some of these fruits and vegetables that make their way uninspected into the United States, simply because we are overwhelmed at the border.

The people at the border are doing their jobs very well. Neither the Governor of Texas, Governor Bush, nor the President of the United States, President Clinton, have done what they need to do, to do those protections and those inspections at the border.

That is why, Mr. Speaker, we have no business passing fast track. The President and Speaker GINGRICH and leadership in the other body have asked us in this Congress to give the President fast track authority to extend all of these trade agreements to the rest of Latin America.

My contention and the contention clearly of the majority of this House, that is why we have not voted on this issue yet, my contention is you do not rush headlong into new trade agreements, into more NAFTA's, until you fix the North American Free-Trade Agreement.

You do not rush headlong into a trade agreement with Chile that costs American jobs until you fix NAFTA, so American jobs do not flee to Mexico. You do not extend fast track to Central and Latin America, which will jeopardize our food supply, until you take care of those problems at the border in Mexico where food contamination is becoming more and more common, where pathogens and other airborne and foodborne illnesses are coming into this country.

Do not rush headlong into other trade agreements until we fix NAFTA. Vote no on fast track.

TRIBUTE TO DR. WILLIAM PHILLIPS OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ON HIS RECEIVING THE 1997 NOBEL PRIZE FOR PHYSICS

The SPEAKER pro tempore. Under a previous order of the House, the gentlewoman from Maryland [Mrs. MORELLA] is recognized for 5 minutes.

Mrs. MORELLA. Mr. Speaker, I rise today to commend and to congratulate Dr. William D. Phillips of the National Institute of Standards and Technology who, along with Steven Chu of Stanford University and Claude Cohen-Tannoudji, has been awarded this year's Nobel Prize in physics from the Royal Swedish Academy of Sciences.

NIST, originally established as the National Bureau of Standards in 1901, has for nearly a century promoted economic growth by working with industry to develop and apply technology, measurements, and standards. As the Nation's arbiter of standards, NIST enables our country's businesses to engage each other in commerce and participate in the global marketplace.

The invaluable research being conducted at NIST is a vital component of the Nation's civilian research and technology development base. Through Dr. Phillips' good work, the Nobel Prize has brought long-deserved attention to the exceptional work done by NIST scientists.

Dr. Phillips' pioneering research in developing methods to cool and trap atoms with laser light is a credit to him and his colleagues at NIST. These advances will open up a new world of physics that will enable the development of ultra-accurate atomic clocks, improve the measurement of gravitational forces, and facilitate the construction of atomic lasers. These advances have many practical applications, such as improving space navigation and the accuracy of global positioning satellites.

I read with pleasure the two articles in the Washington Post recently on Dr. Phillips' many accomplishments. I was especially struck in each article at the universal feeling among colleagues and friends that ". . .. it couldn't have happened to a nicer guy."

Dr. Phillips' unbridled enthusiasm for physics is the spirit we strive to achieve throughout our Federal laboratories. His dedication to improving our understanding of the world through science holds the promise of improving all of our daily lives.

While Dr. Phillips' daily work is on the cutting edge of research into lofty theories involving nature's basic laws. His life is well-rounded by his wife Jane, his two daughters, Christine and Catherine, and his numerous friends. Dr. Phillips' dedication to family and his numerous contributions to his community, such as teaching Sunday school at Fairhaven United Methodist Church, speaks volumes about his character.

We should all be proud of Dr. William Phillips and his family for this remarkable achievement and honor.

Mr. Speaker, I include the October 16, 1997, articles from the Washington Post for the RECORD.

[From the Washington Post, Oct. 16, 1997]

LOCAL SCIENTIST SHARES NOBEL PRIZE FOR PHYSICS

(By Curt Suplee)

A government scientist from Montgomery County has won the 1997 Nobel Prize in Physics, along with colleagues in California and France, for their development of ways to "trap" atoms by herding and subduing them with laser beams. The chemistry award went to an American, a Briton and a Dane for discoveries related to ATP, a compound that is the fundamental energy currency of life.

William D. Phillips, who works at the National Institute of Standards and Technology (NIST) in Gaithersburg, will share the $1 million physics with Steven Chu of Stanford University and Claude Cohen-Tannoudji of the College de France, the Royal Swedish Academy of Sciences announced yesterday.

