

bringing it one step closer to its full consideration by the House today.

This legislation would name a post office in my congressional district in Princeton, Florida, an area in the southern part of Miami-Dade County, after a local hero, Marine Corporal Christian A. Guzman Rivera, who was killed by an IED, an improvised explosive device, while serving our country in Afghanistan.

Christian was 21 years old, and was killed in the western province of Afghanistan in a place called Farah by the enemies of freedom and democracy.

Christian was born on the tropical island of Puerto Rico on December 3, 1987. Two years later he moved with his family to south Florida, where he attended our public schools and joined the Junior ROTC at Homestead Senior High School.

Previously a shy boy, Christian became a more confident young man through his leadership experience in JROTC.

Upon graduation from Homestead High in 2006, he enrolled in Miami-Dade County's Fire Rescue Academy and graduated from the firefighter program. Christian also became a certified emergency medical technician, an EMT.

But Christian, who was always dedicated to public service, also wanted to serve our country in our Armed Forces. His peers say that for Christian, becoming a Marine was not a spur of the moment decision, it was his destiny. He knew it all along.

As the proud wife of a Vietnam combat veteran who volunteered for service and was severely injured in battle, and as the stepmother of two Marine aviators, I am familiar with this military calling.

During a time when the United States was involved in wars in both Iraq and Afghanistan, Christian volunteered for Active Duty service. He enlisted in the U.S. Marine Corps.

In May 2009, Christian was deployed to Afghanistan as a combat engineer attached to the 2nd Battalion, 3rd Marine Regiment.

In Afghanistan, Christian excelled. He understood his duties and his responsibilities and carried them out to the best of his abilities. He was known to be one of the most dependable combat engineer Marines in the battalion.

When his squad leader was wounded and hospitalized for a month, Christian stepped up and assumed his leadership role. Other Marines sometimes requested him specifically by name to accompany them on dangerous patrols.

First Lieutenant Enming Lou, a former Marine Corps officer, said this about Christian A. Guzman Rivera: "Senior explosive technicians thought of Christian as among the best combat engineers in the battalion."

On August 6, 2009, Christian was killed while serving during Operation Enduring Freedom in Farah Province, Afghanistan. Christian made the ultimate sacrifice in the name of liberty

and democracy, the cornerstones of America's ideals.

His military awards include the Navy and Marine Corps Commendation Medal, the Purple Heart Medal, and the Combat Action Ribbon.

Five years have passed, and Christian was and still is deeply missed by close friends in south Florida, by fellow Marines who had the privilege of serving with him, and a close-knit family who could never replace the void left in their lives.

He is survived, loved, and remembered by his mother, Velma, a wonderful lady; by his wonderful stepdad, Felix; his brother, Jonathan; his uncle, Chris, and aunts Rebecca and Vilma; his grandmother, Carmen; and cousins and friends who have endured great pain remembering Christian's sacrifice in the name of country and honor.

Mr. Speaker, Christian's brave service exceeded all measures of selflessness and devotion to our country, and I encourage my colleagues to honor Corporal Christian Guzman's memory and support this bill.

I am proud to name the Corporal Christian A. Guzman Rivera Post Office Building after our local hero who courageously sacrificed his life in the line of duty so that we could enjoy the freedom that makes our wonderful country so special.

Christian is deserving of our continuous praise and gratitude, and I am humbled in presenting this bill to my colleagues, and I pray that our good Lord will continue to give strength to Christian's family.

Mr. DANNY K. DAVIS of Illinois. Mr. Speaker, I yield myself such time as I may consume.

Mr. Speaker, I don't think there is any greater service that one can give than to give the gift of their life fighting for their country. Therefore, I am pleased to join my colleagues in the consideration of H.R. 5030, a bill to designate the facility of the United States Postal Service located at 13500 Southwest 250 Street in Princeton, Florida, as the Corporal Christian A. Guzman Rivera Post Office Building.

A native of Homestead, Florida, Christian Guzman Rivera graduated from Homestead Senior High's ROTC program in 2006.

□ 1530

With dreams of becoming a Marine firefighter, Christian graduated from the Miami-Dade Fire Academy, and in 2007, was assigned as a battalion engineer in Okinawa, Japan.

