Written Testimony of
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American Association for the Advancement of Science
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Chairwoman Johnson, Ranking Member Lucas, and Members of the Committee, thank you very much for the opportunity to testify today. I am Theresa Harris, Interim Director of the Scientific Responsibility, Human Rights, and Law Program of the American Association for the Advancement of Science. AAAS is the world's largest multidisciplinary scientific society and the publisher of the *Science* family of journals. Our mission is to advance science, engineering, and innovation throughout the world for the benefit of all people or – put more simply – to advance science and serve society.

For the past ten years I have managed projects at AAAS that connect scientists, engineers, and health professionals with human rights organizations that approach us seeking scientific and technical support. AAAS has served in this role for several decades. In the 1980s AAAS organized investigations that applied forensic anthropology and then-new DNA analysis to identify people who had been disappeared by their governments. AAAS advised the South African Truth and Reconciliation Commission on responsible data collection and management, explored innovative statistical methods as a new form of evidence of genocide, and led the development of the use of satellite imagery to document mass violations of human rights.

Since 2009, the AAAS On-call Scientists initiative has served as the main point of contact for human rights organizations in the United States and around the world looking for these and other types of objective, empirical evidence so that their work is based on rigorous science. To date, we have connected 129 organizations with 739 scientists to work on 319 projects.

Our work has provided a wide lens view of the ways science and technology can document human rights violations, monitor progress, and inform effective policies. I have seen data shine a light on a hidden problem, point the way for crisis response so assistance is directed to the people who need it most, and illuminate vulnerabilities that are otherwise difficult to see and understand.

This work can be fairly straightforward in many human rights contexts. Many of the requests we receive seek a scientist to interpret the findings of a study or design a survey. For example, we've received requests for biochemists to help analyze evidence that chemical weapons have been used, psychologists who specialize in trauma to help design surveys and focus group methods for interviewing refugees, and ecologists to help an organization better understand an environmental impact report.

The questions we receive from organizations that work on human trafficking, however, are much more complicated.

There has been a lot of attention on estimating prevalence to understand the scope and scale of human trafficking around the world and in different sectors, and that attention has motivated most of the requests for assistance we have received through On-call Scientists related to human trafficking. Prevalence figures are important and needed as a way to understand the gravity and pervasiveness of human trafficking. However, the most advanced models developed by statisticians, economists, and social scientists to estimate prevalence, confirm the incredibly complicated approaches required to properly study human trafficking. There is no one-size fits all mathematical formula because every industry has its own specific challenges. The types of data, research methods and models needed to calculate a reliable prevalence estimate of trafficking in the hospitality industry, for example, are not directly transferrable to agriculture or mining.

Furthermore, while prevalence percentages are useful tools that provide a baseline, they do not get at root questions that also need to be answered. What interventions would discourage and disrupt human trafficking? What support do survivors of trafficking need? How do trafficking networks differ by locations and industries and how could they be more effectively intercepted?

For example, in 2020, Science Advances published the findings of a multi-year study to identify risks for human trafficking in the fishing industry and ways to prevent human trafficking in food supply chains, conducted by a multinational team of researchers from non-profit organizations and academic institutions. https://www.science.org/doi/10.1126/sciadv.1701833. Human trafficking in the fishing industry involves very specific challenges not present in other industries. Forced labor can be hidden on boats that are at sea for long periods of time, and the nature of fishing itself requires long work hours and different payment systems than in other industries. The labor recruiting operations are specific to the fishing industry, hiring skilled workers from multiple countries for the same operation.

To address the unique challenges of identifying forced labor in the fishing industry apart from standard, professional labor practices in the industry, the researchers developed a framework for a Labor Safe Digital Certificate that was tested on 118 products. The researchers found their framework to be an effective way for seafood companies to monitor labor in their supply chains. Accomplishing this result involved public data from the U.S. Department of Labor, the International Labor Organization, the United Nations Office on Drugs and Crime, and the United Nations Action for Cooperation to Prevent Human Trafficking. They also used data collected by the Nexus Institute and Human Rights Watch. The actual experiment to test the framework required data collected by companies in the seafood industry as part of their labor monitoring practices.

