



SAS CORPORATE
SOCIAL RESPONSIBILITY

Data for Good
Analytics helping humanity

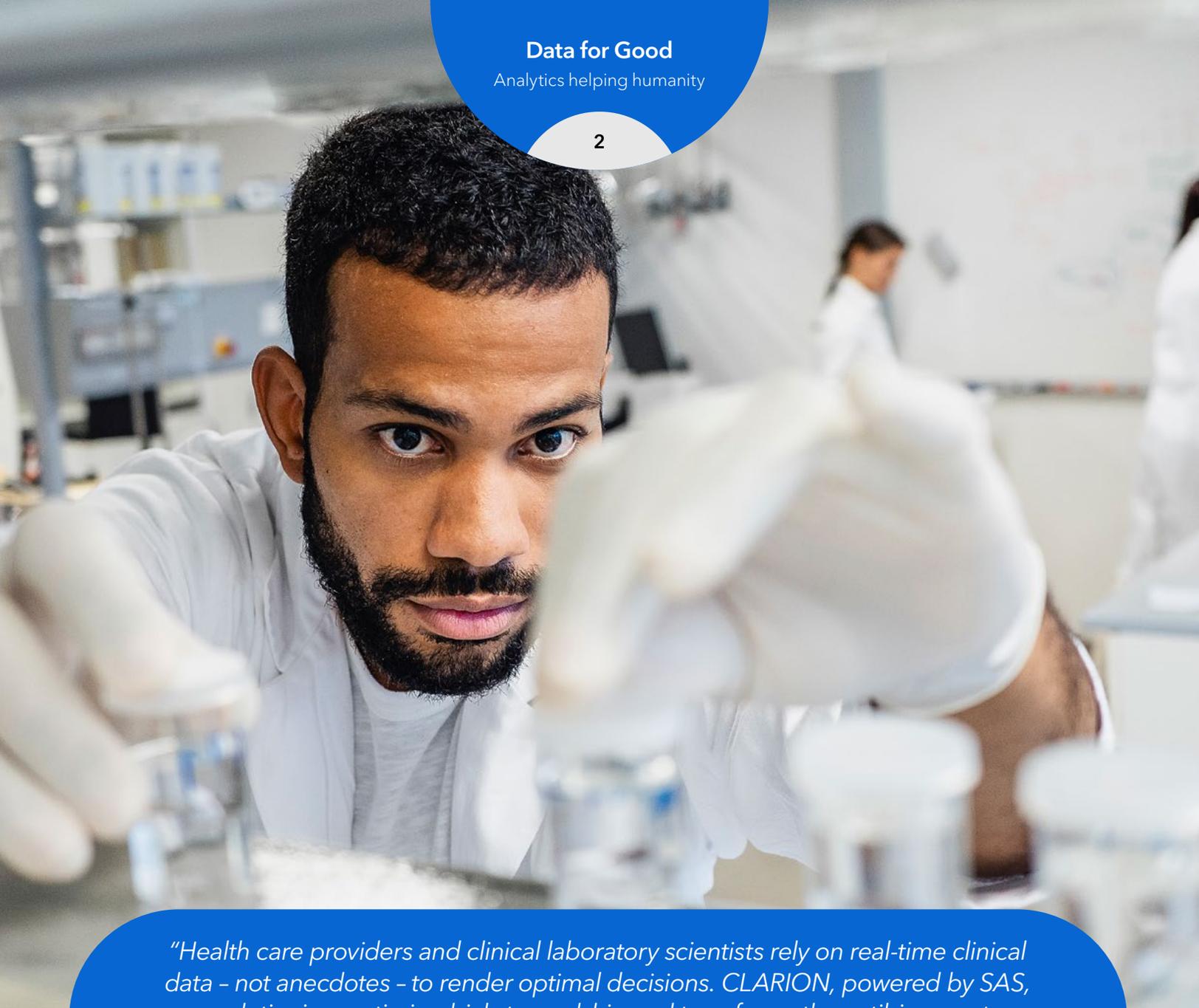


Analytics helping humanity

SAS is passionate about applying its cutting-edge technology and expertise to help solve some of society's biggest problems such as poverty, disease, hunger and illiteracy.

