



PRESS RELEASE

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Erna Akuginow/Geoff Haines-Stiles
THE CROWD & THE CLOUD

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- *338 Citizen Science biodiversity projects with some 2.3 million volunteers globally contribute labor worth **\$2.5 BILLION** annually**
- *Volunteers contributing to the eBird website and app have expended **THREE TIMES** the human effort it took to build the Empire State Building***

Big corporations mine our online activity for profit. NASA sends probes to distant planets, and delivers astonishing images of both deep space and planet Earth. But even in this age of Big Data and Big Science, there is still a need for what's called "citizen science."

THE CROWD & THE CLOUD (C&C) is a four-hour public television series showcasing some of the people at the frontlines of this revolution in how science is done and their contributions to public health, environmental protection, wildlife conservation and mitigating the impacts of climate change. This new approach to science takes advantage of the almost universal availability of mobile technology, low cost sensors and other tools for collecting and sharing data. C&C travels around the U.S. and internationally to document inspiring stories of people taking charge of their health, their rivers and lakes, the air they breathe, the water they drink, and the communities in which they live. Its inspiring vision will offer *view-ers* who want to become *do-ers* online resources (crowdandcloud.org) to find out more.

The series will be distributed by American Public Television (APT) and is slated for release on April 1, 2017 (check local listings).

"Public television has been sharing breakthrough science for decades through such classic series as Carl Sagan's COSMOS, the first home-grown American science series, and NOVA," says writer/producer Geoff Haines-Stiles. "I'm proud to have contributed to both, and been impressed by how audiences have responded with curiosity and passion. As I learned more about today's increasingly varied and valuable citizen science projects, I became certain PBS viewers would love to know more, and perhaps be motivated to start participating. The result is our CROWD & CLOUD project, combining broadcast television and online resources."

CROWD & CLOUD's four programs include classic citizen science projects such as the Audubon Society's Christmas Bird Count, which started in 1900, and recent start-ups such as Smartfin and Propeller Health, which—respectively—use innovative sensors to capture ocean data, and help those suffering from asthma and their doctors track where attacks are triggered. Program 1, "Even Big Data Starts Small," shows how armchair mappers worldwide go online to transform satellite images into maps that help speed first responders where they need to be after disasters block roads. "EyesOnALZ" uses

crowdsourcing and gamification in “Stall Catchers” to enlist online volunteers to help analyze blocked blood vessels in living brains, and speed up research into Alzheimer’s disease, cutting a year of expert work down to two weeks without sacrificing data quality. Each program offers multiple intriguing examples, and engaging profiles of enthusiastic participants in the disruptive and increasingly global phenomenon of “Citizen Science in the Digital Age.” (Descriptions of the four programs follow.)

The series is hosted by Waleed Abdalati, former NASA Chief Scientist and now Director of the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado, Boulder. As Waleed comments, “My background as a scientist, working for NASA and at universities, has shown me the value of the Big Picture perspective you get from looking at Earth from space. Now that I’ve been able to dive into the projects we’ve covered in THE CROWD & THE CLOUD, I’ve learned that the up close and personal perspective, people collaborating and sharing data via the *cloud*, is an excellent way to gather the information we need to help solve the challenges we all face. From earthquakes to epidemics, from air quality to Alzheimer’s research, from the health of our oceans to the safety of our drinking water, citizen science and crowdsourcing *can* make a difference. And citizen science *is* science. The better the data, the bigger the impact, for scientists, policy-makers and the public.”

Executive Producer Erna Akuginow adds, “Now more than ever the hundreds of thousands of Americans engaged in citizen science can help fill gaps where government agencies lack will or resources to address issues of local concern. Whether it’s community members in West Oakland counting trucks to route pollution away from homes, or retirees counting horseshoe crabs on the Delaware Bay and contributing data that shapes conservation strategies, this growing movement is a new way of doing science. It’s as American as apple pie, counting Ben Franklin and Thomas Jefferson as early weather watchers. And it’s fun and rewarding for those participating, and the data is often priceless, and unobtainable in any other way.”

