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DATA CHALLENGES IMPACTING HUMAN TRAFFICKING RESEARCH AND DEVELOPMENT OF ANTI-TRAFFICKING TECHNOLOGICAL TOOLS

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Introduction

In January, 2022, Attorney General Garland released a strategy to address human trafficking. This strategy provides a comprehensive approach to address this poorly understood phenomenon.[1] At the beginning of this DOJ document it accurately states: "Reliable prevalence estimates have been difficult to ascertain. Greater support and funding for research and data collection are needed to better understand the prevalence of human trafficking within the United States."[2] The problem is not just one of prevalence. *It is impossible to come up with an effective strategy without a basic understanding of the phenomenon that we are confronting.*

At present, there is insufficient data to understand the nature, the scope, diversity and the finances of human trafficking in the United States today, or the role of facilitators from the legitimate economy. The absence of data on human trafficking in the United States, and the insights that could be gained from this data, undermines our ability to address effectively human trafficking. At present, despite the expenditures of hundreds of millions of dollars to understand and combat human trafficking, we are at a pre-scientific level in understanding the dynamics and diverse elements of labor, sex and other forms of trafficking. Money will help you get to a strategy but the problem of human trafficking cannot be disrupted or diminished without understanding its complex and diverse aspects.

This statement will address :

1) Why we have an absence of needed data, despite years of funding and commitment to address human trafficking
2) Important opportunities exist to increase or improve federal data collection and data sharing among federal agencies, and between the public and private sectors
3) Our recent research on human trafficking, funded by the National Science Foundation, its results that enhance both our understanding of the modus operandi of sex trafficking in the United States, and the concrete policy recommendations that result from this basic research
4) How a coordinated federal human trafficking research and development approach could dramatically improve our ability to make and implement effective anti-trafficking policy

Data Challenges and Limitations on Research

Much research on human trafficking in the United States has been funded by agencies to directly support their mission, such as detecting, investigating and prosecuting traffickers.[3] They have not invested in basic research that creates data for analysis by a larger community. Nor have they invested in the fundamental research that allows us to understand the diverse components of

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[1] Department of Justice, National Strategy to Combat Human Trafficking, January 2022, https://www.justice.gov/opa/press-release/file/1467431/download.
[2] Ibid, p.4.
[3] See for example, https://nij.ojp.gov/topics/crime/human-trafficking; Human Trafficking Research:U.S. Government Funded Research, March 13, 2019. https://www.state.gov/human-trafficking-research-chart-of-u-s-government-funded-research/.

labor or sex trafficking, the traffickers evolving financial models, their interaction with the legitimate economy nor the diverse nature of the victims. As I wrote over a decade ago, the US is the only developed, democratic society where the majority of its victims are its own citizens, disproportionately minority youth.[4] But we have no data that concretely proves this insight. Moreover, existing research has not yielded data for analysis that allows us to examine comprehensively the rapid evolution of human trafficking over the past decade, as traffickers have exploited online technology and social media.

The easy excuse for this absence of data on human trafficking is that trafficking is a latent and criminal phenomenon that is hard to detect and identify. Yet ample research funding has been provided to analyze the drug trade and a large body of data and methods exists to address this illegal and covert phenomenon. Human trafficking, as the recently released Attorney General's report affirms, often intersects with the drug trade. Therefore, some of the research methods that have been developed in studying other lucrative form of illicit activity such as drugs could be applied to improve data collection and analysis in the area of human trafficking.