Tragically, on August 6, 2009, after having just received a promotion to corporal, Christian Guzman Rivera was killed while supporting combat operations in Afghanistan. Although he never got the chance to fight fires as he had hoped, Corporal Rivera was named an honorary member of the Miami-Dade Fire Rescue Department, and he still remains a role model to his younger siblings.

Mr. Speaker, we should pass this bill, H.R. 5030, to recognize Corporal Chris-

tian Guzman Rivera's honor, courage, and sacrifice.

I yield back the balance of my time.

Mr. COLLINS of Georgia. Mr. Speaker, as has been stated by my friend, Reverend DAVIS, and also by my dear friend from Florida (Ms. ROSELEHTINEN), at this point, you do not have to live many decades to live a full and vibrant life.

This young man proved that you can live a full life if you live each of your days to their fullest. To his credit, we will be proving this, that spirit of living a life that is full and in service to others.

With that, I would ask all of my colleagues to support H.R. 5030, and I yield back the balance of my time.

The SPEAKER pro tempore. The question is on the motion offered by the gentleman from Georgia (Mr. COLLINS) that the House suspend the rules and pass the bill, H.R. 5030.

The question was taken; and (two-thirds being in the affirmative) the rules were suspended and the bill was passed.

A motion to reconsider was laid on the table.

#### AMERICAN SUPER COMPUTING LEADERSHIP ACT

Mr. SMITH of Texas. Mr. Speaker, I move to suspend the rules and pass the bill (H.R. 2495) to amend the Department of Energy High-End Computing Revitalization Act of 2004 to improve the high-end computing research and development program of the Department of Energy, and for other purposes, as amended.

The Clerk read the title of the bill.

The text of the bill is as follows:

H.R. 2495

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

#### SECTION 1. SHORT TITLE.

This Act may be cited as the "American Super Computing Leadership Act".

#### SEC. 2. DEFINITIONS.

Section 2 of the Department of Energy High-End Computing Revitalization Act of 2004 (15 U.S.C. 5541) is amended by striking paragraphs (1) through (5) and inserting the following:

"(1) CO-DESIGN.—The term 'co-design' means the joint development of application algorithms, models, and codes with computer technology architectures and operating systems to maximize effective use of high-end computing systems.

"(2) DEPARTMENT.—The term 'Department' means the Department of Energy.

"(3) EXASCALE.—The term 'exascale' means computing system performance at or near 10 to the 18th power floating point operations per second.

"(4) HIGH-END COMPUTING SYSTEM.—The term 'high-end computing system' means a computing system with performance that substantially exceeds that of systems that are commonly available for advanced scientific and engineering applications.

"(5) INSTITUTION OF HIGHER EDUCATION.—The term 'institution of higher education' has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

“(6) LEADERSHIP SYSTEM.—The term ‘leadership system’ means a high-end computing system that is among the most advanced in the world in terms of performance in solving scientific and engineering problems.

“(7) NATIONAL LABORATORY.—The term ‘National Laboratory’ means any one of the seventeen laboratories owned by the Department.

“(8) SECRETARY.—The term ‘Secretary’ means the Secretary of Energy.

“(9) SOFTWARE TECHNOLOGY.—The term ‘software technology’ includes optimal algorithms, programming environments, tools, languages, and operating systems for high-end computing systems.”.

**SEC. 3. DEPARTMENT OF ENERGY HIGH-END COMPUTING RESEARCH AND DEVELOPMENT PROGRAM.**

Section 3 of the Department of Energy High-End Computing Revitalization Act of 2004 (15 U.S.C. 5542) is amended—

(1) in subsection (a)—

“(A) in paragraph (1), by striking “program” and inserting “coordinated program across the Department”;

(B) by striking “and” at the end of paragraph (1);

(C) by striking the period at the end of paragraph (2) and inserting “; and”;

(D) by adding at the end the following new paragraph:

“(3) partner with universities, National Laboratories, and industry to ensure the broadest possible application of the technology developed in this program to other challenges in science, engineering, medicine, and industry.”;

(2) in subsection (b)(2), by striking “vector” and all that follows through “architectures” and inserting “computer technologies that show promise of substantial reductions in power requirements and substantial gains in parallelism of multicore processors, concurrency, memory and storage, bandwidth, and reliability”; and

(3) by striking subsection (d) and inserting the following:

“(d) EXASCALE COMPUTING PROGRAM.—

“(1) IN GENERAL.—The Secretary shall conduct a coordinated research program to develop exascale computing systems to advance the missions of the Department.