The Nobel committee divided the chemistry prize into two parts. Half goes to Paul D. Boyer of the University of California at Los Angeles and British researcher John E. Walker of the Medical Research Council Laboratory of Molecular Biology in Cambridge for explaining the complex molecular process whereby living things create ATP. Jens C. Skou of Aarhus University in Denmark won the other half of the prize for discovering the key ATP-related enzyme that controls the transit of sodium and potassium across cell membranes—a process essential to life.

"I'm totally stunned," said Phillips, 48, who lives in Darnestown but was in California for a meeting of the Optical Society of America when he was notified. "At 3:30 this morning California time they called from Stockholm. It was a very nice wake-up call." As things rapidly turned hectic, he said, he got some expert commiseration. "There are two previous Nobel Prize winners here," Phillips said, and one of them, Robert F. Curl Jr. of Rice University "told me, 'Well, welcome to the roller coaster.'"

The prize is the first Nobel won by a NIST scientist since the institute was founded as the National Bureau of Standards in 1901. Phillips has worked at NIST since 1978.

The physics laureates were recognized for separate, complementary efforts that spanned nearly 20 years. Their common goal was to come as close as possible to stopping atoms in their tracks—a horribly difficult prospect. Even when cooled to the temperature of the cosmic void between stars (about 3 degrees above absolute zero) atoms of gases are still vibrating at hundreds of miles an hour. Sedating an atom enough to observe it well for even a fraction of a second requires temperatures millions of times colder.

The physicists devised various means of slowing atoms by striking them with laser beams, a process somewhat analogous to stopping the motion of a ricocheting cue ball on a pool table by shooting hundreds of Ping-Pong balls at it. (Phillips also experimented with magnetic trapping, the equivalent of tilting the pool table to slow the ball.) The general idea was to use the momentum of individual units of light, called photons, to slow the target atoms when the photons were absorbed and reemitted.

One major problem is that an atom will not absorb just any photon, but only those of specific frequencies that correspond to distinctive energy levels in that particular kind of atom.

Moreover, because the atom is in motion, the frequency of the cooling photon has to be adjusted for the Doppler effect. That is the phenomenon that makes a train whistle sound higher in frequency as it approaches the listener than it does when the train is standing still—and that makes a light ray act like one of a higher frequency if an atom is moving toward it. So the scientists had to micro-tune the frequencies of their laser photons to compensate for the estimated speed of the atoms.

Chu, then at Bell Labs, achieved a slowing effect, called "optical molasses," with an array of six lasers in 1985, reaching a temperature of 240 millionths of a degree above absolute zero. In 1988, Phillips attained an astonishing 40 millionths of 1 degree. This was below the theoretical minimum for Doppler cooling until the theory was revised by Cohen-Tannoudji and co-workers, who finally hit .2 millionths of a degree in 1995. And temperatures have plummeted since, to billionths of a degree, allowing atoms to be interrogated in unprecedented detail.

The work is "one of the great developments of physics in the past couple decades," said Eric Cornell of NIST's Boulder, Colo., facility, who with colleagues used the trapping techniques in 1995 to create a completely new state of matter called a Bose-Einstein condensate in which very cold atoms in effect coalesce into a "superatom."

Physicist Daniel Kleppner of the Massachusetts Institute of Technology, Phillips' alma mater, said the work had opened up a "new world" that would lead to ultra-accurate clocks to improve space navigation and global position system satellites, among other possibilities. (Atomic clocks operate by measuring the frequencies given off by subfrigid atoms stimulated by radiation; the colder the atoms, the longer they can be measured and thus the more precise the timing.) Cornell predicted that the ability to control atoms on that scale would make it possible to detect extremely small effects such as the change in gravitational force at ground level over an oil deposit.

The chemistry award recognized more than 40 years of research into what was once one of the deepest mysteries in biology: How cells create and deploy ATP (adenosine triphosphate), the basic material that provides energy for all living things.

