
ARTICLES

GOING LOCAL: THE FRAGMENTATION OF GENETIC SURVEILLANCE

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INTRODUCTION	1492
I. THE EXPANSION OF LOCAL DNA DATABASES.....	1500
A. <i>Fragmentation of Genetic Surveillance</i>	1501
1. CODIS Limitations.....	1501
2. Advances in DNA Processing	1504
3. Federal Funding.....	1505
4. Corporate Interests	1506
B. <i>Local DNA Database Models</i>	1507
1. Palm Bay, Florida.....	1507
2. Bensalem Township, Pennsylvania	1511
3. State of Arizona.....	1516
II. IMPLICATIONS OF THE EXPANDED USE OF LOCAL DNA DATABASES.....	1519
A. <i>Entrenching Local DNA Databases</i>	1520
B. <i>Distorting Policing Practices</i>	1523
C. <i>Exacerbating Racial Inequities</i>	1524
D. <i>Threatening Privacy Interests</i>	1529
E. <i>Threatening Dignity Interests</i>	1533
F. <i>Undermining Police Legitimacy</i>	1536
III. REGULATING LOCAL DNA DATABASES.....	1540
A. <i>The Need for External Regulation</i>	1540
B. <i>Existing External Regulations Are Not Sufficient</i>	1543
C. <i>Proposed External Regulations</i>	1546
1. Requiring Adequate Record Keeping.....	1547
2. Regulating Consent	1548
3. Prohibiting the Inclusion of Victim DNA Profiles.....	1550
4. Time Limits for Suspect DNA Profile Retention	1551
5. Monitoring Use.....	1551
D. <i>Implementing Reforms</i>	1552

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CONCLUSION.....	1554
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The FBI's two-decade-long dominance of the use of genetic surveillance for law enforcement purposes is ending. In its place, local police departments are creating DNA databases that operate outside of the FBI's national DNA database network. These local databases, which until now have remained unexamined, promise local law enforcement agencies freedom from the federal laws and regulations that govern the FBI's national network. This Article relies on original qualitative empirical research to describe why agencies created local databases and how these databases operate. It finds that while local DNA databases offer promise as a crime-solving tool, they generate harms that have so far been ignored. These harms include exacerbating racial inequities, threatening privacy and dignity interests, and undermining the legitimacy of the police. Because law enforcement agencies have not internalized these harms, the self-imposed regulations that currently restrain law enforcement's use of local DNA databases are insufficient. This Article proposes several modest, yet effective, reforms that will minimize the harms generated by local DNA databases, while at the same time preserving law enforcement's ability to wield this tool.

INTRODUCTION

The past five years have seen a dramatic and, until now, wholly unexamined splintering of genetic surveillance by law enforcement. Investigators have shifted from using the FBI's centralized, national DNA database network to a growing number of unregulated local databases.¹ These databases operate outside of federal laws and rules that govern law enforcement's use of the FBI's national DNA database network. As a result of this regulatory void, police departments have pushed the boundaries of genetic surveillance, using it in ways not previously permitted.² The aggressive use of local databases has

¹ While there is no comprehensive list of communities operating local DNA databases outside of the FBI's national network, my research has confirmed that such databases are used in the following locations: Bensalem, PA; Palm Bay, FL; Hillsborough County Florida Sheriff's Office (Tampa, FL); Lafayette Parish Sheriff's Office (Lafayette, LA); Allegheny County, PA; and the State of Arizona. See *infra* Section I.B. for a description of three local database programs. This splintering will continue, particularly because two of the early adopters of local databases, Palm Bay, FL, and Bensalem, PA, have been outspoken proponents of such databases. Combined, they have hosted representatives from over 100 police departments, including law enforcement agencies from other countries, to discuss the benefits of local databases. In addition, leaders from Palm Bay and Bensalem are regular speakers at policing conferences. For a discussion of the factors that have helped solidify local databases as a core law enforcement tool, see *infra* Section II.A.

² For example, some jurisdictions populate these databases with DNA profiles from mere suspects, as opposed to the DNA profiles from arrestees and convicted offenders that dominate the FBI's national database. See *infra* Sections I.A.1, I.B.

helped police to increase clearance rates and decrease crime rates.³ But the story is not all positive. The expansion of this surveillance tool at the local level has unleashed significant negative forces that threaten privacy and dignity interests, exacerbate racial inequities in the criminal justice system, and undermine the legitimacy of law enforcement. This Article analyzes these costs and proposes reforms to minimize them, while preserving law enforcement's ability to use this tool on the local level. The Article is the first full-scale examination of these unregulated, local DNA databases. It is supported by original qualitative empirical research based on interviews with law enforcement officials, prosecutors, and representatives from the major firms developing these databases.

This Article makes three claims. First, cutting-edge genetic surveillance issues are playing out on the local level, free from federal regulation and often in the absence of state or local laws.⁴ Second, this Article responds to Professor Rachel Harmon's challenge to scholars to help law enforcement establish "harm-efficient policing" practices by identifying and measuring external harms generated by policing that are not captured by law enforcement's narrow focus on solving crime.⁵ In this sense, this Article is a case study in regulating law enforcement's use of rapidly evolving surveillance technology. Third, contrary to the proposals of many scholars who have advocated for the devolution of power to the local level in the criminal justice system,⁶ this Article urges that national standards are needed to address the costs of genetic surveillance.

³ See *infra* Sections I.B.1, I.B.2 (documenting that Palm Bay, FL, credits its local database for year-over-year declines in its burglary rate of 20%, 14%, and 12% and that Bensalem Township, PA, credits its database as the overwhelming cause of its burglary rate decreasing 42%).

⁴ This Article's recognition that local police departments are pushing the boundaries of law enforcement's use of genetic surveillance, and that this dynamic necessitates a broader, national discussion about the use of genetic surveillance, is an example of the themes explored by federalism scholars who have advocated for considering the role that local, and even sub-city, institutions play in our system of federalism. See, e.g., Heather K. Gerken, *Foreword: Federalism All the Way Down*, 124 HARV. L. REV. 4, 10 (2010) (providing an account of federalism in which "localities serve as staging grounds for national debates, and the decisions of the variegated periphery feed back into national policymaking").

⁵ See Rachel A. Harmon, *The Problem of Policing*, 110 MICH. L. REV. 761, 792-93 (2012) (contending that in order to develop "harm-efficient means of policing" scholars must "lay the groundwork . . . [which] requires establishing theoretical accounts of what the relevant harms are and how the harms should be measured, and empirical work measuring and comparing harms and policing efficacy").

⁶ See, e.g., WILLIAM J. STUNTZ, *THE COLLAPSE OF AMERICAN CRIMINAL JUSTICE* 283 (2011) ("The keys to useful reform are decentralization, local democracy, and—last but definitely not least—money. Local neighborhoods should exercise more power over the administration of justice within their bounds, as they once did. State and federal governments should exercise less, as *they* once did.").

The expansion of locally-controlled DNA databases follows two decades of federal oversight of law enforcement's use of genetic surveillance. Since 1994, when Congress authorized the creation of a national network of DNA databases commonly referred to as CODIS,⁷ the FBI has overseen what has become one of the largest genetic surveillance tools in the world.⁸ CODIS includes DNA profiles from over 14.3 million known individuals and from over 625,000 crime scene samples.⁹ It has been built with millions of dollars of federal funding,¹⁰ and law enforcement officials and politicians routinely advocate for its expansion.¹¹ CODIS has survived every legal challenge it has faced.¹² And it has delivered many law enforcement victories.¹³ Nonetheless, many local agencies have turned away from CODIS to establish their own local databases.¹⁴

⁷ The Combined DNA Index System, or CODIS, is the software that integrates the three-tier hierarchy of DNA databases that are a part of an integrated national network. The three tiers of the CODIS network are the National DNA Index System ("NDIS"), the State DNA Index System ("SDIS"), and the Local DNA Index System ("LDIS"). *See infra* Section I.A. This Article follows the convention of courts, scholars, and law enforcement officials by referring to the entire network as CODIS.

⁸ CODIS's growth was quick and comprehensive. *See* FED. BUREAU OF INVESTIGATION, CODIS BROCHURE, http://www.fbi.gov/about-us/lab/biometric-analysis/codis/codis_brochure [<http://perma.cc/M3EC-SQB4>] (last updated June 2012); *CODIS-NDIS Statistics*, FED. BUREAU OF INVESTIGATION, <http://www.fbi.gov/about-us/lab/biometric-analysis/codis/ndis-statistics> [<http://perma.cc/ER4N-PLXW>] (last updated Apr. 2015).

⁹ *See CODIS-NDIS Statistics, supra* note 8.

¹⁰ *See, e.g.*, 42 U.S.C. § 14135(a)(1)-(6) (2012) (authorizing the Attorney General to allocate funds to state and local governments to develop DNA profiles for inclusion in CODIS); NATHAN JAMES, CONG. RESEARCH SERV., R41800, DNA TESTING IN CRIMINAL JUSTICE: BACKGROUND, CURRENT LAW, GRANTS, AND ISSUES 24-27 (2012) (documenting the allocations Congress has authorized to build the CODIS network).

¹¹ *See, e.g.*, Brief for Maryland Legislators as Amici Curiae Supporting Petitioner at 5-7, *Maryland v. King*, 133 S. Ct. 1958 (2013) (No. 12-207) (describing support of the Maryland legislature and law enforcement officials for Maryland's DNA collection statute).

¹² *See, e.g., King*, 133 S. Ct. 1958 (upholding Maryland's arrestee DNA collection statute); David H. Kaye, *The Genealogy Detectives: A Constitutional Analysis of "Familial Searching,"* 50 AM. CRIM. L. REV. 109, 130 (2013) (mentioning many unsuccessful constitutional challenges to law enforcement DNA databases).

¹³ *See CODIS-NDIS Statistics, supra* note 8 (reporting that as of April 2015 CODIS produced over 283,000 hits and aided over 270,000 investigations).

¹⁴ To be clear, the local databases that are the focus of this Article have an analogue in the CODIS hierarchy. Specifically, the lowest CODIS tier, LDIS, is composed of local DNA databases operated by public crime laboratories. These LDIS databases are integrated in the FBI's national DNA database network. While this Article does not focus on these databases, several jurisdictions—including New York City; Orange County, CA; and Tucson, AZ—use LDIS databases in a manner similar to law enforcement's use of the local, non-CODIS databases that are the subject of this Article. As a result, the external costs explored in Part

Despite the emergence of local databases as a core investigative tool, scholars and courts have not focused on their creation or use.¹⁵ This is in stark contrast to the comprehensive attention paid to CODIS.¹⁶ This Article seeks to shift scholarly attention from CODIS to these local databases. The analysis of local databases usually amounts to a paragraph or a few sentences in a larger critique of CODIS, in which the commentator either pans their use, labeling them “rogue” databases, or notes their promise as new tools that can reduce crime, lock up offenders who would have otherwise escaped detection, and generally revolutionize policing. This paltry coverage contrasts with the buzz local databases have received in other circles. The topic has received

II and the reform proposals in Part III are applicable to some databases in CODIS’s lowest tier, LDIS.

¹⁵ See, e.g., Wayne A. Logan, *Policing Identity*, 92 B.U. L. REV. 1561 (2012) (addressing issues related to police amassing DNA databases, including analysis of how courts have not kept up with the police practice of collecting DNA identification evidence, but failing to mention the unregulated, non-CODIS DNA databases). *But see* David Jaros, *Preempting the Police*, 55 B.C. L. REV. 1149, 1150 (2014) (arguing that courts should be more aggressive in regulating police practices, including the maintenance of local DNA databases, by using intrastate preemption doctrine); Erin Murphy, *License, Registration, Cheek Swab: DNA Testing and the Divided Court*, 127 HARV. L. REV. 161, 172 (2013) (“[J]urisdictions across America engage in ‘rogue’ databasing—the collection and recording of [DNA] samples in local and unofficial databases that need not comply with formal statutory law.”).

¹⁶ See, e.g., Frederick R. Bieber, *Turning Base Hits into Earned Runs: Improving the Effectiveness of Forensic DNA Data Bank Programs*, 34 J.L. MED. & ETHICS 222, 227 (2006) (“It has been assumed, but not demonstrated, that the DNA data banks are effective on a broad scale in the manner intended. In fact, we know very little about the outcomes of most ‘hits’”); Matthew Gabriel et al., *Beyond the Cold Hit: Measuring the Impact of the National DNA Data Bank on Public Safety at the City and County Level*, 38 J.L. MED. ETHICS 396, 396 (2010) (“[T]he impact of DNA identifications achieved using CODIS is complicated by societal issues and systemic challenges in the administration of criminal justice.”); Elizabeth E. Joh, *Maryland v. King: Policing and Genetic Privacy*, 11 OHIO ST. J. CRIM. L. 281, 291 (2013) (predicting that police will collect DNA samples during routine *Terry* stops and traffic stops); David H. Kaye, *DNA Database Trawls and the Definition of a Search in Boroian v. Mueller*, 97 VA. L. REV. IN BRIEF 41, 42 (2011) (exploring how courts have addressed the question of whether convicted offenders can seek to have their DNA profiles removed from the database after serving their sentences); David H. Kaye, *A Fourth Amendment Theory for Arrestee DNA and Other Biometric Databases*, 15 U. PA. J. CONST. L. 1095, 1099 (2013) [hereinafter Kaye, *Fourth Amendment*] (“[T]here are no statistics that show how much the database hits contributed to investigation or convictions.”); Kaye, *supra* note 12, at 130-31 (documenting the failure of numerous constitutional challenges to the DNA database); Erin Murphy, *Relative Doubt: Familial Searches of DNA Databases*, 109 MICH. L. REV. 291 (2010) (evaluating constitutional and policy limitations for familial DNA searches, including description of why such searches have disproportionate racial and ethnic impact); Andrea Roth, *Safety in Numbers? Deciding When DNA Alone Is Enough to Convict*, 85 N.Y.U. L. REV. 1130, 1140 n.43 (2010) (documenting scholars who advocate for greater transparency and access to the database for research purposes).

significant attention in police trade publications,¹⁷ and early adopters have offered unvarnished praise.¹⁸

Proponents of local databases argue that freedom from CODIS's regulations allows police to maximize the potential of genetic surveillance to solve crimes. This belief has led several early adopters to become evangelists for local databases, recruiting other police departments to create databases of their own.¹⁹ These proponents herald local databases as a solution to an assortment of policing challenges, arguing that they increase clearance rates while using fewer resources than other investigative methods, deter criminal activity, decrease the opportunity for latent biases and negative stereotypes to affect policing decisions, and strengthen the public's perception of the police.²⁰ No doubt, this list of positive attributes is what the Supreme Court envisioned

¹⁷ See, e.g., Chris Asplen, *Local Databases*, FORENSIC MAGAZINE, (Apr. 1, 2010), <http://www.forensicmag.com/articles/2010/04/local-databases> [<http://perma.cc/ZAB3-6EZZ>] (praising the Palm Bay Police Department's LODIS project); Bill Berger, Joe Chimera, & John Blackledge, *LODIS, a New Investigative Tool: DNA Is Not Just Court Evidence Anymore*, THE POLICE CHIEF, Apr. 2008, at 150 (describing the Palm Bay Police Department's LODIS project), available at http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=1465&issue_id=42008 [<http://perma.cc/7D39-ZWPD>]; Rockne Harmon, *The Power of LDIS*, FORENSIC MAGAZINE, (Apr. 16, 2013, 4:38 PM), <http://www.forensicmag.com/articles/2013/04/power-ldis?> [<http://perma.cc/5DG8-N7ZH>] (describing the strengths of local DNA databases).

¹⁸ See Telephone Interview with John Blackledge, Deputy Police Chief, retired, Palm Bay Police Department (June 5, 2014) [hereinafter Telephone Interview with John Blackledge, June 5] (transcript on file with author) (estimating that the Palm Bay database has prevented \$6 million worth of crime); Telephone Interview with Fred Harran, Director of Public Safety, Bensalem Township Police Department (June 19, 2014) (transcript on file with author) (characterizing the Bensalem database as follows: "We're locking up bad guys, we're solving and preventing and reducing crime and it's not costing the tax payers anything. Anyone that wouldn't buy that program shouldn't be in government. There's no way to say no here."). *But see* MAJOR CITIES CHIEFS ASS'N, FORENSIC SCI. COMM. POSITION PAPERS, 16 (2012) (stating that the Major Cities Chiefs Association does not support non-CODIS DNA databases).

¹⁹ See, e.g., Telephone Interview with John Blackledge, Deputy Police Chief, retired, Palm Bay Police Department (June 3, 2014) [hereinafter Telephone Interview with John Blackledge, June 3] (transcript on file with author) (explaining that Palm Bay frequently hosts police chiefs to discuss its program and that he has been invited to speak about local databases in jurisdictions across the country).

²⁰ See, e.g., *id.* (discussing an increase in clearance rates once the local DNA database was put into place, and an increase in burglary rates in Palm Bay after the local DNA database was defunded); Telephone Interview with Rockne Harmon, Prosecutor, retired, Alameda Cty., Cal. (June 20, 2014) (transcript on file with author) (discussing the appropriate ways to measure the impact of local DNA databases); Telephone Interview with Fred Harran, *supra* note 18 (describing a decrease in burglaries since the implementation of Bensalem Township's local database program).

when it concluded that DNA “has the potential to significantly improve both the criminal justice system and police investigative practices.”²¹ It is true that law enforcement’s use of local databases has the potential to yield positive outcomes,²² but these benefits must be weighed against the negative effects of expanded use.

The external harms of local databases arise from the gulf between how law enforcement is permitted to use CODIS and the wild west of genetic surveillance practices currently permitted with local databases.²³ For example, like CODIS, local databases include genetic profiles from convicted individuals and arrestees. However, local databases also often include genetic profiles of suspects (including juvenile suspects), witnesses, crime victims, family members of victims, and citizens who responded to police DNA dragnets, which sometimes follow violent, unsolved crimes. Furthermore, local agencies are free to search these databases however they see fit, unconstrained by the limitations governing CODIS adopted by Congress²⁴ and the additional regulations the FBI promulgated for CODIS.²⁵ As a result, local databases amplify some of the same external harms generated by CODIS while simultaneously generating new ones.

These harms include exacerbating racial inequities, threatening privacy and dignity interests, and undermining the legitimacy of law enforcement. While local databases have the potential to mitigate some of the racial inequities in the criminal justice system by replacing police reliance on intuition and hunches with more reliable investigative leads based on DNA evidence,²⁶ local databases increase distributional inequities because local police have total discretion about who to target for inclusion in these databases. This has resulted in police seeking out the “usual suspects”—poor people of color—to secure DNA samples for these databases.²⁷

²¹ *Dist. Attorney’s Office v. Osborne*, 557 U.S. 52, 55 (2009).

²² *See infra* Section I.B (documenting some of the crime-solving potential of local DNA databases).

²³ *See infra* Part I (describing the development of local databases currently in place).

²⁴ DNA Identification Act of 1994, Pub. L. No. 103-322 § 210301, 108 Stat. 2065 (codified in scattered sections of 42 U.S.C.) (permitting the development of CODIS and establishing its limitations).

²⁵ *See* FED. BUREAU OF INVESTIGATION, NATIONAL DNA INDEX SYSTEM (NDIS) OPERATIONAL PROCEDURES MANUAL (Jan. 31, 2013) [hereinafter NDIS MANUAL], available at <http://static.fbi.gov/docs/NDIS-Procedures-Manual-Final-1-31-2013-1.pdf> [http://perma.cc/YU9H-SFDW] (describing the individuals covered by CODIS, the types of records stored and searched, the practices for storing, accessing, and retaining the DNA records, and records access procedures).

²⁶ *See, e.g.,* Jane Bambauer, *Hassle*, 113 MICH. L. REV. 461, 482 (2014) (“Traditional routes to individualization distribute their intrusions in severely regressive ways. It’s no secret that discretion- and observation-driven policing lead to more searches of poor and minority subjects.”).

²⁷ *See generally* Harmon, *supra* note 5, at 811-12 (“[H]arms of policing are unevenly

These databases threaten privacy and dignity interests in several ways. With respect to privacy, they increase surveillance on innocent, law-abiding citizens, expand the use of familial DNA searching, and have the potential to limit self-expression and self-determination for targeted individuals.²⁸ Furthermore, they impose dignity costs in the short and long term. Immediate indignity and stigma accompany being stopped by police in public to provide a DNA sample.²⁹ And there is the long-term dignity cost when these stops communicate that someone needs to be watched—not because he or she was arrested or convicted, but based on law enforcement’s belief that he or she will be a future criminal. Collectively, these costs carry the potential to undermine the legitimacy of law enforcement.³⁰

As local agencies circumvent the federal regulations that govern CODIS by creating their own databases, legislatures and courts have remained aloof, allowing these databases to evolve with little oversight. However, the external costs generated by local databases demonstrate the need for regulation. The current reliance on self-regulation is not sufficient. Law enforcement’s success is commonly measured by a narrow focus on crime rates and clearance rates. As a result, police chiefs lack incentives to identify and measure external costs of surveillance practices.³¹ Current external regulations of genetic surveillance are also insufficient. The vast majority of local databases operate outside of federal and state statutory regulations.³² Furthermore, these databases operate largely beyond the reach of the Fourth Amendment because of their extensive

distributed. . . . African Americans and Latinos are much more often stopped, searched, arrested, and hurt by the police than are others.”).

²⁸ See MICHELLE ALEXANDER, *THE NEW JIM CROW: MASS INCARCERATION IN THE AGE OF COLORBLINDNESS* 69-71 (2010) (labeling policing techniques that rely on an over-inclusive reach as “Kissing Frogs”); Kimberly D. Bailey, *Watching Me: The War on Crime, Privacy, and the State*, 47 U.C. DAVIS L. REV. 1539, 1554 (2014) (explaining that comprehensive surveillance “has a chilling effect on poor people of color’s self-determination, self-expression, and freedom of association”).

²⁹ See William J. Stuntz, *The Distribution of Fourth Amendment Privacy*, 67 GEO. WASH. L. REV. 1265, 1273 (1999) (arguing that Fourth Amendment jurisprudence should protect “the interest in being free from humiliation or indignity, or the interest in avoiding the stigma that comes from being publicly identified as a criminal suspect”).

³⁰ See *infra* Section II.F (describing the ways in which local DNA “databases carry the potential to undermine the legitimacy of law enforcement agencies”).

³¹ See Rachel Harmon, *Why Do We (Still) Lack Data on Policing?*, 96 MARQ. L. REV. 1119, 1123 (2013) (“Police chiefs and mayors are likely to provide too much, overly intrusive, or ill-chosen policing practices if they experience reputational and political gains from doing so.”).

