Achievement**

**Closing**

Tanja Popovic, MD, PhD

*All guests and CDC and ATSDR staff are invited  
to attend a reception honoring the award nominees.*





# KEYNOTE SPEAKER

## **John E. Wennberg, MD, MPH**

*Founder and Director Emeritus*

**The Dartmouth Institute for Health Policy and Clinical Practice**

Dr. John Wennberg is the Peggy Y. Thomson Professor (chair) in the Evaluative Clinical Sciences and founder and director emeritus of The Dartmouth Institute for Health Policy and Clinical Practice. He is also the founding editor of *The Dartmouth Atlas of Health Care*, which examines the patterns of medical resource use in the United States.

Dr. Wennberg has been a professor in the Department of Community and Family Medicine since 1980 and in the Department of Medicine since 1989. He is a member of the Institute of Medicine of the National Academy of Sciences and the Johns Hopkins University Society of Scholars. He has received numerous awards, including the Institute of Medicine's 2008 Gustav O. Lienhard Award, the Association for Health Services Research's Distinguished Investigator Award, the Richard and Hinda Rosenthal Foundation Award in Clinical Medicine, and the Baxter Foundation's Health Services Research Prize.

Dr. Wennberg and colleague Alan Gittelsohn developed a strategy for studying the use of health resources that revealed unwarranted variations in local and regional health care markets, much of which appeared linked to the distribution of resources and to differences in local medical opinion.

Dr. Wennberg and his colleagues undertook a series of studies designed to reduce scientific uncertainty, mainly in the area of prostate disease (in which surgical procedures had been shown to vary by a factor of three or more among neighboring regions). Efforts to clarify the outcomes and the theoretical basis for undertaking prostate surgery led to awareness of the importance of patient preference in the choice of treatment and to studies involving patients as participants in treatment choice. Dr. Wennberg's recent work has focused on documenting and communicating outcomes information to patients.



# PUBLICATION AWARD NOMINEES

*Nominated by the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry (CDC/ATSDR) for the 2013 Charles C. Shepard Science Awards*

The nominated articles were judged on scientific merit and the significance of their effect on the mission of CDC/ATSDR. Following is a complete citation and brief description of each article, listed by category and in alphabetical order by the first author's last name.

## Assessment

Michael D. Attfield, Patricia L. Schleiff, Jay H. Lubin, Aaron Blair, Patricia A. Stewart, Roel Vermeulen, Joseph B. Coble, and Debra T. Silverman

### **The Diesel Exhaust in Miners Study: A Cohort Mortality Study with Emphasis on Lung Cancer**

*Journal of the National Cancer Institute* 2012;104(11):1–15

This was the first study to calculate diesel engine exhaust exposure for each worker in the study. Diesel exhaust consists of hundreds of chemicals and gases, many of which can cause cancer. The authors measured “elemental carbon,” now considered the best substitute for diesel exhaust levels.

Danielle E. Buttke, Kanta Sircar, and Colleen Martin

### **Exposures to Endocrine-Disrupting Chemicals and Age of Menarche in Adolescent Girls in NHANES (2003–2008)**

*Environmental Health Perspectives* 2012;120(11):1613–1618

This is the first study to show a link between exposures to chemicals that disrupt the endocrine system and increasingly earlier first menstrual cycles in the U.S. population. Laboratory studies have shown that some endocrine system disruptors can impair cellular function, and people are exposed to many of these chemical compounds in the environment.

William M. Callaghan, Andreea A. Creanga, and Elena V. Kuklina

### **Severe Maternal Morbidity among Delivery and Postpartum Hospitalizations in the United States**

*The American College of Obstetricians and Gynecologists*  
2012;120(5):1029–1036

The authors propose an easy-to-use indicator of severe maternal morbidity that can be used by hospitals, perinatal regions, and states for surveillance and quality improvement efforts. Further, the indicator can be used at the national level to track severe pregnancy complications.



Adolfo Correa, Suzanne M. Gilboa, Lorenzo D. Botto, Cynthia A. Moore, Charlotte A. Hobbs, Mario A. Cleves, Tiffany J. Riehle-Colarusso, D. Kim Waller, and E. Albert Reece for the National Birth Defects Prevention Study

### **Lack of Periconceptional Vitamins or Supplements that Contain Folic Acid and Diabetes Mellitus-Associated Birth Defects**

*American Journal of Obstetrics and Gynecology* 2012;206(3):218.e1–e13

This is only the second study in humans to suggest that vitamins containing folic acid may decrease the harmful effects of diabetes on pregnancy. The analysis revealed a pattern of associations across most birth defects among women who did not report taking vitamins containing folic acid.



Tracy Dalton, Peter Cegielski, Somsak Akksilp, Luis Asencios, Janice Campos Caoili, Sang-Nae Cho, Vladislav V. Erokhin, Julia Ershova, Ma Tarcela Gler, Boris Y. Kazenny, Hee Jin Kim, Kai Kliiman, Ekaterina Kurbatova, Charlotte Kvasnovsky, Vaira Leimane, Martie van der Walt, Laura E. Via, Grigory V. Volchenkov, Martin A. Yagui, Hyungseok Kang, and the Global PETTS Investigators

### **Prevalence of and Risk Factors for Resistance to Second-Line Drugs in People with Multidrug-Resistant Tuberculosis in Eight Countries: A Prospective Cohort Study**

*The Lancet* 2012;380(9851):1406–1417

This study examined drug resistance in 1,278 patients starting treatment for tuberculosis. Demographic and clinical data were collected and monitored for accuracy, allowing an analysis of risk factors associated with resistance to second-line drugs used for treatment.



Fatimah S. Dawood, A. Danielle Iuliano, Carrie Reed, Martin I. Meltzer, David K. Shay, Po-Yung Cheng, Don Bandaranayake, Robert F. Breiman, W. Abdullah Brooks, Philippe Buchy, Daniel R. Feikin, Karen B. Fowler, Aubree Gordon, Nguyen Tran Hien, Peter Horby, Q. Sue Huang, Mark A. Katz, Anand Krishnan, Renu Lal, Joel M. Montgomery, Kåre Mølbak, Richard Pebody, Anne M. Presanis, Hugo Razuri, Anneke Steens, Yeny O. Tinoco, Jacco Wallinga, Hongjie Yu, Sirenda Vong, Joseph Bresee, and Marc-Alain Widdowson

### **Estimated Global Mortality Associated with the First 12 Months of 2009 Pandemic Influenza A H1N1 Virus Circulation: A Modelling Study**

*The Lancet Infectious Diseases* 2012;12(9):687–695

This paper reports the first mortality estimate of the 2009 H1N1 pandemic. The authors use data from influenza surveillance and special studies to estimate attack rates and fatality ratios by age group. Sites contributing data to the paper represent 13 high-, middle-, and low-income countries.



Carrie A. Dooyema, Antonio Neri, Yi-Chun Lo, James Durant, Paul I. Dargan, Todd Swarthout, Oladayo Biya, Saheed O. Gidado, Suleiman Haladu, Nasir Sani-Gwarzo, Patrick M. Nguku, Henry Akpan, Sa'ad Idris, Abdullahi M. Bashir, and Mary Jean Brown

### **Outbreak of Fatal Childhood Lead Poisoning Related to Artisanal Gold Mining in Northwestern Nigeria, 2010**

*Environmental Health Perspectives* 2012;120(4):600–607

The authors investigated the effects of gold mining activities on high child mortality rates and an outbreak of childhood lead poisoning in rural northwestern Nigeria. They also examined emergency methods of removing heavy metals from the bloodstream. Most of the illnesses and deaths occurred in children under 5 years of age.



Deborah Dowell, Lin H. Tian, Jeffrey A. Stover, Jennifer A. Donnelly, Summer Martins, Emily J. Erbeling, Raul Pino, Hillard Weinstock, and Lori M. Newman

### **Changes in Fluoroquinolone Use for Gonorrhea Following Publication of Revised Treatment Guidelines**

*Research and Practice* 2012;102(1):148–155

This study used an enhanced surveillance system to evaluate the impact of revised CDC guidelines on fluoroquinolone use for gonorrhea. The authors used an interrupted time series design to evaluate whether the guidelines significantly affected prescribing behavior over time.



Xiangming Fang, Derek S. Brown, Curtis S. Florence, and James A. Mercy

### **The Economic Burden of Child Maltreatment in the United States and Implications for Prevention**

*Child Abuse & Neglect* 2012;36(2):156–165

The authors developed an improved method for estimating the economic burden of child maltreatment, which, conservatively, is estimated to be at least \$210,000 per victim. This cost per child is comparable to the economic burden of other public health problems such as stroke and type 2 diabetes.



Giuseppina Imperatore, James P. Boyle, Theodore J. Thompson, Doug Case, Dana Dabelea, Richard F. Hamman, Jean M. Lawrence, Angela D. Liese, Lenna L. Liu, Elizabeth J. Mayer-Davis, Beatriz L. Rodriguez, and Debra Standiford for the Search for Diabetes in Youth Study Group

### **Projections of Type 1 and Type 2 Diabetes Burden in the U.S. Population Aged <20 Years through 2050: Dynamic Modeling of Incidence, Mortality, and Population Growth**

*Diabetes Care* 2012;35(12):2515–2520

This is the first paper to project the future burden of diabetes in youth. Although projections of diabetes prevalence in older people have been published, a consideration of youth requires more sophisticated models. In addition, this is the first projection of diabetes burden to separate types 1 and 2 diabetes.



Adam J. Langer, Tracy Ayers, Julian Grass, Michael Lynch, Frederick J. Angulo, and Barbara E. Mahon

### **Nonpasteurized Dairy Products, Disease Outbreaks, and State Laws—United States, 1993–2006**

*Emerging Infectious Diseases* 2012;18(3):385–391

This paper compares foodborne illness data on the sale of nonpasteurized milk products to examine the burden of dairy-associated illnesses and the association of state laws with risk of outbreaks linked to these products from 1993 through 2006. The evidence suggests states that do not allow the sale of raw dairy products have substantially lower risk of outbreaks.



Chaoyang Li, Earl S. Ford, Guixiang Zhao, James Tsai, Lina S. Balluz, and Wayne H. Giles

**Trends of Insulin Use among U.S. Adults with Type 2 Diabetes: The Behavioral Risk Factor Surveillance System, 1995–2007**

*Journal of Diabetes and Its Complications* 2012;26(1):17–22

This is the first study to examine trends among adults with type 2 diabetes who used insulin, based on large population-based samples of U.S. adults aged 40 years or older who participated in the Behavioral Risk Factor Surveillance System in 1995 and 2007.



Ruowei Li, Joselito Magadia, Sara B. Fein, and Laurence M. Grummer-Strawn

**Risk of Bottle-Feeding for Rapid Weight Gain during the First Year of Life**

*Archives of Pediatrics and Adolescent Medicine* 2012;166(5):431–436

This study explored the mechanism by which infant weight gain varies during the first year. Findings suggest bottle-feeding, regardless of formula type, might cause infants to gain weight faster than breastfeeding because bottle-fed infants may gradually lose the ability to regulate their calorie consumption using the internal feeding cues of hunger and satisfaction.



Sara E. Luckhaupt, Dennis Deapen, Rosemary Cress, Pam Schumacher, Rui Shen, and Geoffrey M. Calvert

**Leukemia among Male Construction Workers in California, 1988–2007**

*Leukemia & Lymphoma* 2012;53(11):2228–2236

Many small studies point to increases in the incidence of leukemia among construction workers, but these data are fragmented and the results inconsistent. This exhaustive study examined associations between construction occupations and the four major subtypes of leukemia. It also permitted evaluation of disparities among racial and ethnic groups.