“(2) EXECUTION.—The Secretary shall, through competitive merit review, establish two or more National Laboratory-industry-university partnerships to conduct integrated research, development, and engineering of multiple exascale architectures, and—

“(A) conduct mission-related co-design activities in developing such exascale platforms;

“(B) develop those advancements in hardware and software technology required to fully realize the potential of an exascale production system in addressing Department target applications and solving scientific problems involving predictive modeling and simulation and large-scale data analytics and management; and

“(C) explore the use of exascale computing technologies to advance a broad range of science and engineering.

“(3) ADMINISTRATION.—In carrying out this program, the Secretary shall—

“(A) provide, on a competitive, merit-reviewed basis, access for researchers in United States industry, institutions of higher education, National Laboratories, and other Federal agencies to these exascale systems, as appropriate; and

“(B) conduct outreach programs to increase the readiness for the use of such platforms by domestic industries, including manufacturers.

“(4) REPORTS.—

“(A) INTEGRATED STRATEGY AND PROGRAM MANAGEMENT PLAN.—The Secretary shall

submit to Congress, not later than 90 days after the date of enactment of the American Super Computing Leadership Act, a report outlining an integrated strategy and program management plan, including target dates for prototypical and production exascale platforms, interim milestones to reaching these targets, functional requirements, roles and responsibilities of National Laboratories and industry, acquisition strategy, and estimated resources required, to achieve this exascale system capability. The report shall include the Secretary’s plan for Departmental organization to manage and execute the Exascale Computing Program, including definition of the roles and responsibilities within the Department to ensure an integrated program across the Department. The report shall also include a plan for ensuring balance and prioritizing across ASCR subprograms in a flat or slow-growth budget environment.

“(B) STATUS REPORTS.—At the time of the budget submission of the Department for each fiscal year, the Secretary shall submit a report to Congress that describes the status of milestones and costs in achieving the objectives of the exascale computing program.

“(C) EXASCALE MERIT REPORT.—At least 18 months prior to the initiation of construction or installation of any exascale-class computing facility, the Secretary shall transmit a plan to the Congress detailing—

“(i) the proposed facility’s cost projections and capabilities to significantly accelerate the development of new energy technologies;

“(ii) technical risks and challenges that must be overcome to achieve successful completion and operation of the facility; and

“(iii) an independent assessment of the scientific and technological advances expected from such a facility relative to those expected from a comparable investment in expanded research and applications at terascale-class and petascale-class computing facilities, including an evaluation of where investments should be made in the system software and algorithms to enable these advances.”.

The SPEAKER pro tempore. Pursuant to the rule, the gentleman from Texas (Mr. SMITH) and the gentlewoman from Oregon (Ms. BONAMICI) each will control 20 minutes.

The Chair recognizes the gentleman from Texas.

**GENERAL LEAVE**

Mr. SMITH of Texas. Mr. Speaker, I ask unanimous consent that all Members may have 5 legislative days in which to revise and extend their remarks and to include extraneous material on H.R. 2495, the bill now under consideration.

The SPEAKER pro tempore. Is there objection to the request of the gentleman from Texas?

There was no objection.

Mr. SMITH of Texas. Mr. Speaker, I yield myself such time as I may consume.

H.R. 2495, the American Super Computing Leadership Act, requires the Department of Energy to develop a plan to bring the United States into the next generation of supercomputing, also known as exascale computing.

The Advanced Scientific Computing Research program at the Department of Energy is the primary Federal research and development program for these computing technology breakthroughs.

High-performance computing has enabled researchers to push beyond our previously understood scientific boundaries. This capability has solved major engineering challenges, ranging from the in-depth modeling of our nuclear weapons stockpile to increasing the fuel efficiency of cars. High-performance computing keeps the United States globally competitive.