³² See Jaros, *supra* note 15, at 1182 (“Although legislatures have fashioned privacy safeguards for the specific databases that they established by statute, lawmakers have proven reluctant to investigate and constrain the police’s ability to assemble and maintain their own searchable genetic records.”).

reliance on obtaining DNA samples by consent or from abandoned DNA.³³ This freedom from regulation was welcomed by early adopters of local databases. It was a driving force behind their creation.³⁴ However, even proponents of local databases recognize the value in embracing some external regulation.³⁵

This Article offers five modest yet effective proposals for reform.³⁶ First, the Article calls for a robust mandatory record-keeping scheme designed to minimize the potential for local databases to diminish privacy and dignity interests and exacerbate existing racial inequities in the criminal justice system. This requirement will largely monitor the inputs of local databases—e.g., what profiles are included, from whom they are collected, and in what manner they are secured. Second, the Article proposes that law enforcement be required to have some minimal level of suspicion before seeking consensual DNA samples from people who cannot be compelled to provide DNA samples—i.e., people other than arrestees and convicted individuals—and that, when seeking consensual DNA samples, law enforcement must clearly disclose its intent to add the resulting profile to its local database. Such a requirement will curb law enforcement’s ability to populate local databases with the “usual suspects,” a practice that will result in a disproportionate number of profiles from people of color and other demographic minorities. Third, the Article calls for prohibiting the inclusion of DNA profiles from victims. This prohibition will limit the crime-solving power of local databases because the line between victims and perpetrators often shifts over time. Nevertheless, it will help to ensure that victims do not pay a genetic surveillance tax in exchange for police assistance. Fourth, the Article proposes a time limit for retaining DNA profiles from suspects to counter the negative implications of the necessarily over-inclusive nature of local databases and to minimize the privacy costs they inflict.³⁷ Finally, the Article proposes comprehensive monitoring of local databases, including tracking what searches are performed in order to monitor outputs and to deter deliberate misuse.

If reforms are not adopted, the negative effects of local databases will remain unchecked. Future empirical work will be necessary to accurately measure these external costs, but it is certainly possible that such costs will outweigh the immediate crime-solving power of local databases. If that turns out to be the case, two options remain for regulating local databases. First, states could follow Vermont’s lead and abolish all non-CODIS databases.³⁸

³³ See *infra* Section III.B (explaining the lack of regulation of local DNA databases).

³⁴ See *infra* Section I.A.1 (citing early proponents of local DNA databases who argued that the regulation of CODIS was too restrictive).

³⁵ See *infra* Section III.D.

³⁶ See *infra* Section III.C.

³⁷ As explained in Section III.C.4, this proposal does not extend to DNA profiles collected upon arrest or after conviction.

³⁸ VT. STAT. ANN. tit. 20, § 1938(e) (Supp. 2011) (prohibiting non-CODIS databases).

Second, states could take the opposite approach and pursue population-wide databases. The latter option would, at the least, address some of the negative externalities of local databases by more fairly distributing the burdens of genetic surveillance across the population.

The Article proceeds as follows. Part I sets the landscape, documenting the fragmentation of genetic surveillance and explaining its causes. These causes include law enforcement's perception that CODIS is over-regulated, advancements in forensic DNA processing combined with decreasing costs, federal funding that has allowed agencies to bypass local political and budgetary processes, and a nascent genetic surveillance-industrial complex. After describing the expansion of local databases, Part I provides a detailed description of the operations of the local databases in Palm Bay, Florida; Bensalem Township, Pennsylvania; and the State of Arizona. This Section fills a large hole in our collective knowledge of law enforcement's use of genetic surveillance.

Part II identifies and examines the implications of the expansion of local databases, and analyzes their external costs. This analysis is particularly important because the issues raised by local databases do not map directly onto those raised by CODIS. This critique sets the stage for Part III, which identifies five reforms for local databases and explains how these reforms can be implemented.

I. THE EXPANSION OF LOCAL DNA DATABASES

The expansion of local DNA databases comes on the heels of a deep and sustained commitment from Congress to build a national network of DNA databases overseen by the FBI. In a flurry of legislation beginning in 1994, Congress authorized the creation and expansion of that network, which is called the Combined DNA Index System ("CODIS").³⁹ Under the CODIS umbrella, the FBI created a three-tiered hierarchy of databases made up of the National DNA Index System ("NDIS"), the State DNA Index System ("SDIS"), and the Local DNA Index System ("LDIS").⁴⁰ Congress designated the FBI to regulate CODIS, and the FBI designed protocols to integrate the three levels into a unified whole.⁴¹ In the decade after authorizing CODIS, Congress passed several laws to expand the CODIS network.⁴² Despite this

³⁹ See DNA Identification Act of 1994, Pub. L. No. 103-322, § 210301, 108 Stat. 2065; Erin Murphy, *Databases, Doctrine, & Constitutional Criminal Procedure*, 37 FORDHAM URB. L.J. 803, 827-28 (2010) (recognizing that the CODIS network is actually a collection of databases regulated by the FBI).

⁴⁰ See generally *Combined DNA Index System (CODIS)*, FED. BUREAU OF INVESTIGATION, <http://www.fbi.gov/about-us/lab/biometric-analysis/codis> [http://perma.cc/FUX6-XA76].

⁴¹ See generally NDIS MANUAL, *supra* note 25.

⁴² See DNA Fingerprint Act of 2005, Pub. L. No. 109-162, § 1002, 119 Stat. 3084; Justice for All Act of 2004, Pub. L. No. 108-405, §§ 203, 411, 118 Stat. 2260, ; DNA

expansion, local law enforcement agencies have increasingly sought to create their own, non-CODIS DNA databases. This Part analyzes what caused this shift. It then provides a description of the local databases in Palm Bay, Florida; Bensalem Township, Pennsylvania; and the state of Arizona.

A. *Fragmentation of Genetic Surveillance*

While the FBI continues to exert significant control over law enforcement's use of DNA databases, its grip is weakening as local databases expand. This fragmentation—leaving local agencies increasingly in control of the use of genetic surveillance—is the result of several factors: (1) restrictions in the CODIS regulations, which, according to many local law enforcement officials, limit law enforcement's ability to take full advantage of DNA databases to solve crime;⁴³ (2) advances in DNA technology—allowing for quicker processing and the analysis of extremely small biological samples—that have coincided with reduced costs; (3) federal funding that allows local law enforcement officials to bypass the local budget process; and (4) private firms interested in expanding the use of forensic DNA analysis.

1. CODIS Limitations

Early adopters of local DNA databases have pointed to two reasons why CODIS does not adequately meet their needs. First, they argue that the CODIS authorizing statute and the FBI's regulations for its use are too restrictive, preventing law enforcement from performing certain searches and from including DNA profiles from certain individuals in CODIS.⁴⁴ Second, they argue that because much of CODIS's growth is the result of adding DNA

Analysis Backlog Elimination Act of 2000, Pub. L. No. 106-546, 114 Stat. 2726; Crime Identification Technology Act of 1998, Pub. L. No. 105-251, § 102(a), 112 Stat. 1870.

⁴³ In other work, I have explained how prosecutors and law enforcement have often used the CODIS regulations to block attempts by post-conviction defendants to gain access to CODIS in an effort to establish their innocence. *See generally* Jason Kreag, *Letting Innocence Suffer: The Need for Defense Access to the Law Enforcement DNA Database*, 36 CARDOZO L. REV. 805 (2015).

⁴⁴ *See* Telephone Interview with John Blackledge, June 5, *supra* note 18 (describing his frustration with the unwillingness of CODIS-participating laboratories to provide investigative leads based on a partial DNA match); *id.* (expressing his frustration with the FBI's regulations that limit the search of profiles that were processed by private DNA laboratories); Telephone Interview with John Blackledge, Deputy Police Chief, retired, Palm Bay Police Department (June 6, 2014) [hereinafter Telephone Interview with John Blackledge, June 6] (transcript on file with the author) (criticizing CODIS regulations that restrict searches because these restrictions seem to value the privacy of convicted offenders with profiles in CODIS more than the interests of victims); Telephone Interview with Fred Harran, *supra* note 18 (criticizing CODIS because it often takes twelve to eighteen months to receive results and information about a database hit); *see also, e.g.*, 42 U.S.C. § 14132(a)(1)(C) (2012) (precluding “DNA samples that are voluntarily submitted solely for elimination purposes” from being included in NDIS).

profiles from known violent offenders who are often serving lengthy prison sentences, CODIS remains an ineffective crime-solving tool.

The FBI has adopted an extensive regulatory scheme for CODIS,⁴⁵ and it regularly audits participating public crime laboratories to ensure compliance.⁴⁶ These regulations are designed to ensure the database is reliable and secured.⁴⁷ For example, the FBI will only allow the inclusion and search of DNA profiles if the profiles were processed by public DNA laboratories that are a part of the CODIS network.⁴⁸ Second, federal regulations prohibit inclusion in CODIS of many types of partial DNA profiles,⁴⁹ and limit law enforcement's ability to compare a partial profile to the other profiles in CODIS.⁵⁰ Third, the process of confirming a match in CODIS can take up to one month,⁵¹ and this is in addition to the six to twelve months often needed for the actual DNA processing at CODIS-participating laboratories.⁵² Fourth, federal regulations require the removal of profiles from CODIS if a convicted offender's conviction is overturned, or, in the case of an arrestee, if the charges are dismissed.⁵³ Finally, as a result of its emphasis on building a database of convicted offenders and arrestees, the FBI's regulations prohibit the inclusion of DNA profiles from individuals, including suspects, who provide law enforcement with consensual DNA samples.⁵⁴

⁴⁵ See NDIS MANUAL, *supra* note 25.

⁴⁶ The CODIS authorizing statute gives the FBI authority to prevent states and local jurisdictions from participating in CODIS if these agencies do not follow the FBI's regulations. 42 U.S.C. § 14132(c) (2012) ("Access to the index established by this section is subject to cancellation if the quality control and privacy requirements . . . are not met.").

⁴⁷ See *Rivera v. Mueller*, 596 F. Supp. 2d 1163, 1166 (N.D. Ill. 2009) (describing an FBI declaration opposing a criminal defendant's request to search CODIS on grounds that such a search did not comply with the FBI's quality assurance standards).

⁴⁸ See NDIS MANUAL, *supra* note 25 at 31.

⁴⁹ See *id.* at 31-33. For example, CODIS prohibits the inclusion of profiles generated from a small amount of biological material—so-called Low Template or Low Copy DNA processing. *Id.* at 33. These prohibitions prevent the inclusion of many profiles obtained from crime-scene evidence. This is so because crime-scene profiles are often partial profiles as a result of the low level of biological material collected or because some of the biological material was degraded or otherwise compromised. See *United States v. Morgan*, 53 F. Supp. 3d 732, 735-36 (S.D.N.Y. 2014) (characterizing Low Copy processing as used when there is less than 100 picograms of material).

⁵⁰ See NDIS MANUAL, *supra* note 25, at 40-42 (outlining appropriate searches).

⁵¹ See *id.* at 50.

⁵² See Telephone Interview with Fred Harran, *supra* note 18 (explaining that one of the limitations of CODIS is that "you'll get a hit on CODIS a long time down the road. It takes twelve to eighteen months to get [a] CODIS [result], maybe nine if you're fast-tracking it.").

⁵³ See NDIS MANUAL, *supra* note 25 at 29.

⁵⁴ See *id.* at 24. See also, *e.g.*, 42 U.S.C. § 14132(a)(1)(C) (2012) (precluding "DNA records that are voluntarily submitted solely for elimination purposes" from being included in NDIS).

Local DNA databases are not required to comply with any of these federal regulations. For example, they are free to include consensual DNA samples from people deemed merely suspicious, victims, victims' family members, and witnesses. These consensual samples have driven the growth of local databases.⁵⁵ Local DNA databases are also built with DNA processing from private laboratories.⁵⁶ Furthermore, local law enforcement is free to set its own protocols for including and searching partial DNA profiles in their databases and for expunging DNA records.⁵⁷ Adopters argue that local databases are more efficient, providing hit confirmations within days of submitting DNA samples to the laboratory as opposed to taking six months to a year, which is common when dealing with CODIS.⁵⁸

Aside from the regulatory scheme, which local agencies seek to sidestep by building their own databases, early adopters of local databases have argued that the manner in which CODIS has grown has prevented it from being an effective crime-fighting tool. Specifically, they criticize CODIS's focus on amassing profiles from people convicted of felonies. For example, as the Bensalem Township Police Chief explains, "CODIS is a great program . . . but CODIS doesn't stop crime. America is plagued with small crime [that CODIS doesn't address]."⁵⁹ Similarly, the president of SmallPond, a private firm that markets and sells a local database software product, echoes this critique, arguing that CODIS is bogged down from processing a backlog of reference samples, leaving no room for application to lower-level crimes.⁶⁰ Scholars have raised a similar critique of CODIS's ineffectiveness as a crime-solving tool, albeit not to advocate for the expansion of local databases, but to advocate for including fewer known DNA profiles in CODIS.⁶¹

⁵⁵ See *infra* Section I.B (providing examples of such expansion).

⁵⁶ See *infra* Section I.A.4 (describing the integral role private DNA laboratories play in these databases).

⁵⁷ See Telephone Interview with Scott Rulong, President, SmallPond (June 4, 2014) (partial transcript on file with author) ("SmallPond is a set of tools. And it's up to [the law enforcement agency customer] to determine how to use those tools. Our customers know their local laws and regulations far more than we would.").

⁵⁸ See *supra* note 52.

⁵⁹ Telephone Interview with Fred Harran, *supra* note 18.

⁶⁰ Telephone Interview with Scott Rulong, *supra* note 57 ("The CODIS system is already overwhelmed with just processing those violent crimes."); *id.* ("So, when a law enforcement agency considers using their public lab to process DNA in something . . . like a property crime, it's really unlikely to get any turn-around time that's good."). See also *id.* ("[F]rom my perspective, DNA technology can be used for more than it's being used right now, more than CODIS enables. And SmallPond . . . is just enabling other applications that are valid and have value.").

⁶¹ See, e.g., Kerry Abrams & Brandon L. Garrett, *DNA and Distrust*, 91 NOTRE DAME L. REV. (forthcoming 2015) (manuscript at 16) available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2473728 [<http://perma.cc/K95L-R6US>], ("Use of DNA is asymmetrical, with widespread use to assemble giant repositories of

2. Advances in DNA Processing

Advances in forensic DNA analysis combined with declining costs have been significant factors in the fragmentation of genetic surveillance. The relevant technological developments have arisen on three fronts. First, new technologies have given DNA analysts the ability to obtain full forensic DNA profiles from exceedingly small amounts of biological material. Not only has this development increased the chances of obtaining DNA profiles from traditional forensic sources—e.g., blood and semen—but it has opened up an entire new area of forensic DNA analysis: so-called touch, or contact, DNA analysis.⁶² In this process, analysts develop DNA profiles from the skin cells shed when touching objects. For example, shed skin cells can be collected from the handle of a gun, the portion of a torn screen touched by an intruder, a brick used to break a window in a burglary, or the steering wheel of a stolen vehicle.⁶³ This development has been critical to the expansion of local databases because many of them are built with the goal of expanding the use of DNA analysis to high-volume property crimes—crimes that often do not involve perpetrators leaving blood, semen, saliva, or other traditional sources of DNA at crime scenes.

In addition to the promise of expanding law enforcement's use of DNA analysis beyond violent crimes, the development of Rapid DNA analysis promises to give police departments the ability to conduct DNA analysis without relying on the services of a laboratory. For example, IntegenX, a firm from California, has developed a stand-alone, fully-automated DNA processing machine that can process a biological sample and obtain a forensic DNA profile in ninety minutes.⁶⁴ A patrol officer responding to a residential burglary can now swab areas near the point of entry in an effort to collect skin cells that were left behind. She can then place the swabs in the Rapid DNA

genetic information that raise real privacy concerns, but far more limited use of DNA tests to solve crimes and to potentially free innocent convicts, raising due process concerns.”); Kaye, *Fourth Amendment*, *supra* note 16, at 1099-1100 (recognizing that studies have not proven that adding DNA profiles from arrestees prevents crime). Scholars have also argued that CODIS has had a limited impact because even when it generates hits for unsolved cases, police do not always follow-up on these leads. *See Abrams & Garrett, supra*, at 25 (“Many jurisdictions have no policy in place to respond to a DNA hit in a closed case. As a result, CODIS hits may receive no follow-up.”).

⁶² *See* Davis Phillips, Note, *State v. Carver: A Cautionary Tale About the Use of Touch DNA as Inculpatory Evidence in North Carolina*, 49 WAKE FOREST L. REV. 1545, 1558 (2014).

⁶³ *See Touch DNA*, BODE TECH., <http://www.bodetech.com/forensic-solutions/dna-technologies/touch-dna/> [<http://perma.cc/C6HY-SXKY>] (describing the methods for collecting and analyzing DNA shed on contact).

⁶⁴ *RapidHIT® System for Human Identification*, INTEGENX, <http://integenx.com/rapidhit-system/> [<http://perma.cc/ZPL4-ZU5E>] (“The self-contained human identification system produces standardized DNA profiles from buccal swabs and other human samples in ~90 minutes.”).

machine at the police station and obtain a full forensic DNA profile, effectively bypassing the laboratory entirely. Admittedly, Rapid DNA processing is still in its infancy. However, several law enforcement agencies, including two of the agencies described in Section I.B, the Palm Bay Police Department and the Arizona Department of Public Safety, are using this process in conjunction with their local databases.⁶⁵

These technological advancements have coincided with decreased costs for forensic DNA processing, making it more economically feasible to expand its use beyond violent crimes. For example, while a Rapid DNA processing machine costs approximately \$250,000, it can process each DNA sample for approximately \$350.⁶⁶ Similarly, private DNA laboratories have responded to the potential to expand law enforcement's use of DNA analysis to high-volume crimes by offering DNA processing for as little as \$85 per sample for large batches of samples,⁶⁷ a rate that makes forensic DNA processing a commodity.

3. Federal Funding

Because local, non-CODIS databases are in some ways duplicative of CODIS, it is reasonable to presume that even if these databases had strong support from law enforcement officials, their expansion would be limited by cost-conscious local government officials not eager to fund them. This has not been the case, in part, because some local databases have been supported by federal, not local funds.⁶⁸ It is ironic that after allocating such a significant amount of money to develop CODIS,⁶⁹ the federal government is funding non-CODIS databases that are at least potential rivals to the CODIS network.⁷⁰ More importantly, federal funding has allowed local agencies to bypass the

⁶⁵ In addition to its role in supporting local DNA databases, Rapid DNA processing will also affect CODIS. The FBI is currently validating it for processing single-source reference samples from arrestees and convicted individuals. *See generally Rapid DNA or Rapid DNA Analysis*, FED. BUREAU OF INVESTIGATION, <http://www.fbi.gov/about-us/lab/biometric-analysis/codis/rapid-dna-analysis> [<http://perma.cc/XH4K-TGCD>] (describing the current state of Rapid DNA technology and the standards it would need to meet to be approved for use by the FBI).

⁶⁶ Yoohyun Jung, *TPD, Sheriff's Department Using "Rapid DNA" Technology*, ARIZONA DAILY STAR (Mar. 20, 2015, 7:12 PM), http://tucson.com/news/blogs/police-beat/tpd-sheriff-s-department-using-rapid-dna-technology/article_c04cc780-708a-594a-a5e4-15f6235c81d9.html [<http://perma.cc/E48S-M5EB>].

⁶⁷ Telephone Interview with John Blackledge, June 6, *supra* note 44.

⁶⁸ Federal funding also supports other state and local law enforcement databases. *See* Laura K. Donohue, *Technological Leap, Statutory Gap, and Constitutional Abyss: Remote Biometric Identification Comes of Age*, 97 MINN. L. REV. 407, 462 (2012) (discussing federal funding that supported the creation of a broad range of biometric databases).

⁶⁹ *See supra* note 10 and accompanying text.

⁷⁰ *See* Telephone Interview with Scott Rulong, *supra* note 57 (recognizing that SmallPond is entering a space once dominated by the FBI).

local budget process and the limitations it imposes on other law enforcement surveillance techniques.⁷¹

The primary sources of federal funding for local DNA databases are the federal forfeiture laws that return money to local law enforcement officials in exchange for their participation in federal task forces.⁷² These laws allow the Department of Justice to share the proceeds of seized property with local agencies that “participated directly in the seizure or forfeiture of the property.”⁷³ Local law enforcement agencies have come to depend on this revenue stream,⁷⁴ and it has been crucial to the evolution of local DNA databases. For example, resources from federal forfeiture laws fully fund the local database in Bensalem Township, and local officials view this as a reliable source of funds for the foreseeable future.⁷⁵ Without this revenue stream, it is unlikely that local databases would have developed as quickly as they have.

4. Corporate Interests

Private firms have quickly recognized business opportunities in law enforcement’s increased use of local databases. These opportunities are driven by the potential for increasing demand for DNA processing as law enforcement agencies seek to use DNA to investigate high-volume property crimes, and the possibility of selling database infrastructure to such agencies. As discussed below, this private sector development is a necessary ingredient to the continued expansion of local DNA databases. For example, Palm Bay’s and Bensalem’s programs could not exist without partnerships with private DNA laboratories because each locality lacks its own DNA laboratory. And, while the Arizona Department of Public Safety operates the state’s crime laboratory, its private, non-CODIS database is powered by SmallPond’s software and Rapid DNA processors from IntegenX.

Interest in the local database market from Orchid Cellmark and Bode Technology (two of the largest private DNA laboratories) is an indication of

⁷¹ See *infra* Section I.B (describing how federal funding sources have supported the Palm Bay and Bensalem local DNA databases).

⁷² See 18 U.S.C. § 981(a), (e) (2012); 21 U.S.C. § 881(a), (e) (2012). For a general description of the reach of these laws and how law enforcement benefits from them, see Sarah Stillman, *Taken*, NEW YORKER, Aug. 12, 2013, at 48.

⁷³ 21 U.S.C. § 881(e)(1)(A) (2012). See also 18 U.S.C. § 981(e)(2) (2012) (giving the Attorney General power to share proceeds of forfeitures with “any State or local law enforcement agency which participated directly in any of the acts which led to the seizure or forfeiture of the property”).

⁷⁴ See Stillman, *supra* note 72 (“What stands out to me is . . . how pervasive and dependent police really are on civil-asset forfeiture—it’s their bread and butter” (quoting Vanita Gupta, Deputy Legal Dir., ACLU)).