Kathleen N. Ly, Jian Xing, R. Monina Klevens, Ruth B. Jiles,  
John W. Ward, and Scott D. Holmberg

### **The Increasing Burden of Mortality from Viral Hepatitis in the United States between 1999 and 2007**

*Annals of Internal Medicine* 2012;156(4):271–278

Using death certificate data from more than 22 million records, the authors examined trends in deaths from hepatitis B and C virus and HIV infections to predict the health and economic consequences of viral hepatitis. Annual deaths from hepatitis C now exceed those from HIV, and deaths from hepatitis B and C are concentrated among middle-aged persons.



Catherine A. Okoro, Tara W. Strine, Paul I. Eke, Satvinder S. Dhingra,  
and Lina S. Balluz

### **The Association between Depression and Anxiety and Use of Oral Health Services and Tooth Loss**

*Community Dentistry and Oral Epidemiology* 2012;40(2):134–144

Study findings suggest that disparities in the prevalence of use of oral health services and tooth loss exist among people suffering from depression and anxiety. These findings have strong implications given that the onset of many psychiatric disorders occurs early in life, increasing their potential to impair oral health over time.



Ju-Hyeong Park, Kay Kreiss, and Jean M. Cox-Ganser

### **Rhinosinusitis and Mold as Risk Factors for Asthma Symptoms in Occupants of a Water-Damaged Building**

*Indoor Air* 2012;22(5):396–404

The authors used a longitudinal approach to determine that building-related rhinosinusitis and mold exposure were risk factors for building-related asthma symptoms but not for non-building-related asthma symptoms. The implication is that building-related nasal symptoms in damp indoor environments imply risk for more serious health outcomes.

Robert M. Park, Leslie T. Stayner, Martin R. Petersen, Melissa Finley-Couch, Richard Hornung, and Carol Rice

### **Cadmium and Lung Cancer Mortality Accounting for Simultaneous Arsenic Exposure**

*Occupational and Environmental Medicine* 2012;69(5):303–310

The authors separated the effects of mutually confounding exposures among smelter employees. Although there was a clear association of lung cancer with cadmium exposure, arsenic exposure was a possible confounder of the results. The study methods allowed for an analysis of the effects of cadmium alone, resulting in strong scientific evidence of its cancer-causing effects.



Lucy A. Peipins, Ashwini Soman, Zahava Berkowitz, and Mary C. White

### **The Lack of Paid Sick Leave as a Barrier to Cancer Screening and Medical Care-Seeking: Results from the National Health Interview Survey**

*BioMed Central* 2012; doi: 10.1186/1471-2458-12-520

The lack of sick leave as a barrier to seeking medical care is not often analyzed. Factors shown to encourage care-seeking include demographic characteristics and having health insurance and usual source of care. This study shows that, for workers, paid sick leave strongly encourages people to seek medical care.



Suzanne E. Powell, Susan Hariri, Martin Steinau, Heidi M. Bauer, Nancy M. Bennett, Karen C. Bloch, Linda M. Niccolai, Sean Schafer, Elizabeth R. Unger, and Lauri E. Markowitz

### **Impact of Human Papillomavirus (HPV) Vaccination on HPV 16/18-Related Prevalence in Precancerous Cervical Lesions**

*Vaccine* 2012;31(1):109–113

This paper evaluated the effect of HPV vaccine on cervical precancers (CIN2+) using only case surveillance data without the need for a control group. Using laboratory data to look at specific HPV types associated with CIN2+ lesions, the results suggest earlier than expected impact on HPV 16/18-related CIN2+ lesions in women aged 18–31 years in the United States.

David W. Purcell, Christopher H. Johnson, Amy Lansky, Joseph Prejean, Renee Stein, Paul Denning, Zaneta Gau, Hillard Weinstock, John Su, and Nicole Crepaz

### **Estimating the Population Size of Men Who Have Sex with Men in the United States to Obtain HIV and Syphilis Rates**

*Open AIDS Journal* 2012;6 (Suppl 1:M6):98–107

The authors used national data on same-sex behavior and applied the proportion of men reporting same-sex behavior in the past 5 years to U.S. census data to produce a population-size estimate. The estimate allowed the authors to calculate the rates for disease metrics and to develop rate ratios showing dramatically higher rates of HIV and syphilis among men who have sex with men than among other men or women.



Erin K. Sauber-Schatz, William Sappenfield, Violanda Grigorescu, Aniket Kulkarni, Yujia Zhang, Hamisu M. Salihu, Lewis P. Rubin, Russell S. Kirby, Denise J. Jamieson, and Maurizio Macaluso

### **Obesity, Assisted Reproductive Technology, and Early Preterm Birth—Florida, 2004–2006**

*American Journal of Epidemiology* 2012; doi: 10.1093/aje/kws155

This study determined that assisted reproductive technology (ART) significantly increases the likelihood of early preterm birth among women who are overweight before becoming pregnant. Findings also suggest healthy weight loss through diet and exercise before pregnancy might reduce preterm birth among ART users.



Guo-Qing Shi, Wen-Li Huang, Jian Zhang, Hong Zhao, Tao Shen, Robert E. Fontaine, Lin Yang, Su Zhao, Bu-Lai Lu, Yue-Bing Wang, Lin Ma, Zhao-Xiang Li, Yang Gao, Zhu-Liang Yang, and Guang Zeng

### **Clusters of Sudden Unexplained Death Associated with the Mushroom, *Trogia venenata*, in Rural Yunnan Province, China**

*PLoS One* 2012;7(5):1–8

For years, healthy adult villagers in Yunnan Province, China, would collapse during normal activities, lapse into a coma, and die. Since the 1980s, the cause of these deaths remained unknown. This paper ties the sudden unexplained deaths to *Trogia venenata*, a new species of mushroom, discovered during the field investigation of the more recent unexplained deaths.



Irene M. Shui, James Baggs, Manish Patel, Umesh D. Parashar, Melisa Rett, Edward A. Belongia, Simon J. Hambidge, Jason M. Glanz, Nicola P. Klein, and Eric Weintraub

### **Risk of Intussusception Following Administration of a Pentavalent Rotavirus Vaccine in U.S. Infants**

*JAMA* 2012;307(6):598–604

Experience with the Rotashield vaccine has alerted public health agencies to continue monitoring newer rotavirus vaccines. This study examined the risk of intussusception following the administration of the rotavirus vaccine in infants. The study found no association with intussusception and strengthened the case for continuing the use of the rotavirus vaccine.



Rachel M. Smith, Melissa K. Schaefer, Marion A. Kainer, Matthew Wise, Jennie Finks, Joan Duwve, Elizabeth Fontaine, Alvina Chu, Barbara Carothers, Amy Reilly, Jay Fiedler, Andrew D. Wiese, Christine Feaster, Lex Gibson, Stephanie Griese, Anne Purfield, Angela A. Cleveland, Kaitlin Benedict, Julie R. Harris, Mary E. Brandt, Dianna Blau, John Jernigan, J. Todd Weber, and Benjamin J. Park for the Multistate Fungal Infection Outbreak Response Team

### **Fungal Infections Associated with Contaminated Methylprednisolone Injections—Preliminary Report**

*The New England Journal of Medicine* 2012; doi: 10.1056/NEJMoa1213978

This paper describes how the largest ever series of fungal meningitis outbreaks due to mold was contained. In addition to expanding the literature and understanding of fungal meningitis, findings of this paper could affect the future of compounding pharmacies in the United States.



Nancy Sonnenfeld, Stephen R. Pitts, Susan M. Schappert, and Sandra L. Decker

### **Emergency Department Volume and Racial and Ethnic Differences in Waiting Times in the United States**

*Medical Care* 2012;50(4):335–341

Black and Hispanic patients have to wait longer to receive care in U.S. emergency departments than their white counterparts. Analyzing data from the 2007–2008 National Hospital Ambulatory Medical Care Survey, this study takes a novel approach to examine racial and ethnic disparities in emergency room waiting time.



Tarak K. Trivedi, Traci DeSalvo, Lore Lee, Aimee Palumbo, Maria Moll, Aaron Curns, Aron J. Hall, Manish Patel, Umesh D. Parashar, and Benjamin A. Lopman

### **Hospitalizations and Mortality Associated with Norovirus Outbreaks in Nursing Homes, 2009–2010**

*JAMA* 2012;308(16):1668–1675

Patterns from norovirus outbreaks in nursing homes suggest outbreaks may lead to deaths. The authors constructed a retrospective cohort of nursing homes with norovirus outbreaks to identify deaths and hospitalizations and to identify nursing home characteristics associated with death and hospitalization.



Quanhe Yang, Mary E. Cogswell, W. Dana Flanders, Yuling Hong, Zefeng Zhang, Fleetwood Loustalot, Cathleen Gillespie, Robert Merritt, and Frank B. Hu

### **Trends in Cardiovascular Health Metrics and Associations with All-Cause and CVD Mortality among U.S. Adults**

*JAMA* 2012;307(12):1273–1283

Preventing the development of risk factors offers promise for cardiovascular health. This study examined the prevalence and trends in cardiovascular health data, their associations, and population-attributable fractions with all-cause and cardiovascular disease mortality risk.

## Data Methods and Study Design

Joseph Y. Abrams, J. R. Copeland, Robert V. Tauxe, Kashmira A. Date, Ermias D. Belay, Rajal K. Mody, and Eric D. Mintz

### **Real-Time Modelling Used for Outbreak Management during a Cholera Epidemic, Haiti, 2010–2011**

*Epidemiology and Infection* 2012; doi: 10.1017/S0950268812001793

This paper describes detailed forecasting models in the wake of Haiti's cholera epidemic following the earthquake of January 2010. The data generated by four successive models were used by CDC, Haitian ministries, and external aid organizations to target needs and supplies on a geographical basis, to analyze the gap between estimated and existing facilities and supplies, and to fund contracts to temporarily expand facilities.



Zhuo Adam Chen, Kakoli Roy, and Carol A. Gotway Crawford

### **Obesity Prevention: The Impact of Local Health Departments**

*Health Services Research* 2012; doi: 10.1111/j.1475-6773.2012.01447.x

The role of local health departments in reducing obesity has not yet been well-studied. This study is the first to assess the relationship between county health department interventions and obesity as measured in the Behavioral Risk Factor Surveillance System, CDC's national health surveillance system of chronic disease risk factors and health status.



Jinhua Guan, Hongwei Hsiao, Bruce Bradtmiller, Tsui-Ying Kau, Matthew R. Reed, Steven K. Jahns, Josef Loczi, H. Lenora Hardee, and Dominic Paul T. Piamonte

### **U.S. Truck Driver Anthropometric Study and Multivariate Anthropometric Models for Cab Designs**

*Human Factors* 2012;54(5):849–871

There is a need to improve ergonomic truck cab designs for safe and efficient operation, as there is now a greater diversity among truck drivers. Data suggest male drivers have become larger and heavier than the U.S. population over the past quarter century. These data will be an important resource for future truck cab designs.



Heather C. Hamner, Sarah C. Tinker, Alina L. Flores, Joe Mulinare, Aliko P. Weakland, and Nicole F. Dowling

### **Modelling Fortification of Corn Masa Flour with Folic Acid and the Potential Impact on Mexican American Women with Lower Acculturation**

*Public Health Nutrition* 2012; doi: 10.1017/S1368980012004582

Brain and spinal cord defects affect about 3,000 pregnancies per year in the United States. Adding folic acid to foods prevents thousands of these defects. This study determines if consumption of folic acid could increase for Mexican American women if corn masa flour were fortified with folic acid.



Ramal Moonesinghe, Eleanor Fleming, Benedict I. Truman, and Hazel D. Dean

### **Linear and Non-Linear Associations of Gonorrhoea Diagnosis Rates with Social Determinants of Health**

*International Journal of Environmental Research and Public Health* 2012;9(9)3149–3165

If health departments can determine local factors that increase gonorrhoea rates, then programs can be tailored to better control gonorrhoea's spread. Using sophisticated surveillance and social data, the authors calculated gonorrhoea rates for each geographic area and analyzed associations between those rates and social determinants of health. The authors found that unmarried and minority status strongly correlated with gonorrhoea diagnosis.



