

transformed how basic science is done. Scientists are using CRISPR to ask fundamental questions about life, such as which genes are essential to a cell's survival. Doctors are testing it as a cure for genetic conditions such as sickle cell disease and hereditary blindness, and plant scientists are using it to create new crops.

People in my home State of Illinois are especially proud of Andrea Ghez, a 2020 Nobel physics laureate who grew up in Chicago and was encouraged to pursue a career in science by a gifted teacher at the University of Chicago Laboratory School.

Dr. Ghez, director of the UCLA Galactic Center Group, received the Nobel for her pioneering research on the supermassive black hole at the center of our galaxy. She describes her research as "extreme astrophysics." Her discoveries have enabled scientists to explore black holes and their fundamental role in the evolution of the universe.

Dr. Ghez and her team conduct their research at the W.M. Keck Observatory in Hawaii. She is only the fourth woman to receive the physics prize. She shares half of the prize with Reinhard Genzel of UC Berkeley and the Max Planck Institute for Extraterrestrial Physics in Berlin. The other half of the prize was awarded to Roger Penrose of the University of Oxford.

Dr. Ghez has earned numerous honors for her research, including election to the National Academy of Sciences and the American Academy of Arts and Sciences. In 2019, she was awarded an honorary degree by Oxford University.

When she was a girl, she wanted to be the first woman to walk on the moon. She attributes her love of science partly to a woman who taught her nearly 40 years ago at the University of Chicago Laboratory School. Judith Keane was the only woman in the Lab School's physical sciences department. Dr. Ghez has said how important it was for her to see a woman in that role.

For much of history, women's involvement in science has been discouraged and their achievements have been ignored. Nevertheless, they have persisted. A few examples:

In 1903, Marie Curie became the first woman to win the Nobel Prize for Physics, for her discovery of radioactivity. She won the Nobel Prize in Chemistry 8 years later for her work in isolating pure radium. She remains the only woman in history to ever win the Nobel twice and the only human to ever win a Nobel Prize in two different sciences.

Rachel Carson was a marine biologist and environmentalist whose groundbreaking book, "Silent Spring," helped launch the modern environmental movement.

Rosalind Franklin, a British chemist and molecular biologist, was one of the key figures behind unlocking the structure of human DNA, although her contributions went largely unrecognized.

Barbara McClintock was an American geneticist and the only woman

ever to have been awarded the Nobel Prize for Medicine by herself. In 1993 she won the Nobel Prize for her discovery of the "jumping gene" or the ability of genes to change position on the chromosome.

Ruth Rogan Benerito was a chemist and pioneer in bioproducts who spent most of her career at the U.S. Department of Agriculture. She is credited with saving the cotton industry in post-WWII America through her discovery of a process to produce wrinkle-free, stain-free, and flame-resistant cotton fabrics.

Navy Rear Admiral Grace Hopper first developed computer languages and a compiler to translate them into machine code. She developed computer languages written in English, rather than mathematical notation, including COBOL, which is still in use today.

Katherine Johnson was an African-American mathematician and NASA space scientist who made enormous contributions to America's space programs by her incorporation of computing tools. She calculated key trajectories for America's first manned space flight and for the 1969 Apollo 11 flight to the moon.

Mae Jemison is a physician, chemist, biologist, and a former NASA astronaut. As a girl growing up on the South Side of Chicago, she was inspired to become an astronaut after watching Star Trek's Lt. Uhuru, the only Black woman aboard the Starship Enterprise. In 1992, she became the first Black woman to travel into space.

Despite the achievements of these and other women, the tradition in science of excluding women and other underrepresented groups at prestigious scientific meetings and conferences is so pervasive that some scientists sometimes refer wryly to such panels as "manels."

Dr. Francis Collins is director of the National Institutes of Health and a brilliant scientist. In June 2019, he announced that he would no longer speak at any science conference where women and other minority scientists were not included. He challenged other leaders in bioscience to do the same. Fortunately, some are. More should. As I said, we need all hands on deck.

I will close with this. About a week after the 2020 Nobel Prizes announcements, the winner of the 2020 3M Young Scientist Challenge was announced. That is the Nation's top science prize for middle schoolers. It carries a \$25,000 award.

The winner this year is a 14-year-old Indian-American girl from Frisco, TX, Anika Chebrolu. Two years ago, she began studying the Spanish Influenza of 1918 that killed at least 50 million people worldwide. Last year, she came with a bad case of the seasonal flu herself and threw herself into finding a cure. She discovered a molecule that may lead to the development of a new antiviral drug to treat COVID. The molecule binds to the spiky protein of the novel coronavirus and inhibits the spread of the virus into human cells.

Supporting the achievements of girls and women in STEM fields can help solve some of the greatest afflictions of our time and solve some of the deepest mysteries of our universe. It is a profoundly wise investment. Congratulations to the new women Nobel science laureates of 2020. May there be many more who follow in their footsteps.

(At the request of Mr. DURBIN, the following statement was ordered to be printed in the RECORD.)