⁷⁵ Telephone Interview with Fred Harran, *supra* note 18 (explaining how the database is funded “100% with drug forfeiture money”). Drug forfeiture money also funded the Palm Bay database for a year of its operations. Telephone Interview with John Blackledge, June 3, *supra* note 19.

the size of the market. Bode's Vice President for Sales and Marketing characterized the market as "enormous."⁷⁶ He explained that Bode has identified up to a thousand law enforcement agencies in localities that do not have their own law enforcement crime laboratories yet are large enough to justify building their own local databases.⁷⁷ Dr. Laura Gahn, the laboratory director for Cellmark Forensics, also sees the business opportunity, emphasizing that the creation of local databases will drive the demand for Cellmark's forensic DNA processing services.⁷⁸ As she explained, even ten years ago it was not economically feasible for most law enforcement agencies to use DNA analysis to investigate routine property crimes, but that is no longer the case.⁷⁹ She added that, given the rate of property crime in the United States—including an estimated 16.8 million property crimes in 2013⁸⁰—Cellmark's ability to offer local database services can serve as an entry point to the market for forensic DNA processing for property crimes.⁸¹

B. *Local DNA Database Models*

1. Palm Bay, Florida

The Palm Bay Police Department was the first local law enforcement agency in the country to create a local, non-CODIS DNA database, and it has championed the expansion of these databases nationally.⁸² Its program began in late 2006 when a representative from a private DNA laboratory, DNA:SI Labs, approached then-Chief Bill Berger at a conference with a proposition.⁸³ The laboratory believed that there was a significant business opportunity in demonstrating the viability of using DNA analysis for high-volume property crimes, and it was seeking a law enforcement partner to test its theory.⁸⁴ In

⁷⁶ Telephone Interview with Andrew Singer, Vice President for Sales and Mrktg., Bode Tech. (June 18, 2014).

⁷⁷ *Id.*

⁷⁸ Telephone Interview with Dr. Laura Gahn, Lab. Dir., Cellmark Forensics (June 4, 2014) (transcript on file with author).

⁷⁹ *Id.*

⁸⁰ JENNIFER L. TRUMAN & LYNN LANGTON, U.S. DEP'T. OF JUSTICE, CRIMINAL VICTIMIZATION, 2013, at 4 tbl.3 (2014), available at <http://www.bjs.gov/content/pub/pdf/cv13.pdf> [<http://perma.cc/Y5R8-HC6D>].

⁸¹ Telephone Interview with Dr. Laura Gahn, *supra* note 78 ("[Y]ou see just how many property crimes are committed in the United States every single year, it's a pretty darn good market to look at. This is all stuff that isn't being done yet, and so that's where I see it driving . . . growth in our overall business.").

⁸² Telephone Interview with John Blackledge, June 3, *supra* note 19 (explaining how he has hosted representatives from over sixty different local law enforcement agencies in Palm Bay to discuss Palm Bay's experience with local databases).

⁸³ *Id.* (describing the interaction between Berger and DNA:SI at an IACP conference).

⁸⁴ *Id.* ("So Berger comes back and says, 'Give this guy a call. He wants to do a DNA project . . . [T]hey're willing to do about a year, six months to a year's worth of DNA for

short, DNA:SI offered free DNA processing for one year for as many DNA samples as the Palm Bay Police Department could collect from individuals and crime scenes. In order to maximize the number of DNA profiles the officers would collect, DNA:SI also offered to train every Palm Bay police officer in how to collect samples from individuals and crime scenes.⁸⁵ DNA:SI believed that amassing a large number of samples in one locality would quickly generate investigative leads and efficiently solve high-volume property crimes.⁸⁶ After a quick, but detailed, negotiation, Palm Bay signed on as DNA:SI's first local law enforcement client.

Palm Bay is a city of just over 100,000 people, making it the largest city in Brevard County, Florida,⁸⁷ and it has approximately 160 sworn officers. Because of its small size, the Palm Bay Police Department does not have its own crime laboratory.⁸⁸ Rather, it traditionally relied on the Florida Department of Law Enforcement (FDLE) Crime Laboratory for DNA services. When Palm Bay began its local program, property crime—including burglary, larceny, and motor vehicle theft—constituted the vast majority of the reported crime in Palm Bay, a fact that remains true today.⁸⁹

The outreach from DNA:SI and its offer to operate a pilot program in Palm Bay came at an opportune time from the perspective of the Palm Bay Police Department leadership. Palm Bay was frustrated with the limited state resources allocated to the FDLE's DNA laboratory and the resulting long turn-around times for DNA processing.⁹⁰ Palm Bay viewed the opportunity to

free and they want to . . . focus on property crimes but do all crime.”).

⁸⁵ *See id.*

⁸⁶ *LODIS: Local DNA Index System*, DNA SECURITY, INC., <https://web.archive.org/web/20080907155954/http://www.dnasi.com/lodisdna/index.html> [<http://perma.cc/H2R4-4QHF>] (“Imagine taking the serial offenders committing the most common crimes off the streets by tying them to DNA evidence collected from property crime scenes.”).

⁸⁷ *American FactFinder, Table GCT-PH1*, UNITED STATES CENSUS BUREAU, http://factfinder.census.gov/bkmk/table/1.0/en/DEC/10_SF1/GCTPH1.CY10/0500000US12009 [<http://perma.cc/VDW8-M9DW>].

⁸⁸ PALM BAY POLICE DEP'T, ANNUAL REPORT 2014: FOCUSED ON THE FUTURE 13 (2015), available at <http://www.palmbayflorida.org/home/showdocument?id=7372> [<http://perma.cc/M6UJ-U97E>].

⁸⁹ For example, in 2007, according to Florida's Uniform Crime Reports, there were 2744 indexed crimes in Palm Bay, and 2607 of them were burglaries, thefts, or larcenies. *See* PALM BAY POLICE DEP'T, 2008 PALM BAY POLICE DEPARTMENT ANNUAL REPORT 4 (2009), available at <http://www.palmbayflorida.org/home/showdocument?id=5130> [<http://perma.cc/GB9M-ST64>]. Similarly, in 2013, there were 2826 indexed crimes and 2226 of them were burglaries, thefts, or larcenies. *See* PALM BAY POLICE DEP'T, *supra* note 88 at 13.

⁹⁰ The architect of Palm Bay's local DNA database recounted two cases that served as motivation for creating its database. Telephone Interview with John Blackledge, June 3, *supra* note 19. The first case was in late 2006 when, shortly after the representative from

partner with a private laboratory as a way to control its use of forensic DNA, speed up the process, and bend it to its distinct local needs.

Palm Bay's program officially launched in early 2007 and in the first six months officers concentrated on obtaining as many DNA profiles as possible from individuals and crime scenes. Ultimately, they collected samples and obtained forensic DNA profiles from over 800 suspects, victims, and witnesses during this six-month period.⁹¹ In addition, they collected over 1600 samples from crime scenes and crime-scene evidence from which they obtained 635 usable DNA profiles.⁹² The more than 1400 DNA profiles amassed in the first six months formed the foundation for Palm Bay's local database.

Palm Bay has continued to aggressively collect known reference samples from individuals for its database. Palm Bay's chief described its practice as follows:

DNA profiles are obtained from a wide variety of subjects: persons developed as suspects during stop-and-frisk scenarios, arrested subjects, and victims and witnesses. . . . Most samples were obtained from persons who had given consent. [However], in some cases . . . samples were taken . . . from discarded items, such as drink bottles or cigarette butts.⁹³

Palm Bay reported immediate positive results from its program. It obtained its first DNA hit forty-five days after starting collection, and in the first year it reported forty-one instances where a DNA profile from a known individual in its database matched a profile developed from crime scene evidence.⁹⁴ It credited its local database with significantly decreasing crime rates and increasing clearance rates. For example, in the first year of the program, it reported a 20% decline in burglaries, and its overall clearance rate increased from 19.7% to 22.2%.⁹⁵ This trend continued with its burglary rate dropping 14% in the second year of the program and 12% in year three.⁹⁶

DNA:SI approached Palm Bay, Palm Bay police were investigating a series of home invasion sexual assaults. Eventually, they developed a suspect from a fingerprint left at one of the crime scenes. When they brought the suspect in for questioning, they gave him a can of soda and collected the can after the questioning. Major Blackledge promptly called the FDLE to ask whether it would analyze the can to obtain the suspect's DNA profile to compare to DNA left at the scene of one of the sexual assaults. To his surprise, the FDLE representative replied, "Major, you have been watching too much television." *Id.* In the second case, a young girl was sexually assaulted in her home, and despite the fact that Palm Bay had developed a suspect and possessed his DNA sample, it took the FDLE crime laboratory six months to process the suspect's reference sample and the DNA from the sexual assault kit to confirm that the suspect was the perpetrator. *Id.*

⁹¹ Berger et al., *supra* note 17, at 153.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*; Telephone Interview with John Blackledge, June 3, *supra* note 19 ("Forty-five days into my project I get the first hit . . .").

⁹⁵ See FLA. DEP'T OF LAW ENF'T, UNIFORM CRIME REPORT: COUNTY AND MUNICIPAL OFFENSE DATA JANUARY – DECEMBER 2007, *available at*

These initial results generated interest in Palm Bay's program, and several other law enforcement agencies in Brevard County ultimately created their own local databases.⁹⁷ By the end of 2013 these various law enforcement agencies reached an agreement to pool their local databases, creating a mini-regional network of local databases in Brevard County. As of June 2014, this network included over 13,000 DNA profiles from known individuals and crime-scene samples.⁹⁸

In the same fashion that the creation of Palm Bay's local database was the result of a partnership with a private firm, this regional network of local databases was also the result of a similar partnership. In this case, a small software company, SmallPond, created a software product that stores the DNA profiles developed by these local agencies in separate databases, each independently controlled by the local agency. But as the central host for the separate databases, SmallPond allows law enforcement agencies to enter into agreements with each other to search new DNA profiles against the databases of cooperating agencies.⁹⁹

The funding for Palm Bay's local databases has come from several different sources during the life of the project. After the first year, which was funded by DNA:SI, Palm Bay fully funded the second year with approximately \$100,000 dollars from property and money seized from drug offenders.¹⁰⁰ In the third year, it funded the program through an outside grant and since then has been self-funding the program through allocations from the city budget.¹⁰¹

<http://www.fdle.state.fl.us/Content/getdoc/66ffe5c6-5dec-4dda-8faf-30074da16a8a/CoMuOff2007annual-pdf.aspx> [<http://perma.cc/V2XC-J3FS>] (reporting 881 burglaries in 2007); FLA. DEP'T OF LAW ENF'T, UNIFORM CRIME REPORT: COUNTY AND MUNICIPAL OFFENSE DATA JANUARY – DECEMBER 2006, *available at* <http://www.fdle.state.fl.us/Content/getdoc/30862626-7471-4ea8-aaf0-491a17818760/CoMuOff2006annual-pdf.aspx> [<http://perma.cc/2VG4-EPVF>] (reporting 1101 burglaries in 2006).

⁹⁶ FLA. DEP'T OF LAW ENF'T, UNIFORM CRIME REPORT: COUNTY AND MUNICIPAL OFFENSE DATA JANUARY – DECEMBER 2008, *available at* <http://www.fdle.state.fl.us/Content/getdoc/ffd59732-77f2-4ed6-a0c6-15088d831f44/CoMuOff2008annual.aspx> [<http://perma.cc/2HRS-LFJY>] (reporting 757 burglaries in 2008); FLA. DEP'T OF LAW ENF'T, UNIFORM CRIME REPORT: COUNTY AND MUNICIPAL OFFENSE DATA JANUARY – DECEMBER 2009, *available at* <http://www.fdle.state.fl.us/Content/getdoc/b8cd3f1a-c473-4307-9baa-229592396688/CoMuOff2009annual.aspx> [<http://perma.cc/8V5L-PQVB>] (reporting 664 burglaries in 2009).

⁹⁷ These include the police departments in Melbourne, West Melbourne, and Cocoa.

⁹⁸ Telephone Interview with Scott Rulong, *supra* note 57.

⁹⁹ *Id.* (“[The program] can . . . be configured so that you could have multiple jurisdictions in a geographical area that can independently maintain their own local databases but then configure SmallPond to do cross-matching between those jurisdictions.”).

¹⁰⁰ Telephone Interview with John Blackledge, June 5, *supra* note 18.

¹⁰¹ *Id.* John Blackledge noted that in the first year that Palm Bay had to self-fund the

2. Bensalem Township, Pennsylvania

Bensalem Township, another pioneer in developing local DNA databases, has taken a different approach to building its database. Bensalem Township is a collection of communities comprising a small suburb northeast of Philadelphia.¹⁰² Approximately 65,000 people live in Bensalem, the largest municipality in Bucks County.¹⁰³ The Bensalem Township police department includes over one hundred sworn officers, led by Director Fred Harran.¹⁰⁴ Like Palm Bay, Bensalem does not have its own local DNA crime laboratory. Rather, it traditionally used the Pennsylvania State Police Bureau of Forensic Service crime laboratory for DNA processing.¹⁰⁵

Similar to other small communities, the vast majority of the crime in Bensalem involves property crime. In 2013, property crimes amounted to over ninety-four percent of the reported crimes in Bucks County,¹⁰⁶ and the crime rate in Bensalem tracked the county rates.¹⁰⁷ Sex offenses and homicides, the two crimes most commonly associated with the use of DNA analysis, made up less than one percent of the reported crimes in Bucks County.¹⁰⁸

Bensalem began its local database in June 2010 after hearing reports of Palm Bay's success. In late 2009, Director Harran and two of his officers visited Palm Bay to talk with John Blackledge, the architect of Palm Bay's database. Harran, who had no prior technical knowledge of forensic DNA, was quickly convinced that a local database would help reduce property crime in Bensalem.¹⁰⁹ Within two years of starting the program, Bensalem was

program, the city only allocated 60% of the program's prior budget. He added that the decrease in funding limited the amount of DNA samples they were able to process. And while he was careful not to draw a direct causal connection, he noted that during that year the department's clearance rate decreased from 34% to 27.5%. *Id.*

¹⁰² See *New in Town?*, BENSLEM TOWNSHIP, <http://www.bensalempa.gov/new-in-town.html> [<http://perma.cc/5KPG-YAFS>].

¹⁰³ *Id.*

¹⁰⁴ See *Frederick Harran*, BENSLEM POLICE DEPARTMENT <http://bensalempolice.org/about/command-staff/director-fred-harran/> [<http://perma.cc/8NLH-X5G5>].

¹⁰⁵ Telephone Interview with Fred Harran, *supra* note 18.

¹⁰⁶ PA. STATE POLICE, CRIME IN PENNSYLVANIA: ANNUAL UNIFORM CRIME REPORT, 2013, app. A (2014), <http://www.paucrs.pa.gov/UCR/Reporting/Annual/AnnualFrames.asp?year=2013> [<http://perma.cc/ZNS9-GWBM>].

¹⁰⁷ See *id.* at app. B; Telephone Interview with Fred Harran, *supra* note 18.

¹⁰⁸ PA. STATE POLICE, *supra* note 106 at app. A (cataloging a total of eight homicides in 2013 and eighty-eight rapes out of a total of 12,144 reported offenses). The remainder of the crime in Bucks County in 2013 involved alcohol-related crimes (14.6%), drug crimes (7.7%), assaults (6%), robberies (1%), and arson (0.2%). *Id.*

¹⁰⁹ See *Video: Detective Glenn Vandegrift Describes Bensalem Township Forensic DNA Program at IACP 2012*, INTEGENX (2012) [hereinafter Vandegrift video], <http://integenx.com/bensalem-dna-property-crime-vandegrift/> [<http://perma.cc/4EQA->

collecting 500 DNA samples per month and identifying, on average, 150 of these samples for processing.¹¹⁰ By June 2014, Bensalem Township had built a local database of 5,400 profiles, split evenly between profiles from reference samples and profiles obtained from crime-scene evidence.¹¹¹ Director Harran predicted that by January 2015, Bensalem will have approximately 10,000 profiles in its database, following this same even split.¹¹² This even distribution is remarkable when compared to CODIS, in which DNA profiles from crime-scene evidence make up less than 6% of all of the profiles in CODIS.¹¹³

There are three drivers behind the quick growth of Bensalem's database. First, Director Harran is committed to expanding the database. He explained, "[T]he bigger the database, the more success you're going to have . . ." ¹¹⁴ Second, the Bensalem Police Department trains all of its patrol officers in how to swab for DNA at crime scenes,¹¹⁵ and each has been instructed to make a concerted effort to recover biological evidence from all crime scenes, with a particular focus on property crimes.¹¹⁶

The third reason for the quick expansion of Bensalem's database is that Bensalem's officers aggressively try to collect consensual DNA samples from all arrestees and any individuals who, for whatever reason, raise the suspicion

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¹¹⁰ *Id.*

¹¹¹ Telephone Interview with Fred Harran, *supra* note 18.

¹¹² *Id.* Assuming that the overwhelming majority of the known reference samples in the Bensalem database are from Bensalem residents, approximately 8% of the population will be included in Bensalem's local database by January 2015. For the sake of comparison, scholars estimate that the FBI has fingerprints cards on approximately 25% of the U.S. population. See Donohue, *supra* note 68, at 441-42.

¹¹³ *CODIS-NDIS Statistics*, *supra* note 8.

¹¹⁴ Telephone Interview with Fred Harran, *supra* note 18. See also *id.* ("What's my motivation? I want the biggest database I can get, because the more bad guys we get in the database, the more suspects, the more people we're going to lock up."); Kaye, *supra* note 12, at 143 ("The more inclusive the database, the more powerful it is as a tool for apprehending the guilty and deterring some potential offenders.").

¹¹⁵ Vandegrift video, *supra* note 109.

¹¹⁶ *Id.* (describing cases in which Bensalem police collected and obtained DNA profiles from steering wheels of recovered stolen cars, rocks burglars used to break windows, and electrical tape found at a burglary site). Vandegrift also reported that Bensalem police have aggressively pursued DNA analysis in gun cases, claiming that in the past they obtained usable latent fingerprints in only 2-3% of the gun cases, but now they identify usable DNA profiles in 90% of the guns they swab for DNA. *Id.*; see also Ben Finley, *Bensalem DNA Database Helps Nab Low-level Criminals*, PHILA. INQUIRER, June 23, 2013 (describing a case in which lawn equipment was stolen from a shed that was solved when Bensalem police developed a DNA profile from the shed and later developed a hit to an individual in the local database). Current standard operating procedures for the department provided guidance for officers to help them identify, preserve, and collect DNA from crime-scene evidence. See Bensalem Township Police Department General Order 7-10 (effective Jan. 14, 2014) (on file with author).

of police.¹¹⁷ Director Harran described his advice to his officers regarding these consensual samples as follows: “[If you stop someone] and you think that they’re up to no good and they’ll give their DNA, we’ll take it.”¹¹⁸ Detective Glenn Vandegrift of Bensalem describes this policy in action, describing a typical encounter in which Bensalem police seek a consensual sample from a suspicious individual:

We come across a guy, on the street, middle of the night. He doesn’t have any good reason for being out in the middle of the night. He’s looking suspicious, but we really don’t have any reason to arrest him. So, we talk to him. . . . [And when he doesn’t provide a good reason for being there], we’ll stop him and then we’ll say, “Will you consent to a buccal swab?” And, you know, ninety-five percent of the time they’ll [consent and provide the swab].¹¹⁹

There are limits on how and from whom Bensalem police seek consensual samples, though even those limits leave ample room for officers to exercise their discretion. For example, Bensalem’s internal regulations dictate that “[i]f the individual is a suspect of criminal activity, he/she must consent to giving the buccal swab specifically for DNA purposes” and that the consent must be “knowing and voluntary” before police will collect a sample.¹²⁰ In addition, the internal regulations add that if the suspect is a juvenile, “parental consent is required.”¹²¹ These internal regulations are motivated by Director Harran’s desire to avoid a call for external regulations that may jeopardize law enforcement’s use of local databases.¹²² He explained:

I make sure the officers don’t push the envelope that hard, if you can’t get DNA from someone because they won’t give it up, leave them alone. I’d rather lose two criminals than lose ten. If two guys don’t want to give up their DNA, then leave them alone and walk away. Don’t trick or force

¹¹⁷ See Bensalem Township Police Department General Order, *supra* note 116 (authorizing collection of reference samples based on consent, abandonment, and pursuant to a court order).

¹¹⁸ Telephone Interview with Fred Harran, *supra* note 18.

¹¹⁹ Vandegrift video, *supra* note 109. See also Finley, *supra* note 116 (quoting Director Harran as saying, “Our program is a voluntary program. And people give up their DNA”); *id.* (quoting Director Harran saying that the police are not tricking anyone, and that “[t]hey sign [a consent form]. They know we’re taking [their DNA]. Do they think we’re taking their DNA to send them a Christmas card? We’ve got to get one up on the bad guy. And right now, we have a great tool with DNA”).

¹²⁰ See Bensalem Township Police Department General Order, *supra* note 116, at III.A.1.

¹²¹ See *Id.* at III.A.4.

¹²² Telephone Interview with Fred Harran, *supra* note 18 (stating his concern that some police departments might not be cautious enough in their use of local databases, which risks having a court or legislature limit their use for everyone).

them or persuade them, don't do anything. We ask, they sign off, they swab themselves, it's that simple.¹²³

While aggressively pursuing consent samples to build its database, Bensalem has followed a more cautious approach in other areas. For example, it has opted not to include in its database profiles generated from DNA samples provided by victims.¹²⁴ It also does not collect surreptitious samples from individuals for inclusion in its database.¹²⁵ And it has declined to pursue familial DNA searches.¹²⁶ Furthermore, Bensalem has a liberal policy for removing profiles from its database, requiring only that an individual write a letter to police requesting removal of his or her DNA profile.¹²⁷

¹²³ *Id.*

¹²⁴ *Id.* (explaining that Bensalem used to include victims' DNA profiles in its database but stopped based on a concern that including victims' profiles might generate negative attention that could lead to restrictions on law enforcement's use of this tool). *But see* Bensalem Township Police Department General Order, *supra* note 116, at III.A.1 (authorizing collection of samples from victims and witnesses).