Latetia V. Moore, Ana V. Diez Roux, and Manuel Franco

### **Measuring Availability of Healthy Foods: Agreement between Directly Measured and Self-Reported Data**

*American Journal of Epidemiology* 2012;175(10):1037–1044

This study demonstrates that people know where healthy foods are available in their communities. Telephone surveys used to measure the availability of healthy foods can substitute for more direct measures. This finding gives researchers options for measuring the food environment accurately and at a lower cost.



Manish M. Patel, Andrew D. Clark, Colin F. B. Sanderson,  
Jacqueline Tate, and Umesh D. Parashar

### **Removing the Age Restrictions for Rotavirus Vaccination: A Benefit-Risk Modeling Analysis**

*PLoS Medicine* 2012;9(10):e1001330

To evaluate World Health Organization (WHO) recommendations on restricting the rotavirus vaccine on infants, the authors conducted the first risk-benefit analysis on the vaccine's safety and effectiveness for infants under 15 weeks old. The study found that removing the age restriction would prevent 154 deaths from rotavirus for each death caused by the vaccine, prompting a change in WHO recommendations.



Muhammad Aziz Rahman, Mohammad Jahangir Hossain, Sharmin Sultana, Nusrat Homaira, Salah Uddin Khan, Mahmudur Rahman, Emily S. Gurley, Pierre E. Rollin, Michael K. Lo, James A. Comer, Luis Lowe, Paul A. Rota, Thomas G. Ksiazek, Eben Kenah, Yushuf Sharker, and Stephen P. Luby

### **Date Palm Sap Linked to Nipah Virus Outbreak in Bangladesh, 2008**

*Vector-Borne and Zoonotic Diseases* 2012;12(1):65–72

Nipah virus infection is fatal in 70% to 90% of cases in Bangladesh. This study confirmed the association between consuming date palm sap and Nipah infection. Using infrared photography, bats were observed in contact with sap-collecting taps and pots attached to date trees. This study provides vital elements of the emerging picture of this zoonotic infection originating in bats and infections in humans in Bangladesh.



Carrie Reed, Matthew Biggerstaff, Lyn Finelli, Lisa M. Koonin, Denise Beauvais, Amra Uzicanin, Andrew Plummer, Joe Bresee, Stephan C. Redd, and Daniel B. Jernigan

### **Novel Framework for Assessing Epidemiologic Effects of Influenza Epidemics and Pandemics**

*Emerging Infectious Diseases* 2013;19(1):85–91

The authors present an adaptable framework to simplify epidemiologic data collection and decision making early in a pandemic. The paper also summarizes data on transmission and severity of influenza from four modern pandemics and selected influenza seasons after a review of literature and historic surveillance data since 1918.



Matthew E. Wise, Melissa Viray, James J. Sejvar, Paige Lewis, Andrew L. Baughman, Walter Connor, Richard Danila, Greg P. Giambone, Christa Hale, Brenna C. Hogan, James I. Meek, Rendi Murphree, John Y. Oh, Arthur Reingold, Norisse Tellman, Susan M. Conner, James A. Singleton, Peng-Jun Lu, Frank DeStefano, Scott K. Fridkin, Claudia Vellozzi, and Oliver W. Morgan

**Guillain-Barré Syndrome during the 2009–2010 H1N1 Influenza Vaccination Campaign: Population-Based Surveillance among 45 Million Americans**

*American Journal of Epidemiology* 2012;175(11):1110–1119

The authors found that persons vaccinated for the H1N1 pandemic had a higher risk of acquiring Guillain-Barré Syndrome than unvaccinated persons; this risk, however, was comparable to some seasonal flu vaccines. The study serves as a model for similar real-time surveillance associated with urgent interventions.



Guangyu Zhang, Nathaniel Schenker, Jennifer D. Parker, and Dan Liao

**Identifying Implausible Gestational Ages in Preterm Babies with Bayesian Mixture Models**

*Statistics in Medicine* 2012; doi: 10.1002/sim.5657

Preterm birth is a leading cause of infant mortality. However, inaccurately reported gestational ages can hinder the study of preterm birth using birth records. The authors' work improves the quality of U.S. birth data by identifying implausible gestational ages. More accurate gestational age data help to better monitor infant health, detect health problems, and develop sound public health policies.



Xiaohui Zhuo, Ping Zhang, Edward W. Gregg, Lawrence Barker, Thomas J. Hoerger, Tony Pearson-Clarke, and Ann Albright

**A Nationwide Community-Based Lifestyle Program Could Delay or Prevent Type 2 Diabetes Cases and Save \$5.7 Billion in 25 Years**

*Health Affairs* 2012;31(1):50–60

Weight loss and increased physical activity can delay or prevent type 2 diabetes. However, the economic impact of scaling up this intervention to the national level has not been known. This paper provides the first verification that a national-scale, intensive effort to prevent type 2 diabetes would reduce health care costs.



## Laboratory Science

Harvey J. Alter, Judy A. Mikovits, William M. Switzer, Francis W. Ruscetti, Shyh-Ching Lo, Nancy Klimas, Anthony L. Komaroff, Jose G. Montoya, Lucinda Bateman, Susan Levine, Daniel Peterson, Bruce Levin, Maureen R. Hanson, Afia Genfi, Meera Bhat, HaoQiang Zheng, Richard Wang, Bingjie Li, Guo-Chiuan Hung, Li Ling Lee, Stephen Sameroff, Walid Heneine, John Coffin, Mady Hornig, and W. Ian Lipkin

### **A Multicenter Blinded Analysis Indicates No Association between Chronic Fatigue Syndrome/Myalgic Encephalomyelitis and Either Xenotropic Murine Leukemia Virus-Related Virus or Polytypic Murine Leukemia Virus**

*mBio* 2012;3(5):e00266-12

Despite contrary scientific consensus, many people believe chronic fatigue syndrome is associated with xenotropic murine leukemia virus-related virus and polytypic murine leukemia virus. In a blind analysis of 293 geographically diverse subjects, the authors found no evidence associating chronic fatigue syndrome with the leukemia virus infections.



Li-Mei Chen, Ola Blixt, James Stevens, Aleksandr S. Lipatov, Charles T. Davis, Brian E. Collins, Nancy J. Cox, James C. Paulson, and Ruben O. Donis

### **In Vitro Evolution of H5N1 Avian Influenza Virus toward Human-Type Receptor Specificity**

*Virology* 2012;422(1):105–113

As shown during the 2009 H1N1 pandemic, early intervention is essential for containing the spread of the disease. Therefore, efforts to anticipate the emergence of influenza pandemics, and H5N1 in particular, are of the utmost importance. This paper shows specific influenza hemagglutinin mutations required for the spread of H5N1 in ferrets and provides critical markers to assess the risk for human transmission.

Yan S. Ding, Theodore Chou, Shadeed Abdul-Salaam, Bryan Hearn, and Clifford H. Watson

### **Development of a Method to Estimate Mouth-Level Benzo[a]pyrene Intake by Filter Analysis**

*Cancer Epidemiology, Biomarkers & Prevention* 2012;21(1):39–44

Cigarette smoke exposes people to many harmful chemicals, and Benzo[a]pyrene (BaP) is one of the most potent. There is no direct way to estimate exposure to BaP because of difficulties in measuring its metabolites in humans. The authors found that discarded cigarette filters provide a quick, noninvasive, and accurate route to estimate mouth-level BaP intake.



Yen T. Duong, Maofeng Qiu, Anindya K. De, Keisha Jackson, Trudy Dobbs, Andrea A. Kim, John N. Nkengasong, and Bharat S. Parekh

### **Detection of Recent HIV-1 Infection Using a New Limiting-Antigen Avidity Assay: Potential for HIV-1 Incidence Estimates and Avidity Maturation Studies**

*PLoS One* 2012;7(3):e33328

The spread of HIV is driven mostly by recently infected people who have a higher viral load and continue high-risk behavior. The authors developed a new way to distinguish recent HIV-1 infections from long-term infections, opening the way for better estimates of the spread of HIV-1 infections. The new method can also be applied to other infections, such as rubella, measles, and hepatitis.



E. Brook Goodhew, Jeffrey W. Priest, Delynn M. Moss, Guangming Zhong, Beatriz Munoz, Harran Mkocha, Diana L. Martin, Sheila K. West, Charlotte Gaydos, and Patrick J. Lammie

### **CT694 and pgp3 as Serological Tools for Monitoring Trachoma Programs**

*PLoS Neglected Tropical Diseases* 2012;6(11):e1873

The bacterium *Cblamydia trachomatis* causes trachoma, the most frequent cause of infectious blindness. Trachoma afflicts millions in Africa and Southeast Asia, especially women and children. This paper presents a novel way to monitor trachoma programs through serological testing. The authors identified two antigens as possible candidates for measuring serologic responses to *C. trachomatis*.



Jingcheng Li, Jacob Carr, and Christopher Jobes

### **A Shell-Based Magnetic Field Model for Magnetic Proximity Detection Systems**

*Safety Science* 2012;50:463–471

The Mine Safety and Health Administration estimates that about 20% of mining-related deaths could be prevented through the use of proximity detection technology. The shell-based analytical model that NIOSH researchers developed in this study mathematically describes the variation of the magnetic fields used in detection equipment. This finding has enabled production of more reliable detection systems to better protect miners.



Naomi W. Lucchi, Mitra Poorak, Jenna Oberstaller, Jeremy DeBarry, Ganesh Srinivasamoorthy, Ira Goldman, Maniphet Xayavong, Alexandre J. da Silva, David S. Peterson, John W. Barnwell, Jessica Kissinger, and Venkatachalam Udhayakumar

### **A New Single-Step PCR Assay for the Detection of the Zoonotic Malaria Parasite *Plasmodium knowlesi***

*PLoS One* 2012;7(2):e31848

This study marks one of the first times constructing a complete gene sequence for a pathogen has led to the development of a new diagnostic test. The authors' work demonstrates the value of the malaria parasite genome database. It also points to the promise that future targets for diagnostic, pharmaceutical, or vaccine development might also be accomplished from a bioinformatics approach.



Jane Y. Ma, Robert R. Mercer, Mark Barger, Diane Schwegler-Berry, James Scabilloni, Joseph K. Ma, and Vincent Castranova

### **Induction of Pulmonary Fibrosis by Cerium Oxide Nanoparticles**

*Toxicology and Applied Pharmacology* 2012;262(3):255–264

Cerium compounds have been used as a fuel additive to reduce emissions, but they are released as cerium oxide nanoparticles, which have been criticized as unsafe. The study demonstrates that cerium oxide causes pulmonary fibrosis in rats, suggesting it will likely affect humans as well.



Laura K. McMullan, Scott M. Folk, Aubree J. Kelly, Adam MacNeil, Cynthia S. Goldsmith, Maureen G. Metcalfe, Brigid C. Batten, César G. Albariño, Sherif R. Zaki, Pierre E. Rollin, William L. Nicholson, and Stuart T. Nichol

### **A New Phlebovirus Associated with Severe Febrile Illness in Missouri**

*The New England Journal of Medicine* 2012;367(9):834–841

This paper describes the discovery of a tick-borne virus new to the Americas. Analysis of the virus genome revealed a distinct member of the phlebovirus genus that the authors named Heartland virus. With its identification and genetic sequencing, Heartland virus is now much better understood, and strategies to reduce the risks associated with it can be developed.