At present there are limited available data sources on human trafficking in the US.[5] All of them have limitations and preclude a full understanding of the problems we face in this country. Illustrative of the existing data are the following:

1) The NGO *Polaris* runs the federal Human Trafficking Hotline that allows victims of human trafficking to report abuse.[6] Although this data can provide important insights into human trafficking, it does not provide a full picture of the problem. Many who are victims of sex or labor trafficking do not have access to a telephone, or if they have a phone, do not have the autonomy to call the hotline. Moreover, many working on isolated farms or locked up in apartments or massage parlors do not have access to the telephone number of the hotline. Moreover, this data often is not verified by the legal process. This incomplete Polaris data is used because it is the only data source available.
2) *DARPA* (Defense Advanced Research Projects Agency) funded a $67 million research program (Memex) between 2014 and 2017 to find human trafficking online. "DARPA rolled out its Memex program to move forward the state of the art in content indexing and web searching on the Internet."[7] Through these tools they found 60 million advertisements, with expenditures for these online notices at $250 million.[8] These tools

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[4] Louise Shelley, *Human Trafficking a Global Perspective*, Cambridge and New York: Cambridge University Press, 2010, pp.229-231.

[5] Orlando Patterson and Xiaolin Zhuo, 2018. "Modern Trafficking, Slavery and Other Forms of Servitude." *The Annual Review of Sociology* 44:3-407-430.

[6] Polaris Project , National Human Trafficking Hotline**,** https://polarisproject.org/national-human-trafficking-hotline/.

[7] US Department of Defense, "Darpa Program Helps to Fight Human Trafficking," Jan. 4, 2017, https://www.defense.gov/News/News-Stories/Article/Article/1041509/darpa-program-helps-to-fight-human-trafficking/.

[8] L. Greenemeier, "Human Traffickers Caught on Hidden Internet." *Scientific American*. February 8, 2015, https://www.scientificamerican.com/article/human-traffickers-caught-on-hidden-internet/.

were used to find perpetrators, but not to understand the overall nature of the phenomenon. After the project was completed, this assembled data was handed over to a private company to maintain, and has been available only to a limited number of approved researchers who are required to pay over $10,000 for access, further limiting its availability to the larger research community.

3) *Traffik Analysis Hub*, a privately funded group, collects and amalgamates different datasets for analysis of human trafficking in the US, the UK and elsewhere. This body of data has very significant inherent limitations that does not make it possible to understand the entire supply chain for human trafficking. For example, it has almost no hotels cited in its database, whereas the Human Trafficking Institute's annual report on federally prosecuted cases reveals that hotels were sites of human trafficking in 80% of all federal criminal cases in the US in 2018 and 2019.[9]

4) *Human Trafficking Institute* (HTI), an NGO, collects all the federal criminal and civil cases of human trafficking and analyzes them annually through painstaking human labor without data analytical tools.[10] They make data available to researchers such as my research team, but they do not have an accessible database of case files for analysis.

Important opportunities exist for increasing or improving federal data collection and data sharing among federal agencies and between the public and private sector

There is information in the possession of the US federal government and the private sector that could help us understand and address many elements of human trafficking, particularly labor trafficking. If some of this data could be anonymized and made available to researchers it could help us understand much more on the dynamics of human trafficking. Several illustrative examples are provided below:

1) T-visas

The US government grants T-visas (trafficking visas) to individuals who have been trafficked and agree to cooperate with law enforcement. (U visas are more numerous and are also sometimes used to assist trafficking victims.) Many of these T-visas are granted to individuals who are victims of labor trafficking. *Ayuda*, an NGO, in Washington, DC, reports filing several hundred successful T-visa applications, most of these for victims of labor trafficking. Yet as the

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[9] Kyleigh Feehs and Alyssa Currier 2019 Federal Human Trafficking Report, Human Trafficking Institute. Fairfax, Va.: Human Trafficking Institute, 2020, https://www.traffickinginstitute.org/wp-content/uploads/2020/05/2019-Federal-Human-Trafficking-Report_Low-Res.pdf; Kyleigh Feehs and Alyssa Currier, 2018 Federal Human Trafficking Report, Fairfax, Va.: Human Trafficking Institute, 2019, https://traffickinginstitute.org/wp-content/uploads/2022/01/2018-Federal-Human-Trafficking-Report-Low-Res.pdf .