¹²⁵ Telephone Interview with Fred Harran, *supra* note 18 ("Abandoned DNA is different. I know what they do down South [in Palm Bay] is they, and it's a great idea, I'd love to do it, I'm just not willing to do it up north, with different courts but they'll give a suspect a bottle of water, and then the subject opens it, the DNA comes off the cap. [The suspect] refuses to give his DNA [consensually], but he leaves the cap there, and they get the DNA off of that. It's legal . . . but I'm not willing to do that up north, and the DA [in Bucks County] doesn't want to do that either, and I'm on board with him, he's right. The courts up here are different than they are down south, so I wouldn't do that."). Despite prohibiting this practice, Bensalem's internal operating procedures contemplate that surreptitious DNA collection from known individuals may occur under some circumstances. *See* Bensalem Township Police Department General Order, *supra* note 116, at III.A.2 ("Abandonment consists of material(s) that may be of evidentiary value that an officer can directly attribute to that person from first hand observation, e.g., blood on a cloth, saliva left on a disposed drink container, or discarded cigarette butt. The officer collecting the DNA must have a reasonable suspicion that the person has committed a particular crime in order to seize the abandoned material. Random collections of abandoned materials will not be made. Officers may not provide materials to suspects of crimes solely to surreptitiously collect DNA samples that the suspect has refused to provide.").

¹²⁶ Telephone Interview with Fred Harran, *supra* note 18 (explaining that Bensalem does not use familial searches, but conceding that he would pursue it if he was confident that doing so would not jeopardize the program by generating overly restrictive regulations).

¹²⁷ *Id.* ("And here, if you want your DNA [removed from our database], you don't have to get a lawyer or an expungement, if you want your DNA out of the database, all you do is write us a letter. . . . We take it out. We don't play games with it. My standing orders [to the department] are . . . 'If they want it out, take it out of the database.' We'll get it [from them] again [in the future]."). Notably, as of June 2014, only three people have requested the removal of their DNA from Bensalem's database. *Id.* This response is consistent with findings in other studies. *See, e.g.,* Julie Samuels et al., *Collecting DNA From Arrestees: Implementation Lessons*, 270 NAT'L INST. JUST. J. 18, 23 (2012) (reporting that people infrequently request that their DNA samples be expunged).

Bensalem's database is powered by Bode Technology, one of the largest private DNA laboratories in the world.¹²⁸ Bode provides forensic DNA processing and the infrastructure for the database. The database operates as follows. Bensalem police officers collect and package the crime-scene and/or known reference samples. The officers log each item of evidence and any relevant case information in Bode's database software. They then ship the evidence samples to Bode. Within thirty days, Bode analyzes the samples for human DNA. If it generates a profile, the profile is added to Bensalem's local database, which is housed at Bode. Bode's software conducts nightly searches of the database, and Bensalem police officers are notified immediately if a search identifies a match.¹²⁹

The Bensalem DNA database costs about \$200,000 per year.¹³⁰ Director Harran explained that Bensalem would not have been able to support the program out of its general fund.¹³¹ However, he has been fortunate to fully fund the program with money Bensalem receives from a federal drug forfeiture program, and he anticipates that funding stream will maintain the database for the foreseeable future.¹³² Harran credited this funding structure for why he was able to convince other local officials that Bensalem would benefit from a local database.¹³³

Bensalem has reported significant positive outcomes since the creation of its database. In the first two years of its program, its clearance rate for serious violent crimes increased from 29.5% to 33%, and during that same period its clearance rate for burglaries and other property crime doubled to 22%.¹³⁴ Director Harran also noted that reported burglaries in Bensalem decreased 42%

¹²⁸ For a description of Bode's local DNA database products, see *BodeHits – Local DNA Database and Cost-Effective DNA Analysis*, BODE CELLMARK FORENSICS, <http://www.bodetech.com/bodehits-putting-the-power-of-dna-in-your-hands/> [<http://perma.cc/84FY-HWD5>].

¹²⁹ Unlike SmallPond's operations, Bode controls the parameters for what searches are performed. See Telephone Interview with Andrew Singer, *supra* note 76. However, Bode's local database product is similar to SmallPond's in that it allows the local agency total discretion about which profiles to add to its database. *Id.*

¹³⁰ See Finley, *supra* note 116.

¹³¹ Telephone Interview with Fred Harran, *supra* note 18 (“[W]hat we are blessed with is we’re also assigned to a federal drug task force. That does bring in funding to pay for unique law enforcement programs that I might not be able to afford from the general fund, and certainly the DNA program is one that meets this criteria.”).

¹³² *Id.*

¹³³ *Id.* (“I fund this program 100% with no tax money but 100% with drug forfeiture money, money that the federal government [seizes] from drug dealers for local law enforcement to use for any type of law enforcement initiative So that was an easy sell. We’re locking up bad guys, we’re solving and preventing and reducing crime, and it’s not costing the tax payers anything. Anyone who wouldn’t buy that program shouldn’t be in government. There’s no way to say no here.”).

¹³⁴ Vandegrift video, *supra* note 109.

since the program started, despite the fact that the only significant change in policy during this period was the use of its local database.¹³⁵ Furthermore, Bensalem police report that the program has generated significant goodwill in the community, noting that property crime victims are often impressed when they learn that police are using DNA to solve even minor crimes.¹³⁶ They also note that the database has affected the adjudication of criminal cases, generating more confessions, quicker convictions, and eliminating instances where prosecutors might have otherwise dismissed or bargained down charges.¹³⁷

3. State of Arizona

The Arizona Department of Public Safety's non-CODIS database represents a third local database model. Rather than focusing on a truly local model, in May 2014, Vince Figarelli, the Superintendent of the Arizona Department of Public Safety ("DPS") Crime Laboratory, announced the creation of the first statewide, non-CODIS database.¹³⁸

Little is known about the Arizona DPS database. As of August 2014, DPS had issued only one press release about the program, and that release, while announcing the program, provided few details.¹³⁹ The description of the program provided here is based on a presentation Superintendent Figarelli gave at the 2014 American Society of Crime Lab Directors Symposium on May 6, 2014, which the author attended; a phone interview the author conducted with

¹³⁵ See Telephone Interview with Fred Harran, *supra* note 18.

¹³⁶ Vandegrift video, *supra* note 109.

¹³⁷ See *id.* ("One of the other fine things about this program is that we're finding that it's saving money down the road for prosecution. When you have a guy and you walk into preliminary court and go to their defense attorney, [and he asks about pleading and what charges can be dropped]. We're not dropping anything. We have DNA that, [for example,] your guy was in that stolen truck. [The defense attorney is] like, 'DNA? You guys have DNA for a stolen truck? For this case?'""); *id.* ("We've had a lot of people confess. We've had a lot of people waive their hearings. And we're saving prosecution time in the county court, because everybody knows DNA is compelling. When you put DNA in front of a jury or a judge, it's compelling evidence and it's hard to deny."); see also Telephone Interview with Fred Harran, *supra* note 18 (explaining that hits often lead to confessions, which, in turn, save money by allowing prosecutors to obtain convictions without having to introduce DNA evidence at trial).

¹³⁸ See Press Release, IntegenX, IntegenX® Announces First State-Wide Deployment of the RapidHIT® Sys. With SmallPond™ at Ariz. Dep't of Pub. Safety (May 13, 2014) available at <http://www.smallpondllc.com/NewsDetail.aspx?ID=25> [<http://perma.cc/H3C6-BU64>].

¹³⁹ See Press Release, Ariz. Dep't of Pub. Safety, Revolutionary DNA Testing Instruments Now Available to DPS Detectives (May 13, 2014), <http://www.azdps.gov/Media/News/View/?p=477> [<http://perma.cc/KK76-6NQK>].

SmallPond President, Scott Rulong; and information DPS provided in response to the author's public records request.¹⁴⁰

Palm Bay and Bensalem were forced to start their databases from scratch. But when the Arizona DPS made the decision to build a non-CODIS database it already possessed over 300,000 DNA profiles in the state's SDIS database, which is part of the CODIS network.¹⁴¹ DPS did not want to lose the benefit of the profiles that it had amassed in its SDIS. In short, DPS wanted to make a copy of the state's SDIS database and to download the DNA profiles into a non-CODIS database operated and controlled solely by DPS without any federal oversight. Such an independent database would allow DPS to add profiles and conduct searches that would otherwise be prohibited by federal CODIS regulations.¹⁴² DPS and its counsel in the Arizona Attorney General's Office reviewed the plan and determined that DPS possessed the authority to build the database, and that doing so would not prevent Arizona from continuing to participate separately in CODIS.¹⁴³ The result is that Arizona now has two statewide DNA databases. One is part of CODIS. The other operates within the exclusive control of the Arizona DPS and completely outside of the national regulatory regime Congress created for CODIS.

The Arizona DPS database is built on the technology from two private firms—SmallPond's DNA database technology and the Rapid DNA processing technology provided by IntegenX.¹⁴⁴ While the FBI regulates which profiles can be included and what types of searches can be performed in CODIS, SmallPond allows its clients—local law enforcement agencies—to make those decisions.¹⁴⁵ As the president of SmallPond explains, "I do know that DNA

¹⁴⁰ See Vince Figarelli, Superintendent, Ariz. Dep't of Pub. Safety Crime Lab., Address at the American Society of Crime Lab Directors: The Arizona DPS Rapid DNA Program (May 6, 2014) (presentation slides on file with author). The author made several requests directly to Superintendent Figarelli to discuss the program, but each request was met with silence.

¹⁴¹ See ARIZ. REV. STAT. ANN. § 41-2418 (2011) (establishing the Arizona DNA system). See *CODIS-NDIS Statistics*, *supra* note 8.

¹⁴² See *supra* Section I.A.1 (discussing the restrictions on CODIS).

¹⁴³ Telephone Interview with Scott Rulong, *supra* note 57. DPS sought the advice of the Arizona Attorney General because, despite the fact that it was building its own DNA database, it did not want to jeopardize Arizona's participation in CODIS. *Id.* This worry was not unfounded. See, e.g., David H. Kaye, *Trawling DNA Databases for Partial Matches: What Is the FBI Afraid Of?*, 19 CORNELL J.L. & PUB. POL'Y 145, 149 (2009) ("The Bureau reportedly has threatened states with cutting off their participation in the national database system that pools the state and federal data if they release their databases to outside scientists or to defendants.").

¹⁴⁴ See Figarelli, *supra* note 140 (reviewing the instrument and software underlying the Arizona DPS Database).

¹⁴⁵ See Telephone Interview with Scott Rulong, *supra* note 57 ("We can offer a full solution or enable a full solution for local law enforcement [to] determine how they want to use DNA to solve the crimes in their local jurisdiction, which are predominantly property

databasing has been the FBI's domain, and we're providing ways to kind of get around that. But from my perspective, DNA technology can be used for more than it's being used for right now, more than CODIS enables."¹⁴⁶

In addition to SmallPond's database technology, the Arizona DPS database is powered by Rapid DNA processing.¹⁴⁷ Rapid DNA processing, which was thought to be several years from reality a short time ago, is a fully-automated process that produces a forensic DNA profile within ninety minutes.¹⁴⁸ As a result of its quick processing speed and the fact that the processing unit is mobile, Rapid DNA processing allows for DNA analysis to move from the crime laboratory to the local police station. For example, police in Arizona can obtain a DNA profile during the intake process at the jail or identify a DNA profile from crime-scene evidence shortly after processing the scene.¹⁴⁹

It is not just the fast processing speed that Arizona DPS sought, however. Rather, they have combined Rapid DNA processing with SmallPond's DNA database capabilities to create a statewide database designed specifically to generate investigative leads, something that CODIS has been comparatively ineffective at doing.¹⁵⁰ Superintendent Figarelli characterizes this new database as a "huge improvement" that will provide "the investigative lead as soon as possible to the detective so that the [suspect] doesn't commit any further crimes."¹⁵¹

Like Palm Bay and Bensalem, Arizona DPS was also attracted by the promise that its database could provide tools that are not available in CODIS.¹⁵² Those noted by Superintendent Figarelli include the use of familial DNA searching,¹⁵³ the inclusion of DNA profiles from suspects, not just arrestees and convicted offenders, and nearly instantaneous notification via text message or email to DPS officers of any hits generated in the database.¹⁵⁴

crimes and lesser violent crimes in most cases."); *id.* ("SmallPond is a set of tools. And it's up to [the law enforcement agency customer] to determine how to use those tools. Our customers know their local laws and regulations far more than we would.").

¹⁴⁶ *Id.*

¹⁴⁷ See Figarelli, *supra* note 140.

¹⁴⁸ See Section I.A.2. See also *RapidHIT System for Human Identification*, INTEGENX, <http://www.integenx.com/rapidhit-system/> [<http://perma.cc/P55S-SV8J>].

¹⁴⁹ See Figarelli, *supra* note 140 (including "upload of arrestee and convicted offender profiles at intake to a database" as an important and helpful function of RapidDNA).

¹⁵⁰ See *supra* Section I.A.1 (documenting CODIS's limitations).

¹⁵¹ See Mark Remillard, *Arizona DPS Gets Faster DNA-Processing Equipment*, KTAR NEWS (May 14, 2014), <http://ktar.com/story/86852/arizona-dps-gets-faster-dna-processing-equipment/> [<http://perma.cc/688Y-YMWP>].

¹⁵² Figarelli, *supra* note 140.

¹⁵³ Superintendent Figarelli explained that DPS is not currently using SmallPond's familial search function, but that he planned to utilize that function in the future. Figarelli, *supra* note 140.

¹⁵⁴ *Id.* For comparison, the hit notification in CODIS is much slower, often taking up to a month. See NDIS MANUAL, *supra* note 25.

Superintendent Figarelli also pointed to Arizona's DNA processing backlog—he estimated that property crimes generated more than 4000 samples—as motivation for implementing the Rapid DNA analysis and SmallPond database.¹⁵⁵

Finally, DPS was also motivated by the desire to preserve the role of the DPS crime laboratory in DNA processing. Specifically, Superintendent Figarelli explained that if DPS had not developed this system, one, or perhaps many, of the local law enforcement agencies in Arizona would have developed similar programs on their own.¹⁵⁶ This possibility, particularly the threat that a local police department could begin processing DNA samples with a fully-automated Rapid DNA machine, rendering useless a significant portion of what crime laboratories offer, convinced Superintendent Figarelli that creating a statewide non-CODIS database was preferable. As he explained, he wanted the DPS Crime Laboratory to “own” forensic DNA processing in Arizona, not individual law enforcement agencies.¹⁵⁷

While some of the operating procedures for the Arizona DPS database can be gleaned from the goals that Superintendent Figarelli stated for the program, much of its operation remains a mystery. For example, it is clear that SmallPond's software leaves DPS with total control over how to define what match stringencies to use for searches, what data sets to cross-match with each other to identify hits, and what type of DNA profiles—arrestees, convicted offenders, witnesses, victims, suspects, etc.—to include in the database.¹⁵⁸ However, it is unclear how DPS has defined its protocols. In response to a public records request from the author seeking the standard operating procedures for the database, DPS's Assistant Superintendent replied, “Currently, standard operating procedures for the SmallPond database do not exist, therefore there is nothing the crime lab is able to provide.”¹⁵⁹

II. IMPLICATIONS OF THE EXPANDED USE OF LOCAL DNA DATABASES

The results from Palm Bay and Bensalem demonstrate that local databases have the potential to be powerful law enforcement tools. Indeed, Director Harran concluded that local databases are “the best thing to come to law enforcement since fingerprints,”¹⁶⁰ and Palm Bay claims that its database

¹⁵⁵ Figarelli, *supra* note 140.

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ Email from Kristin Bouck, Admin. Assistant, Pub. Records Unit, to Jason Kreag, Assoc. Professor, Univ. of Ariz., James E. Rogers Coll. of Law (July 8, 2014, 4:38 PM MST) (on file with author).

¹⁶⁰ Telephone Interview with Fred Harran, *supra* note 18 (“[Local databases are] the best thing to come to law enforcement since fingerprints. It's better than that. It's just unbelievable.”).

prevented \$6 million worth of property crime.¹⁶¹ Given the reduction in property crime and the increased clearance rates credited to local databases, it may appear difficult to question law enforcement's enthusiasm, particularly when the Supreme Court recently blessed the expansion of DNA databases in *Maryland v. King*.¹⁶² However, in addition to the promise of more efficient crime solving, local databases carry the potential for serious negative implications that have not been fully considered by law enforcement. This Part discusses the forces that will help to solidify local databases as an accepted surveillance tool, categorizes and analyzes the potential negative effects of these databases, and sets the stage for reforms proposed in Part III.

A. *Entrenching Local DNA Databases*

There are powerful external forces helping to ensure that once local databases are adopted, they quickly become routine surveillance tools. This Section focuses on three of these external forces: (1) current Fourth Amendment doctrine, allowing law enforcement to tap into the ever-expanding pool of personal information collected and stored by private companies; (2) a nascent genetic surveillance-industrial complex; and (3) growing public acceptance of law enforcement's use of genetic surveillance techniques.

Current Fourth Amendment doctrine—in particular the principles of the third-party doctrine¹⁶³—allows law enforcement to benefit from the vast amount of information the public voluntarily shares with private companies.¹⁶⁴ This has led some scholars to conclude that law enforcement will respond by altering their surveillance practices. Professor Paul Ohm predicts that “[a]s the surveillance society expands, the police will learn to rely more on the products of private surveillance, and will shift their time, energy, and money away from traditional self-help policing, becoming passive consumers rather than active

¹⁶¹ Telephone Interview with John Blackledge, June 5, *supra* note 18.

¹⁶² 133 S. Ct. 1958, 1962 (2013) (holding that collection of an arrestee's DNA through a cheek swab is “a legitimate police procedure that is reasonable under the Fourth Amendment”).

¹⁶³ See *Smith v. Maryland*, 442 U.S. 735, 744 (1979) (finding that voluntary disclosure of information to a third-party diminishes one's expectation of privacy in the information); *United States v. Miller*, 425 U.S. 435, 435 (1976) (applying the third-party doctrine to information voluntarily disclosed during banking transactions).

¹⁶⁴ See, e.g., *United States v. Jones*, 132 S. Ct. 945, 955 (2012) (Sotomayor, J., concurring) (recognizing that police may not have to install GPS devices for surveillance because they could obtain the same information from GPS devices installed by third-parties in vehicles). See also Bernard Harcourt, *Governing, Exchanging, Securing: Big Data and the Production of Digital Knowledge* 5, 28 (Columbia Law Sch. Pub. Law & Legal Theory Working Paper Grp., Paper No. 14-390, 2014), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2443515 [<http://perma.cc/N49G-HGX9>] (concluding that corporate commercial surveillance “dwarf[s]” the surveillance performed by the NSA and other international intelligence agencies).

producers of surveillance.”¹⁶⁵ Professor Ohm’s instincts are correct about certain types of surveillance activities. It seems likely that police will be inclined to use information amassed by private sources, decreasing the need for law enforcement to conduct duplicative surveillance.¹⁶⁶ However, not all information sought by law enforcement is captured in the private sector. Specifically, genetic surveillance is one area where law enforcement will continue to be producers, as opposed to consumers, of surveillance. Whereas Google, Facebook, and other companies will feed law enforcement’s desire for digital surveillance, the expansion of local databases demonstrates that law enforcement will be the driver of collecting and analyzing genetic evidence.¹⁶⁷

In addition, local law enforcement’s use of genetic surveillance will be shaped by corporate interests.¹⁶⁸ Corporate interests have played a role in the development of local DNA databases since their inception.¹⁶⁹ The first local DNA database was designed jointly by a private DNA lab and the Palm Bay Police Department.¹⁷⁰ And private firms are integral to the continued expansion of these databases.

Large firms, such as Bode Technology and Orchid Cellmark, view local law enforcement databases as potential revenue streams, particularly because they promise to promote the use of DNA beyond violent crimes (sexual assaults and homicides) to property crimes.¹⁷¹ These firms see a business opportunity in processing the evidence swabs collected from property crimes. Indeed, in marketing their products, they trumpet the studies that have highlighted DNA’s promise for solving these crimes.¹⁷²

¹⁶⁵ Paul Ohm, *The Fourth Amendment in a World Without Privacy*, 81 MISS. L. J. 1309, 1311 (2011). *See id.* at 1320-21 (“The FBI and other law enforcement will shift from being active producers of surveillance to passive consumers, essentially outsourcing all of their surveillance activities to private third parties, ones who are not only ungoverned by the state action requirements of the Fourth Amendment, but also who have honed the ability to convince private citizens to agree to be watched.”).

¹⁶⁶ *See id.* at 1318-20 (“Today, the use of a tracking beeper seems to be an unnecessary law enforcement risk, because almost every one of us voluntarily carries a personal tracking beeper, [a smart phone].”).

¹⁶⁷ *See* Section I.B (examining the expansion of local databases in Arizona, Pennsylvania, and Florida).

¹⁶⁸ *See, e.g.,* Erin Murphy, *The Politics of Privacy in the Criminal Justice System: Information Disclosure, the Fourth Amendment, and Statutory Law Enforcement Exemptions*, 111 MICH. L. REV. 485, 536 (2013) (“Most technological surveillance devices are developed, marketed, and maintained by private sector industries, not nonprofit or government entities.”).

¹⁶⁹ *See supra* Section I.A.4.

¹⁷⁰ Telephone Interview with John Blackledge, June 3, *supra* note 19 (describing the Palm Beach Police Department’s partnership with DNA: SI).

¹⁷¹ *See supra* Section I.A.4.

¹⁷² *See, e.g.,* BodeHITS — *Local DNA Database and Cost Effective Analysis*, *supra* note 128 (“Research funded by the NIJ has determined the high value of using DNA evidence

Similarly, smaller firms have also sought to benefit from and to drive the expansion of local databases. These include SmallPond and IntegenX.¹⁷³ These companies have been consistent participants in law enforcement conferences in the last several years,¹⁷⁴ and they have sought meetings with local agencies to pitch their products. Furthermore, IntegenX offers to help potential buyers secure grants to purchase its products.¹⁷⁵

The influence of private firms on policing techniques is not new and is certainly not unique to genetic surveillance.¹⁷⁶ However, it is important to recognize that these private interests will influence the expansion, use, and long-term viability of this surveillance tool. And because these private interests have evolved simultaneously with local law enforcement's push to enter the genetic surveillance space, the prospect of a genetic surveillance-industrial complex further entrenching the practice of local databases seems likely.

Finally, the very use of these databases will also contribute to the public's acceptance of them.¹⁷⁷ Even those with only a casual understanding of surveillance techniques accept without question law enforcement's ability to collect personal information—including photographs, fingerprints, addresses, etc.—for investigative databases. And, because CODIS has been around for twenty years, there is widespread understanding that law enforcement collects DNA profiles from at least some segments of the population. Thus, local databases are not a completely new surveillance tool. This incremental evolution of law enforcement investigative databases in general, and DNA databases in particular, will help to solidify local databases as a tolerated, if not accepted, law enforcement tool.¹⁷⁸

analysis in solving [property] crimes.”).

¹⁷³ See INTEGENX, <http://www.integenx.com> [<http://perma.cc/GSY9-FD28>] (describing the company and its products); SMALLPOND, <http://www.smallpondllc.com> [<http://perma.cc/S53S-CHU9>] (describing the company and its products).

