

Volume 38, Edition 8E • February 23, 2023

Published by SBE, Inc. • DBE/MBE/SBE

How Dr. Gladys West Made GPS Possible

By Swapna Krishna

The STEM fields are full of significant innovators who sadly never got the recognition they deserve. These people, many of whom are under-recognized female scientists, were pioneers in their fields. They achieved great things but didn't receive due credit because they were women of color (and often specifically Black women). In the 1950s and 60s, many Black women worked as engineers and "human computers," enabling the dawn of the space age and the era of modern computing.

Dr. Gladys West is one of STEM's hidden trailblazers. She helped develop technology that contributed to the creation of the Global Positioning System, or GPS, which revolutionized modern society. Her contributions have been hidden for too long. We're excited to discuss both Dr. Gladys West and the ins and outs of how GPS works.

How Does GPS Work?

When we're going about our daily lives, we use GPS constantly but don't really think about

what it is. How does GPS work? The United States' GPS relies on a constellation of thirty-one satellites in Earth orbit (other countries have their own GPS systems), according to the FAA. They work in concert with ground stations that pinpoint the precise position of these satellites at any given time. Receivers are what we utilize (our phones, car infotainment systems, etc.) to access the GPS network.

Receivers are able to listen for signals from this satellite constellation. After communicating with a minimum of four separate satellites, they can pinpoint a user's location to within seven meters, with about ninety-five percent accuracy.

Dr. West's Background

Born in 1930 in rural Virginia, Dr. Gladys West was the daughter of Black sharecroppers and worked the fields as a child. She knew education was her way to a different life, so through hard work, she excelled and received a scholarship to college. She earned an undergraduate degree in mathematics and continued on to pursue a master's degree.



In 1956, she began her career at the United States Naval Weapons Laboratory. Her role was to collect and process data from satellites, which she used to help pinpoint their exact locations in space. This experience as a "human computer" helped

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NORTHEAST EVENTS FOR YOUR BUSINESS





SBA and SOS Monthly Webinar Thursday, March 2, 2023, 9:00 am-11:00 am Online

Main Sponsor(s): US Small Business Administration, New Hampshire Secretary of State Corporation Division

Contact: Miguel Moralez, 603-225-1601, miguel.moralez@sba.gov

Fee: Free; registration required

Starting a new business? Looking for capital and finance options? Looking for general advice on starting or maintaining your business? Hear from representatives from the local SBA office and the New Hampshire Secretary of State Corporation Division. This workshop (currently held online during the pandemic) is offered on the first Thursday of every month. To join this free webinar, copy and paste the link below into your browser, then register for tickets for the date of your choice to receive the access code. https://www.eventbrite.com/e/secretary-ofstate-quickstart-and-small-business-administration-programs-tickets-262004180557

Getting Registered into the System for Awards Management (SAM.gov) Webinar Wednesday, March 8, 2023, 1:00 pm-2:00 pm Online

Main Sponsor(s): US Small Business Administration Contact: SBA Los Angeles District Office, 213-634-3855, LADO@sba.gov Fee: Free; registration required

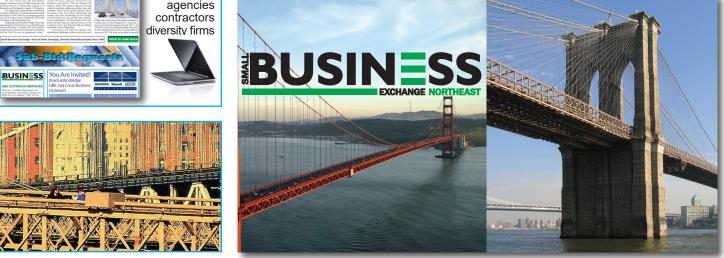
Join the Small Business Administration (SBA) Los Angeles District Office for a virtual workshop to increase your potential for federal contract opportunities through the System for Award Management registration. Workshop topics will include: platform overview; why SAM is required; registration process; required info; and SBA resources available. They will also provide tips, FAQs, and directions on where to get additional assistance, as well as answers to your other questions. To register, visit https://www.eventbrite.com/e/ sam-registration-system-award-managementtickets-512254405717

Selling to the Federal Government Webinar Thursday, March 23, 2023, 1:00 pm-4:00 pm Online

Main Sponsor(s): US Small Business Administration Contact: George Tapia, 610-382-3086, george.tapia@sba.gov

Fee: Free; registration required

Did you know that the federal government is the largest purchaser of goods and services in the world? Interested in learning how your business can market your services or goods to the federal government? Register on line at https://www. eventbrite.com/e/how-to-sell-to-the-federalgovernment-tickets-21790713611 SBA helps to ensure small businesses get fair opportunities to share federal government prime contracts. Topics will include: How to Register, Small Business Certifications, Finding Opportunities, Marketing Your Firm, Federal Supply Schedules, Getting Paid, Tips to Prepare Your Offer, How to Seek Additional Assistance. All training sessions are held via Microsoft Teams Meeting. Participants must ensure Microsoft Teams is functioning.



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