

NOAA to train thousands for jobs that will advance climate resilience

Disadvantaged communities in coastal areas will participate in the new initiative.

Floods. Droughts. Extreme heat. Rising sea levels. Preparing for such natural hazards is the goal of nine training programs launched on 1 August with funding from the NOAA Climate-Ready Workforce for Coastal and Great Lakes States, Tribes, and Territories Initiative. The programs, which were selected from 95 applicants, will receive amounts ranging from \$1.7 million to \$9.8 million, for a total of \$60 million. The initiative is part of a \$3.3 billion investment allocated to NOAA through the Inflation Reduction Act to increase climate change preparedness in coastal communities.

Over the next four years, the programs will train and place people in jobs that help restore ecosystems, develop green infrastructure, elevate buildings from flooding, and more. The awardees will serve communities identified as disadvantaged by the Climate and Economic Justice Screening Tool, launched in 2022 by the Biden administration. Some programs will target graduate students, and others will look for more experienced workers.

"Right now, there aren't enough people to address the crises each region faces," says Ned Gardiner, program manager for the NOAA Climate Smart Communities Initiative. "We don't have to train everyone to be a climate scientist, but we do need people to understand and address what is at stake" in communities frequently hit by weather disasters, he says.

Each program will work with companies to help develop and implement the training curriculum. Those companies have also committed to hiring program participants. Local climate scientists will work with the program



REBECCA ZEIBER/NEW HAMPSHIRE SEA GRANT

DUNE GRASSES being planted by volunteers in April 2016. The effort was part of a NOAA grant to increase beach resilience against erosion in Hampton, New Hampshire. Trainees in a new program funded by the NOAA Climate-Ready Workforce initiative will be planting similar grasses in Massachusetts and New Hampshire.

coordinators to educate participants about the climate issues related to their jobs.

Dangers and damage

Coastal communities near Lake Erie in Ohio are threatened by toxic algal blooms and poor water quality. The Ohio State University will train some participants to monitor storm runoff so they can analyze the resulting water quality. Stormwater infrastructure maintenance skills will also be taught in workshops. Through fellowships, graduate students and postdocs will study algal blooms and generate models to assess their risk to people and animals. Algal blooms deplete oxygen in water and kill aquatic life. They also release toxins that can harm humans. Partners in consulting, technology, and government agencies plan to hire at least 48 out of the program's 100 participants, says project lead Lorryne Miralha, a watershed modeling and data analytics professor at the university.

American Samoa has experienced among the highest rates of sea-level rise in the world. In the past, the sea level rose about 241 millimeters per century. But after a tsunami and earthquake hit the territory in 2009, the land has been subsiding, and the local sea level rose 250 millimeters in just 11 years. Repairing the infrastructure damage cost \$200 million.

With \$1.7 million from the NOAA initiative, participants in a new program there will be trained and certified in water and electrical engineering to fill about 50 out of

110 vacancies in the American Samoa Power Authority. The semiautonomous agency is responsible for the territory's running water, electricity, and garbage pickup. The services are especially essential when sea-level rise and other climate impacts affect local infrastructure. Without the American Samoa Power Authority, says project lead Kelley Tagarino, "we'd have to go back to living off the land."

The initiative's other programs will focus on such issues as urban agriculture, renewable energy, green infrastructure, ecological restoration, and flood prevention. Building up Tribal and Indigenous workforces is also a priority for programs located where those communities are populous, particularly in Alaska and Washington State.

Growing a workforce

"Placing people into positions that offer good wages and job security is important," says NOAA Climate-Ready Workforce coordinator Nicole Rucker. Part of the NOAA investment goes toward providing participants with wraparound services, including childcare and transportation to training sites.

The NOAA initiative has earmarked \$50 million for the programs and \$10 million for technical assistance, such as initial assessments of what training project participants need. The initiative is modeled after the US Economic Development Administration's Good Jobs Challenge, which since 2022 has worked with employers to place people in at least 15 supply-chain

AERIAL ASSOCIATES PHOTOGRAPHY/ZACHARY HASLICK



HARMFUL ALGAL BLOOMS surround Lake Erie's western shore in Monroe, Michigan. Fellows working with the Ohio State University in the new NOAA Climate-Ready Workforce initiative will study and assess the health risks of similar blooms.

industries nationwide.

Other agencies also aim to build workforces in climate resiliency. The Depart-

ment of Energy is investing in renewable energy infrastructure in fiscal year 2025, including \$385 million toward weather-

izing low-income homes and \$95 million toward various Tribal energy projects. The Environmental Protection Agency's Clean Water State Revolving Fund has invested \$172 billion into improving water quality infrastructure over the past 36 years. The Department of Transportation provides funding to communities for safe transportation to escape from natural hazards and extreme weather events.

Gardiner stresses the urgency of developing a workforce to combat climate change impacts. "We need to focus on climate concerns. Ignorance won't protect anyone," he says. Over the coming months and years, NOAA will work with project leads to assess how the jobs benefit the participants and their communities.

Hannah H. Means

Q&A: Rebecca Smethurst, black hole researcher and YouTube star

Dr. Becky aims to shrink the gender imbalance in the viewership of her astronomy videos.

Rebecca Smethurst loves astrophysics. She also loves talking about it. That passion led her to start regularly posting to her YouTube channel, *Dr. Becky*, six years ago. Her videos mainly cover new astronomy research findings. Also on the platform, she hosts a monthly series called *Night Sky News*, where she discusses celestial objects and events amateur astronomers can observe in the coming weeks. In other videos she reacts to pop culture space references in songs, TV shows, movies, and memes.

Smethurst finds inspiration for videos in her daily life, including seminars, journal clubs, and the news. She also tries to market content so YouTube recommends it to more women. About 45% of YouTube's global user-ship identifies as female, but only 10% of Smethurst's audience identifies as female. The *Dr. Becky* channel has amassed over 760 000 subscribers and 85 million cumulative views, with videos averaging a half million views apiece. In 2020 her contributions to



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physics engagement were recognized with the Mary Somerville Medal and Prize bestowed by the UK's Institute of Physics.

In 2017 Smethurst earned her PhD

in astrophysics at the University of Oxford. She completed research fellowships at the University of Nottingham in 2018 and at the University of Oxford in 2022. She is still at Oxford,