¹⁷⁴ See, e.g., *IntegenX Events*, INTEGENX, <http://www.integenx.com/integenx-events/> [<http://perma.cc/6L4A-9Q6D>] (documenting their presence at conferences sponsored by, among others, the International Association of Chiefs of Police, the American Society of Crime Lab Directors, the California State Sheriff Association, and the American Academy of Forensic Sciences).

¹⁷⁵ See *Grant Support for RapidHit Systems*, INTEGENX, <http://www.integenx.com/grantshelp/> [<http://perma.cc/GE3N-ULJZ>].

¹⁷⁶ See, e.g., Donohue, *supra* note 68, at 450-51 (documenting that private firms are developing the FBI's Next Generation Identification (“NGI”) biometric database).

¹⁷⁷ See Ohm, *supra* note 165 at 1310-11 (discussing the public's unwitting acceptance of a “surveillance society”).

¹⁷⁸ See, e.g., David Alan Sklansky, *Too Much Information: How Not to Think About Privacy and the Fourth Amendment*, 102 CAL. L. REV. 1069, 1086-87 (2014) (recounting how initial public outrage over the NYPD's installation of video surveillance cameras quickly subsided); *id.* at 1086 (“Moreover, surveillance practices that once set off alarms about privacy—for example, video cameras mounted in public places—now are either ignored or welcomed.”). For a description of the expansion of New York City's reliance on

B. *Distorting Policing Practices*

Several years ago, Professor William Stuntz observed that in deciding between policing practices, it was the relative costs of options—as imposed by constitutional restrictions—that mattered.¹⁷⁹ The same analysis applies when the relative costs of policing change because of non-constitutional regulations. For example, law enforcement DNA databases and the advances in technology that have made them possible have made investigating property crime comparatively less expensive.¹⁸⁰ As a result, when law enforcement decides how to allocate its investigative resources, a focus on property crime is more appealing now that local databases are available.¹⁸¹ Shifting resources to focus on using DNA to solve property crimes has important implications for policing.

Most obviously, the expansion of local databases promises to lead to law enforcement focusing on the small percentage of crimes that potentially involve DNA evidence. Over time, we can expect officers to focus on a subset of even this small percentage of crimes, zeroing in on those cases where DNA was actually recovered, based on the assumption that those cases will be easier to investigate. This will leave the more difficult investigations to linger. In addition, because law enforcement resources are limited, an increased focus on crimes potentially involving DNA evidence necessarily leaves fewer resources for those that do not.¹⁸² Thus, we may see fewer resources allocated to investigate drunk driving or domestic violence cases.

Increased focus on crimes potentially involving DNA evidence also promises to distort policing practices by turning investigators and patrol officers into crime scene technicians. Officers will be focused on gathering potential biological evidence, perhaps even at the expense of other more traditional investigation methods. For example, in Palm Bay and Bensalem, the

public surveillance, including a description of its Domain Awareness System, which collects and analyzes data from thousands of surveillance cameras, see I. Bennett Capers, *Crime, Surveillance, and Communities*, 40 *FORDHAM URB. L.J.* 959, 960-62 (2013).

¹⁷⁹ See Stuntz, *supra* note 29, at 1267 (“When the Fourth Amendment limits the use of a police tactic like house searches, it does two things: it raises the cost of using that tactic, and it lowers the relative cost of using other tactics that might be substitutes.”).

¹⁸⁰ See *supra* Section I.A.2.

¹⁸¹ This presumes that the cost of investigating other types of crimes has not decreased at a faster rate. While it is beyond the scope of this Article to test that hypothesis, it is reasonable to conclude that advances in DNA analysis and local databases have made policing property crime comparatively cheaper. See JOHN K. ROMAN ET AL., URBAN INST. JUSTICE POLICY CTR., *THE DNA FIELD EXPERIMENT: COST-EFFECTIVENESS ANALYSIS OF THE USE OF DNA IN THE INVESTIGATION OF HIGH-VOLUME CRIMES 3* (2008), available at <https://www.ncjrs.gov/pdffiles1/nij/grants/222318.pdf> [http://perma.cc/N8C7-M5S8] (reporting on the success and the usefulness of DNA analysis in relation to property crimes).

¹⁸² See Abrams & Garrett, *supra* note 61, at 57 (stating that the resources devoted to building CODIS “come at a cost to” broader and important goals including “the goal of using data to solve crimes”).

departments provided training in collecting biological evidence to every officer, not just those who specialized in processing crime scenes.¹⁸³ This will undoubtedly result in the collection of more physical evidence samples,¹⁸⁴ and, over time, it will expand local databases. However, it will also fundamentally alter the dynamics of police investigations.

Outside of the crime-scene context, the expansion of local databases also promises to alter police-citizen interactions. For example, in jurisdictions with local databases, police officers will be motivated to aggressively pursue consensual DNA samples from citizens the officers deem suspicious or simply worthy of watching.¹⁸⁵ Indeed, the existence of a local database may increase police-citizen encounters. Obtaining a DNA sample will be added to the list of other reasons why police make pretextual stops or arrests—e.g., to check for outstanding warrants, illegal drugs, or immigration violations.¹⁸⁶ Scholars have focused on this dynamic in the context of CODIS.¹⁸⁷ There is reason to conclude that the expansion of local databases will have an even more significant effect on the number of police-citizen encounters, because these databases rely on obtaining consensual samples from mere suspects, not just arrestees and convicted individuals.

C. *Exacerbating Racial Inequities*

There are several factors at play, including some at odds with each other, that complicate evaluating the impact local DNA databases will have on people of color. On the one hand, these databases might mitigate some of the criminal justice system's inequities, both by spreading law enforcement surveillance more evenly across the population and by replacing the use of "police intuition" in investigations with something that offers more certainty—forensic DNA analysis. At the same time, local databases also have the potential to deepen existing inequities. This Section explores these competing forces and concludes that, on balance, local databases will contribute to the disproportionate burdens people of color face in the criminal justice system.

¹⁸³ Telephone Interview with John Blackledge, June 3, *supra* note 19; Vandegrift video, *supra* note 109.

¹⁸⁴ See JOSEPH PETERSON ET AL., NAT'L INST. OF JUSTICE, THE ROLE AND IMPACT OF FORENSIC EVIDENCE IN THE CRIMINAL JUSTICE PROCESS 3, 4, 107 (2010), available at <http://www.crime-scene-investigator.net/role-and-impact-of-forensic-evidence.pdf> [<http://perma.cc/H5ML-XMN5>] (reporting that as of 2010 physical evidence was only collected in roughly 20% of burglaries, 25% of robberies, 30% of aggravated assaults, and 81% of homicides).

¹⁸⁵ See Telephone Interview with Fred Harran, *supra* note 18 ("[T]he bigger the database the more success you're going to have . . ."); see also Telephone Interview with Rockne Harmon, *supra* note 20.

¹⁸⁶ See generally ALEXANDER, *supra* note 28, at 66-69 (describing law enforcement's use of pretextual stops).

¹⁸⁷ See Elina Treyger, *Collateral Incentives to Arrest*, 63 KAN. L. REV. 557, 597-607 (examining the impact that CODIS has had on local arrest patterns).

The development of DNA analysis has certainly helped address some of the inequities in the system, most obviously by serving as a check on police investigations that have focused on the wrong person.¹⁸⁸ According to the Innocence Project, in seventy percent of DNA exonerations the person wrongfully accused and convicted was a person of color.¹⁸⁹ The data collected by the National Registry of Exonerations—a joint project of the University of Michigan Law School and Northwestern University School of Law that analyzes DNA and non-DNA exonerations—demonstrates a similar pattern. Of the over 1600 exonerations in the Registry, fifty-nine percent involved wrongful convictions of people of color.¹⁹⁰ It is not just the availability of DNA analysis that helped to prove these individuals' innocence. Many of the exonerations would not have occurred without identifying the actual perpetrator through a DNA database hit.¹⁹¹

Law enforcement's use of local databases also has the potential to replace police reliance on intuition and hunches, potentially decreasing the overall level of hassle generated by investigations.¹⁹² The architect of Palm Bay's database points to this potential as one of the reasons for adopting a local database. He explains, "We've found more people innocent and harassed them less because of our project many, many times over [compared to] what we were doing before, [because we used to] chas[e] down everybody and hassl[e] them . . . finding stupid [reasons] to arrest them."¹⁹³

In other contexts, scholars have advocated for limiting law enforcement's reliance on intuition, arguing that data-driven policing can decrease the

¹⁸⁸ See *Maryland v. King*, 133 S. Ct. 1958, 1970, 1974 (2013) (recognizing DNA's ability to remedy wrongful convictions and upholding a Maryland law requiring DNA collection from people arrested for violent crimes, DNA's ability to remedy wrongful convictions); see also EDWARD CONNORS ET AL., NAT'L INST. OF JUSTICE, CONVICTED BY JURIES: EXONERATED BY SCIENCE: CASE STUDIES IN THE USE OF DNA EVIDENCE TO ESTABLISH INNOCENCE AFTER TRIAL xxviii-xxix, 20 (1996), <http://www.ncjrs.gov/pdffiles/dnaevid.pdf> [<http://perma.cc/R6N5-6FXV>] (describing a pretrial exclusion rate of approximately twenty-five percent in cases in the study).

¹⁸⁹ See *DNA Exonerations Nationwide*, INNOCENCE PROJECT (Sept. 3, 2015, 12:30 PM), http://www.innocenceproject.org/Content/DNA_Exonerations_Nationwide.php [<http://perma.cc/CW63-YR3K>].

¹⁹⁰ NAT'L REGISTRY OF EXONERATIONS, <https://www.law.umich.edu/special/exoneration/Pages/detailist.aspx> [<http://perma.cc/5858-KATY>].

¹⁹¹ See Kreag, *supra* note 43, at 11-12 (explaining how database hits are often needed to establish innocence, particularly where prosecutors and courts raise new theories to explain away the probative weight of a DNA exclusion).

¹⁹² Telephone Interview with John Blackledge, June 3, *supra* note 19 (concluding that the increased use of DNA analysis eliminated the reliance on intuition and "all that hassling [of] . . . persons of interest [or] potential suspects").

¹⁹³ *Id.*

reliance on negative stereotypes.¹⁹⁴ More generally, some scholars point to the ability of mass surveillance to limit police discretion, lessening the burdens of the criminal justice system that fall on people of color. For example, Professor I. Bennett Capers has argued that “[p]ublic surveillance can . . . function to monitor the police, reduce racial profiling, curb police brutality, and ultimately increase perceptions of legitimacy.”¹⁹⁵

Finally, while all law enforcement proponents of local databases do not desire to build a population-wide DNA database, it is important to recognize that DNA databases have the potential to distribute police surveillance to broader segments of the population. By itself, this could redistribute the burdens of policing more evenly.¹⁹⁶

Despite these possible mitigating factors, there are several potential negative implications for people of color that may result from the expansion of local databases. Scholars have focused on how CODIS disproportionately monitors poor people and people of color.¹⁹⁷ They have also observed how police

¹⁹⁴ See, e.g., Bambauer, *supra* note 26, at 473-75 (criticizing current Fourth Amendment doctrine’s acceptance of law enforcement intuition to justify investigations); *id.* at 507 (“Randomly distributed hassle is preferable to the non-random distribution brought about by the common police practices. . . . Because the traditional methods of building individualized suspicion rely on the perceptions of police officers, those methods are bound to target on the poor disproportionately [to the actual commission of the crime].”).

¹⁹⁵ Capers, *supra* note 178, at 978. Professor Capers offers several examples of how this might happen. He explains that surveillance cameras can be used for traffic offenses, replacing discretion with an automated process that would eliminate racial profiling. *Id.* at 984-95. He also argues that surveillance cameras can “deter police from engaging in stops and frisks that cannot be justified by reasonable suspicion” and “the use of excessive force.” *Id.* at 986.

¹⁹⁶ See Bambauer, *supra* note 26, at 482 (“Traditional routes to individualization distribute their intrusions in severely regressive ways. It’s no secret that discretion- and observation-driven policing lead to more searches of [the] poor. . . . In contrast, algorithms are more likely to cast their cold accusations on everybody.”); Jane Yakowitz Bambauer, *How the War on Drugs Distorts Privacy Law*, 64 STAN. L. REV. ONLINE 131, 131-32 (2012) [hereinafter Bambauer, *War on Drugs*] (arguing that “dragnet-style law enforcement,” which includes practices like the routine use of dog-sniffs to investigate drug crimes and pattern-based data mining, “redistribute the burden of unproductive searches from the few-but-stereotypically ‘suspicious’ to the entire population”); Harmon, *supra* note 5, at 811-12 (recognizing that the “harms of policing are unevenly distributed” and that “African Americans and Latinos are much more often stopped, searched, arrested, and hurt by the police than are others”).

¹⁹⁷ See SHELDON KRIMSKY & TANIA SIMONCELLI, *GENETIC JUSTICE: DNA DATA BANKS, CRIMINAL INVESTIGATIONS, AND CIVIL LIBERTIES* 252-74 (2011) (analyzing the racial disparities in CODIS); Kevin Lapp & Joy Radice, *A Better Balancing: Reconsidering Pre-Conviction DNA Extraction from Federal Arrestees*, 90 N.C. L. REV. ADDENDUM 157, 175 (2012) (“DNA collection triggered by any arrest quickly leads to a DNA database of men of color.”); Stephen Rushin, *The Legislative Response to Mass Police Surveillance*, 79 BROOK. L. REV. 1, 13 (2013) (“A growing body of evidence confirms that law enforcement uses

surveillance techniques, in general, often impose costs on people who possess the least social and political power.¹⁹⁸ For example, in analyzing the protections the Fourth Amendment provides, Professor Stuntz concluded:

The problem is not just that the police may tend to be more careful when searching middle-class homeowners than residents of poor city neighborhoods. The larger problem is that the police may be more likely to search the latter because the law protects the former so well. And because such a large portion of defendants come from poor city neighborhoods, legislatures, prosecutors, and judges may find it easier to imprison ever more of them.¹⁹⁹

A similar dynamic will likely result from law enforcement's use of local databases.

The racial disparities that result from the use of local databases are driven both by the same factors that drive the racial disparities in CODIS,²⁰⁰ and by other factors unique to local databases. The factors that contribute to the disparities in CODIS are well documented.²⁰¹ For example, in opposing efforts to include DNA profiles from arrestees in CODIS, Professors Erin Murphy and Brandon Garrett argued that because of the "[r]acial disparities in arrest rates" such a practice "will mean including disproportionate amounts of genetic information from African-Americans and Hispanics as compared to other groups."²⁰²

The factors unique to local databases have not received the same attention. For example, the inclusion of DNA profiles from suspects, not just those arrested or convicted of crimes, gives local law enforcement officials tremendous discretion in building their local databases. As this discretion grows, the likelihood that negative stereotypes will play a prominent role in these databases increases.²⁰³ The concern that discretion can lead to racial

these surveillance technologies [license plate readers, facial recognition cameras] to target minority groups.").

¹⁹⁸ See, e.g., Bailey, *supra* note 28, at 1555.

¹⁹⁹ Stuntz, *supra* note 29, at 1287.

²⁰⁰ See Abrams & Garrett, *supra* note 61, at 30 ("Data-driven regulation of genetics may disproportionately impact the least politically powerful. All of this DNA collection in criminal cases has a racial impact. The collection of DNA from arrestees and convicts reflects the disproportionate numbers of minorities arrested and convicted. Minorities are therefore far more likely to have their DNA included and more likely to be identified using those databanks." (footnote omitted)).

²⁰¹ See, e.g., KRIMSKY & SIMONCELLI, *supra* note 197, at 252.

²⁰² Brandon L. Garrett & Erin Murphy, *Too Much Information; Supreme Court 2013: Why Collecting DNA from People Who Are Arrested Won't Help Solve More Crimes*, SLATE (Feb. 12, 2013, 8:22 AM), http://www.slate.com/articles/news_and_politics/jurisprudence/2013/02/dna_collection_at_the_supreme_court_maryland_v_king.html [<http://perma.cc/MU9C-FL6A>].

²⁰³ See *id.* (calling for the regulation of collecting abandoned DNA and arguing, in that

imbalances in local databases is not just a theoretical concern. John Blackledge, the architect of Palm Bay's database, advises law enforcement agencies seeking to develop local databases to start by collecting samples from any and all individuals who police suspect are involved in criminal activity.²⁰⁴ This does not necessarily imply that local DNA databases will be populated in a racially disproportionate manner. However, if the starting point for building them is individual officers targeting people they suspect are involved in criminal activity, it is likely that these officers will disproportionately turn to the "usual suspects," which overwhelmingly include poor people and people of color.²⁰⁵

SmallPond's business model relies on a similar assumption about the ability of police to successfully target segments of the local population from whom to collect DNA samples. To make the case to potential new clients that a local database can provide quick results even if an agency starts with zero profiles, SmallPond hired a former police officer as its salesperson.²⁰⁶ His argument to new clients is that local police "basically know who's committing the crimes. It is a small percentage of the population that commits the majority of the burglaries."²⁰⁷ With that knowledge, the argument goes, local police can secure consensual or abandoned DNA samples from those individuals, which in turn

context, that "[w]hile discretion is an inevitable aspect of police work, the risk of discriminatory treatment or harassment by the police surely increases when no legal justification for their actions is required"); *see also* Capers, *supra* note 178, at 980-81 (stating in the context of traffic stops that officers' use of additional investigatory actions—ordering drivers out of vehicles, subjecting drivers and passengers to questions unrelated to the traffic stop, and searching the vehicle—is "correlated to race").

²⁰⁴ Telephone Interview with John Blackledge, June 5 *supra* note 18 ("Every police chief that came to see me . . . I told them, here's what you need to do: pull all of your troops . . . all of your street cops and all of your detectives and find out who commits most of [your] crime. And then send your best players out that can legally, probably, ethically, get a DNA swab through consent or some [other] legal means [like abandonment] . . .").

²⁰⁵ *See, e.g.,* Cecelia Crouse & D.H. Kaye, *The Retention and Subsequent Use of Suspect, Elimination, and Victim DNA Samples or Records: A Report to the National Commission on the Future of DNA Evidence* 19 (Nov. 13, 2000), <http://homepages.law.asu.edu/~kayed/pubs/genlaw/ncfdna-nor-01.pdf>

[<http://perma.cc/DJ8K-QUDS>] (arguing that if a local database is formed by rounding up all the "usual suspects" and this group is created with an unfair process (e.g., only collecting DNA from black people), then the database would be "constitutionally impermissible"); Elizabeth E. Joh, *Reclaiming "Abandoned" DNA: The Fourth Amendment and Genetic Privacy*, 100 NW. U. L. REV. 857, 874 (2006) (calling for the regulation of collecting abandoned DNA and noting, in that context, that "[w]hile discretion is an inevitable aspect of police work, the risk of discriminatory treatment or harassment by the police surely increases when no legal justification for their actions is required"); Murphy, *supra* note 39, at 821 (recognizing that law enforcement databases "do not spread their burdens equitably if they are not fairly composed and adequately monitored").

²⁰⁶ Telephone Interview with Scott Rulong, *supra* note 57.

²⁰⁷ *Id.*

will start to generate database hits quickly. Left unstated is *how* the police “know” who is committing the crimes, and it is in that unstated assumption where prejudices and stereotypes lurk.

D. *Threatening Privacy Interests*

Given how law enforcement uses local databases, the expansion of this surveillance tool also represents a new threat to privacy different in degree and scope from the burden on privacy CODIS generates. It is different in scope because these databases will expand the portion of the population under surveillance.²⁰⁸ It is different in degree because those individuals who have already faced the burdens of other police surveillance techniques—stop-and-frisk or other informal police-citizen encounters—will now be asked to provide consensual DNA samples, allowing law enforcement to reach even deeper into their lives.²⁰⁹ This Section identifies and analyzes the privacy intrusions local databases raise.

One result of the expansion of local databases is that there will be increased surveillance of innocent people—individuals who have not committed a crime and who will most likely not commit crimes in the future. This is so because many local databases include profiles not just from arrestees and convicted individuals, but from victims, witnesses, and any person law enforcement targets who consents to providing a sample.²¹⁰ Undoubtedly, some of these individuals will ultimately be linked to a past or future crime. Yet, the majority of these individuals will never be the subject of a DNA hit. Furthermore, if law enforcement’s use of local databases follows the patterns of other surveillance techniques, people of color will disproportionately feel this increased surveillance of innocent people.²¹¹

Scholars have criticized over-inclusive surveillance techniques that scoop up large numbers of innocent people in order to identify the few actual offenders.²¹² Some scholars have proposed theoretical schemes to limit police activities that are over-inclusive in order to curb the harms borne by innocent

²⁰⁸ See *supra* Section II.C (discussing these databases).

²⁰⁹ See *supra* Section II.C (evaluating the potential impacts of these databases).

²¹⁰ See *supra* Section I.B (describing the practices in Palm Bay and Bensalem Township).

²¹¹ See, e.g., Capers, *supra* note 178, at 980 (recognizing that in the context of police investigatory stops “[s]tatistics . . . suggest that law-abiding minorities face the brunt of the additional discretionary decision-making permitted officers upon conducting a stop”).

²¹² See Bailey, *supra* note 28, at 1560 (recognizing that *Terry* stops, motor vehicle stops, and other police-citizen stops employ a “numbers game” that sweeps up many innocent people in an effort to find actual perpetrators); Rushin, *supra* note 197, at 9 (concluding that what he identifies as the “digitally efficient investigative state” “will invariably gather enormous amounts of data on innocent people”); Stuntz, *supra* note 29, at 1282-83 (recognizing that aggressive policing of street drug markets imposes significant costs on innocent people who happen to live in these areas); see also ALEXANDER, *supra* note 28, at 69-72 (characterizing this policing technique as “Kissing Frogs”).

people.²¹³ However, these schemes are in tension with the very premise of local databases. These databases are designed with the assumption that they will ultimately include a large number of DNA profiles from people who will never be linked to a crime. Law enforcement officials accept this outcome in exchange for the better odds that a larger database will yield more hits to actual perpetrators.²¹⁴

Some will argue that there is no, or at best only a very small, privacy deprivation that results from adding DNA profiles of innocent, law-abiding people to local databases, concluding that because these people will not commit crimes in the future their privacy interests are not diminished. For a variety of reasons, I disagree. First, DNA matches in local DNA databases will not only identify potential perpetrators of criminal activity, they also have the potential to highlight innocent, but highly personal and/or embarrassing information.²¹⁵ For example, the use of familial searches, a common practice for local databases, has the potential to identify previously unknown biological relationships.²¹⁶ Similarly, when police arrive at the scene of a burglary and ask the victim and her family to provide DNA samples for elimination purposes, the victim might be forced to tell the police that she was having an affair, and with whom she was having an affair, so as to eliminate the possibility that her affair partner is accused of the burglary.²¹⁷

In addition, there is the risk that awareness of one's DNA profile being included in a local database will alter behavior and limit self-expression. To be certain, altering behavior is one of the stated goals of DNA databases and all police surveillance activities.²¹⁸ Proponents and courts emphasize the ability of DNA databases to deter crime.²¹⁹ However, like other surveillance techniques,

²¹³ See, e.g., Bambauer, *supra* note 26, at 466 (arguing that police investigatory practices should be evaluated based on the likelihood that they increase hassle, which Professor Bambauer defines as "how much pain an investigatory program will impose on the innocent even when the program is moderately successful at detecting crime"); Bambauer, *War on Drugs*, *supra* note 196, at 135 (arguing that policing technologies should be restricted based on the degree to which they are over-inclusive and burdensome to innocent activity).