* “Global change and local solutions: Tapping the unrealized potential of citizen science for biodiversity research,” Theobald, et al. in *Biological Conservation*.

** Chris Wood, Cornell Lab of Ornithology, personal communication

About American Public Television

[American Public Television](#) (APT) has been the leading syndicator of high-quality, top-rated programming to the nation’s public television stations since 1961. For more than 10 years, APT has annually distributed one-third or more of the top 100 highest-rated public television titles in the U.S. Among its 250 new program titles per year, APT programs include prominent documentaries, performance, news and current affairs programs, dramas, how-to programs, children’s series and classic movies. *America’s Test Kitchen From Cook’s Illustrated*, *Cook’s Country*, *AfroPoP*, *Rick Steves’ Europe*, *Front and Center*, *Doc Martin*, *Nightly Business Report*, *Midsomer Murders*, *A Place to Call Home*, *Lidia’s Kitchen*, *Globe Trekker*, *Simply Ming*, and *P. Allen Smith’s Garden Home* are a sampling of APT’s programs, considered some of the most popular on public television. APT licenses programs internationally through its [APT Worldwide](#) service. Now in its 12th year, [Create® TV](#) — featuring the best of public television’s lifestyle programming — is distributed by American Public Television. APT also distributes [WORLD™](#), public television’s premier news, science and documentary channel. To find out more about APT’s programs and services, visit [APTonline.org](#).

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EPISODE LISTINGS

Episode 1

Even Big Data Starts Small

20,000 volunteers across the U.S. measure precipitation: when extreme weather hits, emergency managers turn their data into life-saving alerts. Armchair mappers worldwide update information used by first responders after the Nepal earthquake. A new project, EyesOnALZ, enlists the crowd to speed up research on Alzheimer's disease. DIY enthusiasts from Public Lab map the BP oil spill with kites, balloons and cameras and continue to watchdog pollution. The *crowd*, using mobile tech, and the *cloud* contribute to science that saves lives.

Episode 2

Citizens + Scientists

Citizen scientists track air and water pollution at fracking sites in windswept Wyoming and five other states, using simple but science-based techniques developed by the "Bucket Brigade." On idyllic East Coast trout streams, volunteers from Trout Unlimited monitor water quality regularly, generating baseline data that will prove invaluable in the event of future pollution events. Community members connected with professional researchers to tackle Flint's drinking water crisis and now the same is happening in Philadelphia and other cities. In China, citizens use government data and a unique mobile app to report environmental crimes. When citizens and scientists partner it's a win-win for all concerned.

Episode 3

Viral vs. Virus

Sensors on asthma inhalers generate real-time maps of environmental dangers to help patients, physicians and disease detectives in Louisville, Kentucky. Street knowledge was also crucial in a historic medical breakthrough: John Snow's mapping of cholera fatalities in 19th century London. In West Oakland, California, citizens confront air pollution and rising asthma rates by collecting traffic data. Local ordinances are changed and everyone breathes easier. Can apps and maps combat globalized diseases in a warming world? Stories of citizen science fighting mosquito-borne diseases with apps and crowd-sourced data in Barcelona, Houston and New Orleans. In Kenya, Medic Mobile develops smart but low-cost software to give simple phones powerful capabilities to help community health workers improve maternal and child health.

Episode 4

Citizens4Earth

Counting birds for more than 100 years generates data on a changing climate and there's an app for that: eBird. Surfer science using smart tech tracks ocean acidification and coastal temperatures in the Smartfin project, a recent startup. We spend "A Year in the Life of Citizen Science" including a Thanksgiving monarch butterfly count in California. Seasonal change is tracked by Latina and Native American teens in springtime in Albuquerque, New Mexico, and horseshoe crabs are surveyed in summer by retirees along mid-Atlantic coasts. In Uganda, World Bank economists and local partners generate data for sustainable development. The far-ranging potential of "Citizen Science in the Digital Age."

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