The country with the strongest computing capability will host the world’s next scientific breakthroughs. Unfortunately, China currently hosts the world’s fastest computer, not the United States. This bill is a step in the right direction to reverse this trend and to help keep America on the forefront of supercomputing.

Mr. Speaker, I thank the gentleman from Illinois (Mr. HULTGREN), the gentleman from Alabama (Mr. BROOKS), the gentleman from California (Mr. SWALWELL), the gentleman from Illinois (Mr. LIPINSKI), the gentlewoman from California (Ms. LOFGREN), and the gentlewoman from Oregon (Ms. BONAMICI) for their initiative on this issue, and I urge my colleagues to support the bill.

I reserve the balance of my time.

Ms. BONAMICI. Mr. Speaker, I yield myself such time as I may consume.

I rise in strong support of H.R. 2495, the American Super Computing Leadership Act.

This bipartisan bill would authorize an exascale computing program to promote the development of the next generation of the fastest computers in the world right here in the United States. The bill would also help ensure that we develop the software and algorithms that help us to make the best use of these computers.

Exascale is often used interchangeably with “extreme scale” to refer to the next generation of supercomputers in general. It also refers to the computing systems that would be able to carry out a million trillion operations—that is a million trillion operations per second.

That is a 1 with 18 zeros after it. Now, that is about 500 times faster than the world’s fastest computers today. Developing these capabilities is vital to maintaining our leadership in a wide range of research areas.

This legislation would authorize the Secretary of Energy to support research to significantly increase the computing power available to scientists from the Department of Energy, industry, universities, and other Federal agencies.

I would also like to note that there is no new money being authorized here. We are simply ensuring that we are making the best use of our resources when it comes to the money that we are already investing.

The capabilities made possible by these investments would enable our best and our brightest scientists to gain new insights into societal concerns, ranging from Alzheimer’s disease to climate change.

Other examples of both industrial and academic research that would benefit from advancing high-end computing capabilities include high-temperature superconductivity to significantly reduce energy losses in the transmission of electricity, aero-dynamic modeling for aircraft and vehicle design, pharmaceutical development, and fusion plasma modeling.

Finally, this legislation would also require that the Department of Energy submit a management plan, as well as regular reports to Congress that detail how the Department of Energy expects to implement this program, as well as its progress to date.

With this bipartisan legislation, we will be establishing a transparent program that will allow the United States to remain a leader in high-end computing. I expect that we may well reap benefits from this effort, even beyond what I have spoken about today and beyond the advances that any of us can now imagine.

I would like to take a moment to compliment the sponsors of this legislation, Mr. HULTGREN from Illinois and Mr. SWALWELL from California, for their efforts to craft this bipartisan bill we have before us today. I also thank Ms. LOFGREN from California and, of course, Science Committee Chairman SMITH for his support.

I strongly urge all of my colleagues to support the passage of this important legislation.

Mr. Speaker, I reserve the balance of my time.

Mr. SMITH of Texas. Mr. Speaker, I yield 2 minutes to the gentleman from Illinois (Mr. HULTGREN), who is a member of the Science Committee and also a member of the Science Committee's Energy Subcommittee.

Mr. HULTGREN. I would like to thank the distinguished chair of the Committee on Science, Space, and Technology, the gentleman from Texas, for helping this legislation come to the floor.

Mr. Speaker, H.R. 2495, the American Super Computing Leadership Act, is an important update to a current statute which will ensure that America stays at the forefront of supercomputing technology for the benefits it brings to our national security, the economy, and, more broadly, our research capabilities as a Nation.

While America and American companies are still leading the way for much of this current technology, it is important to point out that the National University of Defense Technology, in China, is now housing the world's fastest supercomputer.

One of the Department of Energy's primary responsibilities within the National Nuclear Security Administration is the maintenance of our current nuclear stockpile. This stockpile stewardship responsibility is carried out with increasingly complex situations, especially as our stockpile has aged.

The need for improved parallelism, capabilities, and decreased energy re-

quirements are spelled out in this legislation to ensure the Department carries out a targeted basic research program to overcoming the most pressing needs.

