

disaster. But he's probably best known for his mantra "faster, cheaper, better," which translates into a push to switch from costly spacecraft that took years to develop to smaller, more focused missions that could be launched for under \$500 million within 18 months of receiving funding approval. The Lunar Prospector, Deep Space 1, and the 1997 Mars Pathfinder missions are examples.

Goldin's departure comes on the cusp of NASA's biggest-ever financial crisis. The ISS is projected to be \$4.8 billion over budget, the human spaceflight program faces a \$1 billion shortfall in its budget for next year, and a \$500 million overrun in NASA's 1999 budget was discovered this fall. In response, this year NASA slashed 40% from the ISS science budget and reduced the space station's crew from seven to three.

Further fixes will follow from the ISS management and cost evaluation task force report, ordered by Goldin this past July to get the ISS back on track without new money. The task force recommends that NASA slash jobs and, to avoid future cost overruns, that the agency adopt strict accounting methods.

NASA's top job is proving hard to fill—by early November, an appointment by President Bush had been imminent for months. It was well known that Goldin didn't want to leave NASA, but the Bush administration had given him no indication that it wanted him to stay. Courtney Stadd, one of Goldin's possible successors and NASA's chief of staff, is temporarily running the day-to-day operations.

Meanwhile, north of the border, Marc Garneau has been appointed president of the Canadian Space Agency. Garneau, Canada's first astronaut, has a bachelor's degree in engineering physics and a PhD in engineering.

The CSA's annual budget of Can\$300 million (\$188 million) is just 1.5% of NASA's. Since 1999 the CSA has emphasized terrestrial applications, such as remote sensing, and closer strategic links among government, academia, and industry. Garneau succeeds Mac Evans, who retired after 35 years at the agency.

PAUL GUINNESSY

New Directors for NIST, NOAA

Two veterans of both science and government service were set to become the new directors of the National Oceanographic and Atmospheric Administration (NOAA) and NIST following their nominations by President Bush. Both men, retired Vice Admiral Conrad Lautenbacher and Purdue University nuclear engineer Arden Bement Jr, were awaiting what were expected to be quick confirmations by the Senate as PHYSICS TODAY went to press.

Bush selected Lautenbacher, who holds a PhD in applied mathematics from Harvard University, to become the new under secretary of commerce for oceans and atmosphere, the official title for NOAA's director. Lautenbacher, a 1964 graduate of the US Naval Academy, was the commander of the US Third Fleet, and advised the Joint Chiefs of Staff on the size and composition of US military forces. He served in both the Vietnam and Gulf Wars and is considered an expert in antisubmarine and anti-air warfare. Scott Gudes has been the acting director of NOAA since Bush took office.

In recent testimony before the

House Science subcommittee on research, Lautenbacher advocated greater study of the seas, telling representatives that only 5% of the world's oceans have been mapped and that "today we know more about other planets than we do about our ocean depths." He called for a wide range of oceanic research, including increased study of the link between the oceans and the atmosphere so that climate shifts such as El Niño and La Niña can be better understood.

Bement, the head of Purdue University's school of nuclear engineering, was chosen by Bush to be the director of NIST. Bement was the vice president of science and technology at TRW throughout the 1980s and before that served as the deputy under secretary of defense for research and engineering. He moved to Purdue in 1993, where he served for a time as the director of the Midwest Superconductivity Consortium.

"I can think of few people more deserving of the appointment," said Ray Kammer, NIST's director from 1997 through 2000. "Dr. Bement has been associated with NIST for the last 20 years in a variety of posts, including chairman of the Visiting Committee on Advanced Technology." The visiting committee makes recommenda-

Math Solution to Nobel Problem

Rumor has it that a century ago, when Alfred Nobel established his prestigious prizes, he shunned mathematics because his wife had jilted him for a mathematician. A good tale but, it turns out, a tall one. Still, mathematicians feel a pang of envy each fall when the Nobels roll around and their field never shares the limelight.

Now Norway has created an international math prize that could achieve Nobel stature. The Abel Prize will be bestowed annually beginning in 2003. Its purse is expected to be in the upper six digits—the annual earnings from the Norwegian government's endowment of roughly \$23 million.

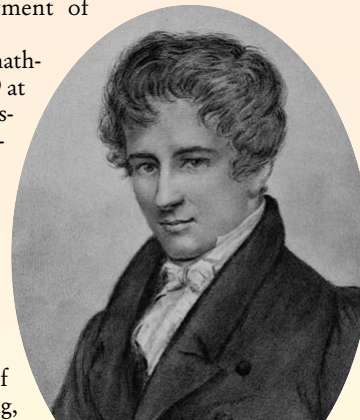
The new prize's namesake is Norwegian mathematician Niels Henrik Abel, who died in 1829 at age 26. He is best known for proving the impossibility of a general algebraic solution to quintic, or fifth-degree, equations, and for his work on elliptic integrals. Groups of commuting elements are called abelian groups in his honor.

In announcing the establishment of the Abel Prize, Norway's Prime Minister Jens Stoltenberg said the aims are "increased interest among young people to study science, strengthening of the country's research in the field of mathematics, increased awareness of Norway as a country of knowledge and learning, as well as positive international awareness."

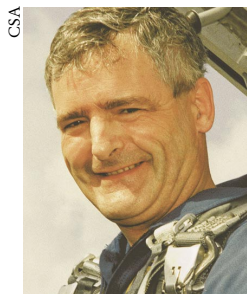
An Abel Prize was first proposed by Oscar II, the king of Norway and Sweden, in 1902, at the centenary of Abel's birth. It fell through when the union between the two countries was dissolved in 1905.

Until the Abel, the closest thing to a Nobel Prize in math was the Fields Medal, which is awarded every four years to mathematicians aged 40 or younger.

TONI FEDER



NIELS HENRIK ABEL (1802–29), in a reproduction based on a painting by Johan Gørbitz.



GARNEAU