Connie H. Miller, S. J. Platt, Anne S. Rice, Fiona Kelly, J. Michael Soucie, and The Hemophilia Inhibitor Research Study Investigators

### **Validation of Nijmegen–Bethesda Assay Modifications to Allow Inhibitor Measurement during Replacement Therapy and Facilitate Inhibitor Surveillance**

*Journal of Thrombosis and Haemostasis* 2012;10(6):1055–1061

Development of inhibitors (antibodies) against clotting factor replacement protein is the most significant cause of death among persons with hemophilia. The authors used knowledge of antibody characteristics to modify a clinical test and make it applicable for national surveillance. It is the first test for treatment-related antibodies used for hemophilia patients that does not require them to abstain from treatment.



Rendi Murphree, J. R. Dunn, William Schaffner, and T. F. Jones

### **La Crosse Encephalitis Surveillance Using Single Versus Paired Serologic Testing**

*Zoonoses and Public Health* 2012;59(3):181–183

La Crosse virus (LACV) is the most frequent cause of arboviral encephalitis among children. The findings in this study suggest that a single serologic test can be used in areas where LACV encephalitis is more common. This simplified testing approach can decrease laboratory burdens and increase public health workers' efficiency.

Linda M. Sargent, Ann F. Hubbs, S. H. Young, Michael L. Kashon, Cerasela Z. Dinu, J. L. Salisbury, Stanley A. Benkovic, David T. Lowry, A. R. Murray, Elena R. Kisin, Katelyn J. Siegrist, Lori Battelli, J. Mastovich, J. L. Sturgeon, Kristin L. Bunker, Anna A. Shvedova, and Steven H. Reynolds

### **Single-Walled Carbon Nanotube-Induced Mitotic Disruption**

*Mutation Research* 2012;745(1–2):28–37

Because of the many emerging commercial applications for carbon fibers and their physical similarities to asbestos fibers, respiratory exposure to workers is likely to increase. This study assesses the toxicity of carbon nanotubes and demonstrates that single-walled tubes disrupt cell division and cause errors in the numbers of chromosomes.



John R. Su, Allan Pillay, Edward W. Hook, Khalil G. Ghanem, William Wong, Dawn Jackson, Lewis D. Smith, Elaine Pierce, Susan S. Philip, Steven Wilson, Matthew R. Golden, Kimberly A. Workowski, Kai-Hua Chi, Deidra D. Parrish, Cheng Y. Chen, and Hillard S. Weinstock

### **Prevalence of the 23S rRNA A2058G Point Mutation and Molecular Subtypes in *Treponema pallidum* in the United States, 2007 to 2009**

*Sexually Transmitted Diseases* 2012;39(10):794–798

Using molecular techniques, this study detected a *Treponema pallidum* mutation associated with syphilis treatment failure and allowed the description of *T. pallidum* subtypes present in different risk populations. This paper represents the first study to apply these techniques to samples of *T. pallidum* from sites across the United States and provides insight into how to address the disease in these areas.

Hong Thai, David S. Campo, James Lara, Zoya Dimitrova, Sumathi Ramachandran, Guoliang Xia, Lilia Ganova-Raeva, Chong-Gee Teo, Anna Lok, and Yury Khudyakov

### **Convergence and Coevolution of Hepatitis B Virus Drug Resistance**

*Nature Communications* 2012; doi: 10.1038/ncomms1794

One way germs begin to resist drugs is through gene mutations. However, with hepatitis B, the usual genetic mutation may not always be found in resistant strains. The authors discovered that an interaction among sites across the entire hepatitis B genome—not just the rtM204I/V mutation—could produce drug resistance among the patients investigated.



Michael B. Townsend, Mary S. Keckler, Nishi Patel, Dele H. Davies, P. Felgner, Inger K. Damon, and Kevin L. Karem

### **Humoral Immunity to Smallpox Vaccines and Monkeypox Virus Challenge; Proteomic Assessment and Clinical Correlations**

*Journal of Virology* 2012; doi: 10.1128/JVI.02089-12

Early smallpox vaccines caused numerous adverse reactions, leading to the development of new, safer vaccines. This is the first study to carefully define smallpox vaccine and systemic orthopoxvirus antibody responses to individual virus proteins. The findings show similarities between vaccine response in prairie dogs and humans, enhancing the value of the prairie dog as a vaccination model for orthopoxvirus.



## Prevention and Control

Taiwo O. Abimbola, Barbara J. Marston, Anand A. Date, John M. Blandford, Naline Sangrujee, and Stefan Z. Wiktor

### **Cost-Effectiveness of Tuberculosis Diagnostic Strategies to Reduce Early Mortality among Persons with Advanced HIV Infection Initiating Antiretroviral Therapy**

*Journal of Acquired Immune Deficiency Syndrome* 2012;60(1):e1–e7

This is the first study to examine the cost-effectiveness of tuberculosis diagnoses among persons with advanced immunosuppressive diseases, such as AIDS. This is also the first paper to assess a new molecular diagnostic tool in reducing the mortality in this population as well as its cost effectiveness.



Anna Bowen, Mubina Agboatwalla, Stephen Luby, Timothy Tobery, Tracy Ayers, and R. M. Hoekstra

### **Association Between Intensive Handwashing Promotion and Child Development in Karachi, Pakistan**

*Archives of Pediatrics & Adolescent Medicine* 2012;  
doi: 10.1001/archpediatrics.2012.1181

An estimated 200 million children are currently at risk for impaired development due to the social and environmental conditions in which they live. Most large-scale efforts to improve child development are costly and often do not reach many children. This study shows that children who received intensive handwashing instruction reached developmental milestones 6 months earlier than those who did not.

James L. Goodson, Manisha A. Kulkarni, Jodi L. Vanden Eng, Kathleen A. Wannemuehler, Annett H. Cotte, Rachelle E. Desrochers, Bakolalao Randriamanalina, and Elizabeth T. Luman

**Improved Equity in Measles Vaccination from Integrating Insecticide-Treated Bednets in a Vaccination Campaign, Madagascar**

*Tropical Medicine and International Health* 2012;17(4):430–437

The authors analyzed vaccination coverage in a measles immunization campaign that included the distribution of insecticide-treated mosquito nets for malaria prevention. They found that pairing the mosquito net distribution with the immunization campaign improved measles vaccination coverage and mosquito net distribution among the poor. This approach reduced health inequities by providing protection for the most vulnerable children.



Edward W. Gregg, Haiying Chen, Lynne E. Wagenknecht, Jeanne M. Clark, Linda M. Delahanty, John Bantle, Henry J. Pownall, Karen C. Johnson, Monika M. Safford, Abbas E. Kitabchi, F. Xavier Pi-Sunyer, Rena R. Wing, and Alain G. Bertoni for the Look AHEAD Research Group

**Association of an Intensive Lifestyle Intervention with Remission of Type 2 Diabetes**

*JAMA* 2012;308(23):2489–2496

Type 2 diabetes has long been considered an incurable disease, with rare exceptions associated with bariatric surgery. This paper used data from the Look AHEAD study, the largest study of how life changes can affect cardiovascular disease among people with diabetes. It is the first randomized controlled trial to show that nonsurgical remission of type 2 diabetes is possible.

Cynthia F. Hinton, Daniel R. Neuspiel, Ruth S. Gubernick, Timothy Geleske, Jill Healy, Alex R. Kemper, Michele A. Lloyd-Puryear, Robert A. Saul, Barry H. Thompson, and Celia I. Kaye

### **Improving Newborn Screening Follow-Up in Pediatric Practices: Quality Improvement Innovation Network**

*Pediatrics* 2012;130(3):e669–e675

The authors established a 6-month quality improvement project in 15 primary care pediatric practices to improve short-term newborn screening follow-up. Practices were successful in improving their screening processes, and providers perceived no increase in time spent during each visit. Practices also increased their use of decision support tools after the project.



Denise J. Jamieson, Charles S. Chasela, Michael G. Hudgens, Caroline C. King, Athena P. Kourtis, Dumbani Kayira, Mina C. Hosseinipour, Deborah D. Kamwendo, Sascha R. Ellington, Jeffrey B. Wiener, Susan A. Fiscus, Gerald Tegha, Innocent A. Mofolo, Dorothy S. Sichali, Linda S. Adair, Rodney J. Knight, Francis Martinson, Zebrone Kacheche, Alice Soko, Irving Hoffman, and Charles van der Horst for the BAN Study Team

### **Maternal and Infant Antiretroviral Regimens to Prevent Postnatal HIV-1 Transmission: 48-Week Follow-Up of the BAN Randomised Controlled Trial**

*The Lancet* 2012;379(9835):2449–2458

Where no safe alternative to breastfeeding exists, the World Health Organization recommends that antiretroviral prophylaxis be given to either HIV-infected mothers or infants throughout breastfeeding. The authors assessed the effect of 28 weeks of maternal or infant antiretroviral prophylaxis on postnatal HIV infection at 48 weeks.



Joanne Klevens, Romina Kee, William Trick, Diana Garcia, Francisco R. Angulo, Robin Jones, and Laura S. Sadowski

### **Effect of Screening for Partner Violence on Women's Quality of Life**

*JAMA* 2012;308(7):681–689

Women who endure partner violence more often report poor physical and mental health. Early diagnosis and intervention could reduce adverse health effects. The results of this study suggest that providing doctors and hospitals with a partner violence resource list does not result in improved health outcomes. These findings provide important information for clinicians and others to consider in light of recent professional recommendations calling for routine screening.



Lara K. Misegades, Kathleen Winter, Kathleen Harriman, John Talarico, Nancy E. Messonnier, Thomas A. Clark, and Stacey W. Martin

### **Association of Childhood Pertussis with Receipt of 5 Doses of Pertussis Vaccine by Time Since Last Vaccine Dose, California, 2010**

*JAMA* 2012;308(20):2126–2132

States reported more than 41,000 cases of pertussis in 2012, the most in the United States since 1955. Along with the emergence of pertussis in vaccinated school-aged children, concerns have been raised about the protection afforded by the pertussis vaccine series. This paper describes a case-control evaluation of the U.S. pertussis childhood vaccination program conducted during the 2010 California epidemic.



John D. Noti, William G. Lindsley, Francoise M. Blachere, Gang Cao, Michael L. Kashon, Robert E. Thewlis, Cynthia M. McMillen, William P. King, Jonathan V. Szalajda, and Donald H. Beezhold

### **Detection of Infectious Influenza Virus in Cough Aerosols Generated in a Simulated Patient Examination Room**

*Clinical Infectious Diseases* 2012;54(11):1569–1577

The potential for influenza to be spread through breathing remains controversial. Clinical data have not resolved uncertainty about the importance of this route and the need to use N95 respirators to prevent it. This study shows that respirators can block the virus and that the influenza virus remains infectious in cough-generated air particles, supporting the use of N95 respirators for protection against airborne influenza.



Ryan T. Novak, Jean Ludovic Kambou, Fabien V. K. Diomandé, Tiga F. Tarbangdo, Rasmata Ouédraogo-Traoré, Lassana Sangaré, Clement Lingani, Stacey W. Martin, Cynthia Hatcher, Leonard W. Mayer, F. Marc LaForce, Fenella Avokey, Mamoudou H. Djingarey, Nancy E. Messonnier, Sylvestre R. Tiendrébéogo, and Thomas A. Clark

### **Serogroup A Meningococcal Conjugate Vaccination in Burkina Faso: Analysis of National Surveillance Data**

*The Lancet Infectious Diseases* 2012;12(10):757–764

Meningitis has posed a recurrent threat for more than 100 years for the 430 million people living in a sub-Saharan region of Africa known as the “meningitis belt.” In 2010, Burkina Faso vaccinated 11.6 million young people against meningitis in 11 days. To evaluate the impact of this campaign, the authors used national surveillance data and provided the first evidence of the effectiveness of this new vaccine.