[10] Ibid; Kyleigh Feehs and Alyssa Currier Wheeler, *2020 Federal Human Trafficking Report*. Fairfax, Va: Human Trafficking Institute, 2021, https://www.traffickinginstitute.org/wp-content/uploads/2021/06/2020-Federal-Human-Trafficking-Report-Low-Res.pdf.

official data on the prosecution of human trafficking indicates, there are few actual cases of labor trafficking initiated by the US government each year. Labor trafficking cases make up about 7% of all federal criminal trafficking cases annually over the last twenty years[11]. Yet analyses of T-visas[12] would permit us to understand more about the geo-spatial distribution of labor trafficking, the number of its victims, their ages, citizenship, and how they are distributed among employment sectors of the US economy.

2) FinCen (SARS)

The US Department of the Treasury collects data on suspected financial transactions related to human trafficking. Its advisory on human trafficking in October 2020, provided examples of red flags for human trafficking.[13] The number of reports related to human trafficking has grown. If made available to researchers with appropriate safeguards to protects victims' identities, this data could help illuminate both the funding mechanisms of human trafficking but also the networks behind this trade. Analytic tools could also be applied to this data to extract more financial patterns of traffickers.

3) Data from the Private Sector

My presently NSF funded research on the illicit supply chains for counterfeit PPE involves extensive data sharing by the private sector.[14] This cooperation presently involves data concerning counterfeit medical masks, a less sensitive topic than human trafficking, but it attests to the possibility of establishing trust and using advanced data analytics to understand illicit supply chains. Therefore, there may be the possibility of establishing cooperation with financial service firms, ride sharing companies, or other businesses that regularly come into contact with human trafficking and **may benefit** from the application of advanced data analytics to tease out networks and emerging patterns of human trafficking. Multi-disciplinary and multi-cultural research teams may be able to see trends in human trafficking not apparent to business professionals.

Current NSF Funded Research on Human Trafficking

I am the Principal Investigator of a research project entitled "A New Multi-Layered Network Approach for Improving the Detection of Human Trafficking," an NSF program on Disrupting

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[11] Feehs and Currier Wheeler, p.3.

[12] Madeleine Sloan, "T Visas Protect Victims of Human Trafficking," https://www.policeforum.org/assets/TVisas.pdf.

[13] Fincen Advisory, Supplemental Advisory on Identifying and Reporting Human Trafficking Activity, October 15, 2020, https://www.ballardspahr.com/-/media/files/articles/advisory-human-trafficking.pdf

[14] D-ISN: TRACK 1: Collaborative Research: An Interdisciplinary Approach to Understanding, Modeling, and Disrupting Drug and Counterfeit Illicit Supply Chains, https://www.nsf.gov/awardsearch/showAward?AWD_ID=2039779

Illicit Supply Chains.[15] My-co principal investigator is Eduard Huang, in Systems Engineering and Operations Research at George Mason's Volgenau School, and we have employed doctoral students with expertise in criminology, data visualization and analysis and transport. This team also has knowledge and experience in many different cultures and regions of the world, including China and Latin America attributes required to understand human trafficking in the US today. We are just one of several NSF funded research projects on human trafficking in the program on disrupting illicit supply chains.

We learned from analysis of diverse sources that hotels were key nodes in the supply chain for human trafficking. Yet there has been almost no research in the United States that analyzes the role of hotels as facilitators of human trafficking. We, therefore, decided to focus on the hotels, their ownership structures, their locations, their policies on human trafficking and the reasons that they are so present in so many reports to the human trafficking hotline of Polaris and in federal criminal and civil human trafficking cases.

We collected data from many criminal cases but focused intensively on the federal civil cases that have been filed against hotels since 2015. The civil cases initiated against hotels provided detailed information on the types of abuse against human trafficking victims that occurred at hotels, and the ways in which hotel staff facilitated and sometimes participated in human trafficking.