Who funded this study? Grants from private foundations Humanity United and the Freedom Fund, in-kind contributions from the companies involved in the pilot testing, site specific support from The Hawaii Seafood Council and Marine Stewardship Council, and small travel grants from the Global Aquaculture Alliance, World Wildlife Fund, and Monterey Bay Aquarium.

Much more research like this is needed so that service providers, the legal community, policy makers and so many others working to address human trafficking have the information they need to answer these questions and take action. In addition to location-specific, sector-specific, quantitative and qualitative data on prevalence, ending human trafficking is going to require more comprehensive evidence on vulnerability that identifies with more specificity where, when, and how trafficking can be prevented. Modeling the ways in which perpetrators and trafficking networks operate is possible through recent advances in network science. Recent research funded by the National Science Foundation provides hope that network science can identify potential opportunities to intercept trafficking. https://www.nsf.gov/news/news_summ.jsp?cntn_id=296258. This type of innovation

requires collaborative research across scientific disciplines. For example, a study recently funded by the National Institute of Justice (NIH) involves computational scientists working together with social scientists to verify and inform the mathematical models of human trafficking networks: NIJ https://nij.ojp.gov/funding/awards/2020-r2-cx-0022.

The data challenges for these researchers are daunting. The nature of human trafficking as a criminal enterprise means much of the information is hidden. Because the perpetrators use fear as a primary tactic, victims are not easily identifiable. To get meaningful results, researchers have employed mixed-methods quantitative and qualitative research that varies depending on whether one is researching trafficking across state lines or across national borders, for example.

What they share is a need for interdisciplinary and multidisciplinary research that draws on multiple data sources: Census, labor, immigration, public health, social services, legal, and licensing records are just a few of the sectors that provide sources of data that can be useful in studying human trafficking. But these are not usually in formats that easily enable aggregating the data for analysis, especially for some of the emerging methods for network analysis, and they are often missing necessary context. This problem is exacerbated when trying to integrate data from state agencies and international organizations. In addition, some of the information that would potentially be most useful is privately held by technology companies and service providers.

Thus, one way in which the federal government can work to improve the ability to carry out robust scientific human trafficking research is to make the relevant data available, and to do so in a way that supports personal privacy norms, scientific freedom and responsibility. Scientists should be able to identify and pursue their research questions without political interference. At the same time, all data must be collected ethically and managed responsibly. Research must be conducted in ways that do not further endanger survivors of trafficking. The extreme vulnerability of persons who are being trafficked, and the harms experienced by survivors of trafficking, elevate concerns around informed consent of research subjects, preserving subjects' anonymity, and appropriate data sharing. The involvement of law enforcement, for example, is a particular concern of advocates for survivors of human trafficking. The safety of the individuals who have been victimized should always be paramount in any efforts to support research that is meant to help end the problem [https://pubmed.ncbi.nlm.nih.gov/30469017/]. Similarly, efforts to improve data sharing and collaboration across federal agencies and between the public and private sector should center scientists' ethical responsibilities as their guiding principles.

To conclude, federal science agencies have a critical role to play in supporting research and technology development to address human trafficking data coordination. In particular, research gaps exist on innovative approaches to address human trafficking; interventions for victims of human trafficking; and treatment and integration services. Technology development for tools that can be used by both scientists and human rights professionals in the field is also a much-needed area of emphasis. At the same time, data collection and sharing need to be done in ways that respect and do not violate human rights

Thank you for the opportunity to testify on this important issue.

Theresa Harris
Biography

Theresa Harris is the Interim Program Director of the Scientific Responsibility, Human Rights and Law Program. She manages SRHRL's projects on science and human rights, including On-call Scientists, a volunteer referral service that provides technical support for human rights organizations, activities that promote greater understanding of the human right to science, and a new project on artificial intelligence and human rights. She also serves as coordinator of the AAAS Science and Human Rights Coalition, a network of scientific, engineering, and health associations that recognize the role of science and technology in human rights. Prior to joining AAAS, Ms. Harris represented survivors of human rights violations before United States courts, the Inter-American human rights system, and United Nations human rights mechanisms. She has served on the Board of Directors of Amnesty International USA and is a member of the governing body of the World Organization Against Torture (OMCT). Ms. Harris holds degrees in anthropology, land use planning, and law and is a Fellow of the American Bar Foundation.