SAS has always been an organization motivated by challenges to use its technology to build a better world. As the UN's Sustainable Development Goals work to reduce inequalities and ensure healthy living, SAS seeks out opportunities where it can help create a brighter future for all. SAS' social innovation initiative works to find creative ways to accelerate global progress and move the world toward a more sustainable future. One of the ways that SAS supports this goal is through the [Data for Good](#) movement, which encourages using data in meaningful ways to solve humanitarian issues around poverty, health, human rights, education and the environment. As a vital part of the Data Ethics Practice, the Data for Good team generates thought leadership and showcases the power of SAS® technology. These efforts put SAS' principles into practice, addressing pressing global issues through the lens of responsible innovation methodologies. The goal is to ensure the ethical application of artificial intelligence. From helping boost donations for conservation efforts and fighting hunger to powering better cancer research and investing in education and data literacy, SAS is contributing to building a better world for the people and the planet.

SAS' social impact programs rely on the curiosity and expertise of SAS employees who are passionate about using their skills for social good. Thanks to these efforts as well as the company's partnerships with customers, industry groups, nonprofits, governments and global organizations, SAS continues to discover new opportunities for analytics to serve the greater good.



"Health care providers and clinical laboratory scientists rely on real-time clinical data - not anecdotes - to render optimal decisions. CLARION, powered by SAS, revolutionizes antimicrobial stewardship and transforms the antibiogram to be automated and dynamic, providing up-to-date information."

Dr. John Hurst, PharmD | Senior Director of US Antimicrobial Stewardship | **bioMérieux**

Strengthening the fight against antimicrobial resistance via data visualization

Antibiotic misuse - including over-prescribing and inaccurate prescribing - causes bacteria and fungi to evolve and become resistant to treatment, leading to 2.8 million infections and more than 35,000 deaths annually in the US. The sooner antimicrobial resistance can be identified, the sooner doctors can put patients on the right prescription.

bioMérieux provides in vitro diagnostics solutions (systems, reagents, software and services) to the clinical field for diagnosing infectious diseases. When patients need medicine, hospitals typically rely on an antibiogram, a report that helps clinicians decide which antibiotics to use on a patient while waiting for confirmation from a lab. By generating better antibiograms using SAS Visual Analytics, bioMérieux helps clinicians identify the best empiric antimicrobial treatment based on data from current local resistance patterns. This represented a sea change in diagnostics. Now, instead of using general information that's up to a year old, doctors can easily access real-time, localized antimicrobial resistance data via mobile dashboards to improve diagnosis and treatment.

"By helping us maximize donor dollars, SAS is helping us advance our mission of building a more sustainable future."

Katherine Bowen | Director of Journey Management and Marketing Automation | **The Nature Conservancy**

Protecting nature with dollars and sense

[The Nature Conservancy](#) is one of the most wide-reaching environmental organizations in the world and has protected lands and waters around the globe. Because of its work, countless habitats and wildlife species have been preserved for generations to come.

The Nature Conservancy works in 76 countries and territories - either directly or through partnerships with other nonprofits. The Nature Conservancy is supported by donations from more than a million members worldwide via email, phone, mail, digital ads and other channels. Because this marketing data was sometimes siloed by channel, it could be difficult and time-consuming for marketers to track member activity across channels, which resulted in not having a full picture of supporters' interactions with the organization.

With SAS, The Nature Conservancy no longer needs to outsource to various marketing technology vendors. All data sources are organized in SAS' customer data platform, which further enhances The Nature Conservancy's ability to prioritize its supporters' data privacy and security. The Nature Conservancy has seen its donor retention rate improve 10% and its year-over-year giving increase 30%.



"People in general process information through examples of human beings and not data. So the question was how to use data to tell the story."

Joel Berg | Chief Executive Officer | **Hunger Free America**

Fighting hunger with data

[Hunger Free America](#) is a nonpartisan nonprofit group working to enact the policies and programs needed to end domestic hunger and eliminate reliance on charity to fight food insecurity. Working with a team of analytics volunteers at SAS, the organization began analyzing data over time from the US Census Bureau's Household Pulse Survey, in which respondents report biweekly on food insecurity during the pandemic.