VOTE EXPLANATION

● Mr. TESTER. Madam President, I was absent due to a family health matter requiring my attention when the Senate voted on vote No. 226 on confirmation of Executive Calendar No. 865, James Ray Knepp II, of Ohio, to be United States District Judge for the Northern District of Ohio. On vote No. 226, had I been present, I would have voted yea.●

ARMS SALES NOTIFICATION

Mr. RISCH. Madam President, section 36(b) of the Arms Export Control Act requires that Congress receive prior notification of certain proposed arms sales as defined by that statute. Upon such notification, the Congress has 30 calendar days during which the sale may be reviewed. The provision stipulates that, in the Senate, the notification of proposed sales shall be sent to the chairman of the Senate Foreign Relations Committee.

In keeping with the committee's intention to see that relevant information is available to the full Senate, I ask unanimous consent to have printed in the RECORD the notifications which have been received. If the cover letter references a classified annex, then such annex is available to all Senators in the office of the Foreign Relations Committee, room SD-423.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

DEFENSE SECURITY
COOPERATION AGENCY,
Arlington, VA.

Hon. JAMES E. RISCH,
Chairman, Committee on Foreign Relations,
U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: Pursuant to the reporting requirements of Section 36(b)(1) of the Arms Export Control Act, as amended, we are forwarding herewith Transmittal No. 20-73 concerning the Army's proposed Letter(s) of Offer and Acceptance to the Government of Australia for defense articles and services estimated to cost \$46 million. After this letter is delivered to your office, we plan to issue a news release to notify the public of this proposed sale.

Sincerely,

HEIDI H. GRANT,
Director.

Enclosures.

TRANSMITTAL NO. 20-73

Notice of Proposed Issuance of Letter of Offer Pursuant to Section 36(b)(1) of the Arms Export Control Act, as amended

(i) Prospective Purchaser: Government of Australia.

- (ii) Total Estimated Value:
Major Defense Equipment* \$40 million.
Other \$6 million.
Total \$46 million.
- (iii) Description and Quantity or Quantities of Articles or Services under Consideration for Purchase:
Major Defense Equipment (MDE):
Two hundred (200) Javelin FGM-148E missiles.
- Non-MDE: U.S. Government technical assistance and other related elements of logistics and program support.
- (iv) Military Department: Army (AT-B-ULL).
- (v) Prior Related Cases, if any: None.
- (vi) Sales Commission, Fee, etc., Paid, Offered, or Agreed to be Paid: None.
- (vii) Sensitivity of Technology Contained in the Defense Article or Defense Services Proposed to be Sold: See Attached Annex.
- (viii) Date Report Delivered to Congress: October 30, 2020.

*As defined in Section 47(6) of the Arms Export Control Act.

POLICY JUSTIFICATION

Australia—Javelin Missiles

The Government of Australia has requested to buy two hundred (200) Javelin FGM-148E missiles with U.S. Government technical assistance and other related elements of logistics and program support. The total estimated cost is not to exceed \$46 million.

This proposed sale will support the foreign policy and national security objectives of the United States. Australia is one of our most important allies in the Western Pacific. The strategic location of this political and economic power contributes significantly to ensuring peace and economic stability in the region.

The Australian Defence Force (ADF) is seeking to fill a short-term shortfall in its Javelin missile inventory in order to maintain the appropriate level of readiness. Australia will not have any difficulty absorbing these missiles into its armed forces.

The proposed sale of this equipment and support will not alter the basic military balance in the region.

These missiles will be provided from U.S. Army stocks. There are no known offsets associated with this sale.

Implementation of this proposed sale will not require the assignment of U.S. Government or contractor representatives to Australia.

There will be no adverse impact on U.S. defense readiness as a result of this proposed sale.

TRANSMITTAL NO. 20-73

Notice of Proposed Issuance of Letter of Offer Pursuant to Section 36(b) of the Arms Export Control Act

Annex Item No. vii

(vii) Sensitivity of Technology:

1. The Javelin Weapon System is a medium-range, man portable, shoulder-launched, fire-and-forget, anti-tank system for infantry, scouts, and combat engineers. It may also be mounted on a variety of platforms including vehicles, aircraft and watercraft. The system weighs 49.5 pounds and has a maximum range in excess of 2,500 meters. The system is highly lethal against tanks and other systems with conventional and reactive armors. The system possesses a secondary capability against bunkers.

2. Javelin's key technical feature is the use of fire-and-forget technology, which allows the gunner to fire and immediately relocate or take cover. Additional special features are the top attack and/or direct fire modes, an advanced tandem warhead and imaging infrared seeker, target lock-on before launch,

and soft launch from enclosures or covered fighting positions. The Javelin missile also has a minimum smoke motor thus decreasing its detection on the battlefield.