John J. Sammarco, S. Gallagher, Alan Mayton, and Justin R. Srednicki

### **A Visual Warning System to Reduce Struck-By or Pinning Accidents Involving Mobile Mining Equipment**

*Applied Ergonomics* 2012;43(6):1058–1065

The study shows that a visual warning system can prevent mine worker injury or death from pinning and striking accidents involving moving mining equipment. The experiment demonstrates that the system can reduce fatalities and injuries because it can be installed on any type of mining equipment or vehicle, above or below surfaces, and regardless of the commodity being mined. The system can also be adapted for transportation, construction, and agriculture.



Parminder S. Suchdev, Laird J. Ruth, Bradley A. Woodruff, Charles Mbakaya, Usha Mandava, Rafael Flores-Ayala, Maria Elena D. Jefferds, and Robert Quick

### **Selling Sprinkles Micronutrient Powder Reduces Anemia, Iron Deficiency, and Vitamin A Deficiency in Young Children in Western Kenya: A Cluster-Randomized Controlled Trial**

*The American Journal of Clinical Nutrition* 2012;95(5):1223–1230

This was the first study to show the effectiveness of micronutrient powders to prevent malnutrition. Although the value of such powders in reducing anemia rates has been shown, their effectiveness in real-world programs has not been assessed. The authors found significant reductions in iron deficiency and vitamin A deficiency and improvements in anemia cure rates among children in communities where the powders were promoted.



Stephen J. Swanson, Christina R. Phares, Blain Mamo, Kirk E. Smith, Martin S. Cetron, and William M. Stauffer

### **Albendazole Therapy and Enteric Parasites in United States-Bound Refugees**

*The New England Journal of Medicine* 2012;366(16):1498–1507

The authors found a 77% reduction in the rate of intestinal parasites among more than 26,000 refugees from sub-Saharan Africa and Southeast Asia between 1993 and 2007. This paper supports the continued use of albendazole therapy and offers insights about specific intestinal worms and protozoa that infect children and adults in resource-poor countries.



Michael C. Thigpen, Poloko M. Kebaabetswe, Lynn A. Paxton, Dawn K. Smith, Charles E. Rose, Tebogo M. Segolodi, Faith L. Henderson, Sonal R. Pathak, Fatma A. Soud, Kata L. Chillag, Rodreck Mutanhaurwa, Lovemore Ian Chirwa, Michael Kasonde, Daniel Abebe, Evans Buliva, Roman J. Gvetadze, Sandra Johnson, Thom Sukalac, Vasavi T. Thomas, Clyde Hart, Jeffrey A. Johnson, C. Kevin Malotte, Craig W. Hendrix, and John T. Brooks for the TDF2 Study Group

### **Antiretroviral Preexposure Prophylaxis for Heterosexual HIV Transmission in Botswana**

*The New England Journal of Medicine* 2012;367(5):423–434

Preexposure prophylaxis (PrEP) with antiretroviral drugs has been shown to reduce the spread of HIV among men who have sex with men, but the effectiveness among heterosexuals is uncertain. These are the first data to quantify the efficacy of PrEP for the prevention of HIV transmission among heterosexuals. The findings have led several African countries to consider PrEP as a national strategy to prevent HIV transmission in discordant heterosexual couples.



# Lifetime Scientific **Achievement**

*The following current or former CDC/ATSDR employees were nominated for the Lifetime Scientific Achievement Award, which recognizes individuals for a body of work contributing to public health. Nominees were judged on their work's scientific merit, its effect on public health and the mission of CDC/ATSDR, and on their leadership and recognition by peers.*

## Larry J. Anderson, MD

*National Center for Immunization and Respiratory Diseases*

Dr. Larry Anderson's research has focused on respiratory syncytial virus (RSV) and the assessment of its disease burden the United States, which is responsible for more than 10,000 deaths each year. His research has led to the development of widely used reference reagents, research agreements to develop reagents for laboratories, and a series of patents on inventions concerning disease progression and immunity mechanisms of RSV.

Dr. Anderson has consistently applied methods from various specialties, and he has developed new ways to resolve public health problems. He holds six patents in viral diagnostics, immune modulation, and immunization. In 1999, he led an interdisciplinary team of scientists that performed the initial genetic characterization of Nipah virus following its emergence in Malaysia and Singapore. He supervised some of the first studies on Nipah virus and went on to characterize infections in Bangladesh and India in later years. In 2003, he led efforts that resulted in the discovery and molecular characterization of a novel emergent coronavirus responsible for the SARS pandemic. Through his leadership of CDC's response, assays were developed and deployed domestically for surveillance, and scientific studies were conducted that led to a better understanding of SARS epidemiology, clinical disease, and distribution of related coronaviruses.

Dr. Anderson's expertise in public health, virology, and epidemiology also led to his accepting an assignment in the Department of Health and Human Services as a senior scientist to develop a strategy for smallpox vaccination. His leadership and accomplishments have made him an internationally recognized expert in the field of infectious diseases. He is an author of more than 200 peer-reviewed scientific publications and 56 book chapters and reviews. His direct supervision of research teams has resulted in more than 130 peer-reviewed publications with his colleagues. His influence and contributions to the scientific activities of other work groups inside and outside his area of responsibility resulted in about 100 more peer-reviewed publications.

## **Hani K. Atrash, MD, MPH**

*National Center on Birth Defects and Developmental Disabilities*

Since graduating from medical school at the American University of Beirut in 1975, Dr. Hani Atrash has focused his career on maternal and child health. He has served in a variety of capacities at CDC since 1979, when he joined the Epidemic Intelligence Service in the Family Planning Evaluation Division.

Dr. Atrash is noted for establishing a national agenda to provide women and families with preconception health services, domestically and internationally. He convened the first national summit on preconception care in June 2005. The summit was cosponsored by 35 national organizations and 5 federal agencies and resulted in consensus recommendations.

As a result of Dr. Atrash's leadership, preconception health promotion is now recognized as critical in both domestic and international maternal and child health programs. Domestically, 47 states now have preconception health indicators in state performance measures and priority needs. As a result of his work, the lives of millions of women, children, and families around the world have been improved. This achievement is shown by the World Health Organization's efforts to ensure all women of reproductive age receive preconception counseling.

Dr. Atrash has served as a role model and motivated others to pursue excellence in scientific quality and productivity. His original scientific and scholarly contributions are quite impressive, having authored or coauthored more than 150 journal articles and book chapters.

Dr. Atrash's international leadership is reflected by the breadth of awards for which he has been nominated or has received, including the American Public Health Association's Distinguished Service Award for Maternal Child Health, the CDC/ATSDR William C. Watson Medal of Excellence, the Federal Employee of the Year Award for Outstanding Manager, the Nathan Davis Government Service Award, and the Service to America Award. He was noted in a peer-reviewed journal to have the most diverse staff of epidemiologists in the United States and perhaps in the world.

## Robert A. Hahn, PhD, MPH

*Office of Surveillance, Epidemiology, and Laboratory Services*

Dr. Robert Hahn has been a pioneer in bridging the disciplines of anthropology, epidemiology, and public health. His desire to improve the health of poor and minority populations brought him to CDC, where he has focused on promoting health equity; integrating disciplines to tackle public health problems; and improving measurement, analysis, and data interpretation—all critical to improving the nation's health.

Because of his research, Dr. Hahn was asked to represent CDC in the revision of racial and ethnic classifications for U.S. census statistics, a process that lasted several years, resulting in a new directive published in 1997 and providing classifications for the 2000 census. His research on classification continued and has yielded an extensive examination and critique of health statistics on racial and ethnic populations in the United States.

From the beginning of his CDC career, he has used his knowledge of epidemiology and anthropology to show how anthropology could play a prominent role in population health. He wrote *Sickness and Healing: An Anthropological Perspective* in his spare time. As part of his work at CDC, he edited the anthology, *Anthropology in Public Health: Bridging Differences in Culture and Society*, which shows how anthropology often clarifies public health issues, provides methods for analysis, and enhances public health practice.

In 1998, Dr. Hahn was elected to the Senior Biomedical Research Service, an elite employment track in the Public Health Service used to recruit and retain widely recognized scientific leaders. He is the only anthropologist in this group at CDC. In 2007, Dr. Hahn won CDC's National Center for Health Marketing Scientist of the Year Award for his Community Guide systematic reviews on public policy. He has also won two individual and one unit Commissioned Corps Commendation awards. In December 2012, the Society for Medical Anthropology presented its Career Achievement Award to Dr. Hahn.

## **Albert E. Munson, PhD**

*National Institute for Occupational Safety and Health*

For 43 years, Dr. Albert Munson has been a pioneer in the field of immunotoxicology. In fact, he is viewed as one of the discipline's founding fathers. Dr. Munson brought his scientific leadership to the National Institute of Occupational Safety and Health (NIOSH) in 1997. Beginning with a tiny staff, he led the establishment of the Health Effects Laboratory Division, now comprising more than 200 staff dedicated to explaining the causes and mechanisms of occupational diseases. He also developed liaisons and partnerships with the National Toxicology Program and National Institute of Environmental Health Sciences, integrating missions across agencies and providing competencies and services to the Department of Health and Human Services' wider public health mission.

Dr. Munson established a highly successful basic science division within NIOSH, integrated its mission to public health practice and prevention, and eased the transfer of infrastructure activities to NIOSH and CDC. He has continued the tradition of Dr. Shepard by translating laboratory research into action relevant to CDC's public health mission.

Dr. Munson has published more than 270 peer-reviewed journal articles, proceeding reports, and book chapters, and served on 18 professional organizations, including current service in the Society of Toxicology, the American Society for Pharmacology and Experimental Therapeutics, and the American Cancer Society. He has served as a reviewer for 24 scientific journals, on the editorial boards of 7 journals, and as a mentor to 25 PhD students.

The success of his scientific leadership of the Health Effects Laboratory Division is seen in the number of division scientists who serve on national and international advisory committees; numerous division alumni in scientific positions in academia, government agencies, and industry; and 22 patents by division staff. The contributions of division research to Occupational Safety and Health Administration regulations, American Society for Testing Materials standards, and NIOSH policy documents—and the production of data to address emerging workplace issues—also demonstrate his influence. Division scientists are sought by science investigators around the world to be co-investigators on grant submissions.

## Govinda Visvesvara, PhD

*National Center for Emerging and Zoonotic Infectious Diseases*

During the past 40 years, Dr. Govinda Visvesvara has established himself as the preeminent authority on free-living amebic infections in humans, specializing in the biology and diagnostics of these organisms and the often fatal infections they cause. Dr. Visvesvara set up CDC's Free-Living Amebas (FLA) Laboratory and paved the scientific path for studying free-living amebic infections. His diagnostic methods for free-living amebas have become standard around the world. During his tenure at CDC, he has increased awareness and understanding of free-living amebic infections, resulting in increased reporting of these illnesses and increased interest in drug testing, genomic sequencing, pathogenicity, epidemiology, and environmental microbiology.

Dr. Visvesvara discovered, named, and has continued to document the pathogenicity of *Balamuthia mandrillaris*. He developed diagnostic immunofluorescence methods and has recently developed a way to more rapidly screen investigation samples. He was the first to identify *Balamuthia* as a transplant-associated infection and has been involved in investigations of three transplant clusters.

The CDC Free-Living Ameba Laboratory is one of the “CDC Gems” that has supported further research on these rare but severe diseases (for 40 years). Increased detection and changing epidemiology underscore the role these national laboratories have in supporting health professionals. The free-living ameba “voice in the wilderness” that Dr. Visvesvara once was, has been heard, and CDC has developed a balanced program to prevent these tragic infections.

Dr. Visvesvara is a renowned leader in his field. He has written more than 40 book chapters and reviews on FLA, as well as more than 300 scientific papers. He has been invited to give talks around the world, and he has served as a reviewer for 14 journals and four federal agencies and foundations. Perhaps the ultimate honor from his peers was to name a new species of ameba, *Monopylocystis visvesvarai*, in his honor.