Combining that information with data on the benefits paid out directly through a variety of social safety net programs - SNAP, school breakfast/lunch, and child and adult care programs - allowed Hunger Free America to explore associations it hoped would support its goal of helping society move "beyond the soup kitchen" and ensure economic and food self-sufficiency for all Americans. Being able to aggregate, analyze and visualize these large amounts of disparate data allowed Hunger Free America to visually back up its belief in the importance of the social safety net. The data showed that after employment and wages, the variables with the strongest relationship to food insecurity in the US were government nutrition-assistance programs.

The correlation might sound obvious: More funds and more food equal less hunger. But stating the obvious visually - especially backed by data - has potentially huge value in Hunger Free America's efforts to show lawmakers the impact their decisions can have on hunger long-term.



"SAS has really allowed every decision made at WWF to be driven by data. Without analytics, we would have never grown to our needed scale, grown our membership program and be one of the most recognized brands in the nonprofit space."

Mac Mirabile | Senior Director of Analytics | **World Wildlife Fund**

Improving donor funding through targeted messaging

The population sizes of mammals, birds, fish, amphibians and reptiles have seen an alarming average drop of 68% since 1970. The mission of [World Wildlife Fund](#) (WWF) is to build a future in which people live in harmony with nature. Founded in 1961, WWF is a public charity dedicated to conservation. For more than six decades, WWF has worked to sustain the natural world for the benefit of people and wildlife, collaborating with local and global partners in nearly 100 countries.

During the last few years, the organization has been taking a closer look at how to use its channels to ensure its donor base stays active, aware and engaged. To do this, WWF must understand what types of donors it has, what channels donors are likely to use and how long they are likely to remain donors.

Using SAS for data analysis, WWF can extract a deep understanding of donation behavior across engagement channels. With SAS Customer Intelligence 360, WWF can personalize aspects of the constituent experience for each donor. This level of personalization will vastly improve the nonprofit's relationships with its donors and constituents.

"By doing predictive analysis earlier in the cycle, we can speed our drug development process and deliver solutions to patients faster."

Andrea Beccari | Head of R&D Platforms and Services | **Dompé farmaceutici**

Improving data collection and modeling to accelerate predictive medicine efforts

For the pharmaceutical industry, the challenge now is around complex and systemic pathologies, such as those related to oncology, cardiology, immunology and metabolic diseases. For these pathologies, conventional approaches are beginning to show signs of ineffectiveness.

To help with this, [Dompé farmaceutici](#) uses SAS for predictive analytics and quantitative disease modeling. As a science-driven biopharmaceutical company, Dompé works to develop innovative drugs for unmet medical needs, and SAS technology is transforming the way Dompé collects and models data.

With SAS Analytics solutions, the organization uses predictive analytics to predict toxicity and side effects. By using SAS to rapidly get new analytical models into production, Dompé accelerates traditionally laborious processes and enables them to deliver new drugs to market faster.