This ubiquitous fuel is produced in enormous quantities in cellular sub-components called mitochondria, each of which is surrounded by its own tiny membrane. Just as one can store energy in a mousetrap by cocking the spring, organisms store energy in the chemical bonds of ATP. It is done by grafting a third bit of phosphate onto an ever-present cellular substance called ADP (adenosine diphosphate), a strand of adenosine that already has two phosphate groups attached. When energy is needed for muscle motion, nerve transmission or sundry metabolic chores, ATP sheds its added third phosphate, liberating the energy of that chemical bond and becoming ADP again.

ATP had been discovered in 1929, but until the work of this year's laureates, nobody knew exactly how it was made except that it was produced by an enzyme called ATP synthase and apparently involved differences in concentrations of charged hydrogen atoms on either side of the mitochondrial membrane.

In the 1950s, Boyer began to study the function of ATP synthase, which has a very complicated structure. The lower part, imbedded in the membrane, gathers energy from the flow of hydrogen atoms like a water wheel picks up energy from a moving stream. The top part, which protrudes above the membrane, resembles a grapefruit with six segments, through the middle of which runs an asymmetric rotation axle connected to the lower section.

As the hydrogen-powered axle turns, it distorts the segments into different shapes that cause them to do various things, such as bind ADP to phosphates, or to cast off freshly minted ATP molecules into the surrounding cellular goo. Boyer also determined that ATP synthase doesn't use energy the way most enzymes do. This ''molecular mechanism'' model was subsequently confirmed and clarified by Walker and colleagues, who also explained the peculiar axle configuration.

''It's a discovery of fundamental significance to understanding the way living organisms work,'' said Peter Preusch, a program director at the National Institute of General Medical Science here, which supported Boyer's work for 30 years.

Meanwhile, since 1957 Skou had been trying to understand the processes that cause the normal chemical imbalance between the insides of cells and their surroundings. Within the cell, sodium content is normally very low and potassium very high; outside, it's the opposite. Numerous essential biological processes—such as the electrical build-up and firing of nerve cells—depend critically on changes in the transport of these elements across cell membranes. Skou found that those actions are controlled by an enzyme called Na-K-ATPase that also degrades ATP in cells, and described how it works.

''The insight he had was really crucial, and not just for this one enzyme but for understanding a great deal about the physiology of the cell,'' said biochemistry expert Kathleen J. Sweadner of Massachusetts General Hospital and Harvard Medical School. ''It opened [Researchers'] minds to studying a whole bunch of other processes.''

[From the Washington Post, Oct. 16, 1997]

ONE OF SCIENCE'S NICE GUYS FINISHES FIRST

(By Michael E. Ruane)

Bill Phillips is 48, lives in Darnestown, wears a beard and works for the government. He has a wife and two kids. His office is down a brown tile corridor in a government building off I–270. He teaches Sunday school at Fairhaven United Methodist Church and founded the church's gospel choir.

Yesterday, Bill Phillips won the Nobel Prize.

''Couldn't happen to a nicer guy,'' said Paul Lett, a member of Phillips's team of physicists at the federal agency that used to be known as the Bureau of Standards and now has an even duller name.

A blaze of glory and a bunch of money fell into the life of the anonymous government scientist, who happens to know how to make atoms almost stand still.

''It really is a thrill, an emotional thrill, a physical thrill, like riding a roller coaster,'' Phillips said in a telephone interview from California, where he was attending a conference when he received the news. ''I am surprised, astounded.''

Phillips will share the $1 million Nobel award for physics with two other scientists, in California and France, who worked separately in the same field. The award recognized their success in chilling and ''trapping'' atoms for deeper scientific study.

Phillips has worked in Gaithersburg at the 585-acre campus of the National Institute of Standards and Technology, or NIST, since 1978. He is the agency's first Nobel winner since the institute was founded as the Bureau of Standards in 1901.

Phillips and his colleagues labor in a casual atmosphere, wearing jeans and T-shirts, but they use state-of-the-art equipment and enjoy an esprit de corps that comes from knowing they are at the cutting edge of research into some of nature's basic laws. Although they struggle for the most exact measurement attainable of the location and other attributes of atomic particles, NIST scientists say only God can get it precisely.

Phillips was born in Wilkes Barre, Pa., the son of social workers who fueled his interest in science with books, microscopes and chemistry sets.