²¹⁴ See Telephone Interview with Fred Harran, *supra* note 18.

²¹⁵ See Bailey, *supra* note 28, at 1571 (rebutting the argument that innocent people should not oppose police surveillance because they do not have anything to hide, and recognizing that "[t]he problem is that even innocent conduct can sometimes be embarrassing or simply politically unpopular").

²¹⁶ See Murphy, *supra* note 16, at 315 (explaining this possibility in the context of familial DNA searches).

²¹⁷ See *id.*

²¹⁸ See, e.g., Capers, *supra* note 178, at 960 (presenting the argument that surveillance activities can help deter crime).

²¹⁹ See, e.g., *Haskell v. Harris*, 669 F.3d 1049, 1064 (9th Cir. 2012) ("The mere existence of the DNA database creates a strong deterrent effect. . . . A felony arrestee is less likely to commit another crime in the future if he knows that his DNA is catalogued in the State database."); see also AVINASH BHATI, URBAN INST. JUSTICE POLICY CTR., QUANTIFYING THE

genetic surveillance carries the potential to alter innocent behavior, curb unpopular behavior, and limit political and associational freedom. In the summer of 2012, the NYPD's use of its local database during the Occupy Wall Street protests demonstrated how genetic surveillance can chill political activity.²²⁰ The NYPD collected DNA from a chain that it believed protestors used, and it quickly compared the DNA to profiles from other unsolved crimes in the NYPD database.²²¹ When the profile from the chain matched to an unsolved murder, the news linking an Occupy Protester to a prior murder quickly gripped the national media.²²² However, almost as quickly as the sensational story broke, the NYPD admitted that the purported match was the result of a lab error.²²³ The aggressive use of DNA analysis at the scene of one of the protests and the fact that the purported link to a murder was leaked so quickly prompted criticism of the NYPD's practices. Professor David Kaye explained:

What's interesting is taking [the DNA] from a chain that so many people could have touched and then running that through the database of crime-scene samples I guess that's creative. They're either very committed to finding clues, no matter how weak, or they're out to get a group of people.²²⁴

In addition to chilling political expression, the expansion of genetic surveillance carries the potential for more insidious invasions of privacy. Professor Kimberly Bailey has characterized how ongoing and comprehensive police surveillance "has a chilling effect on poor people of color's self-determination, self-expression, and freedom of association."²²⁵ In more concrete terms, the expansion of genetic surveillance will affect routine daily

SPECIFIC DETERRENT EFFECTS OF DNA DATABASES vii (2010) ("[R]esearchers examined whether an offender's knowledge that their DNA profile has been entered into a database deters them from offending in the future.").

²²⁰ See Jesse Singal, *Occupy Murder Mess Points to Problems with New York's DNA Database*, DAILY BEAST (July 12, 2012, 4:45 AM), <http://www.thedailybeast.com/articles/2012/07/12/occupy-murder-mess-points-to-problems-with-new-york-s-dna-database.html> [<http://perma.cc/N3D8-JCKJ>].

²²¹ *Id.*

²²² See, e.g., Shimon Prokupez & Jonathan Dienst, *DNA Links Occupy Protest Scene to 2004 Murder*, NBC NEWS (July 10, 2012, 6:02 PM), http://usnews.nbcnews.com/_news/2012/07/10/12669069-dna-links-occupy-protest-scene-to-2004-murder?lite [<http://perma.cc/G9QC-V9EG>]; *Sarah Fox Case: DNA From 2004 Julliard Student Murder Scene Linked to Chain Used in Occupy Wall Street Protest*, CBS NEWS (July 11, 2012, 3:01 PM), <http://www.cbsnews.com/news/sarah-fox-case-dna-from-2004-julliard-student-murder-scene-linked-to-chain-used-in-occupy-wall-street-protest/> [<http://perma.cc/LH3T-ZV2X>].

²²³ See William K. Rashbaum & Joseph Goldstein, *DNA Match Tying Protest to 2004 Killing Is Doubted*, N.Y. TIMES, July 12, 2012, at A19.

²²⁴ Singal, *supra* note 220.

²²⁵ Bailey, *supra* note 28, at 1554.

decisions, such as whether to spend time outside with friends and which route to take to school or work so as to minimize the opportunity for an unwelcome encounter with the police.²²⁶

Local databases also present new privacy threats because they promise to expand the use of familial DNA searches.²²⁷ Such searches, which are performed after law enforcement fail to find an exact match to a known individual, offer law enforcement the fallback of trying to identify a family member of the actual perpetrator.²²⁸ Armed with the identification of a family member, law enforcement can pursue the family member to identify the actual source of the crime-scene DNA. Currently, CODIS restricts law enforcement's use of familial searches.²²⁹ Many states have also adopted laws prohibiting such searches.²³⁰ However, in the states where lawmakers have remained silent on this issue, local databases have the capability of performing familial searches.²³¹ Indeed, the ability to perform familial searching is one of the

²²⁶ See *id.* at 1570; Logan, *supra* note 15, at 1592 (“[T]hose having had their DNA collected and stored . . . will be justly wary of venturing outside, especially in areas already thought worthy of criminal suspicion (e.g., a ‘high crime’ or ‘drug blighted’ area).”). *But see* Capers, *supra* note 178, at 975 (characterizing the role that surveillance plays in limiting freedom of movement as a “de minimis” intrusion). See also *Papachristou v. City of Jacksonville*, 405 U.S. 156, 166 (1972) (recognizing, in the context of declaring a vagrancy law unconstitutional, the potential for police to abuse vague laws). The holding in *Papachristou* is applicable here. The Court explained:

Those generally implicated by the imprecise terms of the ordinance—poor people, nonconformists, dissenters, idlers—may be required to comport themselves according to the lifestyle deemed appropriate by the Jacksonville police and the courts. . . . [R]esult[ing] in a regime in which the poor and the unpopular are permitted to ‘stand on a public sidewalk . . . only at the whim of any police officer.’ . . . A presumption that people who . . . look suspicious to the police are to become future criminals is too precarious for a rule of law.

Papachristou, 405 U.S. at 170-71 (quoting *Shuttlesworth v. City of Birmingham*, 382 U.S. 87, 90 (1965)).

²²⁷ See Murphy, *supra* note 16, at 297 (“Familial searching refers generally to the idea of looking in a DNA database not for the person who left the crime-scene sample, but rather for a relative of that individual.”).

²²⁸ For a description of familial DNA searching and the issues it raises, see *id.* at 291 (evaluating constitutional and policy limitations for familial searches, including a description of why such searches have a disproportionate racial and ethnic impact). *But see* Kaye, *supra* note 12, at 112-13 (responding to Professor Murphy’s critique of familial searching and concluding that the practice is constitutional).

²²⁹ See NDIS MANUAL, *supra* note 25, at 74-76.

²³⁰ See, e.g., Jaros, *supra* note 15, at 1184-86 (describing such restrictions in the state of Maryland).

²³¹ See, e.g., Telephone Interview with Scott Rulong, *supra* note 57 (explaining SmallPond’s capability of supporting familial searching); see also Jaros, *supra* note 15, at 34 (observing that local law enforcement officials in Maryland have asserted a right to conduct familial searches with their local databases, despite the fact that a state law prohibits familial searches of Maryland’s statewide CODIS database).

reasons why the Arizona Department of Public Safety developed its non-CODIS database.²³²

The expansion of local DNA databases also brings into sharper focus the fears many privacy advocates raised about CODIS. In short, they feared that once the FBI's DNA database was created, it would be too tempting for law enforcement to be able to limit its use, causing the tool to evolve and reach deeper into our lives.²³³ CODIS's growth demonstrates the merit of these fears. CODIS expanded from an initial focus on collecting profiles from offenders convicted of certain violent crimes, to including all felony offenders, to now including all arrestees.²³⁴ Similarly, after first prohibiting familial searches, CODIS now permits them in certain circumstances.²³⁵ These advocates also fear what might come next, when technology allows us to glean even more information from an individual's DNA sample.²³⁶ They are particularly fearful of the possibility that law enforcement might use genetic samples to attempt to identify a genetic predisposition to crime.²³⁷

Finally, the expansion of local databases will contribute further to the erosion of privacy protections, to the extent that people come to expect increased surveillance. Fourth Amendment privacy protection is linked to society's reasonable expectations of privacy.²³⁸ As many have noted, this standard is fluid, but it has historically moved in the direction of society accepting lesser privacy protections. Law enforcement's expansion of genetic surveillance has contributed to this trend, and the trend will continue as it becomes routine for even small agencies to build local databases.

E. *Threatening Dignity Interests*

The expansion of local databases raises important issues about individuals' dignity interests and what role, if any, policing practices should play in

²³² Figarelli, *supra* note 140 (mentioning familial searching as a future plan for the program).

²³³ See Abrams & Garrett, *supra* note 61, at 43 (finding that law enforcement needs might create pressure to use DNA databases for reasons not consistent with why the databases were initially created).

²³⁴ See Elizabeth E. Joh, *Policing by Numbers: Big Data and the Fourth Amendment*, 89 WASH. L. REV. 35, 51 (2014) ("The rapid growth of American DNA databases can be attributed to the ever-expanding categories of those deemed eligible for compulsory DNA collection.").

²³⁵ See Kaye, *supra* note 12, at 111 (listing scholars who characterized the FBI's policy shift to allow familial searches as an example of mission creep).

²³⁶ See Abrams & Garrett, *supra* note 61, at 52 ("[Y]et in the future we may be able to generate far more information from DNA tests about a person . . .").

²³⁷ See, e.g., Joh, *supra* note 205, at 876 ("Not only can DNA provide nearly unassailable evidence of identity, it may one day be used to identify and segregate those who possess a 'crime gene.' The possibility of finding genetic causes for antisocial behavior is the most widely publicized research of 'behavioral genetics.'").

²³⁸ See *Katz v. United States*, 389 U.S. 347, 361 (1967) (Harlan, J., concurring).

respecting these interests. The view of many officials who promote local databases is that the databases promote dignity interests—chiefly through helping to ensure personal safety and protecting our property by efficiently identifying criminals.²³⁹ This is true, but it is only a partial truth. What has not been explored and fully considered are the dignity interests of those targeted for inclusion in the database.²⁴⁰ To the extent that these databases are disproportionately composed of people from socioeconomically marginalized groups, it is not surprising that officials have not considered these dignity interests.²⁴¹ This Section aims to remedy that shortcoming.

The specific threat to dignity interests that local databases raise exists on two levels—one immediate and the other less direct, though perhaps more damaging and lasting. First, there is the immediate indignity in the police publicly stopping a person and asking him or her to consent to providing a buccal swab. In that moment, despite law enforcement’s attempt to ensure that it only collects DNA samples through consent, police exert significant power over the targeted citizen.²⁴² Furthermore, the stop itself can signal to others that the targeted citizen is someone the police view as a potential threat, and this signal can carry a lasting stigma in society.²⁴³ While the stigma of law enforcement publicly identifying a person as a criminal suspect exists in many police-citizen encounters—e.g., any arrest—the effect of this stigma is arguably worse in the context of local DNA databases, because law

²³⁹ See, e.g., Telephone Interview with Fred Harran, *supra* note 18.

²⁴⁰ In setting up the discussion in this manner, I do not mean to imply that these categories are inherently separate from each other. For example, individuals who are included in local databases might also benefit, indirectly or directly, from the crime-solving aspects of the databases.

²⁴¹ See Jaros, *supra* note 15, at 1173 (“Poor urban minority communities, which experience a disproportionate share of police activity and are more likely to encounter questionable police practices, often have little political influence and lack the means to press legislators to openly debate issues.” (footnote omitted)).

²⁴² See generally Dana Raigrodski, *Property, Privacy and Power: Rethinking the Fourth Amendment in the Wake of U.S. v. Jones*, 22 B.U. PUB. INT. L.J. 67, 127 (2013) (arguing that the Fourth Amendment’s goal should be properly understood as limiting government’s exercise of dominating power, not the current focus on protecting property or privacy); *id.* at 100 (“[R]easonableness must focus not only on privacy and secrecy but also on bodily integrity and personal dignity.” (quoting Akhil Reed Amar, *Terry and Fourth Amendment First Principles*, 72 ST. JOHN’S L. REV. 1097, 1098 (1998))).

²⁴³ See Stuntz, *supra* note 29, at 1273 (advocating that the Fourth Amendment protect “the interest in being free from humiliation or indignity, or the interest in avoiding the stigma that comes from being publicly identified as a criminal suspect”); see also Logan, *supra* note 15, at 1580 (observing that while current courts have not continued the trend, “[e]arly courts . . . made clear their concern over the long-term stigmatizing effect of identity evidence, especially evidence collected from persons featured in rogues galleries but not convicted of crimes”). Local DNA databases are in some respects the modern equivalent of rogues galleries, particularly when they are populated with DNA profiles from individuals police identify as potential *future* suspects.

enforcement officials often seek consensual samples from individuals who have not been arrested, convicted, or even implicated in any specific crime. Rather, police target individuals based on a different, less articulable, and lower, level of suspicion.

The second dignity interest local databases undermine is both more serious and more difficult to measure. It has to do with the implicit (or sometimes explicit) message a police officer sends when she requests a consensual sample for inclusion in a local database. The message is not, “we are all in this together. We are gathering everyone’s DNA.” Rather, the message is, “I identified you as a potential future criminal. We need your DNA on file, forever, to be able to catch you when you most assuredly act on your criminal instincts.” Even if our ability to predict future criminal behavior improves dramatically, this message carries the potential for perverse and lasting effects on citizens targeted by police.²⁴⁴

Importantly, this message can also negatively impact the habits of police. Professor David Sklansky has observed this in the context of officers who repeatedly invade citizens’ privacy interests, a prospect that seems quite applicable to the populating of local databases.²⁴⁵ Professor Sklansky theorizes:

[P]rivacy violations are harmful not solely because of their effects on the victims, but also, and maybe mostly, because of the habits and ways of thinking they engrain in the violators. . . . [Such violations] can train individuals and organizations in habits of dehumanization and depersonalization.²⁴⁶

Scholars have criticized other aspects of the criminal justice system that cause similar harms in identifying the potential wrongdoer as someone with reduced dignity interests.²⁴⁷ For example, in the parole context, Professor Cecelia Klingele warns that our system reinforces divisive assumptions that those implicated in the criminal justice system are inherently different and, perhaps, less human than people who have not been arrested or convicted.²⁴⁸

²⁴⁴ See, e.g., Bambauer, *supra* note 26, at 486-87 (stating in the context of police overuse of stop and frisk that the community naturally questions “whether the government has overreached its authority. And when an innocent person is stopped more than once in a short time, the effects are much more severe. Repeated police stops are likely to whittle away a person’s sense of democratic belonging and trust. At best, the community will come to regard police presence as a mixed blessing.”).

²⁴⁵ See Telephone Interview with Fred Harran, *supra* note 18 (explaining his policy of removing profiles from anyone who requests the removal, but adding, “[i]f they want it out, [we’ll] take it out of the database! [But w]e’ll get it again!”).

²⁴⁶ See Sklansky, *supra* note 178, at 1107, 1111.

²⁴⁷ See, e.g., Bailey, *supra* note 28, at 1543 (describing privacy invasions that cause dignitary harms); Toni M. Massaro, *Shame, Culture, and American Criminal Law*, 89 MICH. L. REV. 1880, 1943-44 (1991) (discussing public shaming).

²⁴⁸ Cecelia Klingele, *Evidence-based Corrections and the Culture of Control*, 91 NOTRE

The expanded use of local DNA databases carries the potential to do the same thing.

F. *Undermining Police Legitimacy*

The manner in which local DNA databases undermine dignity interests contributes to another destabilizing force. Specifically, these databases carry the potential to undermine the legitimacy of law enforcement agencies. Here, again, it is important to recognize that local DNA databases can and do bolster the reputation of law enforcement in some respects.²⁴⁹ For example, Bensalem Township officials cited the goodwill the police generate from victims of crime by aggressively using DNA analysis to investigate minor property crimes.²⁵⁰ This goodwill almost certainly extends beyond the immediate victims to other community members gratified by law enforcement's use of cutting-edge technology to solve crime. Similarly, police use of local databases will also generate goodwill to the extent that this tool is effective in reducing crime and to the extent that police can effectively communicate these gains to the public. Despite this, the use of local databases also offers a powerful destabilizing force that needs to be measured when weighing whether to implement a local DNA database.²⁵¹

Many scholars have chronicled how police surveillance techniques undermine the legitimacy of law enforcement.²⁵² Perhaps most famously, law enforcement's use of informants has generated a backlash and fed stop snitching campaigns.²⁵³ Professor Alexandra Natapoff explains:

The potential implications of informant use for socially disadvantaged, crime-ridden communities are formidable: more snitches, more crime, more violence, more police-community dysfunction, and more distrust. . . . In neighborhoods where police relations are already tenuous,

DAME L. REV. (forthcoming 2015) (manuscript at 17) (on file with author) (discussing the "challenges faced by people 're-entering' society from prison in the areas of housing, employment, and family life"); *see also* Stuntz, *supra* note 29, at 1287.

²⁴⁹ *See supra* Section I.B (documenting the success in Palm Bay and Bensalem Township).

²⁵⁰ *See* Vandegrift video, *supra* note 109.

²⁵¹ *See, e.g.,* Harmon, *supra* note 31, at 1123 ("The voting public needs information about crime conditions, what its police departments do, and the costs and benefits of alternative policing practices, in order to develop and express preferences about policing in elections and other political venues.").

²⁵² *But see* Capers, *supra* note 178, at 988-89 (arguing that the increased use of police surveillance activities can increase police legitimacy, making it more likely that people will "voluntarily comply with the law" and "voluntarily assist the police in maintaining an ordered society").

²⁵³ *See, e.g.,* ALEXANDRA NATAPOFF, SNITCHING: CRIMINAL INFORMANTS AND THE EROSION OF AMERICAN JUSTICE 121-23 (2009).

informant policies can further erode residents' sense of personal security and social trust, and undermine public faith in the police.²⁵⁴

As local databases expand, it would not be surprising if the response from those targeted for these databases tracks the response in the informant context. Just as stop snitching campaigns are pervasive in some neighborhoods, despite the fact that a decision not to cooperate with police might generate more police attention on an individual, it is possible, and perhaps likely, that some communities will adopt informal "stop swabbing" campaigns to convince people not to provide consensual DNA samples to law enforcement. Such a response has the potential to slow the growth of local databases significantly, particularly because their growth is dependent on obtaining consensual samples.²⁵⁵

The inclusion of DNA profiles from victims and their family members can also cause these groups to question law enforcement's reliance on genetic surveillance. Palm Bay is one jurisdiction that has adopted the practice of including profiles from victims in its databases.²⁵⁶ Of course, police often need to collect DNA samples from victims or their families during investigations. For example, in sexual assault cases, law enforcement may need a sample from a consensual sex partner to exclude that person as the perpetrator. In an automobile theft, in which police try to identify the perpetrator by swabbing the steering wheel, the police will need reference samples to exclude people who were authorized to drive the car. However, including these profiles in local databases does not aid these investigations.

Other jurisdictions have included in their databases DNA profiles given to law enforcement during time sensitive investigations of violent crimes. For example, before the retrial of John Kogut for a rape and murder that post-conviction DNA testing ultimately proved that he and his co-defendants did not commit,²⁵⁷ prosecutors still had lingering questions about the source of foreign male DNA found in the victim's rape kit. Thus, local police conducted a DNA dragnet, collecting samples from over eighty men, including elimination samples from the victim's male relatives, samples from other men

²⁵⁴ *Id.* at 118. *See also* Harmon, *supra* note 5, at 792 (2012) (documenting the scholars who have "argued that *Terry* stops undermine police legitimacy, which in turn undermines public compliance with law and cooperation with law enforcement").

²⁵⁵ *See supra* Section I.B (explaining the importance of consensual samples for local databases).

²⁵⁶ In addition to Palm Bay, the Tucson Police Department also routinely includes DNA profiles from victims in its local database. Interview with John Leavitt, Assistant Police Chief, Tucson Police Dep't, in Tucson, Ariz. (May 9, 2014).

²⁵⁷ *See* John Kogut, INNOCENCE PROJECT, http://www.innocenceproject.org/Content/John_Kogut.php [http://perma.cc/CCG5-XSU2] (detailing John Kogut's exoneration after nineteen years in prison); *see also* Elissa Gootman, *DNA Evidence Frees 3 Men in 1984 Murder of L.I. Girl*, N.Y. TIMES, June 12, 2003, at.

who were identified in the initial investigation, and samples from male associates of Kogut and his co-defendants. None of these samples matched the DNA found in the victim. Despite this, the DNA samples were permanently added to the local database.²⁵⁸

Jurisdictions that add the profiles of victims or other elimination samples to local databases risk creating a powerful opposition to this tool.²⁵⁹ These individuals may conclude that it is unfair to make them submit to a lifetime of genetic surveillance in order for police to investigate the crime for which they were a victim. Some may refuse to report a crime so as to avoid being asked to provide a DNA sample.

The inclusion of DNA profiles from victims and others who provide elimination samples creates a more concrete risk, different from the indignity of not knowing that the police have collected one's DNA for future searches. Specifically, once a profile is included as a result of being a suspect, victim, or witness, such individuals run the risk of being implicated mistakenly in future criminal investigations. In this manner, the inclusion of these profiles has the potential to create future wrongful convictions—for example, turning a “Good Samaritan” who was willing to provide his sample to police during a DNA dragnet into a future suspect.²⁶⁰

The expansion of local DNA databases may also generate a delegitimizing force because these programs have developed with little or no input from local communities.²⁶¹ The lack of community input is the result of the political

²⁵⁸ See List of DNA Tests from Kogut Case (on file with author); Laboratory Report from Kogut Case (on file with author). Ultimately, Kogut was found not guilty at the trial, and prosecutors elected not to pursue a retrial against his co-defendants. His co-defendants were each awarded \$18 million judgments following a civil trial. See Robert E. Kessler, *Federal Jury Awards \$18 Million Each to Two Men Exonerated in '84 Killing, Rape*, NEWSDAY (Apr. 18, 2014), <http://www.newsday.com/long-island/federal-jury-awards-18-million-each-to-2-men-exonerated-in-84-killing-rape-1.7742144> [http://perma.cc/4628-N6VV].