This legislation also points out and defines exascale as the next checkpoint to be accomplished. Exascale computers would exceed existing computing power by nearly 10,000 percent.

I would like to point out, however, that exascale cannot be seen as the end point. It is just a step toward the larger goal of American leadership in this field. This legislation will ensure that the broader scientific community has access to these facilities on a competitive merit review process.

The scientific drivers and the national security responsibilities should be the primary focus of this research, but we must also make sure that the crosscutting benefits of this research are not left at the wayside.

This legislation would create partnerships with universities, industry, and the national labs to conduct the research, ensuring that the Nation as a whole benefits from this research more quickly and efficiently.

In having the pleasure to represent the great State of Illinois, I have been able to witness how an ecosystem of innovation can best be fostered, and part of this is by making sure that our facilities are open to the public when it makes sense and does not interfere with the core missions of our Federal agencies and the labs.

I have been able to see how Fermilab, in my district, and Argonne National Lab, which is just down the road, carry out groundbreaking scientific research, but they also have unintended cross-over benefits, such as proton beam cancer therapy, which uses accelerators developed in our labs.

User facilities, such as the Advanced Photon Source at Argonne, have given a tremendous research capability to pharmaceutical companies, where companies doing research that used to take weeks can often spend more time with samples in the mail than on the lab bench.

The computing capabilities this legislation will help bring about will have tremendous application in the health care and drug development fields, and the modeling simulations this will make available will allow manufacturers to build better prototypes that have been tested thousands of times virtually before they come off the line. This is why I ask all of my colleagues to join me in voting "yes" on this important legislation.

Ms. BONAMICI. Mr. Speaker, I yield back the balance of my time.

Mr. SMITH of Texas. Mr. Speaker, I yield 3 minutes to the gentleman from Tennessee (Mr. FLEISCHMANN), who is a member of the Appropriations Committee and a member of that committee's Energy Subcommittee. He is also a former member of the Science Committee, so we appreciate his participation today.

Mr. FLEISCHMANN. Mr. Speaker, I rise in strong support of the American Super Computing Leadership Act, H.R. 2495. I want to commend Mr. HULTGREN, Ms. BONAMICI, and our chairman for their support of this great legislation.

As part of my representation of the great people of the Third District of Tennessee, Oak Ridge is right in the heart of my district. This is the city that won the cold war. This is the city which was the birthplace of the Manhattan Project.

These are wonderful people, and in that city sits the Oak Ridge National Laboratory, I believe one of the premier national labs in a great national lab system. Oak Ridge National Laboratory has been in the forefront of the leadership on high-speed computing.

I also want to commend our lab director, Dr. Thom Mason, for leading the way in supercomputing. His great successes in upgrading our computing facilities and in working with the other Department of Energy labs has been critical for the greater good of our Nation.

□ 1545

As my colleagues have already articulated, exascale is the next level. Right now, we are at a level called petaflop. Exascale is the next level.

Ladies and gentlemen, a short time ago, the United States was number one. During my tenure in Congress, a couple of years ago, it was number one in the world in supercomputing. I want to maintain that we move forward and become number one again. We cannot let the Chinese or any other nation beat us in this fight. It is critically important.

Why is exascale and supercomputing very important? I have actually seen these roomfuls of computers. It is critically important to our economic security as a Nation.

All Members of this great House want America to be great again, and supercomputing is going to lead the way. This is an economic security issue, as every area of our economy is dependent on this. Banking, manufacturing, health care, commerce, and communication are all critically dependent on supercomputing.

I urge my colleagues on both sides of the aisle for their strong support of H.R. 2495, the American Super Computing Leadership Act.

Mr. SMITH of Texas. Mr. Speaker, I yield back the balance of my time.

The SPEAKER pro tempore. The question is on the motion offered by the gentleman from Texas (Mr. SMITH) that the House suspend the rules and pass the bill, H.R. 2495, as amended.

The question was taken; and (two-thirds being in the affirmative) the rules were suspended and the bill, as amended, was passed.

A motion to reconsider was laid on the table.