The data was assembled in two ways. The Human Trafficking Institute (HTI) provided my research team with a list of all Chapter 77 federal civil sex trafficking cases filed between 2015 and 2020. Then this team also identified new civil cases in 2021. Using the case numbers provided, the researchers retrieved the civil dockets, complaints, and amended complaints about each case from PACER (Public Access to Court Electronic Records). The allegations listed in the case complaints and amended complaints were used as the qualitative foundation for the researchers' analysis. After the determination of the hotels named in the civil trafficking suits, using the hotel profile data our research team identified the star rating of the hotel, its proximity to public transportation, as well as to public highways and transport. (The star rating of each identified hotel was found on the public website for booking hotel rooms, such as Hotels.com.) In addition, the authors also verified the hotel address and extracted the relevant coordinates on Google Maps API to verify the facilities nearby the hotel, and also explored whether other transportation facilities were within a driving time of 30 minutes. All of this information was entered into a database and then analyzed.

This research reveals that the selected hotels are located near transport hubs, on and off ramps of highways, or in proximity to airports. In the majority of cases, they are located in poorer areas of the city but not in the poorest, as those rarely have hotels or motels. Also, these areas where the hotels cited in the suits are located, have the majority of families below the median income level of the city. Yet approximately a quarter of the urban hotels used by traffickers are catering to a more affluent class of clientele and have higher hotel star ratings. This is a phenomenon that has

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[15] Disrupting Operations of Illicit Supply Chains,
https://www.nsf.gov/pubs/2021/nsf21582/nsf21582.htm; Award Abstract # 1837881
EAGER: ISN: A New Multi-Layered Network Approach for Improving the Detection of Human Trafficking.

been rarely discussed, and conflicts with much previous research on urban crime that identifies "hotspots of crime" and where law enforcement concentrates its resources.

The federal trafficking cases reveal a significant underrepresentation of the hotels of the largest American cities, such as New York and Los Angeles, in the law enforcement actions taken against sex trafficking. This is part of a larger problem in which these big cities have fewer prosecutions of human trafficking, although reporting to the hotline suggest that sex trafficking is not less prevalent in large urban areas. Clearly, law enforcement in these locales where there are few cases involving hotels need to be more proactive in pursuing not only the criminal networks that perpetuate the trafficking but also the corporate actors that help facilitate this crime.

Insights from this Basic Research and how they can Inform Policy

These insights are present in published and forthcoming articles resulting from the NSF research.[16]

1) Legitimate companies, especially recognized hotel brands, are key facilitators of human trafficking. The government, NGOs, and private citizens must do more to insure greater corporate social responsibility by the hospitality sector. A growing number of states have forced hotels operating in their communities to train workers in counter-trafficking in order to retain their registration.[17] Yet, the federal government has lagged in forcing change in the hospitality sector. Collecting and analyzing more data on the facilitating role of the hospitality sector could help develop more targeted federal policies that would reduce the facilitating role of the hospitality sector in human trafficking. Otherwise, we cannot successfully disrupt and combat human trafficking.

2) Since the movement of human trafficking online in the last decade, the phenomenon of human trafficking is less present in the streets of urban areas. The centrality of hotels and other legitimate businesses, such as technology companies and ride share companies, needs to be acknowledged now in policy strategies and in law enforcement practice. The just released strategy of the Attorney General focuses on working with tech companies

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[16] Chu-Chuan Jeng. Edward Huang, Sarah Meo and Louise Shelley "Combating Sex Trafficking: The Role of the Hotel—Moral and Ethical Questions" *Religions* as part of the Special Issue Anti-human Trafficking, Interfaith, and Spirituality, Feb, 2022, https://doi.org/10.3390/rel13020138, ; Sarah Meo and Louise Shelley, "Hotels and Sex Trafficking: Why There is a Need for Effective Corporate Social Responsibility, "November 2021,
 https://www.globalpolicyjournal.com/blog/11/11/2021/sex-trafficking-and-hotels-why-there-need-effective-corporate-social-responsibility; Louise Shelley, "Human Trafficking and Responsible Leadership," in Responsible Leadership: Essential to the Achievement of the United Nations' Sustainable Development Goals ed. Michael Saks, Routledge, 2022 (in press).
[17]Hotel Business, "Florida Mandates Human Trafficking Training," November 18, 2020, https://hotelbusiness.com/florida-mandates-human-trafficking-training/.