# PREVIOUS WINNERS

## 2012

### **Assessment**

Concepción F. Estívariz, Hamid Jafari, Roland W. Sutter, T. Jacob John, Vibhor Jain, Ashutosh Agarwal, Harish Verma, Mark A Pallansch, Ajit P. Singh, Sherine Guirguis, Jitendra Awale, Anthony Burton, Sunil Bahl, Arani Chatterjee, and R. Bruce Aylward

### **Immunogenicity of Supplemental Doses of Poliovirus Vaccine for Children Aged 6–9 Months in Moradabad, India: A Community-Based, Randomized Controlled Trial**

*The Lancet Infectious Diseases* 2012;12(2):128–135 (published online 2011)

### **Laboratory Science**

Brian H. Bird, Louis H. Maartens, Shelley Campbell, Baltus J. Erasmus, Bobbie R. Erickson, Kimberly A. Dodd, Christina F. Spiropoulou, Deborah Cannon, Clifton P. Drew, Barbara Knust, Anita K. McElroy, Marina L. Khristova, César G. Albariño, and Stuart T. Nichol

### **Rift Valley Fever Virus Vaccine Lacking the NSs and NSm Genes is Safe, Nonteratogenic, and Confers Protection from Viremia, Pyrexia, and Abortion following Challenge in Adult and Pregnant Sheep**

*Journal of Virology* 2011; 85(24):12901–12909

### **Prevention and Control**

Timothy R. Sterling, M. Elsa Villarino, Andrey S. Borisov, Nong Shang, Fred Gordin, Erin Bliven-Sizemore, Judith Hackman, Carol Dukes Hamilton, Dick Menzies, Amy Kerrigan, Stephen E. Weis, Marc Weiner, Diane Wing, Marcus B. Conde, Lorna Bozeman, C. Robert Horsburgh, and Richard E. Chaisson for the TB Trials Consortium PREVENT TB Study Team

### **Three Months of Rifapentine and Isoniazid for Latent Tuberculosis Infection**

*The New England Journal of Medicine* 2011;365(23):2155–2166

## Data Methods and Study Design

Alula Hadgu, Nandini Dendukuri, and Liangliang Wang

### **Evaluation of Screening Tests for Detecting Chlamydia trachomatis: Bias Associated with the Patient-Infected-Status**

*Algorithm Epidemiology* 2012;23(1):72–82 (published online 2011)

## Lifetime Scientific Achievement

### **Henry Falk, MD, MPH**

Dr. Falk was recognized for his leadership and his efforts to bring the highest quality environmental health science to public health policy and practice.

## 2011

### **Assessment and Epidemiology**

Stacy M. Holzbauer, Aaron S. DeVries, James J. Sejvar, Christine H. Lees, Jennifer Adjemian, Jennifer H. McQuiston, Carlota Medus, Catherine A. Lexau, Julie R. Harris, Sergio E. Recuenco, Ermias D. Belay, James F. Howell, Bryan F. Buss, Mady Hornig, John D. Gibbins, Scott E. Brueck, Kirk E. Smith, Richard N. Danila, W. Ian Lipkin, Daniel H. Lachance, P. James B. Dyck, and Ruth Lynfield

### **Epidemiologic Investigation of Immune-Mediated Polyradiculoneuropathy among Abattoir Workers Exposed to Porcine Brain**

*PLoS One* 2010;5(3):e9782

### **Laboratory and Methods**

Robert D. Gilmore, Jr., Rebekah R. Howison, Gabrielle Dietrich, Toni G. Patton, Dawn R. Clifton, and James A. Carroll

### **The *bba64* Gene of *Borrelia burgdorferi*, the Lyme Disease Agent, is Critical for Mammalian Infection via Tick Bite Transmission**

*Proceedings of the National Academy of Sciences of the United States of America* 2010;107(16):7515–7520

## **Prevention and Control**

Charles S. Chasela, Michael G. Hudgens, Denise J. Jamieson, Dumbani Kayira, Mina C. Hosseinipour, Athena P. Kourtis, Francis Martinson, Gerald Tegha, Rodney J. Knight, Yusuf I. Ahmed, Deborah D. Kamwendo, Irving F. Hoffman, Sascha R. Ellington, Zebrone Kacheche, Alice Soko, Jeffrey B. Wiener, Susan A. Fiscus, Peter Kazembe, Innocent A. Mofolo, Maggie Chigwenembe, Dorothy S. Sichali, and Charles M. van der Horst for the Breastfeeding, Antiretroviral, and Nutrition Study Group

### **Maternal or Infant Antiretroviral Drugs to Reduce HIV-1 Transmission**

*The New England Journal of Medicine* 2010;362(24):2271–2281

## **Lifetime Scientific Achievement**

### **Kathleen Kreiss, MD**

Dr. Kreiss was recognized as a world-renowned expert in occupational respiratory disease. She has improved workplace safety by encouraging the use of safer materials and better work practices and controls.

## **2010**

### **Assessment and Epidemiology**

Fatimah S. Dawood, Seema Jain, Lyn Finelli, Michael W. Shaw, Stephen Lindstrom, Rebecca J. Garten, Larisa V. Gubareva, Xiyan Xu, Carolyn B. Bridges, and Timothy M. Uyeki

### **Emergence of a Novel Swine-Origin Influenza A (H1N1) Virus in Humans**

*The New England Journal of Medicine* 2009;360:2605–2615

### **Laboratory and Methods**

Joseph U. Igietseme, Qing He, Kahaliah Joseph, Francis O. Eko, Deborah Lyn, Godwin Ananaba, Angela Campbell, Claudiu Bandea, and Carolyn M. Black

### **Role of T Lymphocytes in the Pathogenesis of Chlamydia Disease**

*The Journal of Infectious Diseases* 2009;200:926–934

## **Prevention and Control** (Two Awards)

Sandra L. Decker

### **Changes in Medicaid Physician Fees and Patterns of Ambulatory Care**

*Inquiry* 2009;46(3):291–304

Manish Patel, Cristina Pedreira, Lucia Helena De Oliveira, Jacqueline Tate, Maribel Orozco, Juan Mercado, Alcides Gonzalez, Omar Malespin, Juan José Amador, Jazmina Umaña, Angel Balmaseda, Maria Celina Perez, Jon Gentsch, Tara Kerin, Jennifer Hull, Slavica Mijatovic, Jon Andrus, and Umesh Parashar

### **Association between Pentavalent Rotavirus Vaccine and Severe Rotavirus Diarrhea among Children in Nicaragua**

*JAMA* 2009;301(21):2243–2251

## **Lifetime Scientific Achievement**

### **Polly Marchbanks, PhD, MSN**

Dr. Marchbanks was recognized for her global leadership and research, particularly in the area of contraception.

## **2009**

### **Assessment and Epidemiology**

H. Irene Hall, Ruiguang Song, Philip Rhodes, Joseph Prejean, Qian An, Lisa M. Lee, John Karon, Ron Brookmeyer, Edward H. Kaplan, Matthew T. McKenna, and Robert S. Janssen for the HIV Incidence Surveillance Group

### **Estimation of HIV Incidence in the United States**

*JAMA* 2008;300:520–529

### **Laboratory and Methods**

Tracie L. Williams, Leah Luna, Zhu Guo, Nancy J. Cox, James L. Pirkle, Ruben O. Donis, and John R. Barr

### **Quantification of Influenza Virus Hemagglutinins in Complex Mixtures Using Isotope Dilution Tandem Mass Spectrometry**

*Vaccine* 2008;26:2510–2520

## Prevention and Control

Larissa Roux, Michael Pratt, Tammy O. Tengs, Michelle M. Yore, Teri L. Yanagawa, Jill Van Den Bos, Candace Rutt, Ross C. Brownson, Kenneth E. Powell, Gregory Heath, Harold W. Kohl III, Steven Teutsch, John Cawley, I-Min Lee, Linda West, and David M. Buchner

### **Cost Effectiveness of Community-Based Physical Activity Interventions**

*American Journal of Preventive Medicine* 2008;35:578–588

## Lifetime Scientific Achievement

### **Stephen B. Thacker, MD, MSc**

Dr. Thacker was recognized for his leadership and his work in fostering scientific communication and training of future leaders in public health. He has overseen the EIS program since 1989, and under his direction, the first CDC plan for surveillance was completed in 1985.

## 2008

## Assessment and Epidemiology

Earl S. Ford, Umed A. Ajani, Janet B. Croft, Julia A. Critchley, Darwin R. Labarthe, Thomas E. Kottke, Wayne H. Giles, and Simon Capewell

### **Explaining the Decrease in U.S. Deaths from Coronary Disease, 1980–2000**

*The New England Journal of Medicine* 2007;356:2388–2398

## Laboratory and Methods

Terrence M. Tumpey, Christopher F. Basler, Patricia V. Aguilar, Hui Zeng, Alicia Solórzano, David E. Swayne, Nancy J. Cox, Jacqueline M. Katz, Jeffery K. Taubenberger, Peter Palese, and Adolfo García-Sastre

### **A Two-Amino Acid Change in the Hemagglutinin of the 1918 Influenza Virus Abolishes Transmission**

*Science* 2007;315:655–659

## Prevention and Control

R. Louise Floyd, Mark Sobell, Mary M. Velasquez, Karen Ingersoll, Mary Nettleman, Linda Sobell, Patricia Dolan Mullen, Sherry Ceperich, Kirk von Sternberg, Burt Bolton, Bradley Skarpness, and Jyothi Nagaraja on behalf of the Project CHOICES Efficacy Study Group

### **Preventing Alcohol-Exposed Pregnancies: A Randomized Controlled Trial**

*American Journal of Preventive Medicine* 2007;32:1–10

## **Lifetime Scientific Achievement**

### **Vincent Castranova, PhD**

Dr. Castranova was recognized for his leadership in laboratory-based occupational health research. His contributions to the understanding of the biology of lung cells have been translated into the practical study of lung diseases and development of prevention programs.

## **2007**

### **Assessment and Epidemiology**

Wolfgang Hladik, Shelia C. Dollard, Jonathan Mermin, Ashley L. Fowlkes, Robert Downing, Minal M. Amin, Flora Banage, Esau Nzaro, Peter Kataaha, Timothy J. Dondero, Philip E. Pellett, and Eve M. Lackritz

#### **Transmission of Human Herpesvirus 8 by Blood Transfusion**

*The New England Journal of Medicine* 2006;355:1331–1338

### **Laboratory and Methods**

Mary A. Hoelscher, Sanjay Garg, Dinesh S. Bangari, Jessica A. Belser, Xiuhua Lu, Iain Stephenson, Rick A. Bright, Jacqueline M. Katz, Suresh K. Mittal, and Suryaprakash Sambhara

#### **Development of Adenoviral-Vector-Based Pandemic Influenza Vaccine against Antigenically Distinct Human H5N1 Strains in Mice**

*The Lancet* 2006;368:1495–1502

### **Prevention and Control**

Cynthia G. Whitney, Tamar Pilishvili, Monica M. Farley, William Schaffner, Allen S. Craig, Ruth Lynfield, Ann-Christine Nyquist, Kenneth A. Gershman, Marietta Vazquez, Nancy M. Bennett, Arthur Reingold, Ann Thomas, Mary P. Glode, Elizabeth R. Zell, James H. Jorgensen, Bernard Beall, and Anne Schuchat

#### **Effectiveness of Seven-Valent Pneumococcal Conjugate Vaccine against Invasive Pneumococcal Disease: A Matched Case-Control Study**

*The Lancet* 2006;368:1495–1502

## **Lifetime Scientific Achievement**

### **Roger I. Glass, MD, PhD, MPH**

Dr. Glass was recognized for his leadership and accomplishments in viral gastroenteritis. His work led to the recognition of rotavirus as a problem in the United States and to development of a rotavirus vaccine to be used worldwide.