His wife, Jane, 50, whom he met in high school in Camp Hill, Pa., said: ''He was always the one who got all the A's in physics class, in all the classes, and threw off the curve for everyone.''

Phillips said: ''It seems like I've been interested in physics for as long as I can remember.''

He explained: ''It's the simplicity of it. Physics is the simplest science. You're dealing with things that are fundamentally more simple, so you have more of a chance to understand something fully.

''I work with single atoms. More and more, we're finding that single atoms are incredibly rich in the things they have to teach us. . . . Whenever I go into the lab to make a measurement, there are things that we don't understand, things that aren't clear at all.''

The ''trapping'' of normally frenetic atoms has allowed scientists to scrutinize their properties more deeply. It could lead to such things as a new, more precise definition of the duration of a second—that is, an improved way to measure time.

''The trick is getting atoms to stay still,'' said Michael E. Newman, an institute spokesman. ''Trying to get atoms to stay still . . . is a very, very difficult thing to do.''

The institute operates one of the nation's two atomic clocks, which keep time according to the known rate of the natural oscillation of cesium atoms. The institute's atomic clock, in Boulder, Colo., is so accurate that it would neither gain nor lose a second in a million years.

If that were not precise enough, Phillips's study of slowed sodium atoms could produce an atomic clock that is even more accurate. Such insanely precise time-keeping can improve such things as global navigation systems, which depend on the time-keeping abilities of orbiting satellites, Phillips's colleagues said yesterday.

There was jubilation yesterday on the institute's campus and in the laser lab, where Phillips's experiments were arrayed along tables like a fantastically complicated electric train set. Printouts of complex graphs and schematic drawings hung on the walls.

In a conference room adjacent to the lab, colleagues toasted Phillips with sparkling cider and carrot cake brought by his wife. Aides scrambled to arrange interviews, fielded an avalanche of phone calls and struggled to explain Phillips's complex work.

Phillips cut short his trip and caught an afternoon plane back to Washington.

''We're tremendously excited by this news and as proud as can be to have Bill Phillips on the . . . staff,'' Robert Hebner, the institute's acting director, said in a statement. ''The elegant work that Bill and his colleagues have done at the frontiers of atomic measurement opens up new possibilities both in science and measurement technology.''

Some of Phillips's colleagues heard about the prize while they were still in bed yesterday. Steven Rolston, 38, one of the four members of Phillips's atom-trapping team, said he heard the news when his clock radio clicked on about dawn. ''I couldn't believe it. Great way to wake up. I shouted to my wife, who had just gotten up a few minutes before me, 'Bill won the Nobel Prize!' ''

Rolston said Phillips is ''really just a great guy. He's enthusiastic, happy, always willing to help people, very involved in his church.''

Katharine Gebbie, director of the institute's physics laboratory, said she, too, had been in bed when the word came. She had just returned from a long trip, and she said the deputy who called said: ''You know I wouldn't be calling you now if there weren't some good news.''

Gebbie said, ''I held my breath.''

''It's a wonderful honor for Bill and his colleagues in the physics laboratory,'' she said. ''We have cherished them very much.''

Phillips ''is one of the greatest guys in the world, that's all I can say,'' Gebbie said. ''Anybody who listens to him gets a sense of the great thrill of physics that he's doing . . . He just loves it and wants everybody else to love it.''

Another member of Phillips's group, Lett, 39, said he was ''thrilled.''

''It's well deserved,'' he said.

Phillips, who has been married for 27 years, has two daughters, one in high school and one in college. Group members said he is ''very much a family man.'' Physics, though, has kept him in thrall.

''It's the same thing that gets a grip on all of us,'' Lett said. ''Wanting to know the nitty-gritty of why things work.''

Rolston said, ''I always tell my daughter: Everything's physics.''

DETERMINING GUAM'S POLITICAL FUTURE

The SPEAKER pro tempore. Under the Speaker's announced policy of January 7, 1997, the gentleman from Guam [Mr. UNDERWOOD] is recognized for 60 minutes as the designee of the minority leader.

Mr. UNDERWOOD. Mr. Speaker, I take to the floor to talk a little bit