At LANL, breaking down data to address global problems

October 13, 2019

At LANL, breaking down data to address global problems

by Sara Del Valle

The ability to collect information far outpaces the ability to fully utilize it—yet that information may hold the key to solving some of the biggest global challenges facing the world today.

Take, for instance, the frequent outbreaks of water-borne illnesses as a consequence of war or natural disasters. The most recent example comes from Yemen, where, according to the World Health Organization, nearly 536,000 new suspected cases of cholera were reported, with 773 associated deaths, between January and the end of July alone. History is riddled with similar stories. What if it we could better understand the environmental factors that contributed to the disease, predict which communities are at higher risk, and take action to stem the spread?

Answers to these questions—and others like them—could help avert catastrophe.

Data is already collected about virtually everything, from birth and death rates to crop yields and traffic flows. IBM estimates that, each day, 2.5 quintillion bytes of data are generated—equivalent to producing all the information in the Library of Congress more than 166,000 times every 24 hours.

Yet the power of all this information is not fully harnessed. It’s time to change that—and thanks to recent advances in data analytics and computational services, we finally have the tools to do it.

Data scientists at Los Alamos National Laboratory study data from wide-ranging, public sources to identify patterns, aiming to predict trends that could threaten global security. Multiple data streams are critical because the ground-truth data (such as surveys) are often delayed, biased, sparse, incorrect, or, sometimes, nonexistent.

This story first appeared in Santa Fe New Mexican.

Managed by Triad National Security, LLC for the U.S Department of Energy's NNSA