## **2006**

### **Assessment and Epidemiology**

Lee Warner, Maurizio Macaluso, Harland D. Austin, David K. Kleinbaum, Lynn Artz, Michael E. Fleenor, Ilene Brill, Daniel R. Newman, and Edward W. Hook III

#### **Application of the Case-Crossover Design to Reduce Unmeasured Confounding in Studies of Condom Effectiveness**

*American Journal of Epidemiology* 2005;161:765–773

### **Laboratory and Methods**

Terrence M. Tumpey, Christopher F. Basler, Patricia V. Aguilar, Hui Zeng, Alicia Solórzano, David E. Swayne, Nancy J. Cox, Jacqueline M. Katz, Jeffery K. Taubenberger, Peter Palese, and Adolfo García-Sastre

#### **Characterization of the Reconstructed 1918 Spanish Influenza Pandemic Virus**

*Science* 2005;310(5745):77–80

### **Prevention and Control**

Stephen P. Luby, Mubina Agboatwalla, Daniel R. Feikin, John Painter, Ward Billhimer, Arshad Altaf, and Robert M. Hoekstra

#### **Effect of Handwashing on Child Health: A Randomised Controlled Trial**

*The Lancet* 2005;366:225–233

## **Lifetime Scientific Achievement**

### **Robert V. Tauxe, MD, MPH**

Dr. Tauxe was recognized for his leadership in the prevention and control of foodborne diseases in the United States and internationally. His work and that of his colleagues has resulted in dramatic changes in foodborne disease surveillance, outbreak detection, practices, and policies.

## 2005

### **Assessment and Epidemiology**

Barbara Lopes Cardozo, Oleg O. Bilukha, Carol A. Gotway Crawford, Irshad Shaikh, Mitchell I. Wolfe, Michael L. Gerber, and Mark Anderson

#### **Mental Health, Social Functioning, and Disability in Postwar Afghanistan**

*JAMA* 2004;292:575–584

### **Laboratory and Methods**

Justin M. Hettick, Michael L. Kashon, Janet P. Simpson, Paul D. Siegel, Gerald H. Mazurek, and David N. Weissman

#### **Proteomic Profiling of Intact Mycobacteria by Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry**

*Analytical Chemistry* 2004;76:5769–5776

### **Prevention and Control**

Marc Bulterys, Denise J. Jamieson, Mary Jo O’Sullivan, Mardge H. Cohen, Robert Maupin, Steven Nesheim, Mayris P. Webber, Russell Van Dyke, Jeffrey Wiener, and Bernard M. Branson for the Mother-Infant Rapid Intervention at Delivery Study Group

#### **Rapid HIV-1 Testing during Labor: A Multicenter Study**

*JAMA* 2004;292:219–223

### **Outstanding Scientific Contribution to Public Health Newborn Screening Quality Assurance Program**

#### **National Center for Environmental Health/Agency for Toxic Substances and Disease Registry**

William H. Hannon, Barbara W. Adams, and Robert F. Vogt

### **Lifetime Scientific Achievement**

#### **James M. Hughes, MD**

Dr. Hughes was recognized for his expertise in infectious diseases and bioterrorism and response. His leadership in addressing emerging and re-emerging global threats has brought global prominence to CDC and improved public health infrastructures nationwide.

## 2004

### **Assessment and Epidemiology**

Jennita Reefhuis, Margaret A. Honein, Cynthia G. Whitney, Shadi Chamany, Eric A. Mann, Krista R. Biernath, Karen Broder, Susan Manning, Swati Avashia, Marcia Victor, Pamela Costa, Owen Devine, Ann Graham, and Coleen Boyle

#### **Risk of Bacterial Meningitis in Children with Cochlear Implants**

*The New England Journal of Medicine* 2003;349:435–445

### **Laboratory and Methods**

Thomas G. Ksiazek, Dean Erdman, Cynthia S. Goldsmith, Sherif R. Zaki, Teresa Peret, Shannon Emery, Suxiang Tong, Carlo Urbani, James A. Comer, Wilina Lim, Pierre E. Rollin, Scott F. Dowell, Ai-Ee Ling, Charles D. Humphrey, Wun-Ju Shieh, Jeannette Guarner, Christopher D. Paddock, Paul Rota, Barry Fields, Joseph DeRisi, Jyh-Yuan Yang, Nancy Cox, James M. Hughes, James W. LeDuc, William J. Bellini, Larry J. Anderson, and the SARS Working Group

#### **A Novel Coronavirus Associated with Severe Acute Respiratory Syndrome**

*The New England Journal of Medicine* 2003;348:1953–1966

### **Prevention and Control**

Cynthia G. Whitney, Monica M. Farley, James Hadler, Lee H. Harrison, Nancy M. Bennett, Ruth Lynfield, Arthur Reingold, Paul R. Cieslak, Tamara Pilishvili, Delois Jackson, Richard R. Facklam, James H. Jorgensen, and Anne Schuchat for the Active Bacterial Core Surveillance of the Emerging Infections Program Network

#### **Decline in Invasive Pneumococcal Disease after the Introduction of Protein-Polysaccharide Conjugate Vaccine**

*The New England Journal of Medicine* 2003;348:1737–1746

### **Lifetime Scientific Achievement** (Two Awards)

#### **Harold W. Jaffe, MD**

Dr. Jaffe was recognized as a national and international leader in the disease investigation of HIV/AIDS, which has increased scientific knowledge about HIV/AIDS and affected national and international approaches to prevention and control.

## Walter A. Orenstein, MD

Dr. Orenstein was recognized for his leadership in reducing the occurrence of vaccine-preventable diseases in children. His work has been critical to the development of national vaccine policy and global immunization strategies.

## 2003

### Assessment and Epidemiology

Polly A. Marchbanks, Jill A. McDonald, Hoyt G. Wilson, Suzanne G. Folger, Michele G. Mandel, Janet R. Daling, Leslie Bernstein, Kathleen E. Malone, Giske Ursin, Brian L. Strom, Sandra A. Norman, Linda K. Weiss, Phyllis Wingo, Michael S. Simon, Ronald T. Burkman, Jesse A. Berlin, and Robert Spirtas

### Oral Contraceptives and the Risk of Breast Cancer

*The New England Journal of Medicine* 2002;346:2025–2032

### Laboratory and Methods

Bharat S. Parekh, M. Susan Kennedy, Trudy Dobbs, Chou-Pong Pau, Robert Byers, Timothy Green, Dale J. Hu, Suphak Vanichseni, Nancy L. Young, Kachit Choopanya, Timothy D. Mastro, and J. Steven McDougal

### Quantitative Detection of Increasing HIV Type 1 Antibodies after Seroconversion: A Simple Assay for Detecting Recent HIV Infection and Estimating Incidence

*AIDS Research and Human Retroviruses* 2002;18:295–307

### Prevention and Control

Robert E. Quick, Akiko C. Kimura, Angelica Thevos, Mathias Tembo, Isidore Shamputa, Lori Hutwagner, and Eric Mintz

### Diarrhea Prevention through Household-Level Water Disinfection and Safe Storage in Zambia

*The American Journal of Tropical Medicine and Hygiene* 2002;66:584–589

### Outstanding Scientific Contribution to Public Health

Barbara Lopes Cardozo, Bradley A. Woodruff, Muireann Brennan, and Paul B. Spiegel

### International Emergency and Refugee Health Branch National Center for Environmental Health

## **Lifetime Scientific Achievement**

### **William R. Jarvis, MD**

Dr. Jarvis was recognized as a leader in the study of nosocomial infections and other threats to the safety of patients and health care workers. His research has led to interventions to reduce these risks and to the development of prevention guidelines.

## **2002**

### **Assessment and Epidemiology**

Trudy V. Murphy, Paul M. Gargiulo, Mehran S. Massoudi, David B. Nelson, Aisha O. Jumaan, Catherine A. Okoro, Lynn R. Zanardi, Sabeena Setia, Elizabeth Fair, Charles W. LeBaron, Melinda Wharton, John R. Livengood, and Benjamin Schwartz, for the Rotavirus Intussusception Inspection Team

#### **Intussusception among Infants Given an Oral Rotavirus Vaccine**

*The New England Journal of Medicine* 2001;344:564–572

### **Laboratory and Methods**

Brent S. Davis, Gwong-Jen J. Chang, Bruce Cropp, John T. Roehrig, Denise A. Martin, Carl J. Mitchell, Richard Bowen, and Michel L. Bunning

#### **West Nile Virus Recombinant DNA Vaccine Protects Mouse and Horse from Virus Challenge and Expresses in vitro a Noninfectious Recombinant Antigen That Can Be Used in Enzyme-Linked Immunosorbent Assays**

*Journal of Virology* 2001;75:4040–4047

### **Prevention and Control**

Belinda E. Ostrowsky, William E. Trick, Annette H. Sohn, Stephen B. Quirk, Stacey Holt, Loretta A. Carson, Bertha C. Hill, Matthew J. Arduino, Matthew J. Kuehnert, and William R. Jarvis

#### **Control of Vancomycin-Resistant Enterococcus in Health Care Facilities in a Region**

*The New England Journal of Medicine* 2001;344:1427–1433

## **Outstanding Scientific Contribution to Public Health**

Ronald M. Davis, Gary A. Giovino, Michael D. Erikson, and the Office on Smoking and Health

**Surgeon General's Reports on Smoking and Health National Center for Chronic Disease Prevention and Health Promotion**

## **Lifetime Scientific Achievement**

**Gerald R. Cooper, MD, PhD**

Dr. Cooper was recognized for his leadership in improving laboratory measures of lipids that led to the establishment of the CDC Lipid Standardization Program.

## **2001**

### **Assessment and Epidemiology**

Paul B. Spiegel and Peter Salama

**War and Mortality in Kosovo, 1998–99: An Epidemiological Testimony**

*The Lancet* 2000;335:2204–2209

### **Laboratory and Methods**

K.B. Chua, William J. Bellini, Paul A. Rota, Brian H. Harcourt, Azaibi Tamin, S.K. Lam, Thomas G. Ksiazek, Pierre E. Rollin, Sherif R. Zaki, Wun-Ju Shieh, Cynthia S. Goldsmith, Duane J. Gubler, John T. Roehrig, B. Eaton, A.R. Gould, Jim Olson, H. Field, P. Daniels, A.E. Ling, Clarence J. Peters, Larry J. Anderson, and Brian W.J. Mahy

**Nipah Virus: A Recently Emergent Deadly Paramyxovirus**

*Science* 2000;288:1432–1435

### **Prevention and Control**

Carolyn Buxton Bridges, William W. Thompson, Martin I. Meltzer, Gordon R. Reeve, Walter J. Talamonti, Nancy J. Cox, Heather A. Lilac, Henrietta Hall, Alexander Klimov, and Keiji Fukuda

**Effectiveness and Cost-Benefit of Influenza Vaccination of Healthy Working Adults: A Randomized Controlled Trial**

*JAMA* 2000;284:1655–1662

## **Outstanding Scientific Contribution to Public Health**

(Two Awards)

**Behavioral Risk Factor Surveillance System**

**National Center for Chronic Disease Prevention and Health Promotion**

## **Lifetime Scientific Achievement**

### **Joseph Edward McDade, PhD**

Dr. McDade was the first to identify the bacterium *Legionella pneumophila* as the cause of the well-known outbreak of Legionnaires' disease. In the 1980s, he identified the cause of a previously unknown tickborne disease, ehrlichiosis.