²⁵⁹ See Murphy, *supra* note 16, at 316-17 (“[Familial] search methods threaten to erode the good will between such individuals—victims, voluntary cooperators, etc.—and the state, as those persons may fear that cooperation with the government will expose their relatives or themselves to later suspicion or apprehension.”).

²⁶⁰ See Albert E. Scherr, *Genetic Privacy & The Fourth Amendment: Unregulated Surreptitious DNA Harvesting*, 47 GA. L. REV. 445, 473 (2013) (“Once in the database, an ‘innocent’ individual may be the subject of a coincidental match with a crime-scene sample, a match that would likely at least require explanation or a partial match, a match that might lead to a court-authorized search of the family members’ genetic profiles.”).

²⁶¹ See Jaros, *supra* note 15, at 1178 (“Perhaps the most problematic aspect of police maintenance of rogue databases is the fact that the practice has never been subjected to significant public debate.”); *id.* at 1174 (“[P]olice practices generally develop without community participation and often with little or no notice to the local population. Not only are formal police procedures developed internally without significant community input, many dubious police practices are developed informally and are entirely insulated from public debate.” (internal citation omitted)).

system that does not adequately consider the interests of those most affected by local databases²⁶² and bypasses the local budgetary process by relying on federal funding.²⁶³ Notably, the availability of federal funding has insulated this surveillance technique from the institution that exerts the largest external oversight of policing practices: the local political process.²⁶⁴

It is clear that at least some of the departments aggressively developing local databases are cognizant of how this new policing tool may affect the citizens in their communities.²⁶⁵ This is not surprising.²⁶⁶ However, in their zeal to promote this tool, law enforcement agencies may have overestimated the benefits,²⁶⁷ while underestimating, and in some cases failing to consider, the delegitimizing forces these databases create. This is due, in part, to the fact that the local citizens who perceive the positive benefits of a local DNA database—reduced crime—are more than likely not the same citizens who bear the burdens of local databases.²⁶⁸ This result creates agency costs, whereby police

²⁶² See *id.* at 1173 (“Poor urban minority communities, which experience a disproportionate share of police activity and are more likely to encounter questionable police practices, often have little political influence and lack the means to press legislators to openly debate issues.” (internal citation omitted)).

²⁶³ See *supra* Section I.A.3 (discussing the federal funding of local law enforcement DNA databases).

²⁶⁴ See Harmon, *supra* note 31, at 1122-23 (“Policing in the United States is governed first and foremost by the local political process. Local communities elect council members and mayors who hire police chiefs and fund department budgets. Those police chiefs and the limits of those budgets largely dictate how much and what kinds of policing we have.”).

²⁶⁵ See Telephone Interview with John Blackledge, June 5, *supra* note 18 (“My opinion is that if we are not perceived [to be] a little conservative[] in our [reference sample] collection [methods] . . . we’re going to get an adverse reaction from the politic[ians].”); Telephone Interview with Fred Harran, *supra* note 18 (recognizing that if law enforcement is not cautious in its use of this tool there is a possibility that a court or legislature may severely restrict its use).

²⁶⁶ See Bailey, *supra* note 28, at 147 (“Social science research suggests that individuals are more apt to follow the law and to respect law enforcement officers when they feel that they have been treated fairly and respectfully.”); Harmon, *supra* note 5, at 811 (“[I]ncreasingly, chiefs recognize that harmful policing can undermine community relations, and that bad community relations can make law enforcement less effective and police officers less safe.”).

²⁶⁷ See Telephone Interview with Fred Harran, *supra* note 18 (characterizing local databases as “the best thing to come to law enforcement since fingerprints. It’s better than that. It’s just unbelievable.”).

²⁶⁸ See generally Stuntz, *supra* note 29; see also Harmon, *supra* note 5, at 811-12. (“[T]he harms of policing are unevenly distributed. Most citizens rarely experience them. . . . Instead, in many cities, a much smaller group of citizens pay much more than their fair share for policing. Research suggests, for example, that African Americans and Latinos are much more often stopped, searched, arrested, and hurt by the police than are others.” (internal citations omitted)).

chiefs are incentivized to value a vocal and politically powerful constituency at the expense of a less-powerful group.²⁶⁹

III. REGULATING LOCAL DNA DATABASES

Given the expansion of local databases discussed in Part I and the likely implications of this expansion analyzed in Part II, this Part addresses the regulatory challenges local databases present. It begins by recognizing that, while the databases are subject to some internal regulations, external regulation is needed to ensure that they are used appropriately. This Part then outlines the limitations of relying on existing external regulations. It concludes by recommending several substantive reforms and a few thoughts on the most effective manner in which to implement these reforms.

A. *The Need for External Regulation*

There is little need for regulation in areas where law enforcement is limited by practical considerations—e.g., the limits of technology or money.²⁷⁰ However, as is demonstrated in Part I, the underlying technology for DNA processing and the economics of genetic surveillance are no longer significant limiting forces slowing the expansion of local databases.²⁷¹ Even without these limiting forces, there still may not be a need for external regulation. Perhaps law enforcement should be trusted to adopt sufficient internal regulations to police its use of local databases. The Supreme Court recently recognized a role for internal, self-regulation of police investigative techniques.²⁷² However, several scholars argue that internal regulations of surveillance activities have proven unsuccessful.²⁷³ For example, Professor Rachel Harmon concluded that

²⁶⁹ See Harmon, *supra* note 31, at 1123 (“Police chiefs and mayors are likely to provide too much, overly intrusive, or ill-chosen policing practices if they experience reputational and political gains from doing so.”).

²⁷⁰ See, e.g., *United States v. Jones*, 132 S. Ct. 945, 963 (2012) (Alito, J., concurring) (“In the pre-computer age, the greatest protections of privacy were neither constitutional nor statutory, but practical.”); Stuntz, *supra* note 29, at 1277 (observing that the comparative lack of regulation of the use of undercover agents might be because this policing technique is so expensive that “cost alone limits police abuse”); William J. Stuntz, *Terrorism, Federalism, and Police Misconduct*, 25 HARV. J.L. & PUB. POL’Y 665, 671-73 (2002) (describing political and economic limitations that serve to regulate police practices).

²⁷¹ See *supra* Section I.A.2.

²⁷² See *Riley v. California*, 134 S. Ct. 2473, 2491 (2014) (conceding that it was “[p]robably a good idea” for law enforcement to “develop protocols to address [Fourth Amendment] concerns raised by cloud computing” (internal quotation omitted)).

²⁷³ See, e.g., Jaros, *supra* note 15, at 1156 (“The executive branch, however, demonstrates little interest in reining in police activity that does not violate clearly defined legal standards. Likewise, independent review boards lack the authority to impose limits on police activity that is not clearly proscribed by law.”); Rushin, *supra* note 197, at 6 (concluding that police “[d]epartments rarely self-regulate their collection of data or reveal their data retention policies”).

“[police] chiefs are usually better rewarded for maintaining order and reducing crime than protecting civil rights.”²⁷⁴ Professor Harmon’s words ring true in the context of local DNA databases.

Admittedly, our knowledge of the full range of internal regulations of these databases is limited. However, the practices of Palm Bay and Bensalem suggest that relying solely on self-imposed regulations in this context would be short-sighted and ineffective at addressing many of the potential negative implications identified in Part II. This is so for several reasons. First, all regulations, including internal regulations, impose costs.²⁷⁵ And in this context, those costs will be, or at least will be perceived to be, in tension with law enforcement’s primary goal of solving crime.²⁷⁶ Solving and deterring crimes is how law enforcement defines its success, and it is often under considerable pressure to do these two things. In such an environment, it is unlikely that law enforcement will identify and internalize all of the costs of a surveillance procedure, particularly when it believes that procedure to be effective at solving crime.²⁷⁷ Furthermore, in the context of local databases, the potential for law enforcement officials to overlook the harms associated with this tool is exacerbated because many early adopters of these databases hold extremely positive, and perhaps inflated, beliefs in the power of these databases,²⁷⁸ making it even less likely that they could exercise the independence necessary to identify potential external harms.²⁷⁹ Even if law enforcement officials are aware of the potential costs associated with certain practices, these officials

²⁷⁴ Harmon, *supra* note 5, at 811; *see also id.* at 810-11 (“Even the largest and most motivated departments struggle to determine whether problem-oriented policing or broken windows policing results in more intrusions on constitutional rights; which use of force policies are likely to be effective at reducing harm to suspects and officers; or how to implement a cost-effective early intervention system.”).

²⁷⁵ *See, e.g., Riley*, 134 S. Ct. at 2493 (“We cannot deny that our decision today will have an impact on the ability of law enforcement to combat crime. . . . Privacy comes at a cost.”).

²⁷⁶ Telephone Interview with Fred Harran, *supra* note 18 (“[M]y job is to lock up bad guys and prevent tomorrow’s victim. That’s my job. . . . [A]nd I’m going to do that at every means accessible to me.”).

²⁷⁷ Notably, law enforcement agencies lack the incentive to internalize all of the costs of their surveillance techniques. For example, the immunity provisions that partially shield law enforcement agencies in civil litigation brought pursuant to 42 U.S.C. § 1983 help to ensure that law enforcement agencies will underestimate at least some potential costs.

²⁷⁸ *See, e.g.,* Telephone Interview with Fred Harran, *supra* note 18.

²⁷⁹ *See* Bailey, *supra* note 28, at 1544 (“[A] serious analysis of the privacy harms [police surveillance] practices cause is essential in determining under what circumstances their law enforcement value outweighs privacy concerns.”); Harmon, *supra* note 5, at 793 (arguing that in order to measure and create “harm-efficient . . . policing” “scholars [must] lay the groundwork . . . [by] establishing theoretical accounts of what the relevant harms are and how the harms should be measured, and empirical work measuring and comparing harms and policing efficacy”).

often do not have an incentive to collect the data needed for effective regulation.²⁸⁰

The practices of Palm Bay provide one example of the non-alignment of interests between law enforcement and external regulators with respect to the type of information required to evaluate the potential harms caused by local databases. Specifically, Palm Bay records the race of each individual from whom it collects a DNA reference sample.²⁸¹ Such information is, of course, necessary to adequately evaluate the distributional effects of Palm Bay's database. However, Palm Bay maintains this information in one place only: on a paper form attached to the physical envelop used to store an individual's DNA sample. As a result, when Palm Bay received a public records request seeking information about the racial distribution of the known reference samples in its database, it responded that it could not provide that information because it was prohibitively costly to collect it from the paper records.²⁸² This does not mean that Palm Bay deliberately designed its procedures to mask potentially discriminatory practices.²⁸³ However, it does demonstrate that the interests of law enforcement do not adequately embrace the full range of information needed to regulate police practices.

In addition, the very nature of the genetic information collected by law enforcement in building local databases necessitates external regulation. While it is commonly accepted that one's forensic DNA profile does not reveal personal information other than one's identity, this may not always be the case.²⁸⁴ More importantly, even if genetics does not advance to the point where

²⁸⁰ See Harmon, *supra* note 31, at 1130 (“[P]olice chiefs and mayors have inadequate incentives to provide many of the kinds of data that would facilitate effective governance and regulation.”).

²⁸¹ See Telephone Interview with John Blackledge, June 6, *supra* note 44 (documenting that the race of the person associated with every reference sample is indicated on the outside of the envelope used to store the DNA sample).

²⁸² Telephone Interview with John Blackledge, June 5, *supra* note 18 (“[W]e don’t have the funding to capture that data. . . . [A]ll of that data is handwritten on envelopes that are shoved in a file cabinet [A]ll we do is . . . when all these envelopes come in, they take a photographic image of it, and they put in the name and date of birth so we can separate it.”); see also Harmon, *supra* note 31, at 1129 (“Even when departments collect information, they may do so in ways that make it impossible to aggregate the records or compare them with data from other departments. Departments often, for example, keep only paper files and use anomalous report forms and categories.”).

²⁸³ Rather, law enforcement agencies often have extremely practical reasons for not collecting the type and amount of information needed for effective regulation. See Harmon, *supra* note 31, at 1131 (“Most significantly, police chiefs and politicians experience much of the cost of increased investment in obtaining information—in the form of delayed decision-making, opportunity costs, and increased accountability—but usually internalize only some of the benefits of improved policy.”).

²⁸⁴ See Murphy, *supra* note 15, at 180 (“[T]he Department of Justice itself is sponsoring research into the intersection of genetics and delinquency.”).

one's forensic DNA profile can reveal personal information, law enforcement retains more than the DNA profile, which is comprised of only a tiny fragment of an individual's entire DNA sequence. Rather, it retains the original DNA sample, from which law enforcement could glean extremely personal information.²⁸⁵ The sheer scope of the genetic information that law enforcement has access to with the DNA sample demands external regulation.²⁸⁶

Ultimately, it is foolish to assume that law enforcement agencies engaged in the "often competitive enterprise of ferreting out crime"²⁸⁷ will adopt appropriate policies without external oversight. The pressure agencies face to solve crimes has distorted police practices in other contexts,²⁸⁸ and it is a reasonable conclusion that the same pressures might push law enforcement to utilize local DNA databases too aggressively.²⁸⁹ Furthermore, even if a particular agency adopts appropriately strict internal regulations, there still may be a need for external regulations to address deliberate misuse of this tool by individual bad actors.²⁹⁰

B. *Existing External Regulations Are Not Sufficient*

Having argued for the need for external regulation of local databases, it is necessary to explore who is capable of regulating this tool and whether existing external regulations are sufficient. This Section demonstrates that Congress and courts have been integral in regulating CODIS, however these regulations do not reach local databases. Thus, new regulations are needed.

There is a significant debate among scholars and in the courts about which regulatory body—legislatures or courts—is more capable of regulating police surveillance techniques, particularly when the techniques involve evolving technology. Some advocate for courts to be the main source of regulation.²⁹¹

²⁸⁵ See Telephone Interview with John Blackledge, June 5, *supra* note 18 (confirming Palm Bay's practice of retaining DNA samples).

²⁸⁶ See, e.g., Sklansky, *supra* note 178, at 1100 ("None of this is to say that surveillance is harmless. Information is power: the more the government knows about people, the more it can do to them. Any society that hopes to remain democratic should worry about the government accumulating too much power and scrutinize how the government uses the powers it allowed to amass.").

²⁸⁷ *Terry v. Ohio*, 392 U.S. 1, 12 (1968) (quoting *Johnson v. United States*, 333 U.S. 10, 14 (1948)).

²⁸⁸ See, e.g., Brandon L. Garrett, *The Substance of False Confessions*, 62 STAN. L. REV. 1051, 1066 (2010) (describing the phenomenon of "contaminated confessions," whereby police "feed[] or leak[]" key facts to suspects, who then recount those facts in their false confessions).

²⁸⁹ See, e.g., Singal, *supra* note 220 (reporting Professor David Kaye's suspicion that the NYPD used its local database to target Occupy Wall Street protesters).

²⁹⁰ See, e.g., Harcourt, *supra* note 164, at 6 (reporting on NSA analysts being caught trawling databases "for inappropriate material on partners or love interests").

²⁹¹ See, e.g., Murphy, *supra* note 168, at 489-90 ("[L]egislatures have not consistently

Others emphasize the virtues of legislative regulation.²⁹² And still others recommend a hybrid approach.²⁹³ Notably, CODIS is regulated through an “interbranch dialogue,”²⁹⁴ relying on self-imposed limits adopted by the FBI,²⁹⁵ federal statutes,²⁹⁶ and the Supreme Court.²⁹⁷ In contrast to the comparatively extensive regulation of CODIS, local databases have generated very few regulations.²⁹⁸ And constitutional provisions, including the privacy interests protected by the Fourth Amendment, do not reach law enforcement’s use of local databases in most instances.²⁹⁹

With respect to federal legislation, while several laws regulate the use of genetic information in other settings,³⁰⁰ no federal laws regulate law

risen to defend privacy, even in cases where the Constitution has not entered the field or has opened the door to legislative action, pointing to failures in political process. . . . Without the Court, important police activities—such as interrogations of suspects—would otherwise go wholly unregulated.” (internal citations omitted)).

²⁹² See, e.g., Harmon, *supra* note 5, at 776 (“Constitutional rights are, however, structurally ill-suited to balance societal interests in law enforcement and individual freedom.”); Joh, *supra* note 205, at 881 (“[L]egislators can offer flexibility and greater protection where judicial interpretation of the Fourth Amendment falls short.”). See also *United States v. Jones*, 132 S. Ct. 945, 964 (2012) (“In circumstances involving dramatic technological change, the best solution to privacy concerns may be legislative.”); Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801, 858 (2004) (arguing that legislatures “possess a significant institutional advantage” over courts in regulating emerging technologies in criminal investigations);

²⁹³ See, e.g., Murphy, *supra* note 168, at 537-38 (“[I]t is undesirable for either the Court or Congress to assume sole or even primary responsibility for regulating privacy in the twenty-first century. The task is simply too complex to leave to one or the other I propose that the branches should work cooperatively to define and protect privacy as regards criminal justice interests.”).

²⁹⁴ *Id.* at 538.

²⁹⁵ For example, the FBI created the NDIS Operations Procedures Board to identify and create the standard operating procedures for CODIS. See NDIS MANUAL, *supra* note 25, at 5.

²⁹⁶ DNA Identification Act of 1994, Pub. L. No. 103-322, § 210301, 108 Stat. 2065.

²⁹⁷ See, e.g., *Maryland v. King*, 133 S. Ct. 1958, 1979-80 (2013) (upholding Maryland’s statute providing for the collection of DNA samples from arrestees).

²⁹⁸ See Jaros, *supra* note 15, at 1182 (“Although legislatures have fashioned privacy safeguards for the specific databases that they established by statute, lawmakers have proven reluctant to investigate and constrain the police’s ability to assemble and maintain their own searchable genetic records.”).

²⁹⁹ See *id.* (“Similarly, courts have frequently refused to find constitutional limits on the police’s authority to assemble and maintain DNA databases.”).

³⁰⁰ See, e.g., Genetic Information Nondiscrimination Act of 2008, Pub. L. No. 110-233, 122 Stat. 881, 881-922 (preventing genetic information from being used to restrict health insurance coverage or considered in employment decisions); Personal Responsibility and Work Opportunity Act of 1996, Pub. L. No. 104-193, 110 Stat. 2105 (codified at 42 U.S.C.

enforcement's use of local databases. And, although every state has adopted legislation regulating its participation in CODIS,³⁰¹ only three states—Alaska, Vermont, and Washington—have legislation regulating local DNA databases.³⁰² Vermont expressly prohibits law enforcement from building local DNA databases.³⁰³ Alaska and Washington laws are only slightly less restrictive, permitting local databases, but requiring them to comply with CODIS regulations.³⁰⁴

The lack of legislative interest in regulating local DNA databases is not surprising.³⁰⁵ Absent a public outcry, there is normally little political upside for politicians to initiate legislation to curb police use of a tool that law enforcement identifies as effective.³⁰⁶ And the possibility of a public outcry resulting from surveillance techniques like local databases, which disproportionately impact people with comparatively little socioeconomic standing and political power, seems unlikely because “citizens tend not to see themselves as the subjects of future police investigations.”³⁰⁷ Furthermore, even if policymakers would be interested in regulating a particular surveillance

§§ 601-619 (2012)) (regulating the use of genetic testing to identify parents of children seeking government assistance).

³⁰¹ See Kregg, *supra* note 43, at 808 n.13.

³⁰² While these are the only states with laws explicitly regulating local DNA databases, other states have laws that, while designed to address CODIS, would affect the operation of local databases. For example, several state laws regulate law enforcement's use of familial DNA searching. See generally Murphy, *supra* note 16.

³⁰³ See VT. STAT. ANN. tit. 20, § 1938(e) (Supp. 2011) (“Except as provided in section 1939 of this chapter, no DNA records derived from DNA samples shall be aggregated or stored in any database, other than CODIS and the state DNA database, that is accessible by any person other than by the department for the purpose for which the samples were collected.”). A bill introduced in the New York State Senate in 2013 also would have prohibited the creation of local DNA databases, but the proposed legislation did not become law. See S.B. A4394A-2013, 2013 Sen., Reg. Sess. (N.Y. 2013), <http://open.nysenate.gov/legislation/bill/A4394a-2013> [<http://perma.cc/E7NG-59YB>].

³⁰⁴ See ALASKA STAT. § 44.41.035(d) (2014); WASH REV. CODE § 43.43.758(1) (2014).

³⁰⁵ See Stephanie K. Pell & Christopher Soghoian, *A Lot More Than a Pen Register, and Less Than a Wiretap*, 16 YALE J.L. & TECH. 134, 157 (2013) (observing that one of the early court opinions addressing StingRay technology concluded that “no authority, including the Fourth Amendment, either authorizes or limits the government's use of [this surveillance practice]”); Rushin, *supra* note 197, at 6 (“Currently only a few states in the country regulate the use of any type of police surveillance technology.”).

³⁰⁶ See, e.g., Jaros, *supra* note 15, at 1162 (“The politics of crime are not particularly conducive to the vigorous regulation of law enforcement.”); *id.* at 14 (“[Legislators] are generally reluctant to suffer the political costs of limiting police discretion in favor of criminal suspects' privacy interests.”).