## TSUNAMI WARNING, EDUCATION, AND RESEARCH ACT OF 2014

Mr. SMITH of Texas. Mr. Speaker, I move to suspend the rules and pass the bill (H.R. 5309) to authorize and strengthen the tsunami detection, forecast, warning, research, and mitigation program of the National Oceanic and Atmospheric Administration, and for other purposes.

The Clerk read the title of the bill.

The text of the bill is as follows:

H.R. 5309

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the “Tsunami Warning, Education, and Research Act of 2014”.

**SEC. 2. REFERENCES TO THE TSUNAMI WARNING AND EDUCATION ACT.**

Except as otherwise expressly provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the Tsunami Warning and Education Act (33 U.S.C. 3201 et seq.).

**SEC. 3. EXPANSION OF PURPOSES OF TSUNAMI WARNING AND EDUCATION ACT.**

Section 3 (33 U.S.C. 3202) is amended—

(1) in paragraph (1), by inserting “research,” after “warnings,”;

(2) by amending paragraph (2) to read as follows:

“(2) to enhance and modernize the existing United States Tsunami Warning System to increase the accuracy of forecasts and warnings, to maintain full coverage of tsunami detection assets, and to reduce false alarms;”;

(3) by amending paragraph (3) to read as follows:

“(3) to improve and develop standards and guidelines for mapping, modeling, and assessment efforts to improve tsunami detection, forecasting, warnings, notification, mitigation, resiliency, response, outreach, and recovery;”;

(4) by redesignating paragraphs (4), (5), and (6) as paragraphs (5), (6), and (8), respectively;

(5) by inserting after paragraph (3) the following:

“(4) to improve research efforts related to improving tsunami detection, forecasting, warnings, notification, mitigation, resiliency, response, outreach, and recovery;”;

(6) in paragraph (5), as so redesignated—

(A) by striking “and increase” and inserting “, increase, and develop uniform standards and guidelines for”; and

(B) by inserting “, including the warning signs of locally generated tsunami” after “approaching”;

(7) in paragraph (6), as so redesignated, by striking “, including the Indian Ocean; and” and inserting a semicolon; and

(8) by inserting after paragraph (6), as so redesignated, the following:

“(7) to foster resilient communities in the face of tsunami and other coastal hazards; and”.

**SEC. 4. MODIFICATION OF TSUNAMI FORECASTING AND WARNING PROGRAM.**

(a) IN GENERAL.—Subsection (a) of section 4 (33 U.S.C. 3203) is amended by striking “Atlantic Ocean, Caribbean Sea, and Gulf of Mexico region” and inserting “Atlantic Ocean region, including the Caribbean Sea and the Gulf of Mexico”.

(b) COMPONENTS.—Subsection (b) of such section 4 is amended—

(1) in paragraph (1), by striking “established” and inserting “supported or maintained”;

(2) in paragraph (4), by inserting “and safeguarding port and harbor operations” after “communities”;

(3) in paragraph (7)—

(A) by inserting “, including graphical warning products,” after “warnings”;

(B) by inserting “, territories,” after “States”; and

(C) by inserting “and Wireless Emergency Alerts” after “Hazards Program”; and

(4) in paragraph (8), by inserting “and commercial and Federal undersea communications cables” after “observing technologies”.

(c) TSUNAMI WARNING SYSTEM.—Subsection (c) of such section 4 is amended to read as follows:

“(c) TSUNAMI WARNING SYSTEM.—The program under this section shall operate a tsunami warning system that—

“(1) is capable of forecasting tsunami, including forecasting tsunami arrival time and inundation estimates, anywhere in the Pacific and Arctic Ocean regions and providing adequate warnings;

“(2) is capable of forecasting and providing adequate warnings in areas of the Atlantic Ocean, including the Caribbean Sea and Gulf of Mexico, that are determined—

“(A) to be geologically active, or to have significant potential for geological activity; and

“(B) to pose significant risks of tsunami for States along the coastal areas of the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico; and

“(3) supports other international tsunami forecasting and warning efforts.”.