## **2000**

### **Assessment and Epidemiology**

Nathan Shaffer, Rutt Chuachoowong, Philip A. Mock, Chaiporn Bhadrakom, Wimol Siriwasin, Nancy L. Young, Tawee Chotpitayasunondh, Sanay Chearskul, Anuvant Roongpisuthipong, Pratharn Chinayon, John Karon, Timothy D. Mastro, and R.J. Simonds

### **Short-Course Zidovudine for Perinatal HIV-1 Transmission in Bangkok, Thailand: A Randomised Controlled Trial**

*The Lancet* 1999;353:773–780

## **1999**

Robert S. Janssen, Glen A. Satten, Susan L. Stramer, Bhupat D. Rawal, Thomas R. O'Brien, Barbara J. Weiblen, Frederick M. Hecht, Noreen Jack, Farley R. Cleghorn, James O. Kahn, Margaret A. Chesney, and Michael P. Busch

### **New Testing Strategy to Detect Early HIV-1 Infection for Use in Incidence Estimates and for Clinical and Prevention Purposes**

*JAMA* 1998;280:42–48

## **1998**

Denise M. Cardo, David H. Culver, Carol A. Ciesielski, Pamela U. Srivastava, Ruthanne Marcus, Dominique Abiteboul, Julia Heptonstall, Giuseppe Ippolito, Florence Lot, Penny S. McKibben, and David M. Bell for the Centers for Disease Control and Prevention Needlestick Surveillance Group

### **A Case-Control Study of HIV Seroconversion in Health Care Workers after Percutaneous Exposure**

*The New England Journal of Medicine* 1997;337:1485–1490

## **1997** (Two Awards)

Jennifer S. Rota, Janet L. Heath, Paul A. Rota, Gail E. King, María L. Celma, Juan Carabaña, Rafael Fernandez-Muñoz, David Brown, Li Jin, and William J. Bellini

### **Molecular Epidemiology of Measles Virus: Identification of Pathways of Transmission and Implications for Measles Elimination**

*The Journal of Infectious Diseases* 1996;173:32–37

Diana E. Schendel, Cynthia J. Berg, Marshalyn Yeargin-Allsopp, Coleen A. Boyle, and Pierre Decoufle

### **Prenatal Magnesium Sulfate Exposure and the Risk for Cerebral Palsy or Mental Retardation among Very Low-Birth-Weight Children Aged 3 to 5 Years**

*JAMA* 1996;276:1805–1810

## **1996**

Peter M. Strebel, Nicolae Ion-Nedelcu, Andrew L. Baughman, Roland W. Sutter, and Stephen L. Cochi

### **Intramuscular Injections within 30 Days of Immunization with Oral Poliovirus Vaccine—A Risk Factor for Vaccine-Associated Paralytic Poliomyelitis**

*The New England Journal of Medicine* 1995;332:500–506

## **1995**

Robert D. Brewer, Peter D. Morris, Thomas B. Cole, Stephanie Watkins, Michael J. Patetta, and Carol Popkin

### **The Risk of Dying in Alcohol-Related Automobile Crashes among Habitual Drunk Drivers**

*The New England Journal of Medicine* 1994;331:513–517

## **1994**

Michael E. St. Louis, Munkolenkole Kamenga, Christopher Brown, Ann Marie Nelson, Tarande Manzila, Veronique Batter, Frieda Behets, Uwa Kabagabo, Robert W. Ryder, Margaret Oxtoby, Thomas C. Quinn, and William L. Heyward

### **Risk for Perinatal HIV-1 Transmission According to Maternal Immunologic, Virologic, and Placental Factors**

*JAMA* 1993;269:2853–2859

## **1993**

Brian R. Edlin, Jerome I. Tokars, Michael H. Grieco, Jack T. Crawford, Julie Williams, Emelia M. Sordillo, Kenneth R. Ong, James O. Kilburn, Samuel W. Dooley, Kenneth G. Castro, William R. Jarvis, and Scott D. Holmberg

### **An Outbreak of Multidrug-Resistant Tuberculosis among Hospitalized Patients with the Acquired Immunodeficiency Syndrome**

*The New England Journal of Medicine* 1992;326:1514–1521

## **1992**

Marta Gwinn, Marguerite Pappaioanou, J. Richard George, W. Harry Hannon, Shari C. Wasser, Martha A. Redus, Rodney Hoff, George F. Grady, Anne Willoughby, Antonia C. Novello, Lyle R. Petersen, Timothy J. Dondero, and James W. Curran

### **Prevalence of HIV Infection in Childbearing Women in the United States**

*JAMA* 1991;265:1704–1708

## **1991**

Edward A. Belongia, Craig W. Hedberg, Gerald J. Gleich, Karen E. White, Arthur N. Mayeno, David A. Loegering, Sandra L. Dunnette, Phyllis L. Pirie, Kristine L. MacDonald, and Michael T. Osterholm

### **An Investigation of the Cause of the Eosinophilia-Myalgia Syndrome Associated with Tryptophan Use**

*The New England Journal of Medicine* 1990;323:357–365

## **1990**

Patricia M. Griffin, Robert V. Tauxe, Stephen C. Redd, Nancy D. Puhr, Nancy Hargrett-Bean, and Paul A. Blake

### **Emergence of Highly Trimethoprim-Sulfamethoxazole-Resistant Shigella in a Native American Population: An Epidemiologic Study**

*American Journal of Epidemiology* 1989;129:1042–1051

## **1989**

Chin-Yih Ou, Shirley Kwok, Sheila W. Mitchell, David H. Mack, John J. Sninsky, John W. Krebs, Paul Feorino, Donna Warfield, and Gerald Schochetman

### **DNA Amplification for Direct Detection of HIV-1 in DNA of Peripheral Blood Mononuclear Cells**

*Science* 1988;239:295–297

## **1988**

Rebeca Rico-Hesse, Mark A. Pallansch, Baldev K. Nottay, and Olen M. Kew

### **Geographic Distribution of Wild Poliovirus Type 1 Genotypes**

*Virology* 1987;160:311–322

## **1987**

J. Steven McDougal, M. Susan Kennedy, Julie M. Sligh, Sheila P. Cort, Alison C. Mawle, and Janet K. A. Nicholson

### **Binding of HTLV-III/LAV to T4+ T Cells by a Complex of the 100K Viral Protein and the T4 Molecule**

*Science* 1986;231:382–385

## **1986**

Arthur L. Reingold, Claire V. Broome, Allen W. Hightower, Gloria W. Ajello, Gail A. Bolan, Catherine Adamsbaum, Ellen E. Jones, Catherine Phillips, Hilaire Tiendrebeogo, and Adamou Yada

### **Age-Specific Differences in Duration of Clinical Protection after Vaccination with Meningococcal Polysaccharide A Vaccine**

*The Lancet* 1985;2:114–118

# KEYNOTE SPEAKERS

*Following is a list of colleagues who have made keynote speeches at the Shepard Science Awards Ceremony since its inception.*

## **2012**

**James S. Marks, MD, MPH**

Senior Vice President and Director  
Robert Wood Johnson Foundation  
Health Group  
*Making Health and Science Matter*

## **2011**

**Brian Greenwood, MD, CBE,  
FRCP, FRS**

London School of Hygiene &  
Tropical Medicine  
University of London  
*Vaccines for Global Health*

## **2010**

**John Holdren, PhD**

Princeton University  
*Science and Technology Policy for  
Ensuring the Public's Health*

## **2009**

**Paul Krugman, PhD**

Princeton University  
*The New York Times  
Health and the Economic Future*

## **2008**

**Neal Nathanson, MD**

University of Pennsylvania School  
of Medicine  
*AIDS Vaccine at the Crossroads*

## **2007**

**Michael Marmot, PhD, MBBS, MPH,  
FRCP, FFPHM, FMedSci**

Institute for Society and Health  
University College, London  
*Health in an Unequal World*

## **2006**

**Donald M. Berwick, MD, MPP**

Institute for Healthcare Improvement  
*The 100,000 Lives Campaign: Lessons  
from a National Mobilization*

## **2005**

**Harvey V. Fineberg, MD, PhD**

Institute of Medicine  
The National Academies  
*Science, Policy, and Public Trust*

## **2004**

**Shiriki Kumanyika, PhD, MPH**

University of Pennsylvania School  
of Medicine  
*Obesity, Health Disparities, and  
Prevention Paradigms: Hard  
Questions and Hard Choices*

## **2003**

Jo Ivey Boufford, MD

Robert F. Wagner Graduate School of  
Public Health

New York University School of  
Medicine

*Assuring the Public's Health in the 21st  
Century: A Research Agenda*

## **2002**

Marc L. Miringoff, PhD

Fordham Institute for Innovation  
in Social Policy

Fordham University Graduate Center  
*The Social Determinants of Health*

## **2001**

Jeffrey D. Sachs, PhD

Harvard University

*Reinvigorating the Fight against  
Disease in the Developing World*

## **2000**

Lynn R. Goldman, MD, MPH, MS

The Johns Hopkins University School  
of Hygiene and Public Health  
*Health of the World*

## **1999**

Steven N. Blair, PED

Cooper Institute for Aerobics Research  
*Physical Inactivity as a Public Health  
Problem*

## **1998**

Frederick P. Rivara, MD, MPH

Harborview Injury Prevention and  
Research Center

*Injury Control—The Uses of Science for  
Prevention*

## **1997**

David R. Cox, MD, PhD

Stanford University School of Medicine  
*The Human Genome Project and  
Human Disease*

## **1996**

Walter E. Massey, PhD

Morehouse College  
*Science—The (Ever-Expanding)  
Endless Frontier*

## **1995**

Nancy S. Wexler, PhD

Columbia University  
*Uncongenial Genealogies: Prediction  
and Protection in the Public Interest*

## **1994**

Thomas J. Coates, PhD

University of California at San  
Francisco  
*HIV Prevention Programs in Research:  
What Have We Accomplished  
and Where Do We Need to Go?*

## **1993**

W. French Anderson, MD

University of Southern California  
School of Medicine  
*The Scientific, Ethical, and Regulatory  
Issues of Gene Therapy*

## **1992**

Barry R. Bloom, PhD

Howard Hughes Medical Institute  
Albert Einstein College of Medicine  
*Revisiting Mycobacteria*

## **1991**

Lawrence K. Altman, MD

*The New York Times*  
*Science and the Media*

## **1990**

Purnell W. Choppin, MD

Howard Hughes Medical Institute  
*The Role of a Private Medical Research*  
*Organization in Biomedical Research*  
*and Education*

## **1989**

Joseph L. Goldstein, MD

University of Texas Health  
Sciences Center  
*Lipoprotein Receptors: A Genetic*  
*Defense against Hypercholesterolemia*  
*and Atherosclerosis*

## **1988**

David Baltimore, PhD

Whitehead Institute Massachusetts  
Institute of Technology  
*Genetics and Modern Disease*

## **1987**

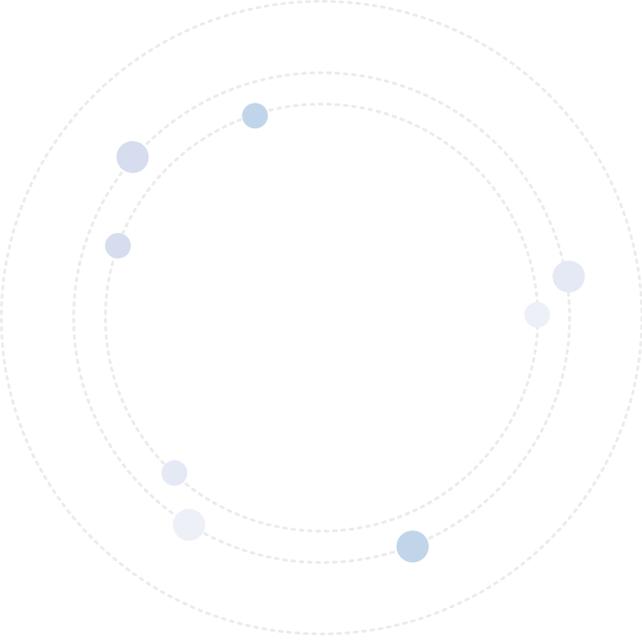
Frank Press, PhD

National Academy of Sciences  
*DNA in Washington*

## **1986**

James O. Mason, MD

Centers for Disease Control and  
Prevention *CDC,*  
*Science and the Future*



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