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PPPL celebrates National Hispanic Heritage Month. From left to right: astrophysicist Mario Acuna, singer Shakira Isabel Mebarak Ripoll (Shakira), and physicist Angela Camacho. (Collage by Kiran Sudarsanan).

DIVERSITY AND INCLUSION (/PPPL-TODAY/CATEGORY/DIVERSITY-AND-INCLUSION)

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PPPL Celebrates Hispanic Heritage Month

A NASA astrophysicist, a Colombian physicist who helped organize female scientists, and a popular singer

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By Giana Aguilar-Valencia

Mario Acuna — Astrophysicist (1940-2009)

Mario Acuna was a senior astrophysicist and a promising scientist at NASA's Goddard Space Flight Center.

Acuna was born in Cordoba, Argentina, and attended the University of Tucuman in Argentina. There, he earned a master's degree in electrical engineering in 1967. Acuna worked for the Ionospheric Research Center at the University of Tucuman and the Argentine National Space Research Commission.

From 1969 to 2009, he was associated with NASA's Goddard Space Flight Center. While at NASA, he conducted experimental investigations of magnetic fields and plasmas in the solar system. Acuna received his Ph.D. in space physics from the Catholic University of America in 1974.

Acuna worked on projects such as Mariner 10, Pioneer 11, Voyager 1 and 2, Ulysses, NEAR, ESA's Giotto mission to Comet Halley, Mars Global Surveyor, Lunar Prospector, and MESSENGER. He specialized in the interactions of magnetic fields and plasmas along with the instruments used to measure interactions.

In addition to his work, he was a founding member of the Latin American Association of Space Geophysicists. He also served as a U.S. project scientist for the International Solar-Terrestrial Physics Program.

Throughout his experience, he won many awards, including the NASA Exceptional Service Medal in 1986, NASA's Distinguished Service Medal in 1996, and the Presidential Rank Meritorious Award in 2003

Angela Camacho — Physicist (Born 1947)

Ángela Stella Camacho Beltrán is a Colombian physicist and president of the Colombian Network of Women Scientists, a network she helped found.

Camacho was born in Bogotá, Colombia. She attended the National

University of Colombia in 1966 where she received her degree in physics. After graduating, she moved to Germany and obtained a Ph.D. from the Johannes Gutenberg University in Mainz, West Germany. This achievement made her the first Colombian woman to receive a doctorate in physics.

After graduating, she returned to Colombia, where she began teaching and researching in the physics department of the Industrial University of Santander. She became research director of the physics department from 1980 to 1982. Camacho relocated to the physics department of the Andes University, where she was department director, postgraduate and research coordinator, and member of the Committee of Teacher Organization of the Faculty of Sciences.

In addition to her work, she has been a member of six national and international scientific associations. She was a leader for Colombia at the Movement of Women in Physics in Paris. In an interview in 2019, she discussed the gender biases in Colombia and the need for gender equality in science.

Camacho has researched condensed matter physics, solid state physics, low-dimensional physics, and low-dimensional semiconductor structures. She currently focuses on the interaction of light with zero-dimensional and one-dimensional nano-systems. She has received many awards, most notably the National Award for Excellence in Research by the Colombian Association for the Advancement in Science.

Shakira Isabel Mebarak Ripoll (Shakira) - Colombian singer, record producer, and philanthropist (Born 1977)

Shakira Isabel Mebarak Ripoll (Shakira) is a singer, record player, and philanthropist who is known as the "Queen of Latin Music."

She was born in Barranquilla, Colombia. At age 13, she recorded her debut with Sony Music Colombia. Years later, she entered the English-Language market and sold over 13 million copies worldwide, When her single "Hips Don't Lie" was released in 2006, it topped charts worldwide. She is one of the best-selling music artists of all time after selling over 80 million records. She also became the only artist from South America to reach the number-one spot on the U.S. Billboard Hot 100. She has won three Grammys and twelve Latin Grammy Awards.

Shakira is of Colombian and Lebanese descent and grew very close to relatives from both cultures. At age 4, her father brought her to a Middle Eastern restaurant. There, she heard Doumbek, which ties to belly dancing. She began dancing on the table and realized she wanted to be a dancer.

Her father also made her aware of societal issues. When she was young, he brought her to a local park to see orphans. Shakira later said, "One day I'm going to help these kids when I become a famous artist."

Aside from her entertainment career, Shakira is involved in philanthropy, humanitarian work, and politics. In 1997, she founded the Pies Descalzos Foundation: a Colombian charity with special schools for poor children in Colombia. The name came from the album she released in 1995, "Pies Descalzos". The foundation focuses on education, with five schools across Colombia that provide education and meals for 4,000 children. She became a founding member of Latin America in Solidarity Action, which promotes early childhood public policies. She is a UNICEF Goodwill Ambassador and one of their global representatives. In 2011, President Barack Obama appointed Shakira to the President's Advisory Commission on Educational Excellence for Hispanics. While Ivan Duque was President of Colombia, she spoke against the plan to reduce the education budget from 13% to 7%.

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