3. The Javelin Weapon System is comprised of two major tactical components, which are a reusable Command Launch Unit (CLU) and a round contained in a disposable launch tube assembly. The CLU incorporates an integrated day-night sight that provides a target engagement capability in adverse weather and countermeasure environments. The CLU may also be used in a stand-alone mode for battlefield surveillance and target detection. The CLU's thermal sight is a second generation Forward Looking Infrared (FLIR) sensor.

4. The missile is autonomously guided to the target using an imaging infrared seeker and adaptive correlation tracking algorithms. This allows the gunner to take cover or reload and engage another target after firing a missile. The missile has an advanced tandem warhead and can be used in either the top attack or direct fire modes (for target undercover). An onboard flight computer guides the missile to the selected target.

5. The Javelin Missile System hardware and the documentation are UNCLASSIFIED.

6. If a technologically advanced adversary obtains knowledge of the specific hardware and software elements, the information could be used to develop countermeasures or equivalent systems that might reduce weapon system effectiveness or be used in the development of a system with similar or advanced capabilities.

7. A determination has been made that Australia can provide substantially the same degree of protection for the sensitive technology being released as the U.S. Government. This proposed sale is necessary to further the U.S. foreign policy and national security objectives outlined in the Policy Justification.

8. All defense articles and services listed on this transmittal are authorized for release and export to the Government of Australia.

ARMS SALES NOTIFICATION

Mr. RISCH, Madam President, section 36(b) of the Arms Export Control Act requires that Congress receive prior notification of certain proposed arms sales as defined by that statute. Upon such notification, the Congress has 30 calendar days during which the sale may be reviewed. The provision stipulates that, in the Senate, the notification of proposed sales shall be sent to the chairman of the Senate Foreign Relations Committee.

In keeping with the committee's intention to see that relevant information is available to the full Senate, I ask unanimous consent to have printed in the RECORD the notifications which have been received. If the cover letter references a classified annex, then such annex is available to all Senators in the office of the Foreign Relations Committee, room SD-423.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

DEFENSE SECURITY
COOPERATION AGENCY,
Arlington, VA.

Hon. JAMES E. RISCH,
Chairman, Committee on Foreign Relations,
U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: Pursuant to the reporting requirements of Section 36(b)(1) of

the Arms Export Control Act, as amended, we are forwarding herewith Transmittal No. 20-25 concerning the Army's proposed Letter(s) of Offer and Acceptance to the Government of Guyana for defense articles and services estimated to cost \$256 million. After this letter is delivered to your office, we plan to issue a news release to notify the public of this proposed sale.

Sincerely,

HEIDI H. GRANT,
Director.

Enclosures.

TRANSMITTAL NO. 20-25

Notice of Proposed Issuance of Letter of Offer Pursuant to Section 36(b)(1) of the Arms Export Control Act, as amended

(i) Prospective Purchaser: Government of Guyana.

(ii) Total Estimated Value:
Major Defense Equipment* \$0 million.
Other \$256 million.
Total \$256 million.

(iii) Description and Quantity or Quantities of Articles or Services under Consideration for Purchase:

Major Defense Equipment (MDE): None.

Non-MDE: Two (2) Bell 412EPi Light Utility Helicopters with customer-unique modifications; two (2) Bell 429 Light Utility Helicopters with customer-unique modifications; two (2) WESCAM MX-10 cameras; mission equipment; contractor-provided pilot and maintainer training; particular ground support equipment; spares; publications; integrated product support; technical assistance; transportation; Repair and Return; and other related elements of logistics and program support.

(iv) Military Department: Army (GU-B-UAH).

(v) Prior Related Cases, if any: None.

(vi) Sales Commission, Fee, etc., Paid, Offered, or Agreed to be Paid: None.

(vii) Sensitivity of Technology Contained in the Defense Article or Defense Services Proposed to be Sold: See Attached Annex.

(viii) Date Report Delivered to Congress: October 30, 2020.

*As defined in Section 47(6) of the Arms Export Control Act.

POLICY JUSTIFICATION

Guyana—Bell 412EPi and 429 Helicopters

The Government of Guyana has requested to buy two (2) Bell 412EPi Light Utility Helicopters with customer-unique modifications; two (2) Bell 429 Light Utility Helicopters with customer-unique modifications; two (2) WESCAM MX-10 cameras; mission equipment; contractor-provided pilot and maintainer training; particular ground support equipment; spares; publications; integrated product support; technical assistance; transportation; Repair and Return; and other related elements of logistics and program support. The total estimated program cost is \$256 million.

This proposed sale will support the foreign policy and national security of the United States by helping to improve security of Guyana, which is expected to grow to be an important force for political stability and economic progress in South America.

The proposed sale of the Bell 412EPi and 429 helicopters will improve Guyana's capability to meet current and future threats. Guyana will use the enhanced capability to strengthen its homeland defense; conduct maritime surveillance, patrol, and interdiction; counter narcotic trafficking and transnational criminal organizations; deter regional threats; and support coalition partners overseas. Guyana will have no difficulty absorbing this equipment into its armed forces.

The proposed sale of this equipment and support will not alter the basic military balance in the region.