retary of Health and Human Services Tommy Thompson praised Gerberding for having "the right mix of professional experience and leadership skills" to run the agency as it focuses on new infectious disease threats. The appointment does not require congressional approval. Nevertheless, Senator Edward Kennedy (D–MA), chair of the Senate panel that reviews health policy, chimed in last week that Gerberding is "a strong public health leader" and "a superb choice."

Gerberding, CDC's first female director, appeared in televised briefings and in congressional hearings last fall to explain how the anthrax bacterium causes infection and how to guard against it. "She's a great teacher," says a former UCSF colleague, Paul Volberding, adding that CDC should benefit from her public communication skills. He also notes that during the 1980s and 1990s, Gerberding organized "an incredible consultation service" that worked around the clock to advise health workers and prevent the spread of HIV infection at San Francisco General Hospital.

CDC has been through a rocky period in the past 8 months, observers say, and many hope this appointment will boost morale. Some members of Congress criticized the agency for what they saw as an uncoordinated response to the anthrax mail attacks. CDC's operational response, says Tara O'Toole, director of the Johns Hopkins University Center for Civilian Biodefense Strategies in Baltimore, "was a little rusty." CDC's most recent director, Jeffrey Koplan, resigned on 31 March, leaving the agency without a permanent chief for 3 months.

Inside choice. Julie Gerberding advances from science chief to director of CDC.

Gerberding is "a terrific appointment," says O'Toole: "She has great scientific credentials, she's experienced in the real world, and she knows the CDC as an insider." James Curran, a former CDC epidemiologist who is now dean of the Rollins School of Public Health at Emory University in Atlanta, agrees: "She will be an energetic leader for CDC at a time when concerns about bioterrorism and infectious disease are paramount." But others, such as Barry Bloom, dean of the Harvard School of Public Health in Boston, warn that any insider like Gerberding faces a big challenge. "It is time to reexamine the architecture of the CDC and its relation to the other U.S. public health agencies," Bloom says, but it will be hard to bring order to the conflicting fiefdoms.

–ELIOT MARSHALL

MATHEMATICS

NSF to Double Number Of Math Institutes

American mathematics just multiplied itself by two. On 1 July, the Division of Mathematical Sciences (DMS) at the National Science Foundation (NSF) announced the creation of three new mathematical sciences research institutes, bringing the total number of such NSF-funded institutes to six. DMS's director, Philippe Tondeur, says he has "incredibly high expectations" for the institutes, which he describes as "vessels for start-up activities."

Castle on a hill. The American Institute of Mathematics' Research Conference Center in Morgan Hill, California, will host focused workshops.

The new institutes will bring together mathematicians and scientists to work on problems ranging from algebraic geometry to neuronal modeling. The institutes, chosen in a nationwide competition, are the Mathematical Biosciences Institute (MBI) at the Ohio State University, Columbus; the Statistical and Applied Mathematical Sciences Institute (SAMSI), a consortium led by Duke University in Durham in collaboration with North Carolina State University in Raleigh, the University of North Carolina, Chapel Hill, and the National Institute of Statistical Sciences in Research Triangle Park; and the AIM Research Conference Center (ARCC) at the American Institute of Mathematics in Palo Alto, California. They join the Mathematical Sciences Research Institute at the University of California, Berkeley; the Institute for Mathematics and Its Applications at the University of Minnesota, Minneapolis; and the Institute for Pure and Applied Mathematics at the University of California, Los Angeles. MBI and SAMSI will each receive $10 million from NSF over the next 5 years; ARCC is slated for $5 million.

MBI will kick off with a yearlong program on neuroscience, including neuronal modeling of olfactory, auditory, and sensorymotor systems. "The mathematical sciences proved valuable in completing the genome project," notes MBI director Avner Friedman. "The promise of the future is even greater." SAMSI has programs lined up on statistical aspects of environmental modeling and inverse problems. ARCC is to hold workshops on specific problems—the first, scheduled for December, will focus on algebraic geometry—and create a permanent "workshop Web site network" for each.

"We're at an exciting juncture," says Tondeur, who is stepping down as director of DMS this month after overseeing a dramatic 70% increase in NSF math funding over the past 3 years (from $106 million in 2000 to $182 million budgeted for 2003). Mathematics institutes are a "very low cost" way of bringing people together for focused research, he says.

–BARRY CIPRA

VIROLOGY

Active Poliovirus Baked From Scratch

With mail-order DNA and more than 2 years of painstaking work, researchers for the first time have assembled a virus from its chemical code. The lab-built poliovirus killed mice and was almost indistinguishable from the original. Biologists disagree on how difficult it would be to construct far bulkier viruses such as smallpox to create bioweapons.

Scientists hail the research, described online this week by *Science* (www.sciencemag.org/cgi/content/abstract/1072266), as a technical achievement. But in an age when anthrax travels through the mail, few could avoid the paper's obvious implications, both for polio—a disease that once triggered panicky epidemics and is now nearing global eradication—and other viral diseases. "It is a little sobering to see that folks in the chemistry lab can basically create a virus from scratch," says James LeDuc, director of the Division of Viral and Rickettsial Diseases at the Centers for Disease Control and Prevention in Atlanta. Vincent Racaniello, a virologist at Columbia University in New York City, was more blunt. "Poliovirus," he says, "will never be gone."

A genomic runt at just 7741 bases, poliovirus is composed of a single strand of RNA and ranks among the most thoroughly dissected viruses of all time. Once it infects

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