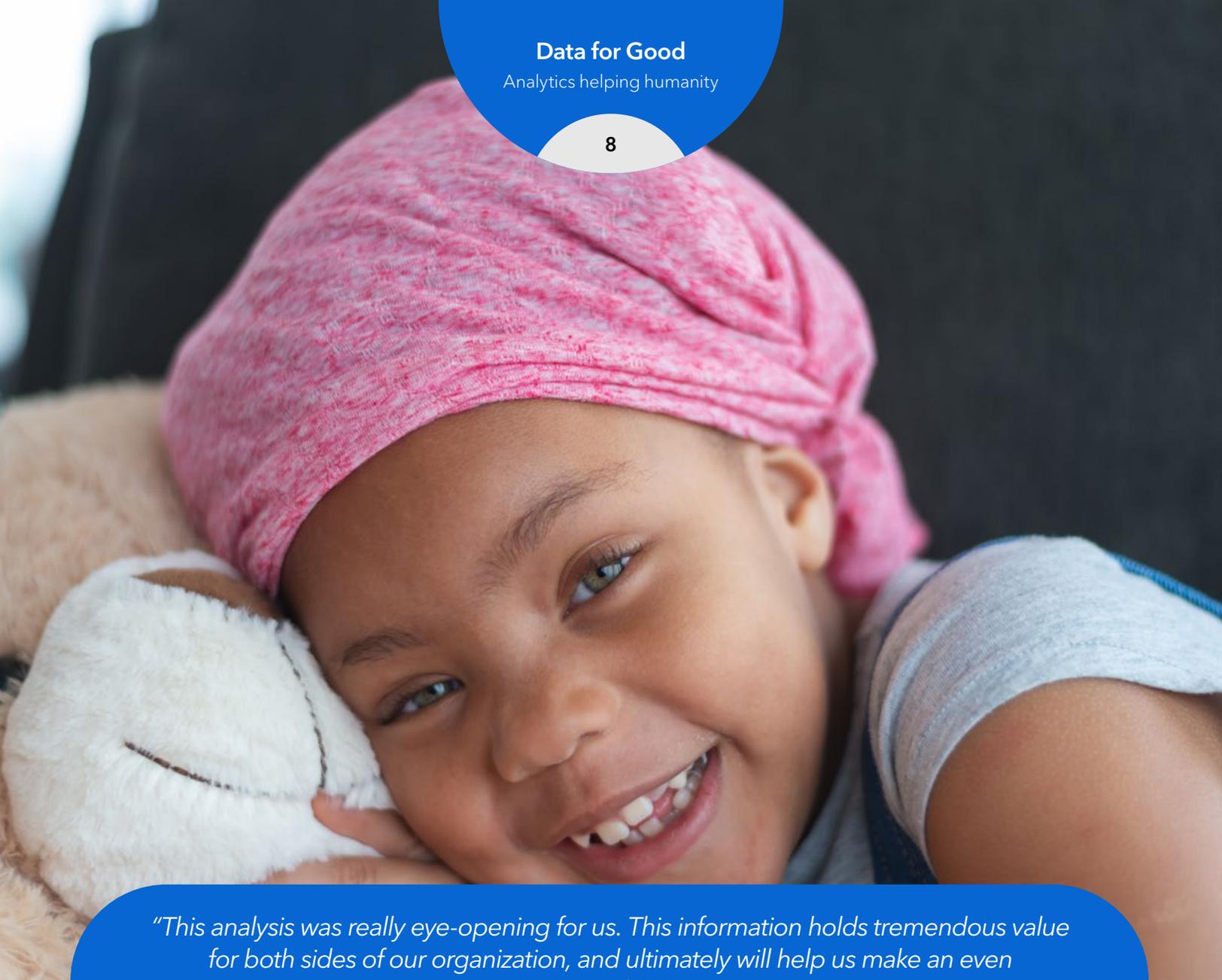
"All states are worried about their students and how they're going to recover from this pandemic, and I think we're all approaching it in similar ways in that we are keeping students at the center of these conversations. We've learned a lot from other states and how they're collecting the data they need and doing with that data. It's been a thrill to see the intentionality with which all states are approaching this work."

Catherine Truitt | North Carolina State Superintendent

Helping determine learning loss and recovery solutions for students

COVID-19 disrupted student learning on an unprecedented scale. Numerous studies indicate that learning loss in math and English language arts was widespread. A sudden shift to remote education, combined with unequal access to the internet and devices, and differing levels of support at home, left many students underserved. Overnight, millions of students lost access to their school communities, to consistency and routine and to stable learning environments that are vital to making timely progress on in their educational journeys.

SAS analytics is helping states and districts around the country measure the extent of learning loss at the state level, and down to the individual student and student group. This [level of analysis](#) enables educators to plan targeted interventions essential to learning recovery and acceleration. The US government provided \$125 billion to states and school districts to help students recover. To ensure this unprecedented investment in education isn't wasted, states will need data and analytics to measure the effectiveness of learning recovery and acceleration efforts.



"This analysis was really eye-opening for us. This information holds tremendous value for both sides of our organization, and ultimately will help us make an even greater impact on the lives of children across our state."

Jaclyn Parker | Chief Operating Officer | **Make-A-Wish Eastern North Carolina**

Using analytics to make more wishes come true

For children with critical illnesses, a wish come true has the power to instill hope, strength and inspiration in an uncertain and difficult time. Make-A-Wish employees and donors know this better than anyone. [Make-A-Wish Eastern North Carolina](#) helps provide these life-changing experiences to an average of 200 children a year. But the chapter wondered... what if they could make even more wishes come true?

SAS applied analytics to both sides of the Make-A-Wish business - mission delivery and donations. By better understanding trends in historical data, the team hoped to predict future wishes and ensure more children can receive their ideal wish.