(d) TSUNAMI WARNING CENTERS.—Subsection (d) of such section 4 is amended to read as follows:

“(d) TSUNAMI WARNING CENTERS.—

“(1) IN GENERAL.—The Administrator shall support or maintain centers, as part of the National Centers for Environmental Prediction, to support the tsunami warning system required by subsection (c). The Centers shall include—

“(A) the National Tsunami Warning Center, located in Alaska, which is primarily responsible for Alaska, the continental United States, and the Caribbean;

“(B) the Pacific Tsunami Warning Center, located in Hawaii, which is primarily responsible for Hawaii and other areas of the Pacific not covered by the National Center; and

“(C) any additional forecast and warning centers determined by the National Weather Service to be necessary.

“(2) RESPONSIBILITIES.—The responsibilities of the centers supported or maintained pursuant to paragraph (1) shall include the following:

“(A) Continuously monitoring data from seismological, deep ocean, coastal sea level, and tidal monitoring stations and other data sources as may be developed and deployed.

“(B) Evaluating earthquakes, landslides, and volcanic eruptions that have the potential to generate tsunami.

“(C) Evaluating deep ocean buoy data and tidal monitoring stations for indications of tsunami resulting from earthquakes and other sources.

“(D) To the extent practicable, utilizing a range of models to predict tsunami arrival times and flooding estimates.

“(E) Disseminating forecasts and tsunami warning bulletins to Federal, State, and local government officials and the public.

“(F) Coordinating with the tsunami hazard mitigation program conducted under section 5 to ensure ongoing sharing of information between forecasters and emergency management officials.

“(G) Making data gathered under this Act and post-warning analyses conducted by the National Weather Service or other relevant Administration offices available to researchers.

“(3) FAIL-SAFE WARNING CAPABILITY.—The tsunami warning centers supported or maintained pursuant to paragraph (1) shall maintain a fail-safe warning capability and ability to perform back-up duties for each other.

“(4) COORDINATION WITH NATIONAL WEATHER SERVICE.—The National Weather Service shall coordinate with the centers supported or maintained pursuant to paragraph (1) to ensure that regional and local forecast offices—

“(A) have the technical knowledge and capability to disseminate tsunami warnings for the communities they serve; and

“(B) leverage connections with local emergency management officials for optimally disseminating tsunami warnings and forecasts.

“(5) UNIFORM OPERATING PROCEDURES.—The Administrator shall—

“(A) develop uniform operational procedures for the centers supported or maintained pursuant to paragraph (1), including the use of software applications, checklists, decision support tools, and tsunami warning products that have been standardized across the program supported under this section;

“(B) ensure that processes and products of the warning system operated pursuant to subsection (c)—

“(i) reflect industry best practices;

“(ii) conform to the maximum extent practicable with internationally recognized standards for information technology; and

“(iii) conform to the maximum extent practicable with other warning products and practices of the National Weather Service;

“(C) ensure that future adjustments to operational protocols, processes, and warning products—

“(i) are made consistently across the warning system operated pursuant to subsection (c); and

“(ii) are applied in a uniform manner across such warning system; and

“(D) disseminate guidelines and metrics for evaluating and improving tsunami forecast models.

“(6) AVAILABLE RESOURCES.—The Administrator, through the National Weather Service, shall ensure that resources are available to fulfill the obligations of this Act. This includes ensuring supercomputing resources are available to run such computer models as are needed for purposes of the tsunami warning system operated pursuant to subsection (c).”.

“(e) TRANSFER OF TECHNOLOGY; MAINTENANCE AND UPDATES.—Subsection (e) of such section 4 is amended to read as follows:

“(e) TRANSFER OF TECHNOLOGY; MAINTENANCE AND UPDATES.—In carrying out this section, the Administrator shall—

“(1) develop requirements for the equipment used to forecast tsunami, including—

“(A) provisions for multipurpose detection platforms;

“(B) reliability and performance metrics; and

“(C) to the maximum extent practicable, requirements for the integration of equipment with other United States and global ocean and coastal observation systems, the global Earth observing system of systems, the global seismic networks, and the Advanced National Seismic System;

“(2) develop and execute a plan for the transfer of technology from ongoing research conducted as part of the program supported or maintained under section 6 into the program under this section; and