³⁰⁷ *Id.* at 1173; see also *id.* (concluding that this lack of foresight makes it “unlikely [that citizens will] push their legislators to examine questionable policing methods ex ante”).

method, they are often not notified of new techniques in advance, leaving the new methods to gain a foothold absent external oversight.³⁰⁸

Just as legislatures have been silent, the Constitution also does not provide adequate limitations on the use of local databases. There are two reasons why this is so, and each relates to how local agencies obtain DNA samples to populate their databases. First, and most importantly, local databases rely on obtaining reference samples by consent, as opposed to compulsion, rendering Fourth Amendment protections inapplicable.³⁰⁹ Second, law enforcement agencies have populated their databases by collecting so-called abandoned DNA, relying on the Fourth Amendment's inapplicability to instances where individuals demonstrate their lack of a reasonable expectation of privacy through abandonment.³¹⁰

C. *Proposed External Regulations*

Designing a regulatory scheme for local databases is not without its challenges. For example, while this Article advances our understanding of law enforcement's use of these databases, there remain significant gaps in our collective knowledge. We do not know how many local databases exist. We do not know how many agencies use products like SmallPond, which give local officials complete discretion over which searches to perform. We have limited knowledge of which databases include profiles from victims, witnesses, or

³⁰⁸ See Pell & Soghoian, *supra* note 305, at 143-44 (“[I]f statutory authorities regulating law enforcement surveillance technologies and methods are to have any hope of keeping pace with technology, some formalized mechanism must be established through which complete, reliable and timely information about new and existing government surveillance methods and technologies shall be brought to the attention of Congress.”); *id.* at 144 (“Congress cannot begin to address the policy challenges posed by new surveillance technologies in the absence of adequate notice about their existence and actual or reasonably likely use by law enforcement.”); see also Harmon, *supra* note 31, at 1121 (“[D]ependable information about policing is crucial to governing the police effectively and yet is difficult to find.”).

³⁰⁹ See *supra* Section I.B. With respect to obtaining DNA samples through compulsion, the Supreme Court has sanctioned the collection of DNA from arrestees. See generally *Maryland v. King*, 133 S. Ct. 1958 (2013). But see Bailey, *supra* note 28, at 1561 (recognizing in the *Terry* context that “[m]ost individuals do not feel free *not* to give such consent, especially if they are poor or of color”); *id.* at 1564 (“Refusal of consent to a search or speech against an officer’s actions could potentially result in retaliation in the form of a resisting arrest charge, physical violence, or future harassment.”); Raigrodski, *supra* note 242, at 105 n.239 (recognizing that the Supreme Court often relies on the “fiction” that police-citizen encounters are consensual).

³¹⁰ See *California v. Greenwood*, 486 U.S. 35, 40 (1988) (holding that Fourth Amendment protections do not extend to garbage left outside a home); Joh, *supra* note 205, at 860 (“[T]he collection of abandoned DNA is virtually unregulated, largely because abandoned DNA has been likened to trash.”); *id.* at 865 (“With abandoned DNA, existing Fourth Amendment law appears not to apply at all.”).

juveniles and which agencies collect abandoned DNA or use surreptitious methods to collect reference samples. Without a comprehensive understanding of these databases, they remain extremely difficult to regulate.

In addition, where we do have information about local procedures, it is clear that there remains significant variation in the use of this tool.³¹¹ Furthermore, it is also difficult to design an effective regulatory scheme in this context because the technology itself is evolving and because our understanding of whether forensic DNA profiles may ultimately be used to predict behavioral traits remains limited.³¹² As such, any proposed regulations should be flexible.

With these limitations in mind, this Section outlines five substantive regulations that should be adopted to oversee the use of local databases. Two scholars have previously proposed regulations that would severely curtail law enforcement's use of these databases. For example, Professor Elizabeth Joh has proposed that law enforcement should be required to obtain a "warrant whenever police seek abandoned DNA from a targeted person."³¹³ Professor Wayne Logan has gone further, recommending that the "government should be barred from using identity evidence secured from a lawful arrestee for any purpose other than identity verification."³¹⁴ The recommendations offered below would not go as far. However, they would help limit many of the potential negative implications of local databases while at the same time leaving sufficient room for law enforcement to expand its use of DNA to high-volume crimes.

1. Requiring Adequate Record Keeping

Maintaining adequate and accurate records is crucial to regulating law enforcement's use of local databases.³¹⁵ Agencies using local databases should be required to record aggregate data regarding the DNA profiles in their databases. This information should include the percentage of DNA profiles from known individuals versus profiles derived from crime-scene evidence. Furthermore, the DNA profiles from known individuals should be further disaggregated. For example, regulations should mandate the collection of

³¹¹ This is to be expected. The promise of exerting local control over forensic DNA databasing was one of the driving forces behind the fragmentation of genetic surveillance.

³¹² See Murphy, *supra* note 15, at 20 ("[The] Department of Justice itself is sponsoring research into the intersection of genetics and delinquency.").

³¹³ Joh, *supra* note 205, at 881; see also Scherr, *supra* note 260, at 526 (arguing that police should not be required to obtain a warrant at the time they collect the abandoned DNA sample, but should be required to obtain a warrant before performing the DNA analysis).

³¹⁴ Logan, *supra* note 15, at 1905; see also *id.* at 1604 ("[I]dentity evidence should be retained only on individuals lawfully convicted of crimes.").

³¹⁵ Professor Erin Murphy has explored how reporting requirements can increase accountability and protect privacy interests. See Murphy, *supra* note 168, at 526 ("Although forcing compliance may be difficult, many federal privacy statutes . . . nonetheless enhance accountability by imposing documentation and public-reporting rules.").

information regarding whether the known profiles were collected by consent, from abandoned biological material, or surreptitiously. Law enforcement should also be required to collect information regarding the sources of the known DNA profiles—that is, whether the profile was generated from a suspect, a victim, a victim’s family member, or a witness. Regulations should require the collection of data on the age, race, and gender of the individuals whose profiles are in local databases. In addition to collecting this aggregate data, law enforcement should be required to track these same categories for each individual officer who collects reference samples. Finally, this data should be recorded in a manner that makes it readily accessible to the public.

If law enforcement is not required to collect this information, it will be difficult to monitor whether local databases are utilized in a fair manner and if their burdens are sufficiently distributed.³¹⁶ This is particularly true because law enforcement officials have considerable discretion in who they target.³¹⁷ For example, it would be important to know if a law enforcement agency only collects abandoned DNA samples from young men of color. It would also be helpful to know if an individual officer’s practices follow the same pattern.³¹⁸ Without this information we will not be able to reliably measure the extent of several of the potential negative consequences identified in Part II.

2. Regulating Consent

As is demonstrated in Section I.B, law enforcement’s use of local databases is dependent on collecting consensual samples from known individuals. In particular, local databases are different from CODIS because they often include profiles from people police have identified as suspects or potential future suspects. The reliance on consensual samples as opposed to legally coerced samples—e.g., from arrestees or convicted individuals—renders it important for regulations to address under what circumstances law enforcement should be able to request a consensual sample. Regulations should also help to ensure that consent is voluntary.

³¹⁶ Periodic auditing of local databases will also ensure that the information in these databases is reliable. For example, when the FBI audited its national database in July 2013, it identified errors in approximately 170 DNA profiles, and some of these errors had hindered police investigations. See Joseph Goldstein, *F.B.I. Audit of Database That Indexes DNA Finds Errors in Profiles*, N.Y. TIMES, Jan. 24, 2014, at A15.

³¹⁷ Notably, the limited role that discretion plays in Maryland’s arrestee DNA collection law, was noted by the Court when it upheld the constitutionality of the law. See *Maryland v. King*, 133 S. Ct. 1958, 1970 (2013) (“The DNA collection is not subject to the judgment of officers whose perspectives might be colored by their primary involvement in the often competitive enterprise of ferreting out crime.” (internal quotation marks omitted)).

³¹⁸ See I. Bennett Capers, *Rethinking the Fourth Amendment: Race, Citizenship, and the Equality Principle*, 46 HARV. C.R.-C.L. L. REV. 1, 42 (2010) (suggesting that auditing an officer’s stop-and-frisk practices might cause the officer to alter his or her practices, which may limit the influence of negative racial biases in policing).

In the absence of regulation, law enforcement can approach anyone and request a consensual DNA sample for inclusion in its local database. Furthermore, no external regulation requires that law enforcement disclose to the targeted individual its plan to add the profile to the local database. Without regulation, there are only two things limiting law enforcement's ability to request a sample from every person police encounter. First, although DNA processing is significantly less expensive than it was even five years ago, it is still economically prohibitive to develop DNA profiles from everyone willing to submit samples. Second, and in part motivated by those costs, some agencies have adopted minimal internal regulations to limit from whom they seek reference samples.³¹⁹

However, these limitations will ease as the cost of DNA processing declines. As a result, it is reasonable to consider whether law enforcement should face limits on seeking consensual DNA samples. Privacy scholars often frame this question as whether one has a right to be left alone.³²⁰ Courts have addressed this issue in regulating police-citizen encounters. For example, New York courts have identified a common law right that provides more protection than the Fourth Amendment to limit law enforcement's ability to initiate consensual searches. In short, "[b]efore the police may stop a person pursuant to [law enforcement's] common law right to inquire there must exist at that moment a founded suspicion that criminal activity is present."³²¹ In *People v. Hollman*,³²² New York's highest court applied this right in reversing a narcotics conviction that resulted from narcotics found after a citizen consented to the search of his bag.³²³ The court held that the undercover officer did not possess sufficient suspicion even to seek consent to search the bag.³²⁴

Admittedly, the protection offered by *Hollman* is limited. It would not prevent officers from seeking consensual DNA samples from individuals for whom police possessed a reason to stop.³²⁵ Furthermore, the Supreme Court's holding in *Whren* would seem to permit pretextual stops designed to give police an opportunity to seek consensual DNA samples.³²⁶ However, recognizing a minimal right to be free from law enforcement's request for a consensual sample—which is often an inherently coercive interaction given the

³¹⁹ See, e.g., Telephone Interview with John Blackledge, June 3, *supra* note 19 (describing how he instructed his officers not to collect swabs from people who were ticketed for failing to renew their driver's licenses).

³²⁰ See Scherr, *supra* note 260, at 507 (raising this question in the context of the privacy interest one maintains in public).

³²¹ *People v. DeBour*, 352 N.E.2d 562, 566 (N.Y. 1976).

³²² 590 N.E.2d 204 (N.Y. 1992).

³²³ *Id.* at 212.

³²⁴ *Id.*

³²⁵ See, e.g., *Terry v. Ohio*, 392 U.S. 1, 13 (1968).

³²⁶ *Whren v. United States*, 517 U.S. 806, 819 (1996).

imbalance of power between law enforcement and the target—would limit law enforcement’s discretion to some degree.

Independent of whether law enforcement should be prohibited from seeking consensual DNA samples without limitation, whenever seeking samples by consent, law enforcement should at least be required to disclose its plans for the sample. If those plans include adding the profile to law enforcement’s database, then that should be made clear. Such a requirement would help ensure that the consent was truly voluntary.

3. Prohibiting the Inclusion of Victim DNA Profiles

Regulations should prohibit local law enforcement from including DNA profiles from victims in local databases. The practice of including victims’ profiles is driven by law enforcement’s presumption that there is often overlap between crime victims and perpetrators.³²⁷ Indeed, many law enforcement officials interviewed during this project repeated variations on the phrase, “Today’s victim is tomorrow’s perpetrator.”³²⁸ Without questioning the accuracy of this presumption, there remain many reasons to prohibit law enforcement from including victim profiles in local databases.

Crime victims seek the assistance of law enforcement to remedy the wrong they faced. In the context of the property crimes that are often the focus of local databases, victims seek to recover their belongings, to obtain a police report needed to file an insurance claim, or simply to alert law enforcement that an offender has targeted them so as to help law enforcement identify patterns or develop leads. In reporting crimes to police, victims voluntarily give up some privacy. Reporting the crime may mean that law enforcement enters their home, takes a statement from them, talks to other potential witnesses, and, in some cases, collects a DNA sample for elimination purposes.

To the extent that law enforcement turns the tables on a victim, making the victim the target of law enforcement’s broader investigative and surveillance activities, it undermines the justification for their initial intrusion. Collecting DNA samples from victims for inclusion in databases adds a significant cost to what victims must already bear when reporting a crime. Such a practice requires victims not only to submit to the immediate invasion of privacy that results from seeking law enforcement’s help, but it also requires victims to submit to a lifetime of genetic surveillance. This cost will undoubtedly cause some victims to avoid calling police. Others may reluctantly seek assistance from police, but they will remain dismayed that they were required to pay a genetic-surveillance tax in exchange for police assistance.

³²⁷ See generally David C. Pyrooz et al., *The Contribution of Gang Membership to the Victim-Offender Overlap*, 51 J. RES. IN CRIME & DELINQ. 315 (2014).

³²⁸ See, e.g., Interview with John Leavitt, *supra* note 256 (explaining that in the Tucson drug trade “[the] victims become suspects quickly, and [the] suspects become victims quickly”).

4. Time Limits for Suspect DNA Profile Retention

Regulations should address how long law enforcement is able to retain DNA profiles in local databases. For example, if police collect a consensual sample from a twenty-two-year-old suspect that an officer stopped while walking down the street in a manner that caught the officer's attention, that profile should be removed automatically from the database after five or ten years if, during that period, the profile had not been matched to a crime-scene DNA profile. Such a regulation would at least cap what would otherwise have been a lifetime of genetic surveillance for the twenty-two-year-old who simply appeared suspicious.

Given the Supreme Court's holding in *Maryland v. King*, in which it upheld the constitutionality of collecting DNA samples from arrestees,³²⁹ the time limit restrictions could be limited to samples collected from mere suspects, as opposed to those arrested or convicted of crimes.³³⁰

5. Monitoring Use

Regulations should also require adequate procedures to ensure that individual officers do not abuse the use of local databases.³³¹ For example, the architect of Palm Bay's database emphasized his stern warning that officers not use the database for personal snooping.³³² But stern warnings are not enough. The infrastructure for local databases already includes the ability to monitor individual users. For example, SmallPond includes a feature called Audit Trail, which produces a record of every user interaction with the system, including which searches were performed and which DNA profiles were uploaded.³³³ Given that this tool is readily available, law enforcement agencies should be required to utilize it to help ensure against misuse.³³⁴

³²⁹ *Maryland v. King*, 133 S. Ct. 1958, 1980 (2013) ("When officers make an arrest supported by probable cause to hold for a serious offense and they bring the suspect to the station to be detained in custody, taking and analyzing a cheek swab of the arrestee's DNA is . . . a legitimate police booking procedure that is reasonable under the Fourth Amendment.").

³³⁰ See, e.g., Rushin, *supra* note 197, at 54 (proposing a one-year limit on law enforcement's ability to store information collected from surveillance cameras and automatic license plate readers).

³³¹ See, e.g., Harcourt, *supra* note 164, at 6.

³³² See Telephone Interview with John Blackledge, June 5, *supra* note 18 ("One of the things I've warned the officers about [is] if you think your wife or boyfriend or husband is screwing around on you, because you come home and see a beer can, and we catch you submitting the swab of the beer can to see if the profile [identifies someone], we're going to be arresting you for that.").

³³³ See Press Release, SmallPond, SmallPond™ 2.7 Release Adds Audit Trail and Improved Import Features (April 21, 2014), <http://www.smallpondllc.com/NewsDetail.aspx?ID=19> [<http://perma.cc/3C9W-QCSU>].

³³⁴ Cf. POLICE EXEC. RESEARCH FORUM, HOW ARE INNOVATIONS IN TECHNOLOGY TRANSFORMING POLICING? 14 (2012) (documenting that the Chicago Police Department logs

D. *Implementing Reforms*

Despite the dearth of statutory or constitutional restrictions of local databases,³³⁵ there is reason to believe that the reforms outlined above could be adopted. Legislatures have demonstrated the ability to protect privacy interests in other settings, most notably demonstrating a remarkable nimbleness in quickly passing legislation regarding law enforcement's use of drones.³³⁶ Additionally, the Court's interpretation of the reach of the Fourth Amendment may evolve.³³⁷ Furthermore, the promise of at least some minimal external regulation is more likely given that some of the early adopters of local databases have indicated openness to regulation.³³⁸

The most effective way to implement the reforms recommended in Section III.C is through federal legislation. Given that federal laws already regulate law enforcement's use of genetic surveillance in CODIS, there is precedent for federal regulation in this space. One obvious challenge to such regulation is ensuring that regulations are sufficiently flexible to allow law enforcement to continue using local databases while limiting the external costs discussed in Part II. The reforms offered here are designed to provide that flexibility.

A new federal law could follow the statutory model used for CODIS. For example, current federal law requires states to certify their compliance with quality standards for DNA processing and with privacy protections for genetic information in order to qualify for participation in CODIS.³³⁹ A new, expanded law could require that in exchange for participation in CODIS, states certify

all actions individual police officers take with its network of surveillance cameras).

³³⁵ See Jaros, *supra* note 15, at 1180 ("To date, neither courts nor legislatures have proven particularly effective at limiting law enforcement's ability to assemble and exploit the genetic material that they acquire.").

³³⁶ See generally Harmon, *supra* note 5, at 814-15 ("Congress has long regulated some kinds of searches and has limited new means of obtaining and using private information deferentially regulated by the Court."); Brandon Nagy, Note, *Why They Can Watch You*, 29 BERKELEY TECH. L.J. 135 (2014) (documenting legislation regulating law enforcement's use of drones); see also Video Privacy Protection Act, 18 U.S.C. § 2710 (2012), amended by Video Privacy Protection Act Amendment Act of 2012, Pub. L. No. 112-258, 126 Stat. 414 (2013) (protecting privacy by limiting access to one's video rental history).

³³⁷ See generally *United States v. Jones*, 132 S. Ct. 945 (2012) (signaling the possibility that the Court may be ready to apply the Fourth Amendment to long-term police surveillance on public roads).

³³⁸ See Telephone Interview with John Blackledge, June 6, *supra* note 44 ("I would actually be one of those people that's favorable to hav[ing] some legislative guidelines."); *id.* ("I would like to see some Congressional or legislative controls, so that goofy crap doesn't happen."); Telephone Interview with Fred Harran, *supra* note 18 (advocating for a commission or some type of regulatory body to adopt standard procedures for the use of local DNA databases).

³³⁹ See, e.g., 42 U.S.C. § 14132(c) (2012) (granting the FBI authority to prohibit states from participating in CODIS if they do not meet certain quality standards and follow minimal privacy protections).

that local databases in their jurisdictions follow the five reforms outlined above. There is good reason to expect that such a law would quickly cause states to comply.³⁴⁰ While local databases are expanding, states still value their participation in CODIS.³⁴¹ Such a regulatory structure would also respect the ability of states to adopt stricter limits on the use of local databases.³⁴²

While a federal law would be most effective, there are other options to achieve some of the benefits of the reforms outlined in Section III.C. For example, each state could be encouraged to adopt a model statute that includes these reforms. The prospect of quick action by each state seems considerably less likely to occur without the stick of being excluded from CODIS that could be a part of federal regulation. However, Alaska, Vermont, and Washington have demonstrated that some states are capable of regulating local databases.

In addition, there are options aside from legislation. Existing regulatory bodies could promote these reforms as best practices for local DNA databases. For example, the recently created National Commission on Forensic Science (“NCFS”), a joint project of the Department of Justice and the National Institute of Standards and Technology (“NIST”), describes part of its mission as “reduc[ing] fragmentation and improv[ing] federal coordination of forensic science.”³⁴³ Similarly, NIST’s newly-formed Organization of Scientific Area Committees (“OSACs”) represents another potential source for external regulation.³⁴⁴ Whereas the NCSF will outline broad policies, the OSACs are designed to adopt specific “standards and guidelines” for each forensic discipline.³⁴⁵ These organizations, which include national leaders from law enforcement, practice, and academia, are limited to adopting non-binding recommendations. However, even recommended procedures could be powerful forces to alter current practices.

Finally, while this Article argues that external regulation is optimal and necessary,³⁴⁶ it is at least possible that the early adopters of local databases could organize a working group to develop uniform standards. Director Harran of Bensalem has considered holding a meeting with the agencies that use local

³⁴⁰ The care that Arizona took to ensure that the creation of its statewide non-CODIS database would not prohibit Arizona’s continued participation in CODIS demonstrates that such a requirement would be a powerful motivator for states to adopt these reforms.

³⁴¹ See *supra* Section I.B.3.

³⁴² See *supra* Part III.B (detailing the state law restrictions in Alaska, Vermont, and Washington).

³⁴³ See *National Commission on Forensic Science*, DEP’T OF JUSTICE, <http://www.justice.gov/ncfs> [<http://perma.cc/B43D-CBD4>].

³⁴⁴ See *Organization of Scientific Area Committees*, NAT’L INST. OF STANDARDS AND TECH., <http://www.nist.gov/forensics/osac/index.cfm> [<http://perma.cc/H87T-VVNU>] (outlining the scope of the OSACs and their responsibilities).

³⁴⁵ See *NIST Organization of Scientific Area Committees Roles and Responsibilities*, NAT’L INST. OF STANDARDS AND TECH., <http://www.nist.gov/forensics/osacroles.cfm> [<http://perma.cc/B3Z4-FWK4>].

³⁴⁶ See *supra* Section III.A.

databases to explore the adoption of standard procedures.³⁴⁷ A working group offers at least three potential incremental benefits. First, simply starting the dialogue would force some agencies to articulate their practices and procedures. Second, a discussion about what regulations are needed could encourage law enforcement to consider some of the external costs of local databases. Finally, even if the working group did not possess the power to adopt binding regulations, it is possible that some agencies—motivated by the self-interested desire to continue using their own local databases—could pressure others to act more cautiously so as not to generate interest from external regulators.

CONCLUSION

Given the pressure on police to solve crimes and reduce criminal activity, it is not surprising that law enforcement aggressively adapts surveillance technology to its benefit. Such actions are often commendable and encouraged. Indeed, the very manner in which law enforcement agencies measure their absolute and comparative success—through crime rates and clearance rates—incincentivizes local agencies to push the boundaries of crime-solving tools. Early adopters of local databases are doing just that, trying to maximize forensic DNA analysis capability to fight and deter crime. Palm Bay, Bensalem, and others have shown that local databases offer great promise when measured on that scale.

But a narrow focus on crime rates and clearance rates is not the only relevant metric when allocating policing resources in general and public surveillance in particular. Rather, policing has the potential to generate positive and negative externalities unrelated to crime rates and clearance rates, and these externalities are often difficult to measure reliably. Furthermore, there is little incentive for law enforcement to identify or measure these externalities, particularly negative ones. This Article is the first attempt to identify the full implications of local databases. While it is beyond its scope to measure these externalities, identifying their existence and recognizing law enforcement's failure to consider them calls for some external regulation of local databases.

Because the empirical work needed to measure the external costs of local databases has not been developed, the reforms proposed in this Article are modest. It is possible, although to this author unlikely, that the external costs of local databases will outweigh their benefits. If that proves true, states should follow Vermont's lead and ban local databases. More than likely, the result of a full-scale empirical study of local databases will call for something in the middle, rejecting the total prohibition in Vermont and rejecting the current landscape, where local agencies are free to develop and use local databases without external regulation.

³⁴⁷ Telephone Interview with Fred Harran, *supra* note 18 (explaining that his motivation to create such a body is to limit the possibility that a separate regulatory body without direct experience using this tool will adopt stricter regulations).