and only alludes to the facilitating role of the hospitality sector.[18] It does not address ride share companies in contemporary human trafficking which are also key nodes in the supply chain for human trafficking. Government strategies must use advanced data analytics to help address the facilitating role of legitimate businesses that are increasingly running their reservations and service delivery through online technologies. Research is needed to help create the tools needed to respond to the pervasive technology making it possible for traffickers to anonymize many of their activities.

3) By mapping the geo-spatial distribution of hotels that were sites of sex trafficking, it is possible to understand much more on the modus operandi of human traffickers. Human trafficking is largely not visible on urban streets today and has shifted to locales close to highways and in a quarter of all civil cases occurs in higher-end hotels. Therefore, the strategies to address human trafficking must often be decoupled from the policing of more ordinary criminal offenses that tend to be concentrated in hotspots of crime, poorer areas of the urban environment.

4) Much of the hospitality industry did little to respond to human trafficking until it was subject to federal suits that are costly and harm their reputations. In recent years many municipalities have required hotels to hold training for their staffs on identifying and reporting human trafficking. But the hotel employees who are most likely to observe human trafficking are low paid employees with limited job security and sometimes tenuous legal status. Therefore, there need to be whistleblower protections for employees as well as the expansion of eligibility for t-visas to include vulnerable hotel workers who help facilitate investigations of human trafficking.

5) Insights on the geo-spatial distribution of hotels that facilitate human trafficking can be useful not only to the law enforcement community. They can also provide insights that can be applied to the algorithms used by the financial community to find suspicious financial transactions related to human trafficking. After a financial webinar for the business community at which I presented the results of our NSF funded research, [19] I was contacted by a bank official who listened and told me that our analysis helped him refine his data analytics in regards to identifying hotels facilitating human trafficking.

Organizing the national research effort

To address human trafficking in the United States more effectively we need a broad coordinated fundamental research effort that brings together the public, the private sector, NGOs and diverse, multi-disciplinary research teams. On the research side, we need the participation of social scientists, data analysts, supply chain specialists, transport, nursing, and medical personnel. We also need the involvement of legal scholars and historians who have provided brilliant insights on human trafficking and its *modus operandi*.

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[18]Department of Justice, National Strategy to Combat Human Trafficking, p.5.
[19] AML Voices, Human Trafficking in 2021 and 2022, December 16, 2021, https://vimeo.com/658660541/7eb8943829.

An effective research program on human trafficking could combine agencies with missions to combat human trafficking with the NSF that has extensive experience bringing together industry, government and researchers, Both existing mission agencies and NSF, if charged to do this, could work together and coordinate their efforts. What is key is to ensure that there is a focus on basic research to identify the large data gaps in our knowledge of human trafficking. NSF has the attributes, mandate and experience to lead in this area. In contrast with an operational agency, NSF does not have a vested interest in the outcome, and it has the demonstrated ability to put together new interdisciplinary teams that are necessary to understand a phenomenon that exists simultaneously in the real and the virtual world.

The suggestion to promote fundamental research does not mean that the studies produced cannot contribute to applied outcomes. Past major basic research efforts at NSF have led to major advances in engineering and technology. Likewise, as our NSF funded research has shown, a better understanding of the illicit supply chain of human trafficking has already led to changes in the data analytics of the financial community and will hopefully lead to a more informed strategy and measures to disrupt the facilitating role of hotels in human trafficking. Therefore, there is no inherent conflict between funding basic research on human trafficking and having major policy and operational breakthroughs in how to address the problem. Fine basic research on human trafficking can lead to important policy results and concrete law enforcement and legislative responses.