With the ability to drill into individual counties - and even down to the zip code - the team can see details about wishes that took place there, as well as the total in-kind and cash donations. This feature provides an easier, more visual way for the team to understand donor patterns and plan for future donation campaigns. By visualizing the wishes in this way for the first time, Make-A-Wish Eastern North Carolina now has a more holistic view of its mission in action. With these new features came new insights that will help shape its success moving forward.



“By integrating SAS into coursework, we’re helping strengthen literacy in data science. Our students become more competitive, our alumni are more successful, and our state and nation are getting more of a workforce that understands SAS and is better prepared to advance many industries as they harness the power of data.”

Cynthia Young | Founding Dean | College of Science at Clemson University

Building brighter futures through education

Extending a 2017 partnership, [Clemson University](#) students and faculty will have access to powerful data science and analytics software from SAS thanks to a new \$3.3 million donation to support teaching and academic research. The latest gift from SAS includes access to SAS® Viya®, the company’s flagship artificial intelligence, machine learning, analytics and data management platform.

SAS Viya enables users to transform raw data into powerful insights. These insights will allow Clemson researchers to make sense of large data sets and explore various critical topics. Researchers intend to study important areas such as racial inequities in education, wildlife disease, addiction, agriculture and the human genome. SAS will also provide teaching materials and on-site training for faculty and staff to help them integrate SAS into coursework and research.



"To understand why certain groups of people are being hit harder by different types of cancer, we need data that represents those people and the means to make sense of it. This information is critical to empowering underserved patient populations, improving health care delivery and ensuring equal access to treatment."

Robert A. Winn, M.D. | Director and Lipman Chair in Oncology | VCU Massey

Deploying health analytics to power new cancer research and a national network

The [Virginia Commonwealth University \(VCU\) Massey Cancer Center](#) is working with SAS® Health to use health analytics to power vital research into higher cancer and mortality rates among low-income and vulnerable populations. Massey's Office of Health Equity and Disparities Research engages with community partners and citizens to collect data and gain a deeper understanding of how cancer manifests in vulnerable and lower socioeconomic populations. With the help of SAS for health and academic research, this data can be integrated with other data sources to create a more holistic and meaningful view of cancer's effects.

SAS and Massey will create the Massey Research Analytics Hub, a secure, cloud-based platform using SAS® Viya® on Microsoft Azure with easy-to-use visualizations of massive amounts of quantitative and qualitative data collected from different sources and systems. This "one-stop shop" will empower researchers to create and share new breakthroughs and encourage collaboration across the cancer research ecosystem to transform health outcomes.

SAS will also speed research efforts by automating manual, time-consuming data management, analytical and data visualization processes. The Hub will allow researchers to communicate and translate data and discoveries, making evidence of risk factors and disparities, along with effective treatments and interventions, equally accessible, understandable and usable by all stakeholders. The Hub will soon add AI- and machine learning-powered analytics for greater and deeper insights into cancer data.

"If a country is resilient, it will certainly experience a crisis at some point, but the intensity will be dampened. The effects will be contained. And the country will quickly recover after the crisis has passed."

Nate Haken | Vice President of Research and Innovation | **Fund for Peace**

Using data and simulations to mitigate violence and cultivate sustainable peace

With more than 100 million people displaced due to conflict and violence and an estimated 313.5 million people needing humanitarian assistance and protection, finding solutions to help reduce violent conflicts and nation fragility is critical. [Fund for Peace](#) (FFP) has been the go-to source for governments and organizations to help identify and quantify help needed for fragile states through its Fragile States Index (FSI), which has assessed the risks and vulnerabilities faced by 179 countries since 2006.

Building on that success, the organization launched a new State Resilience Index (SRI) to gauge how a country can anticipate, manage and recover from a crisis relative to the severity of that situation. FFP partnered with SAS to create a new Crisis Sensitivity Simulator tool to identify areas of opportunity for countries to improve response preparedness for certain crisis and shock scenarios. With this insight, policymakers can identify opportunities to increase countries' resiliency so they can lessen the intensity and effects of a potential crisis and recover more quickly.

FFP plans to continue working with SAS to further enhance the modeling and simulations with a range of additions, including the use of machine learning and AI for the prognosis of risk, prevention and prioritization of resiliency efforts. By facilitating structured dialogues, FFP will build on existing capabilities and provide the countries with risk modules they can use.