Having a research agency of the government coordinate a major research and development effort on human trafficking would help us address the totality of the participants in this activity and help us move away from a perspective that focuses almost exclusively on transnational and organized crime.

We need to focus more on the facilitating role of the legitimate business community. The US Senate Permanent Committee on Investigations recognized this problem in its analysis of Backpage. [20] Deutsche Bank signed a consent order with New York courts for its role in facilitating the money laundering of Jeffrey Epstein. [21] The role of the internet and banks have been addressed in these investigations that led to concrete legal actions. They also reveal the large profits that can be made by the facilitators of human trafficking that often far exceed those of individual traffickers.

More needs to be done to address the facilitating role of other sectors of the legitimate economy. There needs to be more research on the role of the hospitality sector, the rideshare economy, the

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[20] United States Permanent Subcommittee on Investigations, Committee on Homeland Security and Governmental Affairs, "Backpage.com's Knowing Facilitation of Online Sex Trafficking", 2017,
https://www.hsgac.senate.gov/imo/media/doc/Backpage%20Report%202017.01.10%20FINAL.pdf.
[21] New York State Department of Financial Services, "In the Matter of Deutsche Bank AG," 2020,
https://www.dfs.ny.gov/system/files/documents/2020/07/ea20200706_deutsche_bank_consent_order.pdf.

short-term rental economy and many sectors in which trafficked labor is prevalent such as construction, meat packing facilities, gardening and lawn services and restaurants. Without addressing these diverse facilitators of human trafficking we cannot define policies nor allocate resources that will allow us to disrupt human trafficking effectively in the United States. Without understanding how these different businesses operate in regards to human trafficking, we cannot develop the tools and technologies to disrupt their participation in diverse forms of human trafficking.

NSF also has strong traditional international intellectual collaborations. This is key for efforts to combat human trafficking, as this problem is often transnational. Moreover, the insights and data analytics used to counter human trafficking in other societies could possibly be deployed to positive effect in the United States. Researchers on human trafficking in both the UK and the Netherlands have received funding from their governments for fundamental research on human trafficking, and the Netherlands Organization for Scientific Research that funds research on human trafficking encourages international partnerships. Therefore, the latest research insights on human trafficking can be more easily learned and applied in the US.

Funding basic research would allow us to answer these important questions as well as many others: Who are the victims of the human trafficking and what are their attributes? What are the diverse components of labor or sex trafficking, the traffickers evolving financial models, their interaction with the legitimate economy, the diverse nature of the victims—their ages, economic status, race, sex, or citizenship? How much are the profits from labor trafficking and sex trafficking? Where are these profits invested? What are the major health issues associated with human trafficking? What are costs of caring for these physical injuries and the psychological services needed by survivors of human trafficking? When human smuggling turns into labor or sex trafficking, does this more often occur in transit to the United States or upon arrival? What is the geo-spatial distribution of human trafficking in the United States for different types of trafficking? What is the distribution of trafficking within urban and suburban areas? Is this activity concentrated in lower income areas? What does this urban distribution of human trafficking tell us about the allocations and training of law enforcement?

Addressing these basic questions requires the development of data and tools to examine large bodies of data. New tools can be developed in a research program but there are existing commercial data tools that often can be effectively and rapidly deployed. In one of our NSF-funded research projects, we are using available tools that have been provided to us in strategic alliances, cooperative research programs, extended trial periods, or have been offered to us at academic discounts. These enable research access when we have determined these tools to be useful. Perhaps there can even be tax credits for companies who are supporting research in the national interest.

The need to combat human trafficking is an issue that unites much of American society. Many Americans are involved in civil society groups trying to address the growth of human trafficking. Moreover, they seek an active and effective response from their government. We need more basic research, more willingness to share data and the development and application of more sophisticated data analytics to address this problem that has grown enormously in the virtual world in the last decade. This challenge requires creative thinking of individuals from many

different perspectives to provide the breakthroughs that we need to